Philmore

LKG

THE ELECTRONIC ACCESSORIES CENTER

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

NEW PRODUCTS 2012

IP65 · **ETL LISTED us**

HI-BRIGHT LED LIGHT MODULE

The LED Light Module has housing made of ABS plastic with a transparent epoxy seal around the LED's. This provides a robust construction with excellent light distribution and IP-65 sealing, (splashproof and dustproof). The LED Light Modules are available in 3 LED rectangular or 4 LED square configurations. The 50/50 ultra bright LED chip in all standard colors. The modules can be daisy chained for back lighting of signage, illuminating letters and designs, under cabinet lighting, stair lighting and a wide variety of other applications where direct lighting is required.
Both 3 LED and 4 LED are supplied with an adhesive backing for quick and permanent installations or can be mounted with wood screws. All are available in bulk packed, as well. To specify bulk packed, please add suffix letter "B" to part number.

3 LED RECTANGULAR
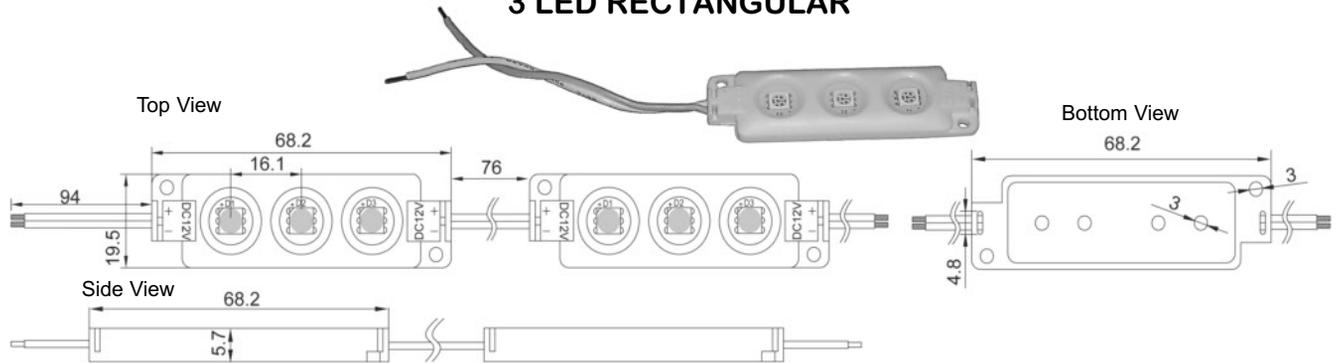
4 LED SQUARE
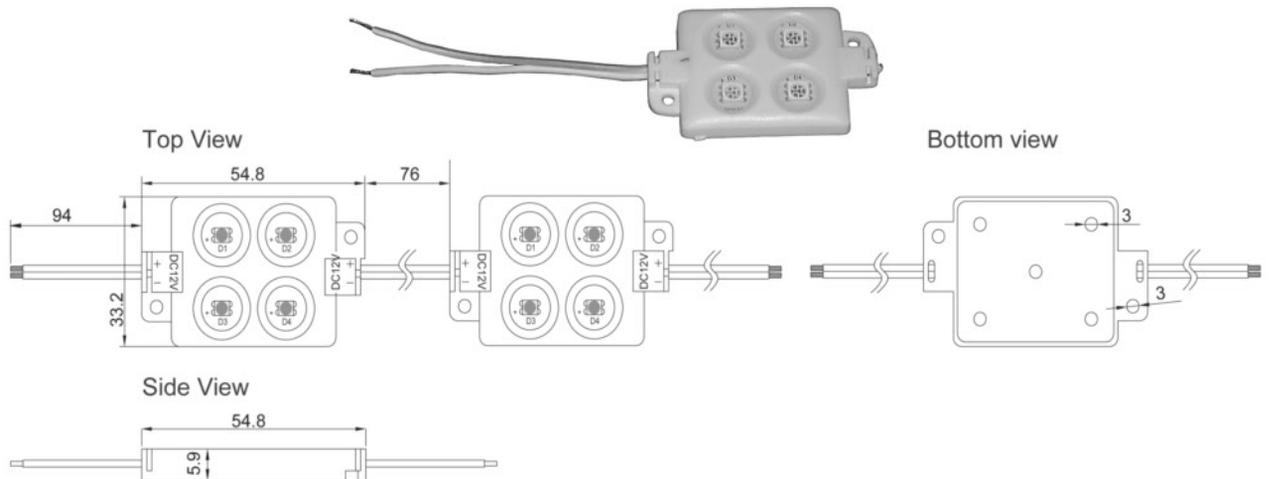
SPECIFICATIONS:

	3 LED	4 LED
LED Quantity / Chip	3pcs SMD5050	4pcs SMD5050
Input Voltage	DC12V	DC12V
Input Power	0.0453A	0.088A
Projection Distance	1m±	1m±
Luminous flux	42.948	53.8
Lighting Efficiency	>80%	>80%
Color Temperature	6000±500K	6000±500K
Coloration Index	Ra>75	Ra>80
Working Temperature	-20°C~40°C	-20°C~40°C
Storage Temperature	-25°C~60C	-25°C~60°C
Life	>30000hrs	>30000hrs
Material	ABS & Epoxy resin	ABS & Epoxy resin
Dimension	68.2*19.5*5.7mm	54.8*33.2*5.9mm
IP Rating	IP65	IP65

SINGLE MODULE		
3 LED Part No.	4 LED Part No.	LED COLOR
11-2930	11-2950	Red
11-2932	11-2952	Yellow
11-2934	11-2954	Pure White
11-2936	11-2956	Warm White
11-2938	11-2958	Green
11-2939	11-2959	Blue

Note: Bulk Packed, Modules are connected together in continuous string with 6 inch Leads. 20 LED Modules per string.
Specify number of modules when order in Bulk (2 pcs. min. - 20 pcs. max.).

NEW PRODUCTS 2012

Right Angle HDMI Cable
(HDMI High Speed with Ethernet)

HDMI°
HIGH SPEED
with ETHERNET

Molded 90° HDMI standard type A connector on one end to straight HDMI connector on other end. Choices of 4 different 90° angle connector to ease the installations where space and clearance behind components is limited. Eliminate the needs of additional expensive right angle adaptor. Available in 3 ft. and 6 ft. Length.

Right Angle, Downward Position
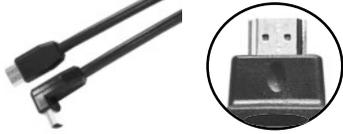
No. 45-7413 - 3 FT.
No. 45-7416 - 6 FT.

Right Angle, Left Elbow

No. 45-7433 - 3 FT.
No. 45-7436 - 6 FT.

Right Angle, Upward Position

No. 45-7423 - 3 FT.
No. 45-7426 - 6 FT.

Right Angle, Right Elbow

No. 45-7453 - 3 FT.
No. 45-7456 - 6 FT.

Retractable HDMI Cable
(HDMI High Speed with Ethernet)

Whether at home or traveling, HDMI cables that can be shortened to eliminate the excess length(s) are a practical and tidy solution to the usual messy scramble of cables we have never quite gotten used to. Available in either 3 or 6 foot lengths when fully extended; both sizes retract to a few inches at your command.

No. 45-7463 - 3 FT. Extended (6" Retracted)
No. 45-7466 - 6 FT. Extended (13"Retracted)

Right Angle Audio Adaptors

A wide selection of Right Angle Adaptors from 2.5mm to 6.3mm (1/4") in both mono and stereo for any devices with phone jack.

**1/4" Stereo Plug to
1/4" Stereo Jack**

New

No. 522

**1/4" Stereo Plug to
3.5mm Stereo Jack**

No. 559RA

**3.5mm Mono Plug to
3.5mm Stereo Jack**

No. 561A

**2.5mm Stereo Plug to
3.5mm Stereo Jack**

New

No. 543

**1/4" Mono Plug
to 1/4" Mono Jack**

New

No. 528

**1/4" Stereo Plug to
2.5mm Stereo Jack**

New

No. 534

**3.5mm Stereo Plug to
2.5mm Stereo Jack**

No. 536

New

**2.5mm Stereo Plug
to 1/4" Stereo Jack**

No. 545

New

**1/4" Mono Plug
to 1/4" Stereo Jack**

New

No. 529

**3.5mm Stereo Plug to
3.5mm Stereo Jack**

No. 556A

**2.5mm Stereo Plug to
2.5mm Stereo Jack**

No. 537

New

NEW PRODUCTS 2012

AC/DC SWITCHING POWER SUPPLY
12V DC - 1AMP

OUTPUT CORD
WIRE: 22AWG/2C 2468,1500mm
PLUG: JACK PLUG 5.5*2.1*9.5mm

No. 48-121

Input Voltage:	100 - 240V AC, (50/60 Hz)- 0.3A Max.
Output Voltage:	12V DC @ 1A
Normal Output Power:	12W
Output Connection:	5 ft. (22 AWG) Cord with 2.1 x 5.5mm DC Plug, Center Positive

12V DC - 2AMP

OUTPUT CORD
WIRE:20 AWG/2C 2468,1500mm
PLUG: JACK PLUG 5.5*2.1*9.5mm

No. 48-122

Input Voltage:	100 - 240V AC, (50/60 Hz)- 0.8A Max.
Output Voltage:	12V DC @ 2A
Normal Output Power:	24W
Output Connection:	5 ft. (20 AWG) Cord with 2.1 x 5.5mm DC Plug, Center Positive

DC/DC USB CHARGER
SINGLE 5V DC - 2.1A

No. 48-1218

Input Voltage:	10 - 16V DC
Output Voltage:	5V DC, USB Jack
Maximum Current:	2100 mA (2.1A)
RED LED POWER INDICATOR LIGHT	

DC/DC USB CHARGER
DUAL 5V DC - 2.1A (each Port)

No. 48-1219

Input Voltage:	12 - 24V DC
Output Voltage:	5V DC, USB Jacks
Maximum Current:	2100 mA (2.1A) both USB Ports
Replaceable Fuse Protection	

AC/DC USB CHARGER
DUAL 5V DC - 2A

No. 48-1221

Input Voltage:	100 - 240V AC-0.3A
Output Voltage:	5V DC, USB Jacks
Maximum Current:	2000 mA (2A) (1A Per USB Port if both Ports are used at the same time. small and light weight desigh.
Size:	2.9" L x 1.1" W x 1.6" Deep

NP3

NEW PRODUCTS 2012

SPLASH PROOF ROCKER SWITCHES

IP65

Current Rating:	20A-12VDC
Contact Resistance:	50m Ohm max
Insulation Resistance:	DC 500V 100m Ohm min.
Dielectric Strength:	AC 1000V for 1 minute
Body Material:	Nylon 66 (94-V2)
Actuator Material:	Clear, PC (94-V2), with black silicone cover.
Terminal Material:	Silver plated, Copper Alloy
Terminal Type:	.187" Quick Connect
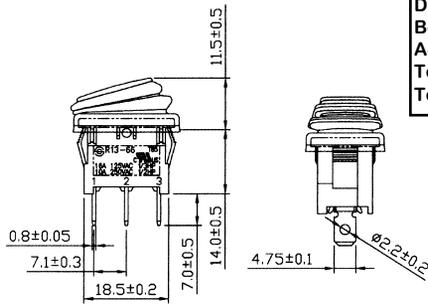
Mounting Hole: 0.51" x 0.764"

Part. No.	Type	Action			Actuator
30-12320	SPST	ON	-	OFF	Black
30-12322	SPST	ON	-	OFF	Red LED
30-12324	SPST	ON	-	OFF	Green LED
30-12326	SPST	ON	-	OFF	Blue LED
30-12328	SPST	ON	-	OFF	Amber LED

SPLASH PROOF SNAP-IN ROUND ROCKER SWITCHES

IP65

Current Rating:	20A-12VDC
Contact Resistance:	50m Ohm max
Insulation Resistance:	DC 500V 100m Ohm min.
Dielectric Strength:	AC 1500V for 1 minute
Body Material:	Nylon 66 (94V-2)
Actuator Material:	PC (94-V2), with black silicone cover
Terminal Material:	Silver plated, Copper Alloy
Terminal Type:	.187" Quick Connect

Mounting Hole: 0.795"

Part. No.	Type	Action			Actuator
30-12330	SPST	ON	-	OFF	Black
30-12332	SPST	ON	-	OFF	Red LED
30-12334	SPST	ON	-	OFF	Green LED
30-12336	SPST	ON	-	OFF	Blue LED
30-12338	SPST	ON	-	OFF	Amber LED

SPLASH PROOF PUSH BUTTON SWITCHES

IP65

Current Rating:	10A-14VDC
Contact Resistance:	50m OHM Max.
Insulation Resistance:	DC 500V 100m OHM max.
Dielectric Strength:	AC 1500V 1 minute
Body Material:	Black Nylon 66 (94-V2)
Actuator Material:	PC (94-V2) with black silicone cover
Terminal Material:	Siliver Plated Brass
Terminal Type:	.250" Quick Connect
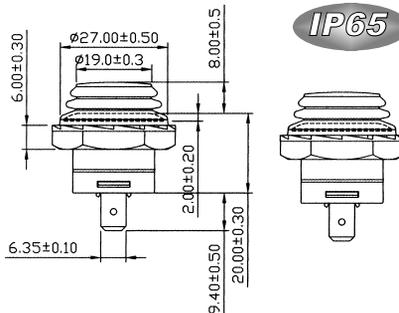
Mounting Hole: 0.87"

Part. No.	Type	Action			Actuator
30-12342	SPST	(ON)	-	OFF	Red LED
30-12344	SPST	ON	-	OFF	Red Nylon

Note: ( ) = Momentary

MINI PUSH BUTTON SWITCH

Current Rating:	3A-125VDC, 1.5A-250VAC
Contact Resistance:	50m Ohm max
Insulation Resistance:	DC 500V 100m Ohm min.
Dielectric Strength:	AC 1000V for 1 minute
Body Material:	Nylon (94V-2)
Terminal Material:	Silver plated brass
Terminal Type:	Solder
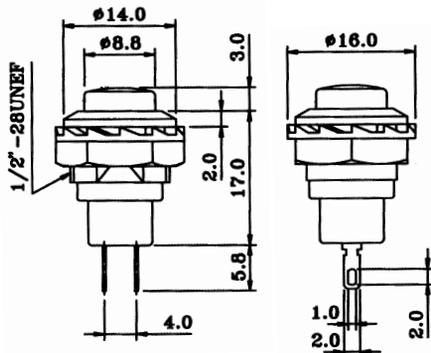
Mounting Hole: 0.50"

Part. No.	Type	Action		Actuator
30-141	SPST	(ON)	- OFF	Red Nylon

Note: ( ) = Momentary

NEW PRODUCTS 2012

A series of handy switches that will switch on night lights for safety and security. Simple two-wire packages make this an easy series to use; each has six inches long insulated wires with stripped ends. These switches are made to be mounted in a case or behind a control panel with the photo-sensor protruding through a mounting hole.

PHOTO-ELECTRIC ON-AT-DARK SWITCHES
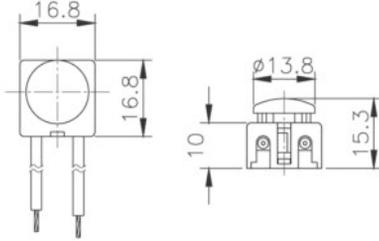
25 Watt, 125 VAC Photo-Switch

A small switch inside a plastic case with two lead wires. Normal usage might be with incandescent, Halogen or LED lamps not to exceed the 25 watt, 125 VAC rating. This switch is intended for indoor use only.

No. 30-10825

---
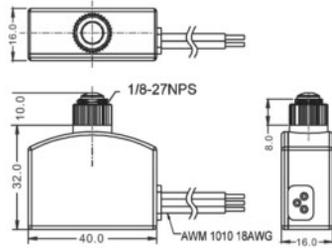
100 Watt INDOOR/OUTDOOR Photo-Switch

A handy switch rated for 100 watts maximum (@125 volts AC) when used to control an incandescent light or 39 voltamps if used with a fluorescent lighting assembly. The case assembly is best used inside a protected case but the 8mm diameter sensor can protrude through the mounting hole to either an indoor or outdoor environment. Built in a protective plastic shell with three lead wires.

No. 30-10830

---
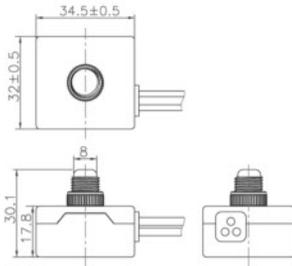
250 Watt INDOOR/OUTDOOR Photo-Switch

Used when a large lighting load is required(generally for large areas) such as in dark warehouse areas, protected loading docks and can handle an incandescent or Halogen lamp up to 250 watts (@125 volts AC) or could be used with fluorescent lamp assembly up to 60 watts. Built in a protective plastic shell with three lead wires. It can be used for both indoor or outdoor environment.

No. 30-10835
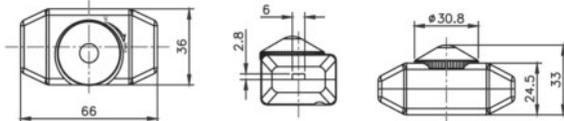
Cord Mount Dimmer Switch

SPECIFICATIONS:

Current Rating:	1.2 A @ 125V AC
Material:	Plastic housing
Terminal Type:	Solder
Wire Gauge:	Up to 18 AWG, SPT-1 or SPT-2

No. 30-10190
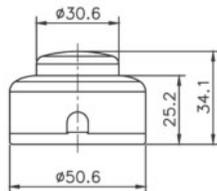
Cord Mount Push Button Switch

SPECIFICATIONS:

Current Rating:	2A-125VAC, 1A-250VAC 1A-125VL
Material:	Plastic housing
Terminal Type:	Screw
Wire Gauge:	Up to 18 AWG, SPT-1 or SPT-2

No. 30-10198
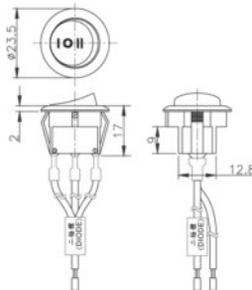
HI-LO Rocker Switch

SPECIFICATIONS:

Current Rating:	10A-125VA, 5A-250VAC 3A-125VL
Action:	LO-OFF-HIGH
Actuator:	Black Rocker with white Legend
Material:	Plastic housing
Terminal Type:	6" Wire Leads

No. 30-9167

Mounting Hole: 0.80"

NEW PRODUCTS 2012

12V LIGHTED SNAP-IN ROUND ROCKER SWITCH
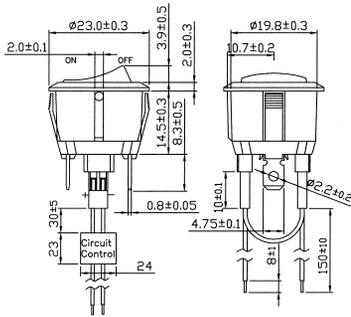
Current Rating:	20A-12VDC
Contact Resistance:	50m Ohm max
Insulation Resistance:	DC 500V 100M Ohm min.
Dielectric Strength:	AC 1500V for 1 minute
Body Material:	Nylon (UL 94V-2). Blue
Terminal Material:	Silver plated brass
Terminal Type:	12V Lead Wire Assembly

Mounting hole: 20.2mm (.79")

Part. No.	Type	Action		Actuator
30-12340	SPST	ON	- OFF	Blue LED Illuminated body. Red LED Rocker*

* Red LED illuminates when switch is in ON position

IN-LINE PUSH BUTTON SWITCH

No. 30-825
(Maximum cable O.D. 6.0mm)
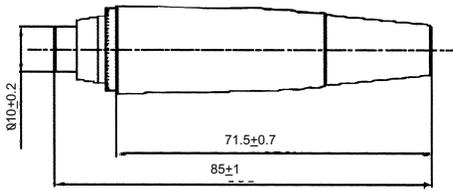
Current Rating:	3A-125V
Contact Resistance:	30 Ohm max
Insulation Resistance:	100m Ohm min.
Terminal Type:	Solder

Sizes: Overall Length 3.3"
Body/handle Length 2.8"
O.D. .75"

12V ACCESSORIES

CIGARETTE LIGHTER PLUG WITH ON-OFF SWITCH

No. 48-790
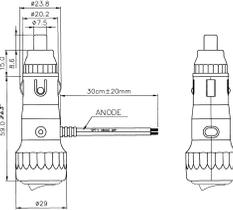
Current Rating:	8A-12VDC
Housing Material:	ABS (UL94-HB)
Contact Material:	Tip - Nickel Plated Brass
	Ground - Nickel Plated Steel
Switch:	SPST Rocker Switch with LED
Wire Size:	SPT-1 Type up to 18 AWG
Fuse:	8A Standard 3AG type (included)

12V SOCKET TO 2 POSITION FLAT CONNECTOR

This 10" long Adaptor has 2 position flat trailer harness connector on one end. On other end is standard 12V cigarette lighter socket. Allows 12V connection from 2 pin trailer connector.

No. 48-1276

12V SOCKET TO 2 PIN CONNECTOR

This 4" long Adaptor has two pin connector on one end that connects with any of the 12V power supplies with interchangeable DC plugs feature. On other end is standard 12V cigarette lighter socket.

No. 48-1274

SPLASH PROOF HOLDER WITH LED INDICATOR LIGHT

U.S.A. **IP66**

Rating 20A 32V DC, holds 1/4"-1-1/4" 3AG type fuse. Can be used in panel up to 3/8" thick, mounts in .63" (16.0mm) mounting hole 94V UL material, LED indicates when fuse is blown.
No. 64-2015

IP66

Rating 20A 12V/24 V DC, holds standard blade type ATC fuse 14 AWG loop wire, LED indicates when fuse is blown.
No. 64-2020

NEW PRODUCTS 2012

12V EXTENSION CORD

A 10 ft. extension cable with fused 12V cigarette lighter plug on one end to 12V socket with dust cover. 18 AWG wire with 2A fuse.

No. 48-485

WEATHER PROOF 12V SOCKET

SPECIFICATIONS:
* RATING: 20A-12V/24V DC
* MATERIAL:
  Housing nylon with glass fiber(UL 94-HB).
  Top contact: nickel plated spring brass.
* Watertight sealing cap.
* 10A uses 18 AWG.
* 15A uses 16 AWG.
* 20A uses 12 AWG.

No. 48-782

φ36.8
37.6 (56)
11
26.3 φ0.2
Mounting Hole
φ29(φ1.14")
Ground Tab
Positive Tab
Quick Terminal(.250")
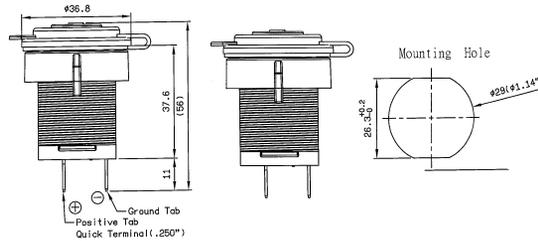
THREAD LOCKERS
ANAEROBIC ADHESIVES/SEALANTS THREADLOCKING

The **TORQUE THREADLOCKING SERIES** represents state of the art anaerobic technology, with world class performance. The **TORQUE THREADLOCKING SERIES** is manufactured to provide specific viscosities, strengths, and cure speeds to meet any application requirement. These anaerobic resins prevent against vibration loosening, while locking and sealing threaded assemblies and metal parts. They have excellent resistance to extremely harsh environments. **TORQUE THREADLOCKING** products are used in a wide range of assembly applications: from delicate electronic devices to heavy industrial equipment. They distribute the load on a fastener over the entire engagement length of the assembly, greatly reducing or completely eliminating fastener and material fatigue. They protect threaded areas by preventing rust and corrosion. These products significantly reduce production cost while enhancing the reliability of the finished product.
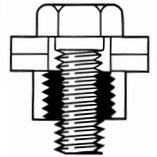
TORQUE TL SERIES™
Locks/seals threaded fasteners

Part No.	Description	Color	Viscosity	Breakaway Prevailing Torque	Temp Range	Cure Speed (FIXTURE/FULL)	Specific Gravity
50-8522	Low strength threadlocking. Ideal for small screws, 1/4" and smaller. Controlled lubricity for accurate clamp loading. Easy disassemble.	Purple	1,200 cps MT	75/50	-60 to 350°	10 Min/8 Hours	1.05
50-8542	General purpose, medium strength, removable, ideal for fastener 3/4" or smaller. Controlled lubricity, for accurate clamp loading.	Blue	1,200 cps MT	150/75	-60 to 350°	10 Min/8 Hours	1.07
50-8571	High strength, permanent threadlocking. Ideal for fasteners up to 1".	Red	500 cps MT	250/350	-60 to 350°	10 Min/8 Hours	1.12
50-8590	High strength, wicking grade. Ideal for post application to pre assembled fasteners. Penetrates threads by capillary action. Secures screws, bolts, seals welds, porous metal parts.	Green	12 cps LT	150/275	-60 to 350°	10 Min/8 Hours	1.08

PURPLE

No. 50-8522
MIL (S-46163-A)
Type II Grade M
(10mL/0.338fl. oz.)

BLUE

No. 50-8542
MIL (S-46163-A)
Type II Grade N
(10mL/0.338fl. oz.)

RED

No. 50-8571
Meets Mil Spec - MIL-S-46163,
Type I Grade K
(10mL/0.338fl. oz.)

GREEN

No. 50-8590
MIL-S-46163-A
Type III Grade R
(10mL/0.338fl. oz.)

NEW PRODUCTS 2012

CAT5 to AUDIO ADAPTORS

The growing popular use of CAT (category five) twisted-pair data cables in audio applications has created a need for adaptors that will facilitate using that popular cable type for connecting amplifiers, speakers etc. These adaptors are wired to provide a twisted pair for each (left and right) stereo signal. Connectors have on one end an RJ-45 female jack, the CAT5 twisted-pair standard, and standard audio connectors on the other ends. The left channel is fed to pins 1 & 3 and the right channel is on pair 6 & 2 of the RJ-45 connector. This popular application is often suggested as a method of reducing electromagnetic interference to susceptible audio systems, particularly when the cable lengths will be more than a few feet in length.

No. 70-027 - CAT5 to 3.5mm phone plug Adaptor (7" overall length)

No. 70-037 - CAT5 to two RCA Male phone plugs (6.5" overall length)
Both adaptors are predominantly black in color.

STEREO "Y" ADAPTOR WITH IN-LINE VOLUME CONTROL

3.5mm Stereo Plug to (2) 3.5mm Stereo Jacks with 10" cords. Each 3.5mm stereo jack has in-line volume control to control audio output on each jack.
No. 70-039

NICKEL PLATED SPEAKERS TERMINAL WITH PUSH-IN CONNECTION
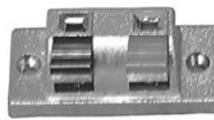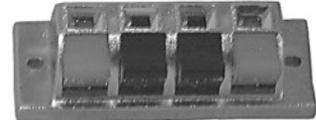
2 Position   4 Position

Bright Nickel plated body, solder terminal.
No. 45-1978 - 2 Position
No. 45-1979 - 4 Position

PCB MOUNT RCA JACK

Printed circuit board mount RCA Jack with Black and Red insulation.
No. 2103 - Black insulation, Package of 2
No. 2104 - Red insulation, Package of 2
No. 2105 - Package of 2, 1 Red & 1 Black Insulation
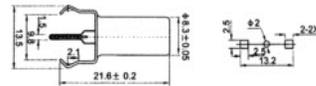
RIGHT ANGLE MINI EXTENSION CORD

A foot long of SJT16/3 Cord with Right Angle 3 Prong Plug on one end and Receptacle on the other. Use with wall outlet where space is limited between wall and equipment.
No. 48-127

3 ft. AUDIO PATCH CORD

3.5mm (1/8") Mono Male to RCA Male, 3 ft. Shielded Cable.
No. CA67

1 ft. VIDEO PATCH CORD

BNC Male to BNC Male, 1 ft. RG59/U, 75 OHM
No. CA921

BNC Male to BNC Female, 1 ft. RG59/U, 75 OHM
No. CA922

STAINLESS STEEL WALL PLATES

A single gang Stainless Steel wall plate with Feed - Thru Audio / Video and Solderless Terminal. Choose any combinations to fit your A/V installation needs. All connectors are Nickel plated. Mounting screws included.

No. 75-1035
Dual HD15(VGA) Jacks + 3.5mm Stereo

No. 75-1672
2 Position Speaker Terminal (Solderless)

No. 75-1674
4 Position Speaker Terminal (Solderless)

No. 75-1678
(2) 4 Position Speaker Terminal (Solderless)

NEW PRODUCTS 2012
BATTERY HOLDERS

AAA

For (6) AAA cells (UM-4)
with Solder Lug Connection
No. BH463

For (8) AAA cells (UM-4) with
Solder Lug Connection
No. BH483

AA

For (4) AA
cells (UM-3)
with cover
On-Off Switch
and built-in
belt clip. USB
A Jack Connection
No. BH3413

C

For (2) C cells (UM-2)
with cover plus On-Off
Switch, 6" Lead Wire
Connection
No. BH2211

For (3) C cells (UM-2)
with cover & 6" Lead Wire
Connection
No. BH2311

D

For (3) D
cells (UM-1)
with cover &
6" Lead Wire
Connection
No. BH1311

9V

For (1) 9 Volt battery with solder
lug connection
No. BH911

For (1) 9 Volt battery Plastic Clip Holder
No. BH912

For (1) 9
Volt Battery
with cover
Plus On-Off
Switch, 6"
Lead Wire
Connection
No. BH913

COIN CELL

Coin cell holder for CR2425
No. BH2042

9 V BATTERY SNAP

For (2) 9V Cells with 6" Lead, 26 AWG Parallel wiring
for higher current applications Projects or radio use.
No. BH139

IMPORTANT NOTES

Part No.	Note	Page No.	Note

_____

_____

_____

_____

_____

_____

MODULAR TELEPHONE WALL PLATES

Telephone wall plates are designed for mounting on standard electrical boxes unless otherwise specified. All wall plates are UL and CSA Listed, supplied with matching color mounting screws. For bulk-packed product, please add suffix letter "B" to the part number.

4 Conductor
No. TWP49 (Ivory)
No. TWP49S (Brown)
No. TWP49V (White)
No. 75-3048 (Light Almond)
No. 75-3050 (Almond)
No. 75-3052 (Black)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-002 (Ivory)
No. 76-004 (White)
No. 76-006 (Light Almond)

6 Conductor
No. TWP50A (Ivory)
No. TWP50AV (White)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-040 (Ivory)
No. 76-042 (White)

8 Conductor
No. TWP80 (Ivory)
No. TWP80V (White)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-060 (Ivory)
No. 76-062 (White)

Color Matching

Most popular smooth plate finish. 4, 6 and 8 conductor, with color-coded wires connect jack to connecting block.

DSS Wall Plates

Use these wall plates to connect your input cables from antenna, cable, telephone and satellites to TV's, VCR's or other devices.

(2) GOLD F-81 Connectors + (1) 4c Telephone
No. 75-4492 Ivory
No. 75-4494 White
No. 75-4496 Brown
No. 75-4498 Lt. Almond

COMBO WALL PLATE
F - 81 AND 4 CONDUCTOR MODULAR JACK

No. TWP11 (Ivory)
No. TWP11V (White)
No. 75-3168 (Light Almond)
No. 75-3170 (Almond)
No. 75-3172 (Black)
INSTALLER PACK
Box of 10 Wall Plates
No. 76-018 (Ivory)
No. 76-020 (White)
No. 76-022 (Light Almond)

Color Matching

Enables user to make two totally different connections: A.) 4-wire modular phone jack to accept a modular telephone plug. B.) An F-81 jack to accept "F" male connector for attaching video devices with 75 ohm cable. With mounting screws.

DUAL WALL PLATES

Color-coded wires connect the modular jack to the screw terminal blocks.

4 Conductor
No. TWP62 (Ivory)
No. TWP62V (White)
No. 75-3248 (Light Almond)
No. 75-3250 (Almond)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-008 (Ivory)
No. 76-010 (White)
No. 76-012 (Light Almond)

6 Conductor
No. TWP60A (Ivory)
No. TWP60AV (White)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-044 (Ivory)
No. 76-046 (White)

8 Conductor
No. TWP82 (Ivory)
No. TWP82V (White)
INSTALLER PACKS
Box of 10 Wall Plates
No. 76-064 (Ivory)
No. 76-066 (White)

MID-SIZE FLUSH MOUNT TELEPHONE WALL PLATE

Color Matching

Size: (3-1/8" x 4-7/8")

MID STANDARD
4 7/8"
4 1/2"
2 3/4"
3 1/8"
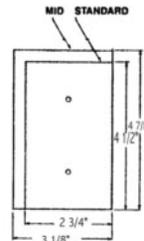
SINGLE 4 Conductor
No. 75-250 (White)
No. 75-252 (Ivory)

DUAL 4 Conductor
No. 75-260 (White)
No. 75-262 (Ivory)

MODULAR PHONE JACK

3-1/4" Dia. Round
Mounts on any flat surface. Screw terminal is color-coded. Includes mounting bracket.

4 CONDUCTOR
No. TWP53 (Ivory)
No. TWP53V (White)
No. TWP53N (Ivory) - Without mounting bracket
No. TWP53VN - (White) - Without mounting bracket
6 CONDUCTOR
No. 75-6248 (Ivory)
No. 75-6249 (White)

Color Matching

MODULAR FLOOR JACK ASSEMBLY
Flush Mount, 4 Conductors

No. TWP66B BULK ONLY
The No. TWP66B assembly includes a modular jack mountable into the standard cut-out wall plate. A steel mounting bracket is also supplied for installation in a standard outlet box. Mounting hardware included.
No. TWP66NB Jack only. No Mounting Bracket.

1

DESIGNER WALL PLATES

Color Matching

All of Philmore wall plates are UL and CSA listed. They can be mounted in any standard electrical box. Complete with single gang wall plate and matching color mounting screws. Two gang and three gang wall plates are available for a multiple gang box installation.

	Single 4 Conductor (6P4C)		Dual 4 Conductor (6P4C / 6P4C)
FIG. 1	No. 75-4040 - Ivory No. 75-4042 - White No. 75-4044 - Brown No. 75-4048 - Lt. Almond No. 75-4250 - Almond	FIG. 6	No. 75-4240 - Ivory No. 75-4242 - White No. 75-4248 - Lt. Almond No. 75-4252 - Almond
FIG. 2	Single 6 Conductor (6P6C) No. 75-4060 - Ivory No. 75-4062 - White No. 75-4064 - Brown	FIG. 7	Dual 6 Conductor (6P6C / 6P6C) No. 75-4260 - Ivory No. 75-4262 - White
FIG. 3	Single 8 Conductor (6P8C) No. 75-4080 - Ivory No. 75-4082 - White	FIG. 8	Dual 8 Conductor (6P8C / 6P8C) No. 75-4280 - Ivory No. 75-4282 - White
FIG. 4	Single "F" Conductor No. 75-4410 - Ivory No. 75-4412 - White No. 75-4414 - Brown No. 75-4418 - Lt. Almond No. 75-4430 - Almond	FIG. 9	Dual 6 & 8 Conductor (6P6C / 8P8C) for Voice & Data No. 75-4680 - Ivory No. 75-4682 - White
FIG. 5	Dual "F" Conductor No. 75-4420 - Ivory No. 75-4422 - White No. 75-4428 - Lt. Almond	FIG. 10	Dual "F" & 6 Conductor ("F" & 6P6C) No. 75-4160 - Ivory No. 75-4162 - White No. 75-4168 - Lt. Almond

(FIG. 1) (FIG. 2) (FIG. 3) (FIG. 4) (FIG. 5)

(FIG. 6) (FIG. 7) (FIG. 8) (FIG. 9) (FIG. 10)
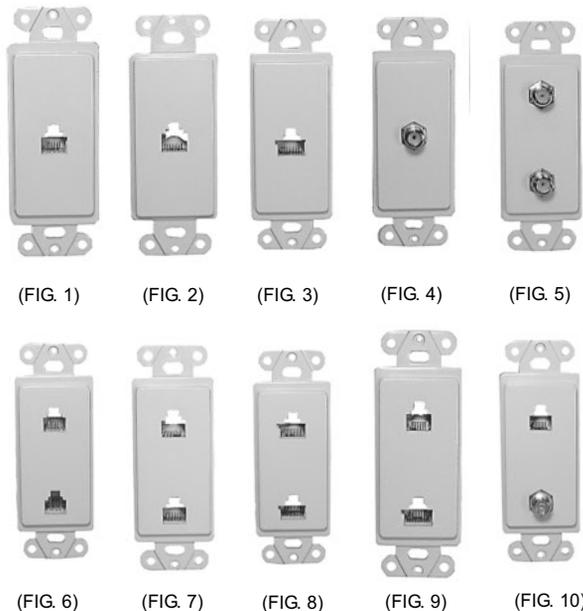
All Designer Wall Plates may be ordered Bulk by adding suffix "B" to the part number.

DECEP Wall Plates

Combo Wall Plate
One-piece designer look alike wall plate.
F-81 Coupler - 4 Conductor Telephone Jack

No. TWP10 (Ivory)
No. TWP10V (White)

Color Matching

Telephone Wall Plate
One-piece designer look alike telephone wall plate.

No. TWP40 (Ivory)
No. TWP40V (White)

Color Matching

Dual Wall Plate
One-piece designer look alike dual telephone wall plate.

No. TWP72 (Ivory)
No. TWP72V (White)

Color Matching

Supplied with mounting screws to match color of wallplates.

WALL PLATE COVERS

These covers are used with the Designer Style inserts for custom installations

Note: All Wall Plate covers are individually packaged in plastic bag. Not available for pegboard display

Color Matching

(White)
No. 75-1000 - 1 Gang Wall Plate
No. 75-2000 - 2 Gang Wall Plate
No. 75-3000 - 3 Gang Wall Plate
(Ivory)
No. 75-1500 - 1 Gang Wall Plate
No. 75-2500 - 2 Gang Wall Plate
No. 75-3500 - 3 Gang Wall Plate
(Black)
No. 75-1300 - 1 Gang Wall Plate
No. 75-2300 - 2 Gang Wall Plate
(Light Almond)
No. 75-1400 - 1 Gang Wall Plate

Blank Wall Plate
• High Impact-Resistant, Non-Flammable and unbreakable Thermoplastic • Flush Fitting with matching color mounting screws. UL approved materials.

Standard Wall Plates
(Single Gang)

No. 75-690 - Ivory
No. 75-692 - White
No. 75-694 - Brown
No. 75-696 - Grey
No. 75-698 - Light Almond
No. 75-292 - Black
No. 75-700 - Almond

Color Matching

(Double Gang)
No. 75-6902 - Ivory
No. 75-6922 - White

Designer Style Wall Plates
(Metal Mounting Bracket)
No. 75-5068 - Ivory
No. 75-1068 - White
No. 75-4068 - Light Almond
No. 75-3068 - Black
No. 75-6068 - Almond

DESIGNER TELEPHONE WALL PLATE

Includes: • Flush mount jack
• Wall Plate
• Mounting hardware
(Metal Mounting Bracket)

Color Matching

4 CONDUCTOR
No. TWP48 (Ivory)
No. TWP48V (White)
No. TWP48S (Brown)

6 CONDUCTOR
No. TWP63 (Ivory)
No. TWP63V (White)
No. TWP63S (Brown)

MODULAR TELEPHONE
CONNECTORS and ADAPTORS

These carefully made modular telephone products, all approved for use in domestic telephone systems, greatly expand the capabilities of existing phone installations. They provide for extension, creation of multiple outlets, basic modular installations, and conversion of old four-wire installations to modular.

All are available bulk packed as well. To specify bulk packed, please add suffix letter "B" to the part number.

DUAL ADAPTORS

Dual adaptor jack connects any two devices, in any combination desired, from a single standard modular outlet. Perfect for telephones, answering devices, or amplifiers. Wired reverse for telecommunications.

No. TEC19 - Female to 2 Females - 4 Conductor - Ivory
No. TEC29 - Male to 2 Females - 4 Conductor - Ivory
No. 75-729 - Male to 2 Females - 4 Conductor - White
No. TEC296 - Male to 2 Females - 6 Conductor - Ivory
No. 75-6257 - Male to 2 Females - 6 Conductor - White
No. TEC298 - Male to 2 Females - 8 Conductor - Ivory

MODULAR 'T' ADAPTOR, for DATA

One male to two female jacks. Wired straight thru for data applications. (Pin 1 to Pin 1)
6 Conductor
No. 75-730 - Ivory
8 Conductor
No. 75-732 - Ivory

THREE-WAY JACK

Adds two single-line phones (RJ11) to two-line telephone jack (RJ14). Also good for 3 phone devices to same line.

No. TEC37 - 4 Conductor - Ivory
No. TEC37WH - 4 Conductor - White
No. 75-6268 - 6 Conductor - IVORY

2 Line "T" Adaptor

This device plugs into 2 line wall jack and affords user Line 1, Line 2 or both Line 1 & Line 2 Female Jacks. On 6 conductor version (No. 75-6258) Plugs into 3 Line wall jack and gives Line 1 & Line 2, Line 2 & Line 3 and all 3 Lines.
No. TEC73 - 4 Conductor
No. 75-6258 - 6 Conductor

MODULAR EXTENSION COUPLERS

Modular cord extension coupler. Female modular jacks at either end allow two separate modular cords to be connected to form an extension. Wired reverse for telecommunications.

No. TEC34 - 4 Conductor - Ivory
No. TEC34V - 4 Conductor - White
No. TEC55 - 6 Conductor - Ivory
No. 75-6262 - 6 Conductor - White
No. TEC84 - 8 Conductor - Ivory
No. TEC50 - 4 Conductor for Handset Plug - Ivory

MINI MODULAR EXTENSION COUPLER

Slim design Female coupler, almost half the size of TEC34.

No. 75-725 - 4 Conductor - Black

.57" W x 1" L

MODULAR INLINE COUPLER, for DATA

Wired straight thru for data applications. (Pin 1 to Pin 1)
6 Conductor
No. 75-726 - Ivory
8 Conductor
No. 75-728 - Ivory

SINGLE WALL-MOUNT JACK

Single wall-mount jacks converts a 4, 6 or 8-wire location to a modular telephone outlet. The mounting block is wired to the modular jack. It is necessary only to screw-mount the block and attach existing color-coded wire to the appropriately identified screw terminals. A convenient snap-on protective cover finishes the installation.

No. TEC30 - 4 Conductor - Ivory
No. TEC30V - 4 Conductor - White
No. 75-3038 - 4 Conductor - Light Almond
No. 75-3040 - 4 Conductor - Almond
No. 75-3042 - 4 Conductor - Black
INSTALLER PACKS
Box of 10 Jacks
No. 76-028 - Ivory
No. 76-030 - White
No. 76-032 - Light Almond

No. TEC66 - 6 Conductor - Ivory
No. 75-6269 - 6 Conductor - White
No. TEC88 - 8 Conductor - Ivory
No. TEC89 - 8 Conductor w/ shorting bar RJ31X - Ivory

MINI SURFACE MOUNT JACK

Same as No. TEC30 (4 conductor) & No. TEC66 (6 conductor) but only 1-11/16" W x 2-1/4" L x 1" H. Available in White and Ivory.

4 CONDUCTOR	**6 CONDUCTOR**
No. 75-266 Ivory	**No. 75-6266** Ivory
No. 75-267 White	**No. 75-6267** White

TINY SURFACE MOUNT JACK
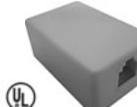
A real space saver for surface mounting telephone jacks. The Philmore tiny jack is almost half the size of standard surface mount jacks. Mounting screws and 2 way adhesive foam tape are included. Color is Ivory and is UL listed.

1.25" W x 1.97" L

No. 75-265 4 Conductor
No. 75-6265 6 Conductor

SURFACE MOUNT
MODULAR CONVERTER

To convert an existing 4-wire telephone mounting block to a modular outlet. A modular jack may also be created from running wire, but the No. TEC30 is recommended if there is no mounting terminal block.

No. TEC33 - Ivory

DUAL WALL MOUNT JACK

Same design as No. TEC30 except two modular jacks are provided instead of one, so that more than one instrument or accessory may be served from a single location.

No. TEC31 - 4 Conductor - Ivory
No. 75-311 - 4 Conductor - White

FOUR PRONG to MODULAR ADAPTOR

No. TEC32 - Converts existing 4-prong jack for use with 4-wire modular plugs. Ivory.

MODULAR JACK REDUCER

Allows user to use telephone equipment equipped with handset plug (4P4C or 4P2C) with standard 4 conductor (6P4C) or 6 conductor (6P6C) modular jacks.
No. TEC64 - Ivory (10 per package)

From 8 Conductor (RJ45- 8P8C)
to 4 and 6 Conductor (6P4C or 6P6C)
No. TEC68 - Ivory (10 per package)

3

TELEPHONE TOOLS & TOOL KIT

WALL PHONE MODULAR JACK

All are designed to mount on a standard junction box or flat on a wall surface. Sturdy supports for mounting the wall phone are molded in. All have screw terminals for wire connection.

4 CONDUCTOR
No. TWP55 (Ivory)
No. TWP55V (White)
No. 75-3558 (Lt. Almond)
No. 75-3560 (Almond)
No. 75-3562 (Black)
Installer Packs
Box of 10 Wall Plates
No. 76-024 (Ivory)
No. 76-026 (White)
6 CONDUCTOR
No. TWP56 (Ivory)
No. 75-657 (White)

STAINLESS STEEL

Stainless steel modular wall plate jack. Screw terminal.
4 CONDUCTOR
No. TWP69

WALL-MOUNT JACK with DUAL SIDE JACK

This wall-mount phone jack provides dual side jacks that can be used to hook-up answering machines, telephone dialers, extension phones, etc.

4 CONDUCTOR
No. TWP58 (Ivory)
No. TWP58V (White)

PROFESSIONAL VOICE / DATA INSTALLATION KIT

No. HT2681

Kit Contains:
(1) No. TEC230 - Impact Punch Down Tool with 66 Type Blade (Punch and Cut)
(1) No. WS468 - Deluxe Modular Crimping Tool Crimps 4, 6 and 8 Conductor Modular Plugs.
(20) No. TEC4B 8 Conductor Modular Plugs
(30) No. TEC3B 6 Conductor Modular Plugs
(1) No. TEC232 110 Type Replacement Blade (Punch and Cut)
(1) Durable Storage Box

FLUSH MOUNT OUTDOOR MODULAR TELEPHONE JACK

4 CONDUCTOR
Flush-mount. Weatherproof RJ11/RJ14. Mounts in any standard electrical box. Mounting hardware provided.
No. TWP67

VOICE & DATA PLATE
(6P6C / Top & 8P8C Keyed/Bottom)

6 conductor jack for voice and 8 conductor, keyed for data on the same flush mount wall plate.
No. TWP68 (Ivory)
No. 75-3682 (White)

Color Matching

PUNCH DOWN TOOLS

These tools are among the most popular tools in the installers caddy today. They are used in the installation of telephone systems, and computer networking all over the world. Philmore offers two (2) types of tools and several types of replacement blades. The most common is the impact tool which has a spring which forces the wire into the connector. With the non impact tool the same blades may be used, however, the power is provided by the installer.

Non-impact Tool
No. 75-228 Non-impact for 110 Style (punch & cut)
No. 75-229 Non-impact for 66/110 Style (punch only)
No. TEC227 Non-impact for 66 style (punch & cut)

Impact Tool
No. 75-238 Impact for 110 Style (punch & cut)
No. 75-239 Impact for 66/110 Style (punch only)
No. TEC230 Impact for 66 style (punch & cut)

REPLACEMENT BLADES

For Philmore Impact and Non-Impact Punchdown Tools
• Hardened SNCM-21 Steel • No Tools Required when changing • Interchangeable
All Blades work for Nos. 75-228, 75-229, TEC227, 75-238, 75-239 and TEC230

No. TEC231
For 66 Type Terminating Blocks (Punch and Cut)

No. TEC232
For 110 Type Terminating Blocks (Punch and Cut)

No. TEC233
For 66 &110 Type Terminating Blocks (Punch Function Only)

No. TEC234
For 630A Type Modular Phone Jack (Punch and Cut)

4

TELEPHONE MODULAR PLUGS & CRIMPING TOOLS

PROFESSIONAL MODULAR CRIMPING TOOL

No. WS468 - Crimps 4-6-8 Conductor

No. WS446 - Crimps 4-6 Conductor & Handset Plugs

No. WSB4 - Replacement Cut & Strip Blade Set

This truly professional, durable crimping tool allows crimping of 4, 6, and 8 conductor (keyed or non keyed) modular plug. (No. WS468 will not work with handset plug - 4P4C) Tool allows cutting and stripping guides for the proper cable preparation. This crimping tool compares to other tools costing twice as much. The unique cam design of this tool gives straight down pressure on contacts to insure proper seating of contacts each time. Will give you thousands of trouble free connections.

10 CONDUCTOR CRIMPING TOOL

This quality, durable tool allows user to assemble 10 conductor modular plugs. The tool is equipped with separate cutter blades, stripping blades and plug crimping to allow complete job. No other tools required.

No. WS210

CRIMP MODULAR PLUGS The Professional Way

2-4-6 CONTACT
Heavy, soft plastic grip, with unbreakable steel body, enables professionally assembled telephone cables without fear of bad connections. Crimps all plug sections simultaneously for maximum reliability. Crimps 6 Position 2 Contact, 6 Position 4 Contact, and 6 Position 6 Contact modular plugs for telephone instruments.

Supplied with 10 modular plugs - 4 Contact

No. WS23

No. WS23B - Crimping Tool only - Bulk

No. WB23 - Replacement Blades
(4) per Package

8 CONTACT
8 contact crimper for multiple telephone installations in commercial settings. Most useful where computer interconnecting is required.

Supplied with 10 modular plugs - 8 Contact

No. WS24

No. WS24B - Crimping Tool only - Bulk

No. WB23 - Replacement Blades
(4) per Package

TELEPHONE MODULAR PLUGS
UL LISTED (UL 94V-0 Material)

GOLD CONTACTS

With 50 micro inches of gold plating and UL94V-0 flame retardant plastic. For stranded Flat Modular Line Cord. **Available in Bulk Only.**

No. TEC145B - 4 Conductor (6P4C)

No. TEC165B - 6 Conductor (6P6C)

No. TEC185B - 8 Conductor (8P8C)

Stranded Wire

RJ-45 Plug for Round Cable (CAT 5)

GOLD CONTACTS

No. CAT5305 - 4 Pair Stranded Conductor Cable (pkg. of 5)

No. CAT5310 - 4 Pair Solid Conductor Cable (pkg. of 5)

No. CAT5310 - 50 - 50 Pack

Solid Wire

Stranded Wire

Shielded RJ45 Plugs (CAT 5)

No. CAT5300 - 4 Pair Stranded Conductor Cable (pkg. 2)

No. CAT5355 - RJ-45 + Strain Relief - 2 sets / Package

CRIMPING TOOLS for Modular Plugs
Regular Modular with adaptor for handset plugs

Make up any desired length of telephone instrument cable by merely stripping and crimping plug to cable with these tools. Salvage defective cable assemblies. Comes with adaptor that allows tool to be used for handset plugs.

No. WS20 - Includes 5 modular plugs

No. WS20B - Crimping Tool Only - Bulk

MODULAR PLUGS for Crimping Tools
For Stranded conductor
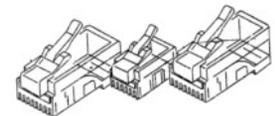
GOLD CONTACTS

Stranded Wire
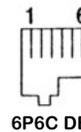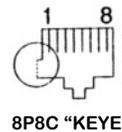
| 6P6C | 6P6C DEC | 8P8C "KEYED" |

No. TEC1 - 4 Cond. instrument plugs (6P4C) - Pkg. of 10
No. TEC1B - Bulk
No. TEC1-50 - 50 Pack
No. TEC2 - 4 Cond. handset plugs (4P4C) - Pkg. of 10
No. TEC2B - Bulk
No. TEC3 - 6 Cond. plugs (6P6C) - Pkg. of 10
No. TEC3B - Bulk
No. TEC3-50 - 50 Pack
No. TEC4 - 8 Cond. plugs (8P8C) - Pkg. of 10
No. TEC4B - Bulk
No. TEC4-50 - 50 Pack
No. TEC5 - 4 Cond. for round cable (6P4C) - Pkg. of 10
No. TEC5B - Bulk
No. TEC6 - 6 Cond. for round cable (6P6C) - Pkg. of 10
No. TEC6B - Bulk
No. TEC7 - 10 Cond. plugs (10P10C) - Pkg. of 10
No. TEC7B - Bulk
No. TEC8 - 8 Cond. - Keyed (8P8C) - Pkg. of 10
No. TEC8B - Bulk
No. TEC9 - 8 Cond. for round cable (8P8C) - Pkg. of 10
No. TEC9B - Bulk
No. TEC11 - (6P4C) DEC Type - Pkg. of 10
No. TEC11B - Bulk
No. TEC12 - (6P6C) DEC Type - Pkg. of 10
No. TEC12B - Bulk

MODULAR JACK REDUCER

Reduce 6 position (4 & 6 conductor) jack to 4 position (handset) Jack.

No. TEC64 - Ivory - Pkg. of 10

Reduce 8 position (8 conductor / RJ45) jack to 6 position (4 & 6 conductor) Jack.

No. TEC68 - Ivory - Pkg. of 10

5

TELEPHONE CABLES

FOUR, SIX and EIGHT CONDUCTOR MODULAR TELEPHONE CABLE

These cable assemblies will serve as replacement items or to expand use of telephone equipment. All telephone cables are packaged for display merchandising or are available in bulk. Please add (B) suffix to order bulk.

TELEPHONE EXTENSION CABLE

• PVC Jacket 26 Gauge Stranded Wire-Non UL
• 15 Micro inches Gold Plated contact modular plugs

NON - UL

Telephone

DATA Interconnect

4 Conductor (Pin 1 to Pin 4)

No. TEC26	Silver Satin	25 ft.
No. TEC26M	Silver Satin	14 ft.
No. TEC26S	Silver Satin	7 ft.
No. TEC20	Ivory	25 ft.
No. TEC20M	Ivory	14 ft.
No. TEC20S	Ivory	7 ft.
No. 75-130	Ivory	1 ft.
No. TEC10	White	25 ft.
No. TEC10M	White	14 ft.
No. TEC10S	White	7 ft.
No. TEC120	Black	25 ft.
No. 75-230	Black	14 ft.
No. 75-210	Black	7 ft.
No. TEC130	Almond	25 ft.
No. TEC140	Brown	25 ft.
No. TEC150	Red	25 ft.
No. TEC160	Ash	25 ft.

6 Conductor (Pin 1 to Pin 6)

No. TEC46	Silver Satin	25 ft.
No. TEC46M	Silver Satin	14 ft.
No. TEC46S	Silver Satin	7 ft.
No. 75-6443	Ivory	50 ft.
No. 75-6243	Ivory	25 ft.
No. 75-6230	Ivory	14 ft.
No. 75-6226	White	25 ft.
No. 75-6232	White	14 ft.

8 Conductor (Pin 1 to Pin 8)

No. TEC86	Silver Satin	25 ft.
No. TEC86M	Silver Satin	14 ft.
No. TEC86S	Silver Satin	7 ft.

INTERCONNECT CABLE
For DATA Application
(Pin 1 to Pin 1)

4 Conductor

No. TEC26R	Silver Satin	25 ft.
No. TEC26RM	Silver Satin	14 ft.
No. TEC26RS	Silver Satin	7 ft.

6 Conductor

No. TEC46R	Silver Satin	25 ft.
No. TEC46RM	Silver Satin	14 ft.
No. TEC46RS	Silver Satin	7 ft.

8 Conductor

No. TEC86R	Silver Satin	25 ft.
No. TEC86RM	Silver Satin	14 ft.
No. TEC86RS	Silver Satin	7 ft.

Plug to plug modular telephone cables are wired in two ways, as extension cords or as interconnect cords. Extension cords by definition advance the contact positions of the jack into which it is inserted. This means the color-coded wires run straight through, each color maintaining its physical position from one end of the cord to the other. Therefore, if the color blue is on the left looking into the plug, it will appear on the right at the other end. The interconnect cords are used when hooking up equipment whose jacks have been wired to standard color sequence. In most such devices, these color sequences are used for terminal identification and accurate wiring. In such cases, the same left to right color sequence must appear at both ends. This is accomplished by rotating the cable 180° before the second modular plug is attached.

CAUTION: There may be terminal color variations or errors in some types of equipment. Please verify terminal sequencing if possible before making interconnects.

TELEPHONE EXTENSION CABLE
For Voice Application (Pin 1 to Pin 4)
(Pin 1 to Pin 6) & (Pin1 to Pin 8)

INTERCONNECT CABLE
For DATA Application (Pin 1 to Pin 1)

4 CONDUCTOR

No. 75-940	7 ft.
No. 75-942	14 ft.
No. 75-944	25 ft.
No. 75-946	50 ft.

6 CONDUCTOR

No. 75-948	7 ft.
No. 75-950	14 ft.
No. 75-952	25 ft.
No. 75-954	50 ft.

8 CONDUCTOR

No. 75-956	7 ft.
No. 75-958	14 ft.
No. 75-960	25 ft.
No. 75-962	50 ft.

• UL Listed 26 Gauge stranded wire, Silver Satin Line Cord
• 50 Micro inches Gold Plated contact modular plugs (UL 94V-0 Material)

4 CONDUCTOR

No. 75-970	7 ft.
No. 75-972	14 ft.
No. 75-974	25 ft.
No. 75-976	50 ft.

6 CONDUCTOR

No. 75-978	7 ft.
No. 75-980	14 ft.
No. 75-982	25 ft.
No. 75-984	50 ft.

8 CONDUCTOR

No. 75-986	7 ft.
No. 75-988	14 ft.
No. 75-990	25 ft.
No. 75-992	50 ft.

UL Approved
SILVER SATIN FLAT LINE CORD

• 26 gauge stranded wire
• UL LISTED
• Convenient 500 ft., 1000 ft. Cardboard Spool
• For use with telephone and computer equipment.

4 CONDUCTOR

No. 75-900	500 ft. Spool
No. 75-902	1000 ft. Spool

6 CONDUCTOR

No. 75-910	500 ft. Spool
No. 75-912	1000 ft. Spool

8 CONDUCTOR

No. 75-920	500 ft. Spool
No. 75-922	1000 ft. Spool

NON - UL
Bulk Telephone Flat Line Cord
26 Gauge
100 ft. Spool

No. TC104	4 Conductor - Silver Satin
No. TC104BL	4 Conductor - Black
No. TC104IV	4 Conductor - Ivory
No. TC106	6 Conductor- Silver Satin
No. TC108	8 Conductor - Silver Satin
No. TC110	10 Conductor - Silver Satin

1000 ft. Spool

No. TC1004	4 Conductor - Silver Satin
No. TC1004 BL	4 Conductor - Black
No. TC1006	6 Conductor - Silver Satin
No. TC1008	8 Conductor - Silver Satin
No. TC1010	10 Conductor - Silver Satin

EXTENSION WIRE CABLES

Spools of flat telephone cable. When used in conjunction with our crimping tools, telephone extension cords may be assembled to desired lengths. Can also be connected to terminal strips. Blister packed.

4 Conductor

No. TC60	50 ft. Display Packed - Silver Satin
No. TC160	100 ft. Display Packed - Silver Satin
No. TC50	50 ft. Display Packed - Ivory
No. TC50WH	50 ft. Display Packed - White
No. TC100	100 ft. Display Packed - Ivory

6 Conductor

No. 75-6050	50 ft. - Ivory

TELEPHONE STATION WIRE

Heavy Duty 22 AWG Round Wire used for inside installation. Solid Conductors

4 Conductor

No. TC51	50 ft. - Beige
No. TC51WH	50 ft. - White
No. TC101	100 ft. - Beige
No. TC101WH	100 ft. - White
No. TC501	500 ft. Easy Pullout Box - Beige

INDUSTRIAL EXTENSION TELEPHONE BELL RINGER
for Indoor / Outdoor Use

A weather-resistant bell loud enough to be heard in the noisiest factory or over extended distances outdoors, but has an adjustable loudness control that makes it ideal for a quiet patio or home. A real necessity for those with a hearing impairment.

This ringer can work in conjunction with your present phone ringer or independently, if so desired. Installation is simple, just use a 4-conductor extension cable (not supplied) with 4 contact modular plugs at both ends. Plug one end into the jack on the No. TEC49 ringer and the other into any modular jack on the line. If no spare jack is available, a dual adaptor, such as Philmore's No. TEC29, will enable it to share a jack with an existing telephone.

SPECIFICATIONS:
Sound Pressure Level: +95dB (excitation 20 Hz., 60 V, rms)
Minimum Operating Voltage: 40 Volts rms (20Hz) rated; average less than 40 volts.
Ringer Impedance: more than 8K ohms at 20 Hz.

No. TEC49
FCC Listed, REN 0.8A

EXTENSION CORD ASSEMBLIES

MODULAR PLUG to 4 COLOR-CODED SPADE LUGS

No. TEC27 - 25 ft. - Silver Satin
No. TEC27M - 14 ft. - Silver Satin
No. TEC27S - 7 ft. - Silver Satin

MODULAR PLUG to MODULAR JACK

No. TEC23 - 25 ft. - 4 Conductor - Ivory
No. TEC23 WH - 25 ft. - 4 Conductor - White
No. TEC23M - 14 ft. - 4 Conductor - Ivory
No. 75-328 - 14 ft. - 4 Conductor - White
No. TEC236 - 25 ft. - 6 Conductor - Ivory
No. TEC21 - 25 ft. - 8 Conductor - Ivory

MODULAR PLUG to DUAL MODULAR JACK

No. TEC24 - 12 ft. - 4 Conductor - Ivory
No. 75-227 - 12 ft. - 4 Conductor - White
No. TEC22 - 25 ft. - 4 Conductor - Ivory
No. 75-237 - 25 ft. - 4 Conductor - White
No. TEC226 - 25 ft. - 6 Conductor - Ivory
No. TEC228 - 25 ft. -8 Conductor - Ivory

RETRACTILE HANDSET CORDS

Connects telephone handset to telephone base. 4 conductor coiled cord with modular plug (4P4C) on each end. Available in eight colors. Please specify color by using following suffix letters:

White - **WH**
Beige - **BG**
Black - **BL**
Almond - **AL**
Brown - **BR**
Ivory - **IV**
Oyster Grey - **OG**
Charcoal Grey - **CG**

No. TEC25 - 25 ft. - Fully extended
No. TEC25M - 14 ft. - Fully extended
No. TEC25S - 7 ft. - Fully extended

---

6 CONDUCTOR and 8 CONDUCTOR COILED CORD

Coiled cords in 6 conductor with standard 6P/6C modular plugs and 8 conductor with 8P/8C modular plugs. These cords are offered in black and silver and wired for voice (Pin 1-6, Pin 1-8) or data (Pin 1-1) use for phone, computer, cellular phone etc.

6 CONDUCTOR COILED CORD

Voice	Length	Data
No. 75-348	7 ft. Black	**No. 75-356**
No. 75-350	14 ft. Black	**No. 75-358**
No. 75-352	7 ft. Silver	**No. 75-360**
No. 75-354	14 ft. Silver	**No. 75-362**

8 CONDUCTOR COILED CORD

Voice	Length	Data
No. 75-364	7 ft. Black	**No. 75-372**
No. 75-366	14 ft. Black	**No. 75-374**
No. 75-368	7 ft. Silver	**No. 75-376**
No. 75-370	14 ft. Silver	**No. 75-378**

NON - UL

Telephone
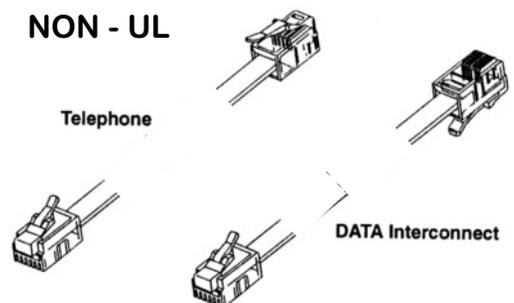
DATA Interconnect

TELEPHONE ACCESSORIES

TELEPHONE LINE JUNCTION BOX

A convenient, easy method of interfacing modular telephones to the system in the home without going through complicated wiring. Attachments are made at one to four color coded connecting points. A modular plug and 24" cable connects to the standard interface jack usually supplied by the telephone company.

No. TEC38 - Ivory

No. TEC38AB - Same as above without 24" cable, Ivory Bulk Packed Only.

5-WAY MODULAR OUTLET BOX
TELEPHONE • RECORDING DEVICE ANSWERING MACHINE EXTENSIONS

Connects up to 5 telephones or related equipment to an existing single modular jack. 4 Contacts.
Self-adhesive backing for convenient and easy installation, 6 ft. cable.

No. TEC39

MECHANICAL TELEPHONE RINGER

If it's inconvenient to have a phone in remote location but do not want to miss a call, this ringer "sounds off," enabling someone to pick up the nearest phone. A plastic enclosed ringer produces a loud noise like the older, standard telephones. In noisy areas, where an electronic bell isn't loud enough to be heard, this mechanical ringer assures important calls won't be missed. It **No. TEC43**
also can be connected between the telephone and the wall plate if a ring louder than normal is required. When someone doesn't want to be bothered by a ring in remote areas, a built-in, "ON-OFF" switch is provided. Installation is easy and fast. Merely insert the plug into an existing modular jack.
FCC Reg. No. CEP8EQ-15519-RG-N
Ringer Equivalence 0.5 amp

UNIVERSAL TELEPHONE PICK-UP COIL

Will pick up both sides of a telephone conversation for recording or amplification, on either the old type phone or the modern new type phones. Comes with rubber suction cup to enable easy attachment to any telephone receiver, securely. Complete with 5 ft. of shielded cable.

No. M81

TELEPHONE MODULAR JACK and LINE TESTER

Tester inserts into modular jack. Provides visual indication of the type and location of the phone line problem, fast detection of incorrect jack wiring. LED indicator light will indicate a reversed polarity or no contact.

No. 75-4650

MICROCASSETTE TAPE

60 minute microcassette tape for answering machines and microcassette recorders. This is a good quality tape that will give long service.

No. TEC98

PHONE STROBE LIGHT FLASHER and BELL RINGER

This FCC registered unit will visually alert when phone rings. Works from phone line voltage. No batteries or external power source required. This device is excellent for:
• The hearing impaired
• In Noisy factory or shop environment
• When TV, radio or stereo are at high volume.
Easily installed on modular phones. Simply plug unit into phone wall jack and plug phone into strobe.

No. TEC48

TELEPHONE RECORDING CONTROL

Record all telephone calls automatically as soon as you pick up the receiver. When receiver is hung up, recorder stops. If recording is not desired, turn power switch to "OFF" position. Operation is quick and simple. Insert plugs into cassette recorder and modular plug into No. TEC29 dual adaptor jack and the telephone into the other adaptor jack. (Philmore's No. TEC29 is supplied.)
Its compact 2-1/2" x 2-1/2" x 1-1/4" size permits unobtrusive placement next to the phone.
FCC-Approved.

No. TEC36

DE-TANGLER
No more tangled telephone cords

NO TOOLS REQUIRED

You will never have another tangled telephone cord with the DE-TANGLER. Simply unplug your telephone cord from the handset and plug in the DE-TANGLER. It can be plugged into the telephone handset or into the telephone base. Fits all standard telephones with removable cords and attaches in seconds.

No. UT24

PHONE LINE RF FILTER & ADSL FILTER

This device will eliminate hissing, humming, scratching, False rings and radio interference. It provides noise suppression and reduces electromagnetic interference. Ideal for cordless phones, answering machines, fax machines, data communication and modems. Also can be used as ADSL filter.

No. TEC200

ADSL FILTER

An ADSL Filter is a must if you have a digital subscriber line for your internet connections and use the same line for regular telephone communications. The ADSL Filter will prevent interference to your telephone and facsimile from the ADSL signals. It also prevents your fax and voice signals from interfering with the data moving in and out of your computer via the DSL connection.

No. **75-211**

Dual Flush Mount Wall Plate With ADSL Filter

4 Conductor jacks, one jack for a regular phone line and second jack has a built - in DSL line filter. The ADSL filter jack will prevent interference to your telephone. Color is white.

No. 75-215

Modular Feed - Thru Jack

Female on each end and snaps into standard Keystone Type wall plate. May be used in line as a coupler as well. UL material, 50 micro inches of gold on contacts.

No. **CAT5126** - 6 conductor (6P6C)
No. **CAT5128** - 8 conductor (8P8C)

UNIVERSAL USB SWITCHING POWER SUPPLY

No. 48-1212 - 5V DC charger with 2 flat pin US plug
No. 48-1215 - 5V DC charger with inerchangeable US, UK, Australia and Schuko plugs.

A 5V DC power supply for digital cameras, cellphones, battery chargers, GPS receivers, MP3, PDA, Apple devices and other devices requiring 5V DC power through USB ports. Use with Philmore (70-series) USB, Mini USB and Micro USB cables.

Features:
* Short circuit protection.
* Automatic thermal cut - off.
* Automatic overload cut - off.
* Interchangeable UK, Australia and Schuko (Europe) plugs (optional).

Specifications:
Input Voltage: 100 - 240V AC 60 Hz
Output Voltage: 5V DC
Maximum Current: 1,000 mA

WORLD WIDE USB CHARGER
(USB Charger for Home / Auto)

An easy way to connect your USB powered devices anywhere in the world.

AC or DC to USB power adaptor, charges most USB powered devices from an AC outlet or from a DC outlet (cigarette lighter socket).
No. 48-1214 is compact size, perfect for home office or travel. It has a sturdy protective cap when cigarette lighter plug (DC input) is not used and foldable 2 flat pin when AC input is not used. Large blue glow indicator light when unit is in use (both AC & DC).

No. 48-1214
AC or DC, 5V DC USB Charger

Specifications:
Operation Voltage: 100 - 240V AC
47-63Hz 0.15A
12-24V DC 0.5A
Output Voltage: 5V DC
Maximum Current: 1,000 mA

Features:
* Foldable input AC wall plug.
* Cigarette lighter plug.
* Jack for USB A Male plug.
* Workable with AC or DC in one unit.

ECONOMY USB SWITCHING POWER SUPPLY

Jack accommodates USB A Male plug for powering or charging any USB device.

Specifications:
Input Voltage: 100 - 240V AC
Output Voltage: 5V DC
Maximum Current: 1,000 mA

No. 48-1209
5V DC charger with AC plug
Note: not compatible with Apple© products.

9

"66" Style Blocks

The Philmore "66" Blocks and accessories are fully compatible with all industry standards. These blocks have 100 contacts which are divided into 50 pairs. The spacing is CAT5 spacing. The "66" Block provides an economical solution for terminating our network cable. These blocks are used in Telephone installations as well as Networking installations.

Features
50 Rows of two pairs of connectors
Allows quick and easy installation
Uses "66" Style Punch-down Tool
Dimensions: 10" H X 3.31" W X 1.18" D
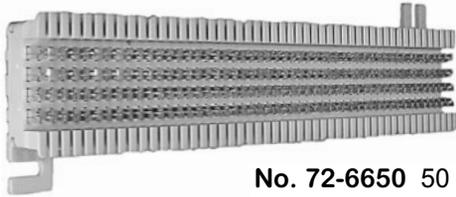
No. 72-6650 50 Pair "66" Block

"66" Block Standoff Mounting Bracket

With these mounting brackets it is easy to make a clean, efficient, and space-saving installation. They are designed so that the installer may lay the cable before the block is snapped into position. The Philmore mounting bracket is compatible with all industry standard "66" blocks. They will accommodate one (1) 6650 block or two (2) 6625 blocks. These blocks conform to the industry's #89D standard.

Dimensions:
10" H X 3.40" W X 1.50" D

No. 72-6689 "66" Block Standoff Mounting Bracket

TELEPHONE STATION WIRE

4 Conductor
No. TC51 - 50 ft. - Beige
No. TC51WH - 50 ft. - White
No. TC101 - 100 ft. - Beige
No. TC101WH - 100 ft. - White
No. TC501 - 500 ft. Easy Pullout Box - Beige

Heavy Duty 22 AWG Round Wire used for inside installation. Solid Conductors

Low Voltage Wall Plate Bracket

This bracket is designed for ALL Low Voltage applications. It fits into **NEW** CONSTRUCTION by attaching it to a stud, dry walling over the bracket, and then the wall plate is mounted on this bracket.

No. **72-4102B** New Construction Low Voltage Bracket
BULK PACKED ONLY

"66" Block Bridging Clips

The clips press onto the center slots of the "66" Block and allow the left pair and the right pair to be connected together. Example; If you terminate the incoming station cable pairs on the left and the equipment wiring on the right hand pair, then by use of the bridging clip they are connected.

No. 72-6602 Bridging Clips (100 pk)

Wire Distribution Spools

These mushroom shaped plastic spools are used to facilitate the routing of wire and cable. They are used on cross connections, fanning cable. By using the proper screw they can be mounted to almost any surface including 19" Racks. They are constructed with high impact plastic. They are compatible with EIA/ TIA Industry Telecommunication #20A standards.

Dimensions:
3" High X 1.5" Diameter

No. 72-2231B Wire Spool without screw

Uses # 10 wood screw.

BULK PACKED ONLY

Designation Strips

These designation strips mount easily and quickly to any "66" Block and provide a place to mark the usage of the pair(s) involved. They are constructed of durable plastic with painted lines between the rows. They are usually purchased in pairs.

No. 72-6610 White lined designation strip.

Retrofit Low Voltage Wall Plate Bracket

This bracket is designed for ALL Low Voltage applications. It fits into EXISTING CONSTRUCTION by cutting a hole in the wall and bending the tabs securing the bracket. Then the wall plate is mounted on this bracket.

No. **72-4100B** Retrofit Bracket
BULK PACKED ONLY

CATEGORY 5 - NETWORKING PRODUCTS

Designer Style Keystone Inserts

These inserts are intended for use with Designer style covers and may be installed by themselves or ganged in a multi-gang electrical box. They can be used with Keystone telephone jacks, network jacks, BNC connectors, "F" connectors, and Audio connectors. The mounting hole is the standard keystone cutout (.58" X .76"). Choose from 1, 2, 3, 4, or 6 ports, color is white.

1 Port	2 Ports	3 Ports	4 Ports	6 Ports
No. 72-5051	No. 72-5052	No. 72-5053	No. 72-5054	No. 72-5056

350 MHz CAT5e Surface Mount Boxes

New CAT5e surface mounted jacks allow for quick and easy installation. These jacks are backward compatible CAT5, CAT4, and CAT3 equipment. The jacks have advanced PCB (printed circuit board) and are UL certified to meet the EIA/TIA 568A & B, and TSB40A specifications. The boxes have built in station ID strips and are available in single and duplex configurations. 110 type terminal.

No. 72-5511 Single 8c (Ivory)
No. 72-5519 Single 8c (White)
No. 72-5521 Dual 8c (Ivory)
No. 72-5529 Dual 8c (White)

WALL PLATE COVERS

These covers are used with the Designer Style inserts for custom installations

Color Matching

Note: All Wall Plate covers are individually packaged in plastic bag. Not available for pegboard display

(White)
No. 75-1000 - 1 Gang Wall Plate
No. 75-2000 - 2 Gang Wall Plate
No. 75-3000 - 3 Gang Wall Plate

CAT5e Designer Style Wall Plate

These units have a CAT5e modular jack (Philmore No. 72-5500) installed in the Designer style insert. This complies fully with EIA/TIA CAT5e specifications. They are available in both single and dual configurations. Both wall plates are UL listed and white in color. With these items installation is faster and easier.

No. CAT5111 (1) Jack

No. CAT5112 (2) Jack

Keystone Wall plates for Datacom

The Wall Plates listed in this section can be used with any jack which fits a standard keystone opening (.58" X .76"). You have the option to mix Audio, Video, Telephone and Computer devices in the same plate. There is NO need for a bezel (adaptor) with these wall plates, and they fit a standard single gang electrical mount.

No. 72-5011 (1) Port Ivory
No. 72-5019 (1) Port White

No. 72-5031 (3) Port Ivory
No. 72-5039 (3) Port White

No. 72-5041 (4) Port Ivory
No. 72-5049 (4) Port White

No. 72-5021 (2) Port Ivory
No. 72-5029 (2) Port White

No. 72-5061 (6) Port Ivory
No. 72-5069 (6) Port White

Wall plate Inserts

These adaptors make it possible to insert television, audio connectors, and plan for future expansion in the same wall plate. These adaptors snap into the standard keystone opening and are available in both Ivory and White.

F   Blank

No. 72-5015 "F" Insert Ivory
No. 72-5016 "F" Insert White
No. 72-5017 Blank Insert Ivory
No. 72-5018 Blank Insert White

11

CATEGORY 5 - NETWORKING PRODUCTS

CAT5e Universal 110 Style Patch Panels

These patch panels exceed the EIA/TIA and TSB40A category 5e requirements. They feature enhanced PCB (printed circuit board) design with performance up to 155 MHz. They will accommodate wires from 22-26 AWG, and the jacks handle T568A or T568B wiring format.

No. 72-5111 - Twelve (12) Port Vertical Mount with Mounting Bracket

No. 72-5112 - Twelve (12) Port 19" Rack Mountable Dimensions = 1.75" X 19" (1 RMS)

No. 72-5124 - Twenty-four (24) Port 19" Rack Mountable Dimensions = 1.75" X 19" (1 RMS)

No. 72-5148 - Forty-eight (48) Port 19" Rack Mountable Dimensions = 3.5" X 19" (2 RMS)

No. 72-5196 - Ninety-six (96) Port 19" Rack Mountable Dimensions = 7.0" X 19" (4 RMS)

RMS units are the Rack Mounting System Units. Each unit is 1.75" wide

---

CAT3 Voice Grade Jacks

These jacks are used to connect Telephone systems, FAX machines and other voice grade equipment to your premise wiring system. They will fit a standard keystone cutout (.58" X .76") which is compatible with AMP, Hubbell, Kron, ICC & others. The Jacks accept 22-26 AWG solid or stranded cable.

6 conductor CAT3 Jacks (fits 4c & 6c)
No. 72-3060 6c Black
No. 72-3061 6c Ivory
No. 72-3069 6c White

110 TYPE ECONOMY PUNCHDOWN TOOL
A very low cost plastic tool for light use. OK for the casual user.

No. CAT5400

Keystone Jack Shield

The optional shield is used where there is a high noise area and shielded cable (STP) is necessary. The two piece unit snaps around the jack once the cable has been attached and the jack is in location.

No. CAT5110
Metal Shield

S-VHS Feed Thru Jack

This 4 pin Mini-Din Female coupler is designed to snap into the standard keystone cutout (.58" x .76"). It allows you to run Home Theater cable through the home easily.

No. 70-478
MD4 (F) / (F)

CATEGORY 5 FEED THRU JACK

These CAT5e jacks are fully compliant with EIA/TIA 568 A & B and TSB40A specifications. They can be snapped into standard, Keystone opening (.58" X .76"). They have a RJ45 8 conductor jack on each end which are offset at 90^0.

No. 70-5128

Voice Grade Feed Thru Jack

Female on each end and snaps into standard Keystone Type wall plate. May be used in line as a coupler as well. UL material, 50 micro inches of gold on contacts.

No. CAT5126 - 6 conductor (6P6C)
No. CAT5128 - 8 conductor (8P8C)

CAT5e In - Line Coupler

RJ45 (8 conductor) jack on both ends. Allow two separate CAT5e patch cords to form an extension. It is fully compliant with CAT5e specifications, color is white.

No. 72-5588

180° CAT5e 110 Style Jacks

These keystone jacks are designed for high speed data requirements and meet EIA/TIA 568A & B and TSB40A specifications. They are constructed of UL 94V0 plastic and have 50 micro inches of GOLD on the contacts. With 180° jacks the contacts are at right angle to the front of the jack.

Features
50 Micro Inches GOLD
Uses 110 Style Punch Down Tool
Passes frequencies up to 350 MHz
Accepts 22-26 AWG Solid Cable

No. 72-5500 8c Black
No. 72-5501 8c Ivory
No. 72-5509 8c White

Tool-less CAT5e Jacks

These CAT5e jacks are simple and convenient to install. There is no need for a punch-down tool. The hinged cover (when snapped down) forces the wire into the contact, completing the connection. These jacks are tested and verified to meet the EIA/TIA 568A & B and TSB40A specifications. They are backward compatible to CAT4 & CAT3 equipment. The jacks are constructed to accept 22-26 AWG cable and are of enhanced PCB construction.

No. 72-5070 8c Black
No. 72-5071 8c Ivory
No. 72-5075 8c Blue
No. 72-5079 8c White

90° CAT5e 110 Style Jacks

These jacks are enhanced CAT5 jacks with a bandwidth of up to 350 MHz.They meet EIA/TIA 568A & B and TSB40A specifications.They are constructed of UL 94V0 plastic and have 50 micro inches of GOLD on the contacts. With 90° jacks the contacts are in-line (horizontal) with the front of the jack. They are backward compatible to CAT4 & CAT3 equipment.

Features
50 Micro Inches GOLD
UL Listed
Uses 110 Punch-down Tool
Accepts 22-26 AWG Solid Cable
No. 72-5580 8c Black
No. 72-5581 8c Ivory
No. 72-5589 8c White

CATEGORY 5 - NETWORKING PRODUCTS

CAT5e LAN Cables

Our cables are made of stranded CAT5e cable using a RJ45 UL Listed Modular plug on each end with 50 micro" GOLD and a snag-free boot. All cables have been tested and verified to meet the EIA/TIA standards. These cables are wired to meet the WESCO, AT&T 258A and EIA/TIA 568B specifications. The Applications include 10Base-T and Token Ring Networks. The cable is 24 AWG 4 pair UTP (Unshielded Twisted Pair). These cables are available in both packaged and bulk put-ups.

for BULK add "B" to Part Number

Gray CAT5e Jumper Cables
No. 72-5103 3' *
No. 72-5105 5'
No. 72-5107 7' *
No. 72-5110 10'
No. 72-5114 14' *
No. 72-5125 25'
No. 72-5150 50'
No. 72-5175 75'
No. 72-5102 100'

Blue CAT5e Jumper Cables
No. 72-5103 BU 3' *
No. 72-5105 BU 5'
No. 72-5107 BU 7' *
No. 72-5110 BU 10'
No. 72-5114 BU 14' *
No. 72-5125 BU 25'
No. 72-5150 BU 50'
No. 72-5175 BU 75'
No. 72-5102 BU 100'

Black CAT5e Jumper Cables
No. 72-5103 BLK 3' *
No. 72-5105 BLK 5'
No. 72-5107 BLK 7' *
No. 72-5110 BLK 10'
No. 72-5114 BLK 14' *
No. 72-5125 BLK 25'

(*) = Also available in Green (GN), Red (RD), and Yellow (YL)

CAT6 NETWORKING CABLES

These CAT6 patch cables are made of stranded UTP (unshielded twisted pair) cable with CAT6 approved RJ45 style plugs and molded boots which have been tested and certified to meet the EIA/TIA standards. LKG Industries offers these patch cords in several lengths. Available in two colors.

Length	Lt. Grey	Blue
3ft.	**72-5603**	**72-5603BU**
7ft.	**72-5607**	**72-5607BU**
10ft.	**72-5610**	**72-5610BU**
14ft.	**72-5614**	**72-5614BU**
25ft.	**72-5625**	**72-5625BU**
50ft.	**72-5650**	**72-5650BU**
100ft.	**72-5600**	**72-5600BU**

Bulk CAT5e Cable

This UL Approved CAT5e cable has been tested and meets or exceeds the EIA/TIA 568A standards. The cable is 4 pair of 24 AWG solid cable with a PVC jacket and is riser rated (CMR). Each roll is in a handy pull-out box.

No. 48-5508 - CAT5e cable PVC 1000' (Blue)

RJ45 Type Plug for Round Cable

These plugs use UL Listed Material and 50 micro inches of GOLD on the contacts. Suitable for 4 pair CAT5 cables.

GOLD CONTACTS

Solid Wire   Stranded Wire

No. CAT5305 - 4 Pair Stranded Conductor Cable (pkg. of 5)
No. CAT5310 - 4 Pair Solid Conductor Cable (pkg. of 5)
No. CAT5310 - 50 - 50 pack

SHIELDED RJ45 PLUGS

This is the 8 contact shielded plug to use with STP (shielded twisted pair). The cord strain relief is recommended for both strength and appearance but is not absolutely necessary. May also be used in unshielded applications. Stranded cable.

No. CAT5300 - RJ45 (pkg. 2)
No. CAT5355 - RJ45 + Strain Relief - 2 sets / Package

RJ45 MODULAR CRIMPING TOOL

This truly professional, durable crimping tool allows crimping of 4, 6, and 8 conductor (keyed or non keyed) modular plug. Tool allows cutting and stripping guides for the proper cable preparation. The unique cam design of this tool gives straight down pressure on contacts to insure proper seating of contacts each time. Will give you thousands of trouble free connections.

No. WS468 - Crimps 4-6-8 Conductor
No. WSB4 - Replacement Cut & Strip Blade Set

RJ45 Hoods

One piece hoods which are installed at the time the plugs are installed.

(2) Per Pack
No. CAT5350 BK
No. CAT5350 BL
No. CAT5350 GN
No. CAT5350 RE
No. CAT5350 WH
No. CAT5350 YE

Assorted Packs (2) each Color
No. CAT5012 (12 pk)

COAX BALUNS
(93 ohm)

These baluns, or adaptors provide a fast way to use twisted pair telephone wire in place of coax cable. BNC on one end to both screw terminals and RJ11 telephone jacks.

No. 70-5002
BNC Male / RJ11
No. 70-5004
BNC Female / RJ11

13

COMPUTER - IEEE 1394 & LAN CABLES

LAN CABLE ASSEMBLIES for ETHERNET

BNC Connectors each end

Philmore LAN cables are manufactured using fine quality RG58A/U (50ohm) coaxial cable, which employs a stranded center conductor for increased durability.

No. 70-5801 - RG58A/U BNC (M)/(M) - 18 inch
No. 70-5800 - RG58A/U BNC (M)/(M) - 3 ft.
No. 70-5802 - RG58A/U BNC (M)/(M) - 6 ft.
No. 70-5803 - RG58A/U BNC (M)/(M) - 12 ft.
No. 70-5804 - RG58A/U BNC (M)/(M) - 25 ft.
No. 70-5806 - RG58A/U BNC (M)/(M) - 50 ft.
No. 70-5808 - RG58A/U BNC (M)/(M) - 100 ft.

LAN CABLE ASSEMBLIES for ARCNET

BNC Connectors each end

This is standard cable used in networks supporting Novell and LANtastic. RG62/U (93 ohm) coaxial cable with BNC connectors each end.

No. 70-5850 - RG62/U BNC (M)/(M) - 3 ft.
No. 70-5852 - RG62/U BNC (M)/(M) - 6 ft.
No. 70-5853 - RG62/U BNC (M)/(M) - 12 ft.
No. 70-5854 - RG62/U BNC (M)/(M) - 25 ft.
No. 70-5856 - RG62/U BNC (M)/(M) - 50 ft.
No. 70-5858 - RG62/U BNC (M)/(M) - 100 ft.

PHILMORE FIREPIPE IEEE 1394 Cables

Cables for very fast IEEE 1394 (Firewire™) standard, used primarily for Video and Graphics. This system is the fastest one at this time. It was designed by Apple Computer and Sony. These cables are made from the highest quality materials and connectors. The six pin and four pin cables comply with the standard for data rated 400 Mbps and above. The maximum length to a single peripheral is suggested to be 15' (4.5 meters) but daisy-chains can be longer as data is buffered and than passed on FIFO (first in-first out).

Features
GOLD Plated Contacts
Cable Size: 24-22, 28-30
6 Pin is for PC Device
4 Pin for Audio/Video Device
Power contacts mate before data
Long Lasting 1500 Duty cycle minimum
Positive Latching
Isochronous Data Transfer
Compressed and Uncompressed Video Support
High Performance Data Transfers 400 Mbps

No. 70-1303 - 6c (M)/(M) 3'
No. 70-1306 - 6c (M)/(M) 6'
No. 70-1310 - 6c (M)/(M) 10'
No. 70-1315 - 6c (M)/(M) 15'
No. 70-1403 - 6c (M)/4c(M) 3'
No. 70-1406 - 6c (M)/ 4c (M) 6'
No. 70-1410 - 6c (M)/4c(M) 10'
No. 70-1415 - 6c (M)/ 4c (M) 15'
No. 70-1503 - 4c (M)/(M) 3'
No. 70-1506 - 4c (M)/(M) 6'
N0. 70-1510 - 4c (M)/(M) 10'
No. 70-1515 - 4c (M)/(M) 15'

MINI COAX, VIDEO & CCTV CABLES

A quality feel in a 75 Ohm cable which features a standard pure Copper center conductor and a 93% precisely woven braid coverage (equal to 100% shield). Cable O.D. is only 0.150", our Super-flex outer jacket is tough but supple and will last a lifetime. For use with virtually all consumer or broadcast video equipment. RoHS compliant.

No. 70-2703 - 3 Ft.
No. 70-2706 - 6 Ft.
No. 70-2712 - 12 Ft.
No. 70-2725 - 25 Ft.
No. 70-2750 - 50 Ft.

BNC MALE TO BNC MALE

RoHS COMPLIANT

IEEE 1394 6-pin Female JACK to IEEE 1394 4-pin Male PLUG

(two views shown)

No. 70-8011

Road Warrior's IPOD ACCESSORIES

For the road-hardened, IPOD toting traveler, accessories can make a trip a bit more pleasant. Philmore Roll-Up Cables may be extended just as much as needed, (32" maximum) keeping excess wire out of the way.
* IPOD is a registered trademark of Apple Computer CORP.

USB MALE "A" to IPOD Connector
Plug into a USB port for connecting an IPOD to your system.

No. 70-8630

IEEE 1394 FIREWIRE 6 Pin Male to IPOD Connector
Plug into a Firewire port for connecting an IPOD to your system

No. 70-8632

IPOD AUTOMOBILE ACCESSORY LIGHT ADAPTOR TO CHARGE AND/OR OPERATE YOUR IPOD.

The IPOD charger has one USB Jack (USB A) and one Firewire jack, (6 Pin)and may be connected with a Philmore Roll-Up Cable (to your left). Power indicator light on each jack.
* IPOD is a registered trademark of Apple Computer CORP.

No. 70-8636

14

COMPUTER ACCESSORIES - ADAPTORS

Low Profile Gender Changers

These fully shielded, low profile gender changers provide for the solutions where space is critical and where an adaptor is needed to connect a cable and / or a device together.

DB Style Gender changers

No. C300 DB9 (M) / (M)
No. C302 DB9 (F) / (F)

No. C304 DB15 (M) / (M)
No. C306 DB15 (F) / (F)

No. C308 DB25 (M) / (M)
No. C310 DB25 (F) / (F)

No. 70-312 DB37 (M) / (M)
No. 70-314 DB37 (F) /(F)

No. 70-316 HD15 (M) / (M)
No. 70-318 HD15 (F) / (F)

36 Pin Centronics Gender Changer

This fully shielded unit provides the ability to connect 2 male ends of a parallel printer cable together. All lines are wired straight thru. All contacts GOLD plated.
No. C114 CEN36 (F) / (F)

VGA Monitor Adaptors

These adaptors are used to adapt S-VGA cables to EGA, CGA, and VGA monitors. They will not adapt a VGA monitor to an older computer. This requires a new video controller card.

These adaptors are molded and fully shielded.

No. 70-090 DB9 (M) / HD15 (F)
No. 70-092 DB9 (F) / HD15 (M)
No. 70-094 DB9 (F) / HD15 (F)
No. 70-096 DB9 (M) / HD15 (M)

NULL Modem Adaptors

These adaptors are included to help you connect DCE (Data Communication Equipment) and DTE (Data Transmit Equipment) together. There are several popular types with special pin configurations available. Philmore has included the most popular ones for your convenience.

No. C140 Standard NULL Modem

Male to Female DB25 Connectors
This is the most common adaptor.

No. C141 No Handshake NULL Modem

Male to Female DB25 Connectors.
This device is used where No handshake is needed.

No. C142 Full Handshake Null Modem

Male to Female DB25 Connectors.
This device is used where a Full
Handshake connection is needed.

SCHEMATIC
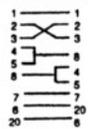
SCHEMATIC
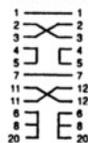
SCHEMATIC
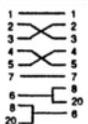
VGA Monitor Adaptor

This device is used to adapt Sun Microsystems or similar Monitors to your VGA computer. There is a Hi-density 15 Pin on one end and a DB15 on the other end.

No. 70-098 HD15 (F) /   DB15 (M)

RS232 Surge Arrestor

DB25 Male to Female connections. Connects in-line or at the port to protect RS232 (DB25) lines (2,3,4,5,& 7). Protects data lines from voltage spikes and surges. Eliminates mis-read data and data loss created by surges.
No. C128 DB25 (M) / (F)

Interface Adaptors

Six & eight wire modular telephone jacks to 9 and 25 Pin D-Subminiature male and female connectors. These adaptors are capable of a variety of computer interconnects. They provide a simple method of attachment and extension. The six wire adaptors may be used in four wire applications, 4 and 6 wire are referred to RJ11 - 8 wire is RJ45.

6P6C

8P8C

No. of Contacts	Male D-SUB	Female D-SUB
RJ11 6 Conductor	No. TDP6 (25 Pin)	No. TDJ6 (25 Pin)
RJ45 8 Conductor	No. TDP8 (25 Pin)	No. TDJ8 (25 Pin)
RJ11 6 Conductor	No. T9P6 (9 Pin)	No. T9J6 (9 Pin)
RJ45 8 Conductor	No. T9P8 (9 Pin)	No. T9J8 (9 Pin)

Serial Port Adaptor

These adaptors are used to change the I/O ports from one type of connector to another for the convenience of the user. Most commonly used to hook a peripheral to your computer.

No. 70-102 DB9 (M) / DB25 (M)
60mm x 56 mm x 15.25mm
1-8, 2-3, 3-2, 4-20, 5-7, 6-6, 7-4, 8-5, 9-12

No. 70-5090 DB9 (F) / DB25 (M)
Connect serial printer to PC serial Port Printer
1-20, 2-2, 3-3, 4-6+8, 5-7, 6-20, 7-5, 8-4, 9-0

No. 70-5109 DB9 (M) / DB25 (F)
Allows connection of PC to Hayes and other compatible Modems
1-8, 2-3, 3-2, 4-20, 5-7, 6-6, 7-4, 8-5, 9-22

No. 70-104 DB9 (F) / DB25 (F)
1-8, 2-3, 3-2, 4-20, 5-7, 6-6, 7-4, 8-5, 9-22

No. 70-5100 DB9 (F) / DB25 (M)
For connecting IBM-AT to H.P. Laser-jet
1-0, 2-2, 3-3, 4-5+6, 5-7, 6-20, 7-0, 8-20, 9-0

No. 70-5110 DB9 (F) / DB25 (M)
1-8, 2-3, 3-2, 4-20, 5-7, 6-6, 7-4, 8-5, 9-22

Stainless Steel Wall Plates

These wall plates are designed for mounting D-Sub connectors (both standard and High-Density types), BNC connectors, Twinax connectors and other audio & video connectors in the work environment. They are constructed of stainless steel and prepunched for the desired connector (s). Mounting screws included.

Audio & Video Connectors
(.375" Round Hole)

No. 70-7420
Single

No. 70-7422
Dual

DB9 / HD15 D - Sub Connectors

No. DW28
Single DB9/HD15

No. DW29
Dual DB9/HD15

Blank Plates

No. 70-7410
Single Gang

No. 70-7412
Double Gang

BNC Connectors
(.50" D-Shape Hole)

No. DW30
Single BNC

No. DW31
Dual BNC

DB25 D-Sub Connectors

No. DW25
Single DB25

No. DW27
Dual DB25

D-Sub + A / V Connectors

No. 70-7424
DB9 / HD15 +
(1) .375" Round

Twinax Connectors
(.75" D-Shape Hole)

No. DW32
Single Twinax

No. DW33
Dual Twinax

Audio & Video Stainless Steel Wall Plates

A single gang stainless steel wall plate with a Feed - Thru type High - Density 15 pin (HD15) D - Sub connector plus other Feed - Thru type Audio and / or Video connectors mounted on the same wall plate. All connectors are nickel plated (except 3.5mm stereo jack).

No. 75-1078
HD15 + 3.5 mm Stereo

No. 75-1071
HD15 + (3) RCA
Component Video
Red / Blue / Green

No. 75-1073
HD15 + (3) RCA (A / V)
Red / White / Yellow

No. 75-1075
HD15 + (2) RCA
(Audio Red / White)
+ (1) RCA (Digital -
Audio - Orange)

No. 75-1076
HD15 + (3) RCA
(Component Video
Red / Blue / Green)
+ 3.5 mm Stereo

No. 75-1080
HD15 + (3) RCA (A / V)
Red / White / Yellow)
+ 3.5 mm Stereo

No. 75-1083
HD15 + (2) RCA (Audio
Red / White) + (1) RCA
(Digital-Audio, Orange)
+ 3.5 mm Stereo

No. 75-1087
HD15 + (3) RCA
Component Video
Red / Blue / Green
+ S-VHS + 3.5 mm Stereo

No. 75-1089
HD15 + (3) RCA (A / V)
Red / White / Yellow +
S-VHS
+ 3.5 mm Stereo

16

DATA Switches

Data switches are a necessity for computer users when sharing modems, printers, computers or other peripheral devices. The switches are intended to be used for low current data connections. The connections are wired to all pins and in most cases straight through. The "X" switch is the exception to the straight through wiring because it is cross wired. The Philmore Data Switches are constructed with high quality components and are fully shielded. They are available in both Automatic and Manual models in both 2-way and 4-way models.

Manual RS232 Switches

No. DSS-252 2-Way (A/B) w/
(3) DB25 (F) Connectors

No. DSS-254 4-Way (A/B/C/D)
(5) DB25 (F) Connectors

No. DSS-25X Cross Switch
(4) DB25 (F) Connectors

No. DSS-094 4-Way (A/B/C/D)
(5) DB9 (F) Connectors

Keyboard & Monitor Switches

These switches allow the user to use multiple keyboards & monitors with a single CPU.

No. 70-7155 2-Way (A/B)
AT Style D5 (F) + HD15 (F)

No. 70-7156 2-Way (A/B)
PS/2 Style MD6 (F) + HD15 (F)

No. 70-7455 4-Way (A/B/C/D)

AT Style D5(F) +HDI5(F)

Manual KVM (keyboard-monitor-mouse) Switches

These KVM switches are fully shielded and use a high quality make before break switch. The connectors are color coded and marked with a symbol for easy user identification.

No. 70-7220 2-Way (A/B)
HD15 (F) + 2 MD6 (F)

No. 70-7240 4-Way (A/B/C/D)
HD15 (F) + 2 MD6 (F)

Modular Telephone Switches

No. 70-7011 2-Way (A/B)
RJ12 (6c)

No. 70-7045 2-Way (A/B)
RJ45 (8c)

No. DSS-RJ12-4 4-Way A/B/C/D
RJ12 (6c)

No. DSS-RJ45-4 4-Way A/B/C/D
RJ45 (8c)

Specialty Switches

No. DSS-362 CEN A/B
(3) Cen 36 (F) Connectors

No. DSS-COAX-2 BNC A/B
(3) BNC (F) Connectors

No. DSS-364 CEN A/B/C/D
(5) Cen 36 (F) Connectors

No. 70-7002 Mini Din 8 A/B
(3) MD8 (F) Connectors

No. DSS-36X Cross switch
(4) Cen 36 (F) Connectors

No. 70-7004 Mini Din 8 A/B
(5) MD8 (F) Connectors

ESD Wrist Strap

Protection against Static Discharge

For the discharge of Electrostatic Voltage from the Human Body during assembly, repair, or service of sensitive components. Never work on a computerized system without one. The unit has an adjustable strap which can fit any wrist. An internal resistor is incorporated within the device to insure that the harmful charges are bled away safely. The retractable (coiled) cord extends to a maximum of 6' to permit plenty of freedom to the user.

No. ICP

Anti-Static Mats

This is a conductive mat designed to disperse static charges away from any equipment placed on it from the person touching the mat. It is constructed of flexible conductive rubber that may be rolled for carrying or storage. The mat was designed to be large enough to fit under a PC or other ESD sensitive electronic circuits. The unit is equipped with a grounding strap (retractable coiled cord) 6' long.

No. 70-3150 23.5" X 19.5" + 6' Grounding cable
No. 70-3154 23.6" X 47.2" + 6' Grounding cable

Diskette Drive Cleaner

This Wet /Dry cleaner provides the user with proper cleaning capability to assure the proper maintenance of their 3.5" disk drives. Cleans the read / write heads thoroughly. Saves on costly repairs and extends the life of the heads and disks.

No. 70-035
3.5" Cleaning Kit

Mouse Pads

These mouse pads reduce friction, dust, and improve tracking of mice which improve the speed and efficiency of a mouse. Each is 10-5/8" X 8-9/16" X 1/4" and is backed with conductive foam rubber.

No. 70-3220 Blue
No. 70-3230 Red
No. 70-3240 Beige

COMPUTER STANDARD COMPUTER CABLES

RS232 CABLES

Philmore RS232 (recommended standard 232 established by TIA/EIA) cables meet or exceed the industry standards and are suitable for commercial and personal use. They are constructed with 28 AWG stranded cable and fully shielded. The PVC jacket is molded to the connector with a built-in strain relief. The contact points are GOLD plated to resist oxidation. All Cables are wired straight through.

DB9 Cables

No. C190 DB9 (M) / (F) 3'
No. C180 DB9 (M) / (F) 6'
No. C170 DB9 (M) / (F) 10'
No. C184 DB9 (M) / (M) 3'
No. C188 DB9 (M) / (M) 6'
No. C182 DB9 (M) / (M) 10'

DB9

DB15 Cables

No. C186 DB15 (M) / (F) 10'

DB25 Cables

No. C192 DB25 (M) / (F) 6'
No. C194 DB25 (M) / (F) 10'
No. C199 DB25 (M) / (F) 25'
No. 70-2570 DB25 (M) / (F) 50'
No. 70-2580 DB25 (M) / (F) 100'

DB15

No. 70-2503 DB25 (M) / (M) 3'
No. C196 DB25 (M) / (M) 6'
No. C198 DB25 (M) / (M) 10'
No. 70-2515 DB25 (M) / (M) 15'
No. C197 DB25 (M) / (M) 25'
No. 70-2550 DB25 (M) / (M) 50'
No. 70-2560 DB25 (M) / (M) 100'

DB25

NULL Modem Cables

These cables are wired especially for the connection of two communication devices such as DCE & DTE in order for them to communicate to each other. The Windows95 Rev. II had an inexpensive small network program using DB9 NULL Modem cables.

No. 70-176 DB9 (F) / (F) 6'
No. 70-179 DB9 (F) / (F) 10'

AC POWER CONVERTER CORD

A short AC cord that connects to the monitor AC jack on the back of a PC to provide a standard, 3 prong socket (NEMA 5-15S) on one end and a shrouded male plug on the other.

No. 70-256 AC Female / Shrouded Male 1'

RIGHT ANGLE AC POWER CORD

These power cords are ideal for flat screen TV installation where space is limited. Molded right angle is 3 prong plug on one end and right angle molded IEC type 3 prong female receptacle on other end. They are UL listed and constructed of SJT type 18 AWG cable. They are available in 4 lengths, color is black.

No. 70-249 - 1.5 Ft.
No. 70-250 - 3 Ft.
No. 70-252 - 6 Ft.
No. 70-255 - 12 Ft.

AC POWER CORD

These power cords are the most common power cord used on computers, copiers, and other office machines in the U.S. today. They consist of a molded 3 prong female receptacle on one end and a NEMA plug on the other end. They are UL listed and constructed of 18AWG cable which is rated at 13A.

No. C250 NEMA 5-15P / Molded Female 6'
No. C252 NEMA 5-15P / RT Angle Molded Female 6'
No. 70-251 NEMA 5-15P / Molded Female 12'

AC POWER EXTENSION CORD

For IBM & MAC computers. This cord is widely used for extending a standard computer power cord or hooking a monitor into your computer. They are constructed with a shrouded 3 prong male on one end and a molded female receptacle on the other. UL Listed. 250V Rating.

No. 70-254 Shrouded (M) / Molded (F) 6'
No. 70-260 Shrouded (M) / Molded (F) 10'

Internal Power "Y" Adaptor

These cables are extremely important when you are installing a new peripheral device such as a DVD, CDR Drive, Zip Drive or other such devices. They allow you to plug into an existing cable and hook an additional device to the same power supply. 18 AWG cable.

No. 70-5293 Power "Y", 5.25" (M) / (2) 3.5" (F) 8"

Drive Power Cables

These cables connect the power to the 5.25" & 3.5" disk drives. They have 4 pin connectors.

No. 70-5290
5.25" (M) - (2) 5.25" (F)

No. 70-5295
5.25"(M) - 3.5" (F)

COMPUTER KEYBOARD & MONITOR CABLES & ADAPTORS

KEYBOARD & MOUSE CABLES

These cables allow the user to move the keyboard and mouse further from the CPU to make the environment more efficient for the operator. They are available in two basic configurations. With 5 PIN DIN connector which is used with IBM-AT and compatible computers, and a Mini-DIN 6 connector which is used on IBM/PS2 style computers. The Mini-Din (MD6) connector is about half the size of the DIN (D5) connector.

DIN (D5) Style Cables
No. C160 D5 (M) / (F) Coiled 6'
No. 70-162 D5 (M) / (F) Straight 6'
No. 70-164 D5 (M) / (F) Straight 10'
No. 70-163 D5 (M) / (M) Straight 6'

Mini-Din (MD6) Style Cables
No. 70-5030 MD6 (M) / (F) 6'
No. 70-5032 MD6 (M) / (F) 10'
No. 70-5036 MD6 (M) / (F) 25'
No. 70-5131 MD6 (M) / (M) 6'
No. 70-5034 MD6 (M) / (M) 10'

KVM (keyboard-monitor-mouse) Cables

These cables are especially designed to work with the KVM switches, however, they work equally well with independent computer hookups. They have a high density 15 pin connector for the VGA monitor with (3) mini RGB coaxial cables and 9 drive cables, (2) PS2 cables for the keyboard and mouse.

Features
> Super VGA HD15 cable w/ ferrite core
> RGB Cable w/ (3+9) wiring
> (2) PS2 Cables with MD6 connectors on each end
> Color coded connectors for easy identification

No. 70-5406 KVM Cable, HD15 (M)/(M) + (2)MD6 (M)/(M), 6'
No. 70-5410 KVM Cable, HD15 (M)/(M) + (2)MD6 (M)/(M), 10'
No. 70-5446 KVM Cable, HD15 (M)/(F) + (2)MD6 (M)/(F), 6'
No. 70-5450 KVM Cable, HD15 (M)/(F) + (2)MD6 (M)/(F), 10'

KEYBOARD & MOUSE ADAPTORS

With these adaptors you can use an AT style keyboard & mouse with a PS/2 style computer and vise / versa depending on your needs. Allows the user to upgrade their computer or use a device which they are more comfortable with on their current system.

No. 70-5040
No. 70-5055

No. 70-5040 MD6 (M) / D5 (F) 6" Flex Cord
No. 70-5045 MD6 (F) / D5 (M) 6" Flex Cord
No. 70-5055 Universal D5 (M) + (F) / MD6 (M) + (F) 1'

IBM-PS/2 to DB9 Mouse Adaptor

This adaptor permits a Microsoft or compatible mouse to be used on a PS/2 PC. The adaptor has a DB9 male connector on one end and a MD6 male on the other and is molded.

No. 70-5070 DB9 (M) / MD6 (M)

Microsoft Mouse Adaptor

Adapt Microsoft compatible mice to a serial computer port. It has a DB9 female connector on one end and a DB25 male connector on the other.

No. 70-5060 DB9 (M) / DB25 (F)

RGB Monitor Cables

These monitor cables especially designed for use with RGB Monitors, LAB equipment, or other devices that use separate RED, GREEN, & BLUE screen drive inputs for your color monitor. Philmore's cables are double shielded with a ferrite bead to give the user added RF shielding which is especially critical in Medical applications.

Specifications:
Mini-coax cables used with BNC's
Double shielded Mylar + Braided Shield
Super flexible PVC Outer Jacket
Ferrite Bead molded onto cable

No. **70-5523** RGB Cable HD15 (M) / (5) BNC (M) 6'
No. **70-5527** RGB Cable HD15 (M) / (5) BNC (M) 10'
No. **70-5529** RGB Cable HD15 (M) / (5) BNC (M) 25'

High Resolution Super VGA (S-VGA) Cable

Male to Male	Length	Male to Female	Male to Male Plus Audio
No. 70-5021	3 Ft.	No. 70-5120	N / A
No. 70-5023	6 Ft.	No. 70-5121	No. 70-5123
No. 70-5027	10 Ft.	No. 70-5025	No. 70-5127
No. 70-5115	15 Ft.	No. 70-5315	No. 70-5215
No. 70-5129	25 Ft.	No. 70-5028	No. 70-5329
No. 70-5042	50 Ft.	No. 70-5041	No. 70-5142
No. 70-5043	75 Ft.	N / A	N / A
No. 70-5044	100 Ft.	N / A	N / A

Double shielded, triple coax designed especially for Hi - Resolution monitors, long cable runs, high speed data transfer and high noise areas. Provides superior EMI interference protection by using ferrite cores on each end of cable, near the connector. Molded HD15 (High Density 15 pin D-sub) connectors, cables are UL & CL2 rated for in-wall installation.

S-VGA Cable

S-VGA + Audio Cable
(3.5mm Stereo Male - Male)

19

COMPUTER - SPECIALTY CABLES & ADAPTORS

SPECIAL MAC CABLES

Apple is the leader in print media. For that reason Philmore offers some of the most popular MAC cables for your convenience.

Imagewriter Cable

These Mini-Din 8 pin male to male cables are for connecting the MAC+IIGS (etc.) to the ImagewriterII printer or the LQ Personal Modem.

No. 70-336 MD8 (M) / (M) 6'
No. 70-338 MD8 (M) / (M) 12'

Universal MAC Cables

These Mini-Din 8 pin cables are wired straight through and may be used between Data switch boxes and some peripherals. Philmore offers both male to male and male to female for easy extending.

No. 70-340 MD8 (M) / (F) 6'
No. 70-342 MD8 (M) / (F) 12'
No. 70-341 MD8 (M) / (M) 6'
No. 70-343 MD8 (M) / (M) 12'

Right Angle S-VHS Cables For Notebook

Right Angle S-VHS Male on both Ends

No. 44-447 - 6 FT

Stereo & Right Angle S-VHS dubbing cables
(3.5 mm stereo Male - MD4 male/S-VHS)

No. 44-448 - 6 FT

"Y" Adaptors

These cables are constructed to allow you to use two monitors, keyboards, mice and tractball or any other I/O device without disconnecting the other.

No. 70-568 Monitor "Y"
HD15 (M) / (2) HD15(F) 6"

No. 70-569 Keyboard "Y"
MD6 (M) / (2) MD6 (F) 6"

IBM PC / AT Modem Cables

These cables have a DB25 male connector on one end and a DB9 female on the other. They are wired specifically for modem connection. They allow you to use a standard serial cable to connect your modem.

No. C165 DB25 (M) / DB9 (F) 3'
No. 70-167 DB25 (M) / DB9 (F) 6'
No. 70-169 DB25 (M) / DB9 (F) 10'

Monitor Cables

These cables are used with monitors requiring an HD15 Cable.

No. 70-5020
HD15 (M) / (F) 6'
No. 70-5022
HD15 (M) / (F) 10'
No. 70-5024
HD15 (M) / (M) 6'
No. 70-5026
HD15 (M) / (M) 10'

For COMPUTER USE.... MULTI media Headsets with microphones.

Two headsets are available for use at the computer, the major difference being that one has a single earpiece and the other is a stereo unit. Foam ear pads allow some outside sound to enter so that you will be able to hear a telephone and other office sounds. A comfortable fit will permit long hours of use. Both units are supplied with two plugs, one for the microphone and the other for the earphone(s). Standard 42" length cables on both units. Earpiece impedance 32 ohms, microphones are a standard high impedance for use with computer sound cards

No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1891	Business	Cobalt	100 db	Monaural
71-1892	MultiMedia	Cobalt	100 db	Stereo

Mini-Din Adaptors

These mini-din adaptors are designed to allow you to couple two similar cables in order to extend the length. Philmore offers these items in several configurations for use with Computers, Audio Equipment, Video Equipment, etc.

No. VHS4 MD4 (F) / (F)
No. 70-348 MD6 (F) / (F)
No. 70-344 MD8 (F) / (F)

20

High Resolution Wireless RF Mouse

State of the art mouse is great for those who have limited desk top room or hate the wire that limits your mobility. It is compatible with Windows 95/98/2000/ NT / Me. and comes complete with software. The receiver connects at the PS2 port for easy installation.

No. **70-3218** RF Wireless Mouse 800dpi

Features
>Reliable RF radio technology design
>Two separate operating channels in 27MHz band. FCC compliant
>High-Resolution **800dpi.**
>Operating distance 5ft. (1.5M) minimum.
>Eurgonomically designed to fit hand.
>Two Buttons + Scroll wheel
>Requires (2) AAA batteries (included)

High Resolution Wireless IR (infrared ray) Mouse

State of the art mouse is great for those who have limited desk top room or hate the wire that limits mobility. It is compatible with Windows 95/98/2000/ NT / Me. and comes complete with software. The receiver connects at the PS2 port for easy installation.

No. **70-3216** IR Wireless Mouse 520dpi

Features
>Reliable IR infrared technology design
>High-Resolution **520dpi.**
>Operating distance 8ft. (2.5M) minimum.
>Eurgonomically designed to fit hand.
>Two Buttons + Scroll wheel
>Requires (2) AAA batteries (included)

IEEE1284 PRINTER CABLES

These cables are fully HP1284 compliant and meet industry standards.They are compatible with most printers, scanners, and Bi-tronic switch boxes, and are recommended for ALL Ink Jet and Laser Jet Printers.

18 Twisted Pairs w/ >35 Twists/ft.
Double Shielded w/ Heavy Duty Mylar Foil & Braid
28 AWG w/ Stranded Conductors

Standard Printer Cable
  No. 70-1206 DB25 (M) / CEN36 (M) 6'
  No. 70-1210 DB25 (M) / CEN36 (M) 10'
  No. 70-1225 DB25 (M) / CEN36 (M) 25'
  No. 70-1250 DB25 (M) / CEN36 (M) 50'

PORT RECONFIGURATION KIT

This kit provides a simple way to either reconfigure to compensate for non-standard wiring or to customize and add additional components such as surge protection. There is no continuity from one end to the other without wiring the jumpers to the device.

No. C125 DB25 (M) / (F)

WIRING ADAPTOR BREAKOUT BOX

This device allows you to wire the DB25 connector to your PC through the use of the internal printed circuit board and included jumper wires. The unit is reusable and requires NO soldering.

No. C130 DB25 (M) / (F)

RS232 TESTER DEVICE

This handy item allows quick checking of data signals. Seven LED's monitor the status of the standard RS232 lines to determine if the trouble is emanating from the equipment or the cable.

No. C120 DB25 (M) / (F)

COMPUTER MULTIMEDIA

MULTIMEDIA MICROPHONE
Goose Neck with Stand

Here is a convenient microphone for the computer user. Mounted on a small, self adhesive stand, the microphone can be pushed out of the way during periods of non-use, pulled toward you for speaking. The gooseneck mounting permits adjustment to allow for different height users as well. The cord has a standard 3.5mm stereo plug.

Specifications:
Frequency Response: 50Hz to 13KHz
Sensitivity: 58db +- 2db
Operating Range: 1.0 to 10 volts, standard = 3 volts
S/N Radio: 40db

No. 70-020 - Microphone complete with stand and 4.5 ft. cable.

MULTIMEDIA MICROPHONE
and HEADSET COMBINATION

This combination permits hands-free conversations over the Internet or an Intranet. A sensitive microphone with a quality headset will allow you undistorted communications. Balanced nicely for weight distribution and comfort. The unit is supplied complete with cable and connectors standard for use with today's PC's sound cards. Volume control.

Specifications:

	Microphone	Headphone
Freq. Response:	20-18,000Hz	20-16,000KHz
Impedance:	32 ohm	24 ohm
Sensitivity:	101db +- 2db	
Max. Power Input:	100mW	0.4 mA

No. 70-025 - Microphone complete with 5.5 ft. cable.

MediaStar™ Audio/Multimedia Cables from Philmore

Simply a better cable for conventional Audio and for the Audio equipment used with Personal Computers. We are receiving better audio reproduction from practically all equipment today, ranging from your personal CD player to the Multimedia Speakers connected to your Personal Computer. Interconnecting these components with cables that are just as capable as your equipment assures that you receive full value and pleasure from your equipment.

Philmore **MediaStar™** cables employ better materials throughout. Pure copper conductors receive a refined tin plating to prevent chemical degradation which commonly begins to occur to raw copper within months of manufacture. This plating assures true fidelity without losses in the mid and high audio ranges for years. The inner cable is heavier than most (26ga. vs 28ga.) to reduce electrical resistance; shielding has also been increased. The outer PVC insulation is advanced (SRPVC) material that will increase life and durability by years. And the light grey color blends practically unnoticed into your home or office. Cable assemblies are molded for toughness.

MediaStar™ cables may be used with complete confidence for your Personal Computer's multimedia system, your personal stereo or your home audio system.

MediaStar™ Monaural Cable
3.5mm mono miniplug on each end. Use between powered and slave multimedia speakers, input from tape player or radio to auxiliary jack etc.
Color: Multimedia grey

No. 70-001 - 3 ft. Length
No. 70-002 - 6 ft. Length

MediaStar™ Stereo CD Cable
These adaptors are simply very short cables, 3.5mm stereo plugs on each end. They are intended for use when connecting a CD with a PC multimedia sound card. May also be used where a long cable is not necessary or inconvenient.
Color: Multimedia grey

No. 70-003 - 6" Length
No. 70-004 - 1 ft. Length

MediaStar™ Stereo Cable
3.5mm stereo miniplug on each end. Use between subwoofer and powered stereo pair in PC multimedia. Use between personal CD player and multimedia or other powered speakers. Connect to auxiliary input on multimedia speakers system from FM stereo radio or CD player; many other uses.
Color: Multimedia grey

No. 70-005 - 3 ft. Length
No. 70-006 - 6 ft. Length
No. 70-007 - 12 ft. Length
No. 70-018 - 25 ft. Length

MediaStar™ Stereo Extension Cable
A stereo 3.5mm plug on one end, to a stereo 3.5mm jack on the other. May be used wherever you need a longer cable between PC multimedia speakers, CD and sound card inputs, or simply your Walkman and amplified speakers.
Color: Multimedia grey

No. 70-008 - 3 ft. Length
No. 70-009 - 6 ft. Length
No. 70-012 - 12 ft. Length
No. 70-016 - 25 ft. Length

MediaStar™ Stereo "Y" Adaptor
One 3.5mm stereo plug to two 3.5mm stereo jacks. Used in several brands of PC multimedia speaker systems to split right and left outputs. May be used for two sets of headphones for personal stereo or CD player etc.
Color: Multimedia Grey

No. 70-010 - 6" Length

MediaStar™ Stereo "Y" Adaptor
One 3.5mm stereo plug to two RCA males. Used by some makes of PC multimedia speakers to split left from right. May be used to connect an amplifier to personal stereo or CD player etc.
Color; Multimedia Grey

No. 70-011 - 6 ft. Length
No. 70-019 - 12 ft. Length

* Additional **MediaStar™** Audio & Video products can be found on pages 80 - 83

ROLL - UP COMPUTER CABLES

ROAD WARRIOR'S
Pocket COMPUTER CABLES

Store perfectly for travel or just occasional use. Philmore Roll-Up Cables extend easily for use and retract perfectly for easy-to-carry storage in your laptop carry-on case. Roll-Up Cables will also extend just as much as needed, keeping excess wire out of your way. Blister card packaging.

USB 2.0 "A" Male Plug to USB "A" Female Jack
Extends to length of 31.5" maximum. Storage size is less than 4 inches total.

No. 70-8500

USB 2.0 "A" Male PLUG to USB "B" Male PLUG
Extends to length of 31.5" maximum. Storage size is less than 4 inches total.

No. 70-8502

USB 2.0 "A" Male PLUG to USB "A" Male PLUG
Extends to length of 31.5" maximum. Storage size is less than 4 inches total.

No. 70-8504

IEEE 1394 6-pin Male PLUG to 4-pin Male PLUG
Extends to length of 31.5" maximum. Storage size is less than 4 inches.

No. 70-8517

RJ-11 to RJ-11 Male PLUGS (6P4C)
For connection to telephone lines for modems, etc. Extends to 31.5" length maximum, storage size appx. 3.5".

No. 70-8530

RJ-45 to RJ-45 Male PLUGS (8P8C)
8 Conductor telephone style male connectors each end. Extends to 31.5" length maximum, storage size appx. 3.5".

No. 70-8532

IEEE 1394 6-PIN Male Plug TO 6-PIN Male Plug

No. 70-8519

ADAPTORS

No. 70-8011
IEEE 1394 6 Pin Female Jack to 4 Pin Male Plug

No. 70-8008
USB "A" Male to mini - USB 5 pin Male

No. 70-8009
USB "A" Male to mini - USB 4 pin Male

No. 70-8013
USB "A" Female to 6 pin mini - Din Male

USB CABLES & ADAPTORS

USB 2.0 Cables

These cables are to be used with USB devices. They are four conductor cables with two different size of connectors. USB "A" connector is a rectangular connector and somewhat larger than the USB "B" connector which is more square in design. Both are available in male and female versions. The "A" connector is usually used where the connection is to be more permanently connected, where as the "B" connector is used where the peripheral may be plugged and unplugged frequently.

USB "A" / "A" Cables (Male - Male)
No. 70-8113 "A" / "A" 3'
No. 70-8116 "A" / "A" 6'
No. 70-8110 "A" / "A" 10'
No. 70-8115 "A" / "A" 15'

USB "A" / "B" Cables (Male - Male)
No. 70-8123 "A" / "B" 3'
No. 70-8126 "A" / "B" 6'
No. 70-8120 "A" / "B" 10'
No. 70-8135 "A" / "B" 15'

USB Extension Cable

No. 70-8136 - USB "A" Male - USB "A" Female 6 Ft.

USB Dual Port Adaptor

With this dual receptacle bracket you can update your computer to enable the use of USB peripherals. You must have Windows '95 Rev. B or later. The device is equipped with two (2) USB "A" Female receptacles with leads which can be plugged onto the computers motherboard.

No. 70-8405

USB 2.0 HUB

The HUB makes connections of a series of USB devices "Downstream" (away from the computer or controlling device) much easier. There is one (1) USB "B" receptacle Upstream (to connect toward the computer or controller) and four (4) USB "A" receptacles for down stream devices. With the use of this HUB you can connect more USB peripherals without needing more ports on the computer. The tiered star topology supports up to 6 tiers and 127 USB devices.

Features
USB Revision 1.1 Compliant
Tiered Topology
Supports up to 127 Devices
LED Activity lights
Power LED Light
Support full speed 12Mbps &
    Low-speed 1.5Mbps

No. 70-8804

Economy USB 2.0 Hub
Pocket size USB Four Port Hub

No. 70-8805

USB 2.0 PCI Controller Card

This is a complete controller Card for USB devices. It is designed to be plugged into the PCI slot on your motherboard. This allows you to upgrade your computer and provides you with two (2) USB ports. You can use any USB device such as keyboards, mice, scanners, and digital cameras.

Features
Universal Serial Bus Interface
Dual USB Port
Intel UHCI (Universal Host Controller Interface)
Normal & Low Power Operating Mode
PCI Interface
Fully Plug & Play Compatible
Both MAC & PC Compatible

No. 70-8402

Mini USB 2.0 Cables & Adaptors

Mini USB version 2.0 cables for connecting hundreds of cameras, personal music MP3 players etc. All connector shells are nickel plated.

Part No.	Description
No. 70-8023	Mini USB 2.0 4-pin Male to USB type B Male, 3 ft. cable
No. 70-8033	Mini USB 2.0 5-pin Male to USB type B Male, 3 ft. cable
No. 70-8043	Mini USB 2.0 4-pin Male to USB type A Male, 3 ft. cable
No. 70-8046	Mini USB 2.0 4-pin Male to USB type A Male, 6 ft. cable
No. 70-8053	Mini USB 2.0 5-pin Male to USB type A Male, 3 ft. cable
No. 70-8056	Mini USB 2.0 5-pin Male to USB type A Male, 6 ft. cable
No. 70-8044	Mini USB 2.0 4-pin Male to Male, 3 ft. cable
No. 70-8055	Mini USB 2.0 5-pin Male to Male, 3 ft. cable

USB 2.0 Video Adaptor

This USB Video adaptor is the ideal video capture device. It has both S-Video connector and RCA connector and is a bridge between PC and analog cameras, VCR's and Camcorders. It captures both still and full motion video.

Features
    Video Input 1 RCA , 1 S-Video
    Snap shot mode: 640 X 480 pixels
    30fps @ CIF size (352 X 288 pixels)
    Converts analog Video to AVI file
    USB 1.0 Compliant
    Supports both NTSC & PAL systems
    Supports both MAC & PC formats

No. 70-8807

USB 2.0 Adaptors

These adaptors allow the user to change the style, gender or couple a cable or cables together to fit their needs. These adaptors are ALL passive devices.

No. 70-8001
USB "A" Female to "B" Male

No. 70-8002
USB "A" Male to "B" Female

No. 70-8003
USB "A" Female to "B" Female

No. 70-8004
USB "A" Male to "A" Male

No. 70-8005
USB "A" Female to "A" Female

No. 70-8006
USB "B" Male to "B" Male

No. 70-8007
USB "B" Female to "B" Female

No. 70-8008
USB "A" Male to
mini - USB 5 pin Male

No. 70-8009
USB "A" Male to
mini - USB 4 pin Male

No. 70-8013
USB "A" Female to
6 pin mini - Din Male

USB 3.0 (USB SUPER SPEED)

Developed by Intel, USB 3.0 is ten times faster than the 480 Mbps limit of the current USB 2.0 version (maximum speed 4.8 Gbps). Additional lines added to cable (the cable is noticeably thicker) allows USB 3.0 to both read and write at the same time from your portable storage devices. Bi - Directional data transfer will be useful for synging up information on PDAs and storage backup.

USB 3.0 is backwards compatible with USB 2.0 but you won't be able to maximize your bandwidth unless you are using it with superspeed devices and ports.

What the maximum speed of 4.8 Gbps can do?

* Transfer 27 GB HD movie to your future media player takes 70 seconds (min. 15 minutes on USB 2.0) with compatible portable storage device.

* More power to charge portable devices (cellphones, MP3 players, digital cameras), boosted the power output from approx. 100 mA to 900 mA.

USB 3.0 A - A (Male - Male)	
No. 70-8160	6 Ft.
No. 70-8165	12 Ft.

MICRO USB CABLES

The new Micro USB connectors are designed to allow up to 10,000 cycles of insertion and removal between receptacle and plug, compare to 500 for the standard USB and mini USB receptacle. Micro USB is designed so that the connector on the cable (inexpensive) would bear the most wear instead of the Micro USB device. Micro USB plugs have a similiar width as mini USB but about half the thickness, enabling their intergration into thinner portable devices such as PDAs, mobile phones, digital cameras or battery chargers.

Micro USB connectors are intended to replace the mini plugs in new devices including smart phones and personal digital assistants. The open mobile terminal platform (OMTP) group have endorsed Micro USB as the standard connector for data and power on mobile devices.

USB A Male to Micro USB B Male	
No. 70-8026	3 Ft.
No. 70-8028	6 Ft.
No. 70-8032	12 Ft.

USB A Male to Micro USB A Male	
No. 70-8036	3 Ft.
No. 70-8038	6 Ft.
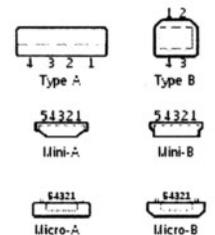
Schematic diagram of Standard, Mini, and Micro USB receptacles.

Philmore USB Charger Power Products

Here is an idea who's time has come! The following cables and adaptors will provide all of the connections that you will need to charge, or simply operate, your cell phone, MP3 player, Bluetooth earpiece, cameras, etc. from the USB port on your computer. Use your desk–top PC, notebook or netbook computer to power virtually any of your tools or toys that use a USB port for a power connection and/or for charging. Leave all of those clumsy chargers in a drawer as a Philmore cable with the right adaptor will charge any USB device. Plug the Philmore cable into your computer, and attach the USB plug that mates with your device. You can even charge two devices at one time with the "Y" cable listed below.

The Philmore USB Power/Charger CABLES for USB

Select the length of cable from the listing here that will best fit your usage. HINT: the smaller cable no. 70-8101 might be the best one for the frequent traveler as it will stash-away with your netbook and weighs almost nothing. One end of these cables plugs into your PC's USB port and the other end has a two-pin connector for any of the adaptors listed on next page. You will want to pick at least one adaptor from the adaptor section. Cables can be used with any PC, desktop, notebook or netbook etc. (Note: this series of cables will supply power or charge, and they are not intended for other USB use, transferring data, etc.)

USB Y Cable
USB A Male to (2) 2 Pin Socket

USB A Male to 2 Pin Socket

Part No.	Cable Description	Cable Length
70-8101	Power only Cable, USB Male A to 2-Pin Socket	12 Inches
70-8103	Power only Cable, USB Male A to 2-Pin Socket	3 Feet
70-8106	Power only Cable, USB Male A to 2-Pin Socket	6 Feet
70-8108	Power only Y- Cable, USB Male A to Two 2-Pin Socket Sockets for charging / Powering two devices at one time	12 Inches

USB CABLES & ADAPTORS

The Philmore USB Power/Charger Adaptors for USB

The Philmore USB Power/Charger Adaptors for USB

This series of adaptors plug into the 2-pin socket on the cables listed on the previous page. You can buy just one or get the set of three so that you will be ready to charge/power virtually ANY USB device. With all three adaptors and a cable in your notebook case, it won't matter when you discover you left the cell phone charger at home on your next business trip!

Mini USB B

Micro USB A

Micro USB B

Part No.	Adaptor Description
70-8015	2 Pin to Mini-USB B Male plug
70-8016	2 Pin to Micro-USB A Male plug
70-8017	2 Pin to Micro-USB B Male plug
70-8020	All Three adaptors, listed above includes Mini B, Micro A and Micro B Male plugs to 2 pin plug
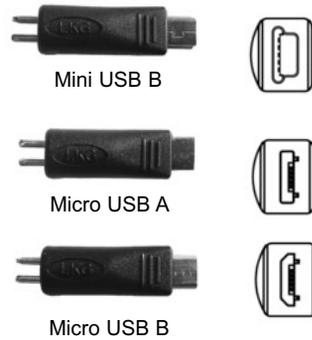
The Philmore USB Power/Charger TRAVELER'S KIT.

These kits are intended for travel, but will be just as handy at your desk in your office. Included are one 12" power cable and all three (70-8015, 70-8016, 70-8017) USB adaptors. The kits, packed in a handy zip-locking clear plastic bag, will fit in any pocket of your notebook PC case and be ready to go when you (or a travel companion) forget to pack that charger for a cell phone, Bluetooth earpiece or other device. (Note: cable connects only for power and charging and are not intended for other USB use, transferring data etc.)

Part No.	Description
70-8022	USB Traveler's power kit, includes one 12" cable (No 70-8101) and all three USB adaptors
70-8024	USB Traveler's kit with Y cable includes one 12" cable (No 70-8108) and all three USB adaptors

And Yes…..! Use this series of USB powering cables with that separate USB power charger too! Use Philmore USB power cables with **any** USB compatible charger.

New types! USB 2.0 CABLES and ADAPTOR

Responding to demand, Philmore has added a number of new cables and an adaptor which feature right angle Micro USB connectors as well as other new configurations. All of this series meets USB 2.0 standards and will also work with earlier (i.e. they are "backward compatible") USB equipment for any USB function. As USB has increasingly become a standard mode for computer/equipment connection, the right angle connectors are finding more uses every day. PLUS: new USB specialty cables below.

USB 2.0 "A" Female to Right angle Micro USB "B" ADAPTOR.

May be used on the end of the common A to A USB cable when a right-angle Micro USB "B" connector is needed.

No. 70-8060 - 3 Ft.

USB 2.0 MICRO to MICRO CABLE

A six foot length cable with MICRO USB B connectors on both ends.

No. 70-8068 - 6 Ft.

MICRO USB ADAPTOR

Mini USB B (5 pin) Female to Micro USB B Male.

No. 70-8012

26

USB 2.0 MALE "A" to Micro Cables

A series of NEW cables with standard USB Male "A" connectors on one end and a Right Angle Micro USB "B" connector on the other; available in three lengths.

Part No.	Cable Description	Cable Length
70-8062	"A" Male to Micro "B" Right Angle	12 Inches
70-8064	"A" Male to Micro "B" Right Angle	3 Feet
70-8066	"A" Male to Micro "B" Right Angle	6 Feet

Mini and Micro "Y" CABLE

A handy new "specialty" cable and "Y" adaptor with a standard USB Male "A" connector on one end leading to one Mini USB "B" male as well as one Micro USB "B" male on the other end. A useful cable for the user with several devices that need to be connected to a PC, such as sophisticated Odometers, GPS units, blood pressure readers, cameras, etc. This one can save you from fumbling around in the drawer looking for the right cable.

Part No.	Cable Description	Cable Length
70-8070	USB "Y"	3 Feet

USB Dual-Micro "Y" CABLE

Another very handy cable to help you put those Personal Computer devices to good use easily. The cable has a standard USB "A" Male connector on one end leading to TWO Micro USB "B" connectors on the other.

Part No.	Cable Description	Cable Length
70-8072	USB "Y"	6 Feet

ECONOMY USB SWITCHING POWER SUPPLY

Specifications:
Input Voltage: 100 - 240V AC
Output Voltage: 5V DC
Maximum Current: 1,000 mA

Jack accommodates USB A Male plug for powering or charging any USB device.

No. 48-1209 - 5V DC charger with AC plug
NOTE: Not compatible with Apple® products.

UNIVERSAL USB SWITCHING POWER SUPPLY

A 5V DC power supply for digital cameras, cellphones, battery chargers, GPS receivers, MP3, PDA, Apple devices and other devices requiring 5V DC power through USB ports. Use with Philmore (70-series) USB, Mini USB and Micro USB cables.

Features:
* Short circuit protection.
* Automatic thermal cut - off.
* Automatic overload cut - off.
* Interchangeable UK, Australia and Schuko (Europe) plugs (optional).

Specifications:
Input Voltage: 100 - 240V AC 60 Hz
Output Voltage: 5V DC
Maximum Current: 1,000 mA

No. 48-1212 - 5V DC charger with 2 flat pin US plug
No. 48-1215 - 5V DC charger with interchangeable US, UK, Australia and Schuko plugs.

WORLD WIDE USB CHARGER
(USB Charger for Home / Auto)

An easy way to connect your USB powered devices anywhere in the world.

AC or DC to USB power adaptor, charges most USB powered devices from an AC outlet or from a DC outlet (cigarette lighter socket). No. 48-1214 is compact size, perfect for home office or travel. It has a sturdy protective cap when cigarette lighter plug (DC input) is not used and foldable 2 flat pin when AC input is not used. Large blue glow indicator light when unit is in use (both AC & DC).

Specifications:
Operation Voltage: 100 - 240V AC
        47-63Hz 0.15A
        12-24V DC 0.5A
Output Voltage: 5V DC
Maximum Current: 1,000 mA

Features:
* Foldable input AC wall plug.
* Cigarette lighter plug.
* Jack for USB A Male plug.
* Workable with AC or DC in one unit.

No. 48-1214 - AC or DC, 5V DC USB Charger

27

USB CABLES & ADAPTORS

USB to USB Link Adaptor

This device provides an economical solution for a small business / home office two (2) station network. It allows Windows'95 Rev. B or Windows 98 or laterPC with a USB Port to connect directly to a similarly equipped PC. Provides same resource sharing like a 10Base-T Ethernet network.

Includes
Instruction Manual
Required Software
USB Device Cable

No. 70-8808

USB to USB SmartNet Cable

This is a USB to USB network bridge. The device provides a quick and easy solution to construct a network environment, share resources such as files, printers, and storage devices. It is very useful for SOHO users, mobile users, and network gamers. Software included

Features
Supports USB network up to 17 PC's
Share resources such as Printers,
  scanners, modems, CD-Roms, etc.
Supports TCP/IP, NetBEUI, IPX/SPX
  Protocols
Suitable for SOHO & Mobile Network

No. 70-8806

USB Ethernet Adaptor

The USB Ethernet adaptor performs USB "HOT" Plug & Play operations to the Ethernet network. There is no need to open your computer to connect to the network. The unit requires a CAT5 or higher cable (not included) for Ethernet operation. Maximum cable length between the adaptor and supporting Ethernet HUB is 300' and requires an RJ45 plug on each end of a cable wired straight through.

Features
Advanced 16 bit Processor for USB
  transaction and control data processing
USB interface version 1.1 compliant
USB BUS I/O base address, along with
  interrupt number, assigned by Plug &
  Play system.
Upstream Port is USB "B" receptacle
Downstream Port RJ45 Jack

Includes
USB Ethernet adaptor
USB "A" / "B" Cable 6'
USB Ethernet driver CD
User's Manual

No. 70-8800

USB to Parallel Cable

USB Parallel Cable allows PC's with a USB port to print to any parallel printer. It provides truly Bi-directional, USB Plug & Play capability. Just plug the USB "A" connector into the computers USB Port and the other end into a IEEE1284 Printer using a CEN36 connector. It is fully compatible with Windows 95/ Rev. B, Windows 98 or higher.

No. 70-8010 USB "A" / CEN36 (M) 10'

USB Repeater Cable

USB Repeater cable allows the cable length on a USB device to be extended up to an additional 80 feet. You can connect up to (5) 16 foot cables serially. This is an active cable with USB "A" connector on each end that acts as a transparent buffered HUB.

Features
Compatible with MAC & IBM PC's
Compatible with Windows 95 Rev 2.1, or higher

No. 70-8150 USB "A" (M) / (F) 16'

USB to PS/2 Active Adaptor

This Active USB Adaptor makes it possible for PS/2 I/O devices such as keyboards and mice to enjoy USB Plug & Play features. Both the mouse and keyboard may be plugged in at the same time.

Features
Cable length 2.5'
(1) USB "A" Connector
(2) Downstream PS/2 Connectors
Supports Microsoft InteliMouse
Sleep mode Power Management

No. 70-8803 USB "A" (M) / (2) MD6 (F) 2.5'

USB Serial Converter

This USB serial converter is ideal for cellular telephones, digital cameras, modems, and PDA's providing the advantages of USB Plug & Play and faster data transfer.

Features
Host Drivers Included
Advanced 16 bit processor for USB
  &Control Data Processing
Compatible with USB 1.1 Specifications
Upstream port USB "B" Female
Downstream port DB25 Male

No. 70-8802 USB "B" (F) / DB25 (M)

Recordable Motion Detector with External DC Power Jack

This entry alarm allows user to play recorded message upon sensor interruption. Recordable message length is about 20 seconds. Detection area up to a distance of 20 feet with a radius of 100 degrees. Supplied with mounting bracket that allows 120 degrees swivel adjustment. Powered by (4) AA batteries (not included). External jack: 6V 600mA regulated DC adaptor (not included) or 3-4.5V 500mA non-regulated DC adaptor (not included).

No. PV1000

RECORDS VOICE MESSAGE UP TO 20 SECONDS

Volume Control Entry Chime with External DC Power Jack

This entry alarm allows user to select volume of entry chime upon sensor interruption. Detection area up to a distance of 15 feet with a radius of 100º. Supplied with mounting bracket that allows 120º swivel adjustment. Powered by (4) AA batteries (not included). External jack: 6V 600mA regulated DC adaptor (not included) or 3-4.5V 500mA non-regulated DC adaptor (not included).

No. SH588A

Electronic DOOR KNOB ALARM

Hang the unit on a door knob and give it a half-minute to "look" at its surroundings. After that, it will sense anyone touching the knob and sound a loud alarm. Use while traveling or monitor unwanted door opening. The alarm will operate for days on a nine volt transistor battery. Note that it works best on wood doors with metal knobs (practically any door) but may not perform as well on a metal (steel) door.

No. PV500

Electronic WINDOW or DOOR ALARM

This is probably the fastest and least costly way to protect a window or door from an intruder. Attach the magnet to the window and the sounder module to the window frame. Both attach easily with double stick foam tape. When you have the unit switched "ON", it will sound if the window is opened, even just a couple of inches. The alarm can monitor a window or door for months on one set of batteries (unless the alarm sounds a lot, which takes more energy.) The LR44 batteries are included and replacements are easily available.

No. SH555

Infrared Automatic SENSOR LED LAMP

When you enter a darkened room where this device is located, it turns on its own light. Use in a closet, spare room, outdoor shed, garage etc. batteries can last for months. No wiring is necessary, the unit runs on four AA batteries (or, an AC adaptor such as Philmore No. BE226). Batteries are not supplied with the unit.

No. PV2000

PERSONAL ALARM

It looks like a computer mouse, but is a very loud personal alarm that may be carried by a jogger, night-shift worker or just someone that might be threatened getting across the parking lot. If the loud sound does not frighten off an assailant, it will at least attract plenty of attention. A bonus feature is a "penlight" flashlight that may be used to locate a lock, foot path etc. Operates on two AAA batteries, which are included.

No. SH999

Magnetic DOOR ANNUNCIATOR

Provides an electronic "ding-dong" to announce someone entering a door. This may be the least expensive door annunciator, and the most easily installed. Attach the magnet to your door and sounding device to the door frame (or vice versa), if you like. Double sticky foam tape makes mounting quick work. A sophisticated sound announces the entry of a customer each time the door is opened.

No.SH333

MULTI - CONTACT CONNECTORS

INSULATION DISPLACEMENT CARD EDGE CONNECTORS

FEATURES:
- 14, 20, 26, 34, 40, & 50 Contact available
- Contacts adjust to compensate for P.C. board thickness
- Contact design assures positive connection, assures long cycle life and good self cleaning wipe on P.C. pad

SPECIFICATIONS:
Contact Resistance: 30m ohm max. at DC 100mA
Insulator Resistance: 1000m ohm min. at DC 500V
Current Rating: 1 Amp Dielectric Withstanding
Voltage: AC 500V for 1 minute
Operating Temperature: -55ºC - +105ºC
Contact: Phosphor Bronze
Housing: PBT & 30% Glass Fiber (UL 94V-0)

Part No.	Position	A	B	C
No. 70-4314	14	1.073 (27.26)	.816 (20.72)	.600 (15.24)
No. 70-4320	20	1.374 (34.90)	1.127 (28.64)	.900 (22.86)
No. 70-4326	26	1.673 (42.50)	1.416 (35.96)	1.200 (30.48)
No. 70-4334	34	2.073 (52.66)	1.815 (46.12)	1.600 (40.64)
No. 70-4340	40	2.373 (60.28)	2.115 (53.74)	1.900 (48.26)
No. 70-4350	50	2.873 (72.98)	2.616 (66.44)	2.400 (60.96)

*NOTE: Metric dimensions in Parentheses. Dimension.
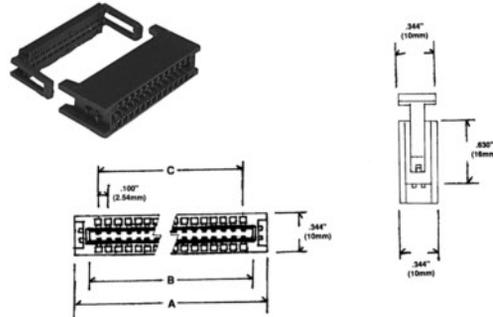
INSULATION DISPLACEMENT DUAL ROW CONNECTORS

FEATURES:
- 6, 8, 10, 12, 14, 16, 20, 24, 26, 30, 34, 40, 50, 60, 62, 64
- Fully interchangeable with competitive models
- Easily removable molded cable strain relief
- Meets Mil-C-83503 Specifications
- 100" Spacing

SPECIFICATIONS:
Contact Resistance: 30m ohm max. at DC 100mA
Insulator Resistance: 1000m ohm min. at DC 500V
Current Rating: 1 Amp Dielectric Withstanding
Voltage: AC 500V for 1 minute
Operating Temperature: -55ºC - +105ºC
Contact: Phosphor Bronze
Housing: PBT & 30% Glass Fiber (UL 94V-0)
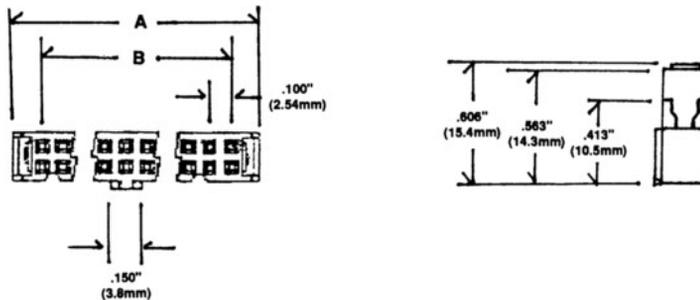
Part No.	Position	A	B	Part No.	Position	A	B
No. 70-4206	6	.479 (12.17)	.20 (5.06)	70-4226	26	1.479 (37.59)	1.20 (30.48)
No. 70-4208	8	.579 (14.70)	.30 (7.62)	70-4230	30	1.680 (42.67)	1.40 (35.56)
No. 70-4210	10	.679 (17.27)	.400 (10.16)	70-4234	34	1.879 (47.75)	1.60 (40.64)
No. 70-4212	12	.779 (19.79)	.50 (12.70)	70-4240	40	2.179 (55.37)	1.90 (48.26)
No. 70-4214	14	.879 (22.35)	.600 (15.24)	70-4250	50	2.679 (68.07)	2.40 (60.96)
No. 70-4216	16	.979 (24.89)	.700 (17.78)	70-4260	60	3.179 (80.77)	2.90 (73.66)
No. 70-4220	20	1.179 (29.97)	.900 (22.86)	70-4262	62	3.279 (83.29)	3.0 (76.20)
No. 70-4224	24	1.379 (35.03)	1.10 (27.94)	70-4264	64	3.379 (85.83)	3.10 (78.74)

*NOTE: Metric dimensions in Parentheses. Dimension.

BREAK-OFF KEY
Break off pin is used to Key the connector so that it may be connected only with the correct orientation. The pin is inserted into a socket and a corresponding pin is removed from the male connector.

No. 70-4200 - 100 Pcs. per package

P.C. BOARD MOUNT DIP IC SOCKETS

FEATURES:
- 8, 14, 16, 18, 20, 24, 28 & 40 Contact available
- Tin Plated contact
- Industry standard spacing

SPECIFICATIONS:
Contact Resistance:	30m ohm max. at DC 100mA
Insulator Resistance:	1000m ohm min. at DC 500V
Current Rating:	1 Amp Dielectric Withstanding
Voltage:	AC 500V for 1 minute
Operating	-55ºC - +105ºC
Temperature:	Phosphor Bronze
Contact:	PBT & 30% Glass Fiber (UL 94V-0)
Housing:	

*NOTE: Metric dimensions in Parentheses					
		Dimension			
Part No.	Position	A	B	C	D
No. 70-4608	8	.400 (10.16)	.300 (7.62)	.400 (10.16)	.300 (7.62)
No. 70-4614	14	.700 (17.78)	.600 (15.24)	.400 (10.16)	.300 (7.62)
No. 70-4616	16	.800 (20.32)	.700 (17.78)	.400 (10.16)	.300 (7.62)
No. 70-4618	18	.900 (22.86)	.800 (20.32)	.400 (10.16)	.300 (7.62)
No. 70-4620	20	1.000 (25.40)	.900 (22.86)	.400 (10.16)	.300 (7.62)
No. 70-4624	24	1.200 (30.48)	1.100 (27.94)	.700 (17.78)	.600 (15.24)
No. 70-4628	28	1.400 (35.56)	1.300 (33.02)	.700 (17.78)	.600 (15.24)
No. 70-4640	40	2.000 (50.80)	1.900 (48.26)	.700 (17.78)	.600 (15.24)
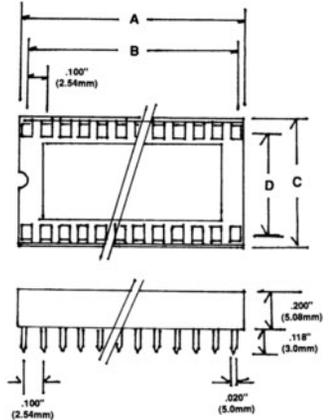
INSULATION DISPLACEMENT DIP CONNECTORS

FEATURES:
- 14, 16, 18, 20, 24, 28 & 40 contact available
- Mates with .050" centered round conductor flat wire
- .100" Contact Spacing
- Accepts 28-30 ga. wire
- Fits all standard DIP Sockets or direct soldering to P.C. board

SPECIFICATIONS:
Contact Resistance:	30m ohm max. at DC 100mA
Insulator Resistance:	1000m ohm min. at DC 500V
Current Rating:	1 Amp Dielectric Withstanding
Voltage:	AC 500V for 1 minute
Operating	-55ºC - +105ºC
Temperature:	Phosphor Bronze
Contact:	PBT & 30% Glass Fiber (UL 94V-0)
Housing:	

*NOTE: Metric dimensions in Parentheses					
		Dimension			
Part No.	Position	A	B	C	D
No. 70-4714	14	.895 (22.74)	.600 (15.24)	.417 (10.60)	.300 (7.62)
No. 70-4716	16	.989 (25.12)	.700 (17.78)	.417 (10.60)	.300 (7.62)
No. 70-4718	18	1.052 (26.74)	.800 (20.32)	.417 (10.60)	.300 (7.62)
No. 70-4720	20	1.170 (29.74)	.900 (22.86)	.417 (10.60)	.300 (7.62)
No. 70-4724	24	1.378 (35.00)	1.100 (27.94)	.716 (18.18)	.600 (15.24)
No. 70-4728	28	1.579 (40.10)	1.260 (32.02)	.716 (18.18)	.600 (15.24)
No. 70-4740	40	2.178 (55.34)	1.900 (48.26)	.716 (18.18)	.600 (15.24)
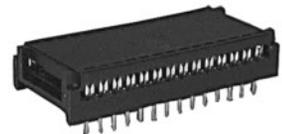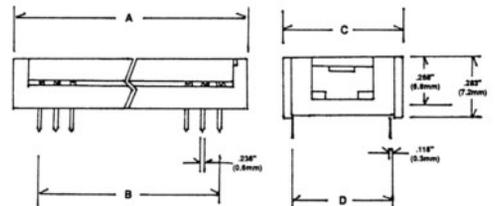
MULTI - CONTACT CONNECTORS

.100" CENTERS LOCKING POLARIZED HEADERS

SPECIFICATIONS:
Voltage Rating: 250V AC, DC
Current Rating: 5 A AC, DC
Withstand Voltage: 1000V AC/minute
Insulation Resistance: 1000m ohm Minute
Temperature Range: -25ºC - +85ºC
Applicable PC Board Thickness: .063" (1.6mm)
Contact Resistance: Initial Value / 10 ohms Max.
After environmental testing / 20m ohms max.
Material: Post - Brass / Tin Plate
Base - Nylon 66, UL 94V-2

Standards
UL: E113875
TUV: E9072257
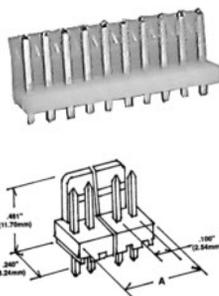
Part No.	Position	Dimension Width	(mm) -A
No. 70-4802	2	.200"	(5.08)
No. 70-4803	3	.300"	(7.62)
No. 70-4804	4	.400"	(10.16)
No. 70-4805	5	.500"	(12.70)
No. 70-4806	6	.600"	(15.24)
No. 70-4808	8	.800"	(20.32)
No. 70-4810	10	1.000"	(25.40)
No. 70-4812	12	1.200"	(30.48)

Mates with No. 70-4852 thru No. 70-4862

.100" CENTERS CRIMP TYPE LOCKING CONNECTORS

SPECIFICATIONS:
Voltage Rating: 250V AC, DC
Current Rating: 5 A AC, DC
Withstand Voltage: 1000V AC/minute
Insulation Resistance: 1000m ohm Minute
Temperature Range: -25ºC - +85ºC
Applicable PC Board Thickness: .063" (1.6mm)
Contact Resistance: Initial Value / 10 ohms Max.
After environmental testing / 20m ohms max.
Material: Post - Brass / Tin Plate
Base - Nylon 66, UL 94V-2

Standards
UL: E113875
TUV: E9072257

Crimp Contacts for 22-30 gauge wire

Material: Brass/Tin Plated
Hardness: SH
Thickness: 0.2mm
No. 70-4800B - Bulk (Box of 100)
No. 70-4800 - Package of 25
No. 63-603 - Recommended Crimping Tool.
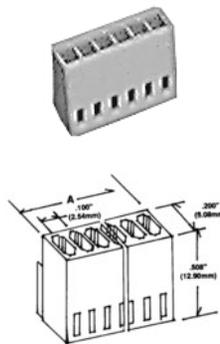
Part No.	Position	Dimension Width	(mm) -A
No. 70-4852	2	.220"	(5.60)
No. 70-4853	3	.321"	(8.15)
No. 70-4854	4	.421"	(10.70)
No. 70-4855	5	.524"	(13.30)
No. 70-4856	6	.622"	(15.80)
No. 70-4858	8	.819"	(20.80)
No. 70-4860	10	1.020"	(25.90)
No. 70-4862	12	1.220"	(31.00)

Mates with No. 70-4802 thru No. 70-4812
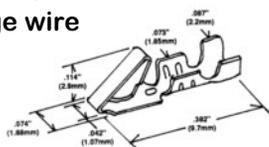
NOTE: For Bulk, pins are not included and must be ordered separately.

.156" CENTERS LOCKING POLARIZED HEADERS

SPECIFICATIONS:
Voltage Rating: 250V AC, DC
Current Rating: 5 A AC, DC
Withstand Voltage: 1000V AC/minute
Insulation Resistance: 1000m ohm Minute
Temperature Range: -25ºC - +85ºC
Applicable PC Board Thickness: .063" (1.6mm)
Contact Resistance: Initial Value / 10 ohms Max.
After environmental testing / 20m ohms max.
Material: Post - Brass / Tin Plate
Base - Nylon 66, UL 94V-2

Standards
UL: E113875
TUV: E9072257
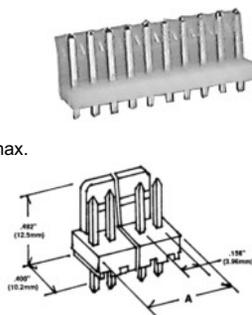
Part No.	Position	Dimension Width	(mm) -A
No. 70-6802	2	.312"	(7.92)
No. 70-6803	3	.472"	(12.0)
No. 70-6804	4	.624"	(15.84)
No. 70-6805	5	.787"	(20.0)
No. 70-6806	6	.936"	(23.76)
No. 70-6808	8	1.248"	(31.58)
No. 70-6810	10	1.560"	(39.60)
No. 70-6812	12	1.872"	(47.52)
No. 70-6816	16	2.496"	(63.36)

Mates with No. 70-6852 thru No. 70-6866

.156" CENTERS CRIMP TYPE LOCKING CONNECTORS

SPECIFICATIONS:
Voltage Rating: 250V AC, DC
Current Rating: 5 A AC, DC
Withstand Voltage: 1000V AC/minute
Insulation Resistance: 1000m ohm Minute
Temperature Range: -25ºC - +85ºC
Applicable PC Board Thickness: .063" (1.6mm)
Contact Resistance: Initial Value / 10 ohms Max.
After environmental testing / 20m ohms max.
Material: Post - Brass / Tin Plate
Base - Nylon 66, UL 94V-2

Standards
UL: E113875
TUV: E9072257

Crimp Contacts for 22-30 gauge wire

Material: Brass/Tin Plated
Hardness: SH
Thickness: 0.2mm
No. 70-6800B - Bulk (Box of 100)
No. 70-6800 - Package of 25
No. 63-603 - Recommended Crimping Tool.
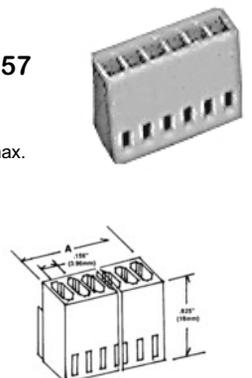
Part No.	Position	Dimension Width	(mm) -A
No. 70-6852	2	.312"	(7.92)
No. 70-6853	3	.487"	(12.39)
No. 70-6854	4	.624"	(15.84)
No. 70-6855	5	.799"	(20.31)
No. 70-6856	6	.936"	(23.76)
No. 70-6858	8	1.248"	(31.58)
No. 70-6860	10	1.560"	(39.60)
No. 70-6862	12	1.872"	(47.52)
No. 70-6866	16	2.496"	(63.36)

Mates with No. 70-6802 thru No. 70-6816

0.10" VERTICAL HEADERS, DUAL ROW

PC board open headers mate with Philmore 70-4200 series flat cable female connectors. Designed to be mounted on PC boards and available in either straight or right angle types. Drawn, 4 side .025" posts are industry standard and mate with nearly any brand of dual row female connectors on a .010" grid .

Contact surface is gold plated for maximum resistance to oxidation; carry current 3 amps. Terminal ends are tinned for solderability.

Straight Header Part No.	Right Angle Header Part No.	Number of Contacts	Straight Header Part No.	Right Angle Header Part No.	Number of Contacts
No. 70-4906		6	70-4926	70-5926	26
No. 70-4908		8	70-4930	70-5930	30
No. 70-4910	70-5910	10	70-4934	70-5934	34
No. 70-4912		12	70-4940	70-5940	40
No. 70-4914	70-5914	14	70-4950	70-5950	50
No. 70-4916	70-5916	16	70-4960	70-5960	60
No. 70-4920	70-5920	20	70-4962		62
No. 70-4924		24	70-4964		64

Straight Header

Right Angle Header
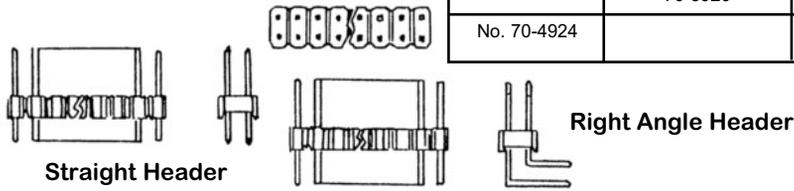
SHROUDED (PROTECTED) DUAL ROW HEADERS

Center Polarizing with Side Latches

These multiconductor headers are designed for use with female flat cable connectors, such as those in the Philmore 70-4200 series. Compatible with virtually all IDC specifications. Quick, secure connection/disconnection of multiline data cables. The contacts are completely protected by surrounding walls, or 'shrouding'. Side latches (removable) secure the mating female in place.

The contacts are standard .025" square posts. Contact areas are gold plated; the termination areas are tin-lead. Insulation material is a black thermoplastic, 94V-0 rated. Available in ten thru sixty contacts and in straight or right angle versions.

Right Angle Shrouded Header

Straight Shrouded Header
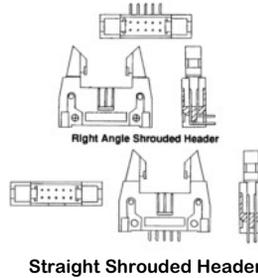
Straight Header Part No.	Right Angle Header Part No.	Number of Contacts
No. 70-4110	70-7110	10
No. 70-4114	70-7114	14
No. 70-4116	70-7116	16
No. 70-4120	70-7120	20
No. 70-4126	70-7126	26
No. 70-4130	70-7130	30
No. 70-4134	70-7134	34
No. 70-4140	70-7140	40
No. 70-4150	70-7150	50
No. 70-4160	70-7160	60

FLAT RIBBON CABLE

Easily Zippable, gray flat-cable has .050" (1.27mm) Center Spacing; No. 1 Conductor color stripped red. 28 AWG, 7 x 36 (7 x 0.127) Stranded Tinned Copper Conductors. 105ºC., Flame Retardant PVC Insulation. Voltage Rating: 300V. Insulation Resistance: 1 x 10 ohms/10 feet (3m). U.L. Style No. 2651, U.L. & CSA Approved.

.050"
(1.27mm)

.0354"
(.90mm)

Conductor	10 foot	25 foot	100 foot
9	No. 70-6009	No. 70-6209	No. 70-6109
10	No. 70-6010	No. 70-6210	No. 70-6110
14	No. 70-6014	No. 70-6214	No. 70-6114
15	No. 70-6015	No. 70-6215	No. 70-6115
16	No. 70-6016	No. 70-6216	No. 70-6116
20	No. 70-6020	No. 70-6220	No. 70-6120
24	No. 70-6024	No. 70-6224	No. 70-6124
25	No. 70-6025	No. 70-6225	No. 70-6125
26	No. 70-6026	No. 70-6226	No. 70-6126
34	No. 70-6034	No. 70-6234	No. 70-6134
36	No. 70-6036	No. 70-6236	No. 70-6136
40	No. 70-6040	No. 70-6240	No. 70-6140
50	No. 70-6050	No. 70-6250	No. 70-6150
60	No. 70-6060	No. 70-6260	No. 70-6160

10 ft. & 25 ft. are Display packed.
100 ft. in cardboard spool.

MULTI - CONTACT CONNECTORS D-SUB

Solder Type High-Density D-Subminiature Connectors

Hi-density types pack more contacts into the standard D-sub configuration. Solder cups are tinned for soldering. Contact areas are gold plated, resist corrosion. Steel shells and glass-fiber reinforced plastic insulator (UL94-V-0).

SPECIFICATIONS:
Current rating: 5 amps
Contact Resistance max: 10 milliohms
Insulation Resistance: 500 megohms

Pin Count	Male No.	Female No.
15	**HDP15**	**HDJ15**
26	**HDP26**	**HDJ26**
44	**HDP44**	**HDJ44**
62	**HDP62**	**HDJ62**
78	**HDP78**	**HDJ78**

Crimp-type High-Density D-SUBMINIATURE CONNECTORS

Higher density permits more circuits in the same size shell as D-Subs.; about an increase of 60%. Pins are supplied separately; be sure to order them as well as these shells. Crimp pins are crimped onto 22 or 24 AWG wire and then inserted into shell body, snapping in place.
Shells are steel, Insulator is glass-fiber reinforced plastic (UL94V-0).

SPECIFICATIONS:
Current rating: 5 amps
Contact Resistance max: 10 milliohms
Insulation Resistance: 500 megohms

NOTE: For bulk package, pins are not included and must be ordered separately.

Pin Count	Male Shell No.	Female Shell No.
15 Pin	**HDPC15**	**HDJC15**
26 Pin	**HDPC26**	**HDJC26**
44 Pin	**HDPC44**	**HDJC44**
62 Pin	**HDPC62**	**HDJC62**
78 Pin	**HDPC78**	**HDJC78**

CONTACT PINS for High-Density D-Sub Connectors
Gold plate contact areas, tinned on crimping areas, brass pins.

No. HDPP100 - Male pin-100 Pack
No. HDPP - Male pin - Bulk Pack
No. HDJP100 - Female pin-100 Pack
No. HDJP - Female pin- Bulk Pack

D-Subminiature Hoods (shells) for High-Density D-Subminiature Connectors

The grey plastic hoods are the most economical; made of a high impact and durable plastic. Die cast hoods are solid metal and the most costly type but provide RF/EMI shielding and are nearly indestructible. Metalized plastic hoods are silver in color and provide shielding at a lower cost than the die cast hoods. Finally, the black plastic hoods with captive thumb screws provide some convenience (the metalized plastic hoods also have captive thumb screws). All hoods are complete with assembly hardware. *Asterisk items have captive thumbscrews (picture above).

Note: Add "B" suffix to a number for bulk package

Size	Grey Plastic	Black Plastic	Metalized Plastic	Die Cast all-Metal
15	**HDE15**	**HDT15**	**HDMT15**	**HDZ15**
26	**HDE26**	**HDT26**	**HDMT26**	**HDZ26**
44	**DE25**	-	**DS25**	**DZ25**
62	**DE37**	-	**DS37**	-
78	**DE50**	-	**DS50**	-

DB Connector Kits

The Philmore DB connector kits are available in both Crimp type & Solder type. Whether you need to move pins, jumper pins or disconnect some of the terminals will depend on which type you choose. All kits come with the connector shell which is metalized plastic for EMI / RFI shielding and GOLD Plated Pins.

Solder Type
No. 70-4450 DB9 (F) Kit
No. 70-4455 DB9 (M) Kit
No. 70-4460 DB15 (F) Kit
No. 70-4465 DB15 (M) Kit
No. 70-4440 HD15 (F) Kit
No. 70-4442 HD15 (M) Kit
No. 70-4470 DB25 (F) Kit
No. 70-4475 DB25 (M) Kit
No. 70-4444 HD26 (F) Kit
No. 70-4446 HD26 (M) Kit
No. 70-4480 DB37 (F) Kit
No. 70-4485 DB37 (M) Kit
No. 70-4490 DB50 (F) Kit
No. 70-4495 DB50 (M) Kit

Crimp Type
No. 70-6505 DB9 (M) Kit
No. 70-6510 DB9 (F) Kit
No. 70-6515 DB15 (M) Kit
No. 70-6520 DB15 (F) Kit
No. 70-6525 DB25 (M) Kit
No. 70-6530 DB25 (F) Kit

High Density D - Subminiature Crimping Tool

Hand held tool crimps High - Density D-sub pins (Male & Female). Also will work with Philmore locking connector pins (No. 70-4800). Has built-in wire cutter. **No. 63-603**

MULTI - CONTACT CONNECTORS D-SUB

Solder-type D-SUBMINIATURE CONNECTORS

Front

Back

Solder cup contacts are tinned for positive soldering of wire. Contact areas are gold plated. Steel shell with glass-fiber reinforced plastic insulators (UL94V-0).

SPECIFICATIONS:
Current rating: 5 amps
Contact Resistance max: 10 milliohms
Insulation Resistance: 500 megohms

Pin Count	Male Shell No.	Female Shell No.
9 Pin	**DP9**	**DJ9**
15 Pin	**DP15**	**DJ15**
25 Pin	**DP25**	**DJ25**
37 Pin	**DP37**	**DJ37**
50 Pin	**DP50**	**DJ50**

Ten Packs of the above D-Subminiature Connectors, display packages, excellent economy.

Pin Count	Male Shell No.	Female Shell No.
9 Pin	**DP9-10**	**DJ9-10**
15 Pin	**DP15-10**	**DJ15-10**
25 Pin	**DP25-10**	**DJ25-10**

D-SUBMINIATURE Crimping Tool

Simple hand tool for crimping D-Sub pins onto wire.

No. WS26

Crimp-type D-SUBMINIATURE CONNECTORS

Male shell indents assure positive contact, firm grip to mating female. Crimp contacts are precision formed brass; contact areas are gold plated and crimp areas are tinned. Typically used with 24 or 22 gauge wire.

Pins are not supplied with these shells when ordering in bulk, be sure to order them as well.

Note: Add "B" suffix to part number for bulk package.

Pin Count	Male Shell No.	Female Shell No.
9 Pin	**DPC9**	**DJC9**
15 Pin	**DPC15**	**DJC15**
25 Pin	**DPC25**	**DJC25**
37 Pin	**DPC37**	**DJC37**
50 Pin	**DPC50**	**DJC50**

CRIMP CONTACTS for the above D-sub connectors. Precision stamped contacts; extra tabs grip insulation. Accommodates wire 22 thru 28 AWG. Gold plated contact areas, tinned in crimp areas. Supplied on continuous, break-off strips.

Description	Part No.
Bulk Male Contact	**DPP**
Bulk Female Contact	**DJP**
100 Pack of Male Contacts	**DPP100**
100 Pack of Female Contacts	**DJP100**
25 Pack of Male Contacts	**DPP25**
25 Pack of Female Contacts	**DJP25**

D-Subminiature HOODS (Shells) with hardware.

Plastic —————— Diecast ——————

* Captive Thumbscrew ——————

Metalized plastic with side screw strain relief. ——————
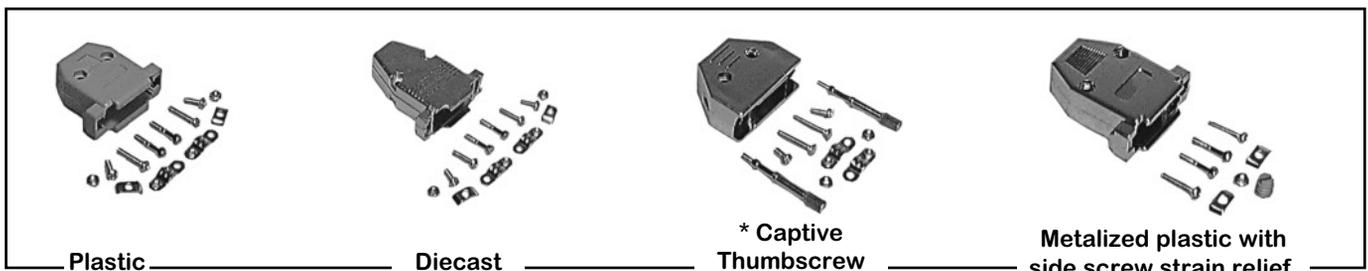
Pin Count	Plastic	Diecast	* Black Plastic	* Metalized Plastic	Metalized Plastic with side screw
9 Pin	DE9	DZ9	DT9**	DMT9**	DS9
15 Pin	DE15	DZ15	DT15	DMT15	DS15
25 Pin	DE25	DZ25	DT25	DMT25	DS25
37 Pin	DE37	-	-	-	DS37
50 Pin	DE50	-	-	-	DS50

Note: Add suffix Letter "B" to part number for bulk package.
** No. DT9 & DMT9 are for solder type D - Sub connectors only

MULTI - CONTACT CONNECTORS D-SUB

INSULATION DISPLACEMENT D-SUBMINIATURE CONNECTORS

FEATURES:
- 9, 15, 25 & 37 Male and Female available
- No exposed metal
- .050" offset contact spacing for standard flat "ribbon cable"
- Accepts 28 ga. solid, 30 ga. stranded
- Easily removable cable strain relief

SPECIFICATIONS:

Shell:	Thermoplastic
Insulator Resistance:	1000m ohm min. at DC 500V
Current Rating:	5 Amp
Number of Contact:	9, 15, 25, 37
Dielectric Strength:	1000V for 1 minute
Operating Temperature:	-55ºC - +105ºC
Pin Contact:	Phosphor Bronze Gold Plated over Nickel
Insulator:	PBT & 30% Glass Fiber (UL 94V-0)

MALE   FEMALE

Strain Relief
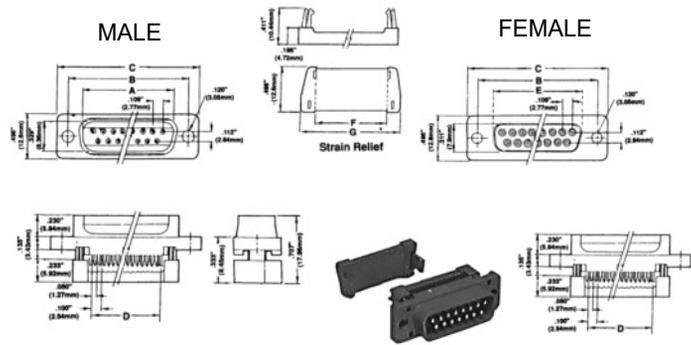
*NOTE: Metric dimensions in Parentheses								
		Dimension						
Part No.	Description	A	B	C	D	E	F	G
No. 70-4409	9 PIn Male	.666 (16.92)	.984 (24.99)	1.216 (30.89)	.400 (10.16)		.480 (12.19)	.759 (19.28)
No. 70-4410	9 Pin Female		.984 (24.99)	1.216 (30.89)	.400 (10.16)	.643 (16.33)	.480 (12.19)	.759 (19.28)
No. 70-4415	15 Pin Male	.944 (25.25)	1.312 (33.32)	1.541 (39.14)	.700 (17.78)		.780 (19.81)	1.087 (27.61)
No. 70-4416	15 Pin Female		1.312 (33.32)	1.541 (39.14)	.700 (17.78)	.971 (24.66)	.780 (19.81)	1.087 (27.61)
No. 70-4425	25 Pin Male	1.534 (38.96)	1.852 (47.04)	2.090 (53.09)	1.200 (30.48)		1.280 (35.51)	1.623 (41.22)
No. 70-4426	25 Pin Female		1.852 (47.04)	2.090 (53.09)	1.200 (30.48)	15.11 (38.38)	1.280 (35.51)	1.623 (41.22)
No. 70-4437	37 Pin Male	2.183 (55.45)	2.500 (63.50)	2.732 (69.39)	1.800 (45.72)		1.880 (47.75)	2.275 (57.78)
No. 70-4438	37 Pin Female		2.500 (63.50)	2.732 (69.39)	1.800 (45.72)	2.159 (54.84)	1.880 (47.75)	2.275 (57.78)

RIGHT ANGLE D-SUBMINIATURE P.C. MOUNT CONNECTORS

SPECIFICATIONS:

Shell:	Steel Tin Plated
Socket Contact:	Phosphor Bronze Gold Plated over Nickel
Insulator Resistance:	1000m ohm min. at DC 500V
Number of Contact:	9, 15, 25, 37
Current Rating:	5 Amp
Dielectric Strength:	1000V for 1 minute
Operating Temperature:	-55ºC - +105ºC
Insulator:	PBT & 30% Glass Fiber (UL 94V-0)

Designed for assembly to P.C. board when straight out application is desired. 9, 15, 25, & 37 Pin Male and Female available.

MALE   FEMALE
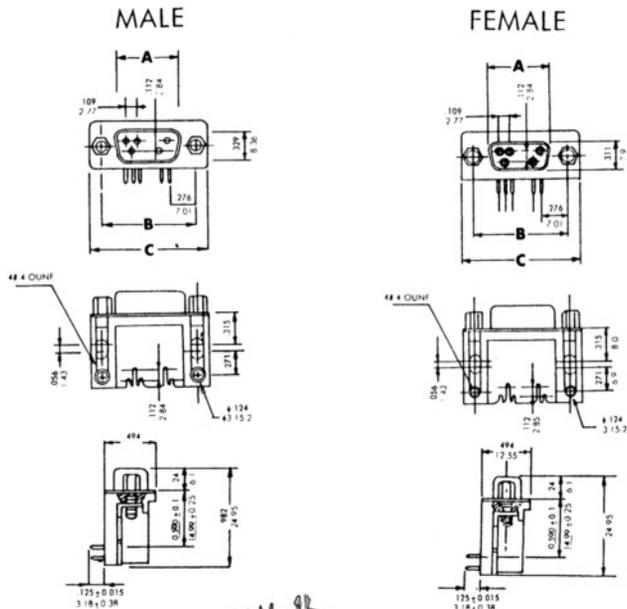
*NOTE: Metric dimensions in Parentheses				
		Dimension		
Part No.	Description	A	B	C
No. 70-4509	9 PIn Male	.666 (16.92)	.984 (24.99)	1.213 (30.81)
No. 70-4510	9 Pin Female	.643 (16.33)	.984 (24.99)	1.213 (30.81)
No. 70-4515	15 Pin Male	.944 (25.25)	1.312 (33.32)	1.541 (39.14)
No. 70-4516	15 Pin Female	.971 (24.66)	1.312 (33.32)	1.541 (39.14)
No. 70-4525	25 Pin Male	1.534 (38.96)	1.852 (47.04)	2.088 (53.04)
No. 70-4526	25 Pin Female	1.511 (38.38)	1.852 (47.04)	2.088 (53.04)
No. 70-4537	37 Pin Male	2.182 (55.42)	2.500 (63.50)	2.729 (69.32)
No. 70-4538	37 Pin Female	2.159 (54.84)	2.500 (63.50)	2.729 (69.32)

WIRE TO WIRE CONNECTORS

PIN and SOCKET CONNECTORS .062" Power Connector Housings

These UL Approved housings are rated UL 94V-2 and hold .062" (1.57mm) crimp terminals. For bulk; must order pins separately. For packaged; pins supplied with housing. Operating voltage 250V, 5A max. Color is natural. 24-20 AWG Wire
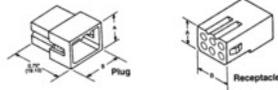
Package Size	Male Pins	Female Sockets
25 pieces	61-190	61-180
50 pieces	61-192	61-182
100 pieces	61-194	61-184
500 pieces	61-196	61-186

Display packaged are 2 housings per package with pins.

FREE HANGING PLUGS				PANEL MOUNTING PLUGS with MOUNTING EARS				FREE HANGING RECEPTACLES				PANEL MOUNTING RECEPTACLE w/MTG. EARS			
PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B
61-101	1	.30	-	61-122	2	.44	.30	61-141	1	.19	-	61-162	2	.34	.19
61-102	2	.44	.30	61-123	3	.59	.30	61-142	2	.34	.19	61-163	3	.48	.19
61-103	3	.59	.30	61-124	4	.74	.30	61-143	3	.48	.19	61-164	4	.63	.19
61-104	4	.74	.30	61-125	5	.89	.30	61-144	4	.63	.19	61-165	5	.78	.19
61-105	5	.69	.30	61-126	6	.44	.60	61-145	5	.78	.19	61-166	6	.34	.49
61-106	6	.44	.60	61-129	9	.59	.59	61-146	6	.34	.49	61-169	9	.49	.49
61-109	9	.59	.59	61-132	12	.74	.59	61-149	9	.49	.49	61-172	12	.63	.49
61-112	12	.74	.59					61-152	12	.63	.49				

PIN and SOCKET CONNECTORS .093" Power Connector Housings

Same as the 0.062" series except holds .093" crimp terminals. Molded of natural nylon rated UL94V-2. For bulk; must order pins separately. For packaged; pins supplied with housing. Operating voltage 250V, 12A max. 24-20AWG Wire.
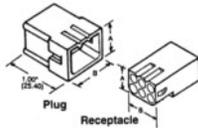
Package Size	Male Pins	Female Sockets
25 pieces	61-280	61-290
50 pieces	61-282	61-292
100 pieces	61-284	61-294
500 pieces	61-286	61-296

Display packaged are 2 housings per package with pins.

FREE HANGING PLUGS				PANEL MOUNTING PLUGS with MOUNTING EARS				FREE HANGING RECEPTACLES				PANEL MOUNTING RECEPTACLE w/MTG. EARS			
PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B	PART No.	Circuits	Dim. (In.) A	B
61-201	1	-	.36	61-222	2	.64	.35	61-241	1	-	.23	61-262	2	.54	.25
61-202	2	.64	.35	61-223	3	.77	.34	61-242	2	.54	.25	61-263	3	.67	.24
61-203	3	.77	.34	61-224	4	.97	.34	61-243	3	.67	.24	61-264	4	.87	.24
61-204	4	.97	.34	61-225	5	1.18	.34	61-244	4	.87	.24				
61-205	5	1.18	.34	61-226	6	.54	.73	61-245	5	1.07	.24	61-266	6	.43	.63
61-206	6	.54	.73	61-229	9	.77	.73	61-246	6	.43	.63	61-269	9	.67	.63
61-209	9	.77	.73	61-232	12	.98	.73	61-249	9	.67	.63	61-272	12	.87	.63
61-212	12	.96	.73	61-235	15	1.18	.73	61-252	12	.87	.63	61-275	15	1.07	.63
61-215	15	1.18	.73					61-255	15	1.07	.63				

3191 INTERNATIONAL .093" Connector Housing

This series is similar to regular .093" series except connectors feature positive locks and isolated terminals. For bulk; must order pins separately. For packaged; pins supplied with housing. 600V @ 12A maximum current.
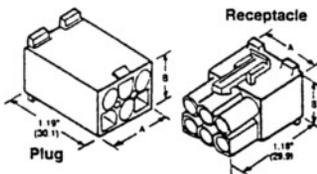
Display packaged are 2 housings per package with pins.

FREE HANGING PLUGS				PANEL MOUNTING PLUGS				FREE HANGING RECEPTACLES			
PART No.	Circuits	AMP/Circuits	Dim. (In.) A	B	PART No.	Circuits	AMP/Circuits	Dim. (In.) A	B	PART No.	Circuits	AMP/Circuits	Dim. (In.) A	B
61-302	2	12A	.58	.32	61-322	2	12A	.58	.32	61-342	2	12A	.56	.30
61-303	3	11A	.85	.32	61-323	3	11A	.85	.32	61-343	3	11A	.83	.30
61-304	4	9A	1.11	.32	61-324	4	9A	1.11	.32	61-344	4	9A	1.09	.30
61-306	6	9A	.85	.59	61-326	6	9A	.85	.59	61-346	6	9A	.83	.56
61-309	9	8A	.85	.87	61-329	9	8A	.85	.87	61-349	9	8A	.83	.83
61-312	12	7A	1.11	.87	61-332	12	7A	1.11	.87	61-352	12	7A	1.09	.83
					61-335	15	6A	1.39	.87	61-355	15	6A	1.37	.83

Ratchet Crimp Tool:

Full cycle Ratchet mechanism with Quick Release & Safety lock. Will crimp both .062" & .093" Male Pins & Female sockets.

No. 61-394

Pin Extraction Tools

These tools are designed for the extraction of pins from Philmore "61" Series housings. They are compatible with Molex® Housings.

PIN EXTRACTION TOOL

61-390 for .093 diameter pins
61-392 for .062 diameter pins

Combo Packs

Packages of one (1) each male & female free hanging housings plus pins.

Circuits	(Part No.) (.062 pins)	(Part No.) (.093 pins)	(Part No.) International (.093 pins)
1	61-401	61-501	N/A
2	61-402	61-502	61-702
3	61-403	61-503	61-703
4	61-404	61-504	61-704
5	61-405	61-505	N/A
6	61-406	61-506	61-706
9	61-409	61-509	61-709
12	61-412	61-512	61-712
15	N/A	61-515	N/A

37

TERMINAL BLOCKS & BARRIER STRIPS

EURO MAG TERMINAL BLOCKS
VERTICAL FEMALE DePLUGGABLE TERMINAL BLOCKS

These handy connectors are designed for quick and easy connection of wire to wire or wire to board configurations and are then unpluggable when needed and are equipped with a sturdy latch to prevent accidental disconnect. The wire entry is through the right side of the connector or vertical (right angle) to the mating connector.

Specifications:
Rating: 15A @ 300V
　　　　UL Listed & CSA Certified
Center Spacing: .2" (5.08 mm)
Wire Size: #12 - 22 AWG
Housing Material: Type 6/6 Polyamide 94VO
Screw Size: 3 mm X 5 mm Zinc Plated Steel

Operating Temperature: 105^OC (221^OF) max.
　　　　　　　　　　-40°C (-40°F) min.

Part Number	# Positions	Length
13-2502	2	10.16 mm
13-2503	3	15.24 mm
13-2504	4	20.32 mm
13-2505	5	25.40 mm
13-2506	6	30.48 mm
13-2508	8	40.64 mm
13-2510	10	50.80 mm
13-2512	12	60.96 mm
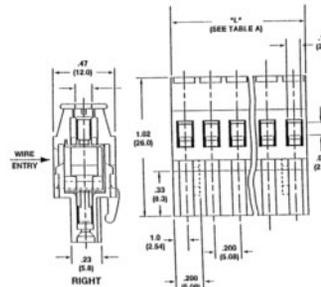
HORIZONTAL FEMALE DePLUGGABLE TERMINAL BLOCKS

These handy connectors are designed for quick and easy connection of wire to wire or wire to board configurations and are then unpluggable when needed and are equipped with a sturdy latch to prevent accidental disconnect. The wire entry is through the rear of the connector or horizontal (in line) to the mating connector.

Specifications:
Rating: 15A @ 300V
　　　　UL Listed & CSA Certified
Center Spacing: .2" (5.08 mm)
Wire Size: #12 - 22 AWG
Housing Material: Type 6/6 Polyamide 94VO
Screw Size: 3 mm X 5 mm Zinc Plated Steel

Operating Temperature: 105^OC (221^OF) max.
　　　　　　　　　　-40°C (-40°F) min.

Part Number	# Positions	Length
13-2602	2	10.16 mm
13-2603	3	15.24 mm
13-2604	4	20.32 mm
13-2605	5	25.40 mm
13-2606	6	30.48 mm
13-2608	8	40.64 mm
13-2610	10	50.80 mm
13-2612	12	60.96 mm

EURO MAG TERMINAL BLOCKS

DePluggable Printed Circuit Mount Male Header Sockets

These sockets are available in both Vertical & Horizontal configurations and mate with the 13-2500 and 13-2600 series. They have closed side bases and a mating latch to prevent accidental disconnection of the plugs.

PCB Layout

Vertical

PCB Layout
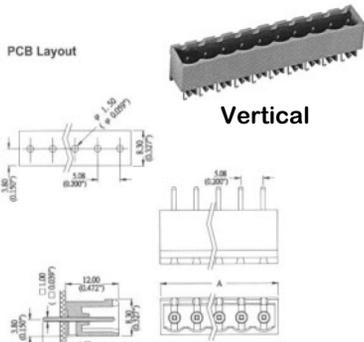
Horizontal

Specifications:
Rating: 15A @ 300V
    UL Listed & CSA Certified
Center Spacing: .2" (5.08 mm)
Contact Material: Tin Plated Brass
Housing Material: Type 6/6 Polyamide 94VO
Recommended PC Hole size: .055" (1.40 mm)
    use #55 drill bit Philmore # 12-552

Operating Temperature: 105°C (221°F) max.
    -40°C (-40°F) min.
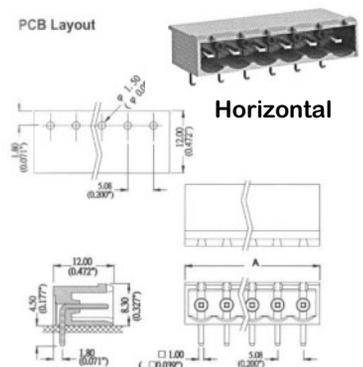
Vertical Mount

Part Number	# Positions	Length (A)
13-2702	2	11.76 mm
13-2703	3	16.84 mm
13-2704	4	21.92 mm
13-2705	5	27.00 mm
13-2706	6	32.08 mm
13-2708	8	42.24 mm
13-2710	10	52.40 mm
13-2712	12	62.56 mm

Horizontal Mount

Part Number	# Positions	Length (A)
13-2802	2	11.76 mm
13-2803	3	16.84 mm
13-2804	4	21.92 mm
13-2805	5	27.00 mm
13-2806	6	32.08 mm
13-2808	8	42.24 mm
13-2810	10	52.40 mm
13-2812	12	62.56 mm

EURO STYLE BARRIER STRIP

These Euro style barrier strips are available in several sizes depending on your carry current needs. They are cutable to almost any desired length. These terminal blocks are available in 20A, 30A, 35A, and 50A versions.

Description:
Base: With 1.2 - 2.5mm raised base
Housing Material: Polyamide 66 (Nylon 66), UL 94V-2

Temperature Rating: 105°C (UL), -30°C to 110°C (VDE)
Terminal Insert: Brass metal alloy, nickel plated
Screw: Zinc plated

Model	Clamping Area	Wire Range (Cu, AWG)	Screw	Unit	A	B	C	D	E	F	U.S.A. c UL us
13-1208	2.5mm²	22-12 Sol/Str	M2.6x5	(mm)	96.20	17.00	14.50	8.00	2.90	2.8 ± 0.1	600V 20 AMP
				(inch)	3.79	0.67	0.57	0.32	0.11	0.11	
13-1210	4.0mm²	22-10 Sol 14-10 Str	M3.0x6	(mm)	117.5	20.20	17.00	10.00	3.60	3.4 ± 0.1	600V 30 AMP
				(inch)	4.63	0.80	0.67	0.39	0.14	0.13	
13-1216	6.0mm²	22-10 Sol/Str	M3.5x7	(mm)	140.7	23.80	19.00	12.00	3.90	4.2 ± 0.1	600V 35 AMP
				(inch)	5.40	0.94	0.75	0.47	0.15	0.15	
13-1232	10.0mm²	20-8 Sol/Str	M4.0x9	(mm)	158.0	25.60	25.20	13.50	4.40	5.0 ± 0.1	600V 50 AMP
				(inch)	6.22	1.01	0.99	0.53	0.17	0.19	
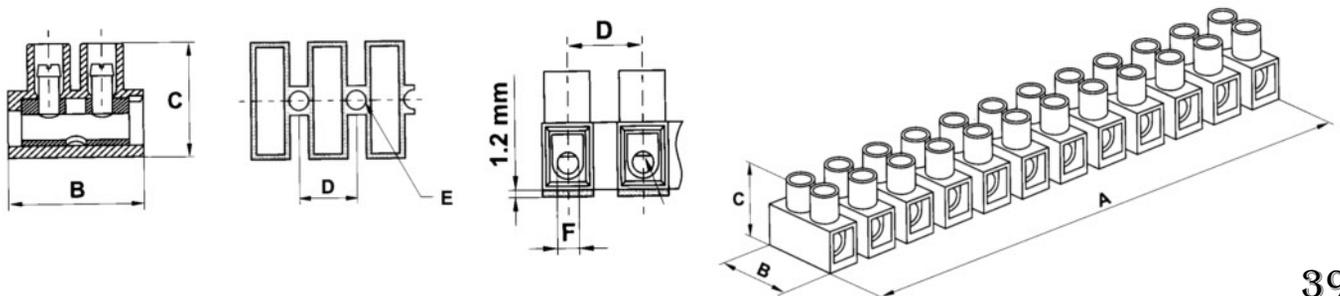
Dimensions (mm / inch)

TERMINAL BLOCKS & BARRIER STRIPS

30 Amp Dual Row Terminal Blocks

Specifications:

Rating: 30A, 300V
Center Spacing: .375" or 3/8" (9.52 mm)
Wire Range: #14-22 AWG CU
Screw Size: #6-32 philslot screws
Torque Rating: 9 in-lb
Distance Between Barriers: .30" (7.62 mm)
Mounting: #6 screws

Operating Temperature: 130°C (266°F) Max.

-40°C (-40°F) Min.

Materials: Molded base: Black, UL rated 94VO thermoplastic

Terminal plating: Tin over brass; Screws: Zinc plated steel
Breakdown Voltage: 3600V
Agency Information: UL/CSA; IEC Compliance; CE Certified

Inches (mm)
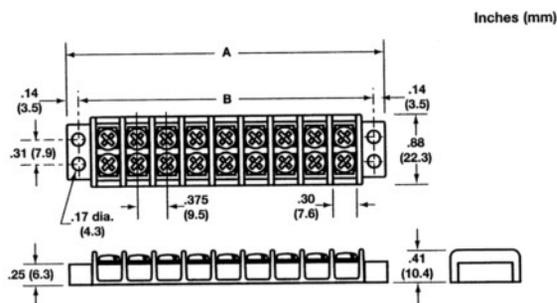
Part Number	No. Poles	"A" dim.	"B" dim.
13-1402	2	1.40"	1.12"
13-1403	3	1.78"	1.50"
13-1404	4	2.16"	1.88"
13-1405	5	2.53"	2.25"
13-1406	6	2.90"	2.62"
13-1407	7	3.28"	3.00"
13-1408	8	3.66"	3.38"
13-1409	9	4.03"	3.75"

Part Number	No. Poles	"A" dim.	"B" dim.
13-1410	10	4.40"	4.12"
13-1412	12	5.16"	4.88"
13-1414	14	5.90"	5.62"
13-1416	16	6.66"	6.38"
13-1418	18	7.40"	7.12"
13-1420	20	8.16"	7.88"
13-1422	22	8.90"	8.62"

Heavy Duty 30 Amp Dual Row Terminal Blocks

Specifications:

Rating: 30A, 300V
Center Spacing: .437" or 7/16" (9.52 mm)
Wire Range: #12-22 AWG CU
Screw Size: #6-32 philslot screws
Torque Rating: 9 in-lb
Distance Between Barriers: .353" (8.97 mm)
Mounting: #6 screws

Operating Temperature: 130°C (266°F) Max.

-40°C (-40°F) Min.

Materials: Molded base: Black, UL rated 94VO thermoplastic
Terminal plating: Tin over brass; Screws: Zinc plated steel
Breakdown Voltage: 4800V
Agency Information: UL/CSA; IEC Compliance; CE Certified

Inches (mi
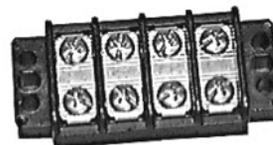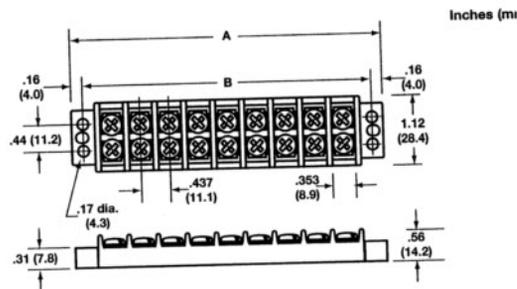
Part Number	No. Poles	"A" dim.	"B" dim.
13-1502	2	1.63"	1.31"
13-1503	3	2.07"	1.75"
13-1504	4	2.51"	2.18"
13-1505	5	2.94"	2.62"
13-1506	6	3.38"	3.06"
13-1507	7	3.82"	3.50"
13-1508	8	4.25"	3.93"
13-1509	9	4.69"	4.37"

Part Number	No. Poles	"A" dim.	"B" dim.
13-1510	10	5.13"	4.81"
13-1512	12	6.00"	5.68"
13-1514	14	6.87"	6.56"
13-1516	16	7.75"	7.43"
13-1518	18	8.62"	8.31"
13-1520	20	9.50"	9.18"
13-1522	22	10.37"	10.06"

TERMINAL BLOCKS & BARRIER STRIPS

30 Amp Dual Row Terminal Blocks

Specifications:

Rating: 30A, 600V
Center Spacing: .562" or 9/16" (14.28 mm)
Wire Range: #8-22 AWG CU
Screw Size: #8-32 philslot screws
Torque Rating: #8 screws 16 in-lb
Distance Between Barriers: .41" (10.5 mm)
Mounting: #8 screws

Operating Temperature: 130°C (266°F) Max.
  -40°C (-40°F) Min.
Materials: Molded base: Black, UL rated 94VO thermoplastic
Terminal plating: Tin over brass; Screws: Zinc plated steel
Breakdown Voltage: 7500V
Agency Information: UL/CSA; IEC Compliance; CE Certified
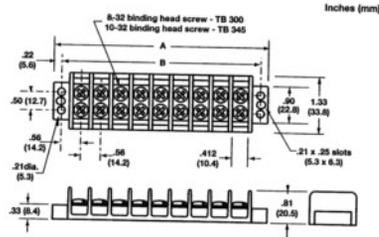
Part Number	No. Poles	"A" dim.	"B" dim.
13-1602	2	2.13"	1.69"
13-1603	3	2.69"	2.25"
13-1604	4	3.25"	2.81"
13-1605	5	3.81"	3.37"
13-1606	6	4.37"	3.94"
13-1607	7	4.94"	4.50"
13-1608	8	5.50"	5.06"
13-1609	9	6.06"	5.62"
13-1610	10	6.62"	6.19"
13-1612	12	7.75"	7.31"

75 Amp Dual Row Terminal Blocks

Specifications:

Rating: 75A, 600V
Center Spacing: .687" or 11/16" (17.45 mm)
Wire Range: #6-14 AWG CU
Screw Size: #10-32 philslot screws
Torque Rating: 20 in-lb
Distance Between Barriers: .56" (14.3 mm)
Mounting: #10 screws

Operating Temperature: 130°C (266°F) Max.
  -40°C (-40°F) Min.
Materials: Molded base: Black, UL rated 94VO thermoplastic
Terminal plating: Tin over brass; Screws: Zinc plated steel
Breakdown Voltage: 7500V
Agency Information: UL/CSA; IEC Compliance; CE Certified
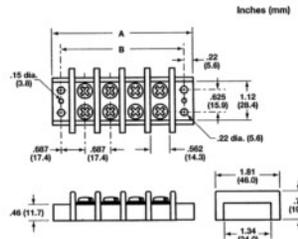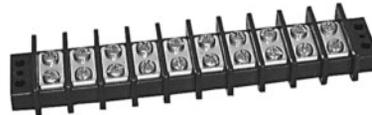
Part Number	No. Poles	"A" dim.	"B" dim.
13-1702	2	2.51"	2.06"
13-1703	3	3.20"	2.75"
13-1704	4	3.89"	3.44"
13-1705	5	4.58"	4.13"
13-1706	6	5.26"	4.81"
13-1707	7	5.95"	5.50"
13-1708	8	6.64"	6.19"
13-1709	9	7.33"	6.88"
13-1710	10	8.01"	7.56"
13-1712	12	9.39"	8.94"

Barrier Strip Hardware

13-1400 Series

Part Number
13-1450 (25 per pack)
  Single Flat Q.D. Tab .187"
13-1450C (100 per pack)

13-1451 (25 per pack)
  Single 45° Q.D. Tab .187"
13-1451C (100 per pack)

13-1452 (25 per pack)
  Dual Flat Q.D. Tab .187"
13-1452C (100 per pack)

13-1453 (25 per pack)
  Dual 45° Q.D. Tab .187"
13-1453C (100 per pack)

13-1455 (25 per pack)
  Slip-on Barrier Jumper
13-1455C (100 per pack)

13-1500 Series

Part Number
13-1550 (25 per pack)
  Single Flat Q.D. Tab .250"
13-1550C (100 per pack)

13-1551 (25 per pack)
  Single 45° Q.D. Tab .250"
13-1551C (100 per pack)

13-1552 (25 per pack)
  Dual Flat Q.D. Tab .250"
13-1552C (100 per pack)

13-1553 (25 per pack)
  Dual 45° Q.D. Tab .250"
13-1553C (100 per pack)

13-1555 (25 per pack)
  Slip-on Barrier Jumper
13-1555C (100 per pack)

41

VIDEO ADAPTOR SYSTEM

999 CONNECTOR ADAPTOR KIT

Never be without the right adaptor. This kit allows user to make up any combination of TNC, UHF, Mini-UHF, SMA, BNC, "N" TYPE, "F" and RCA adaptor. 136 adaptor combinations possible.

.GOLD PLATED BODY
.GOLD PLATED CONTACTS
.TEFLON INSULATION

KIT INCLUDES 2 EACH MALE AND FEMALE FITTINGS AND 8 ADAPTOR FITTINGS. TOTAL 40 Pcs.

THE FOLLOWING ADAPTOR COMBINATIONS CAN BE MADE FROM **No. 999 KIT**

N Male to N Male (1)	Mini UHF Male/SMA Female (2)	BNC Male to BNC Female (2)	UHF Female to UHF Female (1)
N Male to N Female (2)	Mini UHF Male to TNC Male (2)	BNC Male to F Male (2)	UHF Female/Mini UHF Female (2)
N Male to UHF Male (2)	Mini UHF Male/TNC Female (2)	BNC Male to F Female (2)	UHF Female to SMA Female (2)
N Male to UHF Female (2)	Mini UHF Male to BNC Male (2)	BNC Male to RCA Male (2)	UHF Female to TNC Female (2)
N Male to Mini UHF Male (2)	Mini UHF Male/BNC Female (2)	BNC Male to RCA Female (2)	UHF Female to BNC Female (2)
N Male to Mini UHF Female (2)	Mini UHF Male to F Male (2)	BNC Male to N Female (2)	UHF Female to F Female (2)
N Male to SMA Male (2)	Mini UHF Male to F Female (2)	BNC Male to UHF Female (2)	UHF Female/RCA Female (2)
N Male to SMA Female (2)	Mini UHF Male to RCA Male (2)	BNC Male/Mini UHF Female (2)	Mini UHF Female/Mini UHF Female (1)
N Male to TNC MALE (2)	Mini UHF Male/RCA Female (2)	BNC Male to SMA Female (2)	Mini UHF Female/SMA Female (2)
N Male to TNC Female (2)	Mini UHF Male to N Female (2)	BNC Male to TNC Female (2)	Mini UHF Female/TNC Female (2)
N Male to BNC Male (2)	Mini UHF Male/UHF Female (2)	F Male to F Male (1)	Mini UHF Female/BNC Female (2)
N Male to BNC Female (2)	SMA Male to SMA Male (1)	F Male to F Female (2)	Mini UHF Female/F Female (2)
N male to F Male (2)	SMA Male to SMA Female (2)	F Male to RCA Male (2)	Mini UHF Female/RCA Female (2)
N Male to F Female (2)	SMA Male to TNC Male (2)	F Male to RCA Female (2)	SMA Female to SMA Female (1)
N Male to RCA Male (2)	SMA Male to TNC Female (2)	F Male to N Female (2)	SMA Female to TNC Female (2)
N Male to RCA Female (2)	SMA Male to BNC Male (2)	F Male to UHF Female (2)	SMA Female to BNC Female (2)
UHF Male to UHF Male (2)	SMA Male to BNC Female (2)	F Male/Mini UHF Female (2)	SMA Female to F Female (2)
UHF Male to UHF Female (2)	SMA Male to F Male (2)	F Male to SMA Female (2)	SMA Female to RCA Female (2)
UHF Male to N Female (2)	SMA Male to F Female (2)	F Male to TNC Female (2)	TNC Female to TNC Female (1)
UHF Male to Mini UHF Male (2)	SMA Male to RCA Male (2)	F Male to BNC Female (2)	TNC Female to BNC Female (2)
UHF Male to Mini UHF Female (2)	SMA Male to RCA Female (2)	RCA Male to RCA Male (1)	TNC Female to F Female (2)
UHF Male to N Male (2)	SMA Male to N Female (2)	RCA Male to RCA Female (2)	TNC Female to RCA Female (2)
UHF Male to SMA Male (2)	SMA Male to UHF Female (2)	RCA Male to N Female (2)	BNC Female to BNC Female (1)
UHF Male to SMA Female (2)	SMA Male/Mini UHF Female (2)	RCA Male to UHF Female (2)	BNC Female to F Female (2)
UHF Male to TNC Male (2)	TNC Male to TNC Male (1)	RCA Male/Mini UHF Female (2)	BNC Female to RCA Female (2)
UHF Male to TNC Female (2)	TNC Male to TNC Female (2)	RCA Male to SMA Female (2)	F Female to F Female (1)
UHF Male to BNC Male (2)	TNC Male to BNC Male (2)	RCA Male to TNC Female (2)	F Female to RCA Female (2)
UHF Male to BNC Female (2)	TNC Male to BNC Female (2)	RCA Male to BNC Female (2)	RCA Female to RCA Female (1)
UHF Male to F Male (2)	TNC Male to F Male (2)	RCA Male to F Female (2)	
UHF Male to F Female (2)	TNC Male to F Female (2)	N Female to N Female (1)	
UHF Male to RCA Male (2)	TNC Male to RCA Male (2)	N Female to UHF Female (2)	
UHF Male to RCA Female (2)	TNC Male to RCA Female (2)	N Female/Mini UHF Female (2)	
Mini UHF Male/Mini UHF Male (1)	TNC Male to N Female (2)	N Female to SMA Female (2)	
Mini UHF Male/Mini UHF Female (2)	TNC Male to UHF Female (2)	N Female to TNC Female (2)	
Mini UHF Male to SMA Male (2)	TNC Male/Mini UHF Female (2)	N Female to BNC Female (2)	
	TNC Male to SMA Female (2)	N Female to F Female (2)	
	BNC Male to BNC Male (1)	N Female to RCA Female (2)	

For complete kit in zipper carrying case - Order NO.999
For individual replacement parts for kit order as follows:

Part No.	Description	Part No.	Description	Part No.	Description
999-5	N MALE	999-35	SMA MALE	999-65	F MALE
999-10	N FEMALE	999-40	SMA FEMALE	999-70	F FEMALE
999-15	UHF MALE	999-45	TNC MALE	999-75	RCA MALE
999-20	UHF FEMALE	999-50	TNC FEMALE	999-80	RCA FEMALE
999-25	Mini - UHF MALE	999-55	BNC MALE	999-85	COUPLER
999-30	Mini - UHF FEMALE	999-60	BNC FEMALE		

Also available - 18" adaptor cable with 999 coupler on each end
RG59/U CABLE - ORDER No. 999-90
RG58/U CABLE - ORDER No. 999-95

Note: Unless otherwise stated, all items are Nickel Plated

CRIMP-TYPE "F" CONNECTOR
1/4" Crimping ring

Wire Type	Plating	Part No.
RG59/U	Tin	FC65
RG59/U	Gold	FC65G
RG59/U	Tin	FC65-50*
RG6/U	Tin	FC56
RG6/U	Tin	FC56-50*

*asterisk items are 50 piece display pack.

Crimp Rings
1/4" Rings for above Connectors.

For Connector	Crimp Ring Part No.
No. FC65	No. R65B
No. FC56	No. R56B

Order rings in increments of 100, bulk packed.

CRIMP-TYPE "F" CONNECTOR
Attached Ring.

Wire Type	Part No.
RG59/U	FC65A
RG59/U	FC65A-50*
RG6/U	FC56A
RG6/U	FC56A-50*

* asterisk items are 50 piece display pack.

Weather Proof "F" Connector for RG6/U

One piece, High Quality "F" Connector.
Brass and Cadmium Plated.

No. FCW6 - With rubber "O" ring
No. FCW6A - With rubber "O" ring and silicone gel for maximum protection against harsh environments.

SOLDERLESS TWIST-ON "F" CONNECTORS

Wire type	Plating	Part No.
RG59/U	Gold Plated	FCG59C
RG6/U	nickel plated	FC59A
RG6/U	50-pack of above	FC59A-50
RG6/U	Gold Plated	FCG59A
RG59/U	Nickel plated	FC59C
RG59/U	50-pack of above	FC59C-50
RG59	for Belden 8281	FC59N
RG6/QUAD	for quad shield	FC59Q

FOIL SHIELD CRIMP-ON "F" CONNECTORS
Suitable for all wires but a longer crimping ferrule is meant especially for cables with a foil type shield.

Wire Type	Part No.
RG59/U	FC57
RG6/U	FC57A
RG6 Teflon/Plenum	FC86
RG6/U Quad Shield	FC88
50-pack of FC57	FC57-50
50-pack of FC57A	FC57A-50

CRIMP - ON "F" CONNECTOR FOR RG 11/U

No. FC11

(Recommended Crimping Tool No. WS29)

Foil Shield Crimp-On "F" Connectors
Wider Hex, for easy installations
Brass material, Nickel plated

Wire Type	Part No.
RG59/U	FCD57
RG6/U	FCD57A

Push-On
Male "F" for RG59/U with separate 1/4" crimping ring.
No. FC80

"F"-Type GROUND BLOCK
In line ground with females on each end and ground connecting screw.
No. FC55

DUAL "F" GROUND BLOCK
for two lines, females on each end, with mounting screws.
No. FC25

TWIST-ON PUSH-ON "F" CONNECTOR
For RG59/U cable.
No. FC58A

Female "F" TERMINATOR
75 ohms; to eliminate reflections.
No. FC2 - half watt terminator

10 Pack "F" CONNECTORS

Common crimp type and twist-on type "F" connectors for both RG59/U and RG6/U. Both are packaged in an attractive space saving blister card
(2-7/8" x 3-3/4"). Blister cards are printed with a full description and clear terminating instructions on back of card.

Crimp Type with attached ring	Twist-on type	Crimp type with 1/4" crimping ring	Weather proof	Crimp type with attached ring	Female coupler

Part Number	Description	Wire Type	Part Number	Description	Wire Type
No. 48-800	Crimp type with 1/2" attached ring	RG59/U	No. 48-830	Crimp type - weather proof	RG6/U
No. 48-805	Crimp type with 1/2" attached ring	RG6/U	No. 48-825	Crimp type with attached crimping ring	RG59/U
No. 48-810	Twist-on type with long barrel	RG59/U	No. 48-855	Crimp type with attached crimping ring	RG6/U
No. 48-815	Twist-on type with long barrel	RG6/U	No. 48-840	Gold plated twist-on type	RG59/U
No. 48-820	Crimp type with 1/4" crimping ring	RG59/U	No. 48-845	Gold plated crimp type w 1/4" crimping ring	RG59/U
No. 48-850	Crimp type with 1/4" crimping ring	RG6/U	No. 48-860	"F" female coupler (F-81) with nut & washer	

43

PRO-CRIMP "F" CONNECTORS

For the perfect hex crimp every time. The PRO-Crimp "F" connectors have a machined hex crimp barrel surface that will provide a professional looking crimp every time used. Use of the Philmore No. WS29 crimp tool is recommended, but any hex crimp tool with a diameter of 0.358" will accomplish the task. These PRO-Crimp "F" connectors have the added bonus of an internal "O" ring to keep out the effects of harsh environment without the need of the messy gel found in other weather proof connectors. The PRO-Crimp "F" connectors feature a wider hex ring for a smoother look and ease of connection, to the point of being able to use a hex wrench for tightening. The PRO-Crimp "F" connectors are available with nickel or gold plate finishes and in sizes for RG59/U, RG6/U and RG6/U quad shield cables.

Part Number	Qty. / Pkg.	Wire Size/Type	Plating/Finish
No. FC759	4	RG59/U	Nickel
No. FCG759	4	RG59/U	Gold
No. FC756	4	RG6/U	Nickel
No. FCG756	4	RG6/U	Gold
No. FC766	4	RG6/U Quad Shield	Nickel
No. FCG766	4	RG6/U Quad Shield	Gold

These connectors are available in bulk, just add the letter "B" to the end of the part number.

Note: We recommend using the Philmore No. WS29 crimp tool for these connectors. This crimp tool will also crimp RG11/U (0.476" hex) and RG59/U - RG6/U (0.358" hex).

ADJUSTABLE PROFESSIONAL COMPRESSION CONNECTOR TOOL

Features

Heavy-duty Steel Construction
Hand adjustment for different
  length connectors
Works with: Augat, T&B Snap-N-Seal[tm], Paladin
  SealTite, and AIM CATV F
  weatherproof connectors

No. **63-512** Professional Compression Tool for "F", BNC, & RCA

T-TOOL

Easy assembly of screw-on or regular "F"connectors. Great finger saver for assembly of twist-on or regular crimp-on "F" connectors. Just assemble "F" connector by threading on to T-TOOL, then assemble connector.

No. WS70

The PRO-Crimp "F" Environment Rubber Seal

This 3/8" wide rubber seal will protect the PRO-Crimp "F" connectors from harsh environment when placed over the screw-on connection point of the "F" connector and jack. Just slip over the jack and connect the cable plug in the normal manner. The seal will then cover the connection point, insulating from outside environments.
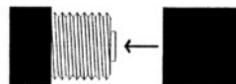
No. FC700 - 4 Pcs./Pkg

PROFESSIONAL HEX CRIMPING TOOL
with
TENSION ADJUSTMENT
for large O.D. Cable

Makes a perfect hex in "F" type and BNC connectors. Works for all Philmore PRO-Crimp "F" connectors, RG6/U Quad Shield, and RG11/U.

.476" 12.08mm	.358" 9.10mm

Tension Adjustment
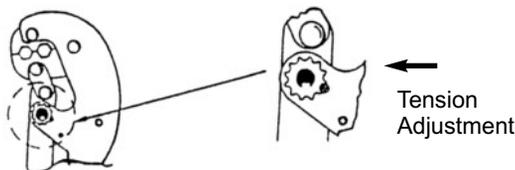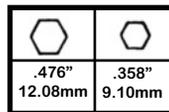
No. WS29 - Crimps RG59/U, RG6/U
  (Pro-Crimp F Connectors)
  and RG11/U

COMPRESSION CONNECTOR TOOL

This tool is especially designed for installation of "F" style compression connectors. It works with the Philmore FC306, FC346, & FC359 as well as the LRC, Augat, T&B, Paladin, AIM and other compatible connectors.

No. 63-508

COMPRESSION TYPE CONNECTORS

Compression RCA MALE Connectors

RCA male connectors for Home Theatre, Digital Audio and Car Stereo applications. They work with the Philmore 63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use. They are color coded for easy identification.

Part Number
45-1359 RD   RCA (M) for RG59, Red Insulator, Nickel Plated
45-1359G RD   RCA (M) for RG59, Red Insulator, Gold Plated
45-1359 YL   RCA (M) for RG59, Yellow Insulator, Nickel Plated
45-1359G YL   RCA (M) for RG59, Yellow Insulator, Gold Plated
45-1359 WH   RCA (M) for RG59, White Insulator, Nickel Plated
45-1359G WH   RCA (M) for RG59, White Insulator, Gold Plated
45-1359 BU   RCA (M) for RG59, Blue Insulator, Nickel Plated
45-1359G BU   RCA (M) for RG59, Blue Insulator, Gold Plated
45-1359 GR   RCA (M) for RG59, Green Insulator, Nickel Plated
45-1359G GR   RCA (M) for RG59, Green Insulator, Gold Plated

Part Number
45-1306 RD   RCA (M) for RG6, Red Insulator, Nickel Plated
45-1306G RD   RCA (M) for RG6, Red Insulator, Gold Plated
45-1306 YL   RCA (M) for RG6, Yellow Insulator, Nickel Plated
45-1306G YL   RCA (M) for RG6, Yellow Insulator, Gold Plated
45-1306 WH   RCA (M) for RG6, White Insulator, Nickel Plated
45-1306G WH   RCA (M) for RG6, White Insulator, Gold Plated
45-1306 BU   RCA (M) for RG6, Blue Insulator, Nickel Plated
45-1306G BU   RCA (M) for RG6, Blue Insulator, Gold Plated
45-1306 GR   RCA (M) for RG6, Green Insulator, Nickel Plated
45-1306G GR   RCA (M) for RG6, Green Insulator, Gold Plated

Part Number
45-1364 RD   RCA (M) for RG6 Quad, Red Insulator, Nickel Plated
45-1364 YL   RCA (M) for RG6 Quad, Yellow Insulator, Nickel Plated
45-1364 WH   RCA (M) for RG6 Quad, White Insulator, Nickel Plated

Part Number
45-1374 RD   RCA (M) for RG174, Red Insulator, Nickel Plated
45-1374G RD   RCA (M) for RG174, Red Insulator, Gold Plated
45-1374 YL   RCA (M) for RG174, Yellow Insulator, Nickel Plated
45-1374G YL   RCA (M) for RG174, Yellow Insulator, Gold Plated
45-1374 WH   RCA (M) for RG174, White Insulator, Nickel Plated
45-1374G WH   RCA (M) for RG174, White Insulator, Gold Plated
45-1374 BU   RCA (M) for RG174, Blue Insulator, Nickel Plated
45-1374 G BU   RCA (M) for RG174, Blue Insulator, Gold Plated
45-1374 GR   RCA (M) for RG174, Green Insulator, Nickel Plated
45-1374G GR   RCA (M) for RG174, Green Insulator, Gold Plated

Rt. Angle Compression RCA MALE Connectors

RCA male connectors for Home Theatre, Digital Audio and Car Stereo applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use. They are color coded for easy identification.

Part Number
45-3507 RD Rt. Angle RCA (M) for RG59, Red Insulator, Nickel Plated
45-3507 YL Rt. Angle RCA (M) for RG59, Yellow Insulator, Nickel Plated
45-3507 WH Rt. Angle RCA (M) for RG59, White Insulator, Nickel Plated
45-3507 BU   Rt. Angle RCA (M) for RG59, Blue Insulator, Nickel Plated
45-3507 GR Rt. Angle RCA (M) for RG59, Green Insulator, Nickel Plated

Part Number
45-3607 RD Rt. Angle RCA (M) for RG6, Red Insulator, Nickel Plated
45-3607 YL Rt. Angle RCA (M) for RG6, Yellow Insulator, Nickel Plated
45-3607 WH Rt. Angle RCA (M) for RG6, White Insulator, Nickel Plated
45-3607 BU Rt. Angle RCA (M) for RG6, Blue Insulator, Nickel Plated
45-3607 GR Rt. Angle RCA (M) for RG6, Green Insulator, Nickel Plated

Compression In-line RCA FEMALE Connector

These RCA female connectors are great for Home Theatre, Digital Audio and Car Stereo applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use. They are color coded for easy identification.

Part Number
45-2107 RD   RCA (F) for RG59, Red Insulator
45-2107 YL   RCA (F) for RG59, Yellow Insulator
45-2107 WH   RCA (F) for RG59, White Insulator
45-2607 RD   RCA (F) for RG6, Red Insulator
45-2607 YL   RCA (F) for RG6, Yellow Insulator
45-2607 WH   RCA (F) for RG6, White Insulator

COMPRESSION "F" MALE CONNECTOR

These commercial grade snap-and-seal connectors are great for Cable Companies, Commercial Broadcast Networks, as well as Residential application where a high-reliability connector is needed. They are constructed of Tin Plated Brass and are fully weather sealed.

No. FC359 - RG59 Coaxial Cable (4 pack)
No. FC306 - RG6 Coaxial Cable (4 pack)
No. FC346 - RG6 Quad Shield Cable (4 pack)

Compression BNC MALE Connector

These BNC male connectors are great for Home Theater, and commercial video applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use.

45-980   BNC (M) for RG59
45-979   BNC (M) for RG58
45-992   BNC (M) for RG6
45-994   BNC (M) for RG6 Quad

Rt.Angle Compression BNC MALE Connector

These BNC male connectors are great for Home Theater, and commercial video applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use.

45-3959   Rt. Angle BNC (M) for RG59
45-3906   Rt. Angle BNC (M) for RG6

Compression BNC FEMALE

These BNC male connectors are great for Home Theater, and commercial video applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use.

45-2944 BNC (F) RG59
45-2945 BNC (F) RG6

These "F" male connectors are great for Home Theater, Digital Audio and Car Stereo applications. They work with the Philmore No.63-512 tool. The compression connector is a tough weather-tite connection that is easy for the consumer or installer to use.

Rt. Angle Compression "F" MALE

45-5759   "F" male RG59
45-5706   "F" male RG6

Compression In-line "F" FEMALE

45-6759   "F" (F) for RG59
45-6706   "F" (F) for RG6
45-6764   "F" (F) for RG6 Quad

Economy "F" Compression Tool

A handy compression connector tool. A patented design to work with "F" connectors for both RG59 & RG6 coaxial cables.

No. 63-505

Economy Adjustable Compression Tool

Hand adjustment for different length connectors. Philmore No. 63-514 will work with "F", BNC and RCA compression type connectors.

No. 63-514

"F" TYPE RF ADAPTORS & JACKS

F-Female to RCA Male

Nickel Plated
No. FC69

Gold Plated
No. FCG69

F-Female to UHF Male

No. FC71

1/8" Phone Plug Male to F Female

No. FC72

F-Female to RCA Female

No. FC74

F-Male to RCA Female

Nickel Plated
No. FC63

Gold Plated
No. FCG63

F-Male To RCA Female

Push-on type F-male
No. FC82

UHF Female to F-Male

No. FC68

F-Male to Male

No. FC73

F-Type Chassis Jack

Mounts in a 3/8" dia. hole in panels up to 1/4" thick. Center solder lug.

No. FC66

F-Female to Female (F-81)

May be panel mounted or used in line. Mounts in 3/8" hole in panels up to 1/8" thickness with washer and nut.

No. FC67 - Adaptor, Nickel Plated
No. 42-1081 - 1" long Adaptor, Nickel plated
No. 42-2000 - 2 GHz (White Insulation)
No. 48-860 - Ten Pack of FC67
No. FCG67 - Adaptor, Gold Plated
No. 42-1081G-1" long Adaptor, Gold plated
No. FC67R - 3GHz (Blue insulation)
No. FCG67R - 3GHz, Gold Plated

3 GHz F FEMALE to FEMALE (F-81)

F-81 high frequency application (up to 3000 MHz), mounts in 3/8" (.375") mounting hole. Overall length is 1", available in both Gold plated & Nickel plated. Precision machined threads, brass material. 75 ohms impedance, mounting hex nut is included.

No. FCG67R - Gold plated (package of 1)
No. FC67R - Nickel plated (package of 1)

F-Female to Female

Intended for inline usage to mate two male "F" type connectors.
No. FC64

F-Female to RCA Female

With hardware for panel mounting in 3/8" hole, or use inline.

No. FC75 - Standard Nickel Plated
No. FCG75 - Gold Plated, Yellow insulation

PCB Mount F-Female

Printed circuit board mounting.
No. FC54

"F" Push-On Adaptor

Female "F" connector to male push-on "F". Rapid connect/disconnect

No. FC62 - Nickel Plated
No. FC62-6 - Six Pack of FC62
No. FCG62 - Gold Plated

F-Type Push-On Right Angle Adaptor

F-female to male push-on.
No. FC70

F-Type Right Angle Adaptor

Male to female.
No. FC61

BNC Female to F Male

No. 958

BNC Female to F Push-on Male

No. 966

BNC Male to F Female

No. 960

BNC Female to F Female

No. 978

N Male to F Female

No. 717

N Female to F Male

No. 718

PAL EUROPEAN to "F" ADAPTORS

Pal Male to "F" Female
No. FP100

Pal Female to "F" Female
No. FP400

Pal Male to "F" Male
No. FP200

Pal Female to "F" Male
No. FP300

Note: All connectors on this page available in bulk--add (B) suffix when ordering

BNC MALE, 2-Piece

with fixed center pin.
Nickel plated body,
delrin insulator,
gold plated
center pin

(Display pack of 1; for bulk add a "B" suffix, e.g. 920B)

Wire Type	Part Number
RG59 & 62 PVC Jacket	**980**
RG59 & 62 Teflon Jacket	**920**
RG58/U	**979**
RG6/U	**929**

BNC MALE, 3-Piece

with separate
pin.Nickel plated body,
delrin insulator, gold
plated pins.

Wire Type	Package Quantity	Part Number
RG58/U PVC	One Per	**974**
RG58/U	Display Ten Pack	**974-10**
RG58A/U	One Per	**996**
RG58 Teflon	One Per	**997**
RG62 & RG59/U PVC	One Per	**973**
RG62 RG59/U	Display Ten Pack	**973-10**
RG59/U with Telflon	One Per	**998**
RG59/U with 20 ga. pin	One Per	**994**
RG6/U (.275" O.D.)	One Per	**989**
RG6/U (.275" O.D.)	Display Ten Pack	**989-10**
RG8X & mini 8	One Per	**926**
RG174, 179, 187, 188 & 316	One Per	**927**

BNC MALE, one-piece

with separate pin.
Nickel plated body,
delrin insulator, gold
plated center pin.
Packed 1 per blister; add "B" suffix for
bulk packaging.

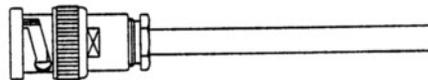| Wire Type	Part Number
RG58/U	**964**
RG59/U	**969NP**
RG6/U (.275 O. D.)	**988**

Right Angle, BNC MALE

Handy in tight
places.Conductors
attach via screw
connections.For
coax under .275"
Such as RG58, 59, 62, 6

No. 967

UG-88/U SCREW-CLAMP STYLE BNC MALE CONNECTOR
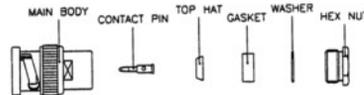
No. 954NP - For RG58/U
nickel plate, Delrin insulator
No. 961NP - For RG59/U
Nickel Plated, Delrin Insulator

No. 975 - For RG6/U
For commercial RG6/U cable such as
Belden type 9290 (dual braid, commercial
type) etc. For cables with O.D. .275" to
.290"

One-Piece, Crimp Type BNC Male with Insulating Boot.

Separate center pin.Quick and
weather tight.Nickel plated Brass,
gold plated center pin.

Wire Type	Part Number
RG59/U& RG62/U	**938**
RG58/U	**937**

BNC MALE RIGHT ANGLE

Crimp-on Two-piece connector for
RG59/U and RG62/U cables.

No. 980RA

BNC Center Contact Pins.
Bulk packed only.

Wire Type	Part Number
RG58/U	**RG58PIN**
RG59/U	**RG59PIN**
RG6	**RG6PIN**
RG58/A	**RG58APIN**
RG59 20 Ga.	**RG59LPIN**

BNC Crimping Rings
Bulk packed only.
This series of rings are all
1/2" in length.

Wire Type	Part Number
RG58	**RG58RING**
RG59	**RG59RING**
RG6	**RG6RING**

NOTE: All connectors on this page are available in bulk. Add "B" to part no. when ordering.

BNC ADAPTORS & CONNECTORS

Note: Unless otherwise stated, all items are Nickel Plated Brass with Delrin Insulators

BNC "T"Adaptor
Male to 2 Female

No. 956NP

BNC Female Both Ends
75 ohm

No. 959NP

BNC "T" Adaptor
3 Females

No. 981 - Silver Plated, Teflon Insulator
No. 981NP - Nickel Plated, Delrin Insulator

BNC "T" 3 Males

No. 930

BNC Dual Males

No. 976

BNC Male to Female Right Angle Adaptor

No. 953NP

BNC Male to RJ11 & Screw Terminals

No. 70-5002

BNC Female to RJ11 & Screw Terminals

No. 70-5004

BNC Terminator with Chain (.5W)
No. 931 - 75 ohms
No. 931L - 50 ohms
No. 931C - 93 ohms

FEMALE BNC CONNECTORS PCB Mount/Panel Mount BNC Female

No. 939

IN-LINE FEMALE BNC
Screw Clamp Mounting.

No. 946 - for RG59/U, RG62/U cable
No. 945 - for RG55/U, RG58/U cable

IN-LINE BNC FEMALE 3-Piece Crimp Type

No. 944 - for RG59/U, RG62/U cable
No. 943 - for RG55/U, RG58/U cable

BNC CHASSIS MOUNT FEMALE

No. 952NP - Nickel plated, Delrin Insulator
No. 952NP-10 - 10- Pack of No. 952NP

BNC FEMALE Isolated Chassis
Mount
No. 952RNP
"Isolated" chassis mount connector.
Mounting hole: 3/8"

BNC FEMALE Chassis Mount
Square flange mount, with mounting holes on 1/2" centers.
No. 948 - UG290 type, Silver plated, Teflon Insulator. Mounting holes tapped 3-56
No. 949 - Same as above but 1/8" mounting holes

BNC Terminator
BNC Male, 0.5 Watts.
Color Coded

No. 971 - 75 ohms
No. 971L - 50 ohms
No. 971C - 93 ohms

Chassis Mount FEMALE CRIMP CONNECTION
No. 936 - for RG59/U, RG62/U
No. 935 - for RG55/U, RG58/U

BNC FEMALE BULKHEAD CONNECTORS

BNC DUAL FEMALE Chassis Mount

No. 970A - Nickel plated and Delrin insulator
No. 970A-10 - Display 10-Pack of No. 970A

BNC TWIST-ON CONNECTORS

	RG58/U	RG62/U RG59/U
Male, fixed pin	No. 991	No. 982
Male, right angle	No.991RA	No.982RA
Female, in-line	No. 977	No. 984
Female, chassis Mnt.	No. 940	No. 941

	RG6/U	Belden 8281
Male, fixed pin	No. 983	No.987
Male, separate pin		No.986
Male, right angle	No.983RA	
Female, in-line	No. 985	
Female, chassis Mnt.	No. 942	

The following are 10-Packs of the above connectors in Display Packaging:
No. 982-10 - 10-Pack of 982
No. 983-10 - 10 Pack of 983
No. 991-10 - 10 Pack of 991

BNC Male Twist-on Connectors, For Teflon Wires Fixed Pin
Wire Type
No. 993 - RG58/U - Teflon Cables
No. 995 - RG59/U, RG62/U - Teflon Cables

48

NOTE: All connectors on this page are available in bulk. Add "B" to part no. when ordering.

Note: Unless otherwise stated, Adaptors are nickel plated with Delrin Insulators.

SMA Male to BNC Male

No. 11330

SMA Male to BNC Female

No. 11335

SMA Female to BNC Male

No. 11340

SMA Female to BNC Female

No. 11350

BNC Male to DUAL BANANA PLUGS

• Standard .750" center to center Banana plugs spacing
• .161" holes in body for side stacking

No. 2380

BNC Female to DUAL BANANA PLUGS

• Standard .750" center to center Banana plugs spacing
• .161" holes in body for side stacking

No. 2382

BNC Male to DUAL BINDING POST

• Standard .750" center to center Banana plugs spacing
• .161" holes in body for side stacking

No. 2390

BNC Female to DUAL BINDING POST

• Standard .750" center to center Banana plugs spacing
• .161" holes in body for side stacking

No. 2392

N Male to BNC Female

No. 724

Mini UHF Female to BNC Male

No. 588

Mini UHF Male to BNC Female

No. 590

TNC Male to BNC Female

No. 876

BNC Female to RCA Male

No. 957

BNC Female to "F" Male

No. 958

BNC Female to "F" Push-on Male

No. 966

BNC Female to 1/8" Phone Plug

No. 963

BNC Female to UHF Male

No. 950NP

BNC Female to UHF Female

No. 962

BNC Male to UHF Female

No. 951NP

BNC Male to RCA Female

No. 955

BNC Male to "F" Female

No. 960

BNC Female to "F" Female

No. 978

NOTE: All connectors on this page are available in bulk. Add "B" to part no. when ordering.

TWINAX / N TYPE CONNECTORS & ADAPTORS

TWINAX CONNECTORS

TWINAX CONNECTORS

Male for IBM cable type 7362211, Belden 8227 & 9207. Equal to Amphenol No. 82-5589 and IBM 736229.

No. 610 - Male Connector
No. 610B PIN - Extra Center Pins
No. 609 - Male Crimp Type w/cover

TWINAX FEMALE INLINE Connectors

No. 613

DUAL FEMALE ADAPTOR

Dual Female Adaptor Equivalent to Amphenol 82-5588 and IBM 7362230
No. 611

TWINAX FEMALE CONNECTORS CHASSIS

Solder Terminals w/ mounting Hardware Equivalent to Amphenol 82-5646 and IBM 7364498
No. 612

TWINAX DUAL FEMALE

Chassis Mount

No. 614

TWINAX "T" ADAPTOR

3 Females

No. 615

N TYPE CONNECTORS AND ADAPTORS

MALE N CONNECTORS

MALE N CONNECTOR

Clamp type with solder pin.

Mil equiv.	Cable Type	Part Number
UG-536B	RG58/U	**708**
UG-21B	RG8/U	**709**

N FEMALE IN-LINE CONNECTOR

Clamp-Type, Solderless

Mil. equiv.	Cable Type	Part Number
N/A	RG58/U	**710**
UG-23	RG8/U	**711**

N DUAL MALE ADAPTOR

Mil Equiv. UG-57B

No. 714

N FEMALE Chassis Mount

Mil Equiv. UG-58

No. 713

N DUAL FEMALE ADAPTOR

Mil Equiv. UG-29

No. 712

TNC MALE to N FEMALE ADAPTOR

No. 885

N RIGHT ANGLE MALE to FEMALE

Mil Equiv. UG-27B

No. 715

N RIGHT ANGLE MALE to MALE

No. 716

N MALE to F FEMALE ADAPTOR

No. 717

N FEMALE to F MALE ADAPTOR

No. 718

NOTE: All connectors on this page are available in bulk. Add "B" to part no. when ordering.

N TYPE / TNC CONNECTORS & ADAPTORS

N TYPE COAXIAL ADAPTORS

Note: Unless otherwise stated, all items are Nickel Plated Brass with Delrin Insulators

UHF FEMALE to N MALE ADAPTOR

No. 719

N FEMALE to UHF MALE ADAPTOR

No. 720

N MALE to BNC FEMALE ADAPTOR

No. 724

N Male to Mini UHF Female

No. 725

SMA MALE to N MALE ADAPTOR

No. 11320

SMA FEMALE to N MALE ADAPTOR

No. 11355

SMA MALE to N FEMALE ADAPTOR

No. 11360

TNC COAXIAL CONNECTORS

These weatherproof connectors stand up under severe vibration. 50 ohm impedance. Nickel plated brass with delrin insulators.

TWIST-ON SOLDERLESS CONNECTOR

TNC MALE TWIST-ON Solderless Connector

Part Number	Wire Type
865D	RG59/U& RG62/U
872D	RG58/U

TNC MALE CONNECTOR, Two Piece Crimp

Part Number	Wire Type
873D	RG59/U& RG62/U
874D	RG58/U

THREE PIECE CRIMP-ON

No. 860D - RG59/62
No. 861D - RG58/U
No. 859D - RG58/U - Black Finish
No. 862D - RG58/AU
No. 863D - RG59/62 - Teflon
No. 867D - RG58/U - Push-on type
No. 871D - RG174, 179, 187, 188 & 316

TNC FEMALE to Push-on TNC MALE ADAPTOR

No. 868D

Mini UHF Female to TNC Male

No. 582

Bulkhead Female Chassis Mount

No. 852D

Bulkhead Dual Female Splice

No. 870D

DUAL FEMALE ADAPTOR

No. 875D

Right Angle Adaptor, Male to Female

No. 853D

TNC Male to BNC Female

No. 876

TNC Male to UHF Female

No. 878

TNC Female to SMA Male

No. 880

TNC Female to UHF Male

No. 882

TNC Male to SMA Female

No. 884

Mini UHF Male to TNC Female

No. 574

NOTE: All connectors on this page are available bulk. Add "B" to part no. when ordering.

UHF CONNECTORS & ADAPTORS

Note: Unless otherwise stated, all items are Nickel Plated Brass with Delrin Insulators

UHF MALE CONNECTOR

Two-Piece crimp-on.

No. 562A - RG59/U Cable
No. 564A - RG58/U Cable

Type PL-259 MALE UHF CONNECTOR

For use with the following cables: RG8, 9, 10, 11, 12 and 13/U. For other cables, use with adaptors No. UG-175/U and No. UG176/U listed below.

No. PL259

REDUCER Adaptor for PL-259

Adapts No. PL259 for use with smaller I.D. cables.

Wire Type	Part Number
RG29, 55& RG58/U	UG175/U
RG17, 59, 62 & RG63/U	UG176/U

UHF Chassis Mount FEMALE Type S0239

No. SO239
Mounts in 5/8" dia. hole, screw holes are on 23/32" mounting centers.

UHF Chassis Mount FEMALE

No. 563A
Bushing mount with nut and washer.

UHF Right Angle Adaptor Male to Female

No. 551A

UHF "T" Adaptor 1 Male to 2 Female

No. 552A

UHF "T" Adaptor 3 Female

No. 554A

UHF Dual Female Adaptor Chassis or In-Line

No. 555A

Length: 2". Installs bulkheads up to 1-1/4" thick. Mounts in 5/8" hole. Continuously threaded and supplied with two nuts.

UHF Dual Female Adaptor In-Line Type PL-258

No. 553A

UHF Male to UHF Male

No. 565

UHF Male to Phono Jack Adaptor

No. 557A

UHF Female to Motorola / RCA Male Adaptors

No. 550A

Motorola Type plug will mate with either a Motorola jack or RCA phono jack.

UHF Female to SMA Female

No. 11347

SMA Male to UHF Female

No. 11370

UHF ADAPTORS

TNC Male to UHF Female

No. 878

TNC Female to UHF Male

No. 882

UHF Female to N Male

No. 719

N Female to UHF Male

No. 720

BNC Female to UHF Female

No. 962

"F" Female to UHF Male

No. FC71

UHF Female to "F" Male

No. FC68

SMA Male to UHF Male

No. 11325

SMA Female to UHF Male

No. 11345

NOTE: All connectors on this page are available bulk. Add "B" to part no. when ordering.

MINI UHF / SMA CONNECTORS & ADAPTORS

Note: Unless otherwise stated, all items are Nickel Plated Brass with Delrin Insulators.

MINI UHF

Crimp-on Male Connector
for RG58/U cable

No. 566

Mini UHF Male Crimp-on Black Finish
for RG58/U cable

No. 567

Mini UHF Female Crimp-on
for RG58/U cable

No. 568

Mini UHF Double Female

No. 572

Mini UHF Right Angle Female to Male

No. 576

Mini UHF 3 Female

No. 578

Mini UHF Chassis Mount Female

No. 580

Mini UHF Male to TNC Female

No. 574

Mini UHF Female to TNC Male

No. 582

Mini UHF Female to UHF Male

No. 584

N Male to Mini UHF Female

No. 725

Mini UHF Male to UHF Female

No. 586

Mini UHF Female to BNC Male

No. 588

Mini UHF Male to BNC Female

No. 590

SMA

SMA Male
Standard type

No. 11000 - 58A/U-141
No. 11001 - 59, 62, 210
No. 11002 - 174, 188, 316

SMA Female Crimp Type

No. 11200 - 58A/U-141
No. 11201 - 59, 62, 210
No. 11202 - 174, 188, 316

SMA Male Crimp Type

No. 11100 - 58A/U-141
No. 11101 - 59, 62, 210
No. 11102 - 174, 188, 316

TNC Female/SMA Male

No. 880

TNC Male SMA Female

No. 884

Double Male SMA

No. 11300

Double Female SMA

No. 11305

T ADAPTOR - 1 Male - 2 Female SMA

No. 11310

SMA Dual Chassis Mount

No. 11315

SMA Male to N Female

No. 11360

SMA Male to N Male

No. 11320

SMA Male to UHF Male

No. 11325

SMA Male to BNC Male

No. 11330

SMA Male to BNC Female

No. 11335

SMA Female to BNC Male

No. 11340

SMA Female to UHF Male

No. 11345

UHF Female to SMA Female

No. 11347

SMA Female to BNC Female

No. 11350

SMA Female to N Male

No. 11355

53

Note: All connectors on this page available in bulk - add (B) suffix when ordering.

MULTI-PIN MOBILE CONNECTORS

Multipin Mobile Connectors

Although these connectors are generically identified as microphone connectors, they are used in a wide variety of applications which require reliable, economical multi-pin connections, particularly for rugged mobile use. The positive screw-on retaining ring, & built-in strain relief, provide reliable contact under extremes of shock and vibration.
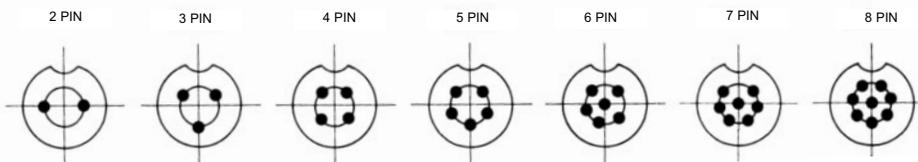
IN-LINE FEMALE   **MALE CHASSIS SOCKET**   **IN-LINE MALE**   **IN-LINE RIGHT ANGLE FEMALE**

SCREW-ON CAP

No. PCP2

Protective closure cap for chassis socket. 3 1/2" chain with eyelet clip for screw mounting.

| 2 PIN | 3 PIN | 4 PIN | 5 PIN | 6 PIN | 7 PIN | 8 PIN |

	2 PIN	3 PIN	4 PIN	5 PIN	6 PIN	7 PIN	8 PIN
In-Line Female	61-602	61-603	61-604	61-605	61-606	61-607	61-608
Male Chassis Socket	61-622	61-623	61-624	61-625	61-626	61-627	61-628
In-Line Male	61-632	61-633	61-634	61-635	61-636	61-637	61-638
Right Angle In-Line Female	61-612	61-613	61-614	61-615	61-616	61-617	61-618

MICROPHONE CONNECTORS & ADAPTORS

IN-LINE FEMALE

No. T600J - 3 Pin (XLR) in-line female

No. 44-602 - 4 Pin (XLR) in-line female

No. 44-608 - 5 Pin (XLR) in-line female

No. 45-690G - Gold plated, 3 Pin (XLR) in-line female

IN - LINE MALE

No. T600P - 3 Pin (XLR) in-line male

No. 44-600 - 4 Pin (XLR) in-line male

No. 44-604 - 5 Pin (XLR) in-line male

No. 45-692G - Gold plated, 3 Pin (XLR) in-line male

CHASSIS MOUNT FEMALE

No. F600J - 3 Pin (XLR) Panel mount female

No. 44-622 - 4 Pin (XLR) Panel mount female

No. 44-626 - 5 Pin (XLR) Panel mount female

No. 45-694G - Gold plated, 3 Pin (XLR) Panel mount female

CHASSIS MOUNT MALE

No. F600P - 3 Pin (XLR) Panel mount male

No. 44-620 - 4 Pin (XLR) Panel mount male

No. 44-624 - 5 Pin (XLR) Panel mount male

No. 45-696G - Gold plated, 3 Pin (XLR) Panel mount male

For bulk packing, add suffix "B" to the part number

FEMALE CONNECTOR

For cable connections with spring protector to prevent sharp bending of cable. Includes coupling ring. Brass, nickel plated. Single contact. Coupling ring is removable. Standard 5/8" - 27 thread.

No. 2317J
No. 2317JB BULK PACKAGED

3 PIN XLR ADAPTOR:

Use to extend length of microphone cables with 3 Pin male or female XLR connector or can be used as a gender changer.

No. 70-610
Male-Male

No. 70-620
Female-Female

3 Pin XLR To 1/4" Phono Adaptors

No. T630 - XLR Female to 1/4" (mono) Male
No. T650 - XLR Female to 1/4" (mono) Female
No. T640 - XLR Male to 1/4" (mono) Male
No. T660 - XLR Male to 1/4" (mono) Female
No. 44-114 - XLR Female to 1/4" (stereo) Male
No. 44-118 - XLR Female to 1/4" (stereo) Female
No. 44-116 - XLR Male to 1/4" (stereo) Male
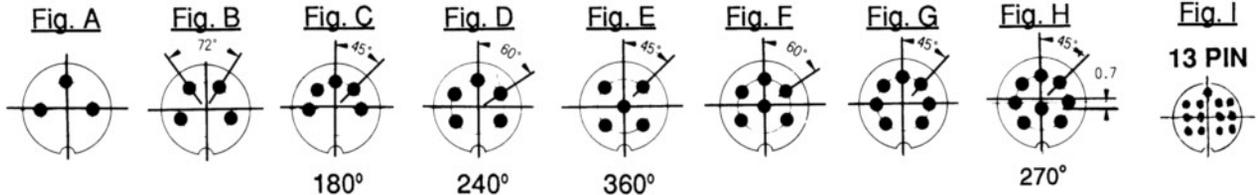**No. 44-120 -** XLR Male to 1/4" (stereo) Female

DIN / MINI DIN CONNECTORS

IN - LINE MALE

CHASSIS MOUNT FEMALE

IN - LINE FEMALE

Fig. A | Fig. B 72° | Fig. C 45° / 180° | Fig. D 60° / 240° | Fig. E 45° / 360° | Fig. F 60° | Fig. G 45° | Fig. H 45° 0.7 / 270° | Fig. I 13 PIN

Originally a European Audio Connector design, these DIN Connectors have found acceptance in computer and other electronic connector applications. A combination of reliability and economy has prompted their widespread adoption. Philmore DIN Connectors are now offered in two series. The original "E" series is of Japanese origin...a factory with a world-wide reputation for quality. The new "ET" series is a lower cost product from Taiwan, also carefully selected to meet exacting Philmore qualification and incoming inspection standards.

E SERIES - JAPAN

The "E" Series, color: light beige, from Japan is designed to meet exacting manufacturing requirements....ease of assembly and long-term physical and electrical reliability...particularly when subject to frequent connect-disconnect and/or movement. Some of the particular design features:

EA AND EL --

Heavier gauge metal & thicker plating on terminals and structure. Better solderability. Terminal numbers molded into insulator.

EA-

Shield clamp integral in structure. Superior finish on pins provide thousands of additional reliable connections. Plastic handle designed to cover the retention mechanism, leaving no exposed metal. Molded-in key facilitates assembly alignment.

EL-

Ground springs are well-formed spring brass with minimal tendency to fatigue and longer firm retention. Superior fit of shells makes assembly quicker and easier. A more rigid shell provides greater protection of terminal connections.

	Fig. A 3 PIN	Fig. B 4 PIN	Fig. C 5 PIN	Fig. D 5 PIN	Fig. E 5 PIN	Fig. F 6 PIN	Fig. G 7 PIN	Fig. H 8 PIN
In-Line Male	EA1	EA5	EA2	EA3	EA4	EA9	EA10	EA11
Chassis Female	ES1	ES5	ES2	ES3	ES4	ES9	ES10	ES11
In-Line Female	EL1	EL5	EL2	EL3	EL4	EL9	EL10	EL11

ET SERIES - TAIWAN

The new "ET" Series, Color: Black, from Taiwan provide a fully satisfactory lower cost alternative for many DIN connector applications. The basic design and quality of production assure serviceable performance, and our own QC overview adds to that assurance.

	Fig. A	Fig. B	Fig. C	Fig. D	Fig. E	Fig. F	Fig. G	Fig. H	Fig. I
In-Line Male	ETA1	ETA5	ETA2	ETA3	ETA4	ETA9	ETA10	ETA11	ETA13
Chassis Female	ETS1	ETS5	ETS2	ETS3	ETS4	ETS9	ETS10	ETS11	
In-Line Female	ETL1	ETL5	ETL2	ETL3	ETL4	ETL9	ETL10	ETL11	ETL13

NOTE: Part numbers as shown are display-packaged-Add (B) suffix for bulk packaging.

No. of Pins	Male Part No.	Female Part No.	CHASSIS MOUNT Female Part No.
3	EMA3	EML3	EMS3
4	EMA4	EML4	EMS4
5	EMA5	EML5	EMS5
6	EMA6	EML6	EMS6
7	EMA7	EML7	EMS7
8	EMA8	EML8	EMS8
9	EMA9	EML9	EMS9

MINIATURE DIN CONNECTORS

These miniature din connectors (9 mm. diameter contact face) are in-line with standard contact configuration for the type. These fine quality products are ideal for a variety of multi-pin applications requiring reliable contact in confined space. Full specifications available upon request.

CHASSIS MOUNT

FEMALE

MALE

Mini-Din Adaptors

These mini-din adaptors are designed to allow you to couple two similar cables in order to extend the length. Philmore offers these items in several configurations for use with Computers, Audio Equipment, Video Equipment, etc.

No. VHS4 MD4 (F) / (F) 4 Pin
No. 70-348 MD6 (F) / (F) 6 Pin
No. 70-344 MD8 (F) / (F) 8 Pin

55

NOTE: Part numbers as shown are display-packaged-Add (B) suffix for bulk packaging.

RCA TYPE (PHONO) CONNECTORS

PHONO PLUG MALE RCA type

Solder terminals; body and shell molded plastic; integral strain relief. Handles available in six colors.

No. MS16 - display pkg, 2 red & 2 black
No. MS16B RED - bulk packed, red
No. MS16B BLK- bulk packed, black

No. MS16B YEL - Bulk Packed, Yellow
No. MS16B WHT - Bulk Packed, White
No. MS16B BLU - bulk packed, blue
No. MS16B GRN - bulk packed, green
No. MS161 - display package,
  1 red & 1 white for audio
No. MS162 - display package,
  1 each of red, white,
  yellow for A/V
No. MS163 - display package,
  1 each of red, green, blue
  for component video
No. 70-013 - grey handle, display pkg. of 2
No. 70-013B - bulk packed

PHONO PLUG MALE RCA type

Gold plated on contacts and solder terminals; body and shell molded plastic; integral strain relief. Available in red or black.
No. MSG16 - display pkg, 1 red & black
No. MSG16B RD - bulk packed, red
No. MSG16B BL- bulk packed, black

PHONO PLUGS Male RCA type

Solder terminals; body and shell molded plastic. Available in four colors.

No. MS14 - display packaged, 2 each red, black,
No. MS144 - display packaged, 2 each red, black, green, yellow
No. MS14B RED - bulk packed, red
No. MS14B BLK - bulk packed, black.
No. MS14B GRN - bulk packed, green
No. MS14B YEL - bulk packed, yellow

RIGHT ANGLE PHONO MALE RCA TYPE:

Solder terminal, integral strain relief for cable up to 4.0 mm O.D. available in four colors.

Right Angle Plugs
No. 70-036B - Black
No. 70-030B - Red
No. 70-032B - White
No. 70-034B - Yellow
NOTE: Bulk pack only

56

AUDIO/VIDEO GRADE PHONO PLUG

RCA MALE, fully shielded. Twist-on, solderless connection. Gold plated for best audio and video performance. Use with either RG58 or RG59 coaxial cable.
No. MDL2 - package one connector
No. MDL2B - bulk pack

RG59/U SCREW - CLAMP STYLE RCA PLUG

A perfect connector for use with RG59 cable in video or audio systems; high tech look too. Noise-free, dependable connections. Available with either black or red color band on gold body.
No. 2101DL - package one black only
No. 2102DL - package one each red & black
No. 2101DLB BL - bulk packaged black
No. 2101DLB RD - bulk packaged red

GOLD plated RCA PLUG

Solder type with spring strain relief. A quality general purpose audio connector, gold plated for performance. Color bands on body identify left and right channels. Use with most audio wires.
No. MSG10 - disp. package 1 red & 1 black
No. MSG10B BL - bulk packed, black
No. MSG10B RD - bulk packed, red

RCA or PHONO PLUG

Nickel plated crimp type with 1/4" crimping ring for RG59/U cable.

No. 2101A - display packaged
No. 2101AB - phono plug bulk packaged only

PHONO PLUG

A standard, very low cost; phono plug.

No. 2101P - phono plug, bulk packaged only

Shielded RCA type PHONO PLUG

A tough, nickel-plated connector for general purpose audio usage. Solder lugs connection.
No. MS10 - five connectors in display package
No. MS10B - connector bulk packaged

SHIELDED PHONO PLUGS MALE RCA TYPE

Fully shielded RCA plug for Audio & Video, Nickel plated body with color coded band & strain relief (maximum cable O.D. 4.0mm). Knurled handle for a secured grip. Available in 4 colors.

No. 70-132 - display package, 1 red & 1 black
No. 70-130B - bulk packed, black
No. 70-134B - bulk packed, red
No. 70-136B - bulk packed, white
No. 70-138B - bulk packed, yellow
No. 70-135 - display package, 1 red & 1 white
No. 70-137 - display package, 1 red, 1 white & 1 yellow

SHIELDED PHONO JACKS FEMALE RCA TYPE

Fully shielded RCA jack for Audio & Video, Nickel plated body with color coded band & strain relief (maximum cable O.D. 4.0mm). Knurled handle for a secured grip. Available in 4 colors.

No. 70-221 - display package, 1 red & 1 black
No. 70-220B - bulk packed, black
No. 70-224B - bulk packed, red
No. 70-226B - bulk packed, white
No. 70-228B - bulk packed, yellow
No. 70-225 - display package, 1 red & 1 white
No. 70-227 - display package, 1 red, 1 white & 1 yellow

Shielded RCA type PHONO JACK

Durable, nickel-plated connector for general purpose audio usage. Solder lugs connection.

No. MS9 - five connectors in display package
No. MS9B - connector bulk packaged

PC MOUNT RCA JACK

Printed Circuit board mounting. A durable part, nylon body and nickel plated contacts. The mounting design affords considerable strain relief to protect PC board.

No. MS11 - single jack, package of five
No. MS13 - dual jack, Package of one
No. MS19 - triple jack, Package of one
* For bulk, add suffix letter "B" to Part No.

GOLD-PLATED, TEFLON INSULATOR
RCA JACK

Panel mounting phono jack is gold plated and designed to be electrically superior as well as very durable; this is our best jack. Color bands for channel identification. Ground lug and nut also gold plated. Bushing measures 5/16" diameter with 9/32 across a flat.

No. MTG12 - display pack 1 red & 1 black
No. MTG12B BL - bulk packed black
No. MTG12B RD - bulk packed red

GOLD PLATED ISOLATED RCA JACK

Panel mounting phono jack is gold plated, mounts in a 3/8" dia. hole (shoulder washers included). Color bands for channel identification. Ground lug and nut are also Gold plated. Bushing measures 5/16".

No. 45-108G - display pack, 1 red & 1 black
No. 45-128G - display pack, 1 red & 1 white
No. 45-138G - display pack, 1 red, 1 white & 1 yellow
No. 45-148G - display pack, 2 yellow
No. 45-108GB BL - bulk packed, black
No. 45-108GB RD - bulk packed, red
No. 45-108GB WH - bulk packed, white
No. 45-108GB YE - bulk packed, yellow

PHONO JACKS Female RCA type

Solder terminals; body and shell molded plastic; integral strain relief. Available in red or black.

No. MS17 - display pkg, 1 red & 1 black
No. MS17B RED - bulk packed, red
No. MS17B BLK - bulk packed, black
No. MS17B YEL - bulk packed, yellow
No. MS17B WHT - bulk packed, white
No. MS17B BLU - bulk packed, blue
No. MS17B GRN - bulk packed, green
No. MS171 - display package, 1 red & 1 white for audio
No. MS172 - display package, 1 each of red, white, yellow for A/V
No. MS173 - display package, 1 each of red, green, blue for component video
No. 70-022 - grey handle, display pkg. of 2
No. 70-022B - bulk packed

RCA or PHONO JACK

An industry standard and popular style jack that mounts in a 1/4" dia. hole; up to 3/16" panel thickness. Mounting hardware is included.

No. MS12 - nickel plated, pack of five
No. MS12B RED - nickel plated, bulk pack, red
No. MS12B BLK - nickel plated, bulk pack, black
No. MS12B WHT - nickel plated, bulk pack, white
No. MS12B YEL - nickel plated, bulk pack, Yellow
No. MSG12 - gold plated, pack of 2
No. MSG12B RD - gold plated, bulk pack, red
No. MSG12B BL - gold plated, bulk pack, black
No. 45-270B WH - gold plated, bulk pack, white
No. 45-270B YE - gold plated, bulk pack, yellow
No. 45-270B BL - gold plated, bulk pack, blue
No. 45-270B GR - gold plated, bulk pack, green
No. 45-270B OR - gold plated, bulk pack, orange
No. 45-270B BK - gold plated, bulk pack, black
No. 45-270B RD - gold plated, bulk pack, red

REAR MOUNT RCA JACK

Mounts in a 3/8" mounting hole into panels up to 3/16" thick.

No. MS22 - Display packaged of one
No. MS22B - Bulk packed

CHASSIS MOUNT RCA JACKS

Traditionally used in audio applications, the RCA connector is often used for video and low voltage power as well. This series is made to be mounted in panel or chassis. Color coded insulators for left or right channel, video etc.. Connector surfaces are nickel plated brass, solder lug surfaces are tinned. The insulator material is black plastic.

No. MS30 - single jack, white insulator
No. MS35 - dual jacks, red & white insulators
No. MS45 - triple jacks, red, white & yellow insulators
No. MS40 - four (quad) jacks, white, red, white, red insulators

* For bulk, add suffix letter "B" to Part No.

PHONO JACKS
Female RCA type

Solder terminals; body and shell molded plastic; Available in red or black.

No. MS15 - display pkg, 1 red & 1 black
No. MS15B RED - bulk packed, red
No. MS15B BLK - bulk packed, black

RCA FEMALE ADAPTOR, or Coupler

Phono jacks on both ends, for mating cables with RCA males.

No. SAG13 - gold plated
No. SAG13B - gold plated, bulk packaged
No. 45-311G - shielded, Gold plated
No. SA13 - nickel plated
No. SA13B - nickel plated, bulk packaged
No. SAG23 - 2 RCA-2 RCA, gold plated
No. SAG23B - bulk packaged
No. 45-333G - 3 RCA-3 RCA, gold plated
No. 45-333GB - bulk packaged

RCA FEMALE, BULKHEAD

Isolated RCA to RCA feed thru jacks for audio & video. Mounts in a 3/8" (.375") Mtg. hole. Colored insulation (Black, Blue, Green, Orange, Red, White and Yellow).

No. 45-162G - Gold plated. Package of 3 (1 red, 1 white & 1 yellow)
No. 42-362 - Nickel plated. Package of 3 (1 red, 1 white & 1 yellow)
No. 45-166G - Gold plated. Package of 3 (1 red, 1 blue & 1 green)
No. 42-366 - Nickel plated. Package of 3 (1 red, 1 blue & 1 green)

PHONE PLUGS & JACKS

1/4" (6.3mm) MONO PHONE PLUGS

DELUXE COLOR CODED PHONE PLUGS

2 conductor, all-metal 1/4" plug set, color coded in 5 colors: Red, Black, Yellow, Blue and Grey. A knurled braided grip, Solder Terminal.

No. 520K - one each of 5 colors, packaged

No. 520 RED - display packaged, red
No. 520 BLK - display packaged, black
No. 520 YEL - display packaged, yellow
No. 520 BLU - display packaged, blue
No. 520 GRY - display packaged, grey
No. 520B RED - bulk packed, red
No. 520B BLK - bulk packed, black
No. 520B YEL - bulk packed, yellow
No. 520B BLU - bulk packed, blue
No. 520B GRY - bulk packed, grey

MONO 1/4" PHONE PLUG SCREW TERMINAL

Two conductor phone plug, screw terminals for solderless connections, and cable clamp strain relief. May also be used as solder type.

No. 527 BLK - packaged, black
No. 527 RED - packaged, red

1/4" SOLDERLESS SHIELDED

Screw terminals.

No. 523WS - package of **one**

1/4" SOLDER TYPE PLUG

Solder lug type with cable clamp terminal. Supplied with red or black plastic handle. All parts nickel-plated. Fits all standard 1/4" jacks.

No. S623 BLK - bulk packaged only, black
No. S623 RED - bulk packaged only, red

1/4" PHONE PLUG- SHIELDED

No. S624 - bulk packaged only, shielded, all metal

58

1/4" (6.3mm) MONO PHONE JACKS

2 CONDUCTOR JACK - INLINE

Two conductor solder terminal jack 2" long. 7/16 dia., black plastic handle.

No. 519 - display packaged

1/4" SHIELDED JACK - INLINE

Shielded metal handle - Mono 1-1/2" x 9/16" dia.

No. 519M - display packaged

1/4" CHASSIS MOUNT JACKS - MONO

Compact size. Mounts in 3/8" dia. hole in panels up to 5/32" thick. Mounting hardware included.

No. 2283JP - display packaged
No. 2283J - bulk packaged
Two conductor with normally closed circuit switch.
No. 2284JP - display package
No. 2284J - bulk packaged

1/4" PHONE JACK - MONO
ISOLATED (Plastic Bushing)
2 conductor, open circuit isolated from panel.

No. 2280P - display packaged
No. 2280 - bulk packaged

1/4" (6.3mm) STEREO PHONE PLUGS

1/4" STEREO PHONE PLUG

Supplied with a black handle. All parts nickel-plated. Fits all standard type 1/4" jacks. Solder type strain relief.
No. 524W - display packaged

1/4" STEREO PHONE PLUG - SHIELDED

Solder type phone plug has shielded nickel-plated barrel.
No. 524WS - display packaged

.206" DIAMETER 3 CONDUCTOR PHONE PLUG

"Aircraft microphone" type plug.

No. 524WTP - Display packaged
No. 524WT - bulk pack only, black plastic handle, Solder lug connections.
No. 521JT- bulk pack only, mating in-line jack.
No. 521JTP - Display packaged

1/4" STEREO 3 CONDUCTOR INLINE JACK

Three conductor dual open circuit jack with solder terminals. Has metal internal shield. Overall size: 2" - Diameter: 7/16"

No. 521S - black

STEREO CHASSIS MOUNT JACKS

3 CONDUCTOR 1/4" JACKS

1/4" dia. 3 conductor phone jacks in 3/8" dia. hole in panels up to 1/8" thick. Mounting hardware is included. Open Circuit, stereo.

No. 2287P - display packaged
No. 2287 - bulk packaged

STEREO 1/4" JACK

3 conductor jack enclosed in black plastic housing.

Normally closed switches on both circuits - tip, ring.

No. 2288CP - display packaged
No. 2288C - bulk packaged

ISOLATED (Plastic Bushing)

The jacks mount in a 0.46" hole. 3 conductor (stereo) switching barrel is not grounded.

Normally closed switches on both circuits - tip, ring.
No. 2281P - display packaged
No. 2281 - bulk packaged

3 conductor (stereo). Two single pole, double-throw switches operate when plug is inserted. Totally isolated from phone plug connections.

No. 2282P - display packaged
No. 2282 - bulk packaged

Note: Unless otherwise specified,plug and jack exposed metal parts are normally bright nickel plated, Soldering tabs and lugs are usually tinned brass for best solder joints; except in case where gold or silver is used.

STEREO 3.5MM MINIATURE PHONE PLUGS

Stereo MINIATURE PHONE PLUG

3.5MM 3 Conductor. Solder terminals, black plastic body with molded in strain relief. Body 3/8" diameter, overall length 2 1/8"

No. 502P - display package of one
No. 502PB - bulk packaged
No. 502GP - display package, gold plated
No. 502GPB - bulk packaged, gold plated
No. 70-017 - gray handle, display pkg. of 2
No. 70-017B - bulk packaged

RIGHT ANGLE STEREO 3.5 mm PLUG

Black plastic body with molded strain relief, solder terminal. Maximum cable O.D - 4.0 mm.

No. 70-097 - right angle, display pkg. of 1
No. 70-097B - right angle, bulk packed

SHIELDED STEREO 3.5 mm PLUG

Handle is nickel plated steel for shielding. Metal spring strain relief.

No. 502M - display pack of 2
No. 502MB - bulk packed

LOCKABLE 3.5mm STEREO PLUG & JACK

Shielded 3.5mm stereo plug with coupling ring that can be threaded to mating shielded 3.5mm In-Line jack or panel mount jack after plug has been fully inserted into mating jacks. Both in-line plug & jack has molded strain relief for cable up to 4.0mm (.157") in diameter. Panel mount jack mounts in 10mm (13/32") hole in panel up to 3.5mm (.14") thick. Both jacks can be used with standard 3.5mm plugs where no locking feature is required.

Panel Mount Female

In-Line Male   In-Line Female

No. 70-075 - In-Line Male
No. 70-065 - In-Line Female
No. 70-055 - Panel Mount Female

SHIELDED 4 CONDUCTOR 3.5mm PLUG

No. 70-050 - Display Pack of 1
No. 70-050B - Bulk Pack

4 Conductor 3.5mm MINIATURE PHONE PLUG & JACKS

70-047   **70-086**

70-088

No. 70-047 -   in-line male, display pkg. of 1
No. 70-047B - in-line male, bulk packaged
No. 70-086 -   in-line female, display pkg. of 1
No. 70-086B - in-line female, bulk packaged
No. 70-088 - chassis mt. female, display pkg. of 1
No. 70-088B - chassis mt. female, bulk packed

STEREO 3.5 mm MINIATURE PHONE JACKS

Stereo MINIATURE PHONE JACK

3.5MM, 3 Conductor. Solder terminals, black plastic body with molded-in strain relief. Body 3/8" diameter, overall length 2 1/8"

No. 502V - display package of one
No. 502VB - bulk packaged
No. 70-026 - gray handle, display pkg. of 2
No. 70-026B - bulk packaged

Stereo MINIATURE PHONE JACK

Chassis or PC board mounting. 3.5mm, 3 Conductor. Solder terminals, Completely sealed jack, switching. Mounts in 15/64" hole in panels up to 1/16" thick.

No. 502J - display package of one
No. 502JB - bulk package

Stereo MINIATURE PHONE JACK

Chassis or Panel mounting. 3.5mm, 3 Conductor with solder terminals. Completely sealed jack, non-switching. Mounts in 1/4" hole in panels up to .075" thick. With hardware, attractive knurled nut.

No. 504K - display package of one
No. 504KB - bulk packaged
No. 502NUT - Round knurled Nut

STEREO FEED-THRU JACK

Panel mounting 3.5mm, 3 conductor jack on both ends. Mount in 3/8" hole.

No. 45-233 - display package of one
No. 45-233B - bulk packaged

TWO CONDUCTOR (MONO) MINIATURE PHONE PLUGS

Mono 3.5mm PHONE PLUG

This miniature phone plug has molded-in strain relief. Other specifications are same as for No. 501P shown below. Two black plugs per package.

No. 501PS - package two black
No. 501PSB - bulk packaged
No. 70-015 - gray handle, display pkg. of 2
No. 70-015B - bulk packaged

RIGHT ANGLE MONO 3.5 mm PLUG

Black plastic body with molded strain relief. Solder terminals, Maximum cable O.D. 4.0 mm.

No. 70-095 - display pack of 1
No. 70-095B - bulk packed

Mono 3.5mm PHONE PLUG

Two conductor miniature phone plug. Solder lug terminals. Overall length is 1-5/8" Dimensions are 9/16" x 1/8".

No. 501P - packaged one black and one red
No. 501PB-BL - bulk packaged, black
No. 501PB-RD - bulk packaged, red

SHIELDED MONO 3.5 mm PLUG

Handle is nickel plated steel for shielding. Metal spring strain relief.

No. 115P - display pack of 2
No. 115PB - bulk packed

TWO CONDUCTOR (MONO) 3.5mm MINIATURE PHONE JACKS

TWO CONDUCTOR (MONO) 3.5 mm MINIATURE INLINE PHONE JACK

Molded body (black plastic), solder terminals.
No. 501VS - display package of one
No. 501VSB - bulk packaged
No. 70-024 - gray handle display pkg. of 2
No. 70-024B - bulk packaged

TWO CONDUCTOR (MONO) MINIATURE PHONE JACK

An in-line (or cord mounting) standard 1/8" (3.5mm) miniature phone jack; two conductor monaural. Open circuit (non switching). Black plastic shell, solder connections.

No. 501V - display package of one
No. 501VB - bulk packaged

59

PHONE PLUGS & JACKS

Note: Unless otherwise specified,plug and jack exposed metal parts are normally bright nickel plated, Soldering tabs and lugs are usually tinned brass for best solder joints; except in case where gold or silver is used.

TWO CONDUCTOR (MONO) 3.5mm MINIATURE CHASSIS MT. PHONE JACK

Economy model miniature jack, closed circuit. Mounts in a 1/4" dia. hole in chassis up to 1/16" thick. Supplied with knurled, slotted round nut and washer.

No. 702JP - display package of one
No. 702J - bulk packaged

ISOLATED PHONE JACKS

Plastic body for both 2.5mm & 3.5mm with solder terminals.Mount in 5/16" mounting hole (front mount) in panel up to 1/8" thick.

2.5 mm JACKS

No. 70-626 - Mono (2 conductor)
        display package of one
No. 70-626B -Mono (2 conductor)
        bulk package
No. 70-636 - Stereo (3 conductor)
        display package of one
No. 70-636B -Stereo (3 conductor)
        bulk packaged

3.5 mm JACKS

No. 70-524 - Mono (2 conductor)
        display package of one
No. 70-524B - Mono (2 conductor)
        bulk package
No. 70-534 - Stereo (3 conductor)
        display package of one
No. 70-534B - Stereo (3 conductor)
        bulk packaged

2.5 MM (SUB MINIATURE) PHONE PLUGS

STEREO 2.5mm PLUG

Solder lug. Overall length 1-1/4"

No. 666PP - package of two
No. 666P - bulk packaged

Shielded 3 Conductor STEREO 2.5mm PLUG

Handle is Nickel plat & steel for shielding. Metal spring strain Relief.

No. 70-053 - Display Pack of 2
No. 70-053B - Bulk Packaged

60

RIGHT ANGLE STEREO 2.5 mm PLUG

Black plastic body with molded strain relief. Solder terminals, maximum cable O.D. - 4.0 mm

No. 70-093 - right angle, package of 1
No. 70-093B - right angle,
        bulk packaged

MONO 2.5mm PLUG

2 conductor plug solder terminals 1" length, 3/32" dia. black.

No. 660PP - package of two
No. 660P - bulk packaged

Shielded 2 Conductor MONO 2.5mm Plug

Handle is Nickel plated steel for shielding. Metal spring strain relief.
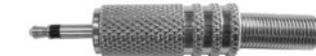
No. 70-052 - Display Pack of 2
No. 70-052B - Bulk Packaged

RIGHT ANGLE MONO 2.5 mm PLUG

Black plastic body with molded strain relief. Solder terminals, maximum cable O.D. 4.0 mm.

No. 70-091 - right angle,
        package of 1
No. 70-091B - right angle,
        bulk packaged

2.5 mm (SUB MINIATURE) PHONE JACKS

STEREO 2.5mm Chassis Mount Jack

shielded, mounts in 15/64" hole for panel up to .075" thick
No. 666JP - package of two
No. 666J - bulk packaged

STEREO 2.5mm JACK

Inline female, solder terminals.

No. 666VP - package of two
No. 666V - bulk packaged

MONO 2.5mm JACK

Closed circuit female, mounts in 5/32" hole and panels up to 1/16" thick.

No. 660JP - package of two
No. 660J - bulk packaged

MONO 2.5mm INLINE JACK
Solder contacts.

No. 660VP - package of two
No. 660V - bulk packaged

KNURLED NUT TOOL

No. NT500
Tool is used to tighten slotted knurled nuts on 3.5mm and some 2.5mm jacks. (i.e. Nos. 502JB, 504KB. 501JR, 702J, 666J)

4 Conductor 2.5mm Sub - Miniature Phone Plug & Jacks

No. 70-049   No. 70-089

No. 70-099   No. 70-646

No. 70-049 - In-Line Male,
        Display package of one
No. 70-049B - In-Line Male,
        bulk packaged
No. 70-089 - In-Line Female,
        Display package of one
No. 70-089B - In-Line Female,
        bulk packaged
No. 70-099 - Isolated Chassis Mt. Female,
        Display package of one
No. 70-099B - Isolated Chassis Mt. Female,
        bulk packaged
No. 70-646 - Chassis Mt. Female,
        Display package of one
No. 70-646B - Chassis Mt. Female,
        bulk packaged

Shielded 4 Conductor 2.5mm Plug

Handle is Nickel plated steel for shielding. Metal spring strain relief.
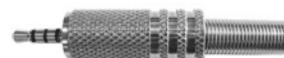
No. 70-054 - Display Pack of 1
No. 70-054B - Bulk Packaged

1/4" Stereo Phone Jack to Mini 1/8" Mono Phone Plug

No. 549A

1/4" Mono Phone Jack to 1/8" Mini Mono Phone Plug

No. 540A

1/4" Mono Phone Jack to RCA Phono Plug

No. 530A

RCA Phono Plug Both Ends

No. 535A

1/8" Mono Jack to Subminiature - Mono Phone Plug

No. 542A

1/4" Stereo Phone Plug to 3.5mm Mono Jack

No. 538A

RCA Phono Jack Both Ends

No. SAG13 - Gold Plated
No. SA13 - Standard

Dual RCA Jack to Dual Jack Adaptor Gold Plated

No. SAG23

Triple RCA Jack Adaptor. Gold Plated. Red, White and Yellow Color-coded

No. 45-333G

Phono Jack to 1/4" Mono Phone Plug

No. 114

RCA Phono Jack to Miniature 1/8" Mono Phone Plug

No. 533A

RCA Phono Plug to Miniature 1/8" Mono Phone Jack

No. 531A

1/4" Mono Phone Plug to Miniature 1/8" Mono Phone Jack

No. 532A

1/4" Stereo Phone Jack to Mini-Stereo 1/8" Phone Plug

No. 558A

1/4" Stereo Phone Plug to Mini-Stereo 1/8" Phone Jack

No. 559A

Mono Mini 1/8" Phone Plug to Mini-Stereo 1/8" Phone Jack,

No. 560A

Mono Mini 1/8" Phone Plug to Mini-Stereo 1/8" Phone Jack Right Angle

No. 561A

Stereo Mini (1/8") Phone Plug to Mini-Stereo (1/8") Phone Jack Right Angle
No. 556A

1/4" Stereo Phone Plug to Mini (1/8") Stereo Phone Jack Right Angle

No. 559RA

1/4" Stereo Plug to Two 1/4" Stereo Jacks

No. 2000

1/8" Stereo Plug to Two 1/8" Stereo Jacks

No. 2030

3.5mm Stereo Plug to 2.5mm Stereo Jack

No. 630A

2.5mm Stereo Plug to 3.5mm Stereo Jack

No. 640A

3.5mm Mono Plug to 2.5mm Mono Jack

No. 544A

STEREO HEADPHONE ADAPTOR KIT

Kit includes all of the popular mini-stereo adaptors. Fill most all connection needs with Philmore **No. 4100.**
Kit contains the following adaptors:

(1) 3.5mm mini-mono plug to 1/4" stereo jack. (549A)

(1) 3.5mm mini-stereo plug to 1/4" stereo jack. (558A)

(1) 3.5mm mini-mono plug to 3.5mm stereo jack. (560A)

(1) 1/4" stereo plug to 3.5mm stereo jack. (559A)

No. 4100

Stereo Couplers
1/8" (3.5MM) Stereo Jack to 1/8" (3.5MM) Stereo Jack

No. 33-182

1/4" (6.3MM) Stereo Jack to 1/4" (6.3MM) Stereo Jack

No. 33-142

61

DC COAXIAL PLUGS/JACKS & ADAPTORS

COAXIAL POWER PLUGS

Part No.	I.D.	O.D.	Mating Jack	Overall Length
202	1.1mm	3.5mm	201 or 311	1"
204	1.3mm	3.5mm	211 or 313	1"
2049	1.3mm	3.5mm	211 or 313	R/A
210	2.1mm	5.5mm	212, 321, 2112, 247	1"
2109	2.1mm	5.5mm	212, 321, 2112, 247	R/A
210L	2.1mm	5.5mm	212, 321, 2112, 247	1-7/16"
250	2.5mm	5.5mm	215, 325, 2512, 248	1"
2509	2.5mm	5.5mm	215, 325, 2512, 248	R/A
250L	2.5mm	5.5mm	215, 325, 2512, 248	1-7/16"

COAXIAL POWER PLUG ADAPTOR

All adaptors in this series have a 3.5mm, 2 conductor jack. Permits you to use an AC adaptor (i.e. power supply) with other types of electronic equipment.

No. 216 - 1.3mm I.D. X 3.5 mm O.D. DC PLUG
No. 217 - 2.1mm I.D. X 5.5 mm O.D. DC PLUG
No. 218 - 2.5mm I.D. X 5.5 mm O.D. DC PLUG

Coaxial Power Plug

A coax power plug for Satellite radio's, AC / DC power supply and others. Solder terminal, sizes: 1.1mm I.D. x 3.0mm O.D. rated .5A - 12VDC.

3mm COAXIAL POWER PLUG

No. 206
No. 206B - bulk packaged
This size coaxial power plug fits the late model Panasonic and JVC devices. 3.0mm I.D. x 5.5mm O.D.

3mm COAX POWER PLUG
For Video Camera Battery Packs

No. 208 - Black
No. 208B - bulk packaged
A coax power plug for video battery packs for Panasonic, RCA etc. 3.0mm I.D. x 6.3mm O.D. solder terminals and flexible strain relief.

COAXIAL POWER PLUG
for Cellular Phone Battery Charger

Solder Lug terminals and flexible plastic strain relief.

No. 1135 - 1.1mm I.D. x 3.5mm O.D.
No. 1438 - 1.4mm I.D. x 3.8mm O.D.

No. 1130 - 1.1mm I.D. x 3.0mm O.D.

DC POWER PLUG/JACK ADAPTOR
With 6 ft. Cord

Permits use of a DC power supply with a wide variety of equipment that does not have a compatible connector. Select an adaptor (below) with a jack that will mate with your power supply and, on the other end, a plug that will mate with your equipment.

No. 278 0.7mm x 2.35mm DC Plug-No. 257 Jack
No. 280 0.7mm x 2.35mm DC Plug-No. 258 Jack
No. 282 0.7mm x 2.35mm DC Plug-No. 501VS Jack
No. 284 1.7mm x 4.0mm DC Plug-No. 257 Jack
No. 286 1.7mm x 4.0mm DC Plug-No. 258 Jack
No. 288 1.7mm x 4.0mm DC Plug-No. 501 VS Jack
No. 290 1.7mm x 4.75mm DC Plug-No. 257 Jack
No. 292 1.7mm x 4.75mm DC Plug-No. 258 Jack
No. 294 1.7mm x 4.75mm DC Plug-No. 501 VS Jack

DC POWER PLUG For Dell & HP

Commonly used on power supplies for Dell & HP laptop computers it can be used on 2 wire or 3 wire power cord.

No. 274
7.4mm O.D. x 5.0mm I.D. x 0.6mm Center Pin

Rating:
18.5V - 19.5V @ 4A Max.

LOCKABLE DC PLUGS & JACKS

New design DC plug and jack to hold the connector securely with a slight turn (clockwise) of the plug. Both new design plugs and jacks can be used with regular DC jacks and plugs.

LOCKABLE DC PLUGS

These DC plugs are designed to mate with Philmore DC jacks **No. 2475** and **No. 2485** and other DC jacks of the same size. Solder terminals with 9.5mm plug length.

No. 2150 - 2.1mm x 5.5mm plug, display pack of one
No. 2150B - 2.1mm x 5.5mm plug, Bulk packed
No. 2550 - 2.5mm x 5.5mm plug, display pack of one
No. 2550B - 2.5mm x 5.5mm plug, Bulk packed

Locking DC Power Plugs

The locking collar threads onto the mating jack (Philmore #2112 & #2512) to hold the connection securely. The Plug has solder terminals with a black plastic handle.

Part No.	Diameter (I.D.)	O.D.	Overall Length	Mating Jack
2160	.083" (2.1mm)	(5.5mm)	1.65"	2112
2560	.098" (2.5mm)	(5.5mm)	1.65"	2512

BULK DC POWER CORD

24 AWG BLACK TWO CONDUCTOR UNSHIELDED CABLE (ZIP CORDS). One conductor is marked with white line for polarity identification, make your own DC coaxial plugs and jacks with same quality cable used on our DC plug cable assemblies with 24 awg wire. Available on 100' and 500' spool.

No. 48-210 - 100 ft. spool
No. 48-250 - 500 ft. spool

LOCKABLE DC JACKS

Plastic housing, mount in 0.515" (33/64") mounting hole panel up to 0.25" thick solder terminals.

No. 2475 - 2.1mm center pin, display pack of one
No. 2475B - 2.1mm center pin, Bulk packed
No. 2485 - 2.5mm center pin, display pack of one
No. 2485B - 2.5mm center pin, Bulk packed

DC PLUGS

DC coaxial power plugs with 9.3mm long barrel, plastic handle with molded strain relief (Max. cable O.D. 4.5mm). Solder terminals.

No. 219 - 2.1mm x 5.5mm plug, display pack of one
No. 219B - 2.1mm x 5.5mm plug, Bulk packed
No. 259 - 2.5mm x 5.5mm plug, display pack of one
No. 259B - 2.5mm x 5.5mm plug, Bulk packed

DC Feed - Thru Jacks

A unique design DC coaxial jack for panel mounting with jack on both ends, mount in 3/8" (.375") hole. Overall length is 1.72". It can also be used as an in-line female coupler.

No. 45-257 - 2.1mm center pin, Gold plated. Mate with 2.1 x 5.5mm plugs.

No. 45-258 - 2.5mm center pin, Nickel plated. Mate with 2.5 x 5.5mm plugs.

DC COAXIAL PLUGS & JACKS

DC POWER PLUGS

Complies with Electronic Industries Association of Japan (EIAJ) RC-5320 Standards. Solder Lug Terminals and flexible plastic strain relief. Available in both straight and right angle color black.

Straight plug

R/A plug

DC Plug Part No.	Rated Voltage (DC)	Sizes I.D. x O.D.	EIAJ
235	3.15 & Below	.7mm x 2.35mm	I
2359	3.15 & Below	R/A.7mm x 2.35mm	I
240	3.16 - 6.3	1.7mm x 4.0mm	II
2409	3.16 - 6.3	R/A 1.7mm x 4.0mm	II
275	6.4 - 10.5	1.7mm x 4.75mm	III
2759	6.4 - 10.5	R/A 1.7mm x 4.75mm	III
255	10.6 - 13.5	3.3mm x 5.5mm 1mm x center pin	IV
2559	10.6 - 13.5	R/A 3.3mm x 5.5mm 1mm center pin	IV
265	13.5 - 18	4.35mm x 6.5mm 1.4mm center pin	V
253	13.5 - 18	4.35mm x 6.5mm, 1.4mm center pin for recessed jack	
285	24.0	3.1mm x 6.5 mm 1.0mm center pin	

IN-LINE DC POWER JACKS

Solder lug terminals and flexible plastic strain relief. Color: Black

Part No.	EIAJ Class	Voltage	Center Pin (I.D. Mating Plug)	I.D.	Mating Plug
256	-	-	1.3mm	3.5mm	No.204
257	-	-	2.1mm	5.5mm	No.210
258	-	-	2.5mm	5.5mm	No.250
261	I	DC 3.15V-below	.7mm	2.35mm	No.235
262	II	DC 3.16V-6.3V	1.7mm	4.0mm	No.240
263	III	DC 6.4V-10.5V	1.7mm	4.75mm	No.275
264	IV	10.5V-13.5V @ 2A	3.3mm center pin 1.0mm	5.5mm	No.255 or 2559
266	V	13.5V-18V @ 2A	4.3mm center pin 1.4mm	6.5mm	No.265

PANEL MOUNT DC POWER JACKS
(Plastic Housing)

Select needed item based upon the inside diameter of your mating coaxial plug. Plastic body, silvered solder lugs.

Part No.	EIAJ Class	Voltage	Center Pin (I.D. Mating Plug)	O.D.	Mating Plug	Mounting Hole
247	-	-	2.1mm	5.5mm	No. 210	0.50" (Front Mount)
2477	-	-	2.1mm	5.5mm	No.210	.437 Snap-In Type
248	-	-	2.5mm	5.5mm	No. 250	0.50" (Front Mount)
2487	-	-	2.5mm	5.5mm	No. 250	.437 Snap-In Type
335	I	DC 3.15V-below	.7mm	2.35mm	No. 235	0.325"
340	II	DC 3.16V-6.3V	1.7mm	4.0mm	No. 240	0.325"
375	III	DC 6.4V-10.5V	1.7mm	4.75mm	No. 275	0.325"
355	IV	DC 10.6V-13.5V	3.3mm (1mm center pin)	5.5mm	No. 255	0.53"
365	V	DC 13.6V-18V	4.35mm (1.4mm center pin)	6.5mm	No. 265	0.53"

Nos. 247 & 248
No. 247NUT - Hex NUT

Nos. 335, 340 & 375

Nos. 2477& 2487

Nos. 355 & 365

Panel Mount DC Power Jacks
(Metal Housing)

No. 2112 & No. 2512

Part No.	EIAJ Class	Voltage	Center Pin (I.D. Mating Plug)	I.D.	Mating Plug	Mounting Hole
311	-	-	1.1mm	3.5mm	No. 202	0.313"
313	-	-	1.3mm	3.5mm	No. 204	0.313"
321	-	-	2.1mm	5.5mm	No. 210	0.437"
2112	-	-	2.1mm	5.5mm	No.2160	0.313"
325	-	-	2.5mm	5.5mm	No. 250	0.437"
2512	-	-	2.5mm	5.5mm	No.2560	0.313"
306	-	-	2.85mm	5.6mm	No. 206	0.437"
308	-	-	2.85mm	6.3mm	No. 208	0.437"

PCB Mount DC Jacks

PCB Mounting, Side entry jacks. Select needed item based upon the mating plugs inside diameter.

Part No.	EIAJ Class	Voltage	Center Pin (I.D. Mating Plug)	I.D.	Mating Plug
201	-	-	1.1mm	3.5mm	No. 202
211	-	-	1.3mm	3.5mm	No. 204
212	-	-	2.1mm	5.5mm	No. 210
215	-	-	2.5mm	5.5mm	No. 250
205	I	DC 3.15V-below	.7mm	2.35mm	No. 235
207	II	DC 3.16V-6.3V	1.7mm	4.0mm	No. 240
220	III	DC 6.4V-10.5V	1.7mm	4.75mm	No. 275
213	IV	DC 10.6V-13.5V	3.3mm (1mm center pin)	5.5mm	No. 255
214	V	DC 13.6V-18V	4.35mm (1.4mmcenter pin)	6.5mm	No. 265

Note: **Full Specifications and foot prints available upon request.**

No. 201 No. 205 No. 207 Nos. 211, 212 & 215 No. 214 No. 213 No. 220

Interchangeable DC Jacks

Right angle DC jacks exclusively designed for Philmore to be used with AC/DC power supply, DC extension cords. You can make your own DC patch cords, DC extension cords or DC adaptors. Combinations are endless (see Philmore extension cords No. 48-1202, No. 48-1208).
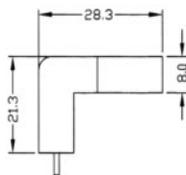
No. 48-3155 - 2.1mm center pin.
Mate with 2.1 x 5.5mm plugs.

No. 48-3555 - 2.5mm center pin.
Mate with 2.5 x 5.5mm plugs.

DC COAXIAL CABLES AND ADAPTORS

DC EXTENSION CABLES

No. 48-1023 - 6 ft. 2.1x5.5mm, Male - Female
No. 48-1024 - 12 ft. 2.1x5.5mm, Male - Female
No. 48-1027 - 6 ft. 2.5x5.5mm, Male to Female
No. 48-1028 - 12 ft. 2.5x5.5mm, Male to Female

Extension cables with Male and Female DC Connectors. Available in both 2.1mm & 2.5mm, 6 ft. and 12 ft. Lengths. Black 20 AWG zip cords.

COAXIAL PLUG POWER CORDS

Six foot cords molded DC coaxial plug on one end, stripped and tinned on other.

Part No.	EIAJ Class	I.D.	O.D.	Molded Plug	Wire Size (AWG)
TC204	-	1.3mm	3.5mm	Right Angle	24
TC210	-	2.1mm	5.5mm	Right Angle	24
TC218	-	2.1mm	5.5mm	Straight	18
48-218	-	2.1mm	5.5mm	Right Angle	18
TC250	-	2.5mm	5.5mm	Right Angle	24
TC258	-	2.5mm	5.5mm	Straight	18
48-228	-	2.5mm	5.5mm	Right Angle	18
48-412	-	1mm center pin	7.0mm	Straight	24
48-410	I	.7mm	2.35mm	Straight	24
TC240	II	1.7mm	4.0mm	Right Angle	24
TC275	III	1.7mm	4.75mm	Right Angle	24
48-420	IV	1mm center pin	5.5mm	Straight	24
TC265	V	1.4mm center pin	6.5mm	Right Angle	18

DC COAXIAL JACK POWER CORDS

Black zip cord, one conductor is marked with white line for polarity identification. Molded DC coaxial jack on one end, stripped and tinned on the other end. Available in 22 AWG and 18 AWG wires.

No. 48-257 - 2.1mm center pin, 22 AWG wire - 6 Ft.
(mate with 2.1mm x 5.5mm DC plug)
No. 48-287 - 2.1mm center pin, 18 AWG wire - 6 Ft.
(mate with 2.1mm x 5.5mm DC plug)
No. 48-255 - 2.1mm center pin, 22 AWG wire - 12 Inches
(mate with 2.1mm x 5.5mm DC plug)
No. 48-258 - 2.5mm center pin, 22 AWG wire - 6 Ft.
(mate with 2.5mm x 5.5mm DC plug)
No. 48-288 - 2.5mm center pin, 18 AWG wire - 6 Ft.
(mate with 2.1mm x 5.5mm DC plug)

For bulk packed product, add suffix letter "B" to the part number.

INTERCHANGEABLE DC PLUGS

Right Angle DC Plugs can be used with Philmore AC/DC Power Supply such as: Nos. BE226, BE227, BE240, 48-140 and DC/DC Power Supply Nos. BE19, 48-150 and 48-160. Make your own DC power cords, extensions or adaptors with extension cords Nos. 48-1021, 48-1025, 48-1020, 48-1202, & 48-1035.

2.5mm Male	3.5mm Male	9V Battery Snap	2.1 x 5.0mm	2.1 x 5.5mm	2.5 x 5.5mm
No. 48-2500	No. 48-3500	No. 48-9000	No. 48-2150	No. 48-2155	No. 48-2555

1.5 x 5.5 mm	1.7 x 4.0mm	1.75 x 4.75mm	1.35 x 3.5mm	1.0 x 3.0mm	0.75 x 2.35mm
No. 48-1555	No. 48-4740	No. 48-1475	No. 48-3535	No. 48-1030	No. 48-475

3.3 x 5.5mm x 1.0mm center Pin	2.5 x 5.0mm	1.5 x 5.0mm	2.8 x 5.5mm	3.0 x 6.3mm	1.0 x 7.0mm
No. 48-3355	No. 48-2550	No. 48-1550	No. 48-5528	No. 48-6330	No. 48-480

2.1mm & 2.5mm DC POWER ADAPTORS & EXTENSIONS

DC Extension cords & Pig-Tail adaptors allows the user to adapt a variety of our interchangeable DC power plugs & jacks to an existing DC power supply with 2.1 x 5.5mm or 2.5 x 5.5mm DC plug or jack. Turn your common 2.1 or 2.5 DC plugs or jacks to 17 different size DC plugs in seconds. Not only can you change the size of the plug, you can also change the polarity of the plug with ease. No need to buy multiple adaptors or power supplies.

2 Pin Socket to DC Jack.

No. 48-1021 - 2.1mm DC Jack, 6 ft. Cord
No. 48-1257 - 2.1mm DC Jack, 6" Cord
No. 48-1266 - 2.1mm DC Jack, 2" Cord
No. 48-1025 - 2.5mm DC Jack, 6 ft. Cord
No. 48-1258 - 2.5mm DC Jack, 6" Cord
No. 48-1269 - 2.5mm DC Jack, 2" Cord

2 Pin Socket to DC Plug

No. 48-1223
2.1mm DC Plug, 6 ft. Cord

No. 48-1227
2.5mm DC Plug, 6 ft. Cord

2 Pin Socket to 2 Pin Socket

No. 48-1202
6 Ft. Cord

No. 48-1208
6" Cord

2 Pin Plug to (2) 2 Pin Socket

No. 48-1022
2.5 Ft. Cord

2 Pin Plug to 2 Pin Socket

No. 48-1020 - 6 Ft. Cord

2 Pin Socket to Stripped and Tinned End

No. 48-1035 - 6 Ft. Cord

DC COAXIAL CABLES & ADAPTORS

POWER SUPPLY (WALL-WART) ACCESSORY ADAPTORS

Philmore offers a number of small power supplies, both regulated and multi-voltage types, that are equipped with a two-pin, in-line connector so that different "tips" (connectors) may be used. This provides the user with flexible Power Supplies that may find a wide variety of uses around the home or office. In addition to the usual "standard" connectors that the user is familiar with, Philmore is now making several new adaptors that can be attached to the two-pin connector and will expand the variety of ways that Philmore's power supplies can be used. The adaptors shown below have connectors that will allow them to be attached to the following Philmore power supplies: MW41 series, MW48-1250A, 48- Series, BE226, BE240 and BE227.

2 PIN ADAPTORS

TERMINAL BLOCK ADAPTOR

Any time that you want to connect bare wires to a Philmore power supply, this adaptor will be handy. One end of this 4" long adaptor is a two-pin connector for attachment to any of the power supplies mentioned above. The adaptor is terminated in a two conductor Terminal Block that will accommodate any bare wires up to 14 awg in size. Polarity is marked clearly and a small screw-driver will make fast connections.

No. 48-1271 -
4" Terminal Block Adaptor

Bare-WIRES ADAPTOR
Thousands of uses

If you need to apply power to a PC board, home-made circuit of some kind (etc.), a couple of bare wires will be handy. This adaptor has the Philmore two-pin connector on one end and may be used with any of the power supplies listed above. On the other end of a 6" cord is a pair of bare wires (clearly marked for correct polarity), pre-stripped and tinned for connection to your circuit.

No. 48-1272 -
6" Long Bare-Wires Adaptor

GATOR-CLIP ADAPTOR

For quick, temporary attachment to any circuit, battery connectors in a radio, alarm or wherever needed, nothing beats standard alligator clips for quick, easy connections. This 6" long adaptor has a Philmore 2-pin connector on one end that connects with any of the power supplies listed above. On the other end is (one red, one black) a pair of alligator clips.

No. 48-1273 -
Gator Clip Adaptor

ACCESSORY ADAPTOR KIT
Contains all 3 Adaptors

All three of the power adaptors, listed on this page, each having the Philmore two-pin plug connects to any of the power supplies listed above, or any AC or DC power supplies with 2 pin Female connector for interchangeable DC plugs. This is a "must" package for the DIY guy (you know: "gadget guy"). Contains Nos. 48-1271, 48-1272 and 48-1273 adaptors. With one of the Philmore variable voltage power supplies (listed above), there is hardly a small electronic device that you cannot get powered up and running.

No. 48-1275 - 1 Each of N0. 48-1271, 48-1272 & 48-1273

Solderless DC Plugs & Jacks

Inexpensive and time saving for installers to terminate cable with DC plug or jack of their choice. Only a small Phillips screw driver is needed to do the job. Molded connector on one end with 2" cord for flexibility, solderless terminal on the other end. Solderless terminal has a polarity marking and will accommodate up to 14 AWG wires.

Solderless Plugs
No. 48-1259
2.1 x 5.5mm plug to solderless terminal.

No. 48-1262
2.5 x 5.5mm plug to solderless terminal.

Solderless Jacks
No. 48-1265
2.1 center pin jack to solderless terminal.

No. 48-1268
2.5 center pin jack to solderless terminal.
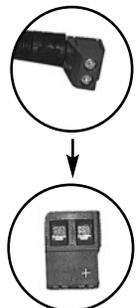
HOME THEATRE CONNECTORS & ADAPTORS

LKG Home Theatre connectors and adaptors are the superlative connectors for audio and video perfectionists. There are no better connectors. Both design and machining are attended to with great care. Only the purest metals and plastics are used for body materials. Gold is used extensively for both highly reliable electrical contact areas as well as to provide an unequalled, even luxurious, appearance.

HOME THEATRE PLUGS & JACKS

fig. 1

fig. 2

fig. 3

fig. 4

fig. 5

fig. 6

fig. 7

fig. 1	45-102G	RCA PLUG with spring strain relief. Color band identification. One each red and black per package. Maximum cable O.D. 7.0mm	
fig. 2	45-103G	RCA Plug for RG59/U coaxial cable; twist-on mounting.	
fig. 3	45-164G	Deluxe RCA Plug, red, white and yellow color band for A/V. Maximum cable O.D. 6.0mm. Package of Three.	
fig. 3	45-144G	Deluxe RCA Plug, yellow color band for video. Maximum cable O.D. 6.0mm. Package of Two.	
fig. 3	45-104G	RCA Plug for cables up to 6.0mm (0.24 inches) in diameter. Color band identification on zinc handles; gold contact areas. Pkg. of 1 red and 1 white.	
fig. 3	45-204G RD	RCA plug for mini coax cable up to 3.5mm (.137") in diameter. Red color band on Zinc handle, Gold contact area. Package of 2.	
fig. 3	45-204G GR	RCA plug for mini coax cable up to 3.5mm (.137") in diameter. Green color band on Zinc handle, Gold contact area. Package of 2.	
fig. 3	45-204G BU	RCA plug for mini coax cable up to 3.5mm (.137") in diameter. Blue color band on Zinc handle, Gold contact area. Package of 2.	
fig. 3	45-207G	RCA plug for mini coax cable up to 3.5mm (.137") in diameter. Color band on Zinc handle, Gold contact area. Package of 1 red, 1 green & 1 blue.	
fig. 4	45-114G	BNC male for coaxial cables up to 6.0mm O.D. Gold Plated contacts solder terminals. Package of 2.	
fig. 4	45-224G RD	BNC Male for mini coax cable up to 3.5mm (.137") in diameter. Red color band on Zinc handle, Gold contact area. Package of 2.	
fig. 4	45-224G GR	BNC Male for mini coax cable up to 3.5mm (.137") in diameter. Green color band on Zinc handle, Gold contact area. Package of 2.	
fig. 4	45-224G BU	BNC Male for mini coax cable up to 3.5mm (.137") in diameter. Blue color band on Zinc handle, Gold contact area. Package of 2.	
fig. 4	45-227G	BNC male for mini coax cable up to 3.5mm (.137") in diameter. Color band on Zinc handle, Gold contact area. Package of 1 red, 1 green & 1 blue.	
fig. 5	45-124G	"F" male for coaxial cables up to 6.0mm O.D. Gold Plated contacts solder terminal. Package of 2.	
fig. 6	45-106G	4 Pin Mini-Din Male; for cables up to 6mm O.D.. Package of two.	
fig. 6	45-186G	4 Pin Mini-Din Male; for cables up to 8.0mm O.D.. Package of two.	
fig. 7	45-478	Solderless S-VHS (bulkhead), .625" mounting hole, 4 Pin Mini DIN female-female. Gold plated	
fig. 7	45-248G	Solderless S-VHS (bulkhead), .50" mounting hole, 4 Pin Mini DIN female-female. Gold plated	
fig 7	42-468	Solderless S-VHS (bulkhead), .625" mounting hole, 4 Pin Mini DIN female-female Nickel Plated	
fig. 8	45-107G	RCA Jack w/spring strain relief. Color band I.D. Package 1 ea. red and black.	
fig. 9	45-105G	Deluxe RCA Jack, red and white color band for audio. (Left & Right) Maximum cable O.D. 6.0mm. Package of Two.	
fig. 9	45-165G	Deluxe RCA Jack, red, white and yellow color band for A/V. Maximum cable O.D. 6.0mm. Package of Three.	
fig. 9	45-145G	Deluxe RCA Jack, yellow color band for video. Maximum cable O.D. 6.0mm. Package of Two.	
fig. 10	45-108G	RCA Jack, isolated chassis mount. Gold w/color bands. Pack 1 each red and black.	
fig. 10	45-128G	RCA Jack, isolated chassis mount, red and white color band for audio. (Left & Right) Package of Two.	
fig. 10	45-138G	RCA Jack, isolated chassis mount, red, white and yellow color band for A/V. Package of Three.	
fig. 10	45-148G	RCA Jack, isolated chassis mount, yellow color band for video. Package of Two.	
fig. 11	45-110G	RCA Jacks bulkhead feed-thru. An adaptor with RCA females on each end for feeding through panels. For panels up to 5/32" thickness. Color band is red.	
fig. 11	45-111G	RCA Jacks bulkhead feed-thru. Same part as above but Color band is BLACK.	
fig. 12	45-2700 RD	Recessed chassis mount RCA jack, Gold plated contacts-isolated from panel. Mount in .765" hole, red insulation	
fig. 12	45-2700 WH	Recessed chassis mount RCA jack, Gold plated contacts-isolated from panel. Mount in .765" hole, white insulation	
fig. 12	45-2700 YL	Recessed chassis mount RCA jack, Gold plated contacts-isolated from panel. Mount in .765" hole, yellow insulation	
fig. 13	45-246G	BNC Female Feed - Thru Jack .50" Mounting Hole, Gold Plated	

fig. 8   fig. 9   fig. 10   fig. 11   fig. 12   fig. 13

HOME THEATRE CONNECTORS & ADAPTORS

HOME THEATRE PLUGS & JACKS

fig.			
fig. 1	**45-142G**	RCA Jack, Bulkhead .375" mounting hole. (2) Pack = (1) ea. Red + White, Gold plated	
fig. 1	**45-162G**	RCA Jack, Bulkhead .375" mounting hole. (1) ea. Red + White + Yellow, Gold plated	
fig. 1	**45-163G**	RCA Jack, Bulkhead .375" mounting hole; (2) Pack Orange, Gold plated	
fig. 1	**45-166G**	RCA Jack, Bulkhead .375" mounting hole; (1) each Red, Green & Blue, Gold plated	
fig. 1	**42-342**	RCA Jack, Bulkhead .375" mounting hole. (2) Pack = (1) ea. Red + White Nickel Plated	
fig. 1	**42-362**	RCA Jack, Bulkhead .375" mounting hole. (1) ea. Red + White + Yellow Nickel Plated	
fig. 1	**42-352**	RCA Jack, Bulkhead .375" mounting hole. (2) Pack Yellow Nickel Plated	
fig. 1	**42-366**	RCA Jack, Bulkhead .375" mounting hole; (1) each Red, Green & Blue Nickel Plated	
fig. 2	**45-109G**	RCA Jack, panel mounting with Teflon insulator. Package 1 red and 1 black.	
fig. 3	**45-270**	RCA Jack, panel mounting, standard insulator. Pkg. of 1 ea. red, yellow, white.	
fig. 3	**45-273**	Component Video RCA Jack Mt. in .25" Hole w/Std insulator. (3) Pack = (1) Red + Blue + Green	
fig. 3	**45-276**	RCA Jack Mt. in .25" Hole w/Std insulator. (6) Pack = (1) ea. Red, White, Yellow, Black, Green, Blue	
fig. 4	**45-229G**	Binding Post, insulated. Accepts wire or banana plug. Pkg. 1 ea. red & black.	
fig. 5	**45-230G**	Binding Post, all metal. Gold w/color bands. Package 1 ea. red and black.	
fig. 6	**45-232G**	Solderless Metal Binding Post, .375" mounting hole. Red and black color band. Package of Two.	
fig. 7	**45-239G**	Low profile Banana Jacks with set screw terminal. Will accept up to 12 Ga. speaker wire. Package 1 each Red & Black.	
fig. 8	**45-235G**	Banana Jacks. Mount in .25" hole. Package of 1 each red and black.	
fig. 9	**45-120G**	Mono (2 conductor) Standard 1/4" Phone Plug; with strain relief spring. Package 1 each red and black.	
fig. 10	**45-121G**	Mono (2 conductor) mini-1/8" Phone Plug; w/rubber strain relief. Pkg. of 2.	
fig. 11	**45-123G**	Mono (2 conductor) mini-1/8" in-line Phone Jack; w/strain relief. Pkg. of 2.	
fig. 12	**45-132G**	Stereo Phone Plug (3 conductor), standard 1/4" with spring strain relief. Package of 1 red & 1 black.	
fig. 13	**45-122**	Mono (2 conductor) Phone Jack , standard 1/4" in-line type with spring strain relief. Package 1 red and 1 black.	
fig. 14	**45-135**	Stereo (3 conductor) Phone Jack, standard 1/4" in-line type with spring strain relief. Package 1 red and 1 black.	
fig. 15	**45-133G**	Stereo (3 conductor) Phone Plug, mini 1/8" with rubber strain relief. Pkg. of 2.	
fig. 16	**45-134G**	Stereo (3 conductor) Phone Jack, 1/4" - panel mounting, open circuit.	
fig. 17	**45-136G**	Stereo (3 conductor) Phone Jack, mini 1/8" in-line type with rubber strain relief. Package of 2.	
fig. 18	**45-310G**	Double RCA male adaptor; plug on each end. Package of 1 red and 1 black.	
fig. 19	**45-810G**	Spade Lugs, handles up to 10 ga. wire. Package 1 black & 1 red.	
fig. 20	**45-811G**	Single Banana Plug 1 Pair red & black. Plastic handle	
fig. 21	**45-812G**	Banana Plugs, for wire up to 10 gauge. Package 1 red & 1 black.	
fig. 22	**45-813G**	Speaker Pin Plug 1 Pair red & black	
fig. 23	**45-814G**	Pin Plugs, for wire up to 10 gauge. Package 1 red & 1 black. Plastic handle	
fig. 24	**45-816G**	Ring Terminals for wire up to 10 gauge.	
fig. 25	**45-820G**	Ring Terminals for 12 to 10 ga. wire; hole size #10. Package 2 red & 2 black. Plastic handle	
fig. 26	**45-818G**	Gold Coupler for perfectly joining two wires up to 10 gauge.	
fig. 27	**45-280**	Gold Spade Terminal. Attach under a speaker screw (etc.) and permits connecting wires up to 10 gauge with no loss in fidelity.	
fig. 28	**45-822G**	Spade Terminals for 12 to 10 ga. wire; hole size #10. Package 2 red & 2 black. Plastic handle	

fig. 1

fig. 2

fig. 3

fig. 4

fig. 5

fig. 6

fig. 7

fig. 8

fig. 9

fig. 10

fig. 11

fig. 12

fig. 13

fig. 14

fig. 15

fig. 16

fig. 17

fig. 18

fig. 19

fig. 20

fig. 21

fig. 22

fig. 23

fig. 24

fig. 25

fig. 26

fig. 27

fig. 28

67

HOME THEATRE CONNECTORS & ADAPTORS

HOME THEATRE PLUGS & JACKS

fig.	1	**45-692G**	3 Pin Male, Amphenol style microphone connector, in-line style.
fig.	2	**45-690G**	3 Pin Female, Amphenol style microphone connector, in-line style.
fig.	3	**45-694G**	3 Pin Female, Amphenol style microphone connector, panel mounting.
fig.	4	**45-696G**	3 Pin Male, Amphenol style microphone connector, panel mounting.
fig.	5	**45-240**	Gold Banana Plugs,(stackable style) screw attachment accommodates wire up to 10 gauge. Package of 1 each red & black.
fig.	6	**45-242G**	Locking Banana Plug, package of one.
fig.	7	**45-260**	Dual Banana Plug, gold plated plugs, black body. Package of one.
fig.	7	**45-262**	Dual Banana Plug, gold plated plugs, red body. Package of one.
fig.	8	**45-236G**	Dual Binding Post; gold plated thumb screws, .75" spacing.
fig.	9	**45-238**	Banana Jack, low profile type. Package of one red and one black.
fig.	10	**45-266**	Dual Banana Plug, screw attachments for wires up to ten gauge, black plastic handle. Package of 1.
fig.	10	**45-268G**	Dual Banana Plug with screw attachments for up to 10 AWG wire. Red Handle Package of 1.
fig.	11	**45-263G**	"F" Male to RCA Female adaptors. Two per package.
fig.	12	**45-307G**	RCA Female to "F Female . Use either in-line or panel mount in 3/8" hole. Package of 1 red and 1 white.
fig.	12	**45-306G**	RCA Female to "F Female . Use either in-line or panel mount in 3/8" hole. Package of 1 red, White & Yellow
fig.	12	**45-301G**	RCA Female to "F Female . Use either in-line or panel mount in 3/8" hole. Package of 1 red, Green & Blue
fig.	13	**45-308G**	"F" female to RCA male adaptor. Two per package.
fig.	14	**45-309G**	Dual "F" Female coupler; joins two cables. Use in-line or panel in 3/8" hole. Pkg. of two.
fig.	14	**42-1081G**	Extra long (1") dual "F" Female coupler. Package of 2.
fig.	15	**45-801G**	Double " Y" Adaptor 6" cable. 2 color coded 2 RCA Plugs to 4 RCA Jacks.
fig.	16	**45-4010G**	Theatre Pro A/V "Y" Adaptor, RCA plug to 2 RCA jacks, Gold Plated, OFC Cable, Grey color jacket - 7" length. Can be used for both Audio and Video application.
fig.	17	**45-800G**	Double " Y" Adaptor 6" cable. 2 color coded 2 RCA Jacks to 4 RCA Plugs.
fig.	18	**45-4000G**	Theatre Pro A/V "Y" Adaptor, RCA jack to 2 RCA plugs, Gold Plated, OFC Cable, Grey color jacket
fig.	19	**45-830G**	Ring Terminals, color coded pair for wire either 10 or 12 gauge. Pkg. of two.

fig. 1

fig. 2

fig. 3

fig.4

fig. 5

fig. 6

fig. 7

fig. 8

fig. 9

fig. 10

fig. 11

fig. 12

fig. 13

fig. 14

fig. 15

fig. 16

fig. 17

fig. 18

fig. 19

HOME THEATER A / V ADAPTORS

fig. 1

fig. 2

fig. 3

fig. 4

fig. 5

fig. 6

fig. 7

fig.	Part	Description
fig. 1	45-832G	Spade Terminals, color coded pair for wire either 10 or 12 gauge. Pkg. of two.
fig. 2	45-305G	1/8" Mono Plug to 1/4" Mono Jack.
fig. 3	45-325G	1/8" (3.5mm) Mono plug to 1/8" (3.5mm) stereo jack.
fig. 4	45-304G	1/8" Mono Plug to RCA Jack.
fig. 5	45-324G	Right Angle, 1/8" (3.5mm) Mono plug to RCA jack.
fig. 6	45-303G	1/4" Mono Plug to RCA Jack.
fig. 7	45-323G	Right Angle, 1/4" (6.3mm) Mono plug to RCA jack.
fig. 8	45-302G	1/4" Mono Plug to 1/8" Mono Jack.
fig. 9	45-320G	1/8" Stereo Plug to 1/4" Stereo Jack.
fig. 10	45-222G	1/4" Stereo Plug to 1/8" Stereo Jack.
fig. 11	45-311G	Dual RCA Jack, female on each end.
fig. 12	45-233	3.5mm Stereo Feed - Thru jack mount in .375" mounting hole, Gold contacts with black plastic body
fig. 13	45-433G	S-VHS/Female + (2) RCA / Female in-line coupler. Red & white color coded RCA jacks.
fig. 14	45-333G	Triple RCA Jack Adaptor, red, white and yellow color-coded for A/V.
fig. 15	45-312G	Dual RCA Plug, male on each end.
fig. 16	45-313G	Right angle RCA adaptor, male to female.
fig. 17	45-314G	RCA Plug to two RCA Jacks.
fig. 18	45-315G	RCA Plug to Dual RCA Jack right angle.
fig. 19	45-316G	Right Angle RCA Jack to RCA Plug, plastic handle. Package 1 red & 1 black.
fig. 20	45-318	Three RCA Jacks adaptor.
fig. 21	45-319G	RCA "T" Adaptor, RCA jack to two RCA plugs.
fig. 22	45-453	S-VHS "Y" Adaptor, MD4 Male/ (2) RCA Male
fig. 22	45-459	6 Ft. S-VHS adaptor, MD4 Male / (2) RCA Male
fig. 23	45-455	S-VHS "Y" Adaptor, MD4 Male/ (2) BNC Male
fig. 23	45-456	6 Ft. S-VHS adaptor, MD4 Male / (2) BNC Male
fig. 24	45-457	S-VHS "Y" Adaptor, MD4 Male/ (2) BNC Female
fig. 24	45-458	6 Ft. S-VHS adaptor, MD4 Male / (2) BNC Female
fig. 25	45-424	S-VHS "Y" Adaptor, MD4 Male/ (2) MD4 Female
fig. 25	45-426	6 Ft. S-VHS adaptor, MD4 Male / (2) MD4 Female
fig. 25	45-434	S-VHS "Y" Adaptor, MD4 Female/ (2) MD4 Male
fig. 25	45-444	S-VHS "Y" Adaptor, MD4 Female/ (2) MD4 Female
fig. 25	45-454	S-VHS "Y" Adaptor, MD4 Male/ (2) MD4 Male
fig. 26	45-395G	Metal Body, 3.5mm Stereo Feed - Thru Jack, Mount in .375" Mounting Hole, Gold plated
fig. 26	45-395	Metal Body, 3.5mm Stereo Feed - Thru Jack, Mount in .375" Mounting Hole, Nickel plated
fig. 27	45-1213	idaptor Headphone / Audio Adaptor for iPhone, 3.5mm Stereo Plug (for recessed jack on iPhone) to 3.5mm Stereo Jack.

fig. 8

fig. 9

fig. 10

fig. 11

fig. 12

fig. 13

fig. 14

fig. 15

fig. 16

fig. 17

fig. 18

fig. 19

fig. 20

fig. 21

fig. 22

fig. 23

fig. 24

fig. 25

fig. 26

fig. 27

HOME THEATRE QUICK FIT™ A/V ADAPTORS

Philmore offers the largest selections of Snap - In Audio / Video / HD adaptors to create a custom design multimedia wall plate. Mix and match Philmore Quick - Fit™ adaptors with our Keystone standard wall plates or Designer style inserts from one port to six ports. All adaptors are Feed - Thru type, no tool required, just plug & play. Most adaptors are Gold plated for optimum performance and appearance, plastic insert is white. They are packaged for in-store display and easy handling.

fig. 1 **45-702** Gold plated standard F-Type Female to Female, White insulation. Package of 2.
fig. 2 **45-704** Gold plated 3 GHz F-Type Female to Female, Blue insulation. Package of 2.
fig. 3 **45-706** Gold plated RCA Female to Female, Red and White insulation. Package of 2.
fig. 3 **45-708** Gold plated RCA Female to Female, Red, White and Yellow insulation. Package of 3.
fig. 3 **45-710** Gold plated RCA Female to Female, Red, Blue and Green insulation. Package of 3.
fig. 3 **45-712** Gold plated RCA Female to Female, Red insulation. Package of 2.
fig. 3 **45-714** Gold plated RCA Female to Female, White insulation. Package of 2.
fig. 3 **45-716** Gold plated RCA Female to Female, Yellow insulation. Package of 2.
fig. 3 **45-718** Gold plated RCA Female to Female, Blue insulation. Package of 2.
fig. 3 **45-720** Gold plated RCA Female to Female, Green insulation. Package of 2.
fig. 3 **45-722** Gold plated RCA Female to Female, Orange insulation. Package of 2.
fig. 3 **45-724** Gold plated RCA Female to Female, Black insulation. Package of 2.
fig. 4 **45-726** Gold plated RCA Female to F Female, Red and White insulation. Package of 2.
fig. 4 **45-728** Gold plated RCA Female to F Female, Red, White and Yellow insulation. Package of 3.
fig. 4 **45-730** Gold plated RCA Female to F Female, Red, Blue and Green insulation. Package of 3.
fig. 4 **45-732** Gold plated RCA Female to F Female, Red insulation. Package of 2.
fig. 4 **45-734** Gold plated RCA Female to F Female, White insulation. Package of 2.
fig. 4 **45-736** Gold plated RCA Female to F Female, Yellow insulation. Package of 2.
fig 4 **45-738** Gold plated RCA Female to F Female, Blue insulation. Package of 2.
fig. 4 **45-740** Gold plated RCA Female to F Female, Green insulation. Package of 2.
fig. 4 **45-742** Gold plated RCA Female to F Female, Orange insulation. Package of 2.
fig. 4 **45-744** Gold plated RCA Female to F Female, Black insulation. Package of 2.
fig. 5 **45-746** Gold plated S-VHS Female to Female. Package of 1.
fig. 6 **45-748** Flush mount S-VHS Female to Female. Package of 1.
fig. 7 **45-750** 2.1mm DC Coaxial power jack, Female to Female. Package of 1.
fig. 7 **45-752** 2.5mm DC Coaxial power jack, Female to Female. Package of 1.
fig. 8 **45-754** Gold plated Binding Post, Female to Female. Package of 2. Black and Red striped color - coded.
fig. 9 **45-756** Gold plated Binding Post, front side is Binding Post with screw on rear side connections. Package of 2.
fig. 10 **45-758** Gold plated Banana jack, front side is standard Banana jack with screw on rear side connections 2/Pkg.
fig. 11 **45-760** Flush mount HDMI Female to Female with LED indicator light. Package of 1.
fig. 12 **45-762** HDMI Female with short pigtail to HDMI Female. Package of 1.
fig. 13 **45-764** Flush mount USB A Female to Female. Package of 1.
fig. 14 **45-766** CAT 5e Jack, 110 type punchdown terminations on the rear. Package of 1.
fig. 15 **45-768** Gold plated BNC Female to Female. Package of 1.
fig. 16 **45-770** White blank inserts to cover up unused port on wall plates. Package of 4.
fig. 14 **45-772** CAT 3 (voice grade) 6 conductor jack with 110 type terminations. Package of 1.
fig. 17 **45-774** 3.5mm Stereo Female to Female.

fig. 1

fig. 2

fig. 3

fig. 4

fig. 5

fig. 6

fig. 7

fig. 8

fig. 10

fig. 12

fig. 14

fig. 16

fig. 9

fig. 11

fig. 13

fig. 15

fig. 17

Keystone Wall Plates			
Designer Style	**Ports**	**Standard**	
No. 72-5051	One	No. 72-5019	
No. 72-5052	Two	No. 72-5029	
No. 72-5053	Three	No. 72-5039	
No. 72-5054	Four	No. 72-5049	
No. 72-5056	Six	No. 72-5069	

SUPER-FLEX DOUBLE SHIELDED AUDIO CABLES

SUPER-FLEX cable was designed to be the best audio cable that we could possibly make. Both home theatre and automotive environments were considered; the cable is made to last indefinitely in either application. Highly pure OFC (oxygen free copper) is used throughout. Double shielding blocks external magnetic noise; heavy PVC outer jacket is resistant to chemicals, abrasion and heat. The RCA connectors are made from the best materials and then gold plated to assure a resistance-free, quality connection . In any audio application, you are not going to be able to find a better cable for pure audio and great longevity.

Gold Dual RCA to RCA male Cables

DUAL RCA PLUG CABLE ASSEMBLIES
Two RCA plugs each end on Super-Flex cable.

No. 45-405 - 1/2 foot cable
No. 45-415 - 1 1/2 foot cable
No. 45-403 - 3 foot cable
No. 45-406 - 6 foot cable

bulk SUPER-FLEX CABLE
No. 45-401 100 feet bulk
No. 45-402 200 feet bulk

SUPER-FLEX PLUS*
GOLD-PLATED, DUAL RCA PLUG CABLE ASSEMBLIES

The series below uses Super-Flex Plus cable which has an added wire which is intended for use as a control wire or additional ground wire. Otherwise, this is the same cable as regular Super-Flex cable.

DUAL RCA PLUG CABLE ASSEMBLIES
Two RCA GOLD plugs each end on Super-Flex Plus cable.

Cable assemblies
No. 45-412 - 12 foot cable
No. 45-417 - 17 foot cable
No. 45-420 - 20 foot cable
No. 45-425 - 25 foot cable

***SUPER-FLEX PLUS**
Bulk cable, no connectors
No. 45-407 - Bulk 100 feet
No. 45-408 - Bulk 200 feet

OFC-AIR INSULATION DIGITAL AUDIO/VIDEO CABLES

Gold Plated RCA Plugs both ends

LKG oxygen free copper with air insulation digital audio cables minimize signal loss and achieve generous stereo imaging, proper focus and uniform frequency reproduction. With LKG you hear more of the music the way it was meant to be heard and receive interference free video signal. LKG Digital Audio/Video Cables are insulated with highly flexible PVC jackets that makes them easy to use yet extremely durable.

All LKG Digital Audio/Video Cables are handmade and pretested before packaging. All metal connector parts are gold plated for the best connection.

LKG Digital Audio/Video Cables come attractively packaged for display and are available in the following lengths:

Audio/Video 1 RCA - 1 RCA	Stereo Audio/VCR Mono Dubbing 2 RCA - 2 RCA	Stereo VCR Dubbing 3 RCA - 3 RCA
No. CA92 - 3 ft.	**No. CA10** - 3 ft.	**No. 45-5015** - 1.5 ft.
No. CA94 - 6 ft.	**NO. CA12** - 6 ft.	**No. 45-503** - 3 ft.
No. CA96 - 12 ft.	**No. CA125** - 12 ft.	**No. 45-5045** - 4.5 ft.
		No. 45-506 - 6 ft.
		No. 45-512 - 12 ft.
		No. 45-5025 - 25 ft.

SUPER FLEX STEREO & VIDEO DUBBING CABLES
(3 RCA - 3 RCA Gold Plated)

Super Flex Stereo and Video dubbing cable (3 RCA - 3 RCA Gold Plated) Flexible paired cables, 75 ohm coaxial video (RG59A/U) and fully shielded audio (color coded for audio Left and Right). Terminated with molded RCA connectors, Gold Plated. Soft PVC jacket for flexibility. New color coded A/V to match industry color sequence (Audio - Red/White) (Video - Yellow) on most equipment.

MALE to MALE

No. VCK81T - 1.5 ft.
No. VCK83T - 3 ft.
No. VCK84T - 4.5 ft.
No. VCK8T - 6 ft.
No. VCK812T - 12ft.

No. VCK820T - 20 ft.
No. VCK825T - 25 ft.
No. VCK850T - 50 ft.
No. VCK875T - 75 ft.
No. VCK810T - 100 ft.

MALE to FEMALE
No. 45-3603 - 3 ft.
No. 45-3606 - 6 ft.
No. 45-3612 - 12 ft.

BULK SUPER FLEX STEREO & VIDEO DUBBING CABLE

Flexible paired cable, 75 ohm coaxial video (RG59 A / U) and fully shielded audio cables. Make your own stereo & video dubbing cable in custom lengths.

Video   Audio L   Audio R
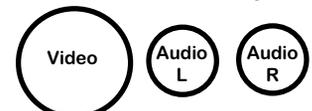
No. 45-881 - 100 ft. Spool
No. 45-883 - 300 ft. Spool

71

COMPOSITE TO S-VHS 2 WAY ADAPTORS

S-VHS (S-Video) to composite (RCA) adaptor is a low cost alternative to high priced active converters. Unique circuit converts a standard base-band signal to an S-VHS signal. Gold plated connectors. Bi-Directional.

No. 45-499 -
S-VHS/M to RCA/F

No. 45-489 -
S-VHS/F to RCA/F

No. 45-479 -
S-VHS/F to RCA/M

UNIVERSAL A/V INTER - CONNECT CABLES:

Never lose your A/V cables again. We combined Toslink, S-VHS, composite video (RCA), Audio (RCA L&R) cables together in one. Cables are color-coded with Gold plated connectors. Use with LKG No. 44-531 remote control A/V selector.

No. 45-5403 - 3 ft.
No. 45-5406 - 6 ft.
No. 45-5412 - 12 ft.

Right Angle S-VHS Cables

Right angle S-VHS connectors for low profile connections. Gold plated 4 Pin Mini DIN connectors with flexible cable.

No. 44-448 - 6 FT

Stereo & Right Angle S-VHS dubbing cables
(3.5 mm stereo Male - MD4 male/S-VHS)
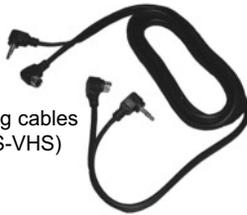
No. 44-447 - 6 FT
Right Angle S-VHS Male on both Ends

SUPER FLEX STEREO & S-VHS DUBBING CABLES
(2 RCA - 4 Pin MINI DIN Male/S-VHS)

Super Flex Stereo and S-VHS dubbing cable (2 RCA - 4 Pin MINI DIN Male/S-VHS) An LKG quality Gold Plated S-VHS (Male) cable coupled with paired audio cables (Audio Left & Right) with soft PVC jacket.

No. 45-2403 - 3 ft.
No. 45-2406 - 6 ft.
No. 45-2412 - 12 ft.
No. 45-2425 - 25 ft.
No. 45-2450 - 50 ft.

MEDIA STAR Extra

Stereo & S-VHS Dubbing Cables. Extra shielding cables for best performance. Flexible bule Jacket Cable with Metalized Plastic handles
Stereo & S-VHS
2 RCA + MD4 Male-Male

No. 71-3450 - 50 Ft.
No. 71-3475 - 75 Ft.
No. 71-3410 - 100 Ft.

S-Video or S-VHS CABLES

For use with S-VHS equipment or television sets that use an S-connector for separate luminance and chroma signals. The Philmore cables use gold plated (4-pin mini-din) connectors throughout for life-long dependable service. S-Cable is available in bulk. See S-Video or S-VHS CABLES below.

No.	Size	Description
VHS41	1 ft.	4-pin male on each end
VHS43	3 ft.	4-pin male on each end
VHS46	6 ft.	4-pin male on each end
VHS412	12 ft.	4-pin male on each end
VHS401	1 ft.	4-pin male to female
VHS406	6 ft.	4-pin male to female
VHS4012	12 ft.	4-pin male to female
VHS425	25 ft.	4-pin male to male
VHS450	50 ft.	4-pin male to male
VHS410	100 ft.	4-pin male to male

No. VHS4 - S-VHS In-Line Adaptor
(4 Pin Mini Din Female)

LOW LOSS S-VHS CABLES WITH GOLD CONNECTORS

A heavily shielded, strong and durable S-VHS cable that is possibly the best available. Multiple strands of synthetic fibers reinforced for strength, a heavy rubber insulation jacket. Connectors Gold plated, standard S-VHS four pin type. A 95% copper braid shield coverage is effectively 100% shielding in electrical terms, low loss. Available in preassembled S-VHS cables and bulk as well.

Bulk cable user information: Cable is comprised of two fully shielded (1 red and 1 yellow) 75 ohm coaxial cable. Coaxial cable outside diameter .122", inner insulator is PE foam .087 O.D. (24 awg stranded center conductor) with a nominal capacitance of 16.9 picofarads per foot. Shield is copper braid woven for 95% coverage. Total cable O.D. is .315" outer insulation dark grey in color.

With Gold S-VHS connectors   **Bulk Cable on Spool**
No. 45-4803 - 3ft
No. 45-4806 - 6ft
No. 45-4812 - 12ft
No. 45-4825 - 25ft

Recommended Philmore S-VHS Male Connectors

NO. 45-186G - 4 Pin Mini DIN, Metal handle

(Fig. 1)	(Fig. 2)	(Fig. 3)	(Fig. 4)	(Fig. 5)

(Fig. 1) CENTER CONDUCTOR, COPPER BRAID, PVC JACKET (GRAY), PE INSULATOR, FOIL

(Fig. 2) CENTER CONDUCTOR, FOIL, PVC JACKET (GRAY), PE INSULATOR, COPPER BRAID

(Fig. 3) CENTER CONDUCTOR, COPPER BRAID, PVC JACKET, PVC JACKET (GRAY), PE INSULATOR, NYLON/COTTON FILLING

(Fig. 4) CENTER CONDUCTOR, FOIL, PVC JACKET (GRAY), PE INSULATOR, COPPER BRAID

(Fig. 5) CENTER CONDUCTOR, INSULATION, FOIL, INNER SHIELD, FOIL, OUTTER SHIELD, PVC JACKET — CLEAR JACKET
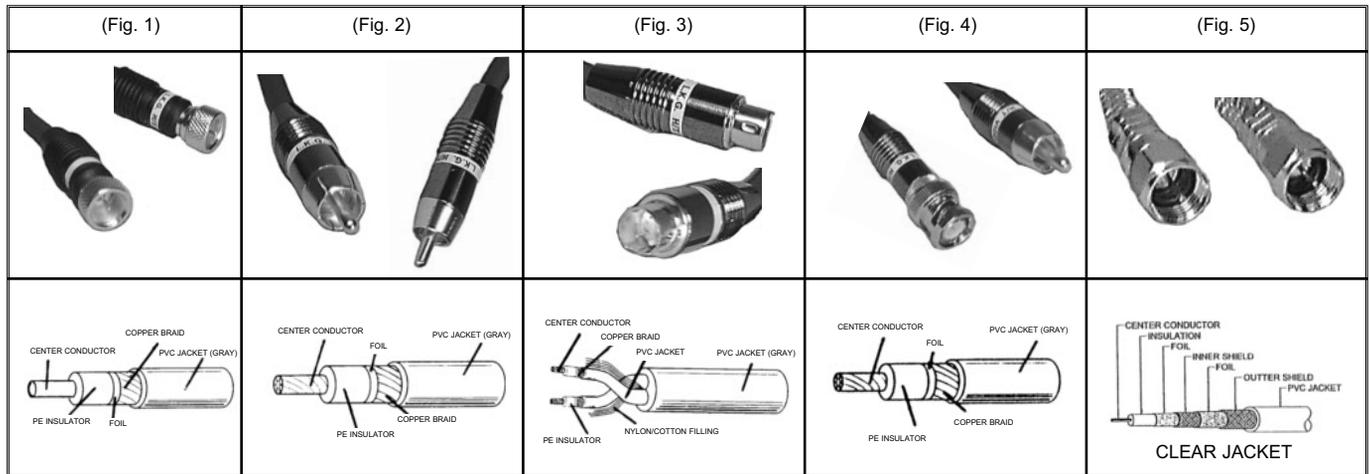
"F" to "F" (Fig. 1)	RCA to RCA (Fig. 2)	(S-VHS) (Fig. 3)	RCA - BNC (Fig. 4)	"F" to "F" RG 6 Quad (Fig. 5)	LENGTH
45-4203	45-4303	45-4403	45-4503	45-4703	3 ft.
45-4206	45-4306	45-4406	45-4506	45-4706	6 ft.
45-4212	45-4312	45-4412	45-4512	45-4712	12 ft.
45-4225	45-4325	45-4425	45-4525	45-4725	25 ft.

Home Theatre has become a serious pastime for many people, who strive to have electronic entertainment media as close to perfect as possible. 'Perfect' is definitely obtainable with today's electronic equipment. And the way to get top performance from your audio and video equipment is to use only the best cables available. Anything less, and you may as well not buy serious equipment.

The following series of cables has been developed with perfection in mind. Only pure gold is used on contact surfaces; it will maintain ideal electrical characteristics indefinitely. OFC (oxygen free copper) is used as the best possible choice for inner conductors. The virgin plastics used as insulators were selected both for excellent electrical characteristics as well as for very long life expectancy. When you use LKG Home Theatre Cables, there will be no doubt that your equipment is delivering every ounce of performance that it was designed to provide for you.

CAMCORDER A/V CABLES:

Shielded patch cords. Flexible black PVC jacket, with 3.5mm (4 conductor) right angle plug on one end and three color-coded RCA connectors (red/white/yellow) at other end. Gold plated connectors.

RCA Male
No. 42-3503 - 3 ft.
No. 42-3506 - 6 ft.
No. 42-3512 - 12 ft.

RCA Female
No. 42-3603 - 3ft.

No. 42-3546 - 6 ft. right angle 3.5mm (4 Cond.)
to stripped & tinned leads.

DOUBLE SHIELDED " Y " CABLES

Two Shields: Braided OFC copper shielding, Plus an aluminum foil shield. 24 Karat gold plated RCA plugs and jacks on each end.

NO. 45-4600
1 Female RCA jack to 2 male RCA plugs

NO. 45-4610
1 Male RCA plug to 2 Female RCA jacks

IN-WALL AUDIO / VIDEO CABLE

Cables are UL-CL3 rated, suitable for In-Wall installation. Will comply with NEC code for residential or commercial installation.

3.5mm Stereo Male - Male

No. 44-1025 - 25 Ft.
No. 44-1050 - 50 Ft.
No. 44-1075 - 75 Ft.
No. 44-1100 - 100 Ft.

Component Video Cable
3 RCA Male - 3 RCA Male
(Red / Blue / Green)

No. 44-2025 - 25 Ft.
No. 44-2050 - 50 Ft.
No. 44-2100 - 100 Ft.

Audio / Video Cable
3 RCA Male - 3 RCA Male
(Red / White / Yellow)

No. 44-3025 - 25 Ft.
No. 44-3050 - 50 Ft.
No. 44-3100 - 100 Ft.

73

MEDIA STAR™ AUDIO/MULTIMEDIA CABLE

LKG **MediaStar™** cables employ better materials throughout. Pure copper conductors receive a refined tin plating to prevent chemical degradation which commonly begins to occur to raw copper within months of manufacture. This plating assures true fidelity without losses in the mid and high audio ranges; for years. The inner cable is heavier than most (26ga. vs 28ga.) to reduce electrical resistance; shielding has also been increased. The outer PVC insulation is advanced (SRPVC) material that will increase life and durability by years. And the light grey color blends practically unnoticed into your home or office. Bulk **MediaStar™** Cable is ideal for custom audio connections. Available in 100 ft. and 300 ft. spools.

Single Conductor with Shield:
No. 70-1100 - 100 ft. Spool
No. 70-1300 - 300 ft. Spool
Two Conductor with Shield:
No. 70-2100 - 100 ft. Spool
No. 70-2300 - 300 ft. Spool
Dual Shielded Conductors:
No. 70-3100 - 100 ft. Spool
No. 70-3300 - 300 ft. Spool
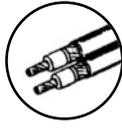
70-1100   70-2100   70-3100

Retractable Cable, 2 Conductor with Shield (Stereo Application) Cable O.D. is 3.0mm (.118")

No. 44-483 - 3 Ft. *
No. 44-486 - 6 FT *
No. 44-489 - 10 FT *
No. 44-492 - 15 FT *
No. 44-495 - 25 FT *

* indicates total extended length not retracted length.

Conductor: 10/0.12 Bare copper
Insulation: PP, ø1.1±0.05, Red/Transparent
Shield: 28/0.12 Bare copper, Sprial
Jacket: PVC, Black
ø3.5±0.15

Cable construction

BULK AUDIO CABLES

Customize your own Audio cables to meet your installation needs or specifications. All bulk cables are made of the same quality materials used in our premade audio cables. Flexible PVC jacket, pure Copper throughout and RoHS compliant. Choose audio connectors from our vast selection of audio connectors, your creation is endless with Philmore bulk cables and connectors. Jacket color is black. 28 Gauge wire.

Single Conductor with Shield (for Mono applications)
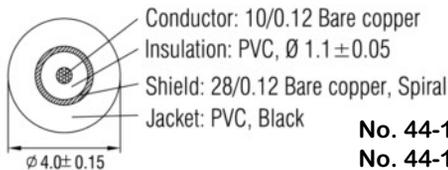
Conductor: 10/0.12 Bare copper
Insulation: PVC, Ø 1.1±0.05
Shield: 28/0.12 Bare copper, Spiral
Jacket: PVC, Black
ø 4.0± 0.15

Cable Construction

No. 44-1250 - 250 Ft. spool
No. 44-1500 - 500 Ft. spool
No. 44-1002 - 1000 Ft. spool

Two Conductor with Shield (for Stereo applications)
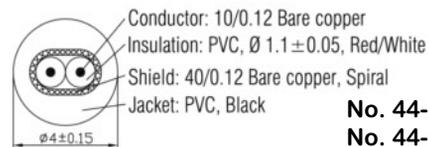
Conductor: 10/0.12 Bare copper
Insulation: PVC, Ø 1.1±0.05, Red/White
Shield: 40/0.12 Bare copper, Spiral
Jacket: PVC, Black
ø4±0.15

Cable Construction

No. 44-2250 - 250 Ft. spool
No. 44-2500 - 500 Ft. spool
No. 44-2002 - 1000 Ft. spool

Dual shielded Conductors (for Two Separate Mono applications)
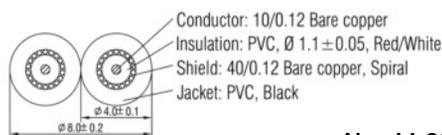
Conductor: 10/0.12 Bare copper
Insulation: PVC, Ø 1.1±0.05, Red/White
Shield: 40/0.12 Bare copper, Spiral
Jacket: PVC, Black
ø4.0±0.1
ø8.0±0.2

Cable Construction

No. 44-3250 - 250 Ft. spool
No. 44-3500 - 500 Ft. spool
No. 44-3002 - 1000 Ft. spool

S-Video or S-VHS CABLES

PVC JACKET

Bulk "S-Video" cable for making your own cables in whatever lengths needed. Use with Philmore connectors Nos. EMA4 and 45-106G etc.. The cable has a black PVC outer insulation, red and white inner conductors (two) that have insulated shields for a total of four conductors. Supplied on spools.

No.	size
45-525	250 Ft.
45-550	500 Ft.
45-510	1,000 Ft.

Recommended Philmore S-VHS Male Connectors

NO. ETA4 - 4 Pin Mini DIN, Plastic handle
NO. 45-106G - 4 Pin Mini DIN, Metal handle

BULK SUPER FLEX STEREO & S-VHS DUBBING CABLE

S-VHS Video   Audio L   Audio R

Super Flex stereo & S-VHS video dubbing cables. Make your own stereo & S-VHS dubbing cable in custom lengths. Paired audio cables are fully shielded.

No. 45-2100 - 100 ft. Spool
No. 45-2300 - 300 ft. Spool

Recommended Philmore A/V In-Line coupler to extend lengths of above cables No. 45-433G

Home Theatre Video Cable RG59 A/U, 75 ohms, Grey Jacket Insulation

Same Supreme Quality Cable used on all LKG 45-4300 Series "Home Theatre" Video Cables. Extremely Flexible, Gray jacket will blend in with most home decor.

PVC JACKET
CENTER CONDUCTOR
FOIL
COPPER BRAID
PE INSULATION

No. 45-4310 - 100 ft. Spool
No. 45-4330 - 300 ft. Spool
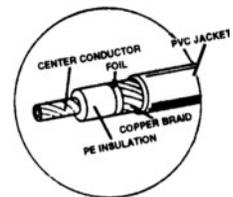
RG6 Quad shield, 75 ohms, clear Jacket Quad shield for Digital Video Application. Super Flex Clear Jacket. 2300MHz. UL/CSA

No. 45-4750 - 500 ft. Spool

LIGHT - LINK AUDIO CABLES
Digital audio fiber optic with universal connectors

Toslink "Flipper" Cable.

It's three cables in one!
Either end of the Toslink-flipper can be a 3.5mm optical connector or a standard Toslink optical connector. Simply flip the tip and you can have:
* Toslink to Toslink cable
* Toslink to 3.5mm cable
* 3.5mm to 3.5mm cable

This is the cable for the active audio enthusiast; the guy that changes connections and equipment often.

Part no.	Length
45-6203	3 ft (1M)
45-6206	6 ft (2M)
45-6215	15 ft (4.5M)
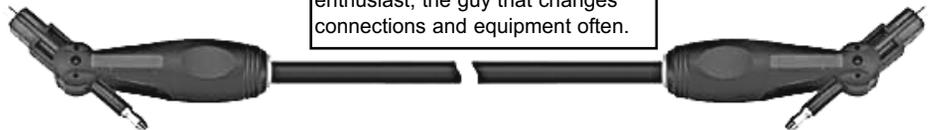
PREMIUM LIGHT-LINK AUDIO CABLE:

Digital Audio Fiber Optic with Toslink connector. LKG Premium series has 6mm diameter cable, gold plated connectors with rubber grip on handle, and Toslink connectors at each end.

- Endurance
- Transmission Increase
- Expandability

Fiber Optic Advantages:
- Versatility
- Noise immunity

No. 45-2203 - 3 ft. (1M)
No. 45-2206 - 6 ft. (2M)
No. 45-2215 - 15 ft. (4.5M)
No. 45-2230 - 30 ft.

LIGHT-LINK AUDIO CABLES
Digital Audio Fiber optic with connectors

These fiber optic cables are perfect for the transmission of newest standard of digital audio broadcasts. The high purity center core of these fiber optic cables will permit the entire spectrum of visible light to pass carrying true sound fidelity with nearly zero loss. When used with DVD Players, Digital Audio (D/A) converters and CD changers, these cables will provide the purest sound possible.

The TosLink connector/cabling is compatible with most DVD players, DISH Network 4720 & DVHS series receivers. The mini plug (3.5mm) will fit most Discman® and mini-disc players that are equipped with optical outputs.

Mini Plug Connector   **TOSLINK Connector**

4.0 mm CABLE O. D.
No. 45-1103 - Light-Link optical cable with mini plug to mini plug 3 ft. (1M)
No. 45-1106 - Light-Link optical cable with mini plug to mini plug 6 ft. (2M)
No. 45-1115 - Light-Link optical cable with mini plug to mini plug 15 ft. (4.5M)
No. 45-1203 - Light-Link optical cable with Toslink to Toslink 3 ft. (1M)
No. 45-1206 - LIght-Link optical cable with Toslink to Toslink 6 ft. (2M)
No. 45-1215 - Light-Link optical cable with Toslink to Toslink 15 ft. (4.5M)
No. 45-1303 - Light-Link optical cable with mini plug to Toslink 3 ft. (1M)
No. 45-1306 - Light-Link optical cable with mini plug to Toslink 6 ft. (2M)
No. 45-1315 - Light-Link optical cable with mini plug to Toslink 15 ft. (4.5M)

LIGHT - LINK PLUS:
Light - Link Plus cables, with new connection glow.
A step further in fiber optic cables for digital audio players and amplifiers, the Light - Link Plus cables have two major features that set them apart from ordinary Light - Link or Toslink cables. First is the easy - connect design that permits easy and sure insertion without having to line up keyed plugs to the Toslink jack; it will fit without rotating the plug! in any position! which means a lot less hassle when you have to reach behind equipment to make or move connections.
The second new feature is the connection glow, the connector actually glows when properly lined up and connected (equipment must be turned on). If the connector does not have a gentle glow, you need to redo the connection.

Toslink - Toslink
No. 45-5203 - 3 ft
No. 45-5206 - 6 ft
No. 45-5215 - 15 ft
No. 45-5230 - 30 ft

LIGHTS UP

75

HOME THEATRE AUDIO CONNECTORS & ADAPTORS

Coax to Toslink Converter

These devices are used to convert coaxial cable to POF (plastic optical fiber) for use with DVD's, DAT's, Digital Headphones, and other Digital equipment. This device has an active IC circuit which takes the coaxial signal and converts it to a digital signal. There is a Toslink receptacle on one end and an RCA jack on the other end. The unit uses a 6V DC @ 250 mA power supply. (INCLUDED)

Dimensions: 2 3/4" W x 1 3/4" L x 7/8" D

No. 45-1251
CONVERTS COAXIAL TO OPTICAL SIGNAL

No. 45-1245
CONVERTS OPTICAL TO COAXIAL SIGNAL

Optical Fiber Splitter

This item is designed to either couple or split an optical signal. Use this device to combine two accessories such as DVD, DAT, or Digital headphone into a piece of equipment with only one input. You may also use the device to split your digital signal and direct it to two similar devices. There are two (2) POF (plastic optical fiber) receptacles on one (1) end and one receptacle on the other end.
Dimensions: 2 1/4" L x 1 1/2" W x 3/4" D.

No. 45-1258

Optical Coupler

Use these connectors to extend your optical cables. They are designed to couple two (2) Toslink cables together. They are designed with two (2) Toslink jacks, one on each end of the barrel shaped connector so the optical signals are not refracted.

No. 45-1250

DESIGNER PLATE STYLE STEREO VOLUME CONTROL

LKG in-wall volume attenuator will benefit surround sound, home theater and multi-room installations. No matter how complex the system is. All controls work with 4 or 8 ohm speakers. Frequency response for all units is 35Hz-20 KHz at rated power. Fits standard electrical box.

- **Number of steps, 12.10 steps of attenuation at 3dB each, and at 6dB for the last two steps. Total attenuation at 30dB and off.**
- **ABS plastic knob**
- **Accepts up to 12 AWG wire.**

No. 75-1055 - White
10 Watts RMS
30 Watt average
55 Watts Peak

No. 75-1150 - White
25 Watts RMS
75 Watt average
150 Watts Peak

Toslink to 3.5mm Adaptors

Use these adaptors to convert between mini phone plugs and optical fiber (Toslink) connectors. These devices are to be used with equipment that use 3.5mm mini phone jacks as the optical connection. If the mini phone jack is not an optical input, you will have to use LKG 45-1251 to convert the signal.

No. 45-1252
Toslink Plug/3.5mm
Mini Jack

No. 45-1259
Right Angle Optical
Connector, Toslink. Male
to Female.
Gold Plated Contacts.

No. 45-1253
3.5mm Mini Plug/Toslink
Jack

HIGH POWER SPEAKER TERMINALS

Recessed Banana Plug/Binding Posts

Dual banana jack style, will accept dual banana plug, up to 10 or 12 gauge wire or tip jacks. Intended for high audio power: 150 watts and above. One red and one black post, angled upward for easy access.

No. 1996
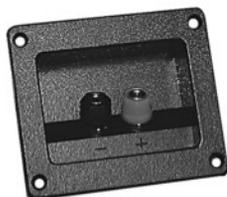
Dual Banana Plug/Binding Posts

Dual banana jack style, will accept dual banana plug, up to 10 or 12 gauge wire or tip jacks. Intended for high audio power: 100 watts and above. Popular round style is easy to mount. One red and one black post, angled upward for easy access.

No. 1997

TERMINAL STRIPS With push - in connection

No. 1978 - 2 Position
No. 1979 - 4 Position

2 Position
No. 1978

4 Position
No. 1979

PUSH TYPE SPEAKER TERMINALS

Color coded four pairs, (8 position) alternating red and black, for quick connection of speakers using bare wire up to and including 16 gauge PCB Mount.

No. 1990

HOME THEATRE DIGITAL AUDIO CONVERTER

The Music Lover's

USB - Digital to Analog Converter No. 45-1255
DAC for short

Hear all of the music, the way that it should sound.

Music from a computer is frequently not as good as we'd like to hear; often, something is missing. Very simply put, the music is "there", in all of its digital glory. But when most computers convert the digital files to produce the analog sounds that we hear, they "sample" parts of the digital file, and generate analog audio from only part of the file. Your computer sound card is 'guessing' at what the music should sound like.

The Philmore Digital to Audio Converter, "DAC", is nothing more or less than a very high quality sound card that will give you all of the fine sound contained in any digital audio file, and it leaves nothing out! (And when you change computers, take the Philmore DAC along.)

NO special connections are required. Plugged into the USB port you can listen to your music files (or a CD or even an optical disk) on headphones. The Philmore DAC also has line-level outputs (left and right) that can be connected to your favorite amplifier or amplified speakers. Your PC using Windows XP, Vista or Windows 7 will immediately recognize the Philmore DAC when connected to the USB port. The DAC will also accept Optical input such as TOSLINK from Blu-ray, a cable box, DVD (etc.). There is a coaxial input connection for use with some cable boxes, Blu-ray equipment, game consoles and more.

A volume control is provided for controlling sound to headphones. When using the DAC at your USB port, no other power supply is required.

Philmore part no. 45-1255.............Digital Audio Converter.
3 Ft. USB Cable & an AC / DC Adaptor are included.

The Philmore no. 45-1255 DAC can 'travel' from your desktop to be used with your notebook as well. And, will stay with you when you upgrade computers.

TECHNICAL
Word lengths supported: Up to 24 bits
Digital inputs: S/PDIF Optical TOSLINK 44.1~192kHz., S/PDIF Coaxial on RCA 44.1~192 kHz IEC-60958, S/PDIF Compatible. Supported Sample rates: 44.1, 48.0, 88.2, 96.0, 176.4, and 192.0 kHz. USB Audio Max 24 bit/96kHz USB 1.1 with sample rate 44.1, 48.0 and 96.0 kHz. Line out RCA type, level 1.35 Vrms, 10K ohms imp.
Headphones: 1/8" stereo phone jack, 16 or 32 ohms.
Power supply: DC 5V @ 100 mA max. (Included)
Power consumption: 90 mA.
Size: 111mm x 105mm x 30 mm

SIMPLE DAC (Digital Audio Converter)

Same specifications and sound quality as No. 45-1255 but without USB Input and Stereo Jack Output / Volume control. Small compact size (80 x 69 x 28 mm) and lower cost.

No. 45-1260 - Digital Audio Converter.
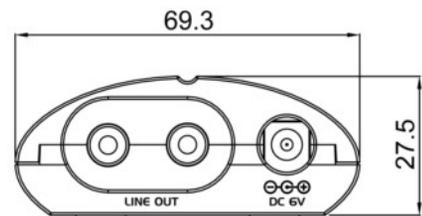
Audio Inputs: Optical Toslink & SPDIF Coaxial.
Audio Output: Stereo (RCA Jacks).
Power Supply: 6V DC (included).
Weight: Approx. 58 grams.

PREMIUM COM-V VIDEO CABLE:

Component Video Cable is designed to provide an excellent video signal transfer and a high degree of protection against unwanted electromagnetic interference. The Premium Com-V video cables from LKG have two layers of shielding. To protect against high frequency noise and interference, an aluminum mylar shield covers 100% of the polyethylene dielectric surface. Oxygen free cables are used to protect against low frequency noise and interference. The Premium Com-V video cable has color-coded molded RCA connectors (Green, Red, & Blue) with gold plated contacts for better contact resistance.

No. 45-3703 - 3 ft.
No. 45-3706 - 6 ft.
No. 45-3712 - 12 ft.

Com-V Video Cables
DVD Component Video Cables

For TV & DVD players equipped with <u>Component Video</u> jacks. Component video connectors bypass the TV's Y/C separator and Color Decoder, routing the color (Y, Cr, Cb) directly into TV's matrix decoder. Sending the pure DVD component Video signal to an input-equipped display device (such as a TV) the DVD signal forgoes extra processing that normally degrade the image. This vastly improved video can result only if cables have been designed for use in this application. LKG Com-V Video Cables are supplied with three (3) color coded RCA male connectors on each end. These cables are fully in compliance with industry standards and compatible with DVD players from makers such as Panasonic, Pioneer, Toshiba, Sony etc.

Note: these letters are screen drive signals, "Y"=Green, "Cr"=Red, "Cb"=Blue

MALE to MALE
No. 45-3303 3 ft.
No. 45-3306 6 ft.
No. 45-3312 12 ft.
No. 45-3325 25 ft.
No. 45-3350 50 ft.
MALE to FEMALE
No. 45-3403 3 ft.
No. 45-3406 6 ft.
No. 45-3412 12 ft.

RIGHT ANGLE COM-V VIDEO CABLES DVD Component Video Cables

DVD component video cables.
In tight places, a Right Angle connector can knock off almost an inch behind your equipment. This is our "regular" Component Video cables with soft, flexible insulation and three color coded Gold plated RCA connectors on each end for use with all video equipment that has Component Video (red, blue, green) jacks. This is a much better cable than most, but still priced in the same range as ordinary cables. RoHS compliant.

No. 45-3203 - 3 Ft.
No. 45-3206 - 6 Ft.
No. 45-3212 - 12 Ft.
No. 45-3225 - 25 Ft.

COM - V VIDEO CABLES PLUS:

We combined component video cables (3 RCA - 3 RCA) and audio cables (2 RCA - 2 RCA) in one. Cables are color - coded with Gold plated RCA Plugs. Available in 3 lengths.

No. 45-3503 - 3 ft
No. 45-3506 - 6 ft
No. 45-3512 - 12 ft

Component video = red, blue, green
Audio cables = white, red

COMPONENT VIDEO with AUDIO CABLES

Flexible, and soft is now a standard in almost all newer Philmore cables. This series is PVC jacketed, industry standard Video/Audio cables. Soft black in color. Five color-coded RCA males on each end for connection of DVD players (etc.) to both component Video and Audio inputs of your television. RCA male connectors for Video are color-coded red, green and blue and the Audio connectors are (industry standard) red and white. Quality construction with virgin materials throughout assures the best picture and sound that your equipment can deliver.

Philmore Part No.	Length
45-2503	3 Ft.
45-2506	6 Ft.
45-2509	9 Ft.
45-2512	12 Ft.
45-2525	25 Ft.
45-2550	50 Ft.

RoHS COMPLIANT

HOME THEATRE HDTV & VIDEO CABLES

HDTV/SATELLITE RECEIVER CABLE

RGB cable for set top receivers from Samsung, Sony and many other makes. For receivers using a high density 15 pin D Female for RGB output to any High Definition TV. A well shielded, 75 ohm cable meeting or exceeding industry specifications. Gold RCA males or BNC Males connect at the TV and a DB-15 (high density) male for connection to the satellite receiver. All connector contact areas are Gold plated for durability and maximum conductivity; assures best performance from your HDTV equipment.

5.1 Shielded Digital Audio Cable
6 RCA Male To 6 RCA Male,
Color Coded RCA Plugs

No. 45-5102 - 6 FT
No. 45-5104 - 12 FT

Shielded RGB-HDTV Audio Cable
5 RCA Male TO 5 RCA Male
Color Coded RCA Plugs

No. 45-5107 - 6 FT
No. 45-5109 - 12 FT

Shielded RGB Video Cable
3 BNC Male TO 3 BNC Male
Color Coded

No. 45-5112 - 6 FT
No. 45-5114 - 12 FT

Shielded RGB Video Cable
5 BNC Male TO 5 BNC Male
Color Coded

No. 45-5119 - 6 FT
No. 45-5121 - 12 FT

Shielded RGB - Video Cable
15 Pin High Density (HD15)
Male TO 3 RCA Male, Gold Plated

No. 45-5306 - 6 FT
No. 45-5312 - 12 FT

Shielded RGB - Video Cable
15 Pin High Density (HD15)
Male TO 3 BNC Male, Gold Plated

No. 45-5506 - 6 FT
No. 45-5512 - 12 FT

Shielded RGB - HDTV Video Cable
15 Pin High Density (HD15)
Male TO 5 BNC Male, Gold Plated

No. 45-5126 - 1 FT
No. 45-5130 - 12 FT

Shielded RGB - HDTV Video Cable15 Pin High Density (HD15)
Male TO 5 BNC Female, Gold Plated

No. 45-5133 - 1 FT
No. 45-5135 - 6 FT
No. 45-5137 - 12 FT

BNC MALE
TO
BNC MALE

No. 70-2703 - 3 Ft.
No. 70-2706 - 6 Ft.
No. 70-2712 - 12 Ft.
No. 70-2725 - 25 Ft.
No. 70-2750 - 50 Ft.

RCA MALE
TO
RCA MALE

No. 70-2803 - 3 Ft.
No. 70-2806 - 6 Ft.
No. 70-2812 - 12 Ft.
No. 70-2825 - 25 Ft.
No. 70-2850 - 50 Ft.

BNC MALE
TO
RCA MALE

No. 70-2903 - 3 Ft.
No. 70-2906 - 6 Ft.
No. 70-2912 - 12 Ft.
No. 70-2925 - 25 Ft.
No. 70-2950 - 50 Ft.

MINI COAX, VIDEO & CCTV CABLES

A quality feel in a 75 Ohm cable which features a standard pure Copper center conductor and a 93% precisely woven braid coverage (equal to 100% shield). Cable O.D. is only 0.150", our Super-flex outer jacket is tough but supple and will last a lifetime. For use with virtually all consumer or broadcast video equipment. RoHS compliant.

RoHS
COMPLIANT

79

MEDIA STAR™ AUDIO & VIDEO CABLES

MediaStar Plus ™ audio and video cables and adaptors.

Today's marvelous electronic equipment can be enjoyed fully only if you make certain to have equally good cable and adaptor interconnections. The *MediaStar Plus* series of products is certain assurance that your equipment will be able to deliver its very best listening and viewing performance.

MediaStar Plus cables begin with a process that refines copper and refines it again until only pure, oxygen-free copper remains. Precision drawn and spun, the copper is wound into extraordinary, double-shielded cables. All connection surfaces are absolutely pure 24K gold because only very pure gold can promise to deliver the same, excellent electrical characteristics from the start and for decades. Spacing between conductors is perfect, conductivity is precise, and the precision of this construction is your guarantee that you have the very best cables and adaptors that can be found. Signals are transmitted perfectly, noise pickup and transfer is eliminated and your equipment can deliver the pure pleasure that you had in mind when you bought it.

Distinctive in appearance, *MediaStar* double molded connectors are not only attractive but easier for your fingers to handle during equipment set up.

MediaStar Plus Audio Cable
RCA Male to RCA Male

Part no.	Length
71-1103	3'
71-1106	6'
71-1112	12'

MediaStar Plus Adaptor
RCA Female toTwo RCA Males

Part no.	Length
71-1058	8"

MediaStar Plus Audio Cable
3.5 mm Stereo Male to Male

Part no.	Length
71-1703	3'
71-1706	6'
71-1712	12'

MediaStar Plus Audio Cable
3.5 mm Stereo Male to Female

Part no.	Length
71-1803	3'
71-1806	6'
71-1812	12'

MediaStar Plus Audio Cable
RCA Male to RCA Female

Part no.	Length
71-1203	3'
71-1206	6'
71-1212	12'

MediaStar Plus Audio Cable
Dual RCA Male to Dual RCA Male

Part no.	Length
71-1303	3'
71-1306	6'
71-1312	12'
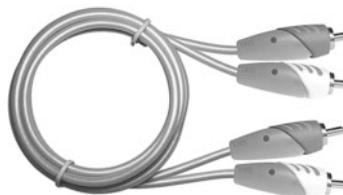
Color coded ends to identify left and right

MediaStar Plus Adaptor
RCA Male to Two RCA Females

Part no.	Length
71-1068	8"

MediaStar Plus Audio Cable
3.5 mm Stereo Male to two RCA Females

Part no.	Length
71-1008	8"
71-1006	6'
71-1012	12'

MediaStar Plus Audio-Video Cables.

Shielding in your audio and video cables is very, very important. Double shielding, and the best in the business, is standard inside every MediaStar Plus cable.

Impedance match is important too. Electronic equipment makers adhere to precise industry standards. Signals from one piece of equipment to the next cannot be produced accurately if your cables are not made to match those industry standards. We take great care to make certain that MediaStar cables will match industry specifications precisely.

MediaStar Plus Audio Cable
3.5 mm Stereo Male to two RCA Males

Part no.	Length
71-1903	8"
71-1906	6'
71-1912	12'

MediaStar Plus Video Cable
RCA Male to RCA Male

Part no.	Length
71-2103	3'
71-2106	6'
71-2112	12'

MediaStar Plus
S-Video Cable
S-Video 4 Pin Male to Male

Part no.	Length
71-2403	3'
71-2406	6'
71-2412	12'

MediaStar Plus
DVD Component Cable
3 RCA Male to 3 RCA Male

Part no.	Length
71-2203	3'
71-2206	6'
71-2212	12'

MediaStar Plus
Audio / Video Dubbing Cable
3 RCA Male to 3 RCA Male

Part no.	Length
71-2303	3'
71-2306	6'
71-2312	12'

MediaStar Plus Video Cable
Male "F" to Male PAL
With "F" Style Knurled Nut

Part no.	Length
71-2503	3'
71-2506	6'
71-2512	12'

MediaStar Plus Video Cable
Male "F" to Male "F"
With "F" Style Knurled Nut

Part no.	Length
71-2603	3'
71-2606	6'
71-2612	12'

America's most knowledgeable
Audio / Videophiles look to
Media Star
for their connections

MEDIA STAR™ AUDIO & VIDEO CABLES

MEDIA STAR Extra AUDIO / VIDEO CABLES

Extra long lengths of fine Audio / Video cables are added to our line of *MEDIA STAR Plus* A/V cables. Using the very best cables with your fine Audio / Video equipment provides assurance that you will receive the quality performance that was designed into that equipment. *Media Star Extra* cables are certain insurance that quality sound and video reproduction will be yours, probably for a lifetime. The purest materials and precision manufacturing make *Media Star Extra* the finest Series of cables and connectors that you can find at any price. All electrical contact surfaces are Gold plated, oxygen free copper is used throughout. Dark blue color jacket with Silver color connector handle. RoHS compliant.

RoHS COMPLIANT

3.5mm Stereo Male-Male

No. 71-3750 - 50 Ft.

Dual RCA Male-Male

No. 71-3350 - 50 Ft.
No. 71-3375 - 75 Ft.
No. 71-3310 - 100 Ft.

Single RCA Male-Male

No. 71-3150 - 50 Ft.
No. 71-3175 - 75 Ft.
No. 71-3110 - 100 Ft.

Component Video
3 RCA Male-Male

No. 71-3250 - 50 Ft.
No. 71-3275 - 75 Ft.
No. 71-3210 - 100 Ft.

Digital Video
Single RCA Male-Male

No. 71-3550 - 50 Ft.
No. 71-3575 - 75 Ft.
No. 71-3510 - 100 Ft.

Stereo & S-VHS
2 RCA + MD4 Male-Male

No. 71-3450 - 50 Ft.
No. 71-3475 - 75 Ft.
No. 71-3410 - 100 Ft.

Home Theatre Wall Plates
Designer Style with Solderless Connectors

3.5mm Stereo Jack
No. 75-1461 White
No. 75-5461 Ivory

3 RCA Jacks
(Red / Blue / Green)
No. 75-1085 White
No. 75-5085 Ivory

(2) RCA Jack
(Red + White)
No. 75-1092 White
No. 75-5092 Ivory
No. 75-3092 Black

(1) RCA Jack (Orange)
No. 75-1081 White
No. 75-5081 Ivory

(1) RCA Jack (White)
No. 75-1091 White
No. 75-5091 Ivory
No. 75-3091 Black

(2) RCA Jacks +
(1) S-VHS Jack
No. 75-1281 White
No. 75-3281 BLACK
No. 75- 5281 IVORY

Media Star Plus Audio and Video adaptors provides discriminating users with a wider range of adaptors for home sound and video systems. Precise manufacturing and pure, virgin materials continue the practice of Media Star top performance products with only a small increase in cost over most ordinary connectors, cables and adaptors. 24K Gold plating on contact surfaces and precise assembly guarantee life long, perfect connections.

Adaptors are color coded for easy user identification: black for monaural, red for stereo and yellow indicates video use. Why not use the best, so that the best that your equipment can do will not be diminished by the connections. Look for Media Star Plus products on display at better electronics parts suppliers.

1/4" Stereo jack - 1/8" Mono plug	**1/4" Mono jack - 1/8" Mono plug**	**1/4" Mono jack - RCA plug**
No. 71-1205	No. 71-1210	No. 71-1215

RCA jack Female coupler	**RCA jack - 1/4" Mono plug**	**RCA jack - 1/8" Mono plug**
No. 71-1220	No. 71-1225	No. 71-1230

RCA plug - 1/8" Mono jack	**1/4" Stereo jack - 1/8" Stereo plug**	**1/4" Stereo plug - 1/8" Stereo jack**
No. 71-1235	No. 71-1240	No. 71-1245

1/8" Mono plug - 1/8" Stereo jack	**3.5mm Stereo plug - 2.5mm Stereo jack**	**2.5mm Stereo plug - 3.5mm Stereo jack**
No. 71-1250	No. 71-1255	No. 71-1260

3.5mm Mono plug - 2.5mm Mono jack	**S-VHS Female - coupler**	**1/8" Stereo jack - 1/8" Stereo jack coupler**
No. 71-1265	No. 71-1270	No. 71-1275

3.5mm 4 Conductor Male - 2.5mm 4 Conductor Female	**2.5mm 4 Conductor Male - 3.5mm 4 Conductor Female**
No. 71-1280	No. 71-1285

HDMI™ DIGITAL CABLES

HDMI™ High Speed with ETHERNET

HDMI® HIGH SPEED with ETHERNET

The HDMI standard just got a lot more powerful, with new capabilities designed to push the boundaries of the HD experience.
The Future-Ready way to connect HD. Consolidation of HD Video, Audio and Data in a single cable, enables high speed bi-directional communication, IP-based applications and transfer speeds up to 100 Mb/sec.

MEDIA STAR™ HD offers HDMI 1.4 with triple shielded cable for isolation from EMI and RFI noise. 24K Gold contacts for enhanced conductivity. Cable is UL-CL3 rated for custom In-Wall installation. Eye catching clam shell packaging for cables from 1 meter (3.28 ft.) to 6 meters (19.68 ft.)

· **HDMI Ethernet Channel (HEC):** High speed, transfer speeds up to 100Mb/ sec.
· **Audio Return Channel (ARC):** Eliminate the need for a separate audio cable.
· **3D:** Gaming & Home Theater, supporting resolutions up to 1080p in 3D.
· **4K Support:** 4K x 2K, four times the resolution of a 1080p display.
· **Content Type:** Automated picture setting selection with no user intervention.
· **Additional Color Spaces:** SYCC601, Adobe RGB and Adobe YCC601 colors.

AL/MYLAR
DRAIN
INSULATION
FILLER
MYLAR
CONDUCTOR
BRAID
OUTER JACKET

HDMI CONNECTORS

STANDARD → MINI → MICRO

HDMI HIGH SPEED with Ethernet, 19 Pin Male - Male	
No. 71-7441	1 Meter (3.28 Ft.)
No. 71-7442	2 Meters (6.56 Ft.)
No. 71-7443	3 Meters (9.84 Ft.)
No. 71-7444	4 Meters (13.12 Ft.)
No. 71-7445	5 Meters (16.4 Ft.)
N0. 71-7446	6 Meters (19.68 Ft.)

HDMI HIGH SPEED with Ethernet, 19 Pin (A) Male to Micro 19 Pin (D) Male	
No. 71-7431	1 Meter (3.28 Ft.)
No. 71-7432	2 Meters (6.56 Ft.)

* HDMI 1.4 specification is fully Backwards
- Compatible with older HDMI (V. 1.0 - 1.3) devices and their features.

BULK - BAG DISPLAY PACKAGE
HDMI High Speed with Ethernet

HDMI® HIGH SPEED with ETHERNET

The Philmore High-Speed HDMI cables are of the best quality and meet industry standards and then some. Each cable is made of materials expected to last for decades and assembled to very high standards. As the cost of packaging cables in fancy and expensive plastic bubble packages has continued to increase at an incredible rate, Philmore has begun supplying a rather simple poly bag packaging that seriously reduces the retail cost.

Equal to our Philmore *MEDIA STAR™* HD series, this economically packaged group provides ten lengths of cable and all are CL3 rated so that they comply with regulations if they are to be used for inside-wall installations. Look for these bright blue and highly dependable cables at your local electronics store.

UL - CL3 RATED E251473

Part No.	Length	Description
45-7401 SP	1 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7403 SP	3 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7406 SP	6 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7410 SP	10 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7412 SP	12 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7415 SP	15 FT.	HDMI 1.4, UL-CL3, 28 AWG Cable
45-7420 SP	20 FT.	HDMI 1.4, UL-CL3, 26 AWG Cable
45-7425 SP	25 FT.	HDMI 1.4, UL-CL3, 26 AWG Cable
45-7435 SP	35 FT.	HDMI 1.4, UL-CL3, 24 AWG Cable
45-7450 SP	50 FT.	HDMI 1.4, UL-CL3, 24 AWG Cable

HDMI High - Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC in the United States and other countries

HDMI™ DIGITAL CABLES

(High Definition Multimedia Interface)

With the launch of HDMI version 1.3, HDMI continues to increase it's overall capabilities to meet the needs of the High - Definition marketplace. HDMI 1.3 will deliver the finest quality digital video & audio transmitted over a single cable. More manufacturers will make use of capabilities added in HDMI 1.3, digital television will be able to present images that are close to real life than previously has been possible. These will include LCD TV's, Plasma displays, Rear projection microdisplays, PS3 displays, new Hi - Definition DVD players (HD-DVD & Blu-Ray), game machines (including the Sony Play station® 3) and A/V receivers.

HDMI 1.3 is fully backward compatible with all prior releases of the HDMI versions (1.0, 1.1 and 1.2) as well as DVI compliant devices.

HDMI HIGH SPEED

· **Higher speed 340 MHz (10.2 Gbps)**

· **Deep color support 30-bit, 36-bit and 48-bit color depths**

· **Broader color space 1.8 times as many colors as existing HDTV signals**

· **Lip sync correction, automatically**

· **Lossless audio formats**

Version 1.3 19 Pin A connector

Philmore Part No.	Description	Cable DIA.	Length (feet)
No. 45-7331	HDMI 1.3 19 PIN, 28 AWG Cable	6.5 mm	1 meter (3.28')
No. 45-7332	HDMI 1.3 19 PIN, 28 AWG Cable	6.5 mm	2 meters (6.56')
No. 45-7333	HDMI 1.3 19 PIN, 28 AWG Cable	6.5 mm	3 meters (9.84')
No. 45-7334	HDMI 1.3 19 PIN, 28 AWG Cable	6.5 mm	4 meters (13.12')
No. 45-7335	HDMI 1.3 19 PIN, 28 AWG Cable	6.5 mm	5 meters (16.4')

MEDIA STAR™ HDMI HIGH SPEED
(High Definition Multimedia Interface)

HDMI 1.3 delivers higher speed, it increases a single - link bandwidth from 165MHz (4.95 Gbps) to 340 MHz (10.2 Gbps) to support the demands of future high definition display devices such as higher resolutions, Deep Color™ and high frame rates. HDMI 1.3 supports 30-bit, 36-bit and 48-bit (RGB or YCbCr) color depths. *MEDIA STAR™* HD offers HDMI 1.3 with triple shielded cable for isolation from EMI and RFI noise. 24K Gold contacts for enhanced conductivity. Cable is UL-CL3 rated (all lengths) for custom in wall installation. Eye catching clam shell packaging for cables from 1 meter (3.28 ft.) to 6 meters (19.68 ft.) and 4-colored installer box from 8 meters (26.24 ft.) to 20 meters (65.6 ft.)

High Speed:	340 MHz (10.2 Gbps)
Deep Color™:	30-bit, 36-bit and 48-bit (RGB or YCbCr) to billions of colors
Broader Color Space:	Removes all limits on color selection
Lip Sync:	Video / Audio synchronization automatically with total accuracy
Lossless Audio Formats:	Dolby digital and DTS, Dolby true HD and DTS-HD
Supports:	480p, 720p, 1080i, 1080P resolutions

Part No.	Description	Cable DIA.	Length (feet)
71-7331	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	1 meter (3.28)
71-7332	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	2 meter (6.56)
71-7333	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	3 meter (9.84)
71-7334	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	4 meter (13.12)
71-7335	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	5 meter (16.4)
71-7336	HDMI 1.3, UL-CL3, 28 AWG Cable	7.3	6 meter (19.7)
71-7338	HDMI 1.3, UL-CL3, 26 AWG Cable	8.5	8 meter (26.25)
71-7339	HDMI 1.3, UL-CL3, 26 AWG Cable	8.5	10 meter (32.8)
71-7342	HDMI 1.3, UL-CL3, 24 AWG Cable	10.0	12 meter (39.37)
71-7345	HDMI 1.3, UL-CL3, 24 AWG Cable	10.0	15 meter (49.2)
71-7350	HDMI 1.3, UL-CL3, 24 AWG Cable	10.0	20 meter (65.6)

Note: HDMI and High Definition Multimedia Interface are trademarks or registered Trademarks of HDMI licensing LLC.

HDMI™ & DISPLAYPORT CABLES & TESTERS

HDMI 1.3 TYPE A (STANDARD) TO TYPE C (MINI) CABLE

Connect camcorders, digital cameras and other devices that utilizes type C (mini HDMI) connection to displays with a standard HDMI (type A) port. Provides the perfect transfer of digital audio & video signals from your portable digital devices to your HDTV, monitors, A/V receivers. Supports 1080P resolution.

No. 45-7441	1 meter (3.28')
No. 45-7442	2 meter (6.56')
No. 45-7443	3 meter (9.84')

HDMI RIGHT ANGLE ADAPTOR

Right angle HDMI Male to Female, 6 inch cable, 30 AWG wire, HDMI High - Speed with Ethernet.

HDMI Male Connector

No. 45-7036

No. 45-7037

45-7036

45-7037

RIGHT ANGLE HDMI 1.3 CABLE

Unique design right angle HDMI male connector swivel 180° on one end and a straight HDMI male connector on the other end. Perfect for installations where space or clearance behind components is limited.
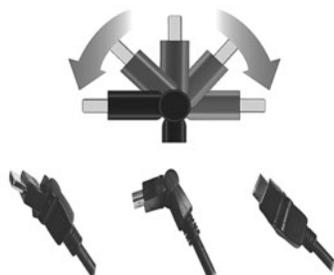
No. 45-7531	1 meter (3.28')
No. 45-7532	2 meter (6.56')
No. 45-7533	3 meter (9.84')

DISPLAYPORT CABLE

DisplayPort connections are the next generation digital display interface standard design to replace DVI, LVDS and eventually VGA. DisplayPort delivers higher performance, enables new monitor designs and improved digital display connectivity. DisplayPort delivers High-Definition and provides both digital video and audio in one cable, provides up to 1080P resolution and supports HDCP (High-Definition Content Protection). Smaller connector foot print than either DVI or VGA.

No. 45-7506	6 Ft.
No. 45-7512	12 Ft.

PHILMORE 45-100 HDMI CABLE TESTER

The Philmore 45-100 is designed to quickly test and troubleshoot standard HDMI 1.2v & 1.3v cables. There are 19 wires present inside the HDMI interface cable, and 9 complete circuits which the 45-100 HDMI tester checks and reports to the user via a pass/fail series of LED's on the top of the unit. The perfect addition to your test bench.

The model 45-100 Tester is intended for in-store use for assuring that all internal cable connections are wired correctly. The cable tester may also be used to test DVI cable assemblies: simply use a DVI to HDMI adapter (not included). Requires one 9 Volt battery (not included).

Tests Cables:
HDMI A Male to A Male
HDMI C Male to C Male
HDMI A Male to C Male
Note: Unit Can Not Test Cables with a Built-In Repeater

Cable identification/testing:
Data Red, Blue, Green
Streaming digital for Red, Blue, and Green with multiplexed sound
Clock.
Master clock for multiplexing with Red, Blue, Green and sound data
CEC.
Consumer Electronics Control
I²C Clock
Serial Port Timing Output supporting HDCP
I²C Data
Serial Data for HDCP, EDID
+5 Volts
System Supply Voltage and Standby
Hot Plug
Announces presence of HDMI Source

PHILMORE 45-200 HDMI INSTALLERS CABLE TESTER

The Philmore no. 45-200 HDMI Remote Cable Tester has been designed for installers! Allows easy "pre-testing" of HDMI cables at the "rough wire" stage of installing, and again after the HDMI cable is installed. Know that your HDMI cable installation is working before the walls are "closed" and before there is power or equipment at the Job Site.

The Philmore 45-200 is designed to quickly test and troubleshoot any standard HDMI 1.2v or 1.3v cable. Inside the HDMI interface cable there are 9 complete circuits and the 45-200 HDMI tester selectively measures each sub circuit within the tester and displays a pass/fail by way of LED's on the top of the receiver. The 45-200 HDMI cable tester may also be used to test DVI cable assemblies; simply use a DVI to HDMI adapter(s) (not included). Main unit requires two AA batteries (not included).

No. 45-100 - HDMI Cable Tester

No. 45-200 - Installers HDMI Cable Tester

HDMI™ DIGITAL CABLES & ADAPTORS

HDMI™ EXTENSION CABLES
HDMI 19 Pin / Male - HDMI 19 Pin / Female

Philmore HDMI extension cables use industry standard 28 AWG cable. Both HDMI 19 Pin Male & Female connectors are Gold plated and come with dust covers to protect connectors from damage during transit and showroom environment. HDMI does not specify a maximum cable length but it specifies the required performance of a cable by their licensed manufacturers. We do not recommend to use or extend HDMI 28 AWG cable in total length to exceed 6-7 meters (19.7 - 23.0 feet). These extension cables can be used with our No. 45-7131 thru No. 45-7135 (1 meter thru 5 meters).

Philmore Part No.	Description	Cable DIA.	Length (feet)
No. 45-7231	HDMI 19 PIN, 28 AWG Cable	7.3 mm	1 meter (3.28')
No. 45-7232	HDMI 19 PIN, 28 AWG Cable	7.3 mm	2 meters (6.56')

HDMI™ FLAT CABLES

A perfect solution for a traveler or an installer with limited space with which to work. Philmore HDMI flat cable is easy - to - carry and store. Cable is approximately 1/8" (.125") thick, 1 meter (3.28') cable weighs less than 4 oz. and can be folded to fit inside your shirt pocket. These flat cables are manufactured to meet HDMI specifications.

Philmore Part No.	Description	Cable Width	Length (feet)
No. 45-7101	HDMI 19 PIN, Flat Cable	13 mm (.51")	1 meter (3.28')
No. 45-7102	HDMI 19 PIN, Flat Cable	13 mm (.51")	2 meters (6.56')

HDMI™ CABLE WITH REPEATER

Philmore HDMI cable with repeater will allow you to customize your installation where extra cable lengths are needed. It works by regenerating the high definition video and digital audio it receives from the source and transmitting it to HDMI display. Cable is CL3/CMG rated for In-Wall installation.

Specifications:

* Self powered active circuitry
* Supports HDMI audio & video
  * Resolutions: 1080P, 1080I, 720P, 480P, & 480I
* Supports computer resolutions: UXGA, SXGA, XGA, SVGA, & VGA
* Total transmitting range:
  -1080P - 25M total length
  -1080I / 720P - 30M total length

* Status indicator lights

HDMI Male - Male

No. 45-7140 - 15 meters (49 ft.)

No. 45-7141 - 20 meters (65.5 ft.)

No. 45-7143 - 30 meters (98 ft.)

NOTE: will also work with DVI (requires DVI adaptor **No. 45-7047**)

HDMI TO DVI-D CABLES & ADAPTORS

Used for connecting High Definition Multimedia to Digital Video Interface devices. All cables below are 19 HDMI pin male to DVI-D (18+1) male connectors. Some manufacturers may use DVI-D Dual link (24+1) connector on other end but 6 pins in the middle are not connected.

HDMI MULTIMEDIA TO DVI-D CABLES

One meter is equivalent to 3.281 feet

Philmore Part No.	Description	Cable Dia.	Length
45-7031	HDMI to DVI-D Single Link	7.3mm	1 Meter
45-7032	HDMI to DVI-D Single Link	7.3mm	2 Meters
45-7033	HDMI to DVI-D Single Link	7.3mm	3 Meters
45-7034	HDMI to DVI-D Single Link	7.3mm	4 Meters
45-7035	HDMI to DVI-D Single Link	7.3mm	5 Meters

HDMI MULTIMEDIA TO DVI-D ADAPTORS

HDMI Multimedia to DVI-D adaptors can be useful when changing a cable end or port on your equipment. NEVER force these connectors, there are many variations in pin configurations and you might break connector pins.

Philmore Part No.	Description
45-7045 45-7047	HDMI Female to DVI-D Single Link Male HDMI Male to DVI-D Single Link Female

Note: HDMI and High - Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

HDMI™ & DVI CABLES & ADAPTORS

HDMI Coupler & Repeater

Use HDMI coupler (HDMI jack - HDMI jack) to extend a short length of HDMI cables (MFG. recommended total cable length not to exceed 5 meters or 16.5 ft.) With HDMI repeater you can extend length of cables up to 30 meters (98 ft.). HDMI repeater regenerates the high definition video and digital audio it receives from the original source and transmits it along to the connecting cable to HDTV display.

HDMI Coupler

No. 45-7049

Specifications:

* Self powered active circuitry
* Supports HDMI audio & video
* Resolutions: 1080P, 1080I, 720P, 480P, & 480I
* Supports computer resolutions: UXGA, SXGA, XGA, SVGA, & VGA
* Total transmitting range:
  -1080P - 25M total length
  -1080I / 720P - 30M total length
* Status indicator lights

HDMI Repeater

No. 45-7051

NOTE: will also work with DVI (requires DVI adaptor **No. 45-7047**)

HDMI™ ADAPTORS

Philmore offers a large selection of HDMI adaptors for installers and end users to ease their installation of HDMI cables.

HDMI Port

No. 45-7040
360°Rotation
Male - Female

No. 45-7041
Right Angle
Male - Female
(Upward Position)

No. 45-7042
Right Angle
Male - Female
(Downward Position)

No. 45-7043
Right Angle
Male - Female
(Left Elbow)

No. 45-7044
Right Angle
Male - Female
(Right Elbow)
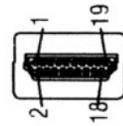
No. 45-7048 -
HDMI A / Female -
HDMI C / Male (Mini
HDMI connector)

Installer Pack
No. 45-7046 - (package of 4), one each of 45-7041, 45-7042, 45-7043 & 45-7044

DVI DIGITAL VIDEO CABLES

DVI, or Digital Video Interface cables are used to connect very high quality flat panel LCD monitors and high-end video graphic cards. Be sure that you use the correct type. There are DVI-A used for analog to analog, DVI-D used for digital to digital, and DVI-I works either an analog or digital signal.

Generally a DVI-I port will be marked as "DVI-I". The DVI-D is most often used between a high quality video card and an LCD monitor. To make matters more confusing, there are single-link and dual-link DVI-I cables; check your equipment's specifications to be sure to select the correct cable. Video quality will be diminished if cable length exceeds the industry standard of five meters (about 16 ft.). If you are not sure which you need, single or dual link, use the dual link. The dual link is "downward compatible" and will handle either job.

DVI-I SINGLE LINK (18+5)
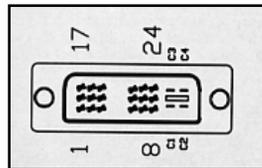
DVI-I DUAL LINK (24+5)
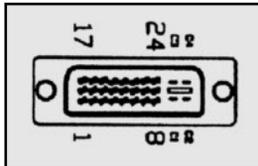
DVI-D SINGLE LINK (18+1)

DVI-D DUAL LINK (24+1)

One meter is equivalent to 3.281 feet
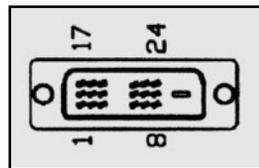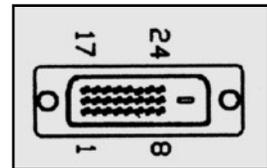
DVI-I VIDEO CABLES - Male to Male

Philmore Part No.	Description	Cable Dia.	Length
45-7011	DVI-I Single Link (18+5)	8.5mm	2 Meters
45-7021	DVI-I Dual Link (24+5)	9.5mm	2 Meters
45-7022	DVI-I Dual Link (24+5)	9.5mm	3 Meters
45-7023	DVI-I Dual Link (24+5)	9.5mm	4 Meters
45-7024	DVI-I Dual Link (24+5)	9.5mm	5 Meters

DVI-D VIDEO CABLES -Male to Male

Philmore Part No.	Description	Cable Dia.	Length
45-7111	DVI-D Single Link (18+1)	7.3mm	2 Meters
45-7121	DVI-D Dual Link (24+1)	8.5mm	2 Meters
45-7122	DVI-D Dual Link (24+1)	8.5mm	3 Meters
45-7123	DVI-D Dual Link (24+1)	8.5mm	4 Meters
45-7124	DVI-D Dual Link (24+1)	8.5mm	5 Meters

Note: HDMI and High - Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

**HDMI Female Coupler
or Feed - Thru Jack
No. 45-241**

**Right Angle HDMI Male
to Female Adaptor
No. 45-7052**

**Right Angle HDMI Female
to Female Adaptor
No. 45-7054**

**HDMI Gender Changer
Male to Male
No. 45-7057**

**HDMI Gender Changer
Female to Female
No. 45-7059**

**HDMI Male to
Female Adaptor
No. 45-7061**

**HDMI A Female to HDMI C
(Mini) Male Adaptor
No. 45-7056**

**HDMI A Male to HDMI C
(Mini) Female Adaptor
No. 45-7058**

**HDMI A Female to HDMI D
(Micro) Male Adaptor
No. 45-7063**

**HDMI Male to DVI-I
Dual Link (24 + 5) Female Adaptor
No. 45-7074**

**HDMI Female to DVI-I
Dual Link (24 + 5) Female Adaptor
No. 45-7076**

**Swivel (180°) HDMI Female to DVI-D
Dual Link (24 + 1) Male Adaptor
No. 45-7077**
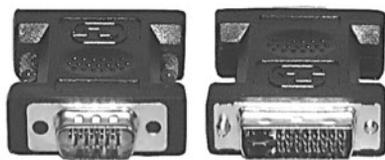
**DVI-I Dual Link (24+5) Male
to HD15 (VGA) Male Adaptor
No. 45-7050**

**DVI-I Dual Link (24+5) Female
to HD15 (VGA) Male Adaptor
No. 45-7053**

**DVI-I Dual Link (24+5) Male
to HD15 (VGA) Female Adaptor
No. 45-7055**

**DVI Gender Changer
DVI-I Dual Link (24+5) Female to Female
No. 45-7065**

**DVI-I Dual Link (24+5)
Male to Female Adaptor
No. 45-7067**

**DVI Gender Changer
DVI-I Dual Link (24+5) Male to Male
No. 45-7069**

HDMI™ ACCESSORIES

HDMI™ Splitter with HDCP Decoding

WHAT IS HDCP?:
High-bandwidth Digital Content Protection (HDCP) is a technology developed by Digital Content Protection, LLC (A subsidiary of Intel) to protect digital entertainment content. HDCP has been implemented across both DVI & HDMI interface, the HDCP specification provides a cost effective and transparent method for transmitting and receiving the highest quality digital entertainment content to DVI / HDMI compliant digital displays.

DO YOU KNOW?:
The most common compatibility problem among devices with HDMI connections have to do with HDCP. Probably the most common failure is the lack of HDCP repeater function or failure to perform the authentic reliability in all types of usage scenarios.

The Philmore HDMI 2 - way, 4 - way splitter allows satellite set-top boxes, DVD players, and other HDTV devices with a HDMI output to be connected to up to two HDTV displays. It is a flexible distribution hub that can accommodate multiple displays when more HDMI splitters are connected to create a larger distribution. Ideal for conventions, conferences, presentations and other digital visual - audio applications, No. 44-512 & No. 44-514 are also perfect for home theater use. The HDMI 2 - way, 4-way splitter supports 720i, 720p, 1080i and 1080p resolutions.

Specifications:
· **Video Amplifier Bandwidth:** 1.65 GHz
· **Single Link Range:** 1080P / 1920 x 1200
· **Vertical Frequency Range:** 60 Hz
· **Audio / Video Input / Output Connectors:** HDMI 19-pin Type A
· **Power Consumption:** 10 watts (max)
· **HDMI Output:** DC5V, 500MA
· **Fully HDMI compliant**
· **Fully HDCP compliant**

No. 44-512 - 1 Input - 2 Outputs
Power Supply: Input - 120V / 60 HZ:
Output - 12VDC 0.8A
Size: 4.7" x 2.6" x .79"
Weight: .40 lb

No. 44-514 - 1 Input - 4 Outputs
Power Supply: Input - 120V / 60 HZ:
Output - 12VDC - 1.5A
Size: 8" x 4.5" x .79"
Weight: 1.1 lb

HDMI™ Converter Box

Philmore No. 44-545 converts component video signal and analog audio signal into a complete HDMI digital A/V signal. No. 44-545 converter box has 3 RCA jacks (red, blue & green) input for component video and 2 RCA jacks (red & white) input for audio, the output has 19 Pin HDMI female jack. No. 44-545 has ability of buffering, amplifying and creating the highest precision digital conversion technique to ensure digital picture quality. Philmore HDMI converter box offers an inexpensive solution to turn your analog A/V devices into a digital entertainment center.

FEATURES:
· **Easy To Use:** Install in seconds, no need for setting
· **Conversion:** It could convert component and audio into complete HDMI
· **HDCP Compliant.**

Specifications:
· **Video Amplifier Bandwidth:** 140 mHZ
· **Input Video Signal:** 0.5-1.0 volts p-p
· **Input DDC Signal:** 5 volts p-p (TTL)
· **Maximum Single Link Range:** 1280 x 1024. 1080i
· **Maximum HDMI Transmission Distance:** 15 meters (49 Ft.)
· **Output Video:** HDMI + HDCP 1.0 / 1.1
· **Vertical Frequency Range:** 60Hz
· **Power Consumption:** 10 watts (max.)
· **Power Supply:** 6-12VDC
· **Dimensions:** 7.9" W x 1.6"H x 7.9"L
· **Weight:** 2.9 Lb.

No. 44-545 - Converts component video & analog audio to HDMI signal
Contents: 1) Main Unit
2) 12V DC Power Adaptor
3) Operating Instructions

Note: HDMI and High - Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

HDMI™ ACCESSORIES

Digital HDMI™ Switches

Philmore HDMI switch is a compact, time saving device. For connecting multiple digital A / V input devices (DVD players, set-top Satellite box etc.) to one HDTV display. Easy operation.

3 - Way Switch

SUPPORTS RESOLUTIONS:
up to 1080P

5 - Way Switch

No. 44-560
Inputs: 3 HDMI
Output: 1 HDMI

No. 44-565
Inputs: 5 HDMI
Output: 1 HDMI

Economy HDMI™ Switches

Philmore 2 - way and 3-way HDMI selector is a low cost solution for Home Theater integration. Select between two or three Home Theater multi-media devices such as DVD players, PS3 etc. to one HDMI display. Supports resolutions up to 1080p-60Hz.

No. 44-562 -
HDMI 2 - Way A/B Switch

No. 44-563 -
HDMI 3 - Way A/B/C Switch

Specifications:
· **Input:** HDMI A sockets
· **Output:** 24" Pigtail cable, HDMI A plug
· **Supports 480i, 480p, 720i, 720p, 1080i, 1080p Resolutions, up to 60Hz.**
· **Selector Slide Switch**
. **Plug and Play**

VGA - HDMI CONVERTER BOX

Philmore 44-540 converts VGA video signal and analog audio signal into a complete HDMI Digital A/V signal. No. 44-540 converter box has VGA (HD15) jack input for video and 2 RCA jacks (red & white) plus 3.5mm stereo jack input for audio; the output has HDMI female jack.

No. 44-540 has ability of buffering, amplifying to achieve long distance transmission of HDMI signal more than 15 meters (over 49 Ft.).

VGA PC

VGA DVD

VGA NB

Digital Projector

HDMI LCD
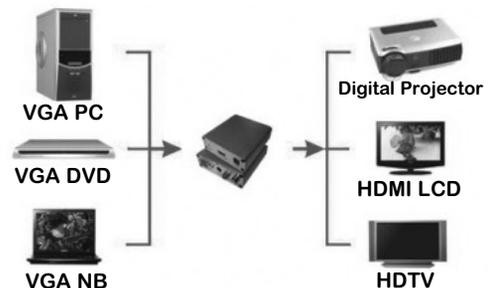
HDTV

No. 44-540 - VGA - HDMI CONVERTER BOX

HOME THEATRE A / V SELECTORS

HDMI and/or DVI A/B SWITCH
WITH AUDIO

For connecting two digital input devices, such as a DVD and a set-top satellite box, to one HDTV. Inputs can be either two HDMI or two DVI or one of each to an HDMI or DVI output. Audio may be handled separately via single digital RCA audio jack or two (left and right) conventional stereo jacks. Saves a lot of cable switching when you want to use more than one input device with one HDTV monitor. Easy operation.

```
Outputs: 1 HDMI
         1 DVI
         1 Audio/Stereo (RCA jacks Red & White)
         1 Digital Audio (RCA jack)
```

No. 44-555

```
Inputs: 2 HDMI
        2 DVI
        2 Audio/Stereo (RCA jacks Red & White)
        1 Digital Audio (RCA jack)
```

Remote Controlled HDMI (with repeater), Component Video, VGA & Audio Selector

Philmore 45-570 has it all. The Component Video, VGA and HDMI (w/repeater function) selector remote control is a digital switcher with Component Video, A/V, VGA and HDMI A/V connections. Features highest quality circuitry for no signal loss at any point. It features 3 Component Video, 3 VGA, 3 HDMI A/V, 3 A/V inputs, 1 Component Video, 1 VGA, 1 HDMI A/V, 1 A/V outputs, for HDTV source switching using a single high definition display. The HDMI ports provide fixed 8 db input equalization and 3 db output de-emphasis to compensate HDMI cable for up to 17M (55 ft.). A simple and reliable solution, the Component video and HDMI A/V selector links any HDTV source (DVD players and satellite set tops) to one HDTV display. You simply select which source you want to view on the display using the remote control.

Specifications;

* Connects 3 HDMI A/V, 3 VGA and 3 component A/V devices (DVD players and satellite set tops, etc.) to one HDTV

* The HDMI ports provide fixed 8 db input equalization and 3 db output de-emphasis to compensate HDMI cable for up to 17M.

* 12 input ports (Component RCA, VGA, HDMI, A/V RCA) to 4 output ports (Component RCA, HDMI, VGA & A/V RCA)

* HDMI -19 pin HDMI jack
  VGA - HD 15 jack
  Component video - 3 RCA jacks (Red, Blue & Green)
  A/V RCA (Yellow, White & Red)

No. 45-570

* 6V - 400MA AC/DC power supply

---

2 IN 1 COMPONENT/COMPOSITE A/V SELECTOR
EASY SELECTION OF INPUT DEVICES FOR YOUR HDTV

Switching for up to five accessories to one HDTV! The back of the selector has provisions for three Component video device inputs plus audio left & right as well as input for one Composite/S-Video input plus audio left & right. Output is also located on the back of the unit. There is an additional Composite/S-Video and audio inputs block on the front of the selector for those momentary hook-ups such as your games, camera etc. Select any five inputs with the push of a button.

No power is required to operate the 44-535 selector; it is completely passive. A 3.5mm stereo audio jack on the front permits easy monitoring of the sources audio. 75 ohm integrity is maintained throughout for your best video performance. A nice looking unit that will sit comfortably on your set top. Dimensions 10-3/4" x 4-1/4" x 1-1/2"

A/V Selector One
Inputs : 3-component Video (RCA jacks, Red, Green & Blue)
: 3 Audio/Stereo (RCA jacks, Red & White)
Output: 1 component Video (RCA jacks, Red, Green & Blue)
: 1 Audio/Stereo (RCA jacks, Red & White)
: 1 3.5mm Stereo jack

A/V Selector Two
Inputs : 2-S-VHS Video (4 pin Mini din)
: 2 Composite Video (RCA jack, yellow)
: 2 Audio/Stereo (RCA jacks, Red & White)
Output: 1-S-VHS Video (4 pin Mini din)
: 1 Composite Video (RCA jack, yellow)
: 1 Audio/Stereo (RCA jacks, Red & White)

No. 44-535

AUDIO / VIDEO COMPONENT SELECTORS

These Audio/Video Selectors can be used with Satellite systems, VCR's, DVD Players, Laser Disc Players, Cable Boxes, Multimedia Speakers, Video Games, and much more. The unit will allow you to connect up to four (4) inputs to one Television. They are equipped with both S-VHS Jacks (MD4) and RCA jacks for separate Audio & Video inputs. There is also an extra (front mounted) mini stereo jack for stereo Headphones, or Multimedia speakers.

FOUR INPUTS / ONE OUTPUT

No. AV413YC

Specifications:
   Frequency: 20 Hz-10 MHz
   Insertion Loss: Audio 1 dB
                    Video 1 dB
   Isolation: 30 dB minimum
   Inputs: Audio (4) Sets of RCA Jacks/switch
          Video (4) S-VHS Jacks (MD4 female)*
          + (1) RCA Jack / switch
          *S-VHS Jack is used for both Audio & Video
   Outputs: Audio (1) Sets of RCA Jacks (Left & Right)
            Video (1) RCA Jack + (1) S-VHS Jack
   Dimensions: 7" x 4.3" x 1.9"
   Weight: 14 oz.

FIVE INPUTS / TWO OUTPUT

No. AV521YC

Specifications:
   Frequency: 20 Hz-10 MHz
   Insertion Loss: Audio 1 dB
                    Video 1 dB
   Isolation: 30 dB minimum
   Inputs: Audio (5) Sets of RCA Jacks/switch
          Video (5) S-VHS Jacks (MD4 female)*
          + (1) RCA Jack / switch
          *S-VHS Jack is used for both Audio & Video
   Outputs: Audio (2) Sets of RCA Jacks (Left & Right)
            Video (2) RCA Jack + (2) S-VHS Jack
   Dimensions: 9.65" x 5.5" x 1.9"
   Weight: 1 lb 7 oz.

Economy Audio / Video selector

Slide switch selector can be used with VCR, CATV, Satellite TV, DVD, Laser Disk Player. The unit will allow you to connect up to three inputs to one television

No. AV31

3 inputs - 1 output

INPUTS: (3) RCA Jacks (Audio left & right + Video)

OUTPUT: (3) RCA Jacks (Audio left & right + Video)

MP3 FM-BROADCASTER FOR HOME & AUTO

Simply plug the MW700 into the earphone jack on your IPOD or any MP3 player, CD player (etc.) and broadcast pure, beautiful music to your Home stereo! Or, take your MP3 music collection with you and play through your Car stereo FM receiver or poolside boom box. It works like a miniature FM broadcasting station.

Listen to your:
IPOD
MP3 PLAYER
CD & MD PLAYERS
PDA's LAPTOPS etc.

No. MW700

Listen ON your:
HOME STEREO SYSTEM
CAR FM RADIO
BOOM BOX
POOL-SIDE FM RECEIVER

FEATURES
There are four user-selectable frequencies to choose from; find an unused channel on your FM receiver.
Simple connection: plugs into your player using a 3.5mm stereo plug (just like the one on headphones)
Requires two AA batteries

RF MODULATOR

An RF Modulator permits viewing DVDs, Video Games, and home videos on a TV that is not equipped with Audio/Video inputs. Simply use the Antenna input on your TV set as the input from the RF Modulator and connect AV equipment, games, DVD Players etc. to the RF Modulator.

Specifications
RF Output Level: 69db ± 3.5dB uv
RF Output Channels: 3 or 4
RF Output Impedance: 75 ohms
Video Input Impedance: 75 ohm / 1K ohms
Audio Input Impedance: 13±3K Ohm
TV to ANT insertion: -2b
Input A: 3 RCA A/V Input
Input B: 75 ohm Antenna Input
Input S-Video: Mini Din 4 pins
Power Source: AC 120V

Front

Back

No. 70-3009

RF Modulator Connection Diagram
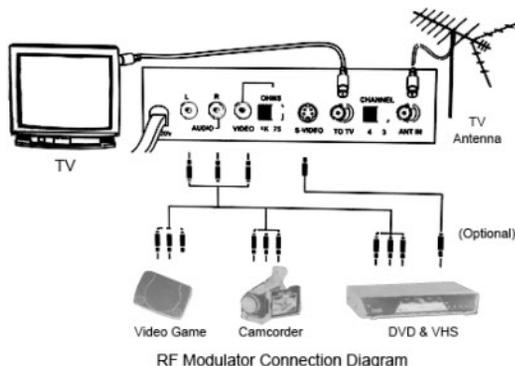
REMOTE CONTROL AUDIO & VIDEO SELECTOR 3 INPUTS/1 OUTPUT

LKG 44-531 allows you to connect up to 3 inputs (Toslink-Optical, S-Video and RCA audio/video) to one television or Home Theatre System. It can be used with DVD players, video games, satellite receivers, VCR's, Laser Disc Players, VCD's, Camcorders, CD's, Multimedia Speakers, MDS and other digital A/V equipment. Small and easy to operate, the 3 button remote control allows you to select one of three inputs from anywhere in your room.

No. 44-531

Specifications:
Inputs: Audio (3) Sets of RCA Jacks (L&R)
                  (3) Toslink Optical Jacks
             Video (3) S-VHS Jacks
                  (3) Composite Video Jacks (RCA)

Output: Audio (1) Set of RCA Jacks (L&R)
                  (1) Toslink Optical Jack
             Video (1) S-VHS Jack
                  (1) Composite Video Jack (RCA)
Dimensions: Selector 9.37"W x 4.25"D x 2"H
             Remote Control 1.75"W x 3.30"L x .25"H
Weight: 2lbs. 10oz.
Power Supply: 9VDC @ 500mA

REMOTE CONTROLLED
COMPONENT VIDEO/AUDIO SELECTOR

Connect up to three different input accessories to one output for your TV or home theatre system; and control the input switching with a shirt-pocket sized remote. Connect DVD's, Satellite receivers, laser disk players and virtually the whole range of audio and video equipment that has matching con-nectors. Connectors for all three (3) inputs and one (1) output are your choice of RCA jacks for compo-nent video (Red, Blue and Green), a toslink jack and 3.5mm stereo jack. Switch either manually at the set or remotely with the remote controller. Supports resolutions 480i, 480p, 720p & 1080i

NOTE that the unit is a switching device and not a converter; you cannot input a toslink and output that signal on one of the other connectors.

No. 44-533

CANOPY WALL PLATE
(Removable & Reversible)

The Canopy Wall Plate is intended for use in situations where installing preassembled cables with molded - on connectors is mandatory. Cables such as HDMI, VGA, S-VHS and so forth can be fed through walls so that they will extend through Canopy Wall Plate. New design will allow installers to remove the canopy portion of the wall plate to allow larger connectors to pass through. Multiple cables can also be fed through at the same time. Available in four different styles and colors.

SINGLE GANG
STANDARD

DECORATOR
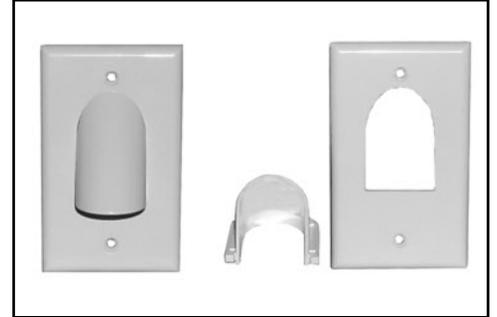
SINGLE GANG
RAISED
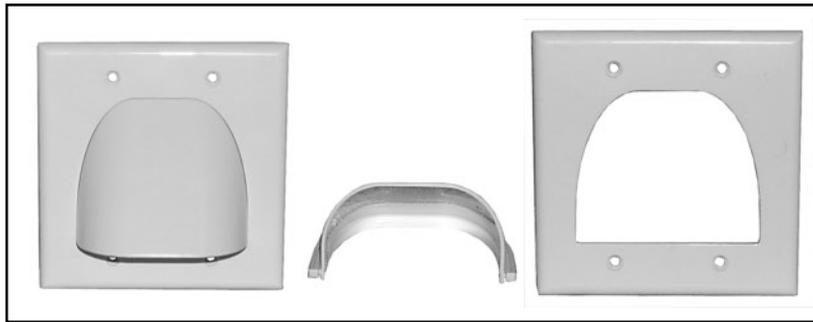
DOUBLE GANG
STANDARD

REMOVED CANOPY   REVERSED CANOPY

Decorator:
No. 75-1101 - White
No. 75-1103 - Ivory

Single Standard:
No. 75-1111 - White
No. 75-1113 - Ivory
No. 75-1115 - Black
No. 75-1117 - Almond

Double standard:
No. 75-1121 - White
No. 75-1123 - Ivory
No. 75-1125 - Black
No. 75-1127 - Almond

Single raised:
No. 75-1131 - White
No. 75-1133 - Ivory
No. 75-1135 - Black
No. 75-1137 - Almond

B

A
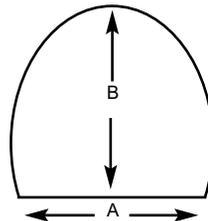
Canopy opening

Decorator style: A = 1.10"
                          B = 1.25"
Single gang standard: A = 1.25"
                          B = 1.0"
Single gang raised: A = 1.20"
                          B = 1.30"
Double gang standard   A = 2.90"
                          B = 1.30"

Canopy may be removed / reversed for new connectors if necessary.
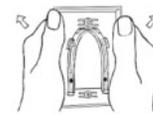
With the back of wall plate facing you, hold the plate as shown in the illustration. With a finger putting a little pressure on the canopy from behind, pushing it toward your face.

Flex (bend) the wall plate firmly until the canopy pops out.
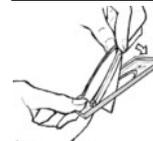
Apply the canopy to the back of the plate as shown. Insert canopy tabs first and then rotate canopy into place.

Flexing wall plate and pressing together until the canopy seats on the plate. It will be obvious when the canopy has snapped firmly into place.

Illustration by:
www.rihanamartinson.net

SPECIALTY WALL PLATES

QUIK-PLATE®

For the:

PROFESSIONAL INSTALLER

HOBBYIST

DIY HOME HANDYMAN

The QUIK-PLATE®
On the job wall plate creation!

When was the last time that you had just about wrapped up a custom installation and you (or your local supplier) were out of the wall plate needed to finish up? The Quik-Plate® from Philmore can save the installer both time and delayed pay checks. Quik-Plate® lends itself to those last-minute job-site changes when you (or your customer) decide that "one additional connector" is needed at a couple of outlet locations?

It won't matter what type of installation you are working on, the Quik-Plate® can be on-site drilled with the step drill to accommodate just about any assortment of connectors that you need. The Philmore Quik-Plate® assortments will provide you not only with the needed connectors, but excellent (spelled: low-cost) economy as well. Quik-Plate® is available to you in STANDARD, Designer or 2 piece Designer wall plates and in White or Ivory. All Quik-Plates® have the correct spacing (on the back of the plates), of course, as well as an accurately-placed "drilling dimple" so that you can place the hole(s) in the correct spot every time. Simply check the Philmore listing for hole size and pop a new connector into a clean, correctly sized hole made with your step drill.

"PRESPACED DRILLING DIMPLES"
For Quick and Accurate Hole Locations

Standard Wall Plate	Designer Style (1 Pc. with Plastic Mtg. Bracket)	Designer Style (2 Pc. with Metal Mtg. Bracket)
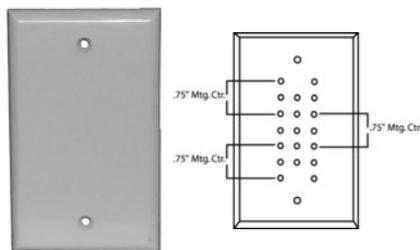
No. 75-780 - White
No. 75-782 - Ivory
(Number of Holes: 1, 2, 3, 4, 6, 8) *
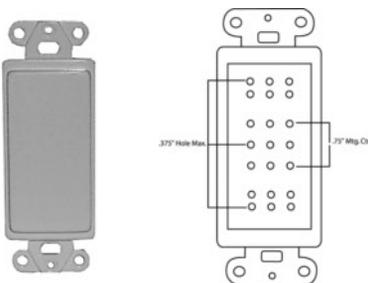
No. 75-1100 - White
No. 75-1102 - Ivory
(Number of Holes: 1, 2, 3, 4, 6, 8) *
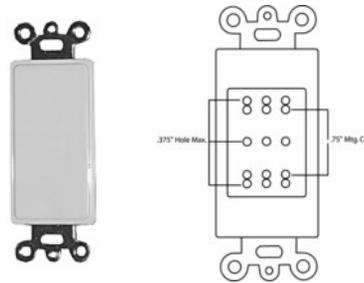
No. 75-1104 - White
No. 75-1106 - Ivory
(Number of Holes: 1, 2, 3, 4, 6) *

No. 75-1108 - 10 Pack Quik - Plate®, White (3 pcs. 75-780, 3 pcs. 75-1100, 4 pcs. 75-1104).

Note: * Number of holes are prespaced for standard 3/8" (.375") hole size. More holes can be drilled for smaller hole sizes (3/16" - 5/16"). All wall plates have 2 and 4 prespaced drilling dimples at 3/4" (.75") mounting centers for Banana Jacks and Binding Post.

See the Quik-Plate® Video @ www.philmore-datak.com or www.youtube.com (Search for Philmore Quik-Plate)

INSTALLER KIT

The profitable way to buy the Quik - Plate® & Connectors and be ready for the job site.
Kit Contents:
(10) Standard wall plates (7 white, 3 ivory)
(8) 1 Pc. Designer style inserts (6 white, 2 ivory)
(6) 2 Pc. Designer style inserts (4 white, 2 ivory)
(10) Feed - Thru binding posts (5 black, 5 red / 45-232G)
(10) Banana jacks (5 red, 5 black / 45-235G)
(10) 3 GHz F female (F-81 / FCG67R)
(10) Feed - Thru RCA-F (2 each red, white, yellow, blue, green / 45-307G)
(23) Feed - Thru RCA jacks (6 red, 4 each white, yellow, 3 each blue, green & orange / 45-162G)
(8) Metal binding post (4 black, 4 red / 45-230G)
(10) Plastic binding post (5 black, 5 red / 45-229G)
(4) 3.5mm stereo feed - thru jack (45-233)
(1) 6 Step drill (63-1601)

No. 75-999 - Installer Kit - 24 wall plates & 85 Connectors

STEP DRILL

No. 63-1601
6 Steps from 3/16" to 1/2" (3/16", 1/4", 5/16", 3/8", 7/16" 1/2") 1/4" drive

CUSTOM DESIGN WALL PLATES HDMI & A/V

Both standard wall plate and Designer styles are white. All wall plates are supplied with matching color mounting screws. All connectors used are Gold plated and / or have Gold contacts for optimum performance and appearance.

Designer Style Wall Plate

HDMI WALL PLATE W / 360° JACK

Without Repeater

**With Repeater
(Effective up to 98 Ft.)**

No. 75-1077 - Without Repeater
No. 75-1079 - With Repeater

Dual HDMI
Feed - Thru Jack
No. 75-1059 - White

Great for tight spaces behind the wall. Keystone like design allows installer to adjust input HDMI jack to any 90° directions.

No. 75-1049 - Single HDMI Wall Plate, White
W / Power Indicator Light

HDMI WALL PLATES

HDMI Female to HDMI Female with approximately 2" of flexible cable, mounted on wall plates. Cable pigtail can be bent in any direction, eliminates problem when HDMI cables come from different directions behind the wall. It will also reduce a strain on contacts inside HDMI jack caused by large & heavy cables (26 AWG - 24 AWG) needed on a longer run. Output jack has a LED indicator light available in standard and designer style wall plates, both in single and dual HDMI jacks. Light assembly is required, available in white only.

No. 75-776
Standard Wall Plate
Single HDMI Jack

No. 75-778
Standard Wall Plate
Dual HDMI Jacks

No. 75-1029
Designer Style Wall Plate
Single HDMI Jack

No. 75-1031
Designer Style Wall Plate
Dual HDMI Jacks

Standard Wall Plates

All Audio and Video connectors used on wall plates are Feed - Thru type for easy plug and play installation.

HDMI + (3) RCA Component
Video (Red, Blue & Green) +
(2) RCA Audio (Red & White)
No. 75-1061 - White

HDMI + (3) RCA Component
Video (Red, Blue & Green) +
(1) "F" Video + (1) 3.5 mm Stereo Jack
No. 75-1063 - White

HDMI + (4) RCA Audio
(2 Red / (2 White) +
(1) 3.5 mm Stereo Jack
No. 75-1065 - White

HDMI + (3) RCA A / V
(Red, White & Yellow) +
(1) S-VHS + (1) 3.5 mm Stereo Jack
No. 75-1067 - White

HDMI + (2) RCA
(Red, White) +
(1) 3.5 mm Stereo Jack
No. 75-1069 - White

HDMI + (1) HD15 +
(1) 3.5 mm Stereo Jack
No. 75-1057 - White

Note: HDMI and High - Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

CUSTOM DESIGN WALL PLATES HDMI, VGA, USB

HDMI / VGA / USB

Introducing a new exclusive design HDMI and USB Female Feed - Thru Jack. Each jack has a built-in LED power indicator light. Both new designs HDMI & USB jacks will give installers more choices of wall plate colors and make it more affordable for a typical Do-It-Yourself user. A space saving design will allow other common Audio & Video jacks on the same wall plate. Choose from a standard wall plate or Designer style wall plate to fit home decor or installation needs.

Standard Plate

Designer Plate

Standard Plate

Designer Plate

Single HDMI Female Feed - Thru Jack (19 pin HDMI 1.3 Compatible)		
Standard Plate Part No.	Color	Designer Plate Part No.
75-667	White	75-1177
75-668	Ivory	75-1179
75-671	Almond	75-1181
75-673	Lt. Almond	75-1183
75-675	Black	75-1185
75-677	Stainless Steel	N / A

Single USB A Female Feed - Thru Jack (USB 2.0 Compatible)		
Standard Plate Part No.	Color	Designer Plate Part No.
75-687	White	75-1187
75-689	Ivory	75-1189
75-691	Almond	75-1191
75-693	Lt. Almond	75-1193
75-695	Black	75-1195
75-697	Stainless Steel	N / A

VGA PLUS

Standard Plate

Designer Plate

Standard Plate

Designer Plate

VGA (HD15 Female) + HDMI Female		
Standard Plate Part No.	Color	Designer Plate Part No.
75-601	White	75-1120
75-603	Ivory	75-1122
75-605	Lt. Almond	75-1124
75-607	Black	75-1126
75-609	Stainless Steel	N / A

VGA (HD15 Female) + USB A Female		
Standard Plate Part No.	Color	Designer Plate Part No.
75-611	White	75-1128
75-613	Ivory	75-1130
75-615	Lt. Almond	75-1132
75-617	Black	75-1134
75-619	Stainless Steel	N / A

USB PLUS Designer Style Plate

USB + 3.5mm Stereo	
Part No.	Color
75-1170	White
75-1172	Ivory
75-1174	Lt. Almond
75-1176	Black

USB + Component Video 3 RCA (Red / Blue / Green)	
Part No.	Color
75-1178	White
75-1180	Ivory
75-1182	Lt. Almond
75-1184	Black

CUSTOM DESIGN WALL PLATES HDMI, VGA, USB & DATA

HDMI / VGA / USB / DATA
HDMI PLUS Designer Style Plate

HDMI + Component Video 3 RCA (Red / Blue / Green)	
Part No.	Color
75-1136	White
75-1138	Ivory
75-1140	Lt. Almond
75-1142	Black

HDMI + A / V 3 RCA (Red / White / Yellow)	
Part No.	Color
75-1144	White
75-1146	Ivory
75-1148	Lt. Almond
75-1152	Black

HDMI + Audio 2 RCA (Red / White)	
Part No.	Color
75-1154	White
75-1156	Ivory
75-1158	Lt. Almond
75-1160	Black

HDMI PLUS
Standard Wall Plate

HDMI + USB	
Part No.	Color
75-621	White
75-623	Ivory
75-625	Lt. Almond
75-627	Black
75-640	Stainless Steel

HDMI + VGA + 3.5mm Stereo	
Part No.	Color
75-629	White
75-631	Ivory
75-633	Lt. Almond
75-635	Black
75-642	Stainless Steel

HDMI + USB + VGA	
Part No.	Color
75-639	White
75-643	Ivory
75-645	Lt. Almond
75-647	Black
75-648	Stainless Steel

HDMI + CAT5e Jack	
Part No.	Color
75-649	White
75-651	Ivory

HDMI + CAT5e Jack + VGA	
Part No.	Color
75-653	White
75-655	Ivory

HDMI + CAT5e Jack + Component Video 3 RCA (Red / Blue / Green)	
Part No.	Color
75-659	White
75-661	Ivory

CUSTOM DESIGN WALL PLATES VGA, USB, DATA & A/V

USB PLUS
Standard Wall Plate

USB + CAT5e Jack	
Part No.	Color
75-663	White
75-665	Ivory

USB + RJ12 Jack	
Part No.	Color
75-660	White
75-670	Ivory

USB + CAT5e Jack + Component Video 3 RCA (Red / Blue / Green)	
Part No.	Color
75-610	White
75-612	Ivory

Audio / Video Combinations
Standard Wall Plate

(2) Component Video (Red / Blue / Green) + (2) Audio (Red / White)	
Part No.	Color
75-654	White
75-688	Ivory

VGA + 3.5mm Stereo + Audio / Video (Red / White / Yellow) + Audio (Red / White) + S-VHS	
Part No.	Color
75-662	White
75-664	Ivory
75-666	Stainless Steel

(3) Audio / Video (Red / White / Yellow) + CATV + SATV Jacks	
Part No.	Color
75-656	White
75-658	Ivory

Audio / Video Combination
Standard Wall Plate

VGA + Component Video (3 RCA Red / Blue / Green) + Audio (2 RCA Red / White)	
Part No.	Color
75-679	White
75-682	Ivory
75-683	Stainless Steel

VGA + Component Video (3 RCA Red / Blue / Green) + (2) Audio (RCA 2 Red / 2 White)	
Part No.	Color
75-684	White
75-685	Ivory
75-686	Stainless Steel

CUSTOM DESIGN WALL PLATES STANDARD STYLE A/V

"F" Connector Wall Plates

(1) F-81 Connector
No. 75-602 White

(2) F-81 Connector
No. 75-604 White

(4) F-81 Connector
No. 75-616 White

Converter "F" / RCA

Convert standard "F" Connector on the rear to RCA Jack on the front of the wall plate. This configuration allows you to use video coaxial cable for both audio & video. All wall plates are White.

(1) RCA/ "F" Jack
No. 75-638

(2) RCA/ "F" Jack
No. 75-644

(3) RCA/ "F" Jack
No. 75-646

S-VHS Wall Plates

4 Pin mini DIN (S-VHS) Bulkhead jack, Gold plated. RCA jacks are solder type with Red & White colored insulation and Gold plated.

((1) Gold S-VHS jack
No. 75-641 White

((1) Gold S-VHS +
(2) RCA jack
No. 75-681 White

DSS Wall Plates

Use these wall plates to connect your input cables from antenna, cable, telephone and satellites to TV's, VCR's or other devices.

(2) GOLD F-81 Connectors
+ (1) 4c Telephone
No. 75-4492 Ivory
No. 75-4494 White
No. 75-4496 Brown
No. 75-4498 Lt. Almond

Binding Post Inserts

Use these wall plates for speaker connections. They may also be used where no coaxial cable is used such as alarm systems and remote control wiring. A binding post has a banana jack on the front and screw apart connections for easy insertion of spade lugs. White

(2) GOLD Binding Post
(1) ea Red + Black
No. 75-630

(4) GOLD Binding Post
(2) ea Red + Black
No. 75-632

RCA Jack Wall Plates

These inserts use the standard solder type RCA jacks which are High Quality and color coded for easy identification. White

SOLDER TYPE
(1) GOLD RCA Jack
No. 75-620

Feed-thru type
No. 75-634 1 RCA
No. 75-636 2 RCA

Solder Type
(2) GOLD RCA Jack
(1) ea Red + White
No. 75-622

SOLDER TYPE
(6) GOLD RCA Jacks
2 Red + 2 White & 2 Yellow
No. 75-618

SOLDER TYPE
(3) GOLD RCA Jack
(1) ea Red + White + Yellow
No. 75-624

Banana Jack Wall Plates

This configuration of insert is often used for speaker connections where a quick and convenient disconnection is desirable. White.

(2) GOLD
(1) ea Red + Black
No. 75-650

(4) GOLD
(2) ea Red + Black
No. 75-652

Speaker Wall Plates

(1) 2 Position Term.
White
No. 75-672
(Solderless)

(1) 4 Position Term.
White
No. 75-674
(Solderless)

(2) 4 Position Term.
White
No. 75-678
(Solderless)

(4) Push-in Term.
No. 75-676 White
No. 75-680 Ivory

Combination Wall Plates
All Wall Plates are White

(2) RCA Jacks + (1) F-81
(1) ea Red + White
No. 75-608

(4) RCA Jacks + (2) F-81
(2) ea Red + White
No. 75-626

(4) RCA Jacks
(2) EA RED + WHITE
+ (2) 1/4" STEREO JACKS
No. 75-628

CUSTOM DESIGN WALL PLATES DOUBLE GANG & A/V

STANDARD WALL PLATES

(3) RCA Jacks
Component Video+
HDMI + VGA
No. 75-702- White
No. 75-704- Ivory

VGA + 3.5mm Stereo
+ (3) RCA A/V +
USB A
No. 75-706- White
No. 75-708- Ivory

VGA + 3.5mm Stereo
+ (3) RCA
Component Video
+ HDMI
No. 75-710- White
No. 75-712- Ivory

XLR 3 Pin Male
Microphone Connector
Nickel Plated

No. 75-714- White
No. 75-716- Ivory
No. 75-718- Stainless Steel

XLR 3 Pin Female
Microphone Connector
Nickel Plated

No. 75-720- White
No. 75-722- Ivory
No. 75-724- Stainless Steel

BNC + 2.1mm DC Power Jack
Feed - Thru Jacks

No. 75-606 - White
No. 75-703 - Stainless Steel

DOUBLE GANG WALL PLATES

VGA + 3.5mm Stereo +
(3) RCA A / V + USB A
No. 75-748- White
No. 75-750- Ivory

VGA + 3.5mm Stereo +
(3) RCA Component Video
+ USB A
No. 75-752- White
No. 75-754- Ivory

(3) RCA A/ V +3.5mm Stereo +
VGA + HDMI + Audio L/R
+ S-VHS
No. 75-740- White
No. 75-742- Ivory

A/V COMBO

Our special designed double gang wall plates with A/V connectors on one side and an opening for Designer Style Insert on the other side to create your own combinations with over 100 Philmore Designer Style A/V & HD inserts. Available in white & ivory.
May be used with the new designer Quik - Plate®.

No. 75-764 - White
No. 75-766 - Ivory
VGA + Audio
HD15 + 3.5mm Stereo
Feed - Thru Jacks

No. 75-768 - White
No. 75-770 - Ivory
VGA + (3) RCA
HD15 + Red / White /
Yellow RCA Feed - Thru Jacks

No. 75-772 - White
No. 75-774 - Ivory
VGA + A/V
HD15 + 3.5mm Stereo +
Red / White / Yellow RCA
Feed - Thru Jacks

No. 75-756 - White
No. 75-758 - Ivory
4 Position Speaker Terminal
(solderless, for 2 speakers)

No. 75-760 - White
No. 75-762 - Ivory
8 Position Speaker Terminal
(solderless, for 4 speakers)

CUSTOM DESIGN WALL PLATES STAINLESS STEEL

A single gang Stainless Steel wall plate with Feed - Thru Audio / Video and HD jacks. Choose any combinations to fit your A/V installation needs. All connectors are Nickel plated. Mounting screws included.

No. 75-1007
Single HD15 (VGA) Jack

No. 75-1005
Dual HD15 (VGA) Jacks

No. 75-1086
HD15 (VGA) + RCA
(White)*

No. 75-1096
HD15 (VGA) + (2) RCA
(Red & White)*

No. 75-1071
HD15 + (3) RCA
Component Video
Red, Blue & Green

No. 75-1073
HD15 + (3) RCA
Audio / Video
Red, White & Yellow

No. 75-1075
HD15 + (2) RCA
Audio, Red / White
+ (1) RCA
Digital Audio, Orange

No. 75-1078
HD15 +
3.5 mm Stereo

No. 75-1076
HD15 + (3) RCA (Component
Video, Red / Blue / Green)
+ 3.5 mm Stereo

No. 75-1080
HD15 + (3) RCA (A / V, Red /
White / Yellow)
+ 3.5 mm Stereo

No. 75-1083
HD15 + (2) RCA (Audio, Red /
White) + (1) RCA (Digital-Audio,
Orange) + 3.5 mm Stereo

No. 75-1087
HD15 + (3) RCA
(Component Video
Red / Blue / Green)
+ S-VHS + 3.5 mm Stereo

No. 75-1089
HD15 + (3) RCA
(A / V, Red / White /
Yellow)
+ S-VHS
+ 3.5 mm Stereo

No. 75-1090
HD15 + (3) RCA
A/V, Red / White / Yellow
+ HDMI + 3.5mm Stereo

No. 75-703
BNC Feed - Thru +
2.1mm DC Feed - Thru Jack

NOTE: (*) = RCA jack is isolated from stainless steel plate and available in 6 colors insulation (Red, White, Yellow, Green, Blue and Orange). You can request (special order) any color or combinations to meet your installation needs. No minimum order requirement on special order just specify color (s) after part number.

103

CUSTOM DESIGN WALL PLATES STAINLESS STEEL

No. 75-677
Single HDMI Female
Feed - Thru Jack

No. 75-701
Dual HDMI Female
Feed - Thru Jack

No. 75-609
VGA (HD15 Female)
+
HDMI Female

No. 75-619
VGA (HD15 Female)
+
USB A Female

No. 75-640
HDMI + USB A
Feed - Thru Jacks

No. 75-642
HDMI + VGA + 3.5mm Stereo
Feed - Thru Jacks

No. 75-648
HDMI + USB A + VGA
Feed - Thru Jacks

No. 75-666
VGA + 3.5mm Stereo
+ Audio / Video
(Red / White / Yellow)
+ Audio (Red / White)
+ S-VHS

No. 75-683
VGA + Component Video
(3 RCA, Red / Blue / Green)
+ Audio (2 RCA, Red / White)

No. 75-686
VGA + Component Video
(3 RCA, Red / Blue / Green)
+ (2) Audio (RCA, 2 Red / 2 White)

No. 75-718
XLR 3 Pin Male
Microphone Connector

No. 75-724
XLR 3 Pin Female
Microphone Connector

No. 75-697
Single USB A Female
Feed - Thru Jack

No. 75-699
Dual USB Female
Feed - Thru Jack

No. 75-1095
(1) 3.5mm Stereo

No. 75-1097
(2) 3.5mm Stereo

NOTE: (*) = RCA jack is isolated from stainless steel plate and available in 6 colors insulation (Red, White, Yellow, Green, Blue and Orange). You can request (special order) any color or combinations to meet your installation needs. No minimum order requirement on special order just specify color (s) after part number.

104

CUSTOM DESIGN WALL PLATES QUICK FIT™

These wall plates are made of the finest components which assure the user to get the optimum performance from their equipment. These inserts allow mixing different types into a multi-outlet box and covering them with a single (multi-port) Designer wall plate cover. For this reason Designer Wall Plates are extremely popular for Media Rooms, & Equipment Closets.

GOLD PLATED SOLDERLESS CONNECTORS
MOUNT IN A 3/8" (.375") HOLE

No. 45-309G - Dual "F" Conn. Female (F-81) (2/pk)
No. 42-1081G - extra long (1"), (2/pk)
No. 45-317G - 3GHz F-81 (2/PK)

No. 45-307G - RCA Jack (F) / "F" Conn. (F)
(1) ea. RED + WHITE
No. 45-306G - .(1) ea. RED + WHT + YEL
No. 45-301G - .(1) ea. RED + GREEN + BLUE

No. 45-162G - Dual RCA (F),
(1) ea. RED + WHT + YEL
No. 45-166G - .(1) ea. RED + GREEN + BLUE
No. 45-142G - Dual RCA (F)
(1) ea. RED + WHT
No. 45-163G - Orange (2/Pk)

No. 45-232G - Metal Binding Post Color coded
(1) ea. RED + BLACK

NO. 45-233 - 3.5 mm Feed - Thru Stereo Jack

NO. 45-239G - SOLDERLESS BANANA JACK
(1) ea. RED & BLACK

Pro's Fit D.I.Y. Custom Design Inserts

These inserts allow for your own custom configuration. Have it your way. These inserts are predrilled with 3/8" (.375") holes for easy mounting of the solderless connectors.

(1) Hole
No. 75-4001- White
No. 75-4501- Ivory
No. 75-4301- Black

(2) Hole
No. 75-4002- White
No. 75-4502- Ivory
No. 75-4302- Black

(3) Hole
No. 75-4003- White
No. 75-4503- Ivory
No. 75-4303- Black

(4) Hole
No. 75-4004- White
No. 75-4504- Ivory
No. 75-4304- Black

(6) Hole
No. 75-4006- White
No. 75-4506- Ivory
No. 75-4306- Black

WALL PLATE COVERS

These covers are used with the DESIGNER Style inserts for custom installations

(White)
No. 75-1000 - 1 Gang Wall Plate
No. 75-2000 - 2 Gang Wall Plate
No. 75-3000 - 3 Gang Wall Plate
(Ivory)
No. 75-1500 - 1 Gang Wall Plate
No. 75-2500 - 2 Gang Wall Plate
No. 75-3500 - 3 Gang Wall Plate
(Black)
No. 75-1300 - 1 Gang Wall Plate
No. 75-2300 - 2 Gang Wall Plate
(LIGHT ALMOND)
No. 75-1400 - 1 Gang Wall Plate

Note: All Wall Plate covers are individually packaged in plastic bag. Not available for pegboard display

Blank Inserts

Use these inserts for future expansion or they may be drilled for custom connectors.

No. 75-1068 White
No. 75-5068 Ivory
No. 75-3068 Black
No. 75-4068 Lt. Almond
No. 75-6068 Almond

QUICK FIT™ CUSTOM DESIGN INSERTS

Giving the Custom Home Theater installer flexibility of interchangeable parts on the job. These wall plates are molded with 3/8" (.375") holes and 7/16" (.437") hex nut cut outs on the front plate to hold Philmore solderless connectors in place. Available in both standard wall plate & Designer style wall plates. Color is white.

1 HOLE
Standard   Designer

No. 75-4111 - Standard
No. 75-4011 - Designer

2 HOLE
Standard   Designer

No. 75-4112 - Standard
No. 75-4012 - Designer

3 HOLE
Standard   Designer

No. 75-4113 - Standard
No. 75-4013 - Designer

4 HOLE
Standard   Designer

No. 75-4114 - Standard
No. 75-4014 - Designer

6 HOLE
Standard   Designer

No. 75-4116 - Standard
No. 75-4016 - Designer

8 HOLE
Standard   Designer

No. 75-4118 - Standard
No. 75-4008 - Designer

105

CUSTOM DESIGN WALL PLATES KEYSTONE + A/V

Designer Style Keystone Inserts

These inserts are intended for use with Designer style covers and may be installed by themselves or ganged in a multi-gang electrical box. They can be used with Keystone telephone jacks, network jacks, BNC connectors, "F" connectors, and Audio connectors. The mounting hole is the standard keystone cutout (.58" X .76"). Choose from 1, 2, 3, 4, or 6 ports, color is white. Spacing of 4 ports & 6 ports might be too tight to accommodate a multiple RJ45 jacks.

1 Port	2 Ports	3 Ports	4 Ports	6 Ports
No. 72-5051	No. 72-5052	No. 72-5053	No. 72-5054	No. 72-5056
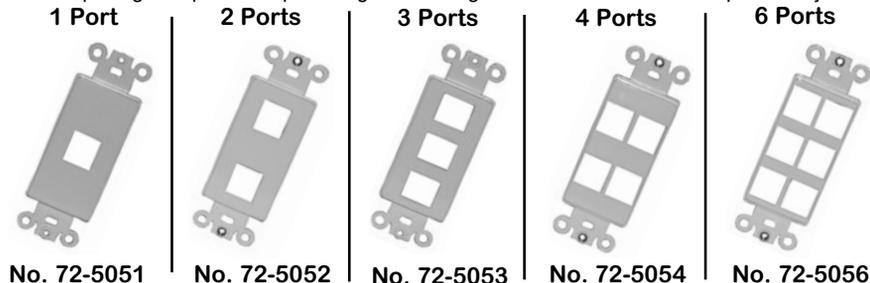
Wall - Plate Adaptors

These adaptors can be used with Philmore Designer style Keystone inserts, color is white.

No. 72-5016 "F" Insert White

No. 72-5018 Blank Insert White

RCA Jack Inserts

These inserts use the standard solder type RCA jacks which are High Quality and color coded for easy identification. Solder Terminal.

(1) GOLD RCA Jack
No. 75-1020 White
No. 75-5020 Ivory

(2) GOLD RCA Jacks
(1) ea Red + Black
No. 75-1022 White
No. 75-5022 Ivory

(3) GOLD RCA Jacks
(1) ea Red + Black + Yellow
No. 75-1024 White
No. 75-5024 Ivory
(3) GOLD RCA Jacks
(1) ea Red + Green + Blue
No. 75-1025 White
No. 75-5025 Ivory

(4) GOLD RCA Jacks
(2) ea Red + Black
No. 75-1026 White
No. 75-5026 Ivory
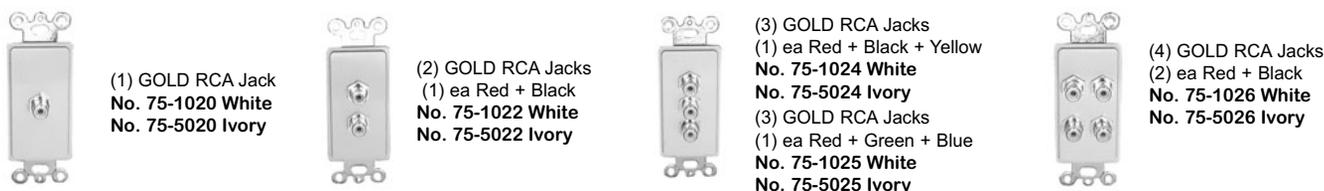
"F" + RCA Combo

These Wall Plates have both GOLD RCA jacks & "F" connector Available in solderless & solder type.

Solder type RCA jack

(1) F-81 + RCA Jack
No. 75-1014 White
No. 75-5014 Ivory

Solderless with Bulkhead RCA jack
(1) F-81 + RCA Jack (Orange)
No. 75-1011 White
No. 75-5011 Ivory

Solder type RCA jacks

(1) F-81 + (2) RCA Jack
No. 75-1008 White
No. 75-5008 Ivory

SOLDERLESS WITH
BULKHEAD RCA JACKS
(Red + White)
No. 75-1208 White
No. 75-3208 Black

Solder type RCA jacks

(2) F-81 + (2) RCA Jack
No. 75-1012 White
No. 75-5012 Ivory

SOLDERLESS WITH
BULKHEAD RCA JACKS
(Red + White)
No. 75-1212 White
No. 75-3212 Black

PROS FIT SOLDERLESS CONNECTORS

RCA Feed Thru Inserts

These Wall Plates have Bulkhead GOLD RCA jacks for easy Plug "n" Play installation

(1) RCA Jack (White)
No. 75-1091 White
No. 75-5091 Ivory
No. 75-3091 Black
(1) RCA Jack (Orange)
No. 75-1081 White
No. 75-5081 Ivory

(2) RCA Jack
(Red + White)
No. 75-1092 White
No. 75-5092 Ivory
No. 75-3092 Black

(3) RCA Jack
(Red + White + Yel)
No. 75-1093 White
No. 75-5093 Ivory
No. 75-3093 Black
(3) RCA Jack
(Red + Green +Blue)
No. 75-1085 White
No. 75-5085 Ivory

(4) RCA Jack
(2 each Red & White)
No. 75-1094 White
No. 75-5094 Ivory
No. 75-3094 Black
(4) RCA Jack
(Red + Green +Blue + Orange)
No. 75-1053 White
No. 75-5053 Ivory

Converter "F"/RCA Inserts

Convert standard "F" Connector on the rear to RCA Jack on the Front of the wall plate. This configuration allows you to use video coaxial cable for both audio & video.

(1) RCA /F-81
(Yellow)
No. 75-1038 White
No. 75-3138 Black

(2) RCA /F-81
(Red + white)
No. 75-1044 White
No. 75-3044 Black
No. 75-5044 Ivory

(3) RCA /F-81
(Red + White + Yel)
No. 75-1046 White
No. 75-3046 Black
No. 75-5046 Ivory

(4) RCA /F-81
(2 each Red + White)
No. 75-1248 White
No. 75-3348 Black

CUSTOM DESIGN WALL PLATES KEYSTONE + A/V

DESIGNER STYLE WALL PLATES

(5) RCA Jacks
Component
Video + Audio
No. 75-1214- White
No. 75-1216- Ivory

(5) RCA Jacks + F
A / V + Audio +
"F" Female 3GHz
No. 75-1218- White
No. 75-1220- Ivory

(5) RCA Jacks + F
Component Video
+ Audio +
"F" Female 3GHz
No. 75-1222- White
No. 75-1224- Ivory

(3) RCA Jacks + F
Component Video +
F Female 3GHz
No. 75-1250- White
No. 75-1252- Ivory

(3) RCA Jacks + F
A/ V + "F" Female 3GHz
No. 75-1226- White
No. 75-1228- Ivory

BNC + 2.1mm DC
Power Jack
Feed - Thru Jacks

No. 75-1009 - White

DESIGNER STYLE KEYSTONE WALL PLATES

One Port
Keystone Plate
With (2) 3/8" Holes

No. 75-1230- White

Two Port
Keystone Plate
With (1) 3/8" Hole

No. 75-1232- White

One Port
Keystone Plate
With HDMI Jack

No. 75-1234- White

One Port
Keystone Plate
With USB A Jack

No. 75-1236- White

One Port
Keystone Plate
With VGA &
3.5mm Stereo Jack

No. 75-1244- White

Two Port
Keystone Plate
With VGA Jack

No. 75-1254- White

QUICK FIT™ A/V ADAPTORS

Mix and match Philmore Quick - Fit™ adaptors with our Keystone standard wall plates or Designer style inserts. All adaptors are Feed - Thru type, no tool required, just plug & play. Most adaptors are Gold plated for optimum performance and appearance, plastic insert is white. See page 70 for part numbers and ordering information.

| F | RCA | RCA to F | S-VHS | SVHS | DC Jack | Binding Post | Binding Post |

| Banana Jack | HDMI | HDMI | USB | CAT5e | BNC | Blank | 3.5mm Stereo |

107
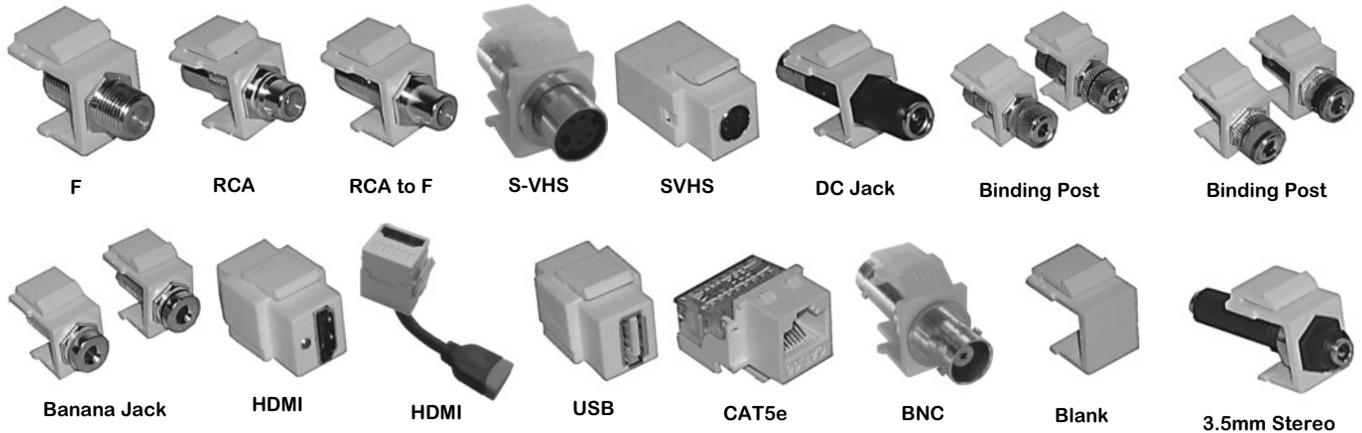
CUSTOM DESIGN WALL PLATES DESIGNER STYLE A/V

BNC Connectors (SOLDER TYPE)

1 GOLD BNC Jack
No. 75-1066 White
No. 75-5066 Ivory

2 GOLD BNC Jack
No. 75-1070 White
No. 75-5070 Ivory

1 GOLD BNC Jack
+ F-81 Connector
No. 75-1010 White
No. 75-5010 Ivory

Video Inserts w/ "F" Connectors

(1) F-81 Connector GOLD
No. 75-1002 White
No. 75-5002 Ivory
No. 75-3002 Black

(2) F-81 Connectors GOLD
No. 75-1004 White
No. 75-5004 Ivory
No. 75-3004 Black

(3) F-81 Connectors GOLD
No. 75-1006 White
No. 75-5006 Ivory
No. 75-3006 Black

(4) F-81 Connectors GOLD
No. 75-1016 White
No. 75-5016 Ivory
No. 75-3016 Black

(2) F-81 Connectors Gold
and RJ11 Jack
No. 75-4490 White
No. 75-4480 Ivory

Banana Jack Inserts

This configuration of insert is often used for speaker connections where a quick and convenient disconnection is desirable.
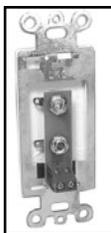
(SOLDERLESS w / PCB)

(2) GOLD Banana Jacks
(1) ea Red & Black
No. 75-1050 White
No. 75-5050 Ivory

(SOLDERLESS WITH PC BOARD)
NO. 75-2050 WHITE
NO.75-4050 IVORY

(4) GOLD Banana Jacks
(2) ea Red + Black
No. 75-1052 White
No. 75-5052 Ivory

(SOLDERLESS WITH PC BOARD)
NO. 75-2052 WHITE
NO. 75-4052 IVORY

Binding Post Inserts

Use these wall plates for speaker connections. They may also be used where no coaxial cable is used such as alarm system and remote control wiring. A binding post has a banana jack on the front and screw apart connections for easy insertion of spade lugs.

(2) 5 way Binding Posts
(1) ea. Red + Black
No. 75-1030 White
No. 75-5030 Ivory
SOLDERLESS WITH
PC BOARD
NO. 75-2030 WHITE
NO. 75-4030 IVORY

SOLDERLESS

(2) GOLD Metal Binding Posts
(1) ea. Red + Black
No. 75-1040 White
No. 75-5040 Ivory

SOLDERLESS WITH
BULKHEAD BINDING POST
No. 75-1082 White
No. 75-5082 Ivory
No. 75-3082 Black

(4) 5 way Binding Posts
(2) ea. Red + Black
No. 75-1032 White
No. 75-5032 Ivory
SOLDERLESS WITH
PC BOARD
NO. 75-2032 WHITE
NO. 75-4032 IVORY

(4) GOLD Metal Binding Posts
(2) ea. Red + Black
No. 75-1042 White
No. 75-5042 Ivory

SOLDERLESS WITH
BULKHEAD BINDING POST
No. 75-1084 White
No. 75-5084 Ivory
No. 75-3084 Black

SOLDERLESS WITH
PC BOARD
NO. 75-2084 WHITE
NO. 75-4084 IVORY

SOLDERLESS

(SOLDERLESS w / PCB)

CUSTOM DESIGN WALL PLATES SPEAKER & MICROPHONE

PROS FIT SOLDERLESS CONNECTORS

S-VHS Combo Inserts

These inserts are some of the most popular special application inserts for Home Theatre Installations. Both RCA & S-VHS connectors are Bulkhead.

RCA / S-VHS Combo
(1) ea. GOLD RCA Jack
+ S-VHS Jack
No. 75-1261 White
No. 75-3061 BLACK
No. 75-5061 IVORY

(2) RCA Jacks + (1) S-VHS Jack
No. 75-1281 White
No. 75-3281 BLACK
No. 75- 5281 IVORY

"F" / S-VHS Combo
(1) ea. GOLD F-81 + S-VHS Jack
No. 75-1243 White
No. 75-3243 BLACK
No. 75-5243 IVORY

(2) F-81 + (1) S-VHS Jack
No. 75-1245 White
No. 75-3245 Black

Telephone / S-VHS Jack
(1) RJ-11 (6c) Jack + S-VHS Jack
No. 75-1247 White
No. 75-5247 Ivory

Microphone & Audio Connector Inserts

(1) GOLD 3 Pin (M)
A3M Style
No. 75-1060 White
No. 75-5060 Ivory

(1) GOLD 3 Pin (F)
A3M Style
No. 75-1062 White
No. 75-5062 Ivory

(1) GOLD Stereo
1/4" Phone Jack
No. 75-1064 White
No. 75-5064 Ivory

PROS FIT SOLDERLESS CONNECTORS

S-VHS Jack Inserts

These 4 Pin miniature DIN style jacks are used to make high speed connections of both audio & video signals and give the viewer performance through their equipment. The connectors are Plug "n" Play for easy installation.

(2) GOLD S-VHS Jack
No. 75-1048 White
No. 75-5048 Ivory
No. 75-3148 Black

(1) GOLD S-VHS Jack
No. 75-1041 White
No. 75-5041 Ivory
No. 75-3041 Black

Speaker Connection Inserts

As this section suggests, these inserts are used to connect speakers to your system.

(4) Push-In Terminals Solder type
No. 75-1074 White
No. 75-5074 Ivory

(2) Heavy Duty Push Type
Speaker Terminals
(Solderless Connectors)
No. 75-1072 White
No. 75-5072 Ivory
No. 75-3072 Black

Speaker Wall Plates

(1) 2 Position Term.
White
No. 75-672
(Solderless)

(1) 4 Position Term.
White
No. 75-674
(Solderless)

(2) 4 Position Term.
White
No. 75-678
(Solderless)

Microphone & Audio Wall Plates

XLR 3 Pin Male
Microphone Connector
Nickel Plated

No. 75-714- White
No. 75-716- Ivory

XLR 3 Pin Female
Microphone Connector
Nickel Plated

No. 75-720- White
No. 75-722- Ivory

STAINLESS STEEL

No. 75-718
XLR 3 Pin Male
Microphone Connector

STAINLESS STEEL

No. 75-724
XLR 3 Pin Female
Microphone Connector

109

CUSTOM DESIGN WALL PLATES VGA + A/V

All wall plates have bulkhead jacks for easy plug & play installation. Philmore offers a large selection of custom design wall plates to meet your Audio & Video installation needs. All mounting hardware included. Choices of White & Ivory colors.

HD-15 (High Density 15 pin) Feed Thru Jacks

Video

Single HD-15
No. 75-1015 - White
No. 75-5015 - Ivory

Video
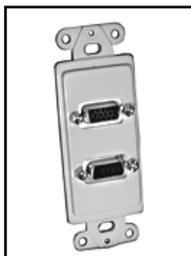
Dual HD-15
No. 75-1017 - White
No. 75-5017 - Ivory

HD-15 With Feed -Thru RCA Jacks

Plus Audio

HD-15 + (1) RCA
(Orange)
No. 75-1019 - White
No. 75-5019 - Ivory

Plus Audio

HD-15 + (2) RCA
(Red + White)
No. 75-1027 - White
No. 75-5027 - Ivory

Plus Audio/Video

HD-15 + (3) RCA
(Yellow, White & Red)
No. 75-1039 - White
No. 75-5039 - Ivory

Plus Component Video

HD-15 + (3) RCA
(Red, Blue & Green)
No. 75-1037 - White
No. 75-5037 - Ivory

Plus Audio

HD-15 + (4) RCA
(2 Red, 2 White)
No. 75-1047 - White
No. 75-5047 - Ivory

HD-15 With "F" & RCA Feed-Thru Jacks

Plus Video

HD-15 + (1) "F"
No. 75-1319 - White
No. 75-5319 - Ivory

Plus Video

HD-15 + (2) "F"
No. 75-1327 - White
No. 75-5327 - Ivory

Plus Audio/Video

HD-15 + (1) "F"+ (2) RCA
(Red & White)
No. 75-1337 - White
No. 75-5337 - Ivory

Plus Audio/Video

HD-15 + (1) "F"+ (1) RCA
(Orange)
No. 75-1339 - White
No. 75-5339 - Ivory

HD-15 With "F" / RCA Feed-Thru Jack
(3) "F" / RCA Feed-Thru converter (Red, Blue & Green)

Plus Component Video

No. 75-1237 - White
No. 75-5237 - Ivory

Component Video

No. 75-1246 - White
No. 75-5246 - Ivory

HD-15 With S-VHS

Plus Audio

HD-15 + (2) Binding Post
(Red & Black)
No. 75-1417 - White
No. 75-5417 - Ivory

Plus Video

HD-15 + S-VHS + "F"
No. 75-1427 - White
No. 75-5427 - Ivory

Plus Audio/Video

HD-15 + S-VHS + (2) RCA
(Red & White)
No. 75-1437 - White
No. 75-5437 - Ivory

Plus Video

HD-15 + S-VHS
No. 75-1419 - White
No. 75-5419 - Ivory

CUSTOM DESIGN WALL PLATES VGA, STEREO + A/V

All wall plates have bulkhead (Feed - Thru) jacks for easy plug & play installation. Philmore offers the largest selection of custom design wall plates to meet your Audio & Video installation needs. We design and manufacture most of our Home Theater wall plates in Rockford, Illinois. All mounting hardware included. Choices of White & Ivory colors.

(1) 3.5 mm Stereo

No. 75-1461 - White
No. 75-5461 - Ivory

(2) 3.5 mm Stereo

No. 75-1463 - White
No. 75-5463 - Ivory

(1) "F" +
(1) 3.5 mm Stereo

No. 75-1465 - White
No. 75-5465 - Ivory

(2) RCA (Red / White)
+ (1) 3.5 mm Stereo

No. 75-1467 - White
No. 75-5467 - Ivory

(3) RCA (Component Video
Red/Blue/Green) +
(1) 3.5 mm Stereo

No. 75-1469 - White
No. 75-5469 - Ivory

(3) RCA (A / V Red / White /
Yellow) + (1) 3.5 mm Stereo

No. 75-1471 - White
No. 75-5471 - Ivory

(1) S-VHS +
(1) 3.5 mm Stereo

No. 75-1473 - White
No. 75-5473 - Ivory

HD15 +
(1) 3.5 mm Stereo

No. 75-1315 - White
No. 75-5315 - Ivory

HD15 + (1) "F" +
(1) 3.5 mm Stereo

No. 75-1453 - White
No. 75-5453 - Ivory

HD15 + (2) RCA (Red / White)
+ (1) 3.5 mm Stereo

No. 75-1455 - White
No. 75-5455 - Ivory

HD15 + (1) S-VHS
+ (1) 3.5 mm Stereo

No. 75-1457 - White
No. 75-5457 - Ivory

HD15 + (3) RCA (Component
Video, Red / Blue / Green) +
(1) 3.5 mm Stereo

No. 75-1459 - White
No. 75-5459 - Ivory

Feed - Thru Connectors

HD-15   "F"   RCA   S-VHS   3.5 mm Stereo

HD15 + (3) RCA (A / V Red /
White / Yellow) +
(1) 3.5 mm Stereo

No. 75-1479 - White
No. 75-5479 - Ivory

111

STEREO HEADPHONES

MediaStar Headphones and Earbuds. Made for Music

The MediaStar™ product group is comprised of consistently superior products, engineered for today's better equipment and particular consumer. When you select a MediaStar™ audio product, you should expect a richer sound experience from base through the high range and as close to real life as your equipment can deliver.

Media Star™ units are not expensive; but we do rate them as among the best units made.There are two general categories of Media Star Earphones, in-the-ear style Earbuds and Headsets.

MediaStar™ Earbuds are intended specifically for use with personal stereos such as Walkman style radios and portable CD players. The Earbuds compact size make them ideal for the traveler, hiker and student. The Media Star™ Headsets will work wonderfully with personal stereos and may be used equally well with your home stereo system.

MediaStar Earbuds.

Engineered by some of the finest engineers in the field, this series can provide you with the finest sound that you will find in Earbuds at any price. MediaStar™ Earbuds provide that intimate world in which you will feel completely "away" with your favorite music. We offer three models, each a slight improvement over the one before.

Earbuds are supplied with a 1.2 meter (47") length cord terminated in a right angle miniature phone plug. Impedance is 32 ohms (all units). The more sensitive Neodymium magnet driver structure will have a better response at the very low (Base) and hi-treble ends of the spectrum. All models responsive from 14 through 20,000 Hz.

Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1834	Melody	Cobalt	110 db	Excellent replacement
71-1836	Harmony	Cobalt	110 db	In-line volume control
71-1837	Symphony	Neodymium	113 db	Live performance

Our ConcertHall *MediaStar* Headset.

Light and comfortable and very serious about sound; our very best unit. Originally intended for home audio system use but so sensitive that the ConcertHall may be used with the smallest portable personal stereo radios, CD's and MP3 Players. In addition to a full range sound, the ConcertHall has the most accurate base range we have measured in a headset.

The ConcertHall features large, 40mm Neodymium magnet speaker assemblies. Frequency response from 14hz to 20 KHz; maximum input power up to 100 mW. Impedance, 32 ohms @ 1000 Hz. Supplied with a 1.2Meter (47") cord terminated in a 3.5 mm mini phone plug. Use with MediaStar extension cords no. 70-012 (12 ft. length) or 70-016 (25 ft. length) when using with home Sound System, TV etc..

Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1859	Concert Hall	Neodymium	110 db	Top of the line

MediaStar™ The Guitarist.

Someone suggested that a Guitarist would love this headset; it stays on exceptionally well (even during a rough practice session) and our critic thought that it did an exceptional job with guitar music. Which may be true, but we like it period.

The head-band fits behind the head and then loops over each ear. The speakers are suspended just inside the ear openings; outside sound may also be heard when the volume is not too high. A comfortable, firm fit.

115 dB sensitivity, frequency response at 14 Hz. through 22,000 Hz. with terrific, musical impact across that range. A match with any personal music player or your home sound system. Supplied with a 1.2 meter (47") cord with 3.5mm miniature stereo phone plug.

Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1857	Guitarist	Cobalt	115 db	Behind Head band, secure fit

MediaStar™ **COOL Headset.**

A style that has become very popular, the head-band is worn behind the head, and loops over each ear for a comfortable feel. A 47" cord for use with personal/portable stereos or use with an extension cord (such as 70-016) when using with a home sound system.
Ear pieces cover entire ear but foam pads do permit some outside sound to enter if volume is not set too high.

frequency response: 14 to 22,000 Hz.
Sensitivity: -115dB
impedance: 32 ohms
maximum input: 110 mW

Magnets: Cobalt Drivers
Cable: 47 " w/3.5mm miniature phone plug
Hi-fi Electroacoustics system
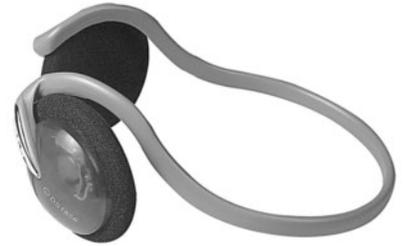
Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1856	Cool	Cobalt	115 db	Electroacoustics

No. 71-1850 *MediaStar™* the REPLACEMENT

Standard lightweight headphone for general replacement for the unit that arrived with your personal stereo; usually will outperform the original.
This feather weight still has a 100 dB sensitivity and provides excellent sound via the pure cobalt earpiece speakers; range 18 Hz to 20 KHz. Standard 47" cord and mini stereo plug, 32 ohm impedance.

71-1853 *MediaStar™* GRADUATE

An improvement over just about any headset that is included with a personal stereo. Standard fit, over the head band, 47" cord. The Graduate is light in weight which, combined with foam ear pads, allows for long periods of use; on walks or at your desk.
Rated at 14 to 20 KHz. frequency range and a sensitivity of 110 dB. Maximum input power, 100 mW. Impedance 32 ohms

Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1850	Replacement	Cobalt	110 db	Adjustable head band
71-1853	Graduate	Cobalt 27 mm	110 db	Adjustable head band

MediaStar Headphones and Earbuds.

For COMPUTER USE.... MULTI media Headsets with microphones.

Two MediaStar headsets are available for use at the computer, the major difference being that one has a single earpiece and the other is a stereo unit. The Stereo Unit, "the MultiMEDIA", delivers music quality sound fidelity while the "BUSINESS" unit is for pretty straight-forward computer use, dictation to your word processor, Internet telephone calls and so on.
Foam ear pads allow some outside sound to enter so that you will be able to hear a telephone and other office sounds. A comfortable fit will permit long hours of use. Both units are supplied with two plugs, one for the microphone and the other for the earphone(s). If a longer cord is needed, please do use one of the MediaStar™ stereo cables so that sound quality is not lost in an ordinary cable.
Standard 42" length cables on both units. Earpiece impedance 32 ohms, microphones are a standard high impedance for use with computer sound cards

Catalog No.	Model Name	Driver Magnet	Sensitivity	Notes
71-1891	Business	Cobalt	100 db	Monaural
71-1892	MultiMedia	Cobalt	100 db	Stereo

STEREO HEADPHONES & ACCESSORIES

Stereo Extension Cord w / In-Line Volume Control And Mono / Stereo Switch

10' extension cord with 3.5 mm Male on one end and 3.5 mm Stereo Female on the other. Small 3 Cond. cable (2.0 mm O.D.) has an in-line switch to change from stereo to mono and a thumb wheel volume control.

No. 70-023

STEREO HEADPHONE LUXURY MODEL
WITH BUILT-IN VOLUME CONTROLS STEREO/MONO SWITCH

A luxury model for a Professional Listener: Volume controls on each phone permit the selective reproduction of sound levels to personal preference on both right and left channels. A mono switch is provided for TV, radio and musical instruments. Two moving coil driver transducers are used for speakers, producing a full range frequency response of 20-20,000Hz power handling capacity of 0.5 watts. Impedance: 8 ohms. Sensitivity: 110 db at 1000Hz with 1mW.

No. HD3030

MINI STEREO HEADPHONES

STEREO HEADPHONES with EXTENSION CABLE

This quality headphone is the perfect replacement for all personal stereo, cassette and CD players. The adjustable headband provides for comfortable use and is provided with an adaptor (1/4" to 3.5mm) to allow easy hook-up to regular stereo equipment.

- Type: 27mm Mylar Speaker
- Frequency Range: 20-18,000 Hz
- Impedance: 32 ohms
- Sensitivity: 96db S.P.I. at 1 KHz
- Max. Input Power: 100mW

No. SP26 - 4 Ft. cord

No. SP26-10 - 10 Ft. cord

No. 40-430 Stereo Mini Headphones (4' CORD) with 10 ft. extension cable. (Blister Card Packing)

114

EAR CUSHIONS for MINI STEREO HEADPHONES

The perfect replacement cushions for mini-stereo headphones. Made of the same quality material as cushions supplied with standard headphones to take the extra wear and tear that mini-headphones are subject to. They slip over ear cups 1-3/4" diameter. 2 per package, in charcoal gray color. O.D. size of cushion is 1.90".

No. EP1

No. EP4 - Larger than **No. EP1** (2.05" O.D.) Slip over ear cups 2-1/2" diameter

REPLACEMENT FOAM EAR PADS

Use for several types of mini headphones. Choose from selection below.

No. EP2 - Charcoal Gray
No. EP3 - Orange

REPLACEMENT FOAM EAR PADS

For ear buds (in-the-ear-style) type earphones. Fits Media Star earbuds (No.71-1834, No. 71-1836 & No. 71-1837) and others, including most earphones for MP3 player. Color is light Grey.

No. EP5 - Package of 4

EARPHONE AND MICROPHONE ACCESSORIES FOR FRS, PERSONAL RADIOS

EARPHONE/ MICROPHONE for Cobra FRS Radios (secret service style, black color) Specifically designed for use with FRS two way radios made by Cobra. Provides private listening via a single, monaural earbud that will fit into either ear. The microphone may be clipped

No. 70-233 - 47" cord

on to the users collar with a built - in clip and is activated by a Push-to-talk (PTT) switch on the microphone assembly. The radio could be worn on the users belt or hidden in a pocket; run the wire under a shirt or jacket to keep it out of the way (cord is long enough for a loop at the Microphone). This is a very convenient arrangement for hikers, fishermen, spies and other outdoorsmen; as well as for keeping in touch with each other at the mall, in the city etc. Standard 32 ohm impedance.

UNIVERSAL MONAURAL EARBUD
FOR FRS, GMRS, WALKMAN, TV etc..

Made to be used with just about any portable radio, some two - way radios and TV; use for private listening (also saves battery power). Compatible with Cobra FRS and Ham radio HT's if they have a separate 3.5mm earphone jack. Use with a walkman or other portable stereo radio when listening to news, talk shows or other broadcasts. Comfortable foam earpad, fits either ear. The 3.5 mm

No. 70-222 - 42" cord

plug fits the earphone jack on almost any portable; 42" cord is plenty long to reach to a beltmounted radio or one stashed in pant's pocket. Standard 32 ohm impedance, color Black.

EARPHONES & PILLOW SPEAKERS

MICRO-STEREO EARPHONES
Fit Comfortably in Your Ear

Tiny "BUDS" fit your ears and produce outstanding results. Comes with handy plastic case. Truly private listening, Ideal for TV in bed. 3 ft. cord and 3.5mm right angle stereo plug. Ferrite magnets with mylar cones. 60mW. With extra set of earpads. Bubble carded for impulse sale.

No. SP426

STEREO EARPHONES
W / EXTRA LONG CORD

Earbuds fit comfortably in your ears and produce outstanding sounds. Comes with 18 Ft. cord and 3.5mm right angle stereo plug.

No. 70-1818 - 18 Ft. Length

DeLUXE PILLOW SPEAKER

A larger speaker for the best audio when used under a pillow. Low impedance for use with nearly any A.M. radio etc..., great for night time talk shows. This is monaural, of course and not for use with stereos, CD's etc.. Six foot cord is terminated in standard mini-plug (3.5mm). 8 OHM Impedance

No. R60
No. R60B bulk packed

PILLOW SPEAKER

Use under a pillow for private listening to A.M. radio etc.. won't disturb your spouse. Low impedance magnetic transducer is fully protected in molded case; employ's bone conduction for excellent reproduction. Just 2 - 1/2" in diameter and 11/16" thick. Cord length is six foot with mono (3.5 mm) mini plug. 8 OHM Impedance.

No. R49
No. R49B bulk packed

DYNAMIC EARPHONES

Ideal for private listening on transistor sets, hearing aids, radio sets and TV sets. These compact earphones are equipped with slim metal ear support for comfortable listening. Twisted stranded wire provides reliability and maximum flexibility. An extra plastic earpiece is provided.

Miniature (1/8" Dia.) Plug

	Impedance	Cord Length
No. P78	8	10 ft.
No. P77	8	6 ft.
No. P7	8	3 ft.
No. P10	2000	3 ft.

Subminiature (3/32" Dia.) Plug

	Impedance	Cord Length
No. P76	8	3 ft.
No. P79	8	10 ft.

For Bulk packed add suffix letter "B" to the part number.

MOLDED SINGLE-PIECE CONSTRUCTION

This molded white earphone has 15 ohm impedance. Unitary construction eliminates need for a detachable earpiece. Miniature (1/8" D) plug termination. Used widely in hospitals and other institutions.

No. P8W - 7 ft. cord
No. P8BW - Bulk Packed
No. P8-20 - 20 ft. cord
No. P8-20B - Bulk Packed

CRYSTAL EARPHONES

Crystal earphones have a very high impedance (over 100 megohms) for a variety of receiving and listening applications. All have molded plastic shell

	Termination	Cord Length
No. 747	Mini (1/8") Phone Plug	7 ft.
No. 748	Stripped and Tinned	7 ft.
No. 748SP	Std. (1/4") Phone Plug	7 ft.

Nos. 747 and 748 are display packaged. For bulk packed add suffix letter "B" to the part number. No. 748SP is available in bulk only.

115

MICROPHONES ACCESSORIES

COMMUNICATION DYNAMIC MICROPHONE
for CB and Amateur Applications

Everyone can now enjoy a microphone with superior specifications at a moderate price. Features four (4) conductors, (1 shielded), in a 6-ft. coiled cable designed for relay or electronic switching in transmitters, transceivers and PA amplifiers.

Full size, press-to-talk switch extends over half the length of this hand-held mike. High impact shockproof case is attractively styled in matte finish midnight black. Supplied with rear hanger button.

Specifications:
Directivity: Omni - Directional
Sensitivity: -72dB ± 4db at 1KHz
Frequency Response: 200Hz - 5KHz

No. CM43A

RETRACTABLE MULTI-CONDUCTOR CABLE

These retractable cables have stranded copper conductors consisting of 15 strands of 37 AWG wire. The shield has 48 strands of 37 AWG copper wire. Cable O.D. of shields are extended and tinned for grounding.

(5) Color-Coded Conductors
(1) Shielded, (4) Unshielded
5 ft. Extended, 2 ft. Retracted
No. TEC80
No. TEC820 - 20 ft. extended

(3) Color-Coded Conductors
(1) Shielded, (2) Unshielded
10 ft. Extended, 2-1/2 ft. Retracted
No. TEC70

(3) Color-Coded Conductors
(1) Shielded, (2) Unshielded
5 ft. Extended, 20 in. Retracted
No. TEC60

NOISE FREE MICROPHONE CABLE
500 ft. Reel

Fully shielded, two conductor cable with heavy copper braid for balanced line microphones. Heavy-duty black rubber jacket to meet all service requirements. This 500 foot cable, spooled and supplied with a plastic axle, is contained in a display / dispenser box for ease of distribution.

No. EMC160T - Two Conductor

No. EMC95T - Single Conductor
Same Specifications as No. EMC160T

SOLID-STATE STEREO PRE-AMPLIFIER
Convert from a crystal to magnetic cartridge.

This high quality Stereo Pre-Amplifier will allow you to replace a Crystal or Ceramic stereo cartridge with a better quality magnetic stereo cartridge while using the original Stereo amplifier supplied with your turntable. The use of this Pre-Amplifier in conjunction with a magnetic cartridge will give you CD quality sound out of your vintage turntable. Improved circuitry and filtering in the power supply results in lower hum while maintaining an isolated ground loop.

No. PRE600

SPECIFICATIONS:
Circuit Design: Low noise Silicon transistor, Printed Circuit
Frequency Response: 30-20,000Hz equalized RIAA.
Input Impedance: 50k ohms
Max. Output: 1.8V (less than 1% distortion)
Output Load: 50k ohms
S/N Ratio: Over 60db
Power Supply: 117 VAC, 50-60Hz .1 watt

MULTI - COLOR MICROPHONE WINDSCREEN SETS

Each soft foam screen adds depth and beauty that the entertainer will find hard to resist. Instant color is added to his/her act. Unwanted "breath" noise due to close talking is eliminated when windscreen is slipped over microphone.

POP and WIND Noise usually associated with outdoor use is filtered out as the foam material is made of open pore urethane foam.

Indoors or out, any microphone can now look different each time - and sound the same every time. A tip for users of mike mixers - avoid mike mix -ups.Identify each mixer control with the color of the windscreen on the microphone it controls.

FOUR SETS OF
INTERCHANGEABLE WIND SCREENS
-BOTH FUNCTIONAL AND DECORATIVE-

No. MW1 - Contains four 1-3/4" high windscreens to fit over 1" to 1- 3/8" Dia. microphones. Colors: Red -Yellow - Green - Black.

No. MW2 - Contains four 2-3/4" high windscreens to fit over 1-3/8" to 1- 3/4" Dia. microphones. Colors: Red -Yellow - Green - Black.

No. MW3 - Contains two 2-3/8" high windscreen to fit over 1-3/4" to 2" Dia. microphones. Colors: Red - Green.

No. MW4 - Contains one 2-3/8" high windscreen to fit over 1-3/4" to 2" Dia. microphones. Color: Dark Grey

Tie-clasp Microphones

Designed to be inconspicuous, these microphones can be worn like a tie-clip, on the lapel, suspender or even concealed by a corsage. Typical uses are with a pocket-sized tape or digital recorder, FM transmitter during interviews, for news report recording or in a classroom. Highly dependable, durable and designed to eliminate background noises while still being very sensitive to sounds in the immediate vicinity.

Two types available: Uni-directional and Omni-directional, both stereo microphones with standard (3.5mm dia.) phone plugs. Use the Uni-directional type when wanting to keep left/right as much separated as possible; recording person on both left and right. Use the Omni-directional when you want a natural sounding stereo sound and wish to have pick up from as wide an area as possible. Separation is sharp and clear on playback.

No. CM57

No. CM58

Part no. CM57…..uni-directional Stereo Lapel Microphone, Imp. 680 ohms. Sensitivity: -46 ~54dB, S/N ratio >58dB, with 1 meter cord and 3.5mm stereo plug.

Part no. CM58…..omni-directional Stereo Lapel Microphone, Imp. 1.5Kohms, Sensitivity –42 ~ 46 dB, S/N ratio >60 dB, with 1 meter cord and 3.5mm stereo plug **.**

OMNI-DIRECTIONALS
(Condenser Cartridge Type)

No. EM300 - All new version of the popular tie clasp mircophone has pickup element and amplifier built into tie clasp housing. The battery (easy to find, 1.5V AA) is minated with 3.5mm plug which plugs into battery housing. Unit is not supplied with battery.

The **No. EM300** is packaged on an attractive display card.

Electrical specifications for Omni-Directionals:
Frequency Response: 40-16,000 HZ
Sensitivity: -64 $\pm$ 3db.
Impedance: 600 ohms

No. EM300

TAPE RECORDER MICROPHONE
REPLACEMENT for MOST PORTABLE RECORDERS

Low impedance, dynamic "mic" with dual plugs, (3.5mm and 2.5mm) for any tape recorder input. With remote ON-OFF switch, desk stand, approx. 3-1/2 ft. cord, 200 ohm impedance for excellent speech and music reproduction. Will improve recording quality on any low-cost recorder with built-in microphone.

NO. RC1

LAPEL CRYSTAL MICROPHONE

A low-priced replacement microphone for PA amplifiers, cassette and open reel portable tape recorders. With approximately 3 ft. shielded cable. Lapel microphone is equipped with molded 3.5mm plug. A clip is provided to assure firm attachment on the lapel. A sensitive high impedance cartridge reproduces crisp clean sounds. Simply plug 3.5mm plug into "mic" jack on amplifier or recording equipment.

Frequency Response: 70-8,000 Hz
Sensitivity: -50 db
Size: 1-1/2" dia. x 1/2"

NO. LM101S

UNBALANCED CABLES
Cables with 3-pin XLR female on one end, 1/4" phone plug on the other.

Number	Cable Description
71-1590	6 ft. XLR F to 1/4" Male phone plug cable
71-1592	12 ft. XLR F to 1/4"Male phone plug cable
71-1593	17 ft. XLR F to 1/4" Male phone plug cable

BALANCED CABLES
Cables with a 3-pin XLR connector on each end, male to female, for use with balance amplifiers. For any MediaStar microphone.

Number	Cable Description
71-1570	6 ft. length cable, 3-pin XLR Male to Female
71-1573	12 ft. length cable, 3-pin XLR Male to Female
71-1575	17 ft. length cable, 3-pin XLR Male to Female
71-1577	25 ft. length cable, 3-pin XLR Male to Female
71-1580	50 ft. length cable, 3-pin XLR Male to Female

MICROPHONES CONNECTORS & ADAPTORS

MICROPHONE CONNECTORS

These cannon type three con-
tact microphone connectors are
of die-cast zinc alloy with Nickel
plate finish. In-line connectors have
rubber strain relief. Locking detent action
is incorporated in the design of the Female
connectors.

No. T600J - 3 Pin (XLR) in-line female

No. 44-602 - 4 Pin (XLR) in-line female

No. 44-608 - 5 Pin (XLR) in-line female

No. 45-690G - Gold plated, 3 Pin (XLR)
in-line female

No. T600P - 3 Pin (XLR) in-line male

No. 44-600 - 4 Pin (XLR) in-line male

No. 44-604 - 5 Pin (XLR) in-line male

No. 45-692G - Gold plated, 3 Pin (XLR)
in-line male

No. F600J - 3 Pin (XLR) Panel mount female

No. 44-622 - 4 Pin (XLR) Panel mount female

No. 44-626 - 5 Pin (XLR) Panel mount female

No. 45-694G - Gold plated, 3 Pin (XLR)
Panel mount female

No. F600P - 3 Pin (XLR) Panel mount male

No. 44-620 - 4 Pin (XLR) Panel mount male

No. 44-624 - 5 Pin (XLR) Panel mount male

No. 45-696G - Gold plated, 3 Pin (XLR)
Panel mount male

For bulk packing, add suffix "B" to the part number

BALANCED MICROPHONE MATCHING TRANSFORMER

Low - z to Low - z
This matching transformer adapts all
balanced line, low-impedance micro-
phones (150 ohms to 600 ohms) to a
standard low impedance phone jack.
It is terminated with a CANNON or
Switchcraft type 3 -pin female connector and a 1/4" phone plug for inputs
requiring low impedance, unbalanced sources. The center tapped primary is
grounded to maintain all the advantages of a balanced line low noise pickup
and excellent frequency response. Pin one is grounded: Pins 2 & 3 connect to
the microphone circuit.

No. HL7

---

3 Pin XLR Female To RCA Adaptors

No. 44-102 - XLR Female to RCA Male
No. 44-106 - XLR Female to RCA Female
No. 44-104 - XLR Male to RCA Male
No. 44-108 - XLR Male to RCA Female

---

3 Pin XLR To BNC Adaptors

No. 44-111 - XLR Female to BNC Female
No. 44-112 - XLR Male to BNC Female

---

3 Pin XLR To 1/4" Phono Adaptors

No. T630 - XLR Female to 1/4" (mono) Male
No. T650 - XLR Female to 1/4" (mono) Female
No. T640 - XLR Male to 1/4" (mono) Male
No. T660 - XLR Male to 1/4" (mono) Female
No. 44-114 - XLR Female to 1/4" (stereo) Male
No. 44-118 - XLR Female to 1/4" (stereo) Female
No. 44-116 - XLR Male to 1/4" (stereo) Male
No. 44-120 - XLR Male to 1/4" (stereo) Female

---

3 PIN XLR ADAPTOR:

Use to extend length of micro-
phone cables with 3 Pin male
or female XLR connector or can
be used as a gender changer.

No. 70-610
Male-Male

No. 70-620
Female-Female

---

3 Pin XLR Female To 3 Pin XLR Male Adaptor
(CROSS WIRE PIN 2 & 3)

No. 44-122

3 PIN XLR ADAPTOR Mini XLR plug to standard XLR jack.

No. 30-662

3 PIN XLR ADAPTOR Mini XLR plug to standard Plug.

No. 30-664

FEMALE CONNECTOR

For cable connections with
spring protector to prevent
sharp bending of cable. Includes
coupling ring. Brass, nickel plat-
ed. Single contact. Coupling ring
is removable. Standard 5/8" - 27
thread.

No. 2317J
No. 2317JB BULK PACKAGED

MICROPHONE CABLES

Fully shielded, high quality replacement microphone cables. Connectors are Nickel plated, Low loss cable, color is black.

3 Pin Male XLR On One End & RCA Male On The Other End

No. 44-310 - 6 FT

3 Pin Female XLR On One End & RCA Male On The Other End

No. 44-305 - 6 FT

3 Pin Female XLR On One End & 1/4" Stereo Plug On The Other End

No. 44-810 - 10 FT
No. 44-820 - 20 FT

3 Pin Female XLR Connector On Both Ends

No. 44-610 - 10 FT
No. 44-630 - 30 FT

3 Pin Male XLR On One End & 1/4" Mono Plug on The Other End

No. 44-110 - 10 FT
No. 44-130 - 30 FT
No. 44-150 - 50 FT

3 Pin Male XLR On One End & 1/4" Stereo Plug On The Other End

No. 44-910 - 10 FT
No. 44-920 - 20 FT

3 Pin Female XLR One End & 3 PIN Male XLR On The Other End

No. 71-1570 - 6 FT
No. 44-510 - 10 FT
No. 71-1573 - 12 FT
No. 71-1575 - 17 FT

No. MCA160 - 20 FT
No. 71-1577 - 25 FT
No. 44-530 - 30 FT
No. 71-1580 - 50 FT

3 Pin Female XLR On One End & 1/4" Mono Plug On The Other End

No. 71-1590 - 6 FT
No. 44-410 - 10 FT
No. 71-1592 - 12 FT
No. MCA165 - 16 FT

No. 71-1593 - 17 FT
No. 44-430 - 30 FT
No. 44-450 - 50 FT

3 Pin Female XLR On One End & 3.5 mm Plug On The Other End

No. 44-315 (W/3.5 mm Mono Plug) 6 FT
No. 44-320 (W/3.5 mm Stereo Plug) 6 FT

3 Pin Male XLR On One End & 3.5 mm Plug On The Other End
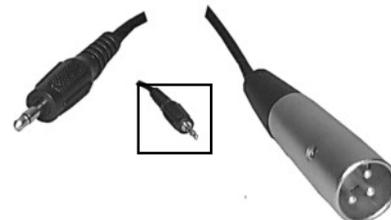
No. 44-325 (W/3.5 mm Mono Plug) 6 FT
No. 44-330 (W/3.5 mm Stereo Plug) 6 FT

119

MICROPHONE CABLES & ADAPTORS

3 Pin XLR "Y" Cable, One Male XLR to 2 Female XLR, 12" Length

No. 44-140

3 Pin XLR "Y" Cable, One Female XLR to 2 Male XLR, 12" Length

No. 44-155

3 Pin Female XLR To 2 RCA Male "Y" cable 12" Length

No. 44-160

3 Pin Female XLR To 2 RCA Female "Y" cable 12" Length

No. 44-165

3 Pin Male XLR To 2 RCA Male "Y" cable 12" Length

No. 44-170

3 Pin Male XLR To 2 RCA Female "Y" cable 12" Length

No. 44-175

Right Angle 3.5mm Stereo Plug to Two 3 Pin Female XLR "Y" Cable 12" Length

No. 44-180

3.5 mm Stereo Plug On One End & Two 3 Pin Female XLR On Other End

No. 44-185 - 6 FT

3.5 mm Stereo Plug On One End & Two 3 Pin Male XLR On Other End

No. 44-190 - 6 FT

3.5 mm Stereo Female To 3 Pin XLR Female, 6" Length.

44-182 (WIRING A)
44-184 (WIRING B)

3.5 mm Stereo Female To 3 Pin XLR Male, 6" Length.

44-186 (WIRING A)
44-188 (WIRING B)

3.5 mm stereo

wiring (A)   wiring (B)

(TIP)   Pin No. 2 ⟷   ⟷ Pin No. 2

(RING) Pin No. 2 ⟷   ⟷ Pin No. 3

(Grnd) Pin No. 1 ⟷   ⟷ Pin No. 1

Pin No.3
NOT CONNECTED
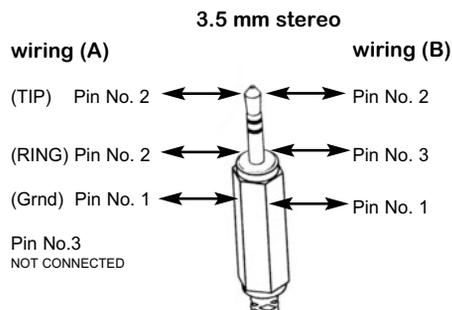
FLANGE-STYLE MICROPHONE MOUNTS

Designed for mounting on a table top, side wall etc., will accommodate a gooseneck or microphone extension pipe. Made for use as a permanent mount. The larger diameter is suggested for better strength if use will be constant and rigorous. Chrome plated finish; 5/8-27" standard threads.

71-4001   71-4005   71-4007

No. 71-4001	- 1-3/4" diameter, male threads
No. 71-4005	- 2-3/4" diameter, male threads
No. 71-4007	- 2-3/4" diameter, female threads

MICROPHONE GOOSENECKS

Flexible "gooseneck" may be used with Flange mounts, Table top mounts or on top of a floor microphone stand. Provides quick, easy repositioning of the microphone. Available in two lengths and in standard chrome or dull, non-reflective black. Male one end, female on the other.

No. 71-4030	- 6" length Gooseneck, black
No. 71-4031	- 6" length Gooseneck, chrome
No. 71-4040	- 13" length Gooseneck, black
No. 71-4041	- 13" length Gooseneck, chrome

MICROPHONE HOLDER

This adjustable microphone holder adapts to the bodies of microphones from small cassette types to larger professionals. A squeeze of the handle, and the holder grips the microphone with a secure grooved ridge contact. Accommodates microphone handles from 5/8" to 1-3/8" diameter. Tilts a full 180 degrees. Standard microphone stand fittings, 5/8" - 27 threads.

No. SM85

MIKE PIPE

Use with the flange mounts (No. 71-4007) with bases for table microphone stands etc.. The 3" "pipe" is chrome plated, threaded on each end with standard 5/8"-27 threads to mate with standard microphone holders and bases. Included is a star nut that can be used to tighten the pipe against a mike holder, prevents loosening.

No. 71-4010 . . . . .3" Mike Pipe

MICROPHONE HOLDER ADAPTORS

Microphone holders and stands are supplied with one of two different size threads. The 5/8" -27 size is one and 3/8"-17 is the other. If you have a mike holder of one size and a stand with the other, you'll need an adaptor to use them together. One of these small adaptors will solve the problem; road groups should carry a few of each.

71-4015

Part no.	Description
No. 71-4015	- 3/8"-17 female to 5/8"-27 male
No.71-4016	- 5/8-27 female to 3/8" -17 male

71-4016

ADD - ON MICROPHONE BOOM

This is a handy accessory for use with microphone floor stands in this section. An adjustable boom that can accommodate a second microphone for an instrument, other vocalists etc., or simply to hold a set of stereo microphones on one stand and boom. The 32" long boom may be adjusted and tightened "in" or "out" as well as angled up or down to any useful angle.

The boom shaft has a standard 5/8"-27 thread to accommodate standard microphone holders. Positive-locking cam for quick, quiet adjustments. The boom is available in conventional chrome plating or in dull black (non-reflective) finish to match microphone floor stands on this page.

No. 71-4666. . . . . .Microphone Boom, Chrome

No. 71-4667 . . . . .Microphone Boom, Black

UNIVERSAL MICROPHONE HOLDERS

Holds microphone firmly - No Compromise. Slide in any microphone having a 3/4" to 1-1/4" diameter handle. This black holder is sharp looking with all microphones. Firm swivel adaptor tilts through 180 degrees. Has standard 5/8" - 27 threads.

No. SM70

121

MICROPHONE STANDS

STANDARD DESKTOP ADJUSTABLE MICROPHONE STAND

This is all-time standard desktop style, a 5-1/4" diameter, round, die-cast iron base (black finished) with an adjustable chrome shaft. Height may be adjusted from approximately 7.5 to 13.5 inches. Sure-locking Collett prevents slipping and will last indefinitely. Standard 5/8"-27 threads at top accepts threaded microphone holders.

No. 71-4512...........Standard desktop mike stand

DESKTOP STOWAWAY MICROPHONE STAND

It looks like a miniature space probe when collapsed for travel, but it's actually a tough little stand that can be set up in a few seconds. The leg assembly unscrews from the upper cone assembly and the legs collapse and store inside. Made of a tough, fiber filled plastic. Reduces to a 5-1/4" long cone. Standard 5/8"-27 thread on top, accommodates standard microphone holders.

Part no. 71-4503..... Stowaway mike stand.

DESKTOP TRIPOD MICROPHONE STAND

A very portable little stand that will accommodate any microphone holder that has a standard 5/8"-27 thread. The legs may be collapsed for easy storage and protected transport; sets up again in seconds. Chrome finish and soft rubber feet.

No. 71-4502…tripod desktop stand
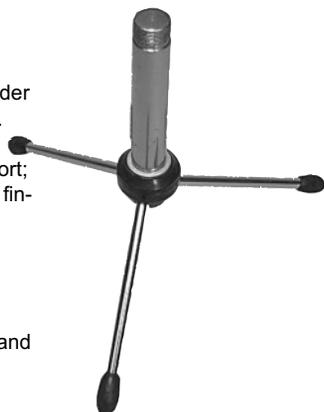
DESKTOP GOOSENECK MICROPHONE STAND

An iron, die-cast base and flexible gooseneck microphone stand. Rubber feet and a vinyl clad base provide for quiet use. The 5/8"-27 thread on top accommodates standard microphone holders. The entire stand is a low reflecting black finish. The gooseneck may be unthreaded from the base for transport or use with other stand parts. Total height 13.5"

No. 71-4507 - Gooseneck mike stand, black

DELUXE DESKTOP MICROPHONE STAND with BOOM

For very serious use, such as interviews, recording commercials or radio work, this is a fine stand with several very important features. The boom is removable if there are occasions to use the stand and shaft alone; height adjusts from about 9" to 15" and will accommodate any standard 5/8"-27 microphone holder (not included). The boom is 17" long and may be adjusted "in" or "out" as well as set at any angle necessary; a secure cam will hold a microphone exactly where you place it. The die-cast iron base is nicely finished (soft black) and has rubber feet to prevent marring table surfaces. May be silently readjusted/repositioned for changing users. Heavy, not usually recommended for portable use. This is a professional quality microphone stand and priced far below professional cost.

No. 71-4517................Deluxe desktop Microphone Stand w/boom.

STANDARD MICROPHONE FLOOR STANDS

This is a familiar microphone stand with die-cast iron base and adjustable in height. The upright may be adjusted from approximately 32" in height up to 60". (The addition of a microphone and holder will usually take the mike up to about 5-1/2 feet max. height) The 5/8"-27 thread on top will accommodate standard microphone holders. Heavy rubber feet eliminate floor noise; and positive locking collets assure that the height will stay where you have placed it.
Two finishes are available, traditional chrome mirror finish shaft with a black base or non-reflective black shaft and base.

No. 71-4652........Floor Stand, Chrome
No. 71-4653 ....Floor Stand, all Black

TRIPOD MICROPHONE FLOOR STANDS

An innovative idea in microphone stands, light in weight and collapsible for easy transport or storage. The stand may be adjusted from a height of only 31" up to 64" and is very stable. The collapsed package is only 31" long; easy to transport and much lighter than die-cast base units. The top accommodates standard (5/8"-27 threads) microphone holders. Constructed of steel tubing and nylon molded parts. Rubber feet.
Two finishes are available, traditional chrome mirror finish shaft with black molded parts; or non-reflective black shaft and black molded parts. (Black for low reflection of spotlights and camera flash units.)
No. 71-4682........Floor Stand, Chrome
No. 71-4683 ....Floor Stand, all Black

Stereo Jumper Cables

Fully shielded stereo (two conductor plus grounding shield) jumper cable with color-coded RCA-type phono plugs at each end. Newly introduced are gold plated connectors for reduced contact resistance and elimination of oxidation and/or corrosion. The gold plated cable assemblies have black insulating jackets and are blister packaged for display. The nickel plated cable assemblies have black jackets.

Male to Male

No. CA32	Nickel	18 in.
No. CAG34	Gold	3 ft.
No. CA34	Nickel	3 ft.
No. CA35	Nickel	4 ft.
No. CAG36	Gold	6 ft.
No. CA36	Nickel	6 ft.
No. CAG37	Gold	12 ft.
No. CA37	Nickel	12 ft.
No. CA38-17	Nickel	17 ft.
No. CA38-20	Nickel	20 ft.
No. CAG39	Gold	25 ft.
No. CA39	Nickel	25 ft.
No. CA59	Nickel	50 ft.

Right Angle Male to Male

No. 44-703	Nickel	3 ft.
No. 44-706	Nickel	6 ft.
No. 44-712	Nickel	12 ft.

Male to Male (Piggyback Type)
No. CA69 - 6 ft.

Male to Female

No. CA15	Nickel	3 ft.
No. CA16	Nickel	6 ft.

Female to Female

No. CA17	Nickel	3 ft.
No. CA18	Nickel	3 ft.

Jumper and Extension Cables
All Cables Are Fully Shielded

RCA type phono plug to RCA type inline phono jacks.

No. CA25 - 3 ft.
No. CA27 - 5 ft.
No. CA28 - 6 ft.
No. CA29 - 12 ft.
No. EC2 - 25 ft.

Male RCA type pin plug on both ends.

No. CA19 - 18" **- Nickel**
No. CAG19 -18" Gold
No. CA20 - 3 ft. **- Nickel**
No. CAG20 - 3 ft. - Gold
No. CA21 - 4 ft. **- Nickel**
No. CA22 - 5 ft. **- Nickel**
No. CA23 - 6 ft. **- Nickel**
No. CAG23 - 6 ft. - Gold
No. CA24 - 12 ft. **- Nickel**
No. CAG24 - 12ft. - Gold
No. CA26 - 25 ft. **- Nickel**
No. CA52 - 50 ft. **- Nickel**

CRYSTAL CLEAR AUDIO CABLES:

High quality cables with bright Gold plated RCA plugs with molded strain relief on each end. The center conductor and spiral shield are oxygen free copper for better conductivity. Encased in a clear jacket.

Single RCA - RCA
No. 70-503 - 3ft
No. 70-506 - 6ft
No. 70-512 - 12ft
No. 70-525 - 25ft

Dual RCA - RCA
No. 70-603 - 3ft
No. 70-606 - 6ft
No. 70-612 - 12ft
No. 70-625 - 25ft

Y - Adaptor
No. 70-4010 -
RCA/M - (2) RCA/F
No. 70-4000 -
RCA/F - (2) RCA/M

SPEAKER EXTENSION CABLE

Extra long length POLARIZED 2 conductor, 22 gauge unshielded speaker cable, allowing the listener to position their speakers in any desired location for maximum HI-FI sound.

RCA type phono plug at each end.
No. EC1 - 25 ft.
No. EC5 - 40 ft.

RCA type phono plug to RCA type phono jack.
No. EC4 - 40 ft.

MEDIA STAR™ AUDIO/MULTIMEDIA CABLE

LKG **MediaStar™** cables employ better materials throughout. Pure copper conductors receive a refined tin plating to prevent chemical degradation which commonly begins to occur to raw copper within months of manufacture. This plating assures fidelity without losses in the mid and high audio ranges. The inner cable is heavier than most (26ga. vs 28ga.) to reduce electrical resistance; shielding has also been increased. The outer PVC insulation is advanced (SRPVC) material that will increase life and durability by years. And the light grey color blends practically unnoticed into your home or office. Bulk **MediaStar™** Cable is ideal for custom audio connections. Available in 100 ft. and 300 ft. spools.

Single Conductor with Shield:
No. 70-1100 - 100 ft. Spool
No. 70-1300 - 300 ft. Spool

Two Conductor with Shield:
No. 70-2100 - 100 ft. Spool
No. 70-2300 - 300 ft. Spool

Dual Shielded Conductors:
No. 70-3100 - 100 ft. Spool
No. 70-3300 - 300 ft. Spool

No. 70-1100

AUDIO CABLES AUDIO PATCH CORDS & EXTENSION CABLES

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	**No. CA64**	3.5mm (1/8") MONO MALE TO RIGHT ANGLE 3.5mm MONO MALE	6 ft.
2	**No. 44-022**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE	1 ft.
2	**No. 44-023**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE	3 ft.
2	**No. 44-026**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE (Formerly CA66)	6 ft.
2	**No. 44-024**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE	12 ft.
2	**No. 44-025**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE	25 ft.
2	**No. 44-460**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE, Gold plated	12 ft.
2	**No. 44-465**	3.5mm (1/8") MONO MALE TO 3.5mm MONO MALE, Gold plated	25 ft.
3	**No. CA63**	3.5mm (1/8") MONO MALE TO RCA MALE	6 ft.
4	**No. 44-463**	3.5mm (1/8") MONO MALE TO RCA FEMALE	6 ft.
5	**No. CA62**	3.5mm (1/8") MONO MALE TO 1/4" MONO MALE	6 ft.
6	**No. 44-480**	3.5mm (1/8") MONO MALE TO 2.5mm MONO MALE, Gold plated	6 ft.
7	**No. 44-380**	3.5mm (1/8") STEREO MALE TO 1/4" MONO MALE, Gold plated	6 ft.
8	**No. 44-384**	3.5mm (1/8") STEREO MALE TO 1/4" STEREO MALE, Gold plated	6 ft.
9	**No. 44-004**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE	1 ft.
9	**No. 44-005**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE	3 ft.
9	**No. 44-006**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE (Formerly PR5)	6 ft.
9	**No. PR5G**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE	6 ft.
9	**No. 44-007**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE	12 ft.
9	**No. 44-018**	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO MALE	25 ft.
10	**No. 44-466**	3.5 mm (1/8") STEREO MALE TO RIGHT ANGLE 3.5mm STEREO MALE, Gold plated	6 ft.
11	**No. 44-468**	3.5 mm (1/8") RIGHT ANGLE STEREO MALE ON BOTH ENDS, Gold plated	6 ft.
12	**No. 44-470**	3.5 mm (1/8") 4 COND RIGHT ANGLE MALE ON BOTH ENDS, Gold plated	3 ft.
12	**No. 44-472**	3.5 mm (1/8") 4 COND RIGHT ANGLE MALE ON BOTH ENDS, Gold plated	6 ft.
12	**No. 44-474**	3.5 mm (1/8") 4 COND RIGHT ANGLE MALE ON BOTH ENDS, Gold plated	12 ft.
13	**No. 44-020**	3.5 mm (1/8") MONO MALE TO 3.5 mm MONO FEMALE	3 ft.
13	**No. 44-019**	3.5 mm (1/8") MONO MALE TO 3.5 mm MONO FEMALE (Formerly CA68)	6 ft.
13	**No. 44-021**	3.5mm (1/8") MONO TO 3.5mm MONO FEMALE	12 ft.
13	**No. 44-027**	3.5mm (1/8") MONO TO 3.5mm MONO FEMALE	15 ft.
13	**No. 44-028**	3.5mm (1/8") MONO TO 3.5mm MONO FEMALEN (Formerly 25SC)	25 ft.
14	**No. CA61**	2.5mm MONO MALE TO 2.5mm MONO MALE	6 ft.
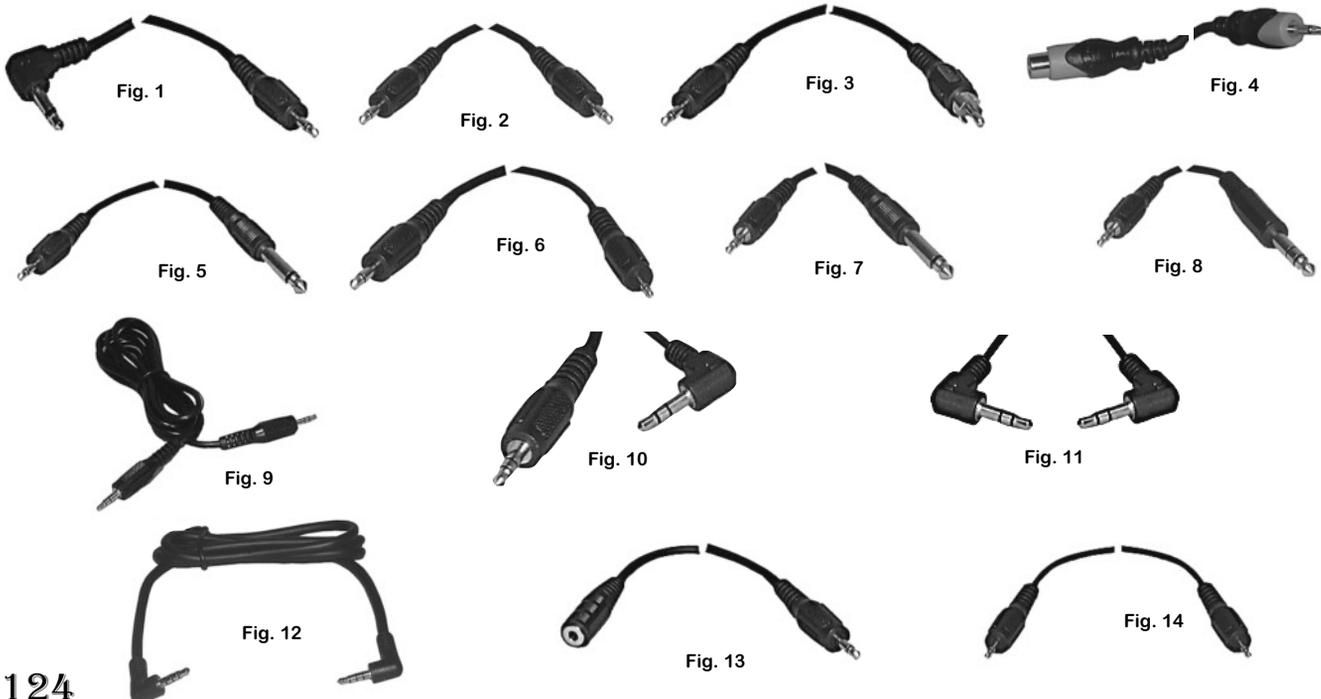
Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

AUDIO CABLES AUDIO PATCH CORDS & EXTENSION CABLES

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 70-206	2.5mm STEREO MALE TO 2.5mm STEREO MALE	6 ft.
1	No. 70-212	2.5mm STEREO MALE TO 2.5mm STEREO MALE	12 ft.
2	No. 44-473	2.5mm STEREO MALE TO 2.5mm STEREO FEMALE, Gold plated	3 ft.
2	No. 44-476	2.5mm STEREO MALE TO 2.5mm STEREO FEMALE, Gold plated	6 ft.
2	No. 44-478	2.5mm STEREO MALE TO 2.5mm STEREO FEMALE, Gold plated	12 ft.
2	No. 44-479	2.5mm STEREO MALE TO 2.5mm STEREO FEMALE, Gold plated	25 ft.
3	No. 44-406	3.5mm 4 CONDUCTOR MALE TO 2.5mm 4 CONDUCTOR FEMALE	6"
4	No. 44-408	2.5mm 4 CONDUCTOR MALE TO 3.5mm 4 CONDUCTOR FEMALE	6"
5	No. 44-404	2.5mm 4 COND. MALE ON BOTH ENDS, Gold plated	6 ft.
6	No. 44-346	1/4" MONO MALE TO 1/4" MONO MALE, Gold plated	6 ft.
6	No. 44-348	1/4" MONO MALE TO 1/4" MONO MALE, Gold plated	12 ft.
7	No. CA43	1/4" MONO MALE TO RIGHT ANGLE 1/4" MONO MALE	6 ft.
8	No. 44-360	1/4" RIGHT ANGLE MONO MALE ON BOTH ENDS, Gold plated	6 ft.
9	No. 44-352	RETRACTABLE CABLE 1/4" MONO MALE TO RIGHT ANGLE 1/4" MONO MALE, Gold plated	15 ft.
9	No. 44-356	RETRACTABLE CABLE 1/4" MONO MALE TO RIGHT ANGLE 1/4" MONO MALE, Gold plated	25 ft.
10	No. 44-340	1/4" STEREO MALE TO 1/4" STEREO MALE, Gold plated	6 ft.
10	No. 44-350	1/4" STEREO MALE TO 1/4" STEREO MALE, Gold plated	12 ft.
10	No. 44-354	1/4" STEREO MALE TO 1/4" STEREO MALE, Gold plated	25 ft.
11	No. 44-342	1/4" STEREO MALE TO RIGHT ANGLE 1/4" STEREO MALE, Gold plated	6 ft.
12	No. 44-344	RIGHT ANGLE 1/4" STEREO MALE ON BOTH ENDS, Gold plated	6 ft.
13	No. CA30	1/4" MONO MALE TO RCA MALE	6 ft.
14	No. 44-388	RIGHT ANGLE 1/4" MONO MALE TO RCA MALE, Gold plated	6 ft.
15	No. 44-390	RIGHT ANGLE 1/4" MONO MALE TO RIGHT ANGLE RCA MALE, Gold plated	6 ft.
16	No. 44-372	1/4" MONO MALE TO 1/4" MONO FEMALE, Gold plated	6 ft.
17	No. 44-364	1/4" STEREO MALE TO 1/4" STEREO FEMALE, Gold plated	12 ft.
17	No. 44-368	1/4" STEREO MALE TO 1/4" STEREO FEMALE, Gold plated	20 ft.
17	No. SEC25	1/4" STEREO MALE TO 1/4" STEREO FEMALE	25 ft.
18	No. RC25	RETRACTABLE CABLE 1/4" STEREO MALE TO 1/4" STEREO FEMALE	25 ft.
19	No. CA82	1/4" STEREO MALE TO 3.5mm (1/8") STEREO FEMALE	6 ft.

Fig. 1
Fig. 2
Fig. 3
Fig. 4
Fig. 5
Fig. 6
Fig. 7
Fig. 8
Fig. 9
Fig. 10
Fig. 11
Fig. 12
Fig. 13
Fig. 14
Fig. 15
Fig. 16
Fig. 17
Fig. 18
Fig. 19
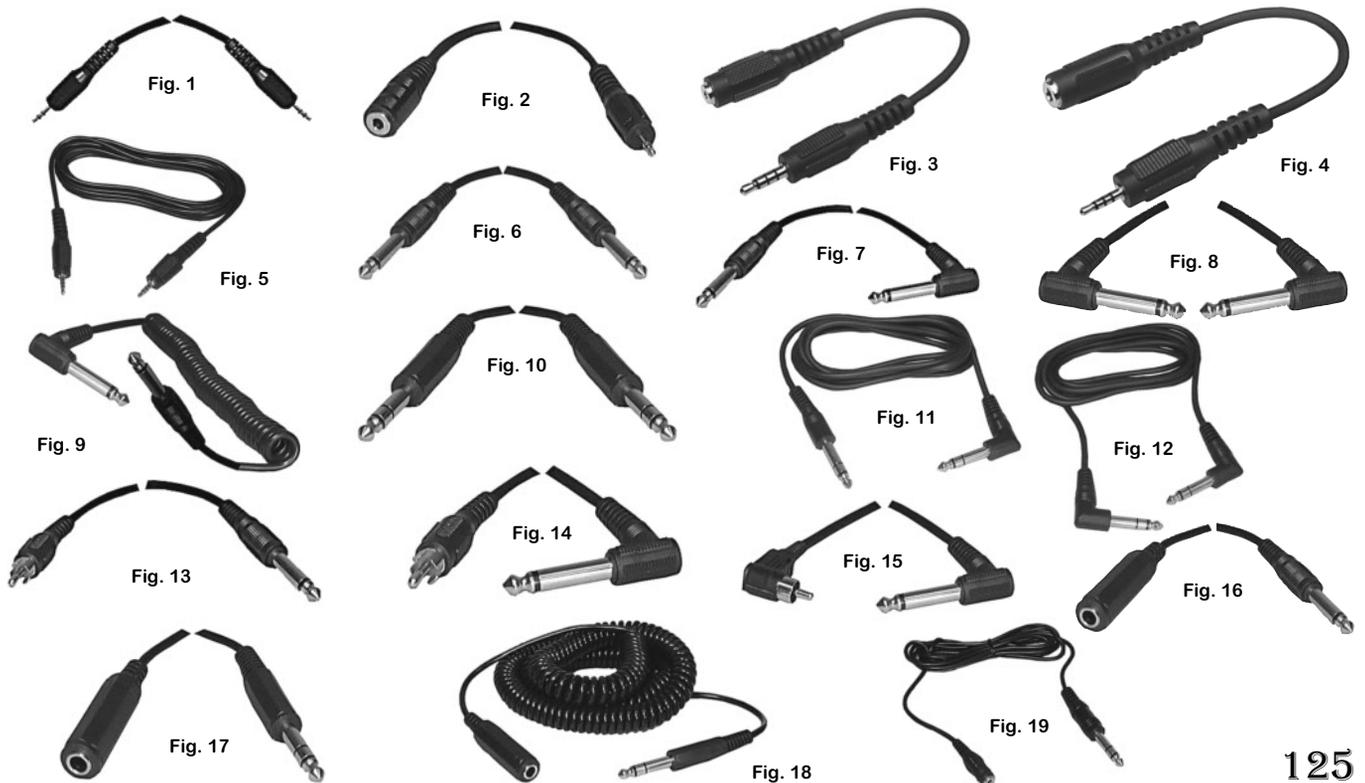
AUDIO CABLES EXTENSION CABLES & ASSEMBLIES

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 44-376	3.5mm (1/8") MONO MALE TO 1/4" MONO FEMALE, Gold plated	6 ft.
2	No. 44-200	3.5mm (1/8") STEREO MALE TO 1/4" STEREO FEMALE	6"
2	No. CA77	3.5mm (1/8") STEREO MALE TO 1/4" STEREO FEMALE	6 ft.
3	No. 44-203	3.5mm (1/8") MONO MALE TO 1/4" STEREO FEMALE	6"
4	No. PR4	STEREO PATCH CORD 3.5mm (1/8") STEREO MALE (WITH BUILT-IN RESISTORS TO PROTECT AGAINST OVER LOADING) ON BOTH ENDS.	6 ft.
5	No. 44-008	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE	3 ft.
5	No. 44-009	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE	6 ft.
5	No. 44-010	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE (Formerly SEC10)	10 ft.
5	No. 44-012	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE	12 ft.
5	No. 44-016	3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE	25 ft.
6	No. RC15	RETRACTABLE CABLE 3.5mm (1/8") STEREO MALE TO 3.5mm STEREO FEMALE	15 ft.
7	No. CA204	(4) COLOR-CODED RCA MALE TO MALE (Yellow, Green, Red & Black)	3 ft.
8	No. RC50	UNIVERSAL STEREO EXTENSION CABLE Retractable cable with 1/4" Stereo male to 3.5mm (1/8") Stereo female. 3.5mm (1/8") Stereo male to 1/4" Stereo female adaptor is included.	25 ft.
9	No. 70-023	STEREO EXTENSION CABLE WITH IN-LINE VOLUME CONTROL & MONO/STEREO SWITCH 3.5mm (1/8") Stereo male to 3.5mm Stereo female.	10 ft.
10	No. CA65	RCA MALE TO STRIPPED & TINNED END	6 ft.
11	No. 44-398	RIGHT ANGLE RCA MALE TO STRIPPED & TINNED END, Gold plated	6 ft.
12	No. CA60	2.5mm MONO MALE TO STRIPPED & TINNED END	6 ft.
13	No. 70-2526	RIGHT ANGLE 2.5mm MONO MALE TO STRIPPED & TINNED END	6 ft.
14	No. 44-392	2.5mm STEREO MALE TO STRIPPED & TINNED END, Gold plated	6 ft.
15	No. 44-291	(2) 3.5mm STEREO MALE (GREEN & RED) TO STRIPPED & TINNED ENDS	7 ft.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 70-2536	RIGHT ANGLE 2.5mm STEREO MALE TO STRIPPED & TINNED END	6 ft.
2	No. 44-403	RETRACTABLE CABLE RIGHT ANGLE 2.5mm Stereo Male to Stripped & Tinned end	3 ft.
3	No. 44-400	2.5mm-4 CONDUCTOR MALE TO STRIPPED & TINNED END, Gold plated	6 ft.
4	No. 44-402	RIGHT ANGLE 2.5mm-4 CONDUCTOR TO STRIPPED & TINNED END, Gold plated	6 ft.
5	No. CA48	3.5mm (1/8") MONO MALE TO STRIPPED & TINNED END	6 ft.
6	No. CA14	3.5mm (1/8") MONO MALE TO STRIPPED & TINNED END (UNSHIELDED CABLE)	6 ft.
7	No. 70-3526	RIGHT ANGLE 3.5mm (1/8") MONO MALE TO STRIPPED & TINNED END	6 ft.
8	No. 44-394	3.5 mm (1/8") STEREO MALE TO STRIPPED & TINNED, Gold plated	6 ft.
9	No. 70-3536	RIGHT ANGLE 3.5mm (1/8") STEREO MALE TO STRIPPED & TINNED END	6 ft.
9	No. 70-3530	RIGHT ANGLE 3.5mm (1/8") STEREO MALE TO STRIPPED & TINNED END	10 ft.
10	No. CA45	1/4" MONO MALE TO STRIPPED & TINNED	6 ft.
11	No. CA47	RIGHT ANGLE 1/4" MONO MALE TO STRIPPED & TINNED	6 ft.
12	No. 44-396	1/4" STEREO MALE TO STRIPPED & TINNED END, Gold plated	6 ft.
13	No. EA6	5 PIN DIN MALE TO (4) RCA MALE (COLOR CODED)	6 ft.
14	No. EA7	5 PIN DIN MALE TO 5 PIN DIN MALE	6 ft.
15	No. EA8	5 PIN DIN MALE TO 5 PIN DIN FEMALE	6 ft.

WIRING
— Yellow
— White
— Red
— Drain

WIRING
— Yellow
— White
— Red
— Drain

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 4000	RCA FEMALE TO TWO RCA MALE	6"
1	No. 4000G	RCA FEMALE TO TWO RCA MALE, Gold plated	6"
2	No. 4010	RCA MALE TO TWO RCA FEMALE	6"
2	No. 4010G	RCA MALE TO TWO RCA FEMALE, Gold plated	6"
3	No. 4040	RCA MALE TO TWO RCA MALE	6"
3	No. 44-284	RCA MALE TO TWO RCA MALE, Gold plated	6 ft.
4	No. 4050	RCA MALE TO RCA MALE & FEMALE	6"
5	No. 44-236	RCA FEMALE TO TWO RCA FEMALE	6"
6	No. 4005	3.5 mm (1/8") MONO MALE TO TWO RCA FEMALE	6"
7	No. CA70	3.5 mm (1/8") STEREO MALE TO TWO RCA FEMALE	6"
7	No. 44-282	3.5 mm (1/8") STEREO MALE TO TWO RCA FEMALE, Gold plated	6 ft.
8	No. 44-281	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA FEMALE	6"
8	No. 44-283	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA FEMALE	3 ft.
8	No. 44-285	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA FEMALE	6 ft.
9	No. 44-293	Right Angle 2.5mm Sub-Mini STEREO MALE TO TWO RCA MALE	6"
9	No. 44-295	Right Angle 2.5mm Sub-Mini STEREO MALE TO TWO RCA MALE	3 ft.
9	No. 44-297	Right Angle 2.5mm Sub-Mini STEREO MALE TO TWO RCA MALE	6 ft.
10	No. CA46	3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	6"
10	No. CA33	3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	6 ft.
10	No. CA31	3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	12 ft.
10	No. 44-292	3.5 mm (1/8") STEREO MALE TO TWO RCA MALE, Gold plated	25 ft.
11	No. 44-331	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	6"
11	No. 44-335	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	3 ft.
11	No. 44-345	Right Angle 3.5 mm (1/8") STEREO MALE TO TWO RCA MALE	6 ft.
12	No. 4020	3.5 mm (1/8") MONO MALE TO TWO 3.5 mm MONO FEMALE	6"
13	No. 44-412	2.5mm 4 Conductor MALE to (1) 2.5mm 4 Conductor FEMALE + (1) 3.5mm 4 Conductor FEMALE	6"
14	No. 4025	3.5 mm (1/8") STEREO MALE TO TWO 3.5 mm MONO FEMALE	6"
15	No. 44-263	3.5 mm (1/8") STEREO MALE TO TWO 1/4" STEREO FEMALE	6"
16	No. CA75	3.5 mm (1/8") STEREO MALE TO TWO 3.5 mm STEREO FEMALE	6"
16	No. CA76	3.5 mm (1/8") STEREO MALE TO TWO 3.5 mm STEREO FEMALE	6 ft.
17	No. 70-057	3.5 mm (1/8") STEREO FEMALE TO TWO 3.5 mm STEREO MALE, Gold plated	6"
18	No. 4090	1/4" MONO MALE TO TWO 1/4" MONO FEMALE	6"
19	No. 4070	1/4" STEREO MALE TO TWO 1/4" STEREO FEMALE	6"

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

Fig. 19

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 44-206	1/4" MONO FEMALE TO 2 RCA MALE	6"
2	No. 44-209	1/4" MONO MALE TO TWO RCA MALE	6"
3	No. 44-212	1/4" STEREO FEMALE TO TWO RCA MALE	6"
4	No. 44-215	1/4" STEREO MALE TO TWO RCA FEMALE	6"
5	No. 44-218	1/4" STEREO MALE TO TWO RCA MALE	6"
6	No. 44-221	1/4" MONO FEMALE TO TWO RCA FEMALE	6"
7	No. 44-224	3.5 mm MONO MALE TO TWO RCA MALE	6"
8	No. 44-227	3.5 mm MONO FEMALE TO TWO RCA MALE	6"
9	No. 44-230	3.5 mm MONO FEMALE TO TWO RCA FEMALE	6"
10	No. 44-233	3.5 mm STEREO FEMALE TO TWO RCA MALE	6"
11	No. 4080	1/4" MONO MALE TO TWO RCA FEMALE	6"
12	No. 44-239	1/4" STEREO FEMALE TO TWO 1/4" MONO MALE	6"
13	No. 44-242	1/4" MONO FEMALE TO TWO 1/4" MONO MALE	6"
14	No. 44-245	1/4" STEREO MALE TO TWO 3.5 mm STEREO FEMALE	6"
15	No. 44-248	3.5 mm STEREO MALE TO TWO 1/4" MONO MALE	6"

Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5 Fig. 6 Fig. 7 Fig. 8 Fig. 9 Fig. 10 Fig. 11 Fig. 12 Fig. 13 Fig. 14 Fig. 15

129

AUDIO CABLES "Y" ADAPTORS

Fully shielded audio cable with flexible black jacket. Unless otherwise stated, all connectors are Nickel plated.

Fig.	Part No.	Description	Length
1	No. 44-251	1/4" STEREO MALE TO TWO 3.5 mm MONO MALE	6"
2	No. 44-254	1/4" STEREO FEMALE TO TWO 3.5 mm MONO MALE	6"
3	No. 44-257	3.5 mm STEREO FEMALE TO TWO 1/4" MONO MALE	6"
4	No. 44-260	3.5 mm STEREO FEMALE TO TWO 1/4" MONO FEMALE	6"
5	No. 44-266	3.5 mm STEREO MALE TO TWO 3.5mm MONO MALE	6"
6	No. 44-269	3.5 mm MONO FEMALE TO TWO 3.5 mm MONO MALE	6"
7	No. 44-272	RCA MALE TO TWO 3.5 mm MONO FEMALE	6"
8	No. 44-280	3.5 mm STEREO FEMALE TO TWO RCA MALE	6 ft.
9	No. 44-286	1/4" STEREO MALE TO TWO RCA MALE	6 ft.
10	No. 44-288	1/4" STEREO MALE TO TWO RCA FEMALE	6 ft.
11	No. 44-290	3.5 mm STEREO MALE TO TWO 3.5 mm MONO MALE	6 ft.
12	No. 44-294	1/4" STEREO MALE TO TWO 1/4" MONO MALE	6 ft.
13	No. 44-482	1/4" STEREO MALE TO TWO 1/4" MONO FEMALE	6"
13	No. 44-296	1/4" STEREO MALE TO TWO 1/4" MONO FEMALE	6 ft.
14	No. 44-298	DUAL RCA MALE TO DUAL 1/4" MONO MALE	6 ft.
15	No. 44-299	DUAL 1/4" MONO MALE TO DUAL 1/4" MONO MALE	6 ft.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

AUDIO CABLE TRI-AUDIO ADAPTORS

Philmore's new line of adaptors allows the user to combine two inputs into one or to split one input to feed into two different devices. Philmore Tri - Audio Cable Adaptors are new combinations of audio adaptors in variations never before thought possible. Philmore Tri - Audio Cable Adaptors will give the user extra plug or jack needed and solves the problem of having multiple audio adaptors or not enough jacks available for a hook - up problem. Some of these combinations will also combine a stereo signal for a mono device or vice-versa; the possibilities are endless. All cables are 12 inches long.

**3.5mm Stereo Female to
(2) RCA Male +
3.5mm Stereo Female**

No. 44-232

**3.5mm Stereo Female to
(3) 3.5mm Stereo Male**

No. 44-258

**3.5mm Mono Male to
(2) RCA Female +
3.5mm Mono Female**

No. 44-302

**3.5mm Stereo Male to
(2) RCA Female +
3.5mm Stereo Female**
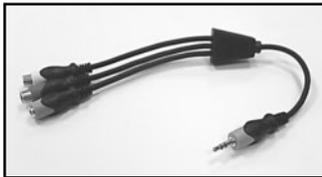
No. 44-312

**3.5mm Stereo Male to
(2) RCA Female +
1/4" Stereo Female**

No. 44-317

**3.5mm Stereo Male to
(2) RCA Male +
3.5mm Stereo female**

No. 44-322

**3.5mm Stereo Male to
(2) RCA Male +
1/4" Stereo Female**

No. 44-327

**3.5mm Stereo Male to
(2) 3.5mm Stereo Female +
1/4" Stereo Female**

No. 44-332

**3.5mm Stereo Male to
(2) 3.5mm Stereo Female
+
2.5mm Stereo Female**

No. 44-337

**1/4" Mono Male to
(2) RCA Female +
1/4" Mono Female**

No. 44-339

**RCA Male to
(2) RCA Female +
3.5mm Stereo Male**

No. 44-341

**RCA Female to
(2) RCA Male +
3.5mm Stereo Male**

No. 44-343

131

AUDIO MAINTENANCE ACCESSORIES

MULTI-PURPOSE CASSETTE CLEANER

- For Home and auto
- Cleans head, capstan and pinch-roller of tape deck in one operation
- Magnetic cleaning tip cleans left to right and rotates 360 degrees

No. CC126
No. CC125 - 10 Replacement tips
No. CC127 - Replacement fluid

COMPACT DISC COURIER
Simple • No Wiring • No Batteries

This unique adaptor provides user with ability to connect compact disc player to any portable audio player or car cassette system. This adaptor requires no wiring or permanent installation. Insert the cassette portion of this adaptor into player and plug the wire into headphone jack of CD player and user is ready to enjoy CD thru the cassette player system. Operates on front and side loading cassette players. Compatible with all in-dash, under-dash, boom boxes, etc. Comes with easy to follow instructions.

- New, improved model with auto reverse
- Play portable CD player thru car stereo cassette
- Plugs into headphone jack on CD
- Use also for boom box, portable cassette, or home stereo
- Patent #4734897

No. CD419

CASSETTE HEAD CLEANER and DEMAGNETIZER

Cleans and demagnetizes without any external power source. Safe and effective. Removes dirt and residual magnetism from tape heads. Use in home, auto, etc...
No. CC130

COMPACT DISC STORAGE/ORGANIZER "Flip File"

No. CD435

Holds 20 CDs in standard jewel cases or in LIFT-LOCK case. The most convenient storage rack available anywhere. Permits quick viewing of front, backside or spine of disc case. Easily places on a shelf or cabinet, or even in a drawer.
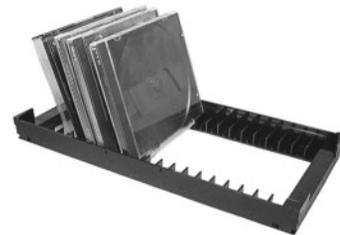
CD LASER LENS CLEANER

CD players utilize a special laser to retrieve the digitally encoded information on CDs. This laser is focused by small optical lens. This cleaner is very effective in cleaning the lens and should be used monthly.
No. CD450

MP3 FM-BROADCASTER FOR HOME & AUTO

Simply plug the MW700 into the earphone jack on your IPOD or any MP3 player, CD player (etc.) and broadcast pure, beautiful music to your Home stereo! Or, take your MP3 music collection with you and play through your Car stereo FM receiver or poolside boom box. It works like a miniature FM broadcasting station.

Listen to your:
IPOD
MP3 PLAYER
CD & MD PLAYERS
PDA's LAPTOPS etc.

No. MW700

Listen ON your:
HOME STEREO SYSTEM
CAR FM RADIO
BOOM BOX
POOL-SIDE FM RECEIVER

FEATURES
There are four user-selectable frequencies to choose from; find an unused channel on your FM receiver.
Simple connection: plugs into your player using a 3.5mm stereo plug (just like the one on headphones).
Requires two AA batteries

PA AMPLIFIER & LINE MATCHING TRANSFORMERS

MOBILE FIXED LOCATIONS
AC-DC P.A. Amplifier
30 WATTS RMS
2 LOW IMPEDANCE
MICROPHONE INPUTS

USE IT ANYWHERE
45 WATT (PEAK POWER)
• 12 Volt DC for MOBILE USE
• 117 Volt AC 50/60 HZ for FIXED LOCATIONS
No. PA503

The versatility of this powerful P.A. Amplifier enables the user to operate it anywhere: For mobile use - 12VDC (with positive or negative ground). For auditoriums or other fixed stations -117VAC 50-60 cycles.

Its versatility does not end as WHERE it can be used - but also as to HOW it can be used: Two low impedance microphone inputs, auxiliary input for cassettes, reel-to-reel tape recorders, phonos and CD players. Special music input for musical instruments, tuners and audio decks. The brushed aluminum front panel has gain controls for 3 different sources of audio including 2 independent mike mixing controls.

FEATURES
• **Sturdy Adjustable Mounting Bracket**
• **Convenient Mike Input on Rear and Front Panel**
• **Fused Line**
• **Ideally suited for both crisp and clean sound whether using amplifier for voice or music.**
• **Size: 10-3/4" W x 6-3/8" D x 2-3/4" H (Less Feet)**

SPECIFICATIONS:
Power Output: 30 watts RMS @ 2% THO
Frequency Response: 50 - 18,000 Hz
Line Outputs: 25 volts & 70 volts
Output
Impedance: 4-8-16 ohms

Power
Requirements: 12VDC and / or 117VAC 50-60Hz

MINI AMPLIFIER

Philmore mini Amp PA305 is built to deliver powerful music sound. Great for boosting the signal from a CD player, MP3 or Ipod or any line-level signal device. Simply connect your stereo source to audio input jack (3.5mm stereo jack) on the back of PA305 or use auxiliary RCA jacks. It has two channel outputs, easy to connect push button speaker terminals. Don't let the small size of this little power house fool you. Delivers 10 watts per channel into 8 ohm speakers. Separate Bass/Treble controls. Operated on 15V DC, wall power supply included

Specifications:
Power per channel: 20 watts RMS x 2 (into 8-ohm speakers from 20 to 20,000 Hz with 0.2 percent THD); 40 watts RMS x 1 (into 8-ohm speakers from 20 to 20,000 Hz with 0.2 percent THD)
Input sensitivity: 1.5Vrms
Signal-to-noise ratio: 107 dB A-weighted
Frequency response: 5 to 65 kHz, +/- 3 dB
Audio inputs: one 3.5mm input and one stereo analog (left/right) RCA input
Audio outputs: 2 sets of stereo (left / right) speaker - level outputs;
Speaker terminals: Push Button
Size: 4-3/4" x 2-1/2" x 1-1/2"

No. PA305

High Quality Speaker Wire

This speaker wire has clear jacket, and is polarity marked for your convenience. We offer speaker wire in varying gauges and put-ups to suit your particular needs. All on plastic spool.

Length	24AWG	22AWG	20AWG	18AWG	16AWG	14AWG
25'	48-24025	48-22025	48-20025	48-18025	48-16025	48-14025
50'	48-24050	48-22050	48-20050	48-18050	48-16050	48-14050
100'	48-24100	48-22100	48-20100	48-18100	48-16100	48-14100
500'	48-24500	48-22500	48-20500	48-18500	48-16500	48-14500
1000'	48-24102	48-22102	48-20102	48-18102	48-16102	48-14102

Dual Line Matching Transformer

Eliminate power loss caused by long distance between Amplifier and speaker. For 8 ohm speakers, 70 volt / 25 volt dual voltage. Mounting Centers - 2 7/16".

Specifications:
* Full range frequency response
  ± 1.2 db 50-15000HZ
* High efficiency design
* Insertion loss .6 db
* Primary taps .63, 1.25, 2.5, 5, & 10W
* Secondary impedance: 8 ohms
* Primary terminations: 6" color coded leads
* Secondary terminations: 6" color coded leads
* Power rating: 10 watts

No. MT2570

For bulk add suffix letter "B"

PA SPEAKERS

5 WAY STEREO SPEAKER SELECTOR

This professional quality selector box is designed to help distribute quality sound throughout your complete Home Theater System. There is built-in protection for your amplifier. The switch can control up to five (5) stereo pairs of speakers in any combination and maintains a constant impedance load to the amplifier.
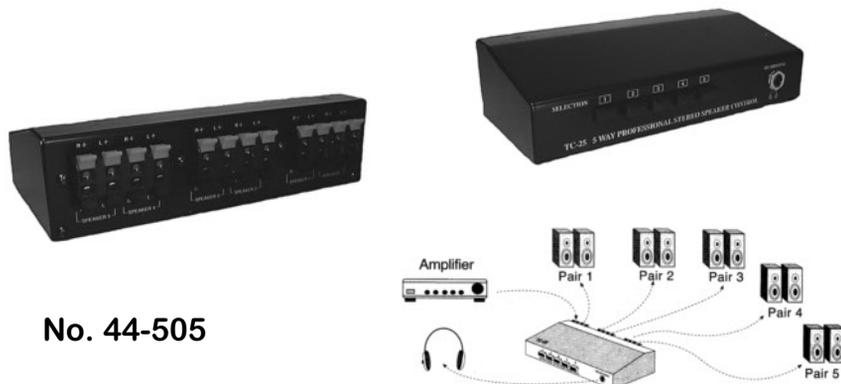
Specifications:
Power: 50 Watts RMS per Channel
Max Power: 75 Watts per Channel
Load Protection: Non Inductive 50 Watts
Outputs: 5 Stereo Speaker Pairs
+ 1 1/4" Headphone Jack
Size: 8" W x 4" D x 2" H
Case: Black Metal

No. 44-505

6" ALUMINUM PA SPEAKER WEATHER PROOF

No. WP10

• HORN MATERIAL - Aluminum - Baked Gray Enamel Finish
  - Weather proof sealed
  - Heavy duty metal mounting bracket
  - Rubber edge guard on metal horn
• FREQUENCY RESPONSE   250-15,000 Hz.
• POWER RATING   15 Watts Maximum
• SENSITIVITY   105 dB / 1W / 1M
• VOICE COIL IMPEDANCE   8 ohm
• SIZE   6" Diameter
                            6" Length

REFLEX TRUMPET
5-1/4" INDOOR / OUTDOOR

A compact speaker for all purposes   **No. WP4**

UNIVERSALLY DESIGNED FOR:
• **BOATING PAGING HORN**
• **FIXED OR MOBILE COMMUNICATIONS**
• **SECURITY**
MODERATELY PRICED - IDEAL WHERE WIDE FREQUENCY RESPONSE IS NOT A FACTOR

ALL EXPOSED METAL STAINLESS STEEL

This highly efficient speaker is a true re-entrant horn design. The speaker is totally weatherproof and has a white plastic casing of high impact, rugged construction. Can be mounted anywhere, with the 110º adjustable swivel bracket and screw flange.
Supplied with 12 ft. length weatherproof leads with 3.5mm phone plug on lead.

SPECIFICATIONS:

Power Handling Nominal Capacity: 8 watts (Handles up to 15 watts)
Frequency Response: 700 to 7000Hz
Impedance: 8 ohms
Overall size: 5-1/4" dia. x 6" depth

HORN   No. WP20
30 WATT
8" OUTDOOR

• **HAILING**
• **PA**
• **PAGING**

• **WATERPROOF**
• **RUST/SHOCK RESISTANT**
• **STAINLESS STEEL MOUNTING HARDWARE**
• **COMPLETELY SEALED FOR MARINE & MOBILE APPLICATIONS**

A smooth, wide frequency response of 450-10,000Hz assures excellent dispersion of music and voice. 30W of continuous power (60W peak) makes it capable of reproducing clear and crisp sound over long distances in noisy terrain. A rubber sealing gasket is provided for sealing mounting base to wall.

Its sleek white lines make this rugged plastic horn ideally suitable for marine craft of all sizes.

SPECIFICATIONS:

Input power: 30W continuous, 60W peak
Impedance: 8 ohms
Freq. Resp.: 450-10K Hz.
Magnet: 10 oz. ferrite
Size: 8" x 4-1/2" x 9-1/4" long

PA SPEAKERS & VOLUME CONTROLS

INDOOR/OUTDOOR TRUMPET SPEAKERS WITH PLENTY OF POWER TO SPARE

No. WP13 25 WATTS RMS   **No. WP12** 15 WATTS RMS

**• ALL WEATHER • RUST RESISTANT •
SHOCK RESISTANT • SWIVEL MOUNTING
BRACKET • PAGING: SPORTING EVENTS •
MARINE • AUDITORIUM**

Hot or cold, the smooth response will hold because these reflex horn speakers can withstand extreme climatic conditions without any loss.
Lightweight heavily enameled ABS plastic has a rubber, sound-dampening ring around the outside edge and is attached to a 24" color-coded connecting cord, stripped and tinned.

SPECIFICATIONS:

Model No.	Horn Opening	Frequency Response	Impedance	Power Rating
WP12	5" x 8"	350-13,000 Hz	8 ohms	15 Watts
WP13	6" x 11"	300-12,000 Hz	8 ohms	25 Watts

No. WP7 5" REFLEX TRUMPET HORN

NEITHER SLEET, NOR SNOW, NOR RAIN STOPS THIS TRUMPET HORN SPEAKER

Construction is of ABS plastic and the driver is protected by a rubber seal for weather and weatherproofing. The efficient sound displacement is consistent, whether used indoors or out.
The beautiful, metallic blue horn is mounted on a stand, fully adjustable through 90º
Power Rating: 10 Watts (RMS) **Frequency Response:** 450-10,000 Hz
Impedance: 8 Ohms **Cable:** 1 Ft. **Size:** 5" x 5" x 5" **Weight::** 1 Pound

WEATHER RESISTANT ELECTRONIC SIREN

No. SH12

• Provides sharp blasts of high and low whoop tones
• 115 db/m sound pressure level
• No moving parts
• Protects homes, cars and boats
• 10 Watts
• 12V DC
• 5-1/4" Diameter x 5-3/4" Length

"L" Pad Level Controls

2-1/8" dial plate finished in matte silver and black is supplied. Mounts in 3/8" panel hole 1" long threaded bushing complete with mounting nuts. Includes black plastic contour knob 15 watts RMS at 8 ohms.

STEREO
No. SLP8   **8 ohms**
MONAURAL
No. LP8   **8 ohms**

Mono L Pads
No. LP100   100 Watts RMS at 8 Ohms
No. LP50   50 Watts RMS at 8 Ohms

Stereo L Pads
No. LP200 Dual Ganged Attenuators, each   100 Watts RMS at 8 Ohms

No. LP75 Dual Ganged Attenuators, each   50 Watts RMS at 8 Ohms

Control speaker volume in remote high power Hi-Fi or commercial sound installations. Maintain constant loading on amplifier at all volume settings. 3/8" bushing mounts in 3/8" diameter hole.

In addition to reliable operation at full rated load, these attenuators are beautifully styled to be an attractive addition to any sound system. The brushed aluminum face plate is calibrated from 0 dB to infinite attenuation in eleven steps.

ECONOMY 100W STEREO

This lower cost L-Pad has electrical and mechanical specifications similar to those of the No. LP200. Smooth low-noise action provides long lasting sound adjustment capability.

The No. SLP10 is not precisely calibrated to match the decibel markings on No. LP200. A black face plate and knob are supplied as illustrated.

No. SLP10
STEREO 100 WATTS RMS AT 8 OHMS

SPEAKERS & SPEAKER WIRE

4" SPEAKER

6" SPEAKER

8" SPEAKER

No. TS40

Fine quality replacement speaker. 4" speaker with 1.7 oz. ceramic magnet. Speaker is 8 ohm impedance rated at 5 watts.

No. TS60

Fine quality replacement speaker. 6" speaker with 3.0 oz. ceramic magnet. Speaker is 8 ohm impedance rated at 10 watts nominal 15 watts peak.

No. SP800

This quality 8" speaker is well-suited for public address systems and background music installations. Metal frame has mounting holes for line matching transformers. Power rating: 20W; 10 oz. magnet; 1 "voice coil; 8-ohm impedance.

High Quality Speaker Wire

This speaker wire has clear jacket, and is polarity marked for your convenience. We offer speaker wire in varying gauges and put-ups to suit your particular needs. All on plastic spool.

Length	24AWG	22AWG	20AWG	18AWG	16AWG	14AWG
25'	48-24025	48-22025	48-20025	48-18025	48-16025	48-14025
50'	48-24050	48-22050	48-20050	48-18050	48-16050	48-14050
100'	48-24100	48-22100	48-20100	48-18100	48-16100	48-14100
500'	48-24500	48-22500	48-20500	48-18500	48-16500	48-14500
1000'	48-24102	48-22102	48-20102	48-18102	48-16102	48-14102

SUPER FLEX 12 AWG SPEAKER CABLE

High resolution 12 gauge speaker wire. 259 strands of 36 gauge wire per conductor in a rope lay design to increase the conductive surface and insure maximum flexibility. Extremely low capacitance. Resistance and inductance of these cables transfer music signals from the source to the speakers with high definition and clarity. Oxygen free bare copper.
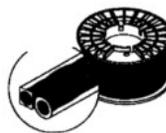
No. 1225 - 25 ft. (Blister Pack)
No. 1250 - 50 ft. (Spool)
No. 12100 - 100 ft. (Spool)
No. 12300 - 300 ft. (Spool)

Miniature PM Speakers
ALNICO V MAGNETS

Philmore miniature speakers have broad application in radios, tape players, intercom's, headphones...a complete spectrum of compact sound applications. These high-quality speakers are equally suited to the volume producer of electronic devices and to the individual experimenter or hobbyist.
Voice Coil Impedance: 8 ohms.

Available bulk-packaged also. Specify by adding suffix letter "B" to the speaker part number.

SPEAKER SIZE	PART NO.	POWER (WATTS)	RES. FREQ. (fo in Hz.)	FREQ. RANGE (Hz.)	SENSITIVITY (db)	MAGNET WT. (oz.)
1 1/2"	707 TS19	0.1	750 ± 60	$fo \rightarrow 7000$	89	0.5
2"	TS20	0.2	550 ± 60	4000	92	0.5
2 1/4"	TS21	0.2	450 ± 55	4000	92	0.5
2 1/2"	TS25	0.3	300 ± 50	4000	93	0.5
2 3/4"	TS26	0.3	300 ± 50	4000	93	0.5
3"	TS27 TS28	0.5	300 ± 50	4000	95	0.5
3 1/2"	TS35 TS36	1.0	200 ± 40	7000	95	0.68
4"	TS29	1.0	190 ± 35	10000	95	1.0
4"	TS31	1.5	225 ± 45	10000	94	0.6

FULL ROUND TYPE
WITHOUT FLANGES
No. TS19 - 1-1/2"
No. TS20 - 2"
No. TS21 - 2-1/4"
No. TS25 - 2-1/2"
No. TS26 - 2-3/4"
No. TS28 - 3"
No. TS36 - 3-1/2"
No. TS31 - 4"

SQUARE TYPE
No. 707 - 1-1/2"
Mtg. Ctrs. - 1-9/32"
No. TS27 - 3"
Mtg. Ctrs. - 2-5/16"
No. TS35 - 3-1/2"
Mtg. Ctrs. - 2-25/32"
No. TS29 - 4"
Mtg. Ctrs. - 3-1/4"

ELECTRONIC SOUNDERS

ELECTRONIC AUDIO SIGNALS

An electronic audio signal that has applications in electronic instruments, alarms, autos, detectors, and any other application where a rich sound and low current consumption is required. Wide operating voltage range in continuous tone and intermittent tone models. Available in DC only and AC/DC models.

A Direct equivalent for the MALLORY Sonalert®

5 types satisfy 95% of all requirements

CROSS REFERENCE	
PHILMORE	**MALLORY**
PS1	SC628
PS2	SC628AN
PS3	SC110N
PS4	SC628ANP
PS5	SC110NP

Audio & Electrical Specifications				
Part No.	Operating Voltage	Typical Current	Min. Sound Pressure *	Output Tone •
PS1	4 V DC Min 28 V DC Max	3 mA 14 mA	64db 80db	C
PS2	6 V AC/DC Min 28 V AC/DC Max	4 mA 18 mA	80db 95db	C
PS3	30 V AC/DC Min 120 V AC/DC Max	4 mA 18 mA	80db 95db	C
PS4	6 V AC/DC Min 28 V AC/DC Max	4 mA 18 mA	64db 80db	I
PS5	30 V AC/DC Min 120 VAC/DC Max	4 mA 18 mA	80db 95db	I

* Min. Sound Pressure db at two feet
• Output Tone • **C** = Continuous • **I** = Intermittent
Frequency (All models) 2900Hz +-500Hz
Mounting Hole - 1.125" Diameter

PIEZO SOUNDERS DC, with circuitry

Loud sounders that may be powered with a voltage of anywhere from 3.0 to 20VDC. Output minimum 95db at minimum voltage; 105db at 20 volts. Sound frequency is 2.8Khz µ0.5Khz. Typical current draw is 6mA @ 6V DC; 10mA at max. voltage. ABS case meets UL94HB, lead wires are UL listed materials. No other circuitry is needed, just DC voltage. Mounting ears are on centers of 50mm, case diameter is 42mm O.D.. Available with continuous tone, on/off tone and with hi/lo dual tone.

Part No.	Type
B818	Continuous
B819	On/Off
B820	Hi/Lo
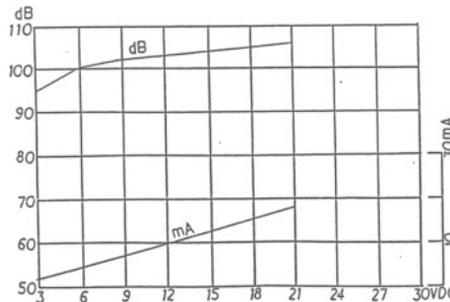
Dimension Unit:mm ±0.3
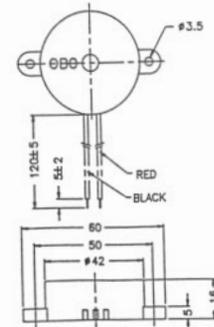
MINIATURE DC BUZZERS

This series of single tone, magnetic buzzers provides a minimum sound pressure (at rated voltages) of 75db. Small and compact, with pigtail leads for connections. No moving contacts to produce arcing, no RF noise. Low current requirements* and very economical. Maximum width and length are: 0.630" and 1.30"

* Stock number B816 draws a maximum of 20 milliamps; all others draw a maximum of 15mA at the rated voltages.

Part No.	DC Volts
B814	3
B816	6 or 9
B822	9
B812	12
B824	24
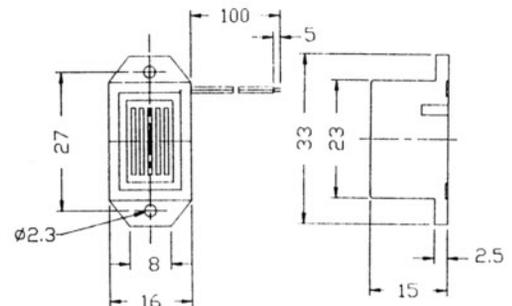
POWER TAPS & SURGE PROTECTION

Power taps add convenience and additional outlets to existing sockets.

6 Outlet Economy Power Tap

This solidly constructed outlet strip is both UL and CUL listed and comes with a 3 ft. power cord, circuit breaker and switch combo.

No. 43-7060

Expander I Duplex 6 Outlet Tap

This economical and convenient 6 position AC power tap plugs into a standard AC duplex outlet. A center screw is provided to insure unit holds securely to duplex outlet. This Unit is UL Listed and rated 15A @ 125V AC (1875 watts)

No. 70-8000

6 Outlet Heavy Duty Economy Power Strip

Economy 6 outlet strip with a heavy duty plastic housing and a 4 foot power cord. Separate On -Off switch and circuit breaker. UL and CUL Listed.

No. 70-405

3 Outlet Economy Power Tap

This wall Tap lets the user maximize the use of the existing AC Receptacle by adding 2 additional sockets. This unit can be used two per AC receptacle. Ivory.

No. 43-333

Metal 6 Outlet Power Tap

Durable metal housing construction. Separate lighted On-Off switch and 15 Amp circuit breaker with a 6 or 15 foot cord.

No. 70-6000 6' cord
No. 43-6015 15' cord

Power Taps with BASIC Surge Protection

Basic surge protection has (1) MOV (metal oxide varister) wired from HOT to Neutral

6 Outlet Heavy Duty Economy Surge Strip

Economy 6 outlet strip with a heavy duty plastic housing and a 4 foot power cord. Separate lighted On -Off switch and circuit breaker.

Features
4' Power Cord
Lighted On-Off Switch
Thermal Fuse
(1) MOV 70 joules
        Hot to Neutral
Peak Amp Rating 4000
EMI/RFI -5 - -40dB

No. 70-661

6 Outlet Economy Surge Strip

This solidly constructed outlet strip is both UL and CUL listed and comes with a 3 foot power cord, circuit breaker and switch combo.

Features
3' Power Cord
Circuit Breaker & Switch Combo
Surge Indicator Light
(1) MOV 70 joules Hot to Neutral

No. 43-7061

138

POWER TAPS & SURGE PROTECTION

Power Taps with FULL Surge Protection
Full surge protection has ALL AC lines protected with a (3) MOV's

3 Outlet Wall Tap with Full Surge

This unit has all 3 AC lines protected plus EMI / RFI filtering.It also has ground and surge indicator lights.

Features.
3 MOV's (210 joules)
Surge Indicator Light
Ground Indicator light.

No. 43-335

Expander III Duplex Wall Tap with Full Surge

The Expander III economical yet complete protection for all sensitive electronic equipment. The 3 MOV's protection featured in this unit will provide worry-free protection. Unit features LED indicator to show that protection circuits are functioning. This unit is UL approved and rated at 15 amps, 125V AC (1875 watts)

No. 70-8030

---

6 Outlet Heavy Duty Surge Strip

This 6 outlet strip is constructed with a heavy duty plastic housing and a 4'or 15'power cord. Separate lighted On-Off switch and circuit breaker and 3 MOV's (210 joules), and EMI/RFI filtering.

Features
4' or 15' Power Cord
Lighted On-Off Switch
Thermal Fuse
(3) MOV's 210 joules
All AC Lines Protected

No. 70-406 4' Power Cord
No. 43-6415 15' Power Cord

Single Outlet With Full Surge + Noise Filtering

This compact single outlet surge protector is compact enough that two can be placed in a single electrical outlet.

Features:
210 Joules
EMI / RFI Filtering
ALL lines Protected
Clamping Voltage 330 V
LED Surge Indicator Light

No. **43-1205** Surge Cube

Metal 6 Outlet Surge Strip

Durable metal housing construction. Separated Lighted On-Off switch, circuit breaker, 6 or 15' power cord.

Features:
6 or 15' Power Cord
Lighted Switch
(2) Thermal Fuses
(3) MOV's 210 joules
ALL AC Lines Protected
EMI/ RFI Filter

No. 70-6030 6' Power Cord
No. 43-6615 15' Power Cord

MINI EXTENSION CORD

A foot long of SJT16/3 cord with 3 prong plug on one end and receptacle on the other. Use with wall outlets or power strip, Use with AC wall transformer & Power supplies to prevent blocking adjacent sockets.

No. 48-123

BEST Single Outlet Surge Protection for AC Line, TV, & Computer

This series of AC line protectors provides 3-mode protection against surges and spikes and these three units have additional circuitry for the protection of other paths of damaging surges. The small size is not an indication of the power capacity, these are full power surge protectors and are single socket devices

Features:
ALL AC Lines Protected
210 joules protection
Indicator Lights for Surge and Ground
EMI / RFI Filtering

No. PTO7

No. PTO7V

No. PT07 AC Line Protection Only
No. PT07V AC Line + Coax Protection for TV / VCR

139

AC CONNECTORS

DEAD FRONT GROUNDING CAP

UL Listed & CSA Approved
No. 8515P

UL and CSA Approved. This three-prong AC plug can take wires up to #12. Removable insert used for thinner wire. Steel armor clad.
New dead front design completely encloses the housing, eliminating need for insulator and insuring against accidental short circuit.

ARMORED GROUNDING CONNECTOR

3-Contact AC Female Receptacle with Removable Cord Clamp

This yellow vinyl connector mates with our No. 8515P dead front grounding cap. It takes 3 #12 wires. Each circuit is separated by vinyl divider. Uses heavy duty, double wipes contacts. **UL Listed and CSA Approved.**

No. 8515J

RUBBER AC 3 WIRE PLUG

UL Listed & CSA Approved

No. 8520

For .225" - .600" cord rubber plugs and female receptacles resist chemical and petroleum by-products. Have low temperature flexibility and resist high heat.

3 WIRE FEMALE CONNECTOR

UL Listed & CSA Approved

For .225" - .600 cord.   **No. 8525**

JIFFY PLUG

No. 8901

No tools, no stripping. Perfect contact in 5 seconds. Cords extends from side of plug.
Non Polarized. Color: White

140

BAKELITE FLAT GRIP CAP

No. 1051B - Brown
No. 1051V - Ivory
10A-250V
15A-125V
UL Approved
Non Polarized Plug

PARALLEL GROUNDING ADAPTOR

No. 8419

Convert three-prong to two-prong caps. Polarized blades and rigid grounding lug. Compact design extends only 1" from socket.

VINYL CUBE TAP

No. 8400

Heavy-duty, durable brown cube tap. One-piece construction. Brass spring prongs.
Rated: 15A - 125V

Hospital Grade AC PLUG and CONNECTOR
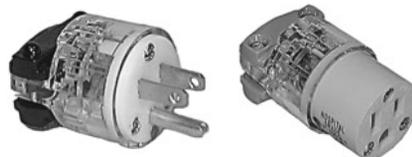
Figure 1   **15A 125V NEMA 5-15**   **Figure 2**

A.C. power connectors meeting all federal specifications for hospital use, as required by the National Electric Code (article 517). Verified by UL to latest federal specifications. Both devices feature terminals separated by insulating barriers, captive speed-screws assembly and integral strain relief. Both accommodate cords with an O.D. from .250" to .685". The connector configuration is NEMA 5-15 and rated at 15 amps at 125 volts AC.
fig. 1 **No. 8266** - male plug
fig. 2 **No. 8269** - connector

OFFICE EQUIPMENT AC CONVERTER (IEC STANDARD)

No. 8522

No. 8922

No. 8523

No. 8923

No. 8527

No. 8529

Three prong power cord connector (like industry type IEC320-13) used on nearly all personal computers, printers, copy machines and other office equipment.
No. 8522 In-Line Female (Rated 10A @ 250VAC)
No. 8922 - Right Angle In-Line Female
          (Rated 10 @ 250 VAC)
No. 8523 In-Line Male (Rated 10A @ 250VAC)
No. 8923 - Right Angle In-Line Male
          (Rated 10A @ 250 VAC)
No. 8527 Panel Mount Male, Snap-In Type.
          (Rated 15A @ 250VAC)
No. 8529 Panel Mount Male, Screw Mt. Type
          (Rated 15A @ 250VAC)

TRIPLE GROUNDING TAP

No. 8147V Ivory
No. 8147B Brown

Accepts 3 standard grounding plugs into a single grounding outlet. Ample room even for right angle type plug.
Size of bakelite case: 3" x 1-3/32" x 1" deep.

The LKG Wire Knutt, A push - in wire connector, fast, alternative to wire nuts.

The LKG Wire Knutt accommodate wire sizes from 22 to 12 AWG (solid conductors). Fast assembly! Strip wire (0.43" or 11 mm strip length) and push it into the knutt. Fast and secure; use in machinery, house wiring etc. for fast and secure connection of wires of same size or various sizes. Available in sizes for joining from two to eight wires.
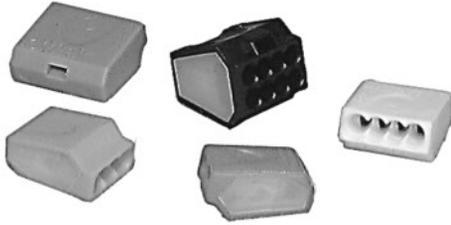
Specification:
Housing Material: Thermoplastic, UL 94V-2 flame retardent
Current: 24A (VDE)
Voltage: UL-600V, VDE-450V.
Temperature Rating: 110ºC
UL file No.: E - 113650

Part No.	Color	Wires
65-252	RED	2
65-253	ORANGE	3
65-254	YELLOW	4
65-255	GREY	5
65-258	BLACK	8
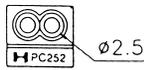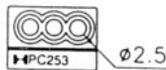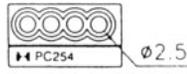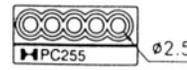
65-252   **65-253**   **65-254**   **65-255**   **65-258**
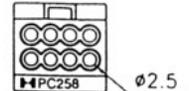
TWIST-ON WIRE CONNECTORS

Molded of rugged, impact and heat resistant plastic. Color identifies size. Heavy ribbed bodies for easy gripping. Display package of 10.

No. WN33 - Small - orange
No. WN33B - bulk
Wire Sizes: #18 to #16
Rating: 300V/Building wire,
300v/Signs & Fixtures

No. WN44 - Medium - yellow
No. WN44B - bulk
WIRE SIZES: #18 to #12
Rating: 600v/ Building wire,
1000v/ Signs & Fixtures

No. WN66 - Large - red
No. WN66B - bulk
Wire size: #18 to #10
Rating: 600v/ Building wire,
1000v/ Signs & Fixtures

UL Listed

AC Receptacles

Panel mount 3 prong grounding receptacles, snap-in type, rated at 15A - 125VAC, UL approved. Black plastic.

No. 8535 - .250" Male Quick connect or solder terminal
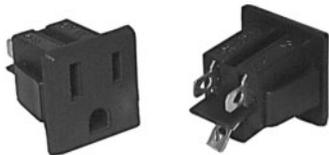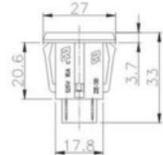
No. 8540 - .250" Female Quick connect terminal with wire protector
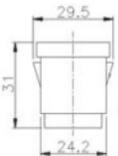
No. 8545 - 6" - 16 awg. wire leads terminal

(mounting hole: 0.96" x 0.87")

(mounting hole: 1.18" x 0.94")
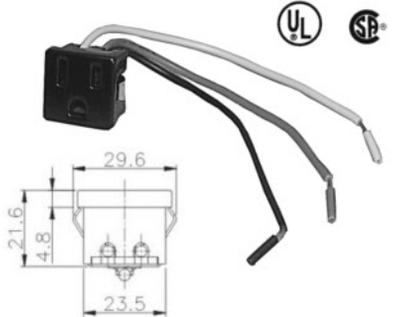
(mounting hole: 1.18" x 0.94")

REPLACEMENT AC PLUGS
Black; Solder Terminals

No. 8464

No. 8465

No. 8466

VINYL PLASTIC ELECTRICAL TAPE

UL LISTED
66 ft. rolls x 3/4" wide, black vinyl tape, with a dielectric strength of 12,000 volts, and tensile strength of 15 lbs. per inch. Thickness 7-9 mils. Flexible stretch, waterproof, and will resist oil, gasoline, salt water, alkalis, and sunlight.

No. PT2
No. PT2B -bulk packaged

CONVENIENCE RECEPTACLE

UL Approved

No. R118J

Suitable for accessory equipment power outlets on amplifiers, pre-amplifiers, clock radio chassis, etc.   Requires 1-1/16" x 7/16" rectangular cutout.
Non Polarized Receptacle.

AC CORDS & REPLACEMENT CABLES

18 AWG SPT-1 PARALLEL POWER CORD UL listed

A standard insulated, two conductor cord with a rib on one conductor for polarity indication. Available in popular colors. The 25 foot lengths are supplied in blister display packages. The longer lengths are supplied on spools with a clear, protective shrink-wrap.

COLOR	25 ft.	100 ft.	250 ft.	1000 ft.	2000 ft.
Black	48-142	48-102	48-252	48-1002	48-2002
Brown	48-144	48-104	48-254	48-1004	48-2004
White	48-146	48-106	48-256	48-1006	48-2006
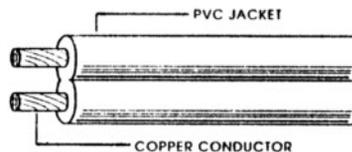
Working Voltage: 300V AC
Temperature Range: 105°C
Size:
Nominal O.D.: 2.65 x 5.35mm
or .104" x .210"
UL Listed CSA Approved

SPECIFICATIONS:
AWG Gauge: 18 Gauge copper
Stranding: 41 strands/ 34 Gauge
Insulation Thickness: 0.030"
Insulation Material: PVC

AC CORD SET - for Cassette Recorders

A direct replacement for the new Panasonic Cassette Recorders, as well as for other recorders and many portable TV sets and Laptops Power Supply. Two Pin cords mates with male receptacles having 3/32" diameter pins on 0.275" centers. Rated 7 amps at 125V AC, this cord set is UL Approved. 6 feet long.

No. 2464P - 2 Pin
No. 2465P - 2 Pin
No. 2467P - 2 Pin
No. 2466P - 3 Pin for Laptop Power Suppliers.

No. 2464P   No. 2465P   No. 2467P   No. 2468P
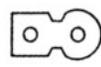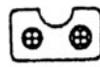
AC POWER CORD SETS for OEM and Replacements

SPT cord sets are typically used in light duty applications, such as table radios, household lamps and so forth. SPT cords are two conductor, 18 gauge. SJT cord sets are three conductor, counting the ground wire, and regarded as hard service cord sets, frequently used with bench tools such as grinders, saws etc.. This is a popular cord set for equipment of all kinds. SJT cord sets are supplied with a standard NEMA 5-15P power plug. Both of these series are of fully molded construction, the plug and cord are permanently connected.

Top: SPT Type AC Cords
Bottom: SJT Type AC Cords

Part No.	UL Wire Type	Wire Gauge	Length	Color	Amps
SPT1182-6BL	SPT-1	18 x 2	6 ft.	Black	10
SPT1182-6BR	SPT-1	18 x 2	6 ft.	Brown	10
SPT1182-6WH	SPT-1	18 x 2	6 ft.	White	10
SPT1182-9BL	SPT-1	18 x 2	9 ft.	Black	10
SPT1182-9BR	SPT-1	18 x 2	9 ft.	Brown	10
SJT143-3	SJT	14 X 3	3 ft.	Black	15
SJT143-6	SJT	14 x 3	6 ft.	Black	15
SJT163-3	SJT	16 x 3	3 ft.	Black	15
SJT163-6	SJT	16 x 3	6 ft.	Black	13
SJT163-9	SJT	16 x 3	9 ft.	Black	13
SJT183-6	SJT	18 x 3	6 ft.	Black	10
SJT183-9	SJT	18 x 3	9 ft.	Black	10

REGULATED POWER SUPPLIES

When in doubt of the amount of current being drawn by your electronic equipment, using a regulated power supply is the best course of action to avoid damage to your valuable equipment. These regulated supplies, however, will 'hold' very close to the rated voltage. For, example, a five volt **regulated** power supply, rated at 300mA will deliver five volts when used with a device drawing 10mA, 50mA or the full 300mA (A non-regulated 5-volt unit would vary from 9 to 4.8 volts.)

In short, non-regulated power supplies are good when used at or near their full current rating, and can vary widely in voltage. These regulated power supplies are going to be supplying a steady (regulated) voltage and will always be a better selection at a modestly higher cost.

We offer popular voltages that are most commonly needed for small electronic devices. Included with each power supply is a set of six adaptors that will permit easy connection to numerous popular consumer electronics devices. Polarity (+/-) may be easily reversed to match your devices. Different sizes of interchangeable DC Plugs are available see below.

Philmore Part No.	Voltage and maximum current rating
MW41-350A	3 Volts DC @ 500mA
MW41-650A	6 Volts DC @ 500mA
MW41-730A	7.5 Volts DC @ 300mA
MW41-945A	9 Volts DC @ 450mA
MW48-1250A	12 Volts DC @ 500mA

C

Plug sizes: 5.5 x 2.5mm, 5.5 x 2.1mm, 5.5 x 1.5mm, 5.0 x 2.1mm, 3.5 x 1.35mm, 3.5mm. (O.D. x I.D.)

AC to AC Adaptor

For phone answering machine. An exact replacement for many name brands.
2.1 x 5.5mm DC Plug
INPUT: 120VAC
OUTPUT: 13.8VAC, 800mA

5.5x2.1mm

No. BE260

Nintendo® Power Adaptor Cord

The male connector on this adaptor mates with the power jack on Nintendo® games. The other end mates with the power plug found on numerous, miscellaneous power supplies; this makes replacing a power supply easy. **2.1mm x 5.5 DC Power Jack to 7mm x 1mm DC Power Plug.**

No. 298

AC to AC ADAPTOR

For any device which requires 18V AC. Power with 300mA rating. Such as cable box etc. UL Listed with 6 ft. cord and 3.5mm plug.

3.5mm

No. 48-414

AC to DC POWER SUPPLIES
wall adaptor style

120 Volts AC, 60Hz, power input to various DC outputs for operating small circuits of any kind. Terminated with a 3.5mm plug, tip positive. User could remove plug and replace with his own when needed or use an adaptor. Cord is six foot. Output is clean, adequate for use with radios and other audio equipment as well as calculators, for charger's and an endless list of small devices.

3.5mm

Part No.	DC volts	Maximum Current
MW310	3	100 mA
MW450	4.5	500 mA
MW630	6.0	300 mA
MW930	9.0	300 mA
MW950	9.0	500 mA
MW1230	12.0	300 mA
MW1250	12.0	500 mA
MW1280	12.0	800 mA
MW1830	18.0	300 mA

MINI BATTERY TESTER

No. BC148

Check power on all types of batteries - **D, C, AA, AAA, 9 volt, N and Button Cells.**
Fits in pocket or purse. Requires no outside power source. Great gift, promo item, or give away.

---

6 in 1, DC Power Adaptor Set

Many AC power supplies shipped with electronic devices (e.g. calculators, radios etc.) are equipped with the same size coax power plug (2.1mm I.D. x 5.5mm O.D.). The cord in this set mates with that connector and the other end of the cord can accommodate six different size coax power plugs, which are included.

PLUG SIZES: 1.) **5.5x2.5mm** 2.) **5.5x2.1mm** 3.) **5.5x1.5mm** 4.) **5.0x2.1mm** 5.) **5.0x2.5mm** 6.) **3.5mm**

No. 296

143

AC / DC ADAPTORS

MULTIPLE CHOICE SELECTION - 300mA

OUTPUT: 1.5, 3, 4.5, 6, 7.5, 9, 12VDC @ 300mA

Here's a device that conserves batteries conveniently and reliably on most equipment. Adaptor plugs into ordinary 120VAC 60Hz house current. Choose any of the above voltages. Has built-in polarity reversal switch. Employs a full wave bridge rectifier, with 1000mfd filter capacitor for good regulation and lowest hum level. Six interchangeable plugs are included with the unit to serve most power-up needs. The plugs are: 2.5mm, 3.5mm, 2.1mm x 5.5mm, 2.5mm x 5.5mm, 1.35mm x 3.5mm, 1.7mm x 4.0mm & 9 volt snap adaptor. **UL Listed.**

No. BE226

EXTRA HEAVY DUTY
MULTIPLE CHOICE SELECTION - 800mA

OUTPUT SELECTION:

OFF, 3, 4.5, 6, 7.5, 9, 12VDC @ 800mA
Six interchangeable plugs are included with the unit to serve most power-up needs. The plugs are: 2.5mm, 3.5mm, 2.1mm x 5.5mm, 2.5mm x 5.5mm, 1.35mm x 3.5mm, 1.7mm x 4.0mm & 9 volt snap adaptor.

- Plug-in Polarity Reversal
- Plugs into 120VAC / 60Hz house current
- 6-1/2 foot cord
- Circuit employs full range bridge rectifier with filter capacitor for excellent regulation and elimination of AC "hum".

No. BE240

DIGITAL CAMERA POWER SUPPLY

Casio, Epson, Fuji, Kodak, Minolta, Ricoh, Toshiba, Viviter, Hewlett Packard, Olympus, Nikon, Konica, AGFA,

This innovative Hi-Tech product is ideal for most **Digital Cameras** which require a 3.0, 3.3, 5.0, 6.0, 6.5, or 7V supply and any current up to 2100mA. It comes with 4 different individual adapter plugs.

Features:
Constant Voltage
Independent of load
Short Circuit Protection
Automatic Thermal Cut Off
Automatic Overload Cut Off
UL/CUL Listed

Specifications:
Inputs: 100-140V AC @60Hz
Output: 3, 3.3, 5.0, 6.0, 6.5, 7V DC
Current: 0-2100mA

No. 48-1190 Digital Camera Power Supply

Plug sizes: 4.0 x 1.7mm, 4.75 x 1.75mm, 3.5 x 1.35mm, 2.35 x 0.75mm (O.D. x I.D.)

WORLD TRAVELER AC/DC ADAPTOR (600mA)

This model is designed for travelers. Dual voltage 110/220V with two flat pin and additional two round pin adaptor plug. Enables the traveler to use this adaptor in parts of most continents e.g. North and South America, Asia, Middle East and Europe. 1.5, 3, 4.5, 6, 7.5, 9, 12VDC with LED indicator and six most common detachable single plugs. Fits most all appliances e.g. radios, cassette recorders, handheld games, calculators, portable phones, toys, office equipment and other electronic products.

No. 48-140

Plug sizes: 5.5 x 2.5mm, 5.5 x 2.1mm, 5.5 x 1.5mm, 5.0 x 2.1mm, 3.5 x 1.35mm, 3.5mm. (O.D. x I.D.)

144

HEAVY DUTY
MULTIPLE CHOICE SELECTION - 500mA

OUTPUT: 3, 4.5, 6, 7.5, 9, 12VDC @ 500mA

- **Plug-in Polarity Reversal**
- **Ideal for Large Audio Equipment**

Conserve batteries that are commonly used with giant portable stereos, video games, 2-way radios and mobile rigs. A full wave bridge circuit with a 2200mfd filter capacitor is built-in to eliminate unwanted "hum". Includes adaptor for Walkman type players. Six interchangeable plugs are included with the unit to serve most power-up needs. The plugs are: 2.5mm, 3.5mm, 2.1mm x 5.5mm, 2.5mm x 5.5mm, 1.35mm x 3.5mm, 1.7mm x 4.0mm & 9 volt snap adaptor. **UL Listed.**

No. BE227

Universal Regulated Switching Power Supply 1000mA Switchable Power Supply

This Hi-Tech product is ideal for all Electronic consumer products which require DC voltages of 3, 4.5, 6, 7.5, 9, or 12V DC and current up to 1000mA. Use with such products as CD players, Radios, Cassette Recorders, Electronic games, mini TV, Palm Computer and many other battery appliances.

Features
Constant Voltage
Independent of load Short Circuit Protection Automatic Thermal Cut Off Automatic Overload Cut Off Folding AC Plug for Travel 6 Different Adaptor Plugs Concealed Voltage selector UL/CUL Listed

Plug sizes: 3.5mm, 2.35 x 0.75mm, 3.0 x 1.0mm, 3.5 x 1.35mm, 4.0 x 1.7mm, 5.0 x 2.5mm, 5.5 x 2.1mm, 5.5 x 2.5mm, (O.D. x I.D.)

Specifications:
Inputs: 100-140V AC @60Hz
Output: 3, 4.5, 6.0, 7.5, 12V DC
Current: 0-1000mA

No. 48-1088 Multi-voltage Power Supply

Universal Regulated Switching Power Supply 1700mA Switchable Power Supply

This Hi-Tech products is ideal for all Electronic consumer products which require, DC voltages of 3, 4.5, 6, 7.5, 9, or 12V DC and current up to 1700mA. Use with such products like CD players, Radios, Cassette Recorders, Electronic games, mini TV, Palm Computer, Digital Cameras, and many other battery appliances.

Features
Constant Voltage
Independent of load Short Circuit Protection Automatic Thermal Cut Off Automatic Overload Cut Off Folding AC Plug for Travel 6 Different Adaptor Plugs Concealed Voltage selector UL/CUL Listed

No. 48-1189 Multi - Voltage Power Supply

Specifications:
Inputs: 100-140V AC @60Hz
Output: 3, 4.5, 6.0, 7.5, 12V DC
Current: 0-1700mA

Plug sizes: 3.5mm, 3.5 x 1.35mm, 5.5 x 1.5mm, 5.5 x 2.1mm, 5.5 x 2.5mm, 4.0 x 1.7mm, 4.75 x 1.75mm, 2.35 x 0.75mm (O.D. x I.D.)

STEP UP/STEP DOWN TRANSFORMERS

TRAVELER'S POWER CONVERTERS
HEAVY DUTY STEPUP & STEPDOWN TRANSFORMER

Whether a tourist or for business, it can greatly enhance the trip if you take along your favorite small appliances including hairdryers, laptops, cell phone chargers and any of the other dozens of electrical appliances that we might use everyday.

WHEN TRAVELING TO THE STATES. It's much the same story as above. The tourist or businessman can use a Philmore travel voltage converter so that he can use his appliances on U.S. voltage without damages or worry.

WHENEVER TRAVELING one travel converter will do the job for your country's appliances. Just be sure to pick one that is "big" enough (has a high enough wattage rating) to do the job. How do you do that? Simply add up the wattage listed on each appliance that will be connected at one time. Example, if your hair dryer and portable coffee maker each have a 700 watt rating (and you will connect and use them both at one time), then you have a total of 1400 watts. So, you need the 2,000 watt unit to get the job done. (If you were to run only one of these at a time, the 1,000 watt unit can get the job done nicely.)

Very small items, such as your cellphone charger, will be fine with the smallest of these converters. But if you will be operating your laptop, a projector and perhaps a public address amplifier as well, you will want to add the wattages together to be sure that you have selected a big enough unit.

Wattages still too big? That is unusual, but you can always use more than one converter if you exceed the 2,000 watt model.

TRAVEL CONVERTERS that allow you to USE YOUR U.S. APPLIANCES WHEN TRAVELING IN FOREIGN COUNTRIES, AND THE SAME CONVERTER WILL PERMIT USE of FOREIGN APPLIANCES IN THE STATES!

100W to 750 Watts

1000W to 2000 Watts

3000W to 5000 Watts

110VAC TO 220VAC
OR 220VAC TO 110VAC

Part No.	Weight (lbs.)	Std. Pack Carton	Power Rating Watts
ST100	5	12	100
ST200	6	6	200
ST300	7	6	300
ST500	8	6	500
ST750	13	4	750
ST1000	17	2	1000
ST1500	23	2	1500
ST2000	25	2	2000
ST3000	30	2	3000
ST5000	51	1	5000

WARNING! This device is an autotransformer. Primary and secondary winding are NOT isolated from each other. USE WITH CARE: AVOID USE IN WET AREAS or on bare earth or concrete floors

• 110V AC to 220V AC or 220V AC to 110V AC
• Heavy Duty Transformer for safety and reliability
• ON/OFF switch with indicator light
• Universal output receptacles (will accept European 2 round pin plug, North American 2 flat pin and 3 prong plug)

SAFETY FEATURES INCLUDE:
• Built-in (non-detachable) power cord with strain relief
• Fused Protection
• Safety polarized input switch (100V AC, 200V AC, 220V AC and 240V AC)
• Non slip rubber feet

Voltage Converter Plugs/Adaptors

No. 48-517 - Two Round Pin

No. 48-518 - Two Flat Pin

No. 48-519 - Two Angled Pin, Australian Type

No. 48-520 - Three Flat Pin, British Type

Universal Adaptors Kit.
No. 48-525 - Contains one each of 48-517, 48-518, 48-519, & 48-520.

Front View

Rear View

JAPAN - U.S.A.
Japan's standard voltage is 100VAC, and appliances made for use in the US will not operate there or vise versa, unless you have a travel converter.

Philmore Model No.	Weight (LBS)	Std. Pack Carton	Power Rating Watts
STJ300	4	6	300
STJ500	5	6	500
STJ1000	8	4	1000
STJ2000	24	2	2000

How do you use one? It's easy; just set a switch to "USE IN USA" when in the United States or set it to "USE IN JAPAN" when in that country. Then, just plug your appliance(s) into the converter; just like home.

POWER SUPPLIES, CHARGERS & ADAPTORS

Single Phase 110 to 120 Volts Variable AC Transformer

The Philmore variable AC transformers permit user to operate equipment on AC voltage anywhere between a few volts and a voltage about 10% above the normal AC line voltage. Available in four different current ratings (VA).

INPUT: 110 -120VAC @ 60Hz
OUTPUT: < 4 V AC-130 VAC, 500V Amps
No. 48-1205
(Weight 9 Lbs)

INPUT: 100 -120VAC @ 60Hz
OUTPUT: < 4 V AC-130 VAC, 1000V Amps
No. 48-1310
(Weight 19 Lbs)

INPUT: 110 -120VAC @ 60Hz
OUTPUT: < 4 V AC-130 VAC, 2000V Amps
No. 48-1320
(Weight 22 Lbs)

INPUT: 100 -120VAC @ 60Hz
OUTPUT: < 4 V AC-130 VAC, 3000V Amps
No. 48-1330
(Weight 28 Lbs)

50 Watt Step-up / Step-down Transformer

The input is selectable from either 110/120 VAC or 220/240VAC @ 60/50 Hz. The unit comes with universal round pins and two adapters are included. The output has a standard 3 prong NEMA receptacle. Both 120V & 220V input are fused for protection. There is a power indicator LED on the front of the unit.

No. 48-550 50 Watt Up-Down Transformer

50 WATT VOLTAGE CONVERTER (Stepdown)

• Changes 220/240V AC to 110/120VAC (stepdown)
• Round two prong plugs
• Flat outlet for U.S. plugs
• Ideal for small appliances; razor, recorder, radio etc..

No. 48-500

WORLD TRAVELER AC/DC ADAPTOR (600mA)

No. 48-140

Plug sizes: 5.5 x 2.5mm, 5.5 x 2.1mm, 5.5 x 1.5mm, 5.0 x 2.1mm, 3.5 x 1.35mm, 3.5mm. (O.D. x I.D.)

This model is designed for travelers. Dual voltage 110/220V with two flat pin and additional two round pin adaptor plug. Enables the traveler to use this adaptor in parts of most continents e.g. North and South America, Asia, Middle East and Europe. 1.5, 3, 4.5, 6, 7.5, 9, 12VDC with LED indicator and six most common detachable single plugs. Fits most all appliances e.g. radios, cassette recorders, handheld games, calculators, portable phones, toys, office equipment and other electronic products.

1600 WATT VOLTAGE CONVERTER (Stepdown)

• Changes 220/240VAC to 110/120VAC (step-down)
• Round two prong plugs
• Flat outlet for U.S. plugs
• Ideal for larger appliances; (motorized) that draw more than 50W but under 1600W hair dryer, iron, curler etc.

Voltage Converter

No. 48-516
Caution: Only for Resistive heating devices

Foreign Electricity Convertor Kit
No. 48-5000
1600W Convertor and 4 adaptors in a plastic storage bag.

World Traveler AC Plug Adaptors.

With an AC adaptor(s) to match the countries on your travel itinerary, you will be able to take along the dryer, shaver or any other portable appliance that is important to you. The series shown on this page will allow you to use those appliances in about two hundred and fifty countries.

No. 48-540	No. 48-545	No. 48-555	No. 48-560	No. 48-565
USA 3 Prong PLUG	2 Flat Pin PLUG	Australian W/Ground PLUG	VDE PLUG	UK PLUG

No. 48-570	No. 48-575	No. 48-580	No. 48-585
South Africa PLUG	Israel 3 Prong PLUG	South Africa 3 Round Pins, Plug w / Ground	Italy 3 Round Pin, Plug w / Ground

REGULATED POWER SUPPLIES & CHARGERS

12 VOLT DC REGULATED POWER SUPPLY

Ideal for operating any 12-14 VDC equipment from 117VAC AC power outlet. For use with CB radio, car radio, Ham transceivers, tape players, mobile scanners and other DC equipment requiring 3 amp continuous (5 amp surge) at 13.8 VDC. The design of this unit incorporates an automatic overload circuit that shuts unit down. The unit will automatically reset. No troublesome fuses to replace. The No. MW123 is also protected against damage caused by accidental short circuit.

No. MW123

FEATURES:
• 3 Amp Continuous (5 Amp Surge)
• LED Indicator Light
• Fail-Safe Over-Voltage Circuit
• Short Circuit Protected
• Overload Protected with Auto Reset

SPECIFICATIONS:
RIPPLE:	40 MV Max
REGULATION:	Better than -5% @ 3 Amps
FOLDOVER CURRENT:	4.5 Amps
INPUT POWER:	117VAC, 60 HZ

CASE SIZE:
6" X 4-1/2" X 3-1/2"
(including rubber feet)
WEIGHT: 4-3/4 lbs.

• Solid State Reliability
• Filtered Output
• Binding Posts

Two (2) Hour Rapid Charger
for Ni-Cd/Ni-MH Batteries
Charge 2 or 4 AA or AAA from Home or Auto

This charger has a built-in microprocessor that can detect the change process when the battery reaches 90% and switches to trickel change mode until the batteries are fully charged. It has automatic polarity protection and minus voltage cut-off.

No. 48-2098 2 Hour Charger

Specifications:
Power: 120V AC @3.5W
Charge Rate: Repid = 900mA
Trickel = 50-60mA

Features
AC Power Supply
LED status indicator
Folding AC Plugs for Travel
UL/CUL Listed

Battery Charger

This plug-in wall type AC/DC Power supply & Charger is ideal to power cellular telephones as a DC battery eliminator and plug-in saver / charger up to 1000mA. Input voltage is 120V AC @ 60 Hz, 17.5W and output is 12VDC @ 1000mA. There is a cigarette lighter socket with a dust cover. The unit is UL listed and non - regulated.

No. 48-1210

---

6 ft. POWER CABLE with Assorted Coaxial Plugs

The cord has spade lugs to be attached at terminals on power supplies such as No.MW122A or No. MW123. The jack on the other end of the cord can accept any one of the six coaxial plugs included with this set. You can power almost any radio, calculator etc. with this accessory set and Philmore power supply.

No. 48-400 - Power Cord and Plug set

Overnight AA Battery Charger

This economical battery charger is for Ni-Cd batteries and will charge 2 or 4 AA size batteries. This is a trickel charge rate charger and works off of 120V AC @ 60 Hz.

Features
AC Power Supply
LED status indicator
Folding AC Plugs for Travel
UL/CUL Listed

No. 48-1298 Economy Charger

Specifications:
Power: 120V AC @3.5W
Charge Rate: Trickel = 60mA/.35VA

---

12 Volt DC POWER SUPPLY with CIGARETTE LIGHTER SOCKET

A desk top power supply for operating automotive equipment in the home or office. Use your house AC power to operate items such as spotlights, CB and Ham radios, coolers, video equipment and so on. The unit plugs into an AC outlet and has a lighter socket.

No.48-130

SPECIFICATIONS:
INPUT POWER:	100 - 140 volt AC
Output Power:	12 - 14 VDC
Current:	4.1 amps continuous
	5 amps surge

FEATURES:
* Fully regulated low ripple
* Light weight & compact
* Short circuit protection
* Automatic thermal cut off
* Automatic overload cut off
* UL approved

147

AUTOMOTIVE POWER SUPPLIES

REGULATED AC - DC POWER SUPPLY

This compact sized regulated power supply is ideal for all devices drawing up to 2 amperes. It is fully regulated to assure that a constant, accurate DC power is delivered to different kinds of electronics and electrical appliances. The rotary selector for choice of 6 voltages (3, 4.5, 6, 7.5, 9, 12VDC), with any currents not more than 2000mA e.g. portable TV sets, video games, tape recorders, radios, scanners, boom boxes etc. The red and black binding posts enable easy connection. In addition, an optional cable is available for easy hook-up to devices with a DC input receptacle. (PHILMORE No. 48-400).

FEATURES:
- **(No. MW122A) Operates on 110/120VAC**
- **(No. MW2122A) Operates on 220/240VAC**
- **Multi-Voltage Output: 3, 4.5, 6, 7.5, 9, 12 VDC**
- **Provides constant current from 0-2000mA**
- **Fully regulated, low ripple**
- **Short circuit protection**
- **Automatic thermal cut off**
- **Automatic overload protection**
- **Heavy Duty Red and Black Binding Posts**
- **"LED" red lamp indicates power**
- **3-3/4" Wide x 5-1/4" Long x 2-5/8" High**
- **Net Weight 2 lb. 14 oz.**

No. MW2122A
- **220/240 VAC Input**
- **Round Pin Plug**

No. MW122A
- **110/120VAC Input**
- **2 Flat Pin Plug**

REGULATED DC to DC CONVERTER, 2 Amps

A power converter that will provide any one of six different DC voltages in your automobile. It plugs into the cigarette lighter socket.Full regulation assures that the voltage is accurately controlled to protect your equipment. The user may select one of the following voltages: 3, 4.5, 6, 7.5, 9 or 12. A set of six different coaxial power plug adaptors will allow this device to connect to almost any equipment you have, including CD's and scanners.

SPECIAL FEATURES:
- Integrated Circuit Regulation
- LED pilot light
- Fuse in lighter plug
- Valuable power plug set
- Safety features such as short circuit and overload protection

Plug sizes: 5.5 X 2.5mm, 5.5 X 2.1mm, 5.5 X 1.5mm, 5.0 X 2.1mm, 3.5 X 1.35mm, 3.5mm (O.D. x I.D.)

No. 48-150

Regulated Mobile DC-DC Converter

3-6-9-12 VOLTS DC

Designed to power battery operated equipment drawing up to 1 amp. current (1000mA). Completely regulated and maintains voltage constant within 1 Volt despite wide variations in load current. Accepts 12-16VDC input from conventional negative ground.
Maximum Current Specifications:
12VDC - 1Amp. (1,000mA)
9VDC - 500 mA
6VDC - 500 mA
3VDC - 300 mA
Comes with 6 adaptor plugs to match nearly all applications. Polarity reversal achieved by rotating adaptor plugs 180º.

Plug sizes: 5.5 X 2.5mm, 5.5 X 2.1mm, 5.5 X 1.5mm, 5.0 X 2.1mm, 3.5 X 1.35mm, 3.5mm(O.D. x I.D.)

No. BE19

DC CONVERTER

Use in auto, boat , truck, camper ,van etc..

INPUT: 12VDC @ 800mA
OUTPUT: 1.5, 3, 4.5, 6, 7.5, 9 and 12
No. BE164

Two in One, 800 mA Regulated DC/DC CONVERTER

Because most converters "block" the cigarette lighter socket during use, this well planned unit has TWO of these sockets so that you may use a converter and other devices such as a scanner or radar detector as well as the converter. Full regulation assures protection for your electronic equipment.

SPECIAL FEATURES:
- IC Regulation Circuit
- LED pilot light
- Fused (inside plug)

No. 48-160

- Voltages: 1.5, 3, 4.5, 6, 7.5, 9 and 12
- Valuable coax power plug set
- Safety features such as short circuit, overload protection and thermal cutoff

Plug sizes: 5.5 x 2.5mm, 5.5 x 2.1mm, 5.5 x 1.5mm, 5.0 x 2.1mm, 3.5 x 1.35mm, 3.5mm (O.D. x I.D.)

CB & AUTOMOTIVE ACCESSORIES

COMMUNICATION DYNAMIC MICROPHONE
for CB and Amateur Applications

Everyone can now enjoy a microphone with superior specifications at a moderate price. Features four (4) conductors, (1 shielded), in a 6-ft. coiled cable designed for relay or electronic switching in transmitters, transceivers and PA amplifiers.
Full size, press-to-talk switch extends over half the length of this hand-held mike. High impact shockproof case is attractively styled in matte finish midnight black. Supplied with rear hanger button.

Specifications:
Directivity: Omni - Directional
Sensitivity: -72dB ± 4db at 1KHz
Frequency Response: 200Hz - 5KHz

No. CM43A

S.W.R. Bridge and Field Strength Meter

Perfect dual-purpose meter for checking SWR measurements, as well as reading the field strength in both mobile and home station rigs. Can monitor transmitter outputs in the circuit continuously.

Specifications: **No. FS45**
SWR: 1:1 to 1:3
RF Power: 0.5-10W and 0.5-100W Switchable
Accuracy: SWR: +-5% **Power:** +-10%
Impedance: 52 ohms
Meter Sensitivity: 200 u A
Freq. Range: 1.7 to 150 MHz
Size: 5-3/4"H x 2-1/4"D x 1-15/16"
Attractive black metal cabinet supplied with detachable antenna, and set of instructions.

Automotive Power Cord
No. TC3640

5 ft.; 16 Ga. red and black leads with fuse holder in-line in red lead with 10 amp fuse. Both ends stripped.

In-Line Fuse Holder for Blade Type Fuses
No. FH101
• **Material** - Bakelite
• **Max. Rating:**250VAC/30A
• **Color** - Black

Screw Cap Fuse Holder
No. FH55
No. FH55B - bulk packaged
Rating 15A @ 250VAC
Holds 1/4" x 1-1/4" fuses. Can be used in panels up to 1/4" thick. Mounts in 19/32" hole. Overall length of holder 2", behind panel 1-3/8".

FUSE HOLDER (Screw Type Cap)

No. 526 - For 3 AG Type Fuse (1/4" x 1-1/4")
No. 525 - For GMA Type Fuse (5mm x 20mm)

Fuse Mounting Bases
No. H108A - Single Fuse
No. H108B - Double Fuse

Will accommodate the 3AG cartridge type auto fuse. Clips are made of spring brass, and mounting board is made of 1/8" XP laminated phenolic insulating material.

Heavy Duty In-Line Fuse Holder
10A @ 250V AC

No. 506 - for 3AG type fuse
(1/4" x 1-1/4")
No. 507 - for GMA type fuse
(5.0mm x 20mm)

In-Line Fuse Holder
No. FH65
No. FH65B - bulk packaged
Holds 1/4" x 1-1/4" fuses. Spring loaded, twist lock design. Plastic housing provides full insulation. 10" heavy duty #18 gauge stranded insulated wire at each end.

MICROPHONE HANG-UP HOLDER
with mounting hardware

Stainless Steel

No. H200SS
No. H200SSB bulk packed

REPLACEMENT SCREWS
for CB's, PA's, Car Mounts, etc.

No. K40 Size 4 mm
No. K50 Size 5 mm
No. K60 Size 6 mm

For connecting mounting brackets to metal cases. Made of machined brass with a heavy nickel plated finish. Length of threaded portion is 3/8". Packed two per package.

Add suffix "B" to part number for bulk pack.

SMA TO UHF HT ADAPTOR CABLE

For hand-held Ham or Business Transceivers (HT) with SMA antenna connectors; adapts the antenna connection to a UHF female for connection to mobile or base antennas with a PL-259 termination. The cable is 16" long miniature 50 ohm coaxial cable (RG174/U). Using an adaptor cable will help to reduce strain on the radio's SMA antenna jack.

No. CA740

GRAIN of WHEAT BULBS

Subminiature lamps used in many automotive units including tape players, CB radios etc. These are supplied with an 8-3/4" lead wire.

No. 480 -12 Volt, 75mA
No. 480B - bulk packaged
No. 495 - 14 Volt, 80mA
No. 495B - bulk packaged

149

AUTOMOTIVE POWER ACCESSORIES

Heavy Duty 3 ft. Extension Cable
No. 48-470
Cigarette Lighter Plug (2 amp fuse) with LED indicator light to cigarette lighter socket and Panasonic type battery clip.

Cigarette Lighter Plug Socket
No. TC660
Double the DC power applications from cigarette lighter socket in cars, trucks and vans. Fused lighter plug to 2 lighter sockets.

SAFETY DUAL ADAPTOR CIGARETTE LIGHTER SOCKET
Converts a single cigarette lighter socket into a dual input. Fused lighter plug (2 amp fuse) with two side spring contacts to two lighter sockets with safety dust cover and LED indicator light on both sockets. Cable length is 10".
No. 48-660

Automobile Accessory Power Cord
No. TC6111
Plugs into any automobile cigarette lighter or accessory socket. Molded phenolic body with nickel plated brass contacts. 3-1/2 ft. two conductor cable is stripped for polarity; and stripped and tinned. 22 AWG Wire.

Universal DC Power Cable
No. TC6115
Supplies 12VDC power to portable VCR or some camcorders etc. from automotive or marine cigarette lighter outlet. With fused lighter plug 4 Amp, 125V fuse, negative ground, 6 ft. cord, 22 GA. wire with 4-way adaptor plug (3.5mm and 2.5mm phone plug, 2.1mm and 2.5mm DC plug).

Universal Power Cord with Six Detachable Plugs
No. TC6106
Heavy duty 10 ft. coiled cord. (26 AWG) 2 Amp fuse. LED indicator light plug.
PLUG SIZE'S (1) 5.5 X 2.5 mm (2) 5.5 x 2.1 mm (3) 5.5 x 1.5 mm (4) 5.0 x 2.1 mm (5) 3.5 x 1.35 mm (6) 3.5 mm

Six Foot Auto Battery Power Cord
No. 48-450
Clips on one end, connect to car's battery terminals; other end is a cigarette lighter socket for a scanner, CB etc. Socket has an LED pilot light power indicator. 18 AWG Wire.

Insulated and Color Coded Battery Clips (5/8" Max. Opening) to Two Pin DC Socket
No. 48-460
Includes the six most popular DC power plugs:

- 3.5mm
- 2.1mm x 5.0mm
- 2.1mm x 5.5mm
- 1.3mm x 3.5mm
- 2.5mm x 5.5mm
- 1.5mm x 5.0mm

Cigarette Lighter Plug Socket
No. TC600
Assemble your own power cords. 10 AMP

Panel Mount Cigarette Lighter Socket
No. TC610
For use with 12VDC. Allows user to install a second jack in cars, RV's and boat for auxiliary use with radar detectors , CB radios and more.

CIGARETTE LIGHTER SOCKET PROTECTIVE DUST COVER
Fits any standard panel mount cigarette lighter socket. Made of black flexible Nylon. Safety protection for lighter socket when not in use.
No. 48-610

Auto Power Plug with 10 Amp Fuse
No. TC777 - Plugs into cigarette lighter of car and protects against burn-outs of 12 volt accessories. Protects car's electrical wiring where fuse is not provided in cigarette lighter circuit.
No. 48-780 - With fuse and LED indicator light.

Right Angle Cigarette Lighter Plug with 8 Amp Fuse
Protects your 12 volt accessories with this compact size fused lighter plug. Will accept up to 18 AWG wire (SPT1-18/2). Housing is made of UL-94 ABS material, rated 8A - 12VDC.
No. 48-785

Cigarette Lighter Plug
No. TC644
Fits into cigarette lighter receptacle for a convenient source of 12 volts DC. Plated spring-loaded center contact and dual side contacts assure minimum voltage drop. Unscrews for ease in fastening wires. Made of high impact plastic. Rated @ 104

LIGHTER SOCKET TO BINDING POSTS ADAPTOR
No. 48-521
The adaptor plugs into the automobile cigarette lighter or accessory socket; binding posts make for easy attachment of bare wires for hundreds of 12 - 14 volt devices. Binding posts are color coded red (+) and black (-) and also accept banana plugs, spade lugs etc... The adaptor is fused with a ten ampere fuse for safety and in case of overload.

Automotive Power Cord
No. TC3670
16 gauge - 6 ft. cable with in-line fuse on red wire. 2-pin plug fits many DC power requirements in automotive applications.

Car CB and Radio NOISE ELIMINATOR KIT
No. NF72
7 Amperes

Static and other noise interference coming from the ignition system or alternator can now be eliminated. The RF choke and the electrolytic capacitor supplied with this kit are all that's required. Simple installation instructions come with kits.

150
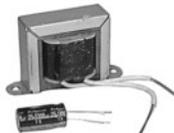
AUTOMOTIVE ACCESSORIES

ANTENNA ADAPTOR
Motorola type plug to "F" Female, 6.5" coaxial cable

No. 64-3017 - 6.5"

ANTENNA CABLE
Motorola type plug to "F" Male, 48" coaxial cable

No. 64-3019 - 4 Ft.

DIPOLE ANTENNA with MOTOROLA TYPE PLUG

The 300-Ohm twin leads has measurements of 6 feet. The ends of each lead are secured with plastic tabs for easy mounting, same design as our No. 5031TV but with Motorola type plug for connection instead of two spade lugs.

No. 5035

Car Stereo Wiring Harnesses

CHRYSLER / DODGE / JEEP 1984 - UP for POWER & (4) SPEAKERS, (7) PINS

No. 64-5005

Ford / Lincoln / Mercury 1986 - UP for POWER & (4) SPEAKERS, (8) PINS

No. 64-5015

General Motors Autos 1988 - UP for POWER & (4) SPEAKERS, (21) PINS

No. 64-5010

General Motors Autos 1978 - 1990 for POWER & (4) SPEAKERS, (12) PINS

No. 64-5020

Honda / Acura 1986 - UP for POWER & (4) SPEAKERS, (16) PINS

No. 64-5025

Solderless Terminals

Vinyl Insulated Ring Connectors

Part No.	Wire Size	Stud Size	Color	Package
65-1587	8 Ga.	1/4"	Red	4 Pcs.
65-1588	8 Ga.	5/16"	Red	4 Pcs.
65-1589	8 Ga.	3/8"	Red	4 Pcs.
65-1597	4 Ga.	1/4"	Yellow	2 Pcs.
65-1598	4 Ga.	5/16"	Yellow	2 Pcs.
65-1599	4 Ga.	3/8"	Yellow	2 Pcs.
65-1609	1/0 Ga.	3/8"	Red	2 Pcs.

Non - Insulated Ring Connectors

Part No.	Wire Size	Stud Size	Package
65-1087	8 Ga.	1/4"	4 Pcs.
65-1088	8 Ga.	5/16"	4 Pcs.
65-1089	8 Ga.	3/8"	4 Pcs.
65-1097	4 Ga.	1/4"	2 Pcs.
65-1098	4 Ga.	5/16"	2 Pcs.
65-1099	4 Ga.	3/8"	2 Pcs.
65-1109	1/0 Ga.	3/8"	2 Pcs.

Vinyl Insulated Butt Connectors

Part No.	Wire Size	Package
65-1243	8 Ga.	4 Pcs.
65-1246	4 Ga.	2 Pcs.

Stud	Size	mm	inch
●	1/4	6.4	.250
●	5/16	7.9	.312
●	3/8	9.5	.375

12 V Red / Black Zip Cords

Philmore Red / Black zip cord is made for 12V DC applications. They are available in three wire sizes, 100 Ft. spool.

Specifications:

Insulation Material: PVC, FT1, 30V.
Conductor: Bare Copper.
Temperature: 80° C.

Part No.	Gauge	Length	Strands
64-2010	20 Ga.	100 Ft.	26 / 0.16mm (34 AWG)
64-2210	22 Ga.	100 Ft.	17 / 0.16mm (34 AWG)
64-2410	24 Ga.	100 Ft.	11 / 0.16mm (34 AWG)

151

AUTOMOTIVE ACCESSORIES

Volkswagen to Motorola Adaptor

This shielded adaptor cable converts the Volkswagen/ Audi flat antenna plug to a standard Motorola antenna jack. It has Volkswagen/Audi antenna jack on one end and a standard Motorola antenna plug on the other.

No. 64-3050

Motorola to Volkswagen Adaptor

This shielded adaptor converts a standard size Motorola plug to the Volkswagen/Audi antenna jack. It has Volkswagen/Audi antenna plug on one end and a standard Motorola antenna jack on the other.

No. 64-3045

Nissan to Motorola Adaptor

Converts the plug on antenna cable in newer Nissan vehicles to standard size Motorola plug for connection to a radio having a standard Motorola jack.

No. 64-3030

Ground Loop Isolator

The Philmore ground loop isolator is a low level filter which isolates the ground between amplifier and radio. It eliminates the ground path which can cause alternator whine and ignition pop. The 64-4005 is equipped with two RCA Females for interconnection with cable adaptor / components. The all metal case will give additional shielding and create better isolation between the head unit and amplifier.

No. 64-4005

High / Low Impedance Adaptor

Effectively balances the low impedance of your car radio / stereo to adapt to the higher impedance of your high powered car amplifier. Protects your car radio by loading the output while balancing to your amplifier's input. For low powered car radio .5 watts per channel.

No. 64-4015

Noise Eliminator & Fixed Output Reducer

The 64-4020 converts car stereo speaker output to preamp level for input to separate amplifier. It is used to add an amplifier to a stereo with 9 - 15 watts of power per channel--up to 30 total watts. This product will adapt any stereo, even those with floating or bridged output, to Pre-Amp level for input to amplifier or equalizer / booster-amplifiers with RCA connector inputs. It also isolates stereo output and ground for noise elimination. No. 64-4020 is metal shielded to prevent radiated noise interference. Stereo output reduction ratio is 10:1. The 2 RCA plugs are 24 Karat Gold plated.

* Use with stereo having 9 -15 watts of power per channel.

No. 64-4020

Signal Noise Eliminator & Adjustable Output Reducer

The 64-4010 converts car stereo speaker outputs to Pre-Amp level for input to a separate amplifier. It is used to add an amplifier to a stereo with 2 to 40 watts of power per channel. The 64-4010 output channels are independently adjustable from zero output to 1200mv or higher. This product will adapt any stereo, even those with floating or bridged output, to preamp level for input to an amplifier or equalizer / booster-amplifier with RCA connector inputs. The 2 RCA jacks are 24 Karat Gold plated. The line output converter also isolates stereo output and ground for noise elimination; PLUS it is fader compatible.

* Use with stereo having a maximum of 40 watts of power per channel.

No. 64-4010

12V Relay

This relay is equipped with a removable mounting tab and can be used with Philmore power relay socket. Part No. 64-1217 12VDC - 30 / 40A, SPDT.

No. 64-1240

Relay Socket & Harness

Heavy duty relay socket with 17" Leads, is intended for use with Philmore No. 64-1240 12V relay, SPDT.

No. 64-1217

Top Mount Battery Terminal

This Battery Terminal is made of Solid Brass and is plated with pure 24 Karat Gold for Maximum Power and Corrosion Free Connection. Tighten wing-nut onto connector for snug fit.

No. 64-2000

Post Extender for GM Battery Side Post

Allows easy hookup of accessories that require uninterrupted power from the battery, such as car alarms, cellular phones, etc. The post extender can be used on either positive or negative terminal.

No. 64-2005

Antenna Adaptors

Antenna Extension Cord
Motorola Type Plug to Motorola Type Jack

These antenna lead extension cords have a Male connector on one end and a Female on the other. It is 100% shielded with braided Copper and has abrasion resistant insulation. Standard size Motorola Connectors.

No. 64-3008 - 8 Ft.
No. 64-3012 - 12 Ft.

Chrysler Antenna Adaptor

This 7-inch shielded adaptor cable with snap-lock, converts a Chrysler Vehicle Antenna, 2002-up, to an Aftermarket Radio.

No. 64-3015

GM to Motorola Adaptor

Converts the Mini-GM Plug on Antenna Cable in Newer GM Vehicles to Standard Size Motorola Plug for Connection to a Radio having a Standard Motorola Jack. Six inches. If necessary, the Right-Angle Plug may be straightened.

No. 64-3020

Motorola to GM Adaptor

Converts a Standard Size Motorola Plug to the Mini GM Size. Connects a Motorola equipped Antenna to a GM Radio Equipped with a Mini Jack. Six inches. If necessary, the Right-Angle Plug may be straightened.

No. 64-3025

Ford to Motorola Adaptor

Converts an antenna plug found in 1995 or newer Ford vehicles into a standard size Motorola plug for connection to a radio having a standard Motorola jack. Six inches.

No. 64-3035

Motorola to Ford Adaptor

Connects a standard size Motorola antenna cable plug to a radio equipped with a jack in 1995 and newer Ford vehicles. Six inches.

No. 64-3040

153

DC TO AC POWER INVERTERS

Provides house current power in your automobile or camper.

A POWER INVERTER can provide 115-117 VAC power while on the road, camping or anywhere else that you have access to an automobile battery. The inverter will convert the 12-14 volt battery power, electronically, to 115-117 VAC house current. Philmore inverters produce a modified sine wave, which is close to a duplication of actual house power from your electric company. Inverters are available in various sizes. The smallest inverter in this series is plenty big enough to operate the "wall wart" power supply to keep your notebook, cell phone chargers, etc. up to a full charge and the inverter can run for a long time without depleting a good battery (your engine will recharge the battery when you drive). Other small equipment, such as radios and black & white TV's, may be used (check the wattage rating of your equipment to be sure).

How to choose an inverter. Pick the inverter model that is rated at least 30% higher than the appliance that you intend to operate. The inverters are rated by their absolute "peak" output and the continuous operating voltage is about 25% less (details below). Motors, such as in drills, grinders, etc. will require about twice the power as they are inductive loads and draw huge power at start up. Philmore inverters do produce a modified sine wave so they should work with most frequency-sensitive appliances and motors.

---

100 Watt Power Inverter

For use powering a small light, B&W TV, radio or the power supply ("wall wart") for your laptop and cell phone to keep their batteries topped off. The unit has one AC socket; connects to your car battery simply by plugging into the automobile's cigarette lighter or accessory power socket.

Part no. MWDAP100...............100 watt peak power Inverter.

Continuous power rating (4 hours): 80 watts
Peak (5 min.) power: 100 watts   Surge maximum: 150 watts

(Clamshell Packaging)

---

300 Watt Power Inverter

The 300 watt unit may be operated by connection to your automobile's cigarette lighter socket. It is advisable to use a direct connection to the battery (attach in seconds) for larger loads. An additional cable with battery clips is included. The unit has two AC sockets.

Big enough for TV's, lighting, small sound systems and other small appliances.

Part no. MWDAP300...............300 watt peak power Inverter.

Continuous power rating (4 hours): 230 watts
Peak (5 min.) power: 300 watts   Surge maximum: 500 watts.

(Clamshell Packaging)

---

700 Watt Power Inverter

This is our largest inverter, and will operate many large appliances including larger color TV's. It is capable of running more than one small appliance at once, including some lighting. As the current needed is larger, your automotive engine should run at idle during use; or, you may want to have two or three batteries in parallel to provide power. Connection directly to your battery via the included power cable and battery clips is required (power is too great to use the cigarette lighter jack).

The unit includes Automatic Protection Circuitry which includes overheating automatic shut down as well as low battery voltage shut down to prevent deeply discharging your battery.

Part no. MWDAP700.............700 watt peak power inverter

Continuous power rating (4 hours): 500 watts
Peak (5 min.) power: 700 watts   Surge maximum: 950 watts

Ceramic Fuses
(Fast Blow)

Part No.	Current	Approval
8410	10A	
8415	15A	c (UL) us
8420	20A	
8425	25A	
8430	30A	N / A
Display Package of 2 Pcs.		

Electrical Characteristic			
Rated Current	100%	135%	200%
In	Min.	Max.	Max.
10A - 30A	4 h	3600 S	120 S

Part No.	Current	Approval
8310	10A	N / A
8315	15A	
8320	20A	
8325	25A	N / A
8330	30A	
Display Package of 2 Pcs.		

Dimensions: 1/4" x 1-1/4" (6.35 x 32mm)
Voltage Rating: 125V / 250V
Specifications: Standard UL 248-1
CSA-C22.2 248

Dimensions: .20" x .79" (5.2 x 20mm)
Voltage Rating: 125V / 250V
Specifications: Standard UL 248-1
CSA-C22.2 248

Mini Blade Type Fuses

These mini blade type fuses are suitable for automotive or wherever mini blade type fuses are specified. They are perfect for car stereo, marine or automotive use. The plastic housing for each rating is color - coded for easy amperage identification.

Display Package of 5 Pcs.

Part No.	Current	Color
64-6002	2A	Grey
64-6003	3A	Purple
64-6004	4A	Pink
64-6005	5A	Tan
64-6007	7.5A	Brown
64-6010	10A	Red
64-6015	15A	Blue
64-6020	20A	Yellow
64-6025	25A	Clear
64-6030	30A	Green

BLADE TYPE TERMINAL FUSES

Voltage Rating - 32V
Suitable for American cars. Display package of (5) pcs.

Current (amps)
No. PAP3   3   Purple
No. PAP5   5   Tan
No. PAP75   7.5   Brown
No. PAP10   10   Red
No. PAP15   15   Blue
No. PAP20   20   Yellow
No. PAP25   25   Clear
No. PAP30   30   Green
EMERGENCY KIT
Contains 1 each of value fuse in display package.
No. PAP8

MAXI Fuses

These **Buss™** fuses are suitable for use wherever Maxi Blade type fuses are specified. They are perfect for car stereo, Marine or General Automotive use.

Part Number	Amperage	Color
MAX20A	20A	Yellow
MAX30A	30A	Green
MAX40A	40A	Orange
MAX50A	50A	Red
MAX60A	60A	Blue
MAX80A	80A	Clear

Buss is a registered trademark of Cooper/Bussman Industries

Gold AGU / 5 AG TYPE FUSES

For HI-FI, Auto high Current Fuses, Custom Installation.

13/32" D x 1-1/2" L. (32V) 15A, 20A, 25A, 30A, 35A, 40A, 50A & 60A.
Display Package of 2 Pcs.

	Current	Voltages
No. 8615	15A	32V
No. 8620	20A	32V
No. 8625	25A	32V
No. 8630	30A	32V
No. 8635	35A	32V
No. 8640	40A	32V
No. 8650	50A	32V
No. 8660	60A	32V

SLO-BLO

Dimensions:
1/4" x 1-1/4"
Voltage Rating:
250V AC
Test Conditions:
Grade A U.L. Listed up to 7.0 amps.
Display Package of (2) pcs.

	Current
No. SB1	1A
No. SB2	2A
No. SB3	3A
No. SB5	5A
No. SB7-1/2	7-1/2A
No. SB10	10A

AGC (3AG) FUSES

Dimensions - 1/4" x 1-1/4"
Voltage Rating - 250V AC
Test Conditions - Grade A U.L. Listed up to 7.0 amps.
Display packaged of (5) pcs.

Part No.	Current (Amps)
No. 3AG1/4	1/4
No. 3AG1/2	1/2
No. 3AG3/4	3/4
No. 3AG1	1
No. 3AG1-1/2	1-1/2
No. 3AG2	2
No. 3AG3	3
No. 3AG4	4
No. 3AG5	5
No. 3AG7-1/2	7-1/2
No. 3AG10	10
No. 3AG15	15
No. 3AG20	20
No. 3AG25	25
No. 3AG30	30

High Power ANL Fuses with Gold Contacts

These High Power fuses are suitable for use wherever ANL fuses are specified. All contacts are Gold plated.

Part No.	Current	Part No.	Current
64-6060	60A	64-6200	200A
64-6100	100A	64-6250	250A
64-6150	150A	64-6300	300A

Display Package of 1 Pc.

EUROPEAN FUSES GMA TYPE

Dimensions - 5mm O.D. x 20mm length.
Replacement fuse for foreign equipment. Display package of 5 pcs. Voltage Rating: 250V AC

	Current		Current
No. EF1005	.5A		
No. EF1010	1.0A	**No. EF1050**	5.0A
No. EF1015	1.5A	**No. EF1060**	6.0A
No. EF1020	2.0A	**No. EF1080**	8.0A
No. EF1025	2.5A	**No. EF1100**	10.0A
No. EF1030	3.0A	**No. EF1150**	15.0A
No. EF1040	4.0A		

SFE SERIES AUTO FUSES

	Current	Size
No. SFE4A	4A	1/4" x 5/8"
No. SFE6A	6A	1/4" x 3/4"
No. SFE75A	7-1/2A	1/4" x 7/8"
No. SFE9A	9A	1/4" x 7/8"
No. SFE14A	14A	1/4" x 1-1/16"
No. SFE20A	20A	1/4" x 1-1/4"
No. SFE30A	30A	1/4" x 1-7/16"

Voltage Rating - 32V
Display package of (5) pcs.

FUSE HOLDERS

FUSE HOLDERS

**Fuse Block
for 5.0 x 20mm Fuses**
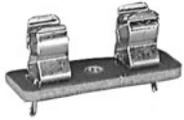
Specifications:
Electrical: Rated for currents, up to 6.3A
Clip/terminals: Nickel-plated tin-plated
spring Brass ear type
Base: Phenolic laminate or glass fiber
No. FH501

**Fuse Block
for 5.0 x 20mm Fuses**

Specifications:
Electrical: Rated for currents, up to 6.3A
Clip/terminals: Nickel-plated tin-plated
spring Brass ear type
Base: Phenolic laminate or glass fiber
No. FH503

**Fuse Block
for 3AG Fuses**

Specifications:
Electrical: Rated for currents, up to 10A
Clip/terminals: Nickel-plated tin-plated
spring Brass ear type
Base: Phenolic laminate or glass fiber
No. FH551

**Fuse Block
for 3AG Fuses**

Specifications:
Electrical: Rated for currents, up to 10A
Clip/terminals: Nickel-plated tin-plated
spring Brass ear type
Base: Phenolic laminate or glass fiber
No. FH554

Automotive Trailer Harnesses

Specifications
Connectors: .156" Bullet plugs & sockets
Wire: 16 AWG Automotive Primary wire
Body Material: Molded Vinyl

These molded trailer harnesses are manufactured with a loop of 16AWG primary wire between the mating ends. We offer the most popular sizes for your custom installation needs.

No. **65-1602**
2 position flat, 12" loop
(Brn, Red)

No. **65-1603**
3 position flat, 12" loop
(Grn, Yel, Brn)

No. **65-1604**
4 position flat, 12" loop
(Grn, Yel, Brn, Wht)

AGU Heavy Duty
In-line Fuse Holder

Heavy Duty Spring loaded Fuse holder for AGU or AG Glass fuses. It has machine brass contacts in a bakelite housing with a 12" loop of 8 AWG wire.

No. **FH8600**

ATC Style In-line
Fuse Holder

This is a heavy duty fuse holder to be used with ATC, ATO, and ATG blade type fuses. The wire is 10 AWG automotive primary wire in a 12" loop.

No. **FH1040**

Maxi Style In-line
Fuse Holder

A heavy duty in-line fuse designed for the MAXI style fuses. It is constructed from 8 AWG automotive power cable, and has a screw hole for easy mounting. The fuse holder is rated for up to 80A.

No. **FHMAXI**

ANL High Power Fuse Block

24 Karat Gold Plated, Solid Brass ANL Fuse Block comes complete with sturdy Plastic Base, crystal clear Plastic Cover, and two hold-down nuts. Holds one High Power ANL Fuse. (Fuse not included). Accepts 1/0, 2 & 4 gauge power cable.
No. 64-1006

CLEAR AGU FUSE HOLDER

Each Clear Fuse Holder from Philmore accepts one AGU fuse from 20 amps to 120 amps. This unique Fuse Holder is made for 4-8 or 10 Gauge power cable. It has 24 Karat Gold Plated contacts.

No. 64-1009

FUSE PULLER and INSERTION TOOL

Durable plastic tool for removal of all 5mm and 1/4" diameter glass fuses. 2nd end allows user to remove and insert blade type fuses.

No. P100

156

VIDEO WALL PLATES & ACCESSORIES

TV/FM WALL PLATE
for 75 ohm Coaxial Cable

Designed for 75 ohm antenna and/or cable systems. These wall plates may be used flush or without box. An F-81 coupler is mounted in the plate. Mounting brackets and hardware are included.

No. TV41 (Ivory)
No. TV41V (White)
No. TV41S (Brown)

With mounting Screws Only:

No. TV41N (Ivory)
No. TV41VN (White)
No. TV41SN (Brown)
No. 75-3418 (Light Almond)
No. 75-3420 (Almond)
No. 75-3422 (Black)
No. 42-741 (Stainless Steel)
INSTALLER PACKS
BOX OF 10 Wall Plates
No. 76-102 (IVORY)
No. 76-104 (WHITE)
No. 76-106 (LIGHT ALMOND)

MID-SIZE FLUSH MOUNT TV
WALL PLATE (with F-81)

Size: (3-1/8" x 4-7/8")

No. 42-250 - Ivory • **No. 42-252** - White

DESIGNER "F" CONNECTOR
WALL PLATE

Includes:
• Flush mount "F" Coupler • Wall Plate
• Mounting Hardware • Metal Mounting Bracket

No. TV48 (Ivory)
No. TV48V (White)
No. TV48S (Brown)

DECEP TV/FM WALL PLATE

One-piece designer look alike wall plate.

No. TV40 (Ivory)
No. TV40V (White)

Dual Wall Plate
F-81 Coupler Modular
Female Jack

Enables user to make two totally different connections: (A) 4-wire modular phone jack to accept a modular telephone plug. (B) An F-81 jack to accept "F" male connector attaching video devices with 75 ohm cable. With mounting screws.

No. TWP11 (Ivory)
No. TWP11V (White)
No. 75-3168 (Light Almond)
No. 75-3170 (Almond)
No. 75-3172 (Black)
**Mid-Size Wall Plate
(3-1/8"W x 4-7/8"L)**
No. 75-850 - (Ivory)
No. 75-852 - (White)

Black and White Fastening
Clamps for Wire and Cable
• Hardened nail can be driven into plaster, mortar or concrete block.
• U/V resistant black plastic for outdoor uses.

For RG59/U(.242"); 6 pair
Telephone and Speaker Wire (.250").

No. 2060WH - White (20 per package)
No. 2060BL - Black (20 per package)

For #12 Ground Wire, 4 Conductor
Station Wire (.140")

No. 2062 - Beige (20 per package)
No. 2062WH - White (20 per package)

For RG6/U(.275")

No. 2064WH - White (20 per package)
No. 2064BL - Black (20 per package)
For Bulk Order add suffix letter "B" to end of the part number

INSULATED
STAPLES

No. 5 size - 1/4" x 5/8". Furnished with fibre insulation. Designed for securing lead-in, ground and other wires for installation.
Packed 100 to a box, 1000 to a master carton.

No. 2059 - Package of 1000
No. 2059-100 - Package of 100

FEED-THRU BUSHINGS

Protect and secure cable through brick, concrete or wood walls. Gives your installation a professional look.

No. 3059B WH - RG59/U Cable-White (Bulk Only)
No. 3059B BL - RG59/U Cable-Black (Bulk Only)
No. 3059 - RG59/U Cable - 4 per package
(2 Black and 2 White)
No. 3006B WH - RG6/U Cable - White (Bulk Only)
No. 3006B BL - RG6/U Cable - Black (Bulk Only)
No. 3006 - RG6/U Cable - 4 per package
(2 Black and 2 White)

WALL PLATE with SPLITTER

Philmore standard White and Ivory wall plates with 2-way right angle splitter assembled for convenient installation.

No. 42-320 - Ivory

No. 42-322 - White

DUAL "F" TYPE WALL PLATE

No. TV45
(Ivory)
No. TV45V
(White)
No. 75-3428
(Light Almond)
No. 75-3430
(Almond)
• Two "F" connectors **No. 42-745**
• Includes mounting (Stainless Steel)
screws

INSTALLER PACKS
BOX OF 10 Wall Plates
No. 76-108 (Ivory)
No. 76-110 (White)
No. 76-112 (Light Almond)

BLANK TV/FM WALL PLATE

Ivory colored wall plate accepts "F-81" receptacle in non-slip hexagonal hole. With mounting hardware.

SINGLE
No. TV42
(Ivory)
No. TV42B
bulk, (Ivory)
No. TV42V
(White)
No. TV42VB
bulk, (White)
INSTALLER PACKS
BOX OF 10 Wall Plates
No. 76-114
(single Ivory)
No. 76-116
(single White)

DUAL
No. 75-4510
(Ivory)
No. 75-4510B
bulk, (Ivory)
No. 75-4512
(White)
No. 75-4512B
bulk, (White)

157

MATV - CATV - SPLITTERS

MULTI-COAXIAL INDOOR/OUTDOOR HYBRID SPLITTERS
CHANNELS 2-83 VHF/UHF/FM and ANY VIDEO RECORDER

All Philmore hybrid splitters are now housed in hemetic zinc die-cast cases for both indoor and outdoor use. Display packed. For bulk-packed splitters, please add suffix letter "B" to part number.

Specifications:

Freq. Range:	5-900
Impedance Input:	75 ohm
Impedance Output:	75 ohm
Insertion Loss:	UHF 4 dB- VHF 3.5 dB
Return Loss:	UHF 15 dB - VHF 20 dB
Isolation:	UHF 25 dB - VHF 30 dB

Miniature 2-Way Hybrid
No. CS12

3-Way Hybrid
No. CS14
INSTALLER PACKS
No. 76-182 - BOX OF 10

2-Way Splitter
for wall plate mounting
No. 42-132 - 5-900 MHz
No. 8110H - 5-1000 MHz (1GHz)

4-Way Hybrid
No. CS15
No. CS15G Gold Plated
INSTALLER PACKS
No. 76-184 - BOX OF 10

2-Way Hybrid with Grounding Block
No. CS13
No. CS13G Gold Plated

2-Way Splitter
Economy 3 Pack of No. CS13,
No. CS13-3
INSTALLER PACKS
No. 76-180 - BOX OF 10

6-Way Splitter
No. 42-136

8-Way Splitter
No. 42-138

ATTENUATER

• Available in 3, 6, 10, 12, 17, 20 and 23 db values
• Nickel plated "F" Male to "F" Female
• DC-1000 MHz Pass
   No. 42-103 - 3 db
   No. 42-106 - 6 db
   No. 42-110 - 10 db
   No. 42-112 - 12 db
   No. 42-117 - 17 db
   No. 42-120 - 20 db
   No. 42-123 - 23 db

DROP TAPS

Zinc die-cast housing, AC and DC isolated ports, straight through-line conductor. 75 ohms impedance, 20 db return loss. Bulk packed only.

Single Output Taps

No. CS16B - Tap isolation 12dB (Insertion loss 1dB)
No. CS17B - Tap isolation 17dB (Insertion loss 0.8dB)
No. CS18B - Tap isolation 23dB (Insertion loss 0.5dB)

Two Output Taps

No. CS19B - Tap isolation 12dB (Insertion loss 2.2dB)
No. CS20B - Tap isolation 17dB (Insertion loss 1.2dB)
No. CS21B - Tap isolation 23dB (Insertion loss 0.6dB)

Four Output Taps

No. CS22B - Tap isolation 12dB (Insertion loss 3.5dB)
No. CS23B - Tap isolation 17dB (Insertion loss 3dB)
No. CS24B - Tap isolation 23dB (Insertion loss 1dB)

Satellite Multiswitches

These switches are designed to provide composite Video signals from two (2) LNB (low noise amplifier/converters) to multiple receivers. They feature (2) LNB inputs + a TV input (either Antenna or Cable) and either four (4) or eight (8) Receiver Outputs. The composite video signal is mixed with the Satellite signal and distributed through a single coax cable. These voltage controlled switches may be used in individual reception systems or SMATV System Star Distribution Networks. The LNB is powered by 14-18 VDC from Satellite Receiver supplied via the coax cable.

Specifications:
   Inputs: (2) LNB 950-2050 MHz + (1) TV 47-860 MHz
   Connectors: female "F" connectors
   Case is Zinc Die Cast, Nickel-Plated
   Isolation ≥ 20 dB

No. 4684B 3 inputs X 4 outputs
Insertion loss=14 dB ± 2 dB (TV) 2 dB ± 3dB (Sat.)

No. 4688 3 inputs X 8 outputs w/external power jack*
Insertion loss=6 dB (Sat.), 18dB (TV) ± 3db

*Power supply 18V @300mA optional extra

MATV - CATV & SATELLITE ACCESSORIES

HIGH "Q" 1 GHz
CATV SPLITTERS

No. 8110PL
2-Way Splitter

• Zinc Diecast, Nickel Plated housing for corrosion resistance
• Tongue and groove backplate design provides over 120dB RFI shielding
• PCB design for best performance. 5MHz - 1 GHz
• All "F" Ports with protective weather cap

No. 8002PL
3-Way Splitter

No. 8113PL
4-Way Splitter

Model & Part No.	Frequency Range (MHz)	Insertion Loss (dB)	Isolation (dB)	Return Loss Input (dB)	Return Loss Output (dB)
2-Way Splitter No. 8110PL	5 - 40	3.5	24	23	21
	41 - 400	3.4	28	24	24
	401 - 600	3.5	25	23	26
	601 - 750	3.7	25	25	26
	751 - 1000	3.7	24	24	25
3-Way Splitter No. 8002PL	5 - 40	5.6	27	21	18
	41 - 400	5.4	27	23	23
	401 - 600	5.8	29	23	23
	601 - 750	6.5	29	23	25
	751 - 1000	6.5	28	22	24
4-Way Splitter No. 8113PL	5 - 40	6.9	22	20	13
	41 - 400	6.5	28	21	24
	401 - 600	6.9	28	26	25
	601 - 750	7.8	28	26	25
	751 - 1000	7.8	24	21	24

No. 8114PV
6-Way Splitter

No. 8120PV
8-Way Splitter

1 GHz TV/FM ISOLATOR

No. CS200
5-1000 MHz TV/FM Isolator

Pass Band (MHz)	5 - 80	88 - 108	120 - 1000
TV: Insertion Loss (dB)	< 2.0	>18	< 2.0
Return Loss (dB)	> 11	-	> 11
FM: Insertion Loss (dB)	> 18	< 2.5	> 18
Return Loss (dB)	-	11	-
RFI: 5 - 470 MHz	RFI > 75 dB		
470 - 1000 MHz	RFI > 65 dB		
DC Block	2,150 V		

SATELLITE Amplifier

• 900-2000 MHz
• Zinc Die-Cast Housing
• Completely Sealed
• Machined Threaded "F" Connectors with Weather Cap
• Minimum 20 dB Gain

No. CS9220
900-2000 MHz Line Amplifier

Part No.	Frequency Range (MHz)	Gain (dB)	Gain Flatness (dB)	Gain Sloping (dB)	Noise Figure (dB)	In/Out VSWR (ohms)	DC Power (V)
CS9220	900-2000	20-24	+/-1	4	7.0	2.5	+15 to +20

SATELLITE Combiner/Splitter (Diplexer)

• 5-2000 MHz
• Completely Sealed Housing
• Built-in 2 Grounding Block

Philmore No. CS101UV allows local UHF/VHF and satellite TV signals to be sent along the same cable. Avoids extra cabling. Also can be used as a signal splitter (separate UHF/VHF Signal and Satellite Signal) when connected in reverse.

Frequency Range (MHz)	VSWR	Pass Insertion Band Loss	Out-Of-Band Rejection
10-76	1.7	1.0dB	
76-222	1.7	1.0dB	20dB (Min)
470-770	1.8	1.2dB	
900-1200	1.8	1.5dB	
1250-1450	2.0	2.0dB	
1500-1750	2.0	2.0dB	20dB (Min)
1800-1950	2.0	2.5dB	
2000-2050	2.0	3.0dB	

No. CS101UV
Combiner/Splitter

159

SATELLITE ACCESSORIES

HIGH FREQUENCY SATELLITE SPLITTER: (900-2050MHZ)

• Die-cast housing   • Low thru Loss   • "F" type connector

No. 6126
2-Way Splitter
(Power Passive to one port)

No. 6122
4-Way Splitter
(Power Passive to one port)

No. 6121
4-Way Splitter
(Power Passive to all ports)

No. 6125
2-Way Splitter
(Power Passive to all ports)

HIGH "Q" SATELLITE SPLITTERS - 2GHz
(Silver Series)

• Completely Sealed Housing   • 5-2050 MHz Frequency Range   • Power Passive to All Ports
• Built-in Two Grounding Block   • Precision Machined Threaded "F" Connectors on All Ports with Weather Cap

No. CS202
2-Way Splitter

No. CS203
3-Way Splitter

No. CS204
4-Way Splitter

No. CS206
6-Way Splitter

No. CS208
8-Way Splitter

HIGH "Q" SATELLITE SPLITTERS - 3GHz
(Platinum Series)

· Nickel plated Zinc die-cast housing for corrosion protection.
· 5 - 3000 MHz frequency range, power passive to all ports,
· Built - in two grounding block.
· High precision machined threads, "F" connectors on all ports.

No. CS202NE
2 - Way Splitter

No. CS203NE
3 - Way Splitter

No. CS204NE
4 - Way Splitter

RG59/U VIDEO JUMPER CABLES

"F" to "F" PUSH-ON

No. CAF30	3 ft.	White
No. CBF30	3 ft.	Black
No. CBFG30	3 ft.	Black (G)
No. CAF60	6 ft.	White
No. CBF60	6 ft.	Black
No. CBFG60	6 ft.	Black (G)
No. CAF90	12 ft.	White
No. CBFG90	12 ft.	Black (G)

"F" to "F" PUSH-ON Right Angle

No. CBF40	3 ft.	Black
No. CBF70	6 ft.	Black
No. CBF80	25 ft.	Black (G)

RCA to RCA PHONO

No. CAF33	3 ft.	White
No. CBF33	3 ft.	Black
No. CBFG33	3 ft.	Black (G)
No. CAF25	6 ft.	White
No. CBF25	6 ft.	Black
No. CBFG25	6 ft.	Black (G)
No. CAF50	12 ft.	White
No. CBF55	25 ft.	Black
No. CBFG55	25 ft.	Black (G)

"F" to RCA PHONO

No. CAF20	6 ft.	White
No. CAF21	12 ft.	White

All cable assemblies listed below consist of RG59/U 75 ohm low-loss coaxial cable carefully terminated with the connectors indicated. Cable assemblies with gold plated connectors have been identified by the letter (G). All connectors are molded on. All are supplied individually packaged for display rack sales. All cables may be ordered bulk packaged by adding suffix letter "B" to the part number.

"F" to "F" SCREW-ON

No. CBF15	6 inch.	Black
No. CBF1	1 ft.	Black
No. CBF2	2 ft.	Black
No. CAF3	3 ft.	White
No. CBF3	3 ft.	Black
No. CBFG3	3 ft.	Black (G)
No. CAF6	6 ft.	White
No. CBF6	6 ft.	Black
No. CBFG6	6 ft.	Black (G)
No. CAF10	12 ft.	White
No. CBF10	12 ft.	Black
No. CBFG10	12 ft.	Black (G)
No. CAF18	25 ft.	White
No. CBF18	25 ft.	Black
No. CBFG18	25 ft.	Black (G)
No. CAF12	50 ft.	White
No. CAFG12	50 ft.	White (G)
No. CBF12	50 ft.	Black
No. CBFG12	50 ft.	Black (G)
No. CAF75	75 ft.	White
No. CBF75	75 ft.	Black
No. CAF100	100 ft.	White
No. CAFG100	100 ft.	White (G)
No. CBF100	100 ft.	Black
No. CBFG100	100 ft.	Black (G)

(G) = Gold Plated Connectors
NOTE: See price list for those cables available in bulk. Add (B) suffix.

RG6/U Video Jumper Cable
UL/CSA RG6/U with molded "F" Type Connecter on both ends.

No. RG603	- 3 ft.	Black
No. RG603W	- 3 ft.	White
No. RG606	- 6 ft.	Black
No. RG606W	- 6 ft.	White

RG6/U 18AWG 1800 MHz E124763 (UL)

UL/CSA RG6/U with Weatherproof "F" Connectors

Direct burial grade. Compatible with Mini Dish Satellite Systems.
18 AWG, 1800 MHz

No. RG612	- 12 ft.	Black
No. RG612W	- 12 ft.	White
No. RG625	- 25 ft.	Black
No. RG625W	- 25 ft.	White
No. RG650	- 50 ft.	Black
No. RG650W	- 50 ft.	White
No. RG675	- 75 ft.	Black
No. RG675W	- 75 ft.	White
No. RG6100	- 100 ft.	Black
No. RG6100W	- 100 ft.	White

RG6/U CONSTRUCTION SPECIFICATIONS			
Center Conductor	Material		Copper Wire
	Construct	No./mm	1 x 1.06
	O.D.	mm	1.05
Insulation	Material		PE Form
	Thick	mm	1.725 ← 0.05
	O.D.	mm	4.5 ← 0.1
	Color		White
Foil	Material		Foil with Gel
Braid Shield	Material		The Copper Wire
	Construct	No./mm	0.16/4/16
PVC Jacket	Material		PVC UL/CSA
	O.D.	mm	6.8 ← 0.15
	Color		Black

75 ohm RG59/U COMPUTER GRADE COAXIAL CABLE ASSEMBLIES

High quality molded-on connectors with strain relief add physical reliability and assured contact to the low-loss quality of RG59/U coaxial cable. Individually packaged for display rack sales. For bulk pack, please add suffix letter "B" to the part number.

No. CA902	3 ft.	BNC to BNC Connectors
No. CA903	6 ft.	BNC to BNC Connectors
No. CA904	12 ft.	BNC to BNC Connectors
No. CA925	25 ft.	BNC to BNC Connectors
No. CA950	50 ft.	BNC to BNC Connectors
No. CA957	100 ft.	BNC to BNC Connectors
No. CA918	1.5 ft.	RCA to RCA Connectors
No. CA905	3 ft.	RCA to RCA Connectors
No. CA906	6 ft.	RCA to RCA Connectors
No. CA907	12 ft.	RCA to RCA Connectors
No. CBF55	25 ft.	RCA to RCA Connectors
No. CA915	50 ft.	RCA to RCA Connectors
No. CA917	100 ft.	RCA to RCA Connectors
No. CA908	3 ft.	RCA to BNC Connectors
No. CA909	6 ft.	RCA to BNC Connectors
No. CA910	12 ft.	RCA to BNC Connectors
No. CA911	25 ft.	RCA to BNC Connectors
No. CA912	50 ft.	RCA to BNC Connectors

RG8X SUPER CABLES - 50 ohm

UHF Male to Male cables for connecting R.F. equipment. A series using low-loss RG8X coaxial cable that will handle more power, more efficiently than most coaxial cables but without the bulky, hard to bend weight of RG-8 etc.

For long life under normal Ham-shack type use, the UHF male connectors are molded and very strong. The entire series is black in color. "Super" cables will be your best choice for hooking up the linear, SWR and power meters and switches in your shack. May be used for computers too, wherever fifty ohm cable and UHF connectors are required.

No. CA702 - RG8X UHF male to male 1.5 ft.
No. CA706 - RG8X UHF male to male 3 ft.
No. CA712 - RG8X UHF male to male 6 ft.
No. CA716 - RG8X UHF male to male 12 ft.
No. CA720 - RG8X UHF male to male 18 ft.

161

VIDEO CABLES & MATCHING TRANSFORMERS

QUAD-COMPRESSION, QUAD SHIELDED RG6 CABLES WITH WEATHERPROOF COMPRESSION 'F" CONNECTORS

There is no better RG6 video cable. The series is quad-shielded (100% shielding several times) and the center conductors are pure 18 gauge copper. We do NOT use steel for the center as it is less conductive at lower frequencies, less reliable for composite video applications and much less flexible than pure copper. This series may be used with all RF (television) as well as composite video and even with audio using F to RCA or F to BNC adaptors.

The compression "F" connectors are fully weatherproof; and these assemblies are very durable and reliable. The outer jacket is CMX and CL1 UL rated. The compression connector is our FC346B, the original and only completely reliable design that we have seen.

All of the following cables are black in color, male to male quad-shielded with "F" male compression connectors on both ends. All cables may be ordered bulk packaged by adding suffix letter "B" to the part number.

Part No.	Description
No. 45-601	- Male to Male, Quad RG6 cable, 1' length
No. 45-603	- Male to Male, Quad RG6 cable, 3' length
No. 45-606	- Male to Male, Quad RG6 cable, 6' length
No. 45-612	- Male to Male, Quad RG6 cable, 12' length
No. 45-625	- Male to Male, Quad RG6 cable, 25' length
No. 45-650	- Male to Male, Quad RG6 cable, 50' length
No. 45-675	- Male to Male, Quad RG6 cable, 75' length
No. 45-685	- Male to Male, Quad RG6 cable, 100' length

CCTV Power/Video Cable

Closed Circuit TV combination VIDEO & POWER in one cable assembly. Philmore CCTV video cables are true 75 ohm cable* with an additional universal power cable. The video cable is terminated in BNC males; may be used with Philmore No. 957 (BNC female to RCA male adaptor) if your system has RCA connectors. The power cable section is terminated in male and female (universally used 2.1 x 5.5mm) DC coaxial connector. These are very flexible cables, and are exceptional in delivering low loss signals over even the very longest cable runs.

*Most of our competition uses simple audio cable in place of true 75 ohm coaxial video cable, which always results in at least some degradation in picture quality. Our video cable is 100% Aluminum foil shield plus Copper braid. Center conductor is pure copper.

Part No.	Description
No. 42-2025	- CCTV Power/Video cable 25 ft.
No. 42-2035	- CCTV Power/Video cable 35 ft.
No. 42-2050	- CCTV Power/Video cable 50 ft.
No. 42-2075	- CCTV Power/Video cable 75 ft.
No. 42-2100	- CCTV Power/Video cable 100 ft.
No. 42-2150	- CCTV Power/Video cable 150 ft.

COAXIAL IN-LINE CONNECTOR

This in-line device allows user to splice coaxial cable to repair breaks or extend length of cable. For all coax cables up to O.D. of RG6/U cable.

No. CCS1

BALUNS, MATCHING TRANSFORMERS
No. 75-300 OHM UHF/VHF/FM BALUN
Superior three-capacitor design for effective blocking.

No. MT73 Packaged
No. MT73B Bulk
No. MT73-4 -Economy 4 pack of No. MT73 75-300 ohm Matching Transformer

OUTDOOR MATCHING TRANSFORMER
300-75 OHM UHF/VHF BALUN
Hermetically sealed, molded PVC case assures complete resistance to all weather conditions. Superior three-capacitor design for effective blocking.

Supplied with protective plastic removable boot.

No. MT74 Packaged
No. MT74B Bulk

WEATHER BOOT
Weather resistant black rubber boot. For RG59/U and RG6/U cable

No. MTB Bulk Only

PUSH-ON BALUN MATCHING TRANSFORMER
Matches 75 ohm Input to 300 ohm Lead-In

No. MT80 Individually Packed
No. MT80B Bulk
No. MT80G -Gold Plated

75-300 MATCHING TRANSFORMER
for "Mini Televisions"
Special Plug permits hook-up of external antenna. Inserts into "ext. ant" jack on back of set. With 300 ohm terminals to attach to flat lead or for 75 ohm cable hook-up.

No. MT82

CCTV POWER / VIDEO HOOK UP CABLE

BNC Male and 2.1 x 5.5mm DC coaxial male connector on both ends with short 18" cables. Use Philmore 42-2118 between wall plate and camera for a quick connect or disconnect installation. Works with Philmore Video & DC power wall plates No. 75-1009, 75-606 and 75-703.

No. 42-2118

A/B SWITCH BOX

The ultimate design in a video selector- For Styling and Performance. Select perfect viewing from TV or VCR with this RF slide switch. Mount conveniently anywhere with durable, two-sided tape (supplied). 100% shielding assures removal of external inter-ference. High isolation of 90db over the entire TV band. **Impedance:** 75 ohm.

No. AB8

COAXIAL SWITCHES

2-Way Coaxial Push Button Switch No. AB6

3-Way Coaxial Push Button Switch No. AB7

SELECTS 75 OHM VIDEO DEVICES FOR VIEWING ON TV SET. ELIMINATES INTERFERENCE BETWEEN SIG-NALS BECAUSE OF A HIGH ISOLATION OF 950-890mHz.

NO BLEEDING - NO STATION INTERFERENCE - NO PICTURE LOSS

A coaxial switch offers the user numerous other capabilities, such as; switching between directional antennas; cable and outside TV antenna; computer inputs; etc.
A zinc diecast inner case gives this switch complete internal protection. Fully shielded with low conductivity gaskets. Supplied with double sided tape and connecting screws for ease of mounting.

COAXIAL GAME SWITCH

This convenient coaxial switch allows the user to quickly change from stan-dard TV programming to other video devices such as VCR, Videodisc and games. Switch operates in the 54-890 MHZ range. Return loss 20db, isolation 60db.
Size is 2" x 2-3/4" x 1"

No. CS2

Input:	2 x 75 ohms
Output:	75 ohms
Insertion	
Loss:	0.2 db

VIDEO DUBBING CABLE ASSEMBLY

Gold Plated Connectors,
for mono recording
No. VCK43T - 3 ft.
No. VCK4T - 6 ft.
No. VCK412T - 12 ft.
No. VCK420T - 20 ft.

Heavy duty paired cables, coaxial video and fully shielded audio. Terminated with molded RCA phono plugs, gold plated with built-in strain relief for reliable long term use.

Video Dubbing Cable Assembly

for stereo recording
MALE TO MALE
No. VCK81T - 1.5 ft.
No. VCK83T - 3 ft.
No. VCK84T - 4.5 ft.
No. VCK8T - 6 ft.
No. VCK812T - 12 ft.
No. VCK820T - 20 ft.
No. VCK825T - 25 ft.
No. VCK850T - 50 ft.
No. VCK875T - 75 ft.
No. VCK810T - 100 ft.

MALE TO FEMALE
No. 45-3603 - 3 ft.
No. 45-3606 - 6 ft.
No. 45-3612 - 12 ft.

Security Camera Adaptors:

DC Power Adaptor cables use a video dubbing cable, such as LKG'S VCK series on page 68, to make an extension cable for CCD Video Cameras. These unique 6" adaptor cables allow you to use one of the audio cables with RCA male connectors to extend the DC power to the camera. Converts RCA male plugs to 2.1x 5.5mm DC power con-nectors.

No. 42-210 RCA Jack-2.1mm x 5.5mm DC Plug Adaptor.
No. 42-257 RCA Jack-2.1mm x 5.5mm DC Jack Adaptor.

No. 42-467 ADAPTOR KIT
Kit contains the following adaptors:
(1) No. 42-210 RCA Jack-2.1mm x 5.5mm DC Plug Adaptor.
(1) No. 42-257 RCA Jack-2.1mm x 5.5mm DC Jack Adaptor.
(2) No. SA13 (RCA Female Coupler)

RG58/U Cable Assemblies
No. CA898 - 6 ft. BNC Male to UHF Male
No. CA890 - 3 ft. UHF Male to UHF Male
No. CA892 - 6 ft. UHF Male to UHF Male

BNC - UHF   UHF - UHF

163

VIDEO AMPLIFIERS & SPLITTERS

BAND SEPARATORS, SPLITTERS

....perfectly designed and matched for TV and FM signals coming from the UHF-VHF-FM BANDS. Heavy duty wire and cable prevents broken connections. Non-strip piercing screws are made of plated brass for corrosion-free reliability. Add suffix letter "B" to part number for bulk pack.

No. MT77
75-300 OHM BALUN
WITH UHF/VHF/FM SPLITTER

Matches impedance between 75 ohm coaxial cable and 300 ohm TV and FM antenna inputs. It separates the three signals from the 3-way antenna into individual signals for UHF, VHF and FM. Two outputs connect to the UHF, VHF antenna terminals on rear of the TV set. Separate screw terminal connects 300 ohm twin lead to the FM receivers. For VCR's too.

No. MT78
75-300 OHM BALUN AND
UHF/VHF/FM BAND SEPARATOR

Separates incoming signals from a 75 ohm antenna downlead into UHF, VHF and FM bands. The coaxial 75 ohm cable is fitted with an "F" connector to accommodate the VHF terminal on rear of TV set or VCR. The 300 ohm output for UHF connects to the receiver with heavy, hook terminated wires.

SEPARATOR/COMBINER BALUNS

Designed expressly for TV sets with "F" coaxial jack input, these baluns will accept 75 ohm coax or 300 ohm twin lead input and combine them, feeding them to the set through a push-on "F" connector on the back of each type. These combiners may be used as separators because they can function with signal fed in either direction. Individually packaged for display rack, they may be obtained bulk packed by adding suffix letter "B" to the part number.

No. MT86
75 ohm VHF + 75 ohm UHF to 75 ohm push-on male.

No. MT87
300 ohm VHF + 300 ohm UHF to 75 ohm push-on male.

No. MT88
75 ohm VHF + 300 ohm UHF to 75 ohm push-on male.

(Back View)

300 OHM JUMPER CABLE
300 ohm cable, twin lead, with spade lug on both ends for extension lead between VCR and TV, 6ft.

No. CA280

UHF/VHF/FM HIGH GAIN DISTRIBU-
TION AMPLIFIER (with FM TRAP)

No. DA27B

Traps out strong FM interference from TV.

c UL US

SPECIFICATIONS:

Band Width:	50 to 900 Mhz.
Output Capability:	40 dbmV
Gain:	VHF-25db, UHF - 21db
Noise Figure:	4 db
FM Trap Attenuation:	-20 db (switchable) 95 - 108 MHz.
Input:	75 ohm, "F" type coax connector
Output:	75 ohm, "F" type coax connector
Power Source:	120VAC 60Hz
Dimensions:	3" x 5 7/8" x 1-5/8"

10 db VCR/TV SIGNAL AMPLIFIER
50-900MHz

Sharpens and improves picture quality by restoring signal loss that occurs in some 75 ohm connections. Standard "F" connectors; 117 volt @ 1.2 watt operation. Boosts both TV and FM radio systems.

No. DA10B

6 db VCR/TV SIGNAL AMPLIFIER
with 2 OUTPUTS 50-900MHz

Single 75 ohm input from antenna or cable system with two 75 ohm outputs. Standard "F" connectors; 117 volt @ 1.2 watt (10mA) operation.

No. DA12B

10 db VCR/TV SIGNAL AMPLIFIER
with 4 OUTPUTS 50-900MHz

Single 75 ohm input from antenna or cable system with four 75 ohm outputs. Standard "F" connectors; 117 volt @ 1.2 watt (10mA) operation.

No. DA14B

*ALL PHILMORE Signal Amplifiers cover to 900 MHz and can be used to amplify cable signal.

TV - FM ANTENNAS

ULTRA MODERN ALL - CHANNEL VHF/UHF/FM ANTENNA

New stream lined design of this antenna provides low profile, pleasing appearance. The unit has 12 position tuning circuit to maximize signal strength.

No. 46-600

UHF LOOP ANTENNA

Ideal replacement for use on most TV's... Color or black and white. Provides excellent reception for all local UHF channels. Universal mounting bracket with swivel adjustment for back-of-set mounting.
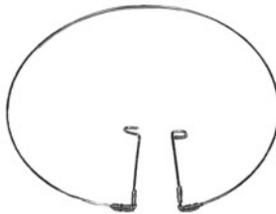
No.46-200

VHF ANTENNA

Attractive top-of-set antenna. 4-section, telescoping dipoles extend a full 38". Extra high impact polystyrene base with felt padded bottom. Complete with lead wire and terminals.

No. 32300

PANASONIC TYPE ANTENNA

Replacement antenna for: Panasonic, RCA, Quasar and others

No. 46-500

• Five section • Approximately 39" extended

"T" SHAPED DIPOLE ANTENNA

The flexibility of this folded dipole antenna enables it to be placed anywhere in back of the TV or FM set-even if hooked up out of sight, the signal comes in strong and sharp. The 300-ohm twin lead has measurements of 6-1/2 feet. The ends of each lead are secured with plastic tabs for easy mounting, while bottom of section has two spade lugs for attachment to TV or FM set.

No. 5031TV

No. 5031TVB - Bulk packed

DIPOLE ANTENNA with MOTOROLA TYPE PLUG

The 300-Ohm twin leads has measurements of 6 feet. The ends of each lead are secured with plastic tabs for easy mounting, same design as our No. 5031TV but with Motorola type plug for connection instead of two spade lugs.

No. 5035

UHF BOW-TIE ANTENNA

For color or black and white, this unique universal snap-on type antenna is for UHF channels 14-83. Snap on to VHF antenna rod. With lead wire and terminals.

No. 46-202

AUTOMATIC ROTOR

Heavy-Duty antenna rotor for all TV antenna applications.The automatic antenna control indicates the position of the antenna.

• **Power Requirements:** 115VAC, 60 Hz., .5 Amp
• **Rotation:** 360º in 78 seconds
• **Mast Diameter:** 1-1/8" - 1-3/4"
• **Motor Voltage:** 18VAC
• **Zinc Die-cast weatherproof motor housing**

No. AR-303

VHF/UHF/FM ANTENNA

This VHF/UHF/FM antenna is great for use with mini dish systems to pick up local stations, as a replacement for a built-in antenna or to improve FM reception

No. 46-320

Features
Output: 75ohm
VHF/FM Ant: 5 sections 36" Rod
VHF Ant: 6" Loop

165

ANTENNA HARDWARE

WALL MOUNT

Made of heavy gauge steel. Supplied with 2 brackets and mounting hardware. For masts up to 1-1/2" diameter. Wall clearance of 3-3/4".
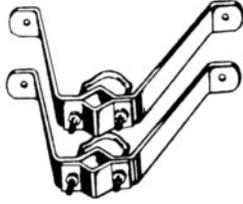
No. 15-9023

CHIMNEY MOUNT

fits masts up to 1-1/2" diameter complete with heavy duty strap clamps, 18 ft. stainless steel strapping and necessary hardware.
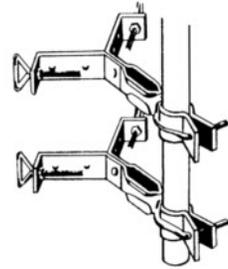
No. 15-1218

UNIVERSAL INSULATOR (STANDOFF)
Woodscrew Type

No. 15-853 - 3-1/2" Long (4 Per Package)
No. 15-854 - 5-1/2" Long (4 Per Package)

MASONRY DRIVE-IN STANDOFFS
Universal Insulator - Hardened steel with 3" nail. Double welded construction.

No. 15-820 - (2 Per Package)

MAST STANDOFFS
Universal Insulator - Snap Type for 1-1/4" Masts

No. 15-822 - (2 Per Package)

STRAP-ON STANDOFFS
Universal Insulator 10" Straps
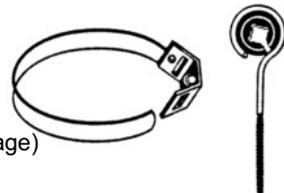
No. 15-823 - 10" Straps (2 Per Package)

3 1/2" Stand off

ANTENNA GUY WIRE

50 ft. - 6 Strand - 20 Gauge wire. Heavy Galvanized Steel. Rustproof.

No. 15-620

ALUMINUM GROUND WIRE, for TV ANTENNA SYSTEMS

No. 15-625 - 9 gauge (1/8" Dia.) 50 ft. Coil Solid Aluminum Ground Wire

ROTOR WIRE

3 Conductor
UL Listed

No. 15-127 - 50 ft.
No. 15-128 - 75 ft.
No. 15-129 - 100 ft.

PURE COPPER ANTENNA WIRE

No. 15-630 - 14 gauge 50 Ft. Copper Antenna Wire
No. 15-635 - 14 gauge 100 Ft. Copper Antenna Wire

2-WAY GUY WIRE MAST CLAMP
Two screw eyes for attaching guy wire to masts up to 1-1/2" diameter.

No. 15-827 - (1 Per Package)

CABLE CLAMPS
Guy wire clamps to hold wires securely. Galvanized Steel - 1/8" wire size.
No. 15-850 - (4 Per Package)

GUY RING and CLAMP
For 1-1/4" Diameter Masts
No. 15-835

LAG SCREWS
Steel slotted hex washer head lag screw. (1/4" x 2") For installation of TV antenna mounts and brackets.
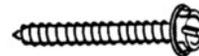
No. 15-833 - (4 Per Package)

SCREW HOOK
Steel - Zinc Plated
1/4" x 3-3/4" - 1" I.D.

No. 15-825 - (3 Per Package)

MAST CLAMP ASSEMBLY
U Bolt Assembly. Serrated edges to prevent twisting.
No. 15-826 - (1 Per Package)

TURNBUCKLES
Galvanized steel for installing guy wires.
Closed 4" - Open 5-5/8"
No. 15-829 - (2 Per Package)

VIDEO MAINTENANCE ACCESSORIES

LCD and PLASMA SCREEN CLEANER

A non-flammable cleaner for the TV and Computer Monitor Screens. The cleaner is safe on non-glare screens and provides streak-free cleaning. Use with a lint-free cloth and never use ordinary window cleaners on your modern video screens. For safety sake, turn power off and be careful not to spray toward face and eyes. Non-aerosol, 6 oz. pump spray.

No. 50-8730 LCD and PLASMA SCREEN CLEANER

VHS TAPE REWINDER

- Saves time and wear on VCR's
- Automatic shut-off system when tape is rewound
- Automatic start when lid is closed
- Indicator light during rewinding
- One touch operation

No. UV520

VIDEO TAPE REPAIR KIT

Easy to use kit to repair VHS or BETA tapes. Includes both leader tapes, splicing jig, cutting blade. adhesive tape and instructions. Also use for editing.

No. CB8 - Complete Kit

VCR HEAD CLEANER

Safely cleans video and audio recording heads. Foam-tipped swabs provided to apply cleaning fluid. For use on all types of video and audio recording heads. Contains 2 oz. bottle of special cleaning solution and assortment of swabs. Use to prevent flutter, distortion, head wear, tape damage etc. Instructions included.

No. CB460 - Complete Kit
No. CB402 - 2 oz. Fluid only

FOAM CLEANING SWABS

By keeping heads clean on recorders, the equipment will operate longer. These swabs are not cotton but soft foam, making them lintless, as well as reusable. 6" long with 20 to blister card.
No. SC20
No. SC20B - Package of 100 Swabs

ULTRA-CHEM Swabs

No. **50-150**
Double Tipped 6" (100 pk)

- -

No. **50-288**
Chamois 3/8" X 3 1/2" (25 pk)

VHS WET-TAPE VIDEO HEAD CLEANER

Place cleaning solution on tape per instructions, run VCR 10 seconds on "PLAY" and video heads, rollers etc. are safely cleaned providing a sharper picture...plus saving wear and tear on unit. Do not rewind.

No. CB2 - Economy VHS Video Cleaner

ALL-PURPOSE DUST CLEANER with 4 SLIP-ON ADAPTOR TOOLS blows away dust particles from: VCR's, Computers & Cameras

No. BL6

With a push button, blow away dust, oxide particles and simple dirt from hard to reach areas without damage to delicate equipment. Merely attach the appropriate adaptor from the tools furnished and Blow Master cleans VCR heads, computer keyboards, terminals, disk drives, camera optics and dozens of other delicate devices where normal cleaning is required. Includes a brush attachment where blown air is not enough. Uses 2 "AA" batteries (not included).

167

CIRCUIT BREAKERS

PUSH BUTTON CIRCUIT BREAKER

B7000 Series PUSH BUTTON THERMAL CIRCUIT BREAKER

"B7000" Series breakers are UL 1077 recognized as Supplementary protectors, File E99607, and CSA Certified as appliance Components protectors, File LR62590.

B7000 Series are single pole, thermal circuit breakers that feature a recessed reset button which cannot be manually pulled out to disconnect the circuit. When an overload occurs and the breaker opens, it allows the reset button to "pop out" for visible trip indication.
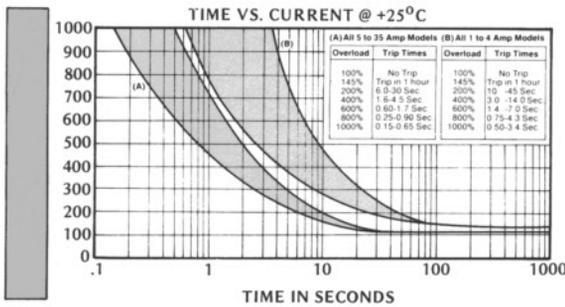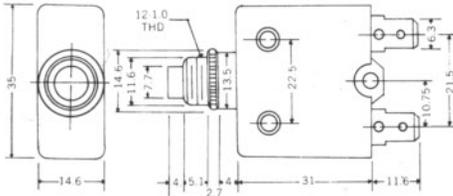
Specifications:
* **Input Power:** 125 VAC / 250 VAC / 50 VDC.
* **Dielectric Strength:** 1500 VAC / 1 minute.
* **Interrupt Capacity:** 125 VAC x 1000 A,
  250 VAC x 2000 A.
* **Insulation Resistance:** > 100 M
* **Calibration:** 25 C-100% of rated current-continuously carried.
  25 C-between 101% to 145%-may trip or not.
  25 C-150% of rated current- trip within 1 hour.
  25 C-200% of rated current-trip within 1 minute.
* **Contact Endurance:** 125 VAC x 150% of rated current - 500 cycles

TIME VS. CURRENT @ +25°C

	All 5 to 35 Amp Models		All 1 to 4 Amp Models	
	Overload	No Trip Trip Times	Overload	No Trip Trip Times
	100%	No Trip	100%	No Trip
	145%	Trip in 1 hour	145%	Trip in 1 hour
	200%	6.0-30 Sec	200%	10 -45 Sec
	400%	1.6-4.5 Sec	400%	3.0 -14.0 Sec
	600%	0.60-1.7 Sec	600%	1.4 -7.0 Sec
	800%	0.25-0.90 Sec	800%	0.75-4.3 Sec
	1000%	0.15-0.65 Sec	1000%	0.50-3.4 Sec

TIME IN SECONDS

Endurance: 1,000 times at least
Calibration: Breaker will continuously carry 100% of rated load. It may trip between 101% and 144% of rated load, but must trip at 145% at 25° C.
Dielectric Strength: Over 1,500 volts RMS.
Max. Operating Voltages: 50VDC, 250VAC
Interrupt Capacity: 2,000 Amps, at 50 VDC(1-30 amp Models)
1,000 Amps, at 250VAC (1-30 amp Models)

Approvals

* **UL** c **UL** Approval: 3 -30 A 125/250 VAC

* **CSA** Approval: 5A, 10A, 15A, 20A125 VAC

Part No.	Amps.	Maximum Resistance in ohms	Trip time@ 200% of Rating
B7003	3	.18	10-45 Seconds
B7004	4	0.10	10-45 Seconds
B7005	5	.026	10-45 Seconds
B7006	6	0.15	10-45 Seconds
B7007	7	.020	10-45 Seconds
B7008	8	.020	10-45 Seconds
B7010	10	.014	6 to 30 Seconds
B7012	12	.010	6 to 30 Seconds
B7015	15	.010	6 to 30 Seconds
B7020	20	.006	6 to 30 Seconds
B7025	25	0.005	6 to 30 Seconds
B7030	30	.004	6 to 30 Seconds
B7035	35	.004	6 to 30 Seconds
B7040	40	.004	6 to 30 Seconds
B7045	45	.002	6 to 30 Seconds
B7050	50	.002	6 to 30 Seconds
B7060	60*	0.002	Within 60 Seconds
B7070	70*	0.0015	Within 60 Seconds
B7080	80*	0.0015	Within 60 Seconds
B7090	90*	0.001	Within 60 Seconds

Derating Factor	
TEMP	50A - 100A
60°C	x 0.50 ohm
55°C	x 0.55 ohm
50°C	x 0.60 ohm
45°C	x 0.65 ohm
40°C	x 0.72 ohm
35°C	x 0.80 ohm
30°C	x 0.85 ohm
25°C	x 1.00 ohm
20°C	x 1.10 ohm
15°C	x 1.15 ohm
10°C	x 1.25 ohm
(For Reference Only)	

No. B7000 - Clear plastic boot for Philmore No. B7000 - Series Push Button circuit breaker. Protects reset button from dust and moisture.

(3A - 50A)
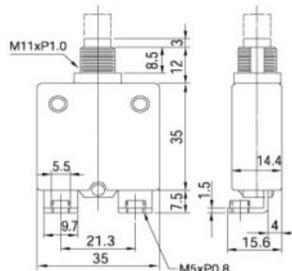
Screw Terminals
* = (60A - 90A)

CIRCUIT BREAKERS & SWITCH ACCESSORIES

MINIATURE PUSH BUTTON CIRCUIT BREAKER

Approvals

* **ℛⓊ** c **ℛⓊ** Approval: 3 -15 A 125/250 VAC

Specifications:
Standard Rating: 3-20 AMPERE.
Input Power: 125 VAC / 250 VAC.
Dielectric Strength: 1500 VAC / 1 Minute.
Interrupt Capacity: 125 VAC x 1000 A, 250 VAC x 1000 A.
Insulation Resistance: > 100 Meg Ohm.
Calibration: 25ºC-105ºC of rated Current-Continuously Carried.
  25ºC-Between 101% to 145%-May Trip or not.
  25ºC-150% of Rated current-Trip Within 1 Hour.
  25ºC-200% of Rated Current-Trip Within 1 Minute.
Contact Endurance: 125 VAC x 1505 of rated current-500 Cycles.
Reset: Manual push reset/auto reset.

Trip Time Curve

Over Load	3-20AMP
100%	No Trip
150%	Trip in 1 Hr.
200%	4-60 Sec.
300%	1.8-11.5 Sec.
400%	0.6-8.5 Sec.
500%	0.4-5.5 Sec.
600%	0.3-3.5 Sec.

TERMINAL

O: 6.3m/m
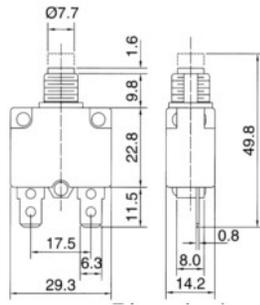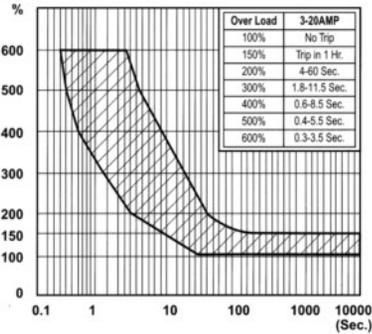
Part No.	Amps	Maximum Resistance in ohms
30-6003	3	0.120
30-6004	4	0.120
30-6005	5	0.100
30-6015	15	0.008
30-6018	18	0.007
30-6020	20	0.007

SNAP-IN CIRCUIT BREAKER

PHILMORE'S NEW SNAP-IN CIRCUIT BREAKERS END FUSE REPLACEMENT WORRIES

Easy to install. Where you use glass cartridge fuseholders, B-8000 series can replace them without panel redesign or repunching. Think about putting them out front. B-8000 series breakers can be prewired and then snapped securely into the panel from the front.

B-8000 SERIES
THERMAL CIRCUIT BREAKERS
 -FUSE HOLDER TYPE
 - SNAP-IN TO INSTALL
 -MANUALLY RESET

Interrupting Characteristics @ + 25°C
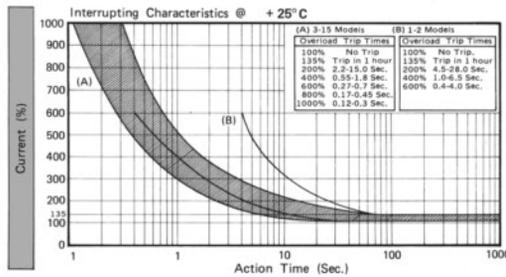
Recommended Panel Cutouts

MODEL	CURRENT A	RESISTANCE OHMS
B8003	3	.069
B8005	5	.030
B8007	7	.017
B8010	10	.011
B8015	15	.007

A. 6.35mm terminals are plated and punched for quick connect ot solder connections. Easy to wire and install.

B. Special molded clips, snaps securely into standard 15.9mm panel cutouts. No redesign or repunching.

C. Trip indicator warns of a possible circuit problem. Choice of black or white

SPECIFICATION

1. VOLTAGE : 32VDC, 250VAC
2. RESET TIME : 180 SECONDS MAX
3. ENDURANCE : 1,000 TIMES AT LEAST
4. WEIGHT : ALMOST 10g

Special Switch Accessories

No. 30-1450 - fits SP Rocker switches up to 15mm (.59") X 21mm (.82")

No. 30-1455 - fits DP Rocker switches up to 24mm (.94") X 21mm (.82")

No. 30-1600 - fits Round Rocker switches up to 23mm (.90") dia.

No. 30-1000 - fits Miniature toggle switch with 1/4-40 UNS threads bushing

No. 30-1001 - fits sub-miniature toggle switch with 10-48 UNS threads bushing

* Package of 2

No. 30-1400 - Fits Push Button Switches with 15/32" X 32 bushing, Black

Key Switch Protective Cover

This cover is designed to fit on standard key switches such as Philmore 30-10076 and 30-1190 series and others to protect them from moisture and damage.

No. 30-10079
Key Switch Cover

TOGGLE SWITCH SAFETY GUARD

Features
 Rugged Spring-loaded Design, Black Steel Base w/ Red urea Plastic Cover
 Fits ALL Metal Lever toggles w/ 15/32 X 32 Bushing
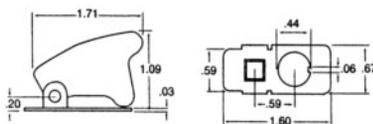
No. 30-1250 Toggle Switch Guard

TOGGLE SWITCH HARDWARE
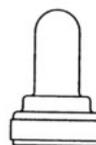
Part No. 30-1320
Rubber Boot
Thread Size: 15/32-32
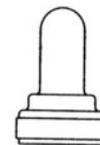
Part No. 30-1200
Rubber Boot
Thread Size: M12 x 1.0

ON
OFF
Part No. 30-2200B
ON - OFF PLATE
* Available in Bulk only.

POTENTIOMETERS

Miniature Potentiometers (16 mm)

These potentiometers are used in a lot of consumer electronics applications such as stereos, TV's, two-way radios, and many more. They are now available in solder lug type and universal terminal which may be inserted into PC boards or wrapped with wire and solders. They are available in resistance values from 1K (1000) ohms to 1 Meg (1,000,000) ohms and in both Audio and Linear tapers and with or without switches.

Specifications:
Total Resistance: 1K - 1 Meg Ohm
Resistance Tolerance: 20%
Maximum Voltage: Linear = 150V AC
　　　　　　　　 Audio = 200V AC
Power Rating: Linear = 200 mA, .2W
　　　　　　　 Audio = 100 mA, .1W
Switch Rating: 1.0 A @ 12V DC or 125V AC
Total Rotation: 300°
Rotation life: 15,000 cycles
Bushing Diameter: 7 mm
Shaft: 30mm w/ flat 12 mm

(Combo Terminal)

SHAFT SHOWN IN
FULL C.C.W. POSITION
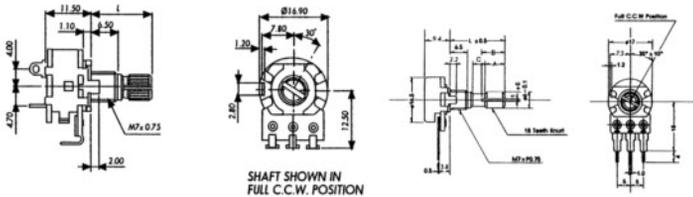
Part Number	Resistance Value	Taper	Switch	Terminal Style
PC72	1K	Linear	No	Combo
PC725	1K	Linear	Yes	Solder Lug
PC82	1K	Audio	No	Combo
PC825	1K	Audio	Yes	Solder Lug
PC73	5K	Linear	No	Combo
PC83	5K	Audio	No	Combo
PC835	5K	Audio	Yes	Solder Lug
PC74	10K	Linear	No	Combo
PC745	10K	Linear	Yes	Solder Lug
PC84	10K	Audio	No	Combo
PC845	10K	Audio	Yes	Solder Lug
PC75	50K	Linear	No	Combo
PC85	50K	Audio	No	Combo
PC855	50K	Audio	Yes	Solder Lug
PC76	100K	Linear	No	Combo
PC86	100K	Audio	No	Combo
PC865	100K	Audio	Yes	Solder Lug
PC77	500K	Linear	No	Combo
PC775	500K	Linear	Yes	Solder Lug
PC87	500K	Audio	No	Combo
PC875	500K	Audio	Yes	Solder Lug
PC78	1Meg	Linear	No	Combo
PC88	1Meg	Audio	No	Combo
PC885	1Meg	Audio	Yes	Solder Lug

Standard Potentiometers (24 mm)

These potentiometers are used in a lot of consumer electronics applications such as stereos, TV's, two-way radios, and many more. They are now available in solder lug type and universal terminal which may be inserted into PC boards or wrapped with wire and solders. They are available in resistance values from 500 ohms to 1 Meg (1,000,000) ohms and in both Audio and Linear tapers and with or without switches.

Specifications:
Total Resistance: 500 - 1 Meg Ohm
Resistance Tolerance: 20%
Maximum Voltage: Linear = 500V AC
　　　　　　　　 Audio = 250V AC
Power Rating: Linear = 500 mA, .5W
　　　　　　　 Audio = 250 mA, .25W
Switch Rating: 1.0 A @ 12V DC or 125V AC
Total Rotation: 300°
Rotation life: 15,000 cycles
Bushing Diameter: 8 mm
Shaft: 30mm w/ flat 12 mm

(Solder Lug Terminal)

SHAFT SHOWN IN
FULL C.C.W. POSITION
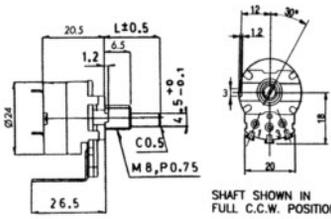
Part Number	Resistance Value	Taper	Switch	Terminal Style
PC31	500	Linear	No	Combo
PC22	1K	Linear	No	Solder Lug
PC325	1K	Audio	Yes	Combo
PC32	1K	Audio	No	Combo
PC335	5K	Audio	Yes	Combo
PC23	5K	Linear	No	Solder Lug
PC33	5K	Audio	No	Combo
PC24	10K	Linear	No	Solder Lug
PC245	10K	Linear	Yes	Combo
PC34	10K	Audio	No	Combo
PC345	10K	Audio	Yes	Combo
PC25	50K	Linear	No	Solder Lug
PC35	50K	Audio	No	Combo
PC355	50K	Audio	Yes	Combo
PC26	100K	Linear	No	Solder Lug
PC36	100K	Audio	No	Combo
PC365	100K	Audio	Yes	Combo
PC27	500K	Linear	No	Solder Lug
PC275	500K	Linear	Yes	Combo
PC37	500K	Audio	No	Combo
PC375	500K	Audio	Yes	Combo
PC28	1Meg	Linear	No	Solder Lug
PC285	1Meg	Linear	Yes	Combo
PC38	1Meg	Audio	No	Combo
PC385	1Meg	Audio	Yes	Combo

SUB-MINIATURE TRIMMER POTENTIOMETER
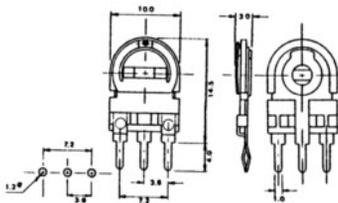
No. PC300	300 ohms
No. PC500	500 ohms
No. PC1K	1000 ohms
No. PC2K	2000 ohms
No. PC5K	5000 ohms
No. PC10K	10000 ohms
No. PC30K	30000 ohms
No. PC50K	50000 ohms
No. PC100K	100000 ohms
No. PC500K	500000 ohms

• Very small; well suited for the low profile sets
• For printed circuit board mount
• Control is linear
• Ideal for volume and tone control for compact audio products

PUSH BUTTON CANOPY SWITCH

Mounting Hole: 0.375"

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-1885	SPST	ON	-	OFF	METAL

PUSH BUTTON CANOPY SWITCHES

Mounting Hole: 0.400"

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC, 6A @ 30 VDC, 3A @ 15VDC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 60/50 Hz for 1 minute
Terminal Material:	Brass/Nickel Plate
Actuator Type:	Plastic

Part No.	Type	Action			Terminal
30-19164	SPST	ON	-	OFF	Solder
30-19886	SPST	ON	-	OFF	Wire Leads

ROTARY CANOPY SWITCH

Mounting Hole: 0.375"

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-9159	SPST	ON	-	OFF	Knurled Plastic

ROTARY CANOPY SWITCH

Mounting Hole: 0.406"

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-9161	SPST	ON	-	OFF	Knurled Plastic

171

SWITCHES APPLIANCE & SPECIALTY

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action	Actuator
30-1887	Two Circuit	3-Way (L-1, L-2, L-1&2, OFF)	Black Nylon

PUSH BUTTON CANOPY SWITCH
(Two Circuit)

Mounting Hole: 0.406"

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action	Actuator
30-9160	Two Circuit	3-Way (L-1, L-2, L-1&2, OFF)	Knurled Metal

ROTARY CANOPY SWITCH
(Two Circuit)

Mounting Hole: 0.400"

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1.5A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C^o Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-9162	SPST	ON	-	OFF	Black Plastic Knob
30-19163	SPST	ON	-	OFF	White Plastic Knob
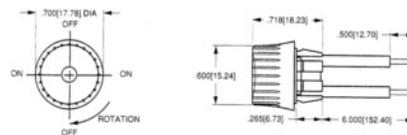
FRONT MOUNTED ROTARY SWITCHES

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - 6" 18 AWG, 105 C^o Wire
Terminal Material:	Brass - Bright Nickel Plate
Terminal Type:	Stripped & Tinned Wire Leads

Part No.	Type	Action			Actuator
30-1720	SPST	ON	-	OFF	Metal

LIGHT DUTY BALL HANDLE TOGGLE SWITCH

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	8A @ 125V AC, 4A @ 250V AC
	10A @ 125V AC, 1/3 HP @ 125V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - 6" 18 AWG, 105 C^o Wire
Terminal Material:	Brass - Bright Nickel Plate
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-350	SPST	ON	-	OFF	Metal
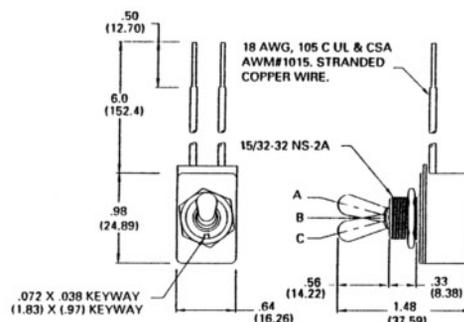
UTILITY BAT HANDLE TOGGLE SWITCH

Mounting Hole: 0.500"

PULL CHAIN SWITCH

Mounting Hole: 0.406"

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C° Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action			Actuator
30-9157	SPST	ON	-	OFF	Pull Chain

NOTE: Rope chain (No. 9157PCB) must be ordered separately.
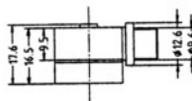
PULL CHAIN SWITCH
(Two Circuit)

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	6" 18 AWG 105 C° Wire
Terminal Type:	Stripped Wire Leads

Part No.	Type	Action	Actuator
30-9158	Two Circuit	3-Way (L-1, L-2, L-1&2, OFF)	Pull Chain

Mounting Hole: 0.406"

Pull Chain Switches
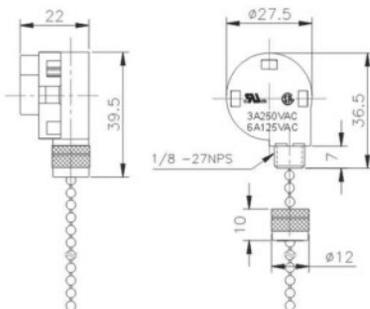
SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Type:	Push-In Slot

Part No.	Type	Action	Actuator
30-9150	Two Circuit	OFF, L-1, L-2, L-3	Pull Chain
30-9152	Two Circuit	L-1-2-3, L-2-3, L-1-3, L-1-2	Pull Chain

SURFACE MOUNT PANIC SWITCH
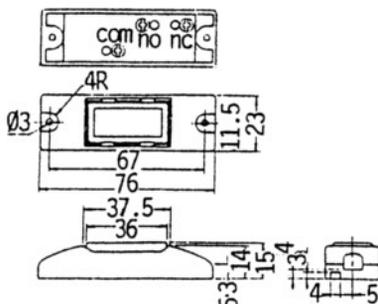
SPECIFICATIONS:

Current Rating:	2A @ 125VAC, 1A @ 250VAC
Mounting Centers:	2.625"
Mounting Hole:	.12"
Dimensions:	.90" W x 3" L x .60"H
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-17076	SPST	O.N. or N.C. Momentary	Plastic

173

SWITCHES APPLIANCE & SPECIALTY

FEED THRU CORD SWITCH

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Spring Brass
Terminal Type:	Insulation Piercing

Part No.	Type	Action			Actuator
30-10098	SPST	ON	-	OFF	Round Plastic Dial

HI-LO INLINE DIMMER SWITCH

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Spring Brass
Terminal Type:	Insulation Piercing

Part No.	Type	Action			Actuator
30-10196	SPDT	ON	ON	OFF	Round Plastic Dial

FEED THRU CORD SWITCH

SPECIFICATIONS:

Current Rating:	10A @125V AC
Dielectric Strength:	300 Volt
Terminal Material:	Brass
Terminal Type:	Screw
Wire Type:	Flat or round cords
	Flat:18/2 & 16/2, SPT-1, SPT-2, HPN
	Round: 18/2 type SVT, up to 9/32" O.D.

Part No.	Type	Action			Actuator
30-9851	SPST	ON	-	OFF	Black W/White Legend
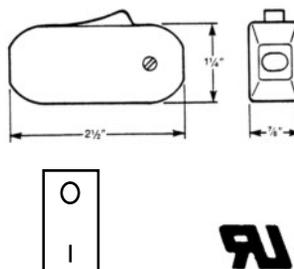
CORDED INLINE DIMMER SWITCH

SPECIFICATIONS:

Current Rating:	1.2A @ 125V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass
Terminal Material:	UL SPT-1 18AWG 2 Cond. Wire, Stripped
Terminal Type:	120V AC Plug/Stripped Ends

Part No.	Type	Action			Actuator
30-10192	SPST	ON	-	OFF	Roller Ball

(6 ft. Overall Length)

Automotive-Heavy Duty
TOGGLE SWITCH-w/boots

A heavy switch that includes four different colored boots, use one of your choice black, blue, red, or yellow. The boot protects against dust and splashes.

Electrical Rating:

SPST snap action toggle, ON-OFF, die cast metal case. Rated at 12-14 volts DC 50 amps.
Terminals: Copper with screws.
Mounting hole: 1/2" diameter.

No. 30-12244

ILLUMINATED DUCKBILL
TOGGLE SWITCHES

for automotive applications. Rated 20 amps at automotive (12-14 VDC) voltages, all but one in the series have illuminated handles which light when power is "on". These are three terminal devices, needing one connection for ground to power the LED "Glo" light in the handles. Actuators are the stylish "Duckbill" shape. All in this series are SPST, ON-OFF with .250" terminals for push-on lugs. Mounting hole size: 1/2"

No. 30-12170

Part No.	Illumination Color
30-12170	Not illuminated
30-12174	Red Glo
30-12176	Amber Glo
30-12178	Blue Glo
30-12179	Green Glo

High-Current Automotive
TOGGLE SWITCHES

High current switches for automotive use, ideal for autos with arrays of spot lights, heavy sound system equipment or radios. Switch body is die-cast metal, terminals pure copper. Available with red, black or bright chrome actuator.

Part No.	Handle Color
30-12240	Black
30-12242	Red
30-12245	Chrome

Electrical Rating:

type: SPST Toggle, ON-OFF
50 amps at 12-14 Volts DC
Contacts: silver plated.
Terminals: Copper, screw terminals
Actuator: 1 1/16" length
Mounting hole: 1/2"

LED Illuminated TOGGLE SWITCHES
STYLISH NEW LOOK with LED's in actuator handle tips.

This is a SPST, ON-OFF switch and designed for use at automotive (12-14V DC) voltages: rated at 30 amps. This is a popular new look in actuator styles. The handle (actuator) is Black and tipped with an LED; three color choices. The LED will draw only 20 mA at normal automotive voltages.
Mounting hole diameter: 1/2"
Terminals will accept 1/4" push-on solderless connectors or may be soldered.

Part No.	LED Color
30-12050	Red
30-12055	Green
30-12060	Blue

All switches in this group are
ON-OFF SPST
All rated @ 20 amps/12-14 volts DC

AUTOMOTIVE APPLICATION
ON-OFF TOGGLE SWITCHES
WITH ILLUMINATED WEDGE HANDLES

With plastic handles, heavy (20 amp) switch for various uses at automotive voltage of 12 to 14 volts. Choose from different colored handles. These are three terminal switches, connect to ground, power and your appliance. (The ground connection is needed for power to the light.)

Part No.	Color
30-12145	BLACK
30-12147	RED
30-12149	GREEN
30-12150	AMBER
30-12153	BLUE

SWITCHES AUTOMOTIVE & MARINE

Stylish Automotive TOGGLE SWITCH with LED

Brushed and tapered bat handle gives this switch a "classy" look; perfect for custom dash. LED (red) lights to indicate power is "on". The 20 amp rating is plenty for many automotive accessories.
Terminals accept standard .250" push-on terminals or may be soldered.
This is a three terminal switch with one connection for ground which is needed to light the LED.

Electrical Rating:
SPST snap action toggle.
Rated at 12-14 volts DC, 20 amps.
Terminals: .250" push-on terminals or solder.
Mounting hole: 1/2" diameter round.
Metal actuator 1 1/16" length
Construction: polycarbonate UL94-1 rating

Part No.	Circuit Type
30-12180	ON - OFF SPST

12V AUTO/MARINE

"Surf and Turf" GUARDIAN SWITCHES

The Guardian series is dust and moisture resistant, designed for use in a marine environment or dusty equipment such as construction equipment, off-road vehicles and farm equipment. This is a tough switch and designed to meet or exceed IP66 requirements. Snap-in mounting requires a rectangular cut-out

12V AUTO/MARINE

Electrical Rating:
SPST or SPDT snap action toggle
Rated: 12-14 volts DC 20 amps.
Terminals: accept .250" push-on terminals.
Mounting hole: rectangular .60 X 1.450 (+/-.004") hole in panels up to .050" thickness.
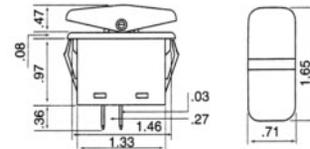
Part No.	Rocker Color	Action	no. of Terminals	Type
30-12280	Black/Black	ON-OFF	2	SPST
30-12281	Black/Red Dep.	ON-OFF	3	SPST
30-12282	Black/Black	ON-OFF-ON	3	SPDT
30-12284	Black/Black	(ON)-OFF-(ON)	3	SPDT

Note: ( ) = Momentary

Auto Alarm Style MINIATURE TOGGLE SWITCH

12V AUTO/MARINE

A switch often used by alarm installers to set/un-set alarm systems; mounting is typically under or in the dash. The alarm switch comes with an attached "pigtail" that is 24" long, red and black insulated, stranded 20 gauge wire.
Rated at 6 amps at 12-14 VDC, this ON-OFF SPST switch could easily be used for any number of appliances, as well as for arming alarms. Included is a miniature escutcheon plate with the legends ON and OFF. Mount hole: 1/4" diameter round.

No. 30-10005

MODULAR PANELS (Switch Brackets)

Modular panels, or switch mounting brackets, permit mixing of switch types and easy mounting of switches in general. Two brackets will accommodate switches that need either round or rectangular holes.

Part No.	Description
30-12575	for switches needing a 1/2" X 1" rectangular hole
30-12585	for switches needing a 1/2" dia. round hole

Big PUSH-BUTTON SWITCH (HORN SWITCH)

Surface mounting switch commonly used for fog-horn or siren. Momentary action, horn will sound only as long as button is depressed. The switch is designed for typical mobile and marine 12-14 volt DC applications.
The actuator is black plastic button, and the frame is chrome plated brass construction. Overall length is 2-5/8" by 1-1/2". Rated at 5 Amps 12-14 VDC. SPST, (ON)-OFF

Mounting Center 2 1/16"

12V AUTO/MARINE

No. 30-12465

* ( ) = Momentary

Extra Heavy Duty PUSH BUTTON (Starter) SWITCH WITH WEATHER-BOOT NUT

A heavy-duty (50 amps) push-button momentary switch that is dust and moisture resistant; rubber boot-nut is included for enhanced protection. Contacts are silver/copper for long life.

Electrical and mechanical
5/8" x 32 mounting bushing, panels up to 1/2" thickness.
SPST Momentary action, (ON)-OFF
Screw Terminals (X2)
Rated 50 amps @ 12-14 VDC
Rubber dust boot/nut included.

12V AUTO/MARINE

No. 30-12475

* ( ) = Momentary

Round Hole Automotive
ROCKER SWITCHES
Illuminated

The round hole design makes installation much easier than for most rocker switches, requiring only a 1/2" diameter hole. One of this series is non-illuminated, but the others have one extra terminal (total: 3 terminals) to connect to ground for the light. This is an attractive series; lighted switches having a "glo" that is available in four different colors. Incandescent bulb

Electrical Rating:
30 A @12-14 V DC
Mounting hole: 1/2" diameter round
SPST, ON-OFF
.250" Quick Connect Terminal

Part No.	COLOR	no. of Terminals
30-12310	not illuminated	2
30-12312	Red	3
30-12314	Amber	3
30-12316	Blue	3
30-12318	Green	3

HEAVY-DUTY 12 VOLT WINDOW SWITCH

Current Rating: 20A @ 12VDC
Initial Contact Resistance: <50Meg Ohms @12VDC
Insulation Resistance: >100Meg Ohms
Dielectric Strength (Open Contacts): >1500V for 1 minute
Contact Material: Silver Plated Brass
Terminal Material: Copper Alloy
Body Material: Nylon (UL 94V-2)
Actuator & Bezel: Nylon (UL 94V-2)
Terminal Type: .187" Quick Connect

Part No.	Type	Action	Lamp / Actuator Color
30-16579	DPDT	(On)-Off-(On)	Black Actuator

Panel Cut-out: 22mm (.87") X 30mm (1.18")   ( ) = Momentary

AUTOMOTIVE PUSH BUTTON SWITCH

Ø11
11
17.5
5/8"-32NEF
34.4
30
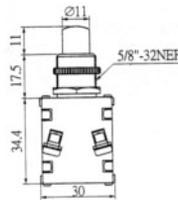
15A 12V DC

OFF   (ON)

SPECIFICATIONS:

Current Rating:	15A @ 12V DC		
Terminal Material:	Brass		
Terminal Type:	Screw		

Part No.	Type	Action		Actuator
30-19484	SPST	OFF	-	(ON)	Brass/Nickel Plate

NOTE: ( ) = Momentary

Mounting Hole: .625"

AUTOMOTIVE PUSH/PULL SWITCH

Ø25.5
20
31.7
3/8"-24UNF
43.4
30
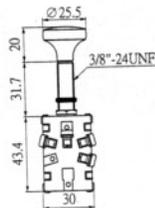
30A 12V DC

OFF   ON   ON

SPECIFICATIONS:

Current Rating:	30A @ 12V DC		
Terminal Material:	Brass		
Terminal Type:	Screw		

Part No.	Type	Action			Actuator
30-17408	SP3T	OFF	ON	ON	Brass/Nickel Plate

Mounting Hole: .375"

SWITCHES DIP AND ROTARY

DIP SWITCHES

SPECIFICATIONS:

Contact Rating:	50V DC 100mA @ Steady Situation 24V DC 25mA @ Make or Break
Initial Contact Resistance:	100mA, 30 Meg ohm @ initial 100mA, 100 Meg ohm after life test
Insulation Resistance:	500V DC 100 Meg ohm (Min.) between adjacent terminals
Dielectric Strength:	500V AC for 1 minute between adjacent terminals
Operation Life:	5,000 make-break cycles each circuit @ test speed of 72 cycles/min.
Operation Force:	500g Max.
Shock:	Withstand of 20g 11ms sawtooth waveform w/no contact opening > 10 ms (microseconds)
Vibration:	No mechanical damage or intermittent change of setting during or after test
Case & Cover Material:	UL 94V-O Polybutylene Telephtalate
Top Seal Material:	Polyester Film
Potting Material:	Epoxy
Contact Material:	Nickel, Phosphor Bronze w/Gold Plate
Terminal Material:	Nickel, Phosphor Bronze w/Gold Plate
Terminal Type:	Solder

Part No.	Position	"A" Dim. in. (mm)		Actuator
30-11001	1	.147	(3.74)	White UL 94V-O PBT
30-1002	2	.260	(6.6)	White UL 94V-O PBT
30-1003	3	.360	(9.14)	White UL 94V-O PBT
30-1004	4	.460	(11.68)	White UL 94V-O PBT
30-11040	4	.452	(11.48)	White -Side Actuated
30-1005	5	.560	(14.22)	White UL 94V-O PBT
30-1006	6	.660	(16.76)	White UL 94V-O PBT
30-1007	7	.760	(19.3)	White UL 94V-O PBT
30-1008	8	.860	(21.84)	White UL 94V-O PBT
30-11080	8	.845	(21.46)	White Side Actuated
30-11081	8	.854	(21.70)	White-Right Angle
30-1009	9	.960	(24.38)	White UL 94V-O PBT
30-1010	10	1.06	(26.92)	White UL 94V-O PBT
30-1012	12	1.26	(32)	White UL 94V-O PBT

ROTARY SWITCHES

SPECIFICATIONS:

Current Rating:	0.3A @ 125V AC
Initial Contact Resistance:	20 Meg ohm (MAX.)
Insulation Resistance:	DC500V-100 Meg ohm (Min.)
Withstand Voltage:	AC500V-1 minute
Rotation Torque:	1.0 ± 0.5 kg/om
Shaft:	38mm Length, 6.35mm O.D.
Terminal Type:	Solder

Part No.	Type	No. Pole	No. Position	Style
30-15112	Shorting	1	12	Open Frame
30-15204	Shorting	2	4	Open Frame
30-15205	Non Shorting	2	5	Open Frame
30-15206	Shorting	2	6	Open Frame
30-15303	Non Shorting	3	3	Open Frame
30-15100	Non Shorting	1	12	Enclosed Contact
30-15106	Non Shorting	1	6	Enclosed Contact
30-15203	Non Shorting	2	3	Enclosed Contact
30-15304	Non Shorting	3	4	Enclosed Contact
30-15403	Non Shorting	4	3	Enclosed Contact

Mounting Hole: .375"

Open Frame

Mounting Hole: .375"

Enclosed Contact

KEY SWITCH

HOLE FOR INSTALLATION

SPECIFICATIONS:

Current Rating:	4A @ 125V AC, 2A @ 250V AC
Initial Contact Resistance:	10 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

Part No.	Type	Key Pull	Actuator
30-10078	SPST	ON or OFF Position	Barrel Key (All keyed Alike)

KEY SWITCHES

HOLE SIZE

Unit: mm

SPECIFICATIONS:

Current Rating:	4A @ 125V AC, 2A @ 250V AC
Initial Contact Resistance:	10 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Solder

Part No.	Type	Key Pull	Actuator
30-10076	DPST	OFF Position Only	Barrel (round) Key
30-10077	DPST	ON or OFF Position	Barrel (round) Key

Note: May be used as either DPST or SPST.

PLATE TUMBLER KEY SWITCHES

**Mounting Hole: 0.75" (3/4")
Made in USA**

SPECIFICATIONS:

Current Rating:	2.5A @ 120V AC, 2.1A @ 46V DC
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	Screw
Hardware:	Cylinder Ring, Hex nut, 2 Screws, 2 Keys

| Part No.	Type	Key Pull	Actuator
30-1190	SPST	ON or OFF Position	Metal Key #HC530
30-1191	SPST	ON or OFF Position	Metal Key #HC531
30-1192	SPST	ON or OFF Position	Metal Key #HC540
30-1193	SPST	ON or OFF Position	Metal Key #HC550
30-1194	SPST	ON or OFF Position	Metal Key #HC553

KEY SWITCHES

Mounting Hole

**Mounting Hole: 0.75" (3/4)
Made in China**
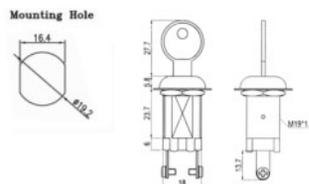
SPECIFICATIONS:

Current Rating:	3A - 125 V AC, 1.5A - 250 V AC
Contact Resistance:	50m Ohm Max.
Insulation Resistance:	DC 500V 100 M Ohm Min.
Dielectric Strength:	AC 1000V 1 Minute
Terminal Type:	Screw

Part No.	Type	Key Pull	Actuator
30-1196	SPST	On or Off Position	Flat Key A2133
30-1197	SPST	On or Off Position	Flat Key A2213

179

SWITCHES SUB-MINIATURE PUSH BUTTON, PC MOUNT

Electrical Rating:
Rating: 3 Amps with resistive load @ 120 VAC or 28 VDC
or   1 Amp with resistive load @ 250 VAC
Life expectancy: 60,000 cycles @ full load
Contact Resistance: 20 milliohms Max, initial @ 2-4 VDC
100 mA
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level
Operating Temperature: -30 to 85 degrees Celsius

Mechanical:
Case: Dially phthalate (DAP) UL94-0
Plunger: Thermo Plastic Polyester (Black)
Housing: Stainless Steel
Bushing: Brass N.P.
Contacts: Silver
Terminal: Brass, Silver plated.

Right angle, horizontal style SPST

Part No.	Circuit
30-20500	SPST, OFF- (ON)

NOTE: ( ) = Momentary
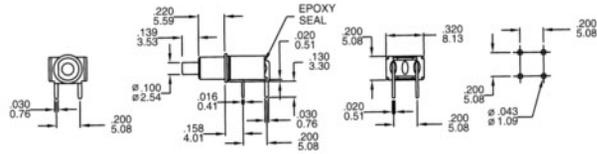
Right angle, horizontal style SPDT

Part No.	Circuit
30-20507	SPDT, ON- (ON)

NOTE: ( ) = Momentary
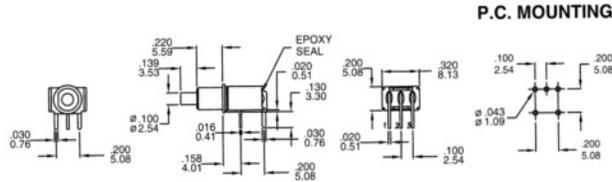
Right angle, vertical style SPST

Part No.	Circuit
30-20512	SPST, OFF-(ON)

NOTE: ( ) = Momentary
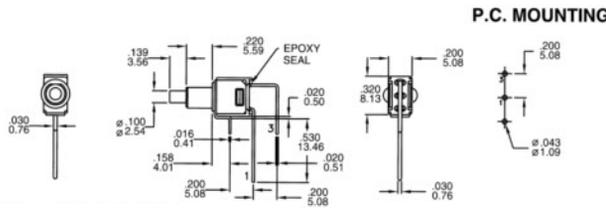
Right Angle vertical style SPDT

Part No.	Circuit
30-20516	SPDT, ON -(ON)

NOTE: ( ) = Momentary
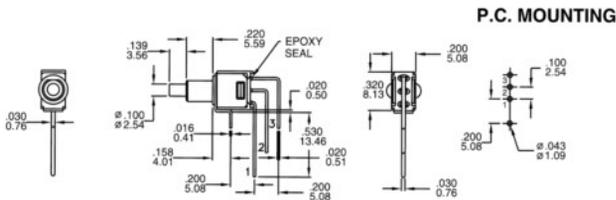
Vertical Mounting w/bracket SPST

Part No.	Circuit
30-20522	SPST, OFF- (ON)

NOTE: ( ) = Momentary

180
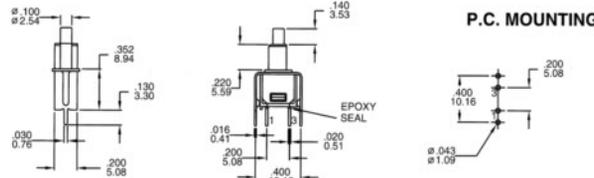
SWITCHES PUSH BUTTON

SEALED MINIATURE PUSH BUTTON SWITCHES (M-Series)

Philmore is pleased to introduce the new fully shielded M-Series miniature push button switches. The M-Series features complete IP67 protection. IP67 (Ingress protection) is the top rating classified for the level of protection that electrical appliances provide against the intrusion of solid objects (including dust & liquids). M-series switch mounts in 0.50" mounting hole in panel up to .157" thick.

ENVIRONMENTAL:

Degree of protection:	IP67
Operating Temperature:	-40° to +85° C

ELECTRICAL & GENERAL:

Max. current / voltage rating with resistive load:	
400mA 32V AC-100mA 50V DC-125mA 125VAC	
Initial Contact Resistance:	50m max
Insulation Resistance:	1G min. at 500V DC
Dielectric Strength:	1,000 V AC rms
Electrical Life at Full Load:	500,000 cycles
Panel Thickness:	.059" Min. - .157" Max.
Total Travel:	1.5mm (.59)
Operating Force:	2N - 5N
Mechanical Life:	1,000,000 cycles
Torque:	1.5Nm max. applied to nut
Soldering:	300° C max. for 3 seconds

MATERIAL:

Case:	Thermoplastic UV94-VO
Plunger:	Polyamide 6/6
Bushing / Bezel:	Polyamide 6/6
Contacts:	Silver, Gold plated
Terminal Seals:	Epoxy

Part No.	Type	Action			Actuator
30-12630	SPST	(ON)	-	OFF	Red Button
30-12632	SPST	(ON)	-	OFF	Yellow Button
30-12634	SPST	(ON)	-	OFF	Green Button
30-12636	SPST	(ON)	-	OFF	Blue Button
30-12638	SPST	(ON)	-	OFF	Black w / Red LED
30-12640	SPST	(ON)	-	OFF	Black w / Yellow LED
30-12642	SPST	(ON)	-	OFF	Black w / Green LED
30-12644	SPST	(ON)	-	OFF	Black w / Blue LED

NOTE: ( ) = MOMENTARY

LED SPECIFICATION:

Lens Appearance	Color	Electro-optical Data (AT 20mA)				Viewing Angle 20 1/2 (deg)
		Vf (V)		Iv (mcd)		
		Typ.	Max.	Min.	Typ.	
Water Clear	Super Red	2.1	2.6	42.0	100.0	35°
	Super Green	2.0	2.6	42.0	80.0	
	Super Yellow	2.1	2.6	94.0	200.0	
	Super Blue	2.8	3.2	28.0	70.0	

181
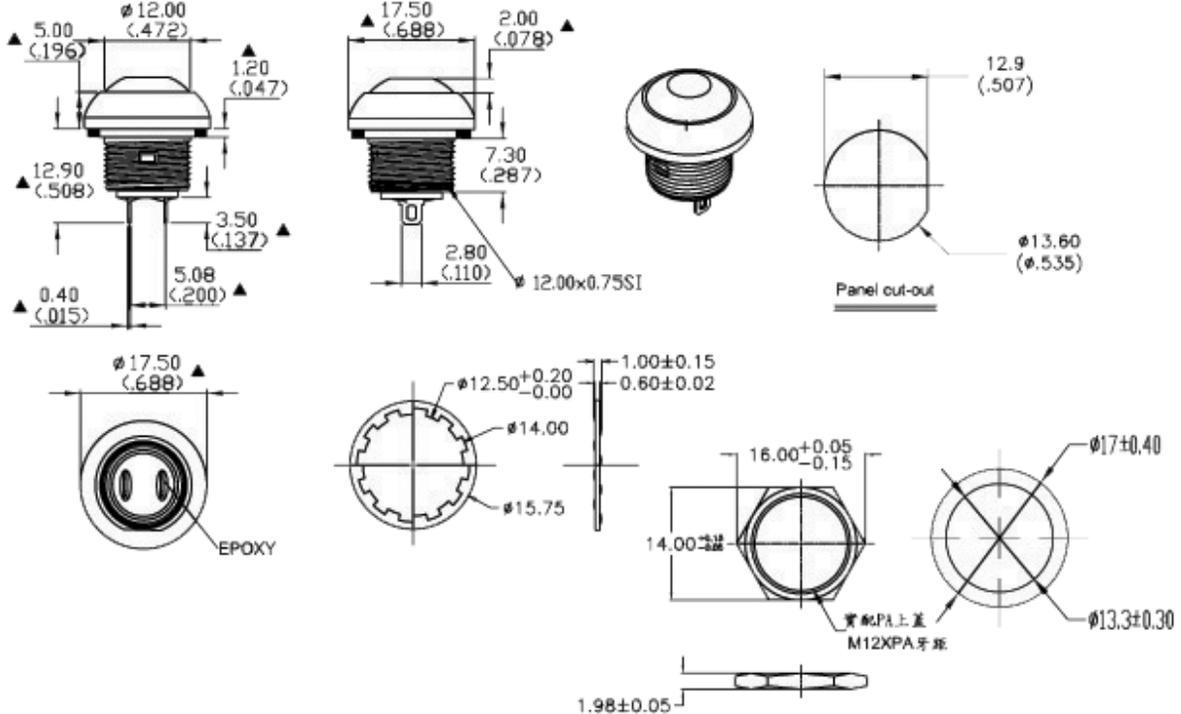
SWITCHES PUSH BUTTON

SUB-MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	1A @ 125V AC
Initial Contact Resistance:	DC 2.5V-1A, 10 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
*30-2289	SPST	OFF	-	(ON)	Red Nylon
*30-2299	SPST	(OFF)	-	ON	Black Nylon

NOTE: ( ) = Momentary

* = 2 Pieces per blister pack
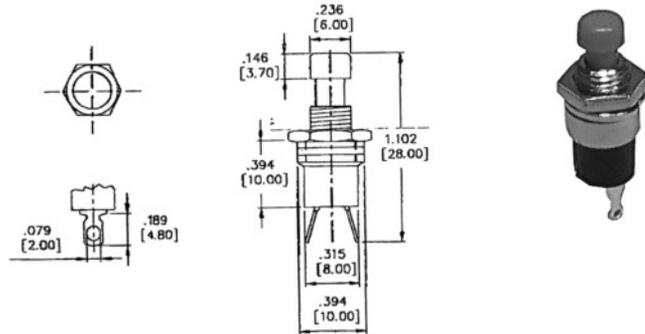
Mounting Hole: 0.265"

MINIATURE PUSH BUTTON SWITCH

SPECIFICATIONS:

Current Rating:	1/2A @ 125V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-040	SPST	OFF	-	(ON)	Black Button

NOTE: ( ) = Momentary
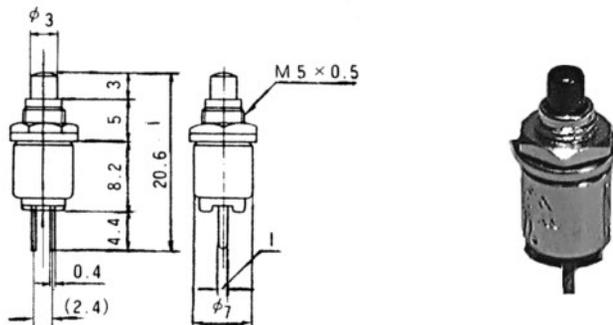
Mounting Hole: 0.250"

MINIATURE SNAP ACTION PUSH BUTTON SWITCH (SPDT)

SPECIFICATIONS:

Current Rating:	1A @ 125V AC, 38V DC
Initial Contact Resistance:	10 Meg ohm (Max.), Initial @2-4V DC
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Brass w/Gold Plate over Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-2700	SPDT	Snap Action Momentary			White Nylon
Terminal Connection		1-3	-	1-2	
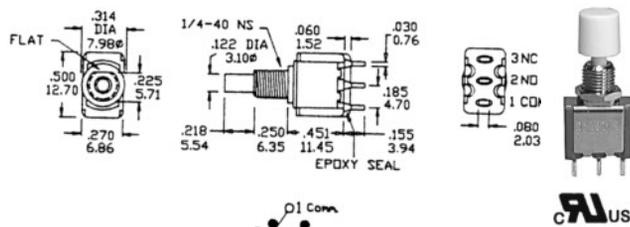
Mounting Hole: 0.250"

MINIATURE SNAP ACTION PUSH BUTTON SWITCH (DPDT)

SPECIFICATIONS:

Current Rating:	1A @ 125V AC, 38V DC
Initial Contact Resistance:	10 Meg ohm (Max.), Initial @2-4V DC
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Brass w/Gold Plate over Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-2750	DPDT	Snap Action Momentary			White Nylon
Terminal Connection		1-3, 4-6	-	1-2, 4-5	
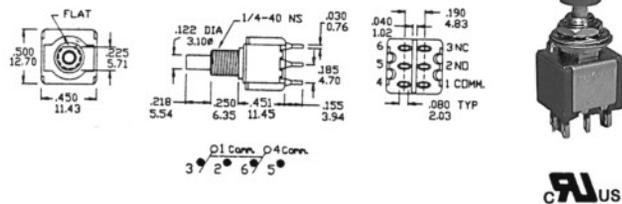
Mounting Hole: 0.250"

NOTE: Nos. 30-2700 and 30-2750 are supplied with red cap; also available black, green and yellow.

MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-111	SPST	OFF	-	(ON)	Round Black Nylon
30-112	SPST	OFF	-	(ON)	Square Black Nylon
30-113	SPST	OFF	-	(ON)	Rectangular Black Nylon
30-14114	SPST	OFF	-	(ON)	Rectangular Red Nylon

NOTE: ( ) = Momentary

Mounting Hole: 0.406"

MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action	Actuator
30-003	SPDT	Push ON / Push ON	Black Button
30-005	DPDT	Push ON / Push ON	Black Button

Mounting Hole: 0.250"

MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-006	SPST	Push ON / Push OFF			Black Button
30-008	SPDT	Push ON / Push OFF			Black Button
30-009	SPST	OFF	-	(ON)	Black Button
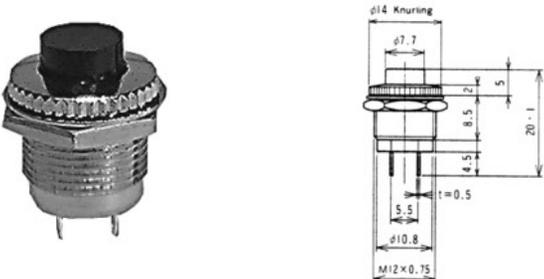
NOTE: ( ) = Momentary

Mounting Hole: 0.328"

MINIATURE PUSH BUTTON SWITCH

SPECIFICATIONS:

Current Rating:	1A @ 125V AC
Initial Contact Resistance:	20 Meg ohm (Min.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-146	SPST	OFF	-	(ON)	Black Plastic

NOTE: ( ) = Momentary

Mounting Hole: 0.50"

183

SWITCHES PUSH BUTTON

SPECIFICATIONS:

Current Rating:	1A - 125 V AC
Initial Contact Resistance:	20m Ohm (Max.)
Insulation Resistance:	DC 500V 100 M Ohm Min.
Dielectric Strength:	AC 1500V 1 Minute
Electrical Life:	30,000 Make & break cycles at full load
Terminal Type:	Solder

Part No.	Type	Key Pull	Actuator
30-148	SPDT	Normally Open (Momentary ON) Normally Closed (Momentary OFF)	Red Plastic

---
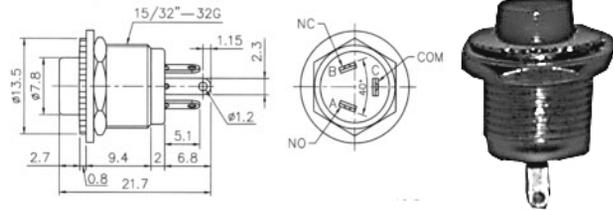
SPECIFICATIONS:

ELECTRICAL RATINGS:

12A	125-250V AC 85C	UL E45221
1/2HP	125V AC 1HP 250V AC	UL E45221
12A	125-250V AC	CSA LR10990
12 (2)A	250V AC T125	VDE 10032
6 (6)A	250V AC T105 5E4 (50K Operations)	VDE 10032
10A	28V DC	No Approvals

MATERIALS:

Body:	Nylon 6.6
Rocker (Opaque):	Nylon 6.6
Rocker (Lighted):	Polycarbonate
Contact Gap:	3mm (.118)
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-830	SPST	ON	-	OFF	Red Lens Button
30-832	SPST	ON	-	OFF	Green Lens Button
30-836	SPST	ON	-	OFF	Amber Lens Button

* NOTE: User Note: The light bulb incorporated in this switch must be connected to 12 volts AC or DC and NOT to 125 volts. The 125 volt rating applies to switch contacts, NOT to the light.

12V LIGHTED MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10068	SPST	OFF	-	(ON)	Blue Nylon
30-10070	SPST	ON	-	(OFF)	Red Nylon

NOTE: ( ) = Momentary

SQUARE SNAP-IN PUSH BUTTON SWITCHES

Mounting Hole: 0.43" x 0.50"

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10064	SPST	OFF	-	ON	Black Nylon
30-10065	SPST	OFF	-	ON	Red Nylon
30-10066	SPST	OFF	-	(ON)	Red Nylon

NOTE: ( ) = Momentary

SQUARE PUSH BUTTON SWITCHES

Mounting Hole: 0.50"

ROUND PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10060	SPST	OFF	-	ON	Black Nylon
30-10061	SPST	OFF	-	(ON)	Black Nylon
30-10062	SPST	OFF	-	(ON)	Red Nylon

NOTE: ( ) = Momentary

Mounting Hole: 0.50"

ROUND SNAP-IN PUSH BUTTON SWITCH

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Copper - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-2295	SPST	OFF	-	(ON)	Red Nylon

NOTE: ( ) = Momentary

Mounting Hole: 0.71"

MINIATURE PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 Minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-2292	SPST	Push OFF	-	Push ON	Silver Metallic
30-2293	SPST	OFF	-	(ON)	Red Nylon

NOTE: ( ) = Momentary

Mounting Hole: 0.406"

ACTION PUSH BUTTON SWITCH (MOMENTARY) & SEPARATE PUSH - BUTTON ASSEMBLY

This is a big, rugged switch assembly that was originally designed for video games and computer games, where the action is hard and frequent. The plastic button assembly is designed to accommodate any number of snap action switches; refer to the drawing of Philmore 30-2000 (in catalog) for dimensions. Switches simply snap into place in the separate assembly, or purchase a unit complete with switch. The complete assembly, including switch, is supplied with a miniature snap action MOMENTARY 10A 250VAC switch with a very light action; only 75 grams of pressure is required to activate vs, an average of more than 125 grams for most switches of this design. The switch is protected from over - pressure by the push button assembly. Available in six colors, with or without 10 amp switch.

PUSH BUTTON ASSEMBLY WITHOUT SWITCH

Catalog No.	Color
30-771	RED
30-772	WHITE
30-773	BLUE
30-774	GREEN
30-775	YELLOW
30-776	BLACK

PUSH BUTTON ASSEMBLY INCLUDES SWITCH

Catalog No.	Color
30-781	RED
30-782	WHITE
30-783	BLUE
30-784	GREEN
30-785	YELLOW
30-786	BLACK

switch life cycle 100,000 (minimum)

185

SWITCHES PUSH BUTTON

MOMENTARY PUSH BUTTON SWITCHES

.340 (8.64)
.285 (7.24)
Terminal

.54 [13.72]
.21 (5.33)
.47 (11.94)
.38 (9.65)
.88 (22.35)

.072 X .038 KEYWAY (1.83) X (.97) KEYWAY
15/32-32 NS-2A

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	6A @ 120V AC, 3A @ 240V AC
Initial Contact Resistance:	10 Meg ohm (Max.)
Insulation Resistance:	200 Meg ohm (Min.)
Dielectric Strength:	1000V AC
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-457	SPST	OFF	-	(ON)	Black Nylon
30-458*	SPST	(OFF)	-	ON	Red Nylon

NOTE: ( ) = Momentary

NOTE: Switches must be installed with a hex nut behind panel to prevent damage during installation.
*30-458 Rated 3A @ 120VAC, 1.5A @ 277VAC

HEAVY DUTY PUSH BUTTON SWITCH
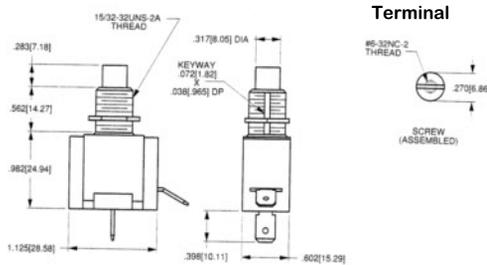
Terminal

15/32-32UNS-2A THREAD
.283[7.18]
.317[8.05] DIA
#6-32NC-2 THREAD
KEYWAY .072[1.82] .038[.965] DP
.562[14.27]
.982[24.94]
1.125[28.58]
.398[10.11]
.602[15.29]
SCREW (ASSEMBLED)
.270[6.86]

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	15A @ 125V AC, 10A @ 250VAC
Insulation Resistance:	100 Meg ohms. (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Phenolic
Bushing Material:	Brass/Nickel Plate
Terminal Type:	Screw (#6-32NC-2 Thread)

Part No.	Type	Action			Actuator
30-14455	SPST	ON	-	OFF	Brass/Nickel Plate

UTILITY AC/DC PUSH BUTTON SWITCH
(Snap-ON Snap-OFF)

.50 (12.70)
6.0 (152.4)
18 AWG, 105 C UL & CSA AWM#1015. STRANDED COPPER WIRE.
15/32-32 NS-2A
.41 (10.41)
.98 (24.89)
.41 (10.41)
.55 (13.97)
.082 x .035 KEYWAY
.64 (16.26)
1.58 (40.13)

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	8A @ 125V AC, 4A @ 250V AC
	10A @ 125V AC, 1/3 HP 125V AC
Initial Contact Resistance:	10 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	6" 18 AWG Wire Lead

Part No.	Type	Action			Actuator
30-354	SPST	ON	-	OFF	Black Plastic

NOTE: Switches must be installed with a hex nut behind panel to prevent damage during installation.

HEAVY DUTY UTILITY AC PUSH BUTTON SWITCHES

6-32 SCR. TERM
.343
1.045
.406
.415 .561
1.445
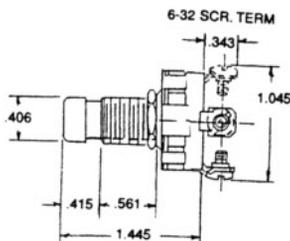
Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	15A @ 125V AC, 10A @ 250V AC
Dielectric Strength:	1000V RMS Min.
Contact Mechanism:	Slow-Make, Slow-Brak Butt Contact
Contact Material:	Copper Alloy/Silver Plate
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-1425	SPST	ON	-	OFF	Metal
30-1426	SPST	OFF	-	(ON)	Metal
30-1427	SPST	(OFF)	-	ON	Metal
30-1428	SPDT	ON	-	ON	Metal

NOTE: ( ) = Momentary

AC/DC PUSH BUTTON SWITCHES

SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 250V AC
Insulation Resistance:	100 Meg ohms. (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Phenolic
Actuator & Bushing Material:	Brass/Nickel Plate
Actuation Force:	6-8 lbs.

Part No.	Type	Action			Terminal
30-14348	SPST	ON	-	OFF	Solder
30-14349	SPST	ON	-	OFF	Screw
30-14450	SPST	OFF	-	(ON)	Solder
30-14451	SPST	(OFF)	-	ON	Solder

NOTE: ( ) = Momentary

PUSH BUTTON SWITCH CAPS (.60" O.D.)

Part No.	Type	Color	Material
30-14436	Packaged	(1) Red + (1) Black	Plastic
30-14437B	Bulk	Red	Plastic
30-14438B	Bulk	Black	Plastic

Terminal

Mounting Hole: 0.500"

NON-LIGHTED & LIGHTED LARGE ROUND PUSH BUTTON SWITCHES
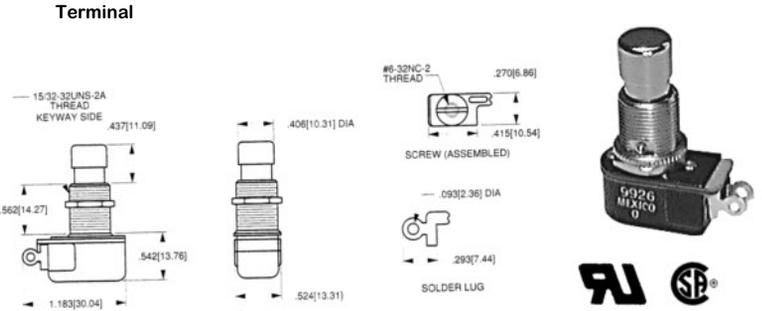
SPECIFICATIONS:

ELECTRICAL RATINGS:

16A	125-250V AC 65C	UL E45221
1/2HP	125V AC 1HP 250V	UL E45221
16A	125-250V AC	CSA LR10990
16 (4)A	250V AC T125	VDE 44397
35A	Inrush	EN61058-1

MATERIALS:

Body:	Nylon 6.6
Actuator Transparent:	Polycarbonate
Contact Gap:	3mm (.118)
Contact Material:	Silver (for additional specifications consult factory)

Part No.	Type	Action			Actuator
30-755	SPST	ON	-	OFF	Red Plastic
30-757	SPST	(ON)	-	OFF	Red Plastic
30-759	SPST	(ON)	-	OFF	Black Plastic
30-765	SPST	ON	-	OFF	Lighted Amber

* Lamp Voltage 105-130V AC Neon
NOTE: ( ) = Momentary

LIGHTED PUSH BUTTON SWITCHES

SPECIFICATIONS;

Current Rating:	8A @ 125V AC, 5A-250VAC, 6A @ 24V DC, .2A @ 250VDC
Initial Contact Resistance:	AC-1A 10 Meg ohms
Insulation Resistance:	5000 VDC 1000 Meg ohms
Insulation Voltage:	4000V, 60Hz 1 min. Between all terminals & gnd.
Contact Material:	Silver
Body Material:	Thermoplastic
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-14512	SPST	OFF	-	(ON)	Square Plastic
30-14514	SPST	OFF	-	ON	Square Plastic
30-14530	DPST	ON	-	ON	Square Plastic
30-14531	DPST	ON	-	ON	Rectangular Plastic
30-14532	SPST	OFF	-	(ON)	Rectangular Plastic

Note: ( ) = Momentary
Lamp: Midget Groove Base : 6V- 379/337, 12-14V-#386,24-28V-#334
12.5VAC - NE84 NEON
For bulk, Lenses are not included and must be ordered separately

Mounting Hole: 0.625"
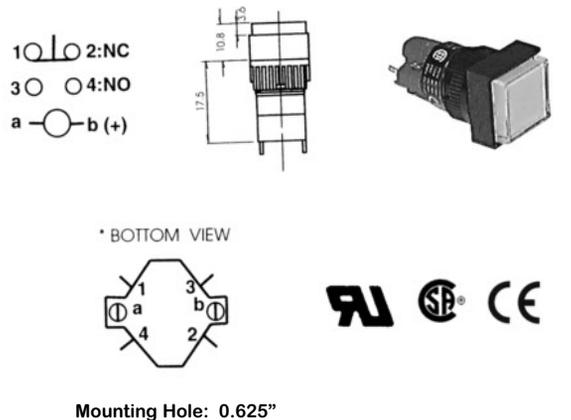
Replacement Colored Lenses for Lighted Push Button Switches

Square
.60" x .60"
No. 30-14535 Green
No. 30-14537 Red
No. 30-14538 Clear
No. 30-14539 Yellow

Rectangular
.60" x .85"
No. 30-14540 Green
No. 30-14542 Red
No. 30-14543 Clear
No. 30-14544 Yellow

187

SWITCHES PUSH BUTTON
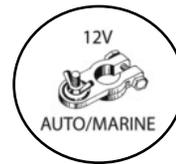
SEALED ILLUMINATED PUSH BUTTON SWITCHES

Tamper proof push button switch mounts in 16.0 mm (5/8") hole in panel up to .50" thick. Bushing & button is made from brass, nickel plated for durability. Features IP67 protection and illuminated ring around actuator. Switches can be used in both illuminated and non-illuminated application (12V DC LED).

SPECIFICATIONS:

Contact Rating:	3A @ 250V AC, 2A @ 24V DC
Electrical Life:	50.000 cycles
Contact Resistance:	50m-ohms max (initial).
Insulation Resistance:	1,000M-ohms min @ 500V DC
Dielectric Strength:	2,000V RMS 50 ~ 60Hz
Operating Temperature:	-20° ~ +70° C
Switching Circuit:	ON - ON (latching)
IP Class:	IP67 protection
Torque:	5 ~ 14Nm max. applied to nut
Operating Force:	5.5N max.

MATERIALS:

Bushing & Button:	Brass Nickel plated
Contacts:	Silver, alloy
Nut:	Nickel plated Brass
Base:	PBT.

Part No.	Type	Action			Actuator
30-12646	SPDT	(ON)	or	(OFF)	Brass w / Red LED
30-12648	SPDT	(ON)	or	(OFF)	Brass w / Green LED
30-12650	SPDT	(ON)	or	(OFF)	Brass w / Blue LED
30-12652	SPDT	Push ON	-	Push OFF	Brass w / Red LED
30-12654	SPDT	Push ON	-	Push OFF	Brass w / Green LED
30-12656	SPDT	Push ON	-	Push OFF	Brass w / Blue LED

NOTE: ( ) = Momentary

WHAT IS AN IP CODE?
An IP code refers to the different levels of protection an enclosure provides. A worldwide standard has been established by the International Electrotechnical Commission (IEC). The code contains two separate numerals, the first numeral indicates protection against access to hazardous parts and protection of equipment against ingress of solid foreign objects, including dust. The second numeral indicates protection of equipment against harmful ingress of water.

IP67: 6 = complete protection against entry of dust (rating 1 to 6)
7 = protection against temporary immersion (rating 1 to 8)

IP 67
ACCORDING TO
EN 60529:1991+A1:2001
IEC 60529:2001

RoHS compliant

Using an LED

LED wth DC (Direct Current)

An LED (light emitting diode) requires about two volts to operate and twenty milliamps of current. A current limiting resistor must be used in series with an LED to prevent current over 20 mA from flowing; otherwise, your LED will be damaged. You may simply use Ohm's law to calculate the resistor value. Here is an example: We have a circuit operating at 12 volts DC, and need to know the value of a resistor to use. The LED "wants" two volts to operate ; so subtract 2 from the 12 volts which, is of course, ten. Plug the "ten" in at "E" and divide by "I" or .020 amps. The result is 500 ohms for the resistor value
If you forget to subtract the two volts, the resistor value will be 600 and the LED will not be at maximum brightness. However, it will last much longer (about double normal life)!
Another formula you can use is R=50(V-2). The R is for resistor, the V for voltage. We like this one as it is easy to recall and do in your head.

LED with AC (Alternating Current)

When using an LED with AC, a diode must be placed in series with the LED. Because AC will only be flowing 1/2 the time, we use a variation on the easy formula shown to the left(bottom). Use R=25(V2.7), which includes the voltage drop across the diode.
So, if you have a circuit using 28 volts AC, multiply 25.3 (or 28V -2.7), times 25 equals 632 ohms. We need to use a standard value resistor, so use 680 ohms for "R".

Typical voltages used in electronics and resistor values (rounded to nearest standard resistor).

DC Volts	5V	6V	12V	24V	AC Volts	6V	12V	24V	48V	117V
Resistor (ohms)	150	180	470	1200	Resistor (ohms)	82	220	560	1200	3K

ROUND ROCKER SWITCHES

Mounting Hole: 0.812" (13/16)

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Copper - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10055	SPDT	ON	-	ON	Red Nylon
30-10056	DPST	ON	-	OFF	Red Nylon
30-10058	DPDT	ON	-	ON	Red Nylon
30-10059	SPST	ON	-	OFF	Black Nylon w/ LED

SQUARE BEZEL NUT MOUNTED ROUND ROCKER SWITCHES

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.187" Quick Connect
Mounting Hardware:	M20-P1.0

Part No.	Type	Action	Actuator
30-16200	SPST	On-Off	Bi-Color Actuator
30-16220	SPST	(On)-Off	Black Actuator
30-16260	SPST	On-(Off)	Black Actuator
30-16330	SPDT	On-(On)	Black Actuator
30-16340	SPDT	On-Off-(On)	Black Actuator
30-16210	SPDT	On-On	Black Actuator
30-16215	SPDT	On-Off-On	Black Actuator
30-16360	SPDT	(On)-Off-(On)	Black Actuator

Panel Cut-out: 20.2mm (.79")
Maximum Panel thickness 6.0 mm
( ) = Momentary

LIGHTED, SQUARE BEZEL NUT MOUNTED ROUND ROCKER SWITCHES

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.187" Quick Connect
Lamp Voltage:	AC= 110V neon, DC= LED 2V *@20ma
	(*resistor needed for other voltages)
Mounting Hardware:	M20-P 1.0

DC - LED   AC - NEON

Part No.	Type	Action	Lamp / Actuator Color
30-16402	SPST	On-Off	AC Lamp, Red
30-16404	SPST	On-Off	AC Lamp, Amber
30-16405	SPST	On-Off	AC Lamp, Green
30-16422	SPST	On-Off	DC Lamp, Red
30-16423	SPST	On-Off	DC Lamp, Amber
30-16425	SPST	On-Off	DC Lamp, Green
30-16426	SPST	On-Off	DC Lamp, Blue

Panel Cut-out: 20.2mm (.79")
Maximum Panel thickness 6.0 mm

189
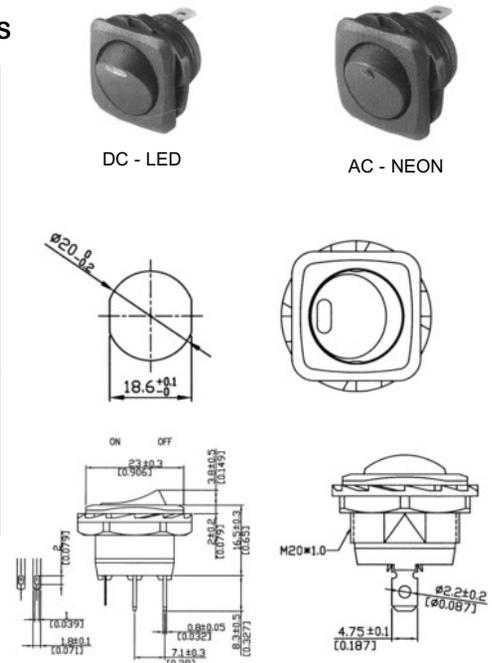
SWITCHES ROCKER

RECTANGULAR BEZEL ROUND ROCKER SWITCHES

Current Rating:	3A 250VAC, 6A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms @500V
Dielectric Strength (Open Contacts):	>1000V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.110" Quick Connect
Mounting Hardware:	M20-P1.0

Part No.	Type	Action	Actuator
30-16150	SPST	On-Off	Black Actuator
30-16155	SPDT	On-On	Black Actuator
30-16160	DPST	On-Off	Black Actuator

Panel Cut-out: 12.2mm (.48")
Maximum Panel thickness 6.0 mm

SNAP-IN ROUND ROCKER SWITCHES

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-16060	SPST	On-Off	Bi-Color Actuator
30-16062	SPST	(On)-Off	Black Actuator
30-16066	SPST	On-(Off)	Black Actuator
30-16068	SPDT	On-(On)	Black Actuator
30-16110	SPDT	On-Off-(On)	Black Actuator
30-16070	SPDT	On-On	Black Actuator
30-16072	SPDT	On-Off-On	Black Actuator
30-16074	SPDT	(On)-Off-(On)	Black Actuator

Panel Cut-out: 20.2mm (.79")
Maximum panel thickness 3.0 mm

( ) = Momentary

LIGHTED SNAP-IN ROUND ROCKER SWITCHES

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.187" Quick Connect
Lamp Voltage:	AC= 110V, DC= 12V

Part No.	Type	Action	Lamp / Actuator Color
30-16182	SPST	On-Off	AC Lamp, Red
30-16183	SPST	On-Off	AC Lamp, Amber
30-16185	SPST	On-Off	AC Lamp, Green
30-16122	SPST	On-Off	DC Lamp, Red
30-16123	SPST	On-Off	DC Lamp, Amber
30-16125	SPST	On-Off	DC Lamp, Green
30-16126	SPST	On-Off	DC Lamp, Blue

Panel Cut-out: 20.2mm (.79")
Maximum Panel thickness 3.o mm
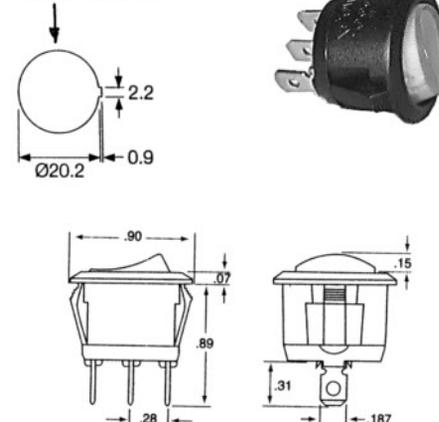
LIGHTED SNAP-IN ROUND ROCKER SWITCHES

AC - NEON

DC - LED

PANEL CUT-OUT (mm)

Ø20.2
2.2
0.9

.90
.07
.89
.28

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	.187" Quick Connect
Lamp Voltage:	AC= 110V neon, DC= LED 2V* @20ma
	(*resistor needed for other voltages)

Part No.	Type	Action	Lamp / Actuator Color
30-16282	SPST	On-Off	AC Lamp, Red
30-16283	SPST	On-Off	AC Lamp, Amber
30-16285	SPST	On-Off	AC Lamp, Green
30-16222	SPST	On-Off	DC Lamp, Red
30-16223	SPST	On-Off	DC Lamp, Amber
30-16225	SPST	On-Off	DC Lamp, Green
30-16226	SPST	On-Off	DC Lamp, Blue

Panel Cut-out: 20.2mm (.79")   Maximum Panel thickness 3.0 mm

---

Switch Covers

No. 30-1600 - fits Round Rocker switches up to 23mm (.90") dia.

No. 30-1450 - fits SP Rocker switches up to 15mm (.59") X 21mm (.82")

No. 30-1455 - fits DP Rocker switches up to 24mm (.94") X 21mm (.82")

Using an LED

LED wth DC (Direct Current)

An LED (light emitting diode) requires about two volts to operate and twenty milliamps of current. A current limiting resistor must be used in series with an LED to prevent current over 20 mA from flowing; otherwise, your LED will be damaged. You may simply use Ohm's law to calculate the resistor value. Here is an example, We have a circuit operating at 12 volts DC, and need to know the value of a resistor to use. The LED "wants" two volts to operate ; so subtract 2 from the 12 volts which is of course, ten. Plug the "ten" in at "E" and divide by "I" or .020 amps. The result is 500 ohms for the resistor value

$$R = \frac{E}{I}$$

If you forget to subtract the two volts, the resistor value will be 600 and the LED will not be at maximum brightness. However, it will last much longer! (about double normal life).

Another formula you can use is R=50(V-2). The R is for resistor, the V for voltage. We like this one as it is easy to recall and do in your head.

LED wth AC (Alternating Current)

When using an LED with AC, a diode must be placed in series with the LED. Because AC will only be flowing 1/2 the time, we use a variation on the easy formula shown to the left(bottom). Use R=25(V-2.7), which includes the voltage drop across the diode.

So, if you have a circuit using 28 volts AC, multiply 25.3 (or 28V -2.7), times 25 equals 632 ohms. We need to use a standard value resistor, so use 680 ohms for "R".

LED   A.C.
diode   R

Typical voltages used in electronics and resistor values (rounded to nearest standard resistor).

DC Volts	5V	6V	12V	24V	AC Volts	6V	12V	24V	48V	117V
Resistor (ohms)	150	180	470	1200	Resistor (ohms)	82	220	560	1200	3K

SWITCHES ROCKER

MINIATURE ROCKER SWITCHES
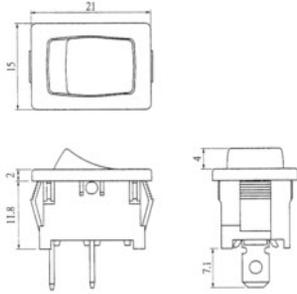
Mounting Hole: .51" x .751"

SPECIFICATIONS:

Current Rating:	10A @ 125V AC, 6A @ 250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	DC 500V 100 Meg ohms (Min.)
Dielectric Strength:	AC 1500V 1 min.
Base Material:	Nylon UL 94V-2
Terminal Material:	Brass/Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action			Actuator
30-16605	SPST	ON	-	OFF	Black Nylon with Red 0-I Legend
30-16606	DPDT	ON	-	ON	Black Nylon
30-16607	SPST	ON	-	OFF	Black Nylon
30-16608	DPST	ON	-	OFF	Black Nylon
30-16612	SPDT	ON	-	ON	Black Nylon

MINIATURE ROCKER SWITCH

DIMENSIONS

19.75 (.778)
2.0 (.079)
12.45 (.490)
5.5 (.217)
7.0 (.275)
7.0

TERMINAL

6.9 (.271)
4.8 (.187) X 0.8 (.031) Tab

ACTUATOR
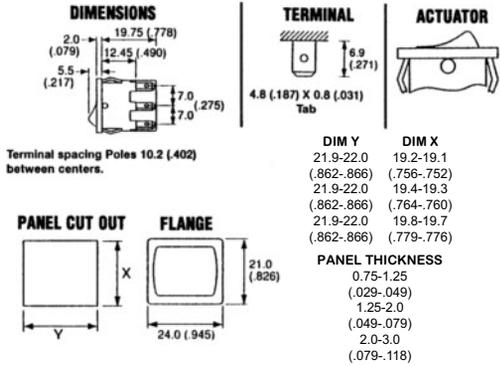
Terminal spacing Poles 10.2 (.402) between centers.
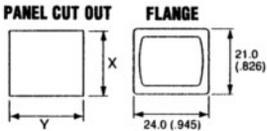
DIM Y	DIM X
21.9-22.0 (.862-.866)	19.2-19.1 (.756-.752)
21.9-22.0 (.862-.866)	19.4-19.3 (.764-.760)
21.9-22.0 (.862-.866)	19.8-19.7 (.779-.776)

PANEL CUT OUT **FLANGE**

21.0 (.826)
24.0 (.945)

PANEL THICKNESS
0.75-1.25 (.029-.049)
1.25-2.0 (.049-.079)
2.0-3.0 (.079-.118)

SPECIFICATIONS:

ELECTRICAL RATINGS:

10A	125-250V AC 65C	UL E45221 CSA LR10990
1/4HP	125V AC 1/2HP 250V AC	UL/CSA
6A	277V AC	UL
15 (4)A	125-250V AC 90C	
	1/2HP 250V AC	UL
	1/4HP 125V AC	
10 (4)A	250V AC T90	VDE44375
25A	Inrush	EN61058-1
10A	28V DC	Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator:	Nylon 6.6
Contact Gap:	3mm (.118)
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-846	DPDT	ON	-	ON	Black

MINIATURE SNAP-IN ROCKER SWITCHES

.435 (11.05)
.230 (5.84)
.460 (11.68)
.340 (8.64)
.825 (20.96)
.630 (16.00)
A
B
C
.430 (10.92)
.032 TYP (.81)
.590 (14.99)
.080 (2.03)
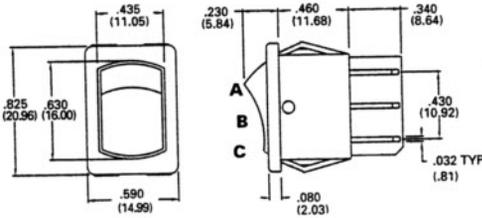
Mounting Hole: .756" x .508"

SPECIFICATIONS:

Current Rating:	*13A @ 125V AC, 10A @ 250V AC 1/2 HP @ 125-250V AC, 5A @ 14V DC
	**16A @ 125V AC, 10A @ 250V AC 3/4 HP @ 125-250V AC, 5A @ 14V DC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Copper Alloy
Terminal Material:	Silver Plate - Copper Alloy
Terminal Type:	.187" Quick Connect

Part No.	Type	Action			Actuator
**30-002	SPDT	ON	-	ON	Black Nylon
*30-004	SPDT	ON	OFF	ON	Black Nylon
**30-042	SPST	ON	-	OFF	Black Nylon
**30-043	DPST	ON	-	OFF	Black Nylon

TINY ROCKER SWITCHES

Ideal for small appliances or controls with limited space. The mini rocker switch is capable of handling high currents as the traditional larger switches. This product range is electrically approved in thirteen countries.

DIMENSIONS

5.0 (.197)
9.0 (.354)
2.0 (.079) 14.5 (.571) 9.7 (.382)

TERMINAL

9.7 (.382)
4.8 x 0.8 (.187 x .031)

ACTUATOR

(A)

PANEL CUT OUT **FLANGE**

21.0 (.827)
6.8-6.9 (.268-.272)
9.5 (.374)

(B)

Legend Black and White Imprint
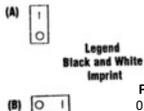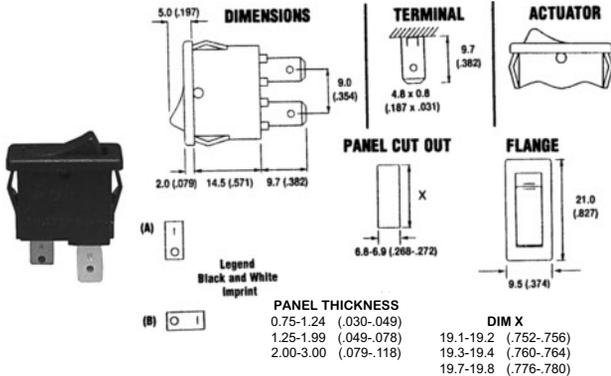
PANEL THICKNESS
0.75-1.24 (.030-.049)
1.25-1.99 (.049-.078)
2.00-3.00 (.079-.118)

DIM X
19.1-19.2 (.752-.756)
19.3-19.4 (.760-.764)
19.7-19.8 (.776-.780)

SPECIFICATIONS:

ELECTRICAL RATINGS:

12A	125-250V AC	UL E45221
1/2HP	125V AC	UL E45221
12A	125-250V AC	CSA LR10990
10 (6)A	250V AC T100	VDE88662
10A	24V DC	

Tracking resistance:	KB250
Humidity resistance at 91-95% relative humidity:	48 hours
Switch body/rocker:	Nylon 66
Current carrying parts	
Contact points:	Silver Alloy
End terminal:	Copper Alloy with Silver Alloy contact
Pivot terminal:	Copper Alloy, Silver plated
Moving contact:	Copper Alloy with Silver Alloy contact

Part No.	Type	Action			Actuator
30-880	SPST	ON	-	OFF	Black Nylon
30-882	SPST	ON	-	OFF	Black Nylon w/ White Imprint (A)
30-884	SPST	ON	-	OFF	Black Nylon w/ White Imprint (B)

STANDARD ROCKER SWITCHES

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Copper - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.		Type	Action			Actuator
30-10086		SPDT	ON	-	ON	Black Nylon
30-10088		SPDT	ON	OFF	ON	BlackNylon
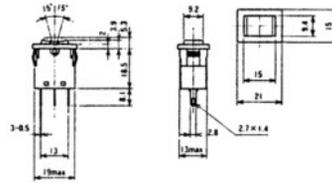
Mounting Hole:
0.51" x 0.75" @ .04" Panel Thickness
0.51" x 0.76" @ .08" Panel Thickness

MINIATURE POWER ROCKER SWITCHES

For applications such as computers, audio, medical, office instrument and appliance products.

SPECIFICATIONS:

ELECTRICAL RATINGS:

10A	125-250V AC 65C	UL E45221	CSA LR10990
1/4HP	125V AC 1/2HP 250V AC		UL/CSA
10 (4)A	250V AC T90		VDE 44375
25A	Inrush		EN61058-1
10A	28V DC		Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator:	Nylon 6.6
Contact Gap:	3mm (.118)
Contact Material:	Silver

Part No.	Type	Action			Actuator
30-860	SPST	ON	-	OFF	Black Nylon
30-16844	SPDT	ON	-	ON	Black Nylon

Micro Rocker Switches

Electrical Ratings:
SPST snap action Rocker.
6A @125 VAC or 3A @250 VAC (UL)
3A@250 VAC (CQC)
Rating: 3A@125 VAC, 250 VAC pending for VDE
Initial Contact resistance: 20m ohm Max.
Insulation Resistance: 100 Ohm @500 VDC
Dielectric Strength: 1,000 VAC for 1 minute
Electrical/mechanical life: 10,000 cycles
Temperature range: 0 to 88 degrees centigrade
Base: Nylon66, UL rated 94V-2 min.
Spring: Piano wire
Stationary contact: Silver Alloy

A very small Rocker with a good "feel" in the action, excellent for small appliances, battery operated portable devices. This is a SPST switch and the black and white activators are marked with the "universal" digital "I" and "0" to indicated ON and OFF. The red actuator is plain, no markings.

Note that Dimension "Y" mounting hole varies with panel thickness as below. Dimension Z is 9.2mm for all.

Part No.	Type	Action	Actuator
30-870	SPST	On-Off	White (with o – markings in black)
30-872	SPST	On-Off	Black (with o – markings in white)
30-874	SPST	On-Off	Red (plain, no marking on actuator)

DOUBLE POLE MINIATURE POWER ROCKER SWITCHES

SPECIFICATIONS:

ELECTRICAL RATINGS:

16A	125-250V AC 65C	UL E45221
1HP	30V DC	UL/CSA
1/2A	125V AC	UL/CSA
10A	125-250V AC 65C	CSA LR10990
10 (6)A	250V AC T100	VDE 75171
75A	Inrush	EN61058-1
10A	28V DC	Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator:	Nylon 6.6
Contact Gap:	3mm (.118)
Contact Material:	Silver Alloy
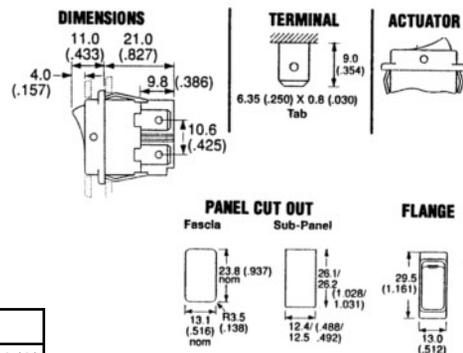
Part No.	Type	Action			Actuator
30-250	DPST	ON	-	OFF	Black Nylon w/White Legend (A)
30-252	DPST	ON	-	OFF	Black Nylon w/White Legend (B)
30-16705	DPST	ON	-	OFF	White Nylon w/Black Legend (A)

193

SWITCHES ROCKER

MINIATURE ROCKER SWITCHES
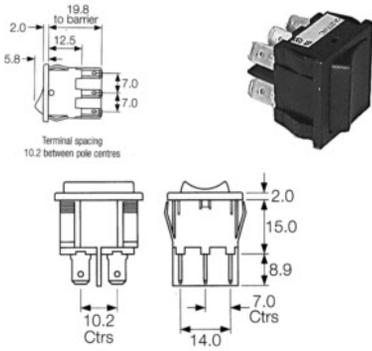
Current Rating:	10A 250VAC, 1/2 Hp @ 277VAC, 1/4 Hp @125VAC
Initial Contact Resistance:	<100Meg Ohms @12VDC
Insulation Resistance:	>20Meg Ohms
Dielectric Strength (Open Contacts):	>1000V for 1 minute
Contact Material:	Silver Alloy
Terminal Material:	Copper Alloy
Body Material:	Nylon 6.6
Actuator & Bezel:	Nylon 6.6
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-16860*	DPDT	On-(On)	Black Nylon
30-16870	DPDT	On-Off-On	Black Nylon

*note: 30-16860 is 6A @ 277VAC

( ) = Momentary

Mounting Hole: 21.9mm x 19.2mm

MINIATURE ROCKER SWITCHES
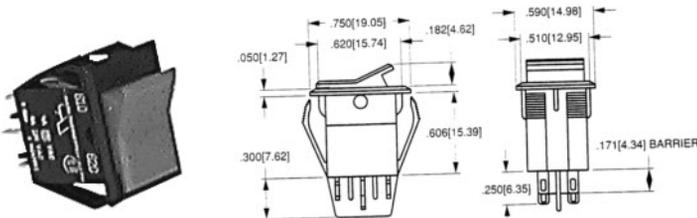
Mounting Hole: 0.515" x 0.625"

SPECIFICATIONS:

Current Rating:	8A @125 V AC, 4A @ 250 V AC
Insulation Resistance:	100 Meg ohms (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Nylon
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-654	DPDT	ON	-	ON	Red Nylon
30-656	DPDT	ON	OFF	ON	Red Nylon

SPECIFICATIONS:

ELECTRICAL RATINGS:

15A	125-250V AC 65C Non Ind	UL E45221
1/4HP	125V AC 1/2HP 250V AC	UL E45221
12A	125-250V AC	CSA LR10990
10 (6)A	250V AC T125	VDE75171
75A	Inrush	EN61058-1
10A	28V DC	No Approvals

MATERIALS:

Body:	Nylon 6.6
Rocker (Opaque):	Nylon 6.6
Contact Gap:	3mm (.118)
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-850	SPST	ON	-	OFF	Black Nylon & Red
30-852	SPST	ON	-	OFF	Black Nylon & Green
30-854	SPST	ON	-	OFF	Black Nylon & Blue
30-855	DPST	ON	-	OFF	Black Nylon & White

MINIATURE ROCKER SWITCHES

Two Color Actuator with Molded in Color Legend.
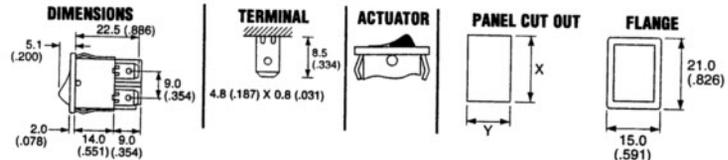
PANEL THICKNESS	DIM X	DIM Y
0.75-1.25 (.029-.049)	19.2-19.1 (.756-.752)	13.0-12.9 (.512-.508)
1.25-2.0 (.049-.079)	19.4-19.3 (.764-.760)	13.0-12.9 (.512-.508)
2.0-3.0 (.079-.118)	19.8-19.7 (.779-.776)	13.0-12.9 (.512-.508)

Industry Standard size. Snap in mounting.
Single and Double Pole. ON-OFF Circuits.

STANDARD SIZE ROCKER SWITCHES
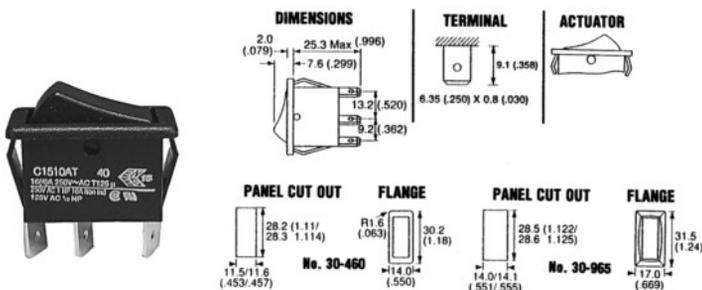
SPECIFICATIONS:

ELECTRICAL RATINGS:

16A	125-250V AC 85C	UL E45221
1/2HP	125V AC 1HP 250V AC 2 Position	UL/CSA
16A	125-250V AC	CSA LR10990
16 (4)A	250V AC T85	VDE 62411
20A	28V DC	Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator:	Nylon 6.6
Contact Gap	
(On-Off SP Circuits):	3mm (.118)
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-460	SPDT	ON	-	ON	Black Nylon
30-965	SPDT	(ON)	OFF	(ON)	Black Nylon

NOTE: ( ) = Momentary

DOUBLE POLE HEAVY DUTY ROCKER SWITCHES
(Moisture and Dust Resistant)

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 277V AC
	1-1/2 HP @ 125-250V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Gasket:	Molded Elastomer
Case:	UL94 Flame Class, 94V-2
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-630	DPST	ON	-	OFF	Black Nylon
30-660	DPST	(ON)	-	OFF	Black Nylon
30-640	DPDT	ON	-	ON	Black Nylon
30-680	DPDT	ON	-	(ON)	Black Nylon
30-650	DPDT	ON	OFF	ON	Black Nylon
30-690	DPDT	ON	OFF	(ON)	Black Nylon
30-695	DPDT	(ON)	OFF	(ON)	Black Nylon

NOTE: ( ) = Momentary

Terminal

Recommended Mounting Hole:
±.015 ±.381 ±.005 ±.127
Fits .830 (21.08) x 1.450 (36.83) panel cutout in
.093 (2.36), .125 (3.18), .187 (4.75) thick panels.

ROCKER SWITCH

SPECIFICATIONS:

ELECTRICAL RATINGS:

20A	125-250V AC 85C	UL E45221
1/2HP	125V AC 1HP 250V AC	UL/CSA
20A	125-250V AC	CSA LR10990
16 (4)A	250V AC T85	VDE 62411
16 (6)A	250V AC T125 5E4	Semko EN61058-1
150A	Inrush	Semko IEC65
20A	28V DC	Approvals N/A

MATERIALS:
Body:	Nylon 6.6
Actuator:	Nylon 6.6
Contact Gap:	3mm (.118)
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-564	DPST	ON	-	OFF	Black Nylon
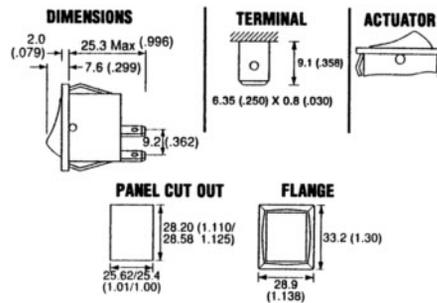
Mounting Hole: 1.0" x 1.12"

ROCKER SWITCH with LED

SPECIFICATIONS:

Current Rating:	10A @125V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass - Bright Nickel Plate
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-084	SPST	ON	-	OFF	White w/ Red LED
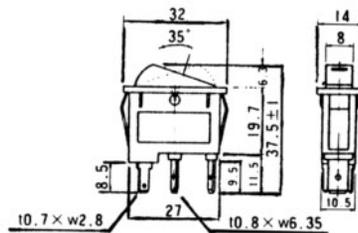
Mounting Hole: 0.430" x 1.180"

MINIATURE ROCKER SWITCHES with LED

SPECIFICATIONS:

Current Rating:	6A @125 V AC, 3A @ 250 V AC
Initial Contact Resistance:	DC 2.5V-1A, 20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Copper - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10083	SPST	ON	-	OFF	Black Nylon w/ Red LED
30-10085	SPST	ON	-	OFF	Black Nylon w/ Green LED
30-16081*	SPST	ON	-	OFF	Black Nylon w/Amber LED

*30-16081 has .187" Quick Connect Terminal

Mounting Hole: 0.51" x 0.75"

ROCKER SWITCHES

Mounting Hole: 0.55" x 1.13"

SPECIFICATIONS:

Current Rating:	16A @ 125V AC, 10A @ 250V AC	
Initial Contact Resistance:	50 Meg ohm (Max.)	
Insulation Resistance:	500V DC 100 Meg ohm (Min.)	
Dielectric Strength:	1500V AC for 1 minute	
Contact Material:	Copper - Silver Plate	
Terminal Material:	Copper - Silver Plate	
Terminal Type:	.250" Quick Connect	

Part No.	Type	Action			Actuator
30-16091	SPST	ON	-	OFF	Black Nylon
30-16093	SPST	ON	-	OFF	Black Nylon with Red Legend
30-16703*	SPST	ON	-	OFF	Black Nylon with Red Legend
30-16094	SPDT	ON	OFF	ON	Black Nylon
30-10080	SPDT	ON	-	ON	Black Nylon

*= 3/4 HP Rating

POWER ROCKER SWITCH
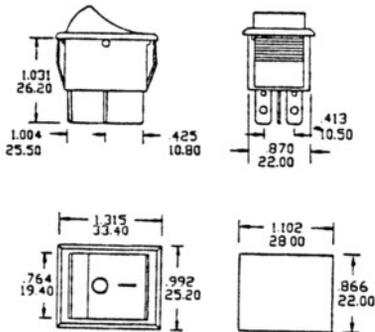
Mounting Hole: 0.87" x 1.10"

SPECIFICATIONS:

Current Rating:	16A @ 125V AC, 10A @ 250V AC	
Initial Contact Resistance:	50 Meg ohm (Max.)	
Insulation Resistance:	500V DC 100 Meg ohm (Min.)	
Dielectric Strength:	1500V AC for 1 minute	
Contact Material:	Copper - Silver Plate	
Terminal Material:	Copper - Silver Plate	
Terminal Type:	.250" Quick Connect	

Part No.	Type	Action		Actuator
30-10082	DPDT	ON	-	ON	Nylon

POWER ROCKER SWITCH

Mounting Hole: 0.55" x 1.13"

SPECIFICATIONS:

Current Rating:	16A @ 125V AC, 10A @ 250V AC	
Initial Contact Resistance:	50 Meg ohm (Max.)	
Insulation Resistance:	500V DC 100 Meg ohm (Min.)	
Dielectric Strength:	1500V AC for 1 minute	
Contact Material:	Copper - Silver Plate	
Terminal Material:	Copper - Silver Plate	
Terminal Type:	.250" Quick Connect	

Part No.	Type	Action		Actuator
30-10084	SPST	ON	-	OFF	Red Nylon

SINGLE POLE HEAVY DUTY ROCKER SWITCHES
(Moisture and Dust Resistant)

Terminal

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 277V AC 3/4 HP @ 125-250V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Gasket:	Molded Elastomer
Case:	UL94 Flame Class, 94V-2
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-600	SPST	ON	-	OFF	Black Nylon
30-610	SPDT	ON	-	ON	Black Nylon
30-620	SPDT	ON	OFF	ON	Black Nylon

Recommended Mounting Hole:
+.015 +.381 +.005 +.127
Fits .830 (21.08) x 1.450 (36.83) panel cutout in
.093 (2.36), .125 (3.18), .187 (4.75) thick panels.

LIGHTED ROCKER SWITCHES

SPECIFICATIONS:

Current Rating:	15A @ 125V AC, 7.5A @ 250V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Copper Alloy
Terminal Material:	Copper Alloy
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-390	SPST	ON	-	OFF	Amber Nylon
30-395	SPST	ON	-	OFF	Red Nylon
30-16740*	SPST	ON	-	OFF	Translucent Nylon

*30-16740 RATED 16A @ 125VAC, 10A @ 250VAC
Neon Light @ 110V AC

Mounting Hole: 1.125" x 0.550"

APPLIANCE ROCKER SWITCHES

SPECIFICATIONS;

Current Rating:	16A @ 125V AC, 12A @ 250V AC
	3/4 HP @ 125-250V AC, 10A @ 14V DC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Copper Alloy
Terminal Material:	Copper Alloy
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-710	SPST	ON	-	OFF	Black Nylon
30-720	SPDT	ON	-	ON	Black Nylon
30-730	SPST	ON	-	OFF	Green Nylon*
30-740	SPST	ON	-	OFF	Amber Nylon*

*Lamp (is dependent) high intensity neon with 1/4 watt 22 K Ohm resistor, with 10,000 hours of life for 125 volts.

Mounting Hole: 1.125" x 0.550"

LIGHTED STANDARD SIZE ROCKER SWITCHES

SPECIFICATIONS:

ELECTRICAL RATINGS:

15A	125-250V AC T85	UL E45221
1/2HP	125V AC 1HP 250V	UL E45221
16A	125-250V AC Res	CSA LR10990
16 (4)A	250V AC T85	VDE 45152
20A	28V DC	Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator Transparent:	Polycarbonate
Contact Gap:	u Micro
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-060	SPST	ON	-	OFF	Red Lens*
30-069	SPST	ON	-	OFF	Red Translucent**

* Lamp Voltage 12V AC/DC Incandescent
** Lamp Voltage 105-130V AC Neon

* NOTE: User Note: The light bulb incorporated in this switch must be connected to 12 volts AC or DC and NOT to 125 volts. The 125 volt rating applies to switch contacts, NOT to the light.

LIGHTED STANDARD SIZE SNAP-IN ROCKER SWITCHES

SPECIFICATIONS:

ELECTRICAL RATINGS:

15A	125-250V AC T85	UL E45221
1/2HP	125V AC 1HP 250V	UL E45221
16A	125-250V AC Res	CSA LR10990
16 (4)A	250V AC T85	VDE 45152
20A	28V DC	Approvals N/A

MATERIALS:

Body:	Nylon 6.6
Actuator Transparent:	Polycarbonate
Contact Gap:	u Micro
Contact Material:	Silver Alloy

Part No.	Type	Action			Actuator
30-550	SPST	ON	-	OFF	Red Lens*
30-552	SPST	ON	-	OFF	Green Lens*
30-556	SPST	ON	-	OFF	Amber*

* NOTE: User Note: The light bulb incorporated in this switch must be connected to 12 volts AC or DC and NOT to 125 volts. The 125 volt rating applies to switch contacts, NOT to the light.

Lead Terminal 1, Line In terminal 2, Line Out terminal 3. Light will be ON or OFF when switch is In ON or OFF position. 12V AC/DC Incandescent

197

SWITCHES ROCKER

SPECIFICATIONS:

Current Rating:	15A @ 125V AC, 10A @ 250 VAC
	1/2HP 125-250VAC
Insulation Resistance:	100 Meg ohms. (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Phenolic
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-652	SPST	ON	-	OFF	Amber Nylon

* Lamp Voltage 125VAC/Neon

LIGHTED HEAVY DUTY ROCKER SWITCHES

.960[24.38]
.080[2.03]
1.700[43.18]
1.069[27.15]
.372[9.45]
.422[10.71]
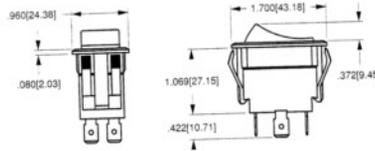
Mounting Hole: 0.83" x 1.45"

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 15A @ 250 VAC
	16 (6) A-125VAC T85,
	125A Peak Inrush Current
Insulation Resistance:	100 Meg ohms. (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Nylon
Actuator Material:	Nylon/Polycarbonate
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-16867	DPST	ON	-	OFF	Red Translucent

LIGHTED HIGH INRUSH HEAVY DUTY ROCKER SWITCH

1.240[31.50]
.784[19.91]
1.145[29.08]
.080[2.03]
.215[5.46]
.725[18.42]
1.180[29.97]
3.75[9.53]
1.070[27.17]
1.086[27.58]
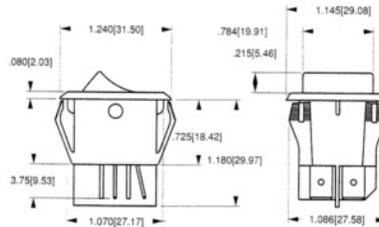
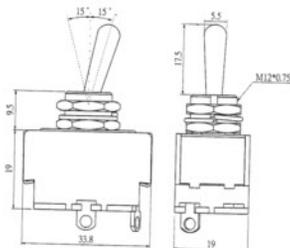**Mounting Hole: 0.872" x 1.125"**
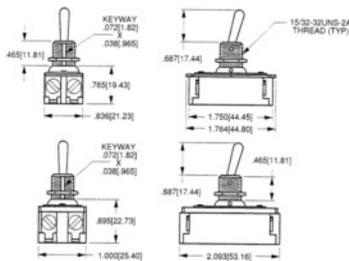

SPECIFICATIONS:

Current Rating:	10A @ 125VAC, 6A @ 250VAC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	DC 300V 100 Meg ohm. (Min.)
Dielectric Strength:	1500VAC for 1 Min.
Terminal Type:	.187" Quick Connect

Part No.	Type	Action			Actuator
30-16096	SPST	ON	-	OFF	Red Nylon

* Lamp Voltage 125VAC/Neon 33K ohm

LIGHTED MINIATURE ROCKER SWITCHES

21
15
1
2
3
ON   OFF
3P SPST
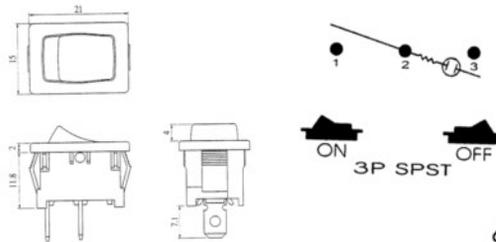
Mounting Hole: 0.512" x 0.756"

CIRCUIT DIAGRAM

1   2
4   5
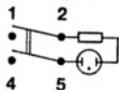
Lamp Voltage: Neon 105-125V AC

SPECIFICATIONS:

ELECTRICAL RATINGS:		
20A	125-250V AC 85C	UL E45221
1/2HP	125V AC 1HP 250V AC	UL E45221
20A	125-250V AC	CSA LR10990
16 (4)A	250V AC T85	VDE 62411
150A	Inrush	Semko IEC 65

Part No.	Type	Action			Actuator
30-866	DPST	ON	-	OFF	Black Plastic w/ Red Neon
30-867	DPST	ON	-	OFF	Red Plastic

LIGHTED ROCKER SWITCHES

DIMENSIONS
25.3 (.996) Max
2.0 (.079)
7.6 (.299)
9.2 (.362)

TERMINAL
9.1 (.358)
6.35 (.250) X 0.8 (.030)

ACTUATOR
No. 30-866
Actuator color same as body color.
No. 30-867

PANEL CUT OUT
30.0 (1.181/30.1 1.185)
22.1/22.2 (.870/.874)
No. 30-866
28.20 (1.110/28.58 1.125)
25.62/25.4 (1.01/1.00)
No. 30-867

FLANGE
R3.5
33.4 (1.31)
25.0 (.984)
33.2 (1.30)
28.9 (1.138)

AC/DC HEAVY DUTY ROCKER SWITCHES

1.348[34.24]
.762[19.35]
.422[10.72]
.750[19.05]

Mounting Hole: 0.83" x 1.45"

SPECIFICATIONS;

Current Rating:	15A @ 125V AC, 10A @ 250V AC
	3/4 HP @ 125-250V AC
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Phenolic
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-16600	SPST	ON	-	OFF	Black Nylon
30-16610	SPDT	ON	-	ON	Black Nylon
30-16620	SPDT	ON	OFF	ON	Black Nylon
30-16630	DPST	ON	-	OFF	Black Nylon
30-16660	DPST	(ON)	-	OFF	Black Nylon
30-16640	DPDT	ON	-	ON	Black Nylon
30-16680	DPDT	ON	-	(ON)	Black Nylon

Note: ( ) = Momentary

HEAVY DUTY ROCKER SWITCHES

1.145[29.08]
.784[19.91]
.215[5.46]
.080[2.03]
1.240[31.50]
1.180[29.97]
.375[9.53]
.725[18.42]
1.070[27.17]
1.086[27.58]
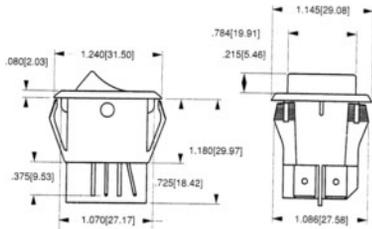
Mounting Hole: 0.872" x 1.072"

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 15A @ 250VAC,
	125A Peak Inrush current
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Nylon
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-16564	DPST	ON	-	OFF	Black Nylon
30-16625*	DPST	ON	-	OFF	Black Nylon w/on-off Legend

* 30-16625 = 3/4HP 125-250VAC

"V" STYLE ROCKER SWITCHES

.050[1.27]
.390[9.77]
.220[5.59]
.860[21.84]
.375[9.52]
.544[13.81]
1.120[28.44]
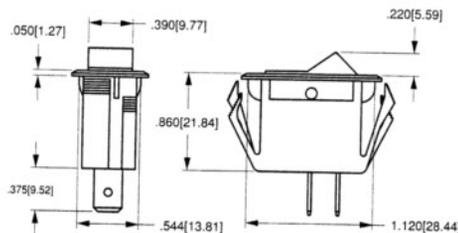
Mounting Hole: 0.55" x 1.125"

SPECIFICATIONS:

Current Rating:	10A @ 125VAC, 5A @ 250 VAC,
	1/2HP 125-250VAC
Insulation Resistance:	100 Meg ohms (Min.)
Dielectric Strength:	1000V (Min.)
Base Material:	Nylon
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-370	SPST	ON	-	(OFF)	White Nylon
30-16751*	SPST	OFF	-	(ON)	White Nylon

Note: ( ) = Momentary

* 30-16751 = 15A @ 125VAC, 10A @ 250VAC, 3/4HP 125-250VAC

SEALED LIGHTED ROCKER SWITCHES

IP 67
ACCORDING TO
EN 60529:1991+A1:2001
IEC 60529:2001

8 7
1 4
2 5
3 6
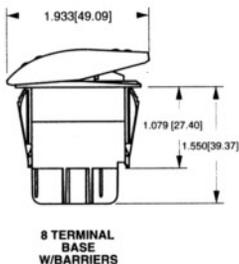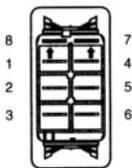
BOTTOM VIEW
TERMINAL
ARRANGEMENT
8 TERMINAL BASE
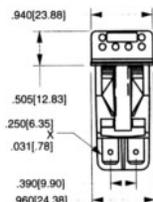
1.933[49.09]
1.079[27.40]
1.550[39.37]
.940[23.88]
.505[12.83]
.250[6.35]
.031[.78]
.390[9.90]
.960[24.38]

8 TERMINAL
BASE
W/BARRIERS

8 TERMINAL BASE
W/BARRIERS

Mounting Hole: 0.83" x 1.45"

SPECIFICATIONS:

Current Rating:	20A @ 12VDC
Initial Contact Resistance:	10 Milli ohms (Max) @ 4VDC
Insulation Resistance:	50 Meg ohms
Dielectric Strength:	1500 Volts RMS
Contact Material:	Silver CAD-Oxide, Silver Tin-Oxide, Fine Silver
Terminal Material:	Brass or Copper/Silver Plate
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-16500	SPST	ON	-	OFF	Black with Amber Lens
30-16505	SPST	ON	-	OFF	Black with Green Lens
30-16510	SPST	ON	-	OFF	Black with Red Lens
30-16515	SPST	ON	-	OFF	Black with Blue Lens
30-16520	DPDT	ON	OFF	ON	Black with Amber Lens
30-16525	DPDT	ON	OFF	ON	Black with Green Lens
30-16530	DPDT	ON	OFF	ON	Black with Red Lens
30-16535	DPDT	ON	OFF	ON	Black with Blue Lens
30-16560	DPDT	(ON)	OFF	(ON)	Black with Amber Lens
30-16565	DPDT	(ON)	OFF	(ON)	Black with Green Lens
30-16570	DPDT	(ON)	OFF	(ON)	Black with Red Lens
30-16575	DPDT	(ON)	OFF	(ON)	Black with Blue Lens
30-16580*	SPST	ON	-	OFF	Black Nylon**
30-16585	DPDT	ON	-	ON	Black Nylon**
30-16590	DPDT	ON	OFF	ON	Black Nylon**

Note ( ) = Momentary
* 30-16580 15A @ 125VAC, 10A@ 250VAC, 1/2HP 125-250VAC, UL/CSA
** =Non Lighted
Lamp is incandescent 12V Rated @ 10,000 Hrs.

199

SWITCHES MINIATURE SLIDE, PC MOUNT

Printed Circuit Mounting
Miniature SLIDE SWITCHES
Digital Circuit Service.

Gold contacts will assure constant dependability throughout the entire service life of the switch, even at very low voltage/currents. These are not power switches (see group below) but designed for digital and other low current applications.

Electrical Rating:
Contact rating: 0.40 VA max. @ 20 V max. (AC or DC)
Life expectancy: 20,000 make-break cycles
Contact Resistance: 50 milliohms Max, initial
Minimum Load: 10 mA 50 mV
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.

Mechanical:
Case: Nylon, white
Housing: Black Nylon.Actuator: Nylon, black
Terminals: Gold Plated.
Contact materials: Gold

Part No.	Circuit	Application
30-20280	SPDT ON-ON	DIGITAL, low voltages
30-20284	SPDT ON-OFF-ON	DIGITAL, low voltages
30-20290	DPDT ON-ON	DIGITAL, low voltages
30-20292	DPDT ON-OFF-ON	DIGITAL, low voltages

SPDT

DPDT
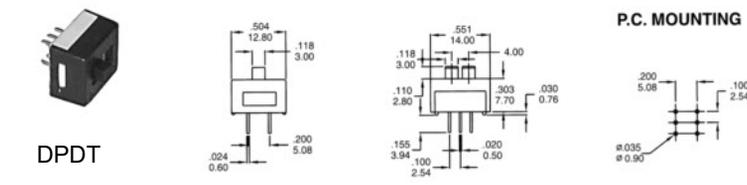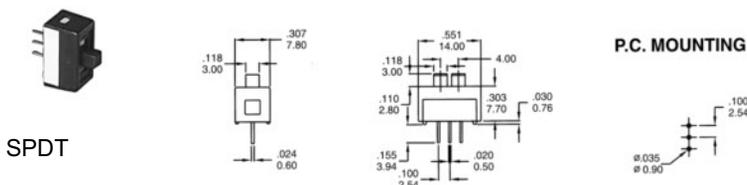
Printed Circuit Mounting
Miniature SLIDE SWITCHES
for Power Use.

Silver coined contacts are designed to handle power. This is the same switch as above, but with contacts made for power applications, either 125 VAC or DC voltages. Use same PC layout patterns and physical dimensions; the only differences are internal to the switch.

Electrical Rating:
Contact rating: 3 Amps @ 120 VAC or 28 VDC (resistive)
        1 Amps @ 250 VAC (resistive load)
Life expectancy: 20,000 make-break cycles
Contact Resistance: 50 milliohms Max, initial
Minimum Load: 100 mA 10 VDC
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.
Contacts: Silver   Terminals: Gold
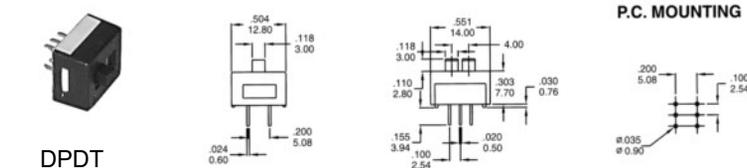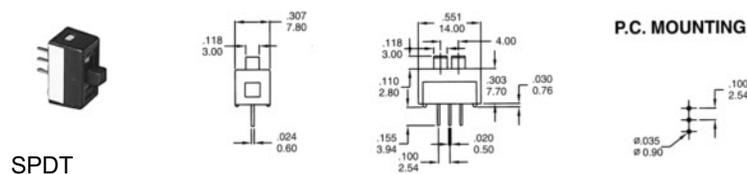
Part No.	Circuit	Application
30-20300	SPDT ON-ON	Power
30-20304	SPDT ON-OFF-ON	Power
30-20310	DPDT ON-ON	Power
30-20312	DPDT ON-OFF-ON	Power

SPDT

DPDT

SUB-MINIATURE SLIDE SWITCH

SPECIFICATIONS:

Current Rating:	3A @125V AC
Initial Contact Resistance:	Less than 20 Meg ohms.
Insulation Resistance:	100 Meg ohms/DC500V
Withstand Voltage:	AC500V, 50-60 Hz/1 min.
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-9184	SPDT	ON	-	ON	Black Nylon

Mounting Centers: 0.59"

Mounting Hole: .23" x .75"

MINIATURE SLIDE SWITCH

SPECIFICATIONS:

Current Rating:	6A @ 125V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Bronze - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-9164	DPDT	ON	-	ON or OFF	Black Nylon

NOTE: Mounting holes tapped for 1-72 screws (supplied).

SUB-MINIATURE SLIDE SWITCH

SPECIFICATIONS:

Current Rating:	300MA @125V AC
Initial Contact Resistance:	Less than 20 Meg ohm
Insulation Resistance:	100 Meg ohm/DC500V
Terminal Material:	Copper - Silver Plate
Withstand Voltage:	AC500V, 50-60 Hz/1 min
Terminal Type:	PC Mount

Part No.	Type	Action			Actuator
30-9185	SPDT	ON	-	ON	Black Nylon

STANDARD SIZE SLIDE SWITCH

SPECIFICATIONS:

Current Rating:	6A @125V AC, 3A @ 250V AC
Initial Contact Resistance:	30 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Bronze - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-9182	DPDT	ON	-	ON	Black Nylon

STANDARD SIZE SLIDE SWITCH

SPECIFICATIONS:

Current Rating:	6A @125V AC, 3A @ 250V AC
Initial Contact Resistance:	30 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Bronze - Silver Plate
Terminal Material:	Copper - Silver Plate
Terminal Type:	Printed Circuit

Part No.	Type	Action			Actuator
30-9186	DPDT	ON	-	ON	Black Nylon

201

SWITCHES MICRO & SUB - MINIATURE SNAP ACTION

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1Ac 500V 50/60 Hz for 1 minute
Contact Resistance:	50 Meg Ohm
Electrical Life:	30,000 Cycles
Operating Temperature Range:	-25ºC - +85ºC

Part No.	0F max	RF min	PT max	OT min	MD max	OP	Actuater
30-2400	150g	20g	0.5 mm	0.25 mm	0.12 mm	5.5 + 1.5 mm	Pin Plunger
30-2401	80g	5g	0.55 mm	0.55 mm	0.5 mm	6.8 ± 1.5 mm	Short Lever

MICRO SNAP ACTION SWITCHES

30- 2401

30- 2400

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action	Actuator
30-2500	SPDT	Snap Action Momentary	Pin Plunger

SPECIFICATIONS:			
Terminal: Solder		**OT Min.:**	0.6mm
OF Max.:	150g	**MD Max.:**	0.2mm
RF Min.:	55g	**FP Max.:**	9.2mm
PT Max.:	0.6mm	**OP:**	8.4 ± 0.5mm

SUB-MINIATURE SNAP ACTION SWITCH with PIN PLUNGER

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action	Actuator
30-2501	SPDT	Snap Action Momentary	Short Lever

SPECIFICATIONS:			
Terminal: Solder		**OT Min.:**	1.4mm
OF Max.:	45g	**MD Max.:**	0.8mm
RF Min.:	12g	**FP Max.:**	11.9mm
PT Max.:	2.8mm	**OP:**	8.8 ± 0.8mm

SUB-MINIATURE SNAP ACTION SWITCH with SHORT LEVER

SUB - MINIATURE SNAP ACTION SWITCH WITH SIMULATED ROLLER

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	AC 500V (50/60Hz for 1 minute)
Contact Resistance:	30 Meg Ohm max
Electrical Life:	100,000 Cycles
Operating Temperature Range:	-25ºC - +85ºC

Part No.	0F max	RF min	PT max	OT min	MD max	FP max	OP
30-2503	45 g	12 g	3.0 mm	1.4 mm	0.8 mm	14.0 mm	10.7 ± 0.8 mm

SUB-MINIATURE SNAP ACTION SWITCH with LONG LEVER

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	Under 30 Meg ohm
Insulation Resistance:	100 Meg ohm (Min.) at 500 VDC
Dielectric Strength:	1000V AC 50-60 Hz
Service Life:	Mechanically 30,000,000 Electrically 100,000
Terminal Type:	Solder

Part No.	Type	Action	Actuator
30-18222	SPDT	Snap Action Momentary	Long Lever

SUB-MINIATURE SNAP ACTION SWITCH with ROLLER LEVER

SPECIFICATIONS:

Current Rating:	5A @ 125V AC, 3A @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action	Actuator
30-2505	SPDT	Snap Action Momentary	Roller Lever

SPECIFICATIONS:			
Terminal: Solder		**OT Min.:**	1.4mm
OF Max.: 45g		**MD Max.:**	0.8mm
RF Min.: 12g		**FP Max.:**	17.6mm
PT Max.: 2.8mm		**OP:**	14.5 ± 0.8mm

MINIATURE SNAP ACTION SWITCHES with PIN PLUNGER

SPECIFICATIONS:

Current Rating:	16A @ 125V/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-2000	SPDT	Snap Action Momentary	Pin Plunger
30-18230*	SPDT	Snap Action Momentary	Pin Plunger

* 30-18230 Rated 10A @ 125V/250VAC with .250" Quick Connect Terminal

SPECIFICATIONS:			
Terminal: Quick Connect		**OT Min.:**	0.8mm
OF Max.: 230g		**MD Max.:**	0.15-0.4mm
RF Min.: 56g		**OP:**	14.7 ± 0.4mm
PT Max.: 1.2mm			

Terminal

MINIATURE SNAP ACTION SWITCH WITH SHORT LEVER

SPECIFICATIONS:

Current Rating:	16A @ 125/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-2020	SPDT	Snap Action Momentary	Lever

SPECIFICATIONS:			
Terminal: Quick Connect		**OT Min.:**	1.6mm
OF Max.: 115g		**MD Max.:**	1.2mm
RF Min.: 14g		**OP:**	15.2 ± 1.2mm
PT Max.: 3.3mm			

Terminal

203

SWITCHES MINIATURE SNAP ACTION

SPECIFICATIONS:

Current Rating:	16A @ 125/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-2040	SPDT	Snap Action Momentary	Long Lever
30-18205*	SPDT	Snap Action Momentary	Long Lever

* 30-18205 Rated 10A @ 125V/250VAC with .250" Quick Connect Terminal

SPECIFICATIONS:			
Terminal: Quick Connect		**OT Min.:**	3mm
OF Max.: 60g		**MD Max.:**	2.2mm
RF Min.: 7g		**OP:**	15.2 ± 2.6mm
PT Max.: 7.6mm			

MINIATURE SNAP ACTION SWITCHES with LONG LEVER

Terminal

SPECIFICATIONS:

Current Rating:	16A @ 125/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-2060	SPDT	Snap Action Momentary	Roller Lever
30-18236*	SPDT	Snap Action Momentary	Roller Lever

* 30-18236 Rated 10A @ 125V/250VAC with .250" Quick Connect Terminal.

SPECIFICATIONS:			
Terminal: Quick Connect		**OT Min.:**	1.6mm
OF Max.: 115g		**MD Max.:**	1.2mm
RF Min.: 14g		**OP:**	20.7 ± 1.2mm
PT Max.: 3.3mm			

MINIATURE SNAP ACTION SWITCHES with ROLLER LEVER

Terminal

SPECIFICATIONS:

Current Rating:	16A @ 125/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-2080	SPDT	Snap Action Momentary	Short Roller Lever

SPECIFICATIONS:			
Terminal: Quick Connect		**OT Min.:**	0.6mm
OF Max.: 230g		**MD Max.:**	0.5mm
RF Min.: 45g		**OP:**	20.7 ± 0.6mm
PT Max.: 1.5mm			

MINIATURE SNAP ACTION SWITCH with SHORT ROLLER LEVER
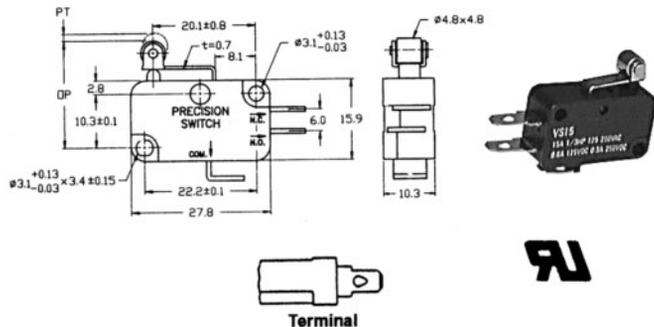
Terminal

SPECIFICATIONS:

Current Rating:	10A @ 125/250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) at 500VDC
Dielectric Strength:	1000V AC 50/60 Hz for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	.250" Quick Connect

Part No.	Type	Action	Actuator
30-18203	SPDT	Snap Action Momentary	Simulated Roller

SPECIFICATIONS:			
OF Max.: 115g		**OT Min.:**	1.6mm
RF Min.: 14g		**MD Max.:**	1.2mm
PT Max.: 3.7mm		**OP:**	18.7 ± 1.2mm

MINIATURE SNAP ACTION SWITCH with SIMULATED ROLLER

Terminal

TERMINAL ENCLOSURE
for Heavy Duty Snap Action Switches
No. 30-8000
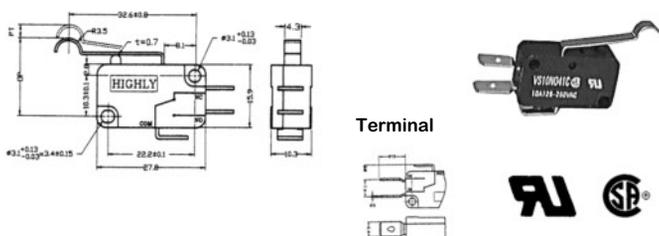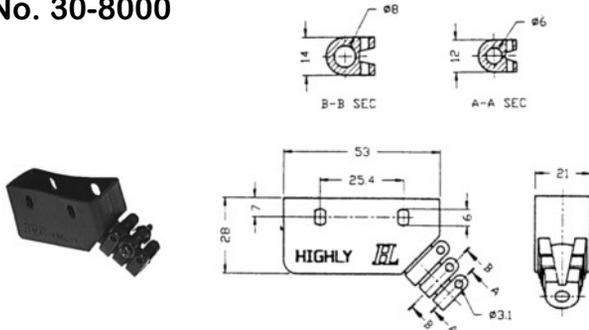
MOUNTING HOLES for
Heavy Duty Snap Action Switches

HEAVY DUTY SNAP ACTION SWITCHES with PIN PLUNGER

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-1300	SPDT	Snap Action Momentary	Pin Plunger
30-18144	SPDT	Snap Action Momentary	Extended Pin Plunger (14mm H.)

SPECIFICATIONS:

Terminal: Screw		**OT Min.:**	0.13mm
OF Max.:	250-350g	**MD Max.:**	0.05mm
RF Min.:	114g	**OP:**	5.9 ± 0.4mm
PT Max.:	0.4mm		

HEAVY DUTY SNAP ACTION SWITCH with PLUNGER

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-1307	SPDT	Snap Action Momentary	Plunger

SPECIFICATIONS:

Terminal: Screw		**OT Min.:**	5.5mm
OF Max.:	250-350g	**MD Max.:**	0.05mm
RF Min.:	114g	**OP:**	21.8 ± 0.8mm
PT Max.:	0.4mm		

HEAVY DUTY SNAP ACTION SWITCH with ROLLER PLUNGER

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-1308	SPDT	Snap Action Momentary	Roller Plunger

SPECIFICATIONS:

Terminal: Screw		**OT Min.:**	3.58mm
OF Max.:	250-350g	**MD Max.:**	0.05mm
RF Min.:	114g	**OP:**	32.5 ± 1mm
PT Max.:	0.4mm		

SPECIFICATIONS:

Current Rating:	15A - 125/250V AC
	1/2A @ 125V DC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) at 500VDC
Dielectric Strength:	1000V AC 50/60 Hz for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

HEAVY DUTY SNAP ACTION SWITCHES with BUTTON ACTUATOR

Part No.	Type	Action	Actuator
30-18130	SPDT	Snap Action Momentary	Screw
30-18135	SPDT	Snap Action Momentary	Solder

SPECIFICATIONS:

OF Max.:	250-350g	OT Min.:	1.6mm
RF Min.:	114g	MD Max.:	0.05mm
PT Max.:	0.4mm	OP:	21.5 ± 0.5mm

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

HEAVY DUTY SNAP ACTION SWITCH with SIDE ROLLER PLUNGER

Part No.	Type	Action	Actuator
30-1318	SPDT	Snap Action Momentary	Side Roller Plunger

SPECIFICATIONS:

Terminal: Screw		OT Min.:	3.58mm
OF Max.:	250-350g	MD Max.:	0.05mm
RF Min.:	114g	OP:	32 ± 1mm
PT Max.:	0.4mm		

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

HEAVY DUTY SNAP ACTION SWITCH with LONG LEVER

Part No.	Type	Action	Actuator
30-1701	SPDT	Snap Action Momentary	Long Lever

SPECIFICATIONS:

Terminal: Screw		OT Min.:	5.6mm
OF Max.:	70g	MD Max.:	1.27mm
RF Min.:	14g	FP Max.:	28.2mm
PT Max.:	10mm	OP:	19 ± 0.8mm

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

HEAVY DUTY SNAP ACTION SWITCH with LONG ROLLER LEVER

Part No.	Type	Action	Actuator
30-1703	SPDT	Snap Action Momentary	Long Roller Lever

SPECIFICATIONS:

Terminal: Screw		OT Min.:	4mm
OF Max.:	100g	MD Max.:	1.02mm
RF Min.:	22g	FP Max.:	36.5mm
PT Max.:	7.1mm	OP:	30.2 ± 0.8mm
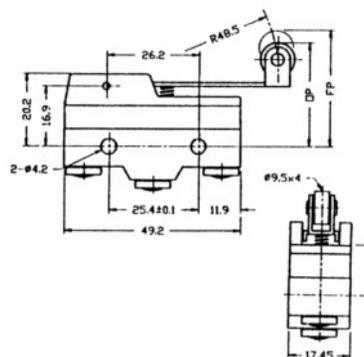
HEAVY DUTY SNAP ACTION SWITCH with HINGED ROLLER LEVER

SPECIFICATIONS:	
Current Rating:	15A @ 125/250V AC
	1/2A @ 125V DC, 1/4 HP @ 250V DC
	1/8 HP @ 125V AC, 1/4 HP @ 250V AC
Initial Contact Resistance:	15 Meg ohm (Max.)
Insulation Resistance:	500V DC 1000 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 Minute
Contact Material:	Silver
Terminal Material:	Brass - Silver Plate
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-1744	SPDT	Snap Action Momentary	Short Roller Lever

SPECIFICATIONS:			
Terminal:	Screw	OT Min.:	5.5mm
OF Max.:	250-350g	MD Max.:	0.05mm
RF Min.:	114g	OP:	21.8 ± 0.8mm
PT Max.:	0.4mm		

MOMENTARY PUSH BUTTON SNAP ACTION SWITCH
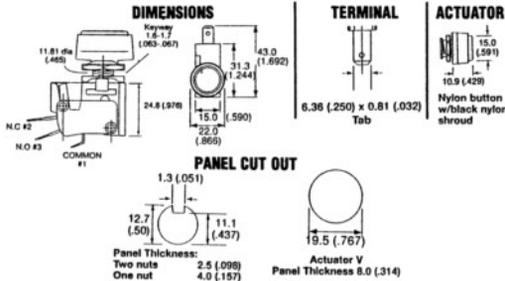
SPECIFICATIONS:

ELECTRICAL RATINGS:			
15A	125-250V AC 65C		UL E91973 CSA LR98589-1
1/2HP	125-250V AC		UL/CSA
15A	250V AC T125		VDE 4715UG

MATERIALS:

Operating Force (Nom):	280g (10 oz)
Endurance (Mech):	>10'6 Operations
Flame Retardancy:	UL 94 V2
Actuator:	Nylon 6.6 - V Stainless Steel
Mounting Bracket:	Nylon 6.6
Contacts:	Fine Silver u gap

Part No.	Type	Action	Actuator
30-383	SPDT	Normally Open/Closed	Red w/ Black Shroud

VANDAL RESISTANT SWITCHES
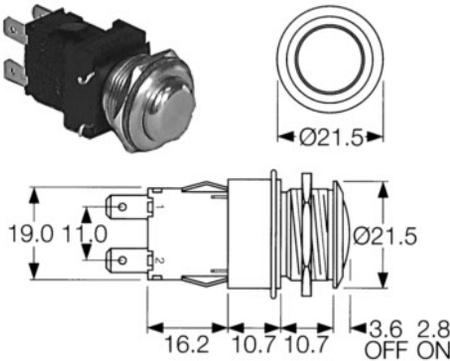
Current Rating:	12A 250VAC DP, 13A 250VAC SP
Initial Contact Resistance:	<100Meg Ohms @12VDC
Insulation Resistance:	>20Meg Ohms
Dielectric Strength (Open Contacts):	>1000V for 1 minute
Contact Material:	Silver Alloy
Terminal Material:	Copper Alloy
Body Material:	Nylon 6.6
Actuator & Bezel:	Stainless Steel
Terminal Type:	.187" Quick Connect

Part No.	Type	Action	Actuator
30-14300	SPST	On-Off	Stainless Steel
30-14350	DPST	On-Off	Stainless Steel
30-14310	SPST	(On)-Off	Stainless Steel
30-14360	DPST	(On)-Off	Stainless Steel

( ) = Momentary

Mounting Hole: 19.5mm (.76")
Panel thickness up to 3.0 mm

VANDAL RESISTANT SNAP ACTION SWITCH
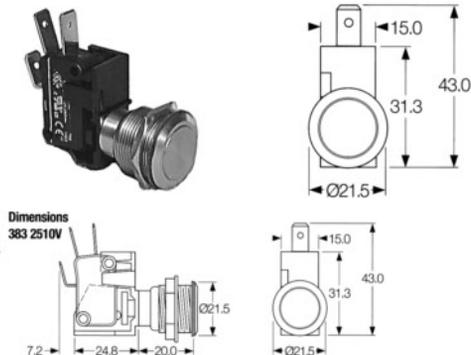
Current Rating:	22A 125-250VAC 1Hp @ 65° C
Mechanical Life:	>10 Milli ohms Operations
Insulation Voltage:	>1250V
Tracking Force:	120g
Contact Material:	Fine Silver
Terminal Material:	Copper Alloy
Body Material:	Nylon 6.6 VO
Actuator & Bezel:	Stainless Steel
Terminal Type:	.250" Quick Connect

Part No.	Type	Action	Actuator
30-14340	SPDT	On -(On)	Stainless Steel

( ) = Momentary

Mounting Hole: 19.5mm (.76")
Panel thickness up to 8.0 mm

SWITCHES SPECIALTY & SECURITY

AC PLUG-IN DIMMER SWITCH

SPECIFICATIONS:

Current Rating:	1.2A @ 125V AC
	For Devices up to 150 Watts
Contact Material:	Nickel Plated Brass
Terminal Material:	Brass
Terminal Type:	120V AC Plug & Jack

Part No.	Type	Action			Actuator
30-10194	SPST	ON	-	OFF	Round Plastic Knob

Note: Not for inductive load, only for resistive load.

KNIFE SWITCH

SPECIFICATIONS:

Current Rating:	300MA @50V AC, 500MA @ 6V DC
Initial Contact Resistance:	15MW (Max.)
Terminal Material:	Nickel Plated Steel
Contact Material:	Nickel Plated Steel
Terminal Type:	Screw
Base Material:	ABS

Part No.	Type	Action			Actuator
30-9730	DPDT	ON	OFF	ON	Plastic Handle
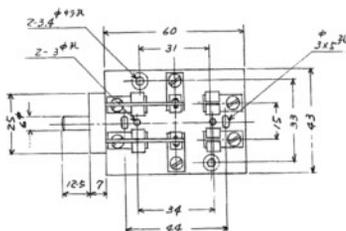
Dimensions: 43mm x 60mm
Mounting Centers: 44mm

MERCURY TILT SWITCH

SPECIFICATIONS:

Current Rating:	1A @ 250V AC
Tilt Angle:	12º
Contact Material:	Iron Alloy/Mercury
Terminal Material:	Copper Wire
Terminal Type:	1.25" Wire Leads

Part No.	Type	Action	Actuator
30-10074	SPST	Normally open or closed. Dependent upon tilt angle.	Iron Alloy/Mercury

----

NON MERCURY TILT SWITCH
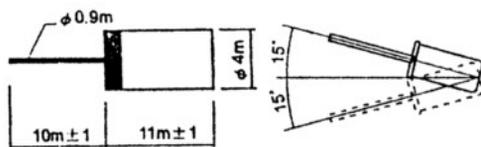
SPECIFICATIONS:

Current Rating:	.5A @ 24V AC
Tilt Angle:	15º
Terminal Type:	.35" Leads

Part No.	Type	Action
30-17072	SPST	Normally open or closed. Dependent upon tilt angle.

MAGNETIC REED SWITCH

SPECIFICATIONS:

Current Rating:	.5A @ 100VDC
Initial Contact Resistance:	300 Meg ohm (Max.)
Operating Gap:	1.25" Max
Mounting Centers:	2.094" (2-3/32")
Mounting Hole:	.15" (Max.)
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-17050	SPST	N.C (Normally closed) when magnet is within actuation range	Magnet

----

N.O./N.C. MAGNETIC REED SWITCH

SPECIFICATIONS:

Current Rating:	0.5A @ 20V DC, 10 Watts (Max.)
Voltage Rating:	120V AC (Max.) @ 0.08A
	80V DC (Max.) @ 0.1A
Operating Gap:	.90" Max
Contact Material:	Iron Alloy - Gold Plate
Terminal Material:	Plated Steel
Terminal Type:	Screw

Part No.	Type	Action	Actuator	Color
30-10072	SPDT	Normally open w/o magnet	Magnet	Brown
30-10071	SPDT	Normally closed w/o magnet	Magnet	White

Mounting Center: 2.125"

MAGNETIC REED SWITCH

SPECIFICATIONS:

Current Rating:	.5A @ 100VDC/125VAC
Initial Contact Resistance:	300 Meg ohm (Max.)
Operating Gap:	.90" Max
Mounting Centers:	1.56" (1-9/16")
Mounting Hole:	.134" (Max.)
Terminal Type:	Screw

Part No.	Type	Action	Actuator
30-17051	SPST	N.O. (Normally Open) when magnet is within actuation range	Magnet

----

LOW PROFILE MAGNETIC REED SWITCH

SPECIFICATIONS:

Current Rating:	.5A @ 100VDC/125VAC
Initial Contact Resistance:	300 Meg ohm (Max.)
Operating Gap:	.60"-1.5"
Mounting Centers:	1"
Mounting Hole:	.125" (Max.)
Terminal Type:	10" Leads, 24 AWG

Part No.	Type	Action	Actuator
30-17054	SPST	N.O. (Normally Open) when magnet is within actuation range	Magnet

OPEN REED SWITCH

Sizes
Glass Length: 19.5mm
Overall Length: 52mm

SPECIFICATIONS:

Current Rating:	1A @ 200VDC
Power Rating:	10W
Breakdown Voltage:	350V DC
Operating Time (MS):	0.8
Contact Material:	Rhodium
Pull-In Range (AT):	9-60
Terminal Type:	Leads

Part No.	Type	Action		
30-17152	SPST	ON	-	OFF

OPEN REED SWITCH

SPECIFICATIONS:

Current Rating:	1A @ 150VAC
Power Rating:	20W
Breakdown Voltage:	200V DC
Operating Time (MS):	2.5
Contact Material:	Rhodium
Pull-In Range (AT):	15-30
Terminal Type:	Leads

Part No.	Type	Action
30-17154	SPDT	Normally Open or Normally Closed

Sizes
Glass Length: 14.5mm
Overall Length: 55mm

RECESSED MAGNETIC REED SWITCH
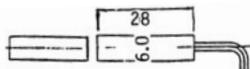
SPECIFICATIONS:

Current Rating:	.2A @ 12VDC
Terminal Type:	12" Leads, 22 AWG

Part No.	Type	Action
30-17060	SPST	N.C. (Normally Closed) When Magnet is within actuation Range.

Mounting Hole: 0.25"

SPST N.C. Door Jam Reed Switch.

Designed for use with alarm systems. The switch will remain closed as long as the magnet is within 1/2" of the switch. Magnet is mounted in the door. Both magnet and switch will fit tightly in 3/8" holes in wood or aluminum door jams and doors (may not work at all with steel doors). Fits flush with surface; glue in place with adhesive.

Pigtail lead wires are 11" long. Switch case is high impact plastic. Contacts (reed switch) rated at 0.2 amps at 12 VDC. Life approximately two million cycles.

Part No.	CIRCUIT	NOTES
30-17059	SPST Normally Closed reed switch	Normally closed when magnet is within 1/2" or closer

ROLLER BALL SWITCH

SPECIFICATIONS:

Current Rating:	.2A @ 12VDC
Mounting Centers:	1.16"
Mounting Hole:	.765" (49/64")
Dimensions:	.85" W x 1.6" L x 1.8"H
Terminal Type:	10" Leads, 24 AWG

Part No.	Type	Action			Actuator
30-17070	SPST	OFF	-	(ON)	Roller Ball

Note: ( ) = Momentary

SNAP-IN TAMPER SWITCH
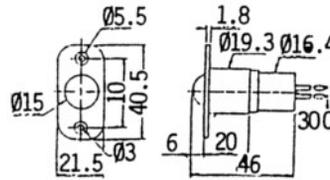
SPECIFICATIONS:

Current Rating:	1A @ 125VAC
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-17074	SPST	OFF	-	(ON)	Plastic (.55" H.)

Note: ( ) = Momentary

Mounting Hole: 0.75"

FRIG SWITCH
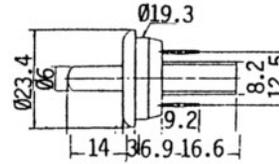
ELECTRICAL RATING; UL Listed SPST Switch.
Current Rating: 5A @125 VAC
Insulation Resistance: @DC 500V 100 Megohms
Withstand Voltage: AC 1500V 1 minute
Contact Resistance: DC 2-4V 1A 100 milliohms-ohms or less.
Life: 100,000 cycles at 5 Amps
Minimum stroke to open contacts is 0.5mm from full open position
Action: SPST, (OFF) - ON

Note: ( ) = Momentary

Designed for use in a refrigerator as a light switch, turning "on" when the door is opened. Switch is normally on until the activator is depressed; or pushed down by a closing door. For mounting in metal panel. Can be used in "dead mans" switch applications. Applications could include alarm systems, hood up indicator switch etc.

No. 30-17065

A= FULL TRAVEL
B= #1 & #3 AT "ON"

MOUNTING HOLE
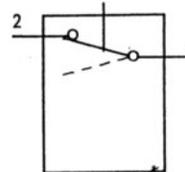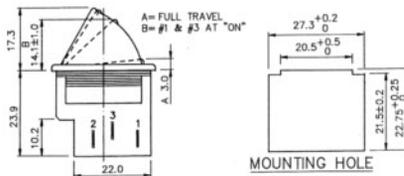
FOOT OPERATED SWITCHES

Foot operated switches may be used for starting and stopping light-weight motors, keying paging systems or intercoms and transceivers; useful just about anywhere that a person hands are occupied. Also for applications in music.

These two switches are fundamentally the same, but one is push-on, push-off. The other is 'momentary' and the switch will be closed only as long as the user keeps the switch pressed down with his foot.

Both units are supplied with a ten foot, two conductor wire terminated in a standard 1/4" phone plug. Color black, momentary unit has red foot pad on top.

Part No.	Type	Action			Actuator
30-17090	SPST	(ON)	-	OFF	Foot Pedal
30-17092	SPST	Toggle	0N	OFF	Foot Pedal

Note: ( ) = Momentary

Electrical Rating:
5 Amps @125 VAC, 3 Amps @250 VAC
Initial contact resistance: less than 50 milliohms
Insulation resistance: >100 Megohms
@ 500 Volts.

SPECIFICATIONS:

Current Rating:	50mA @ 125VDC
Initial Contact Resistance:	100 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500 VDC
Dielectric Strength:	250V AC/ 1 minute
Contact Material:	Phosphor Bronze w/Silver Cladding
Terminal Material:	Brass with Silver Cladding

Part No.	Housing	Type	Action			Terminal
30-14411	6 x 6mm - 4.5mm H.	SPST	OFF	-	(ON)	Through Hole Mt.
30-14412	6 x 6mm - 7.0mm H.	SPST	OFF	-	(ON)	Surface Mt.
30-14414	6 x 6mm - 7.0mm H.	SPST	OFF	-	(ON)	Through Hole Mt.
30-14415	6 x 6mm - 9.5mm H.	SPST	OFF	-	(ON)	Surface Mt.
30-14416	12 x 12mm - 4.3mm H.	SPST	OFF	-	(ON)	Surface Mt.
30-14418*	6 x 6mm - 11.8mm H.	SPST	OFF	-	(ON)	Through Hole Mt.

No. 30-14410 Designer Kit

Kit contains No. 30-14411, No. 30-14412, No. 30-14414, No. 30-14415, and No. 30-14418

NOTE: ( ) = Momentary
*30-14418 is Right Angle

No. 30-14411
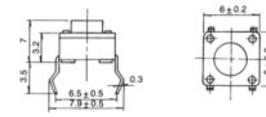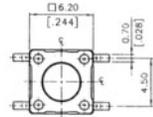
No. 30-14418

No. 30-14414
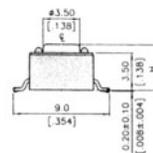
No. 30-14412
No. 30-14415
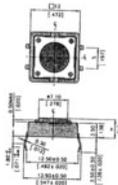
No. 30-14416

No. 30-14411

No. 30-14418
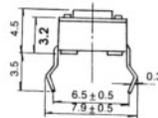
PUSH BUTTON KEY SWITCH

SPECIFICATIONS:

Current Rating:	10mA @ 35V DC
Stroke:	0.8mm
Operating Force:	130 + 30 gf.
Terminal Type:	PCB Mount

Part No.	Type	Action			Actuator
30-14420	SPST	OFF	-	(ON)	Square Black

NOTE: ( ) = Momentary

PUSH BUTTON KEYBOARD SWITCH

SPECIFICATIONS:

Current Rating:	50mA @ 24V AC
Initial Contact Resistance:	20 Meg ohm Max (AC 12UV/5mA)
Insulation Resistance:	100 Meg ohms. (Min.)
Dielectric Strength:	250V/AC (Min.)
Electrical Life:	200,000 Operations
Shock Resistance:	30G
Terminal Type:	PCB Mount

Part No.	Type	Action			Actuator
30-14419	SPST	OFF	-	(ON)	White Plastic

NOTE: ( ) = Momentary

Electrical Rating:
RATING: 25MA @50VDC
Electrical Life: 1million cycles typical.
Insulation resistance: minimum of 1,000 megohms.
Contact Resistance: 10m max @ 2-4VDC, 100mA.
Dielectric strength: >1,000V rms @ sea level.
Operating force:120+/-50 gf
Housing: 6/6 Nylon.
Cap: ABS or polycarbonate.
Dome contact: gold over stainless.
Terminals and contacts: Silver plated over copper alloy.

SPST Momentary Printed Circuit Push Button Switch

Attractive, low profile SPST push-button switches. A dull click provides tactile feedback when contact has been made.

P.C. MOUNTING

Part No.	Type	Action			Actuator Color
30-14424	SPST	OFF	-	(ON)	RED
30-14425	SPST	OFF	-	(ON)	WHITE
30-14426	SPST	OFF	-	(ON)	BLACK

NOTE: ( ) = Momentary

* Display pack of 2
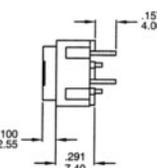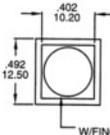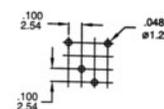
Printed Circuit-vertical mounting Miniature TOGGLE SWITCHES UL E 187490

Vertical mounting PC board switches with either a plain (smooth) bushing or with a threaded bushing and assembled hardware. Integral mounting brackets provide strength and prevent switching action from stressing PC board pads

Part No.	Circuit	Bushing
30-20038	SPDT ON-ON	1/4"-20 threaded
30-20037	SPDT ON-ON	Smooth
30-20048	DPDT ON-ON	1/4"-20 threaded
30-20047	DPDT ON-ON	Smooth
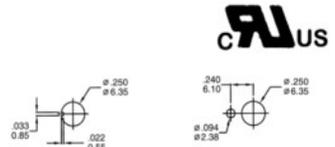
Panel mounting dimensions for PC board miniature switches

Electrical Rating:
Contact rating: 5 amps @ 120 VAC or 28 VDC
2 amps @ 250 VAC resistive load
Life expectancy: 40,000 make-break cycles @ full load.
Contact Resist.: 10 m ohm Max, initial @ 2-4 volts @100 mA
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.
Operating temperature range: -30 to +85 degrees Celsius

Mechanical:
Case: Dially phthalate (DAP) (UL94V-0), epoxy sealed terms.
Actuator: Brass, Chrome plated.
Bushing: Brass, nickel plated
Housing: Stainless steel.
Switch support: Brass, tin plated
Terminals: Gold plated
Contact materials: coin silver.

SPDT

DPDT

OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00
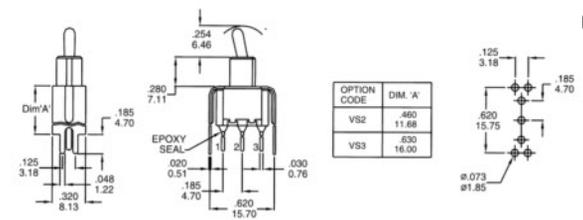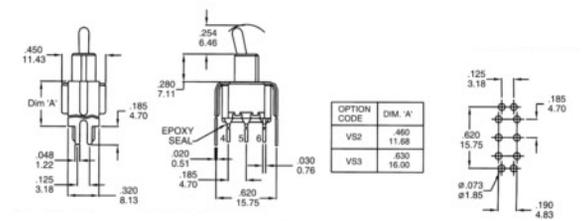
Printed Circuit Sealed Miniature Toggle Switches Vertical Mounting

Vertical mounting PC board switches with a (smooth) bushing. This series is SEALED with special "O" rings in the actuator neck and EPOXY is applied around terminals where they enter the switch case. Switches sealed with epoxy around the terminals are impervious to solder fluxes and cleaners. The "O" rings provide very good, long term resistance to environmental contamination.

Part No.	Circuit
30-20150	SPDT ON-ON
30-20153	SPDT ON-(ON)
30-20156	SPDT ON-OFF-ON
30-20160	SPDT ON-OFF-(ON)

NOTE: ( ) = Momentary

Electrical Rating:
Contact rating: 5 amps @ 120 VAC or 28 VDC
2 amps @ 250 VAC resistive load
Life expectancy: 30,000 make-break cycles @ full load.
Contact Resistance: 10 m ohms Max, @ 2-4 volts. @100 mA
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.
Operating temperature range: -30 to +85 degrees Celsius
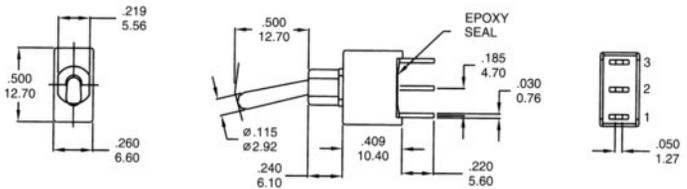
HORIZONTAL RIGHT ANGLE MOUNTING - SEALED

Part No.	Circuit
30-20170	SPDT ON-ON
30-20172	SPDT ON-(ON)

NOTE: ( ) = Momentary

Mechanical:
Case: Glass-filled Nylon 66 (UL94V-0)
Actuator: Brass, Chrome plated w/internal "O" ring seal.
Switch support retainer: Stainless steel.
Terminals: Gold Plated.
Contact materials: coin silver.
Special: Epoxy seal at contacts (against solder, flux remover)

P.C. MOUNTING

REFERENCE ONLY TERM. NOS. FOR
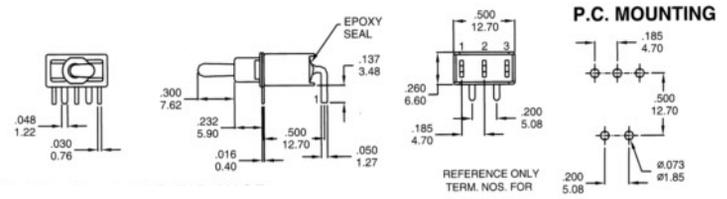
SWITCHES MINIATURE TOGGLE, PC mount

Printed Circuit Miniature Toggle Switches

Philmore PC mounting miniature switches are available in two bushing styles. When offered with a threaded bushing, hardware (nut and washers) are included and assembled. Smooth, non-threaded bushings are also offered and the buyer needs to watch for this distinction to be sure to get the correct style.

Philmore Printed Circuit board layout patterns include both conductor mounting holes and the mounting holes for mechanical supports which are an integral part of toggles and some of the other styles, where they are needed.

Printed Circuit-horizontal mounting
Miniature TOGGLE SWITCHES

Right angle and horizontal mounting PC board switches with either a plain (smooth) bushing or with a threaded bushing and assembled hardware. Coin silver contacts for current capacity; gold plated terminals.

Part No.	Circuit	Bushing
30-20004	SPDT ON-ON	1/4"-20 threaded
30-20003	SPDT ON-ON	Smooth
30-20006	SPDT ON-NONE (ON)	1/4"-20 threaded
30-20005	SPDT ON-(ON)	Smooth
30-20010	DPDT ON-NONE (ON)	1/4"-20 Threaded
30-20009	DPDT ON-NONE (ON)	Smooth
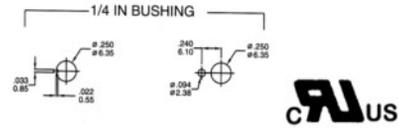
NOTE: ( ) = Momentary

Panel mounting dimensions for PC board miniature switches

Electrical Rating:
Contact rating: 5 amps @ 120 VAC or 28 VDC
  2 amps @ 250 VAC resistive load
Life expectancy: 40,000 make-break cycles @ full load.
Contact Resist: 10 m ohms Max, initial @ 2-4 volts @100 mA
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.
Operating temperature range: -30 to +85 degrees Celsius

SPDT
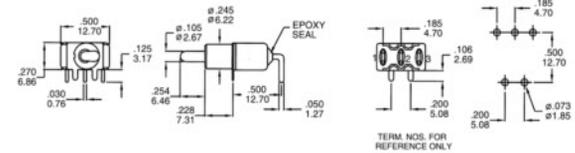
Mechanical:
Case: Dially phthalate (DAP) (UL94V-0), epoxy sealed terms.
Actuator: Brass, Chrome plated.
Bushing: Brass, nickel plated
Housing: Stainless steel.
Switch support: Brass, tin plated
Terminals: Gold plated
Contact materials: coin silver.
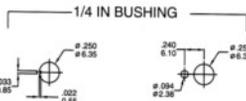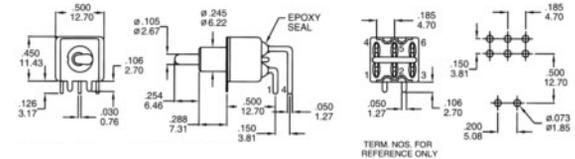
DPDT

Panel mounting dimensions for PC board miniature switches

Part No.	Circuit	Bushing
30-20018	SPDT ON-ON	1/4"-20 threaded
30-20017	SPDT ON-ON	Smooth
30-20026	DPDT ON-ON	1/4"-20 Threaded
30-20025	DPDT ON-ON	Smooth

Printed Circuit-vertical mounting
Miniature TOGGLE SWITCHES

Right angle and vertical mounting PC board switches with either a plain (smooth) bushing or with a threaded bushing and assembled hardware. Gold plated terminals, contacts are coin silver.
UL Listed   E187490

Electrical Rating:
Contact rating: 5 amps @ 125 VAC
  2 amps @ 250 VAC
Life expectancy: 40,000 make-break cycles @ full load.
Contact Resistance: 10 milliohms Max, initial @ 2-4 volts.
  @100 mA for both silver and gold plated contacts.
Insulation resistance: 1,000 Megohms minimum
Dielectric Strength: 1,000 V RMS @ sea level.
Operating temperature range: -30 to +85 degrees Celsius

SPDT
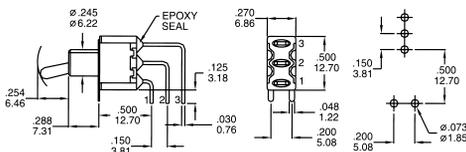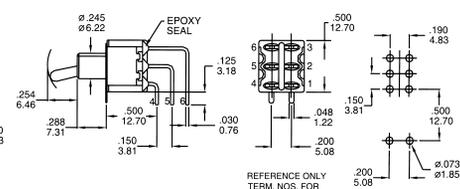
Mechanical:
Case: Dially phthalate (DAP) (UL94V-0)
Actuator: Brass, Chrome plated.
Bushing: Brass, nickel plated
Housing: Stainless steel.
Switch support: Brass, tin plated
Terminals: Gold plated
Contact materials: Coin Silver.

DPDT

SUB-MINIATURE TOGGLE SWITCHES - SPST & SPDT

SPECIFICATIONS:

Current Rating:	3A @ 120V AC, 28V DC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10030	SPST	ON	-	OFF	Metal
30-10042	SPDT	ON	-	ON	Metal
30-10044	SPDT	ON	OFF	ON	Metal
30-10046	SPDT	ON	-	(ON)	Metal
Terminal Connection		2-3	Open	2-1	

NOTE: ( ) = Momentary

Mounting Hole: 0.203"

SUB-MINIATURE TOGGLE SWITCHES - DPDT

SPECIFICATIONS:

Current Rating:	3A @ 120V AC, 28V DC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10048	DPDT	ON	-	ON	Metal
30-10050	DPDT	ON	OFF	ON	Metal
30-10052	DPDT	ON	-	(ON)	Metal
Terminal Connection		2-3, 5-6	Open	2-1, 5-4	

NOTE: ( ) = Momentary

Mounting Hole: 0.203"

MINIATURE TOGGLE SWITCHES - SPST & SPDT

SPECIFICATIONS:

Current Rating:	5A @ 120V AC/28V DC, 2A @ 250V AC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10002	SPDT	ON	-	ON	Metal
30-10004	SPDT	ON	-	(ON)	Metal
30-10006	SPDT	ON	OFF	ON	Metal
30-10007	SPST	ON	-	OFF	Metal
30-10008	SPDT	(ON)	OFF	(ON)	Metal
30-10010	SPDT	ON	OFF	(ON)	Metal
Terminal Connection		2-3	Open	2-1	

NOTE: ( ) = Momentary

Mounting Hole: 0.250"

MINIATURE TOGGLE SWITCHES - DPDT

SPECIFICATIONS:

Current Rating:	5A @ 120V AC/28V DC, 2A @ 250V AC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10012	DPDT	ON	-	ON	Metal
30-10014	DPDT	ON	-	(ON)	Metal
30-10016	DPDT	ON	OFF	ON	Metal
30-10018	DPDT	(ON)	OFF	(ON)	Metal
30-10020	DPDT	ON	OFF	(ON)	Metal
30-090*	DPDT	ON	ON	ON	Metal
Terminal Connection		2-3, 5-6	Open	2-1, 5-4	
30-090*		2-3, 5-6	2-3, 5-4	2-1, 5-4	

NOTE: ( ) = Momentary

Mounting Hole: 0.250"

215

SWITCHES MINIATURE & TOGGLE

SPECIFICATIONS:

Current Rating:	5A @ 120V AC/28V DC, 2A @ 250V AC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10022	3PDT	ON	-	ON	Metal
30-10024	3PDT	ON	OFF	ON	Metal
30-10026	3PDT	(ON)	OFF	(ON)	Metal
30-10028	3PDT	ON	OFF	(ON)	Metal
Terminal Connection	2-3, 5-6, 8-9	Open	2-1, 5-4, 8-7		

NOTE: ( ) = Momentary

MINIATURE TOGGLE SWITCHES - 3PDT

Mounting Hole: 0.250"

SPECIFICATIONS:

Current Rating:	5A @ 120V AC/28V DC, 2A @ 250V AC
Initial Contact Resistance:	2-4V DC 1A 10m ohm
Insulation Resistance:	1000 Meg ohm (Min.)
Dielectric Strength:	1000V RMS @ Sea Level
Contact Material:	Coin Silver - Silver Plate
Terminal Material:	Brass - Silver Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-10032	4PDT	ON	OFF	ON	Metal
30-10034	4PDT	ON	-	ON	Metal
Terminal Connection	2-3, 5-6, 8-9,11-21	Open	2-1, 5-4, 8-7, 11-10		

MINIATURE TOGGLE SWITCHES - 4PDT

Mounting Hole: 0.250"
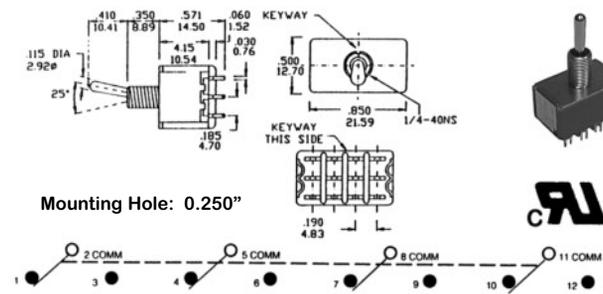
SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
Initial Contact Resistance:	50 Meg ohm
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plated
Terminal Material:	Brass - Nickel Plated
Actuator Type:	Metal

Part No.	Type	Action			Actuator
30-1100	SPST	ON	-	OFF	Solder
30-1104	SPST	ON	-	OFF	Screw
30-1110	SPDT	ON	-	ON	Solder
30-1114	SPDT	ON	-	ON	Screw
30-1120	SPDT	ON	OFF	ON	Solder
30-1124	SPDT	ON	OFF	ON	Screw

SPST & SPDT STANDARD SIZE TOGGLE SWITCHES

Screw Terminal **Solder Terminal**

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	15A @ 125/250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plated
Terminal Material:	Brass - Nickel Plated
Actuator Type:	Metal

Part No.	Type	Action			Actuator
30-1130	DPST	ON	-	OFF	Solder
30-1134	DPST	ON	-	OFF	Screw
30-1140	DPDT	ON	-	ON	Solder
30-1144	DPDT	ON	-	ON	Screw
30-1150	DPDT	ON	OFF	ON	Solder
30-1154	DPDT	ON	OFF	ON	Screw

DPST & DPDT STANDARD SIZE TOGGLE SWITCHES

Screw Terminal **Solder Terminal**

Mounting Hole: 0.500"

Current Rating:	3A 250VAC, 6A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	Solder Connection
Mounting hardware:	M15 P1.0

ROUND PADDLE LEVER TOGGLE SWITCHES

Part No.	Type	Action	Actuator Color
30-10320	SPST	On-Off	Black Paddle
30-10322	SPDT	On-On	Black Paddle
30-10324	SPDT	On-(On)	Black Paddle
30-10326	SPDT	On-Off-On	Black Paddle
30-10328	SPDT	On-Off-(On)	Black Paddle
30-10329	SPDT	(On)-Off-(On)	Black Paddle

Panel Cut-out: 15mm (.59")
Maximum panel thickness 6.0 mm

( ) = Momentary

CSA · UL

Current Rating:	6A 250VAC, 10A 125VAC
Initial Contact Resistance:	<50Meg Ohms @12VDC
Insulation Resistance:	>100Meg Ohms
Dielectric Strength (Open Contacts):	>1500V for 1 minute
Contact Material:	Silver Plated Brass
Terminal Material:	Copper Alloy
Body Material:	Nylon (UL 94V-2)
Actuator & Bezel:	Nylon (UL 94V-2)
Terminal Type:	Solder Connection
Mounting Hardware:	M18 P1.0
Lamp Voltage:	LED 3V* @20ma (*resistor needed for other voltages)

ROUND PADDLE LEVER TOGGLE SWITCHES

LED indicator on top of lever

Part No.	Type	Action	Lamp / Actuator Color
30-10440	DPST	On-Off	Black Paddle
30-10442	DPDT	On-On	Black Paddle
30-10444	DPDT	On-Off-On	Black Paddle
30-10522	SPST	On-Off	LED Lamp, Red
30-10523	SPST	On-Off	LED Lamp, Amber
30-10525	SPST	On-Off	LED Lamp, Green
30-10622	SPDT	On-On	LED Lamp, Red
30-10623	SPDT	On-On	LED Lamp, Amber
30-10625	SPDT	On-On	LED Lamp, Green
30-10722	SPDT	On-Off-On	LED Lamp, Red
30-10723	SPDT	On-Off-On	LED Lamp, Amber
30-10725	SPDT	On-Off-On	LED Lamp, Green

Panel Cut-out: 18mm (.70")
Maximum panel thickness 5.0 mm

CSA · UL

Using an LED

LED wth DC (Direct Current)

An LED (light emitting diode) requires about two volts to operate and twenty milliamps of current. A current limiting resistor must be used in series with an LED to prevent current over 20 mA from flowing; otherwise, your LED will be damaged. You may simply use Ohm's law to calculate the resistor value. Here is an example, we have a circuit operating at 12 volts DC, and need to know the value of a resistor to use. The LED "wants" two volts to operate ; so subtract 2 from the 12 volts which is of course, ten. Plug the "ten" in at "E" and divide by "I" or .020 amps. The result is 500 ohms for the resistor value

If you forget to subtract the two volts, the resistor value will be 600 and the LED will not be at maximum brightness. However, it will last much longer! (about double normal life).

Another formula you can use is R=50(V-2). The R is for resistor, the V for voltage. We like this one as it is easy to recall and do in your head.

LED wth AC (Alternating Current)

When using an LED with AC, a diode must be placed in series with the LED. Because AC will only be flowing 1/2 the time, we use a variation on the easy formula shown to the left(bottom). Use R=25(V2.7), which includes the voltage drop across the diode.

So, if you have a circuit using 28 volts AC, multiply 25.3 (or 28V -2.7), times 25 equals 632 ohms. We need to use a standard value resistor, so use 680 ohms for "R".

Typical voltages used in electronics and resistor values (rounded to nearest standard resistor).

DC Volts	5V	6V	12V	24V	AC Volts	6V	12V	24V	48V	117V
Resistor (ohms)	150	180	470	1200	Resistor (ohms)	82	220	560	1200	3K

217

SWITCHES PADDLE HANDLE TOGGLE

AUTOMOTIVE/MARINE TOGGLE SWITCHES

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 250V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-160	SPST	ON	-	OFF	Nylon
30-166	DPDT	ON	-	ON	Nylon

Mounting Hole: 0.500"

AUTOMOTIVE/MARINE TOGGLE SWITCHES

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 250V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-150	SPDT	ON	OFF	ON	Nylon
30-152	SPDT	(ON)	OFF	(ON)	Nylon
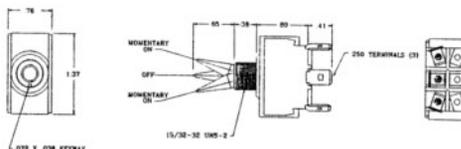
Mounting Hole: 0.500"

NOTE: ( ) = Momentary

AUTOMOTIVE/MARINE TOGGLE SWITCHES

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 250V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-156	DPDT	ON	-	ON	Nylon
30-158	DPDT	ON	OFF	ON	Nylon
30-159	DPDT	(ON)	OFF	(ON)	Nylon
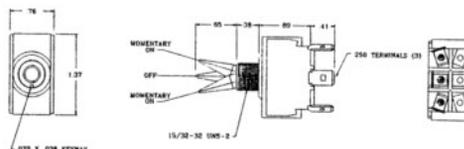
Mounting Hole: 0.500"

NOTE: ( ) = Momentary

REVERSING TOGGLE SWITCH

SPECIFICATIONS:

Current Rating:	21A @14V DC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V AC for 1 minute
Contact Material:	Brass
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-125	DPDT	(ON)	OFF	(ON)	Nylon

NOTE: ( ) = Momentary

Mounting Hole: 0.500"

STANDARD SIZE PADDLE HANDLE TOGGLE SWITCH

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	10A @125V AC, 6A @ 250V AC
Initial Contact Resistance:	20 Meg ohm (Max.)
Insulation Resistance:	500V DC 100 Meg ohm (Min.)
Dielectric Strength:	1500V AC for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass - Bright Nickel Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-089	DPDT	ON	OFF	ON	Black Plastic

LIGHTED PADDLE HANDLE TOGGLE SWITCHES
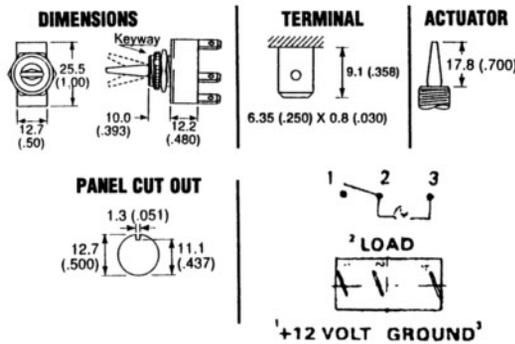
Mounting Hole: 0.500"

SPECIFICATIONS:

ELECTRICAL RATING:
16A   12V DC
MATERIALS:

Contact Material:	Silver - Silver Plated
Terminal Material:	Silver - Silver Plated
Lamp:	12V, 55mA, 10,000 Hr Avg. Life
Initial Contact Resistance:	5 Milliohms (Max.)
Insulation Resistance:	100 Megaohms
Dielectric Strength:	1500V AC (Min.)

Part No.	Type	Action			Actuator
30-890	SPST	ON	-	OFF	Red
30-892	SPST	ON	-	OFF	Green
30-894	SPST	ON	-	OFF	Amber

MINI TIPPETTE PADDLE HANDLE TOGGLE SWITCHES

Mounting Hole: 0.55" x 1.125"

SPECIFICATIONS:

Current Rating:	15A @ 125VAC, 10A @ 250VAC
	3/4 HP 125-250VAC
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V (min.)
Base Material:	Nylon
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-10308	SPST	ON	-	OFF	Black Nylon
30-10318	SPST	ON	-	OFF	Black Nylon with Amber Lens
30-10319	SPST	ON	-	OFF	Black Nylon with Red Lens

NOTE: Lamp Voltage 125Volt/Neon

STANDARD SIZE PADDLE HANDLE TOGGLE SWITCHES
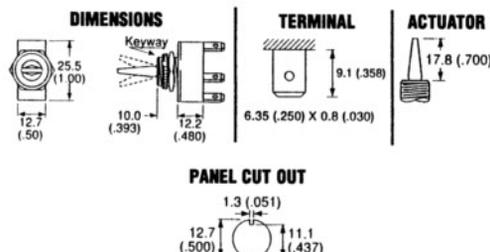
Mounting Hole: 0.500"

SPECIFICATIONS:

ELECTRICAL RATINGS:

20A	125-250V AC 85C Single Pole	UL E45221
1/4HP	125V AC 1/2HP 250V AC 3 Pos.	UL/CSA
1/2HP	125V AC 1HP 250V AC 2 Pos.	UL/CSA
16A	125-250V AC	CSA LR10990
16 (4)A	250V AC T85	VDE 89254
20A	28V DC	Approvals N/A

Part No.	Type	Action			Actuator
30-170	SPST	ON	-	OFF	Black Nylon
30-171	SPDT	ON	-	ON	Black Nylon
30-172	SPDT	ON	OFF	ON	Black Nylon

219

SWITCHES STANDARD TOGGLE

STANDARD SIZE BAT HANDLE TOGGLE SWITCHES
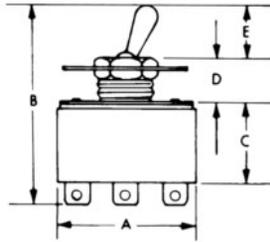
Mounting Hole: 0.500"
Bushing .472 OD

SPECIFICATIONS:

Current Rating:	3A @ 125V AC, 1A @ 250V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-219	SPST	ON	-	OFF	Metal
30-221	DPDT	ON	-	ON	Metal

Part No.	Type	A	B	Depth	C	D	E
30-219	SPST	1"	1-21/32"	9/16"	9/16"	13/32"	1/2"
30-221	DPDT	1-5/32"	1-13/16"	22/32"	11/16"	13/32"	1/2"

STANDARD SIZE BAT HANDLE TOGGLE SWITCH

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	6A @125V AC, 3A @ 250V AC
Initial Contact Resistance:	5 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-226	DPDT	ON	OFF	ON	Metal

STANDARD SIZE BAT HANDLE TOGGLE SWITCHES

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	10A @125V AC, 6A @ 250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	DC 500V 100 Meg ohm (Min.)
Dielectric Strength:	AC 1500V 1 minute
Bushing Material:	Brass - Nickel Plate,M12-.75 Threads
Terminal Material:	Brass - Nickel Plate
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-10124	SPDT	ON	-	ON	Brass Nickel Plate
30-10126*	SPDT	ON	-	ON	Brass Nickel Plate

(* 30-10126 has .250" Quick connect terminal.)

STANDARD SIZE BAT HANDLE TOGGLE SWITCHES

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	15A @125V AC, 10A @ 250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	DC 500V 100 Meg ohm (Min.)
Dielectric Strength:	AC 1500V 1 minute
Bushing Material:	Brass - Nickel Plate,M12-.75 Threads
Terminal Material:	Brass - Nickel Plate
Actuator Type:	Metal (Brass Nickel Plate)

Part No.	Type	Action			Terminal
30-10099	SPDT	(ON)	OFF	(ON)	Solder
30-10351	SPDT	(ON)	OFF	(ON)	Screw

NOTE: ( ) = Momentary

HEAVY DUTY TOGGLE SWITCHES, AC/DC MOTOR CONTROL

SPECIFICATIONS:

Current Rating:	16A @125V AC, 8A @ 250V AC
	1 HP @ 125-250V AC
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1000V 1 minute
Base Material:	Phenolic
Bezel Material:	Brass/Nickel Plate
Terminal Type:	.Screw (#6-32NC-2 Thread)

Part No.	Type	Action			Actuator
30-10341	SPST	ON	-	OFF	Brass Nickel Plate
30-10131	DPST	ON	-	OFF	Brass Nickel Plate
30-10342*	DPST	ON	-	OFF	Brass Nickel Plate

* = Rating for 30-10342 is 20A @ 125VAC, 10A @ 250VAC, 1-1/2 HP 125-250VAC

Mounting Hole: 0.500"

STANDARD SIZE BAT HANDLE TOGGLE SWITCH
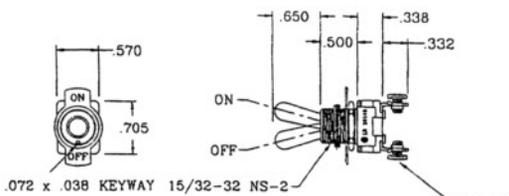
SPECIFICATIONS:

Current Rating:	15A @ 125V AC, 10A @ 277V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Silver Plate
Terminal Material:	Brass
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-067	SPST	ON	-	OFF	Metal
30-10360*	DPST	ON	-	OFF	Metal

* = 3/4 HP 125-250VAC

Mounting Hole: 0.500"

STANDARD SIZE BAT HANDLE TOGGLE SWITCHES

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	1-1/2 HP @ 125/277V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-020	SPST	ON	-	OFF	Metal

Mounting Hole: 0.500"

STANDARD SIZE BAT HANDLE TOGGLE SWITCHES
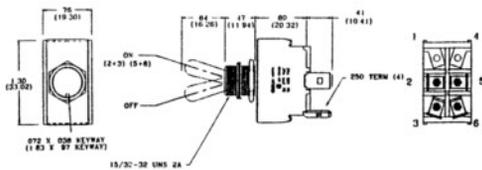
SPECIFICATIONS:

Current Rating:	6A @ 125V AC, 3A @ 277V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Nickel Plate
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-019	DPST	ON	-	OFF	Metal

Mounting Hole: 0.500"

SEALED HEAVY DUTY BAT HANDLE TOGGLE SWITCHES
(Splash Proof)

SPECIFICATIONS;

Current Rating:	20A @ 125V AC, 10A @ 277V AC
	21A@ 12-14V DC,
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500 V DC
Dielectric Strength:	1,000V AC for (Min)
Base Material:	Phenolic
Actuator & Bushing:	Brass Nickle Plated
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-3050	SPST	ON	-	OFF	Metal
30-3057	DPST	ON	-	OFF	Metal

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - SPST & SPDT

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	3/4 HP @ 125-250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-300	SPST	(ON)	-	OFF	Metal
30-305	SPST	ON	-	OFF	Metal
30-310	SPDT	ON	-	ON	Metal
30-315	SPDT	ON	OFF	ON	Metal
30-335	SPDT	(ON)	OFF	(ON)	Metal

NOTE: ( ) = Momentary

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - SPST & SPDT

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	3/4 HP @ 125/250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-080	SPST	ON	-	OFF	Metal
30-355	SPST	(ON)	-	OFF	Metal
30-013	SPDT	ON	-	ON	Metal
30-116	SPDT	ON	-	(ON)	Metal
30-010	SPDT	ON	OFF	ON	Metal
30-053	SPDT	ON	OFF	(ON)	Metal
30-055	SPDT	(ON)	OFF	(ON)	Metal

NOTE: ( ) = Momentary

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - SPST & SPDT

SPECIFICATIONS:

Current Rating:	20A @ 125V AC, 10A @ 277V AC
	3/4 HP @ 125-250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass - Tin Dipped
Terminal Type:	Solder

Part No.	Type	Action			Actuator
30-078	SPST	ON	-	OFF	Metal
30-076	SPST	(ON)	-	OFF	Metal
30-014	SPDT	ON	-	ON	Metal
30-016	SPDT	ON	-	(ON)	Metal
30-086	SPDT	ON	OFF	(ON)	Metal

NOTE: ( ) = Momentary

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - DPST & DPDT

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	1-1/2 HP @ 125-250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-345	DPST	ON	-	OFF	Metal
30-320	DPDT	ON	-	ON	Metal
30-325	DPDT	ON	OFF	ON	Metal
30-330	DPDT	(ON)	OFF	(ON)	

NOTE: ( ) = Momentary

Mounting Hole: 0.500"

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - DPST & DPDT

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	1-1/2 HP @ 125-250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass
Terminal Type:	Screw

Part No.	Type	Action			Actuator
30-312	DPST	ON	-	OFF	Metal
30-365	DPST	ON	-	(OFF)	Metal
30-046	DPDT	ON	-	ON	Metal
30-048	DPDT	ON	OFF	ON	Metal
30-051	DPDT	ON	OFF	(ON)	Metal
30-050	DPDT	(ON)	OFF	(ON)	Metal

NOTE: ( ) = Momentary

Mounting Hole: 0.500"

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - DPST & DPDT

SPECIFICATIONS:

Current Rating:	20A @125V AC, 10A @ 277V AC
	1-1/2 HP @ 125/250V AC
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.) @ 500V DC
Dielectric Strength:	1000V AC 50/60 Hz for 1 minute
Contact Material:	Brass - Bright Nickel Plate
Terminal Material:	Brass
Terminal Type:	Solder - Tin Dipped

Part No.	Type	Action			Actuator
30-012	DPST	ON	-	OFF	Metal
30-052	DPDT	ON	-	ON	Metal
30-049	DPDT	ON	OFF	ON	Metal

NOTE: ( ) = Momentary

Mounting Hole: 0.500"

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - 3PST & 3PDT
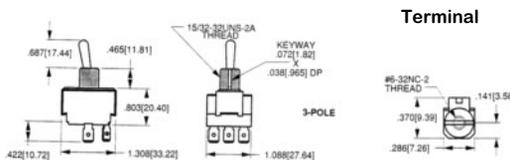
SPECIFICATIONS:

Current Rating:	17A @125V AC, 12A @ 250V AC
	1-1/2 HP 250V AC 1, 2 or 3 Phase
Insulation Resistance:	100 Meg ohms
Dielectric Strength:	1000V (min.)
Base Material:	Phenolic
Actuator & Bushing Material:	Brass/Nickel Plate
Terminal Type:	Screw (#6-32 NC-2 Thread)

Part No.	Type	Action			Actuator
30-10239	3PST	ON	-	OFF	Metal
30-10240	3PDT	ON	OFF	ON	Metal
30-10241	3PDT	ON	-	ON	Metal

Mounting Hole: 0.500"

SPECIFICATIONS:

Current Rating:	15A @125V AC, 10A @ 250V AC
Insulation Resistance:	100 Meg ohms
Dielectric Strength:	1000V (min.)
Base Material:	Phenolic
Actuator & Bushing Material:	Brass/Nickel Plate
Terminal Type:	Screw (#6-32 NC-2 Thread)

Part No.	Type	Action			Actuator
30-10243	4PDT	ON	OFF	ON	Metal
30-10245	4PST	ON	-	OFF	Metal
30-10376	4PDT	ON	-	ON	Metal

HEAVY DUTY BAT HANDLE TOGGLE SWITCHES - 4PDT

Terminal
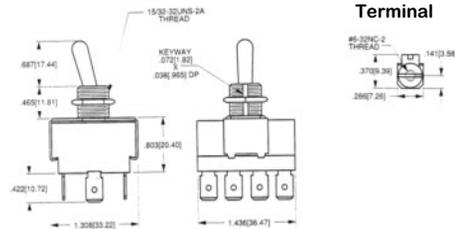
Mounting Hole: 0.500"

HEAVY DUTY BAT HANDLE TOGGLE SWITCH
SPDT, TWO CIRCUIT

Current Rating:	15A @ 125V AC, 10A @ 250V AC
	3/4 HP @ 125-250V AC,
Initial Contact Resistance:	50 Meg ohm (Max.)
Insulation Resistance:	100 Meg ohm (Min.)
Dielectric Strength:	1,000V for (Min)
Base Material:	Phenolic
Actuator & Bushing:	Brass Nickle Plated
Terminal Type:	.250" Quick Connect

Part No.	Type	Action			Actuator
30-340	SPDT	(ON)	ON	OFF	Metal
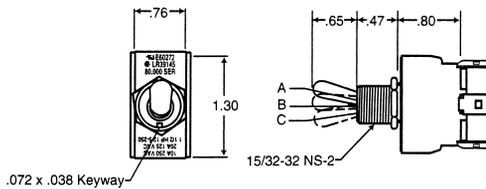
TOGGLE SWITCH SAFETY GUARD

Features

Rugged Spring-loaded Design, Black Steel Base w/ Red urea Plastic Cover

Fits ALL Metal Lever toggles w/ 15/32 X 32 Bushing

No. 30-1250 Toggle Switch Guard

TOGGLE SWITCH HARDWARE

**Part No.
30-1320**

Rubber Boot
Thread Size: 15/32-32

**Part No.
30-1200**

Rubber Boot
Thread Size: M12 x 1.0

ON
OFF
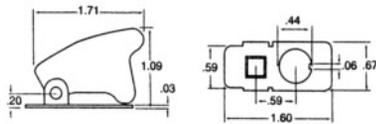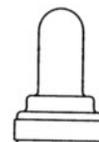
**Part No.
30-2200B**

ON - OFF PLATE

* Available in Bulk only.

Switch & Control Mounting Nuts

Size	Part Number
3/8-32 x 1/2 x 3/32"	**10-133**
15/32-32 X 9/16 x 5/64"	**10-137**

Knurled Dress Nut

These nuts are Nickel plated brass and are used on controls, switches, capacitors, and tip jacks.

Size	Part Number
15/32-32 x 5/8"	**10-135**

COIN CELL HOLDERS

Coin cell Holder, For CR1220 &
Other 12.5mm x 2mm Coin Cells, PCB Mount

PCB LAYOUT

No. BH2020

Coin cell Holder, For CR1225 &
Other 12.5mm x 2.5mm Coin Cells, PCB Mount

PCB LAYOUT

No. BH2025

Coin cell Holder, For CR2032 &
Other 20mm x 3.2mm Coin Cells, PCB Mount

No. BH2032

Coin cell Holder, For CR2325 &
Other 23mm x 2.5mm Coin Cells, PCB Mount

No. BH2038

Vertical Coin cell Holder, For CR2032 &
Other 20mm x 3.2mm Coin Cells PCB Mount

No. BH2040

9V Battery Snap, Vinyl Cover

No. BC9 - 3" Leads, 5Pc. / Pk.
No. BC100 - 10" Leads, 2Pc. / Pk.

"T" Shape 9V Battery Snap, Vinyl Cover

No. BC109 - 6" Leads, 2Pc. / Pk

9V Battery Snap, Molded Plastic Cover

No. BC120 - 6" Leads, 2Pc. / Pk

"T" Shape 9V Battery Snap, Molded Plastic Cover

No. BH129 - 6" Leads, 2Pc. / Pk

Male and female batttery snaps that mate with all of the battery holders and with standard 9V batteries. 10" lead wire color coded to match polarity of 9V snap on battery holder.

Philmore No.	Description
No. BC7B	MALE SNAP WITH 10" BLACK LEAD WIRE (BULK)
No. BC8B	FEMALE SNAP WITH 10" RED LEAD WIRE (BULK)
No. BC6	2 PAIR OF MALE AND FEMALE SNAP W/10" WIRE LEAD. (PACKAGED)

225

BATTERY HOLDERS

AAA, N, 9V, 1/2 AA CELL HOLDERS

For (4) AAA cell (UM-4)
With Cover Plus On-Off
Switch, 6" Lead Wire

Bottom

No. BH4411

For (4) AAA cell (UM-4)
With Solder Lug Connection

No. BH443

For (4) AAA cell (UM-4)
With Standard Snap Connection

No. BH443S

For (1) N cell (UM-5)
With Solder Lug Connection

No. BH511

For (1) N cell (UM-5)
With PC Board Mounting

No. BH511P

For (2) N cell (UM-5)
With Solder Lug Connection

No. BH521

For (1) 9 Volt battery
Aluminum Holder
With Solder Lug Cnnection

No. BH102

For (1) 9 Volt battery
With Solder Lug Cnnection

No. BH910

For (1) 9 Volt battery
Metal Clip Holder

No. BH980

For (1) 1/2 AA (3.6V Lithium Battery)
With PC Board Mountig

No. BH531

For (1) 1/2 AA (3.6V Lithium Battery)
With Solder Lug Connection And Switch

No. BH541

AAA CELL HOLDERS

For (1) AAA cell (UM-4)
With Solder Lug Connection

No. BH411

For (1) AAA cell (UM-4)
With PC Board Mounting

No. BH411P

For (2) AAA cell (UM-4)
With Cover Plus On-Off Switch, 6" Lead Wire

No. BH4211

For (2) AAA cell (UM-4)
With Solder Lug Connection

No. BH421

For (2) AAA cell (UM-4)
With PC Board Mounting

No. BH421P

For (3) AAA cell (UM-4)
With Solder Lug Connection

No. BH431

For (3) AAA cell (UM-4)
With Cover Plus On-Off Switch, 6" Lead Wire

No. BH4311

For (4) AAA cell (UM-4)
With PC Board Mounting

No. BH441P

For (4) AAA cell (UM-4)
With Standard Snap Connection

No. BH441S

BATTERY HOLDERS

AA CELL HOLDERS

For (3) AA cell (UM-3)
W/Cover Plus On-Off switch,
6" Lead Wire Connection

No. BH3311

For (4) AA cell (UM-3)
With Standard Snap Connection
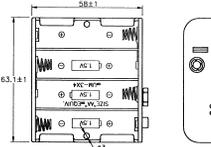
No. BH341

For (4) AA cell (UM-3)
W/Cover Plus On-Off switch,
6" Lead Wire Connection

No. BH3411
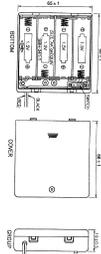
For (4) AA cell (UM-3)
With Standard Snap Connection
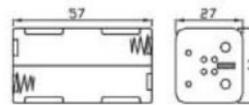
No. BH343

For (4) AA cell (UM-3)
With Solder Lug Connection
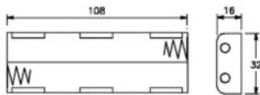
No. BH344

For (6) AA cell (UM-3)
With Snap Cover, 6" Lead
Wire Connection

No. BH3611
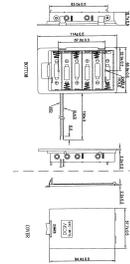
For (6) AA cell (UM-3)
With Standard Snap Connection
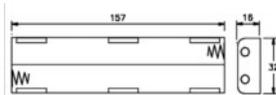
No. BH362S

For (6) AA cell (UM-3)
With Standard Snap Connection
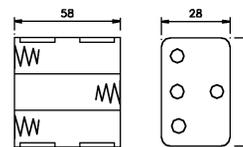
No. BH363

For (8) AA cell (UM-3)
With Solder Lug Connection And Mounting Ears
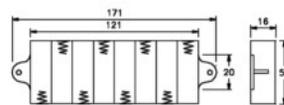
No. BH381M

For (8) AA cell (UM-3)
With Standard Snap Connection
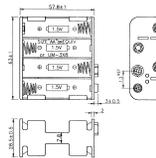
No. BH383

For (10) AA cell (UM-3)
With Solder Lug Connection

No. BH3103

AA CELL HOLDERS

For (2) AA cell (UM-3)
With Cover & 6" Lead Wire Connection

No. BH320

For (2) AA cell (UM-3)
With Solder Lug Connection

No. BH321

For (2) AA cell (UM-3)
W/Cover Plus On-Off switch,
6" Lead Wire Connection

No. BH3211

For (2) AA cell (UM-3)
With Solder Lug Connection And Mounting Ears

No. BH321M

For (2) AA cell (UM-3)
With PC Board Mounting, And Mounting Ears

No. BH321PM

For (2) AA cell (UM-3)
With PC Board Mounting

No. BH321P

For (2) AA cell (UM-3)
With Standard Snap Connection

No. BH322S

For (2) AA cell (UM-3)
With Standard Snap Connection
And Mounting Ears

No. BH321SM

For (2) AA cell (UM-3)
With Solder Lug Connection

No. BH325

For (3) AA cell (UM-3)
With Standard Snap Connection

No. BH331

BATTERY HOLDERS

C CELL HOLDERS

For (1) C cell (UM-2)
With Solder Lug Connection

62 — 25 — 30
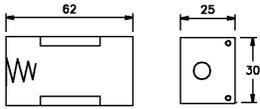
No. BH211

For (2) C cell (UM-2)
With Solder Lug Connection

63 — 23 — 56
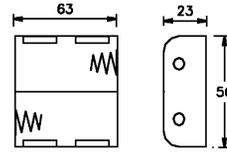
No. BH221

For (3) C cell (UM-2)
With Solder Lug Connection

85 — 24 — 62
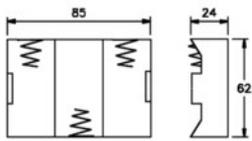
No. BH232

For (4) C cell (UM-2)
With Solder Lug Connection

108 — 23 — 54
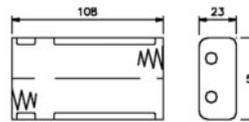
No. BH242

For (4) C cell (UM-2)
With Solder Lug Connection

106 — 22 — 59
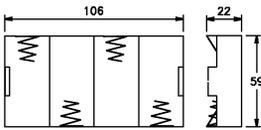
No. BH243

For (6) C cell (UM-2)
With Solder Lug Connection

159 — 25 — 57
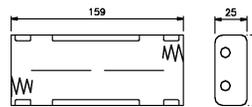
No. BH261

For (8) C cell (UM-2)
With Solder Lug Connection

106 — 45 — 59
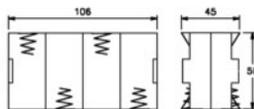
No. BH281

AA CELL HOLDERS

For (1) AA cell (UM-3)
With Solder Lug Connection

57 — 14 — 17
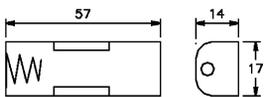
No. BH311

For (1) AA cell (UM-3)
With PC Board Mounting

57 — 14 — 17
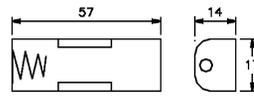
No. BH311P

D CELL HOLDERS

For (1) D cell (UM-1)
With Solder Lug Connection

69 27 37
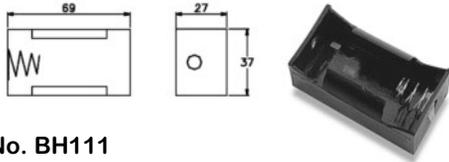
No. BH111

For (1) D cell (UM-1) Aluminum Holder
With Solder Lug Connection
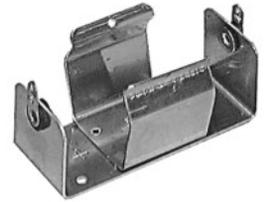
No. BH65

For (3) D cell (UM-1)
With Solder Lug Connection

106 28 70
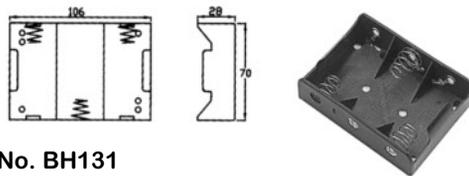
No. BH131

For (4) D cell (UM-1)
With Solder Lug Connection

133 32 74
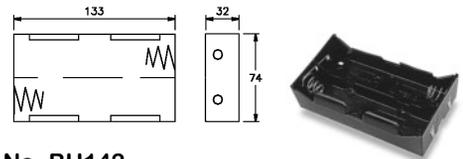
No. BH142

For (4) D cell (UM-1)
With Solder Lug Connection

141 31 73
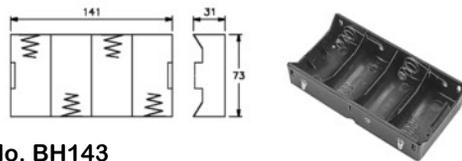
No. BH143

For (4) D cell (UM-1)
With Solder Lug Connection

71 62 73
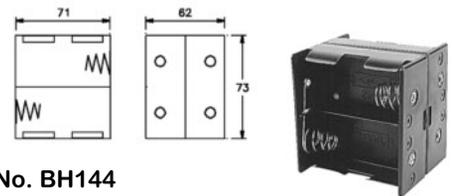
No. BH144

For (6) D cell (UM-1)
With Solder Lug Connection

105 56 70
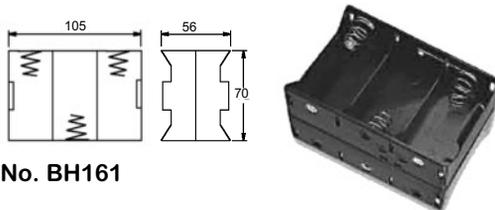
No. BH161

For (8) D cell (UM-1)
With Solder Lug Connection

141 63 73
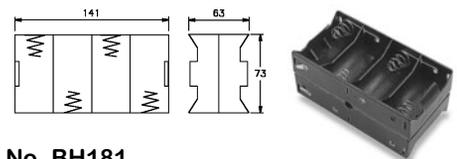
No. BH181

For (2) D cell (UM-1)
With Solder Lug Connection

71 31 73
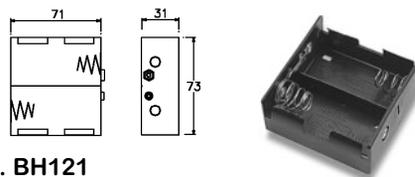
No. BH121

STRAIN RELIEFS & WIRE

STRAIGHT-THROUGH STRAIN RELIEF BUSHINGS

UL Listed; Sizes for most popular AC power cords. Recognized under Component Program of Underwriters' Laboratories File No. E-10793. Certified by Canadian Standards Assoc. File No. LR-66162.

This series of AC cord bushing provides the most accepted method of securing AC power cords at the point where they enter/exit the chassis or cabinet. These bushings are generally regarded as permanent and will prevent damage to the wire as well as securing the wire against any possible in-out motion.

Select the type needed first by wire type and gauge and then the maximum panel thickness. In cases where the wire is a special, not listed in the chart, use the approximate wire size column.

Molded of Nylon; the two pieces of these strain reliefs are permanently connected by an integral tether to prevent them from becoming separated.

Part no. shown is for one package containing ten pieces. For bulk package add a "B" to the end of number and order in standard package multiples of 50 pieces.

Part Number	Wire Shape	UL Wire Type	Approx. Wire Size	Hole A	Hole B	Max. "Thk.F	Dim. D
65-1000	Flat	SPT-1	.118x.220"	.433"	.390"	.0625"	.406"
65-1010	Flat	SPT-1	.118x.220"	.433"	.390"	.098"	.406"
65-1015	Flat	SPT-2	.150x.300"	.5-.515"	.465"	.0625"	.406"
65-1020	Flat	SPT-2	.150x.300"	.5-.515"	.465"	.098"	.406"
65-1025	Round	SVI SVT	.25-.291"	.5-.515"	.452"	.0625"	.433"
65-1030	Round	SVI SVT	.25-.291"	.5-.515"	.452"	.098"	.433"
65-1035	Round	SJT-18/3	.30"	.625"	.55"	.0625"	.583"
65-1040	Round	SJT-18/3	.30"	.625"	.55"	.125"	.583"
65-1045	Round	SJT-16/3	.320-.362"	.625"	.55"	.0625"	.583"
65-1050	Round	SJT-16/3	.320-.362"	.625"	.55"	.125"	.583"
65-1055 65-1055	Round Round	SJT-14/3 SJT-14/3	.433" .362-.413"	.780" .750"	.660"	.063"	.748"
65-1060 65-1060	Round Round	SJT-14/3 SJT-14/3	.433" .362-.413"	.780" .750"	.660"	.125"	.748"
65-1070	Round	SJT-12/3	.472"-.598"	.750"	.750"	.125"	.818"
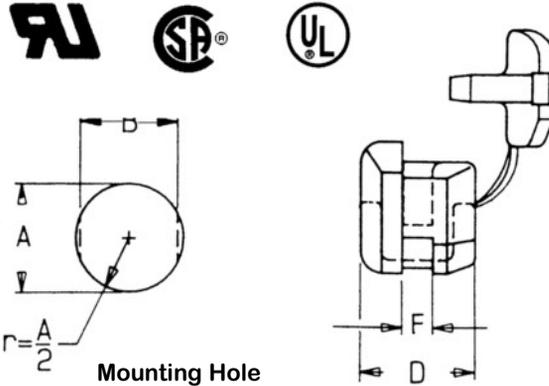
Mounting Hole

**Maximum Chassis Thickness
Part actually has
additional clearance.**

STRAIN RELIEF TOOL No. 63-640

PHILMORE STRAIN RELIEF TOOL

High quality assembly tool for Nylon strain reliefs. Adjustable for all Philmore & other Heyco - Type strain relief bushings, that assemble into holes up to 7/8" diameter. Spring loaded action (replaces Philmore WS40).

No. **63-640**

HOOKUP or LEAD WIRE

22 gauge, solid copper hookup wire with PVC insulation; UL listed 1007/1569. This is the standard at board level and also fits our Prototype Boards, both solderless and solder types. Supplied in 25 foot hanks in various colors and also in an assortment.

PVC INSULATION

COPPER CONDUCTOR
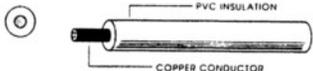
**SPECIFICATIONS:
UL 1007/1569**

Insulation:.016" thk. PVC 105°C
300-volts nominal O.D. .0626"

No. **12-2211** - black
No. **12-2214** - white
No. **12-2216** - red
No. **12-2217** - green
No. **12-2218** - yellow
No. **12-2276** - 5 piece kit, 1 each of 5 colors

MAGNET WIRE

Commonly used for winding R.F. coils and transformers and general lab or school classroom assembly. This is a standard round, pure copper wire with a polyimide enamel inner-coat and polyurethane over coat; Thermo Class 130. The insulation will stand up and not crack during winding of tight coils, high speed winding etc..

Part No.	AWG Size	Approx. Footage per 1/2 lb. spool	Part No.	AWG Size	Approx. Footage per 1/2 lb. spool
12-1234	34	4050 feet	**12-1224**	24	408 feet
12-1232	32	2510 feet	**12-1222**	22	251 feet
12-1230	30	1640 feet	**12-1220**	20	160 feet
12-1228	28	1032 feet	**12-1218**	18	101 feet
12-1226	26	650 feet	**12-1216**	16	62 feet

Philmore Hook-up Wire
UL Style 1007/1569
Insulated copper wire
Solid and stranded types.

Philmore offers all of the most called for gauges in UL listed, 300 volt hook-up wire for use in electronic and electrical circuits. Ten colors in wire gauges 26 through 16 AWG and your choice of 25 or 100 foot spools.

SPECIFICATIONS
STRANDED TINNED COPPER
PVC INSULATION (10 COLORS) .016"
UL STYLE 1007/1569 VM-1
CSA TR-64
TEMPERATURE -40 to 105° C.
Rated 300 volts

26 AWG STRANDED .051 nom. OD 7X34 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-22610	78-22640
Brown	78-22611	78-22641
Red	78-22612	78-22642
Orange	78-22613	78-22643
Yellow	78-22614	78-22644
Green	78-22615	78-22645
Blue	78-22616	78-22646
Violet	78-22617	78-22647
Gray	78-22618	78-22648
White.	78-22619	78-22649

24 AWG STRANDED .056 nom. OD 7X34 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-22410	78-22440
Brown	78-22411	78-22441
Red	78-22412	78-22442
Orange	78-22413	78-22443
Yellow	78-22414	78-22444
Green	78-22415	78-22445
Blue	78-22416	78-22446
Violet	78-22417	78-22447
Gray	78-22418	78-22448
White.	78-22419	78-22449

22 AWG STRANDED .062" nom. OD 7X30 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-22210	78-22240
Brown	78-22211	78-22241
Red	78-22212	78-22242
Orange	78-22213	78-22243
Yellow	78-22214	78-22244
Green	78-22215	78-22245
Blue	78-22216	78-22246
Violet	78-22217	78-22247
Gray	78-22218	78-22248
White.	78-22219	78-22249

20 AWG STRANDED .069" nom. OD 10X30 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-22010	78-22040
Brown	78-22011	78-22041
Red	78-22012	78-22042
Orange	78-22013	78-22043
Yellow	78-22014	78-22044
Green	78-22015	78-22045
Blue	78-22016	78-22046
Violet	78-22017	78-22047
Gray	78-22018	78-22048
White.	78-22019	78-22049

18 AWG STRANDED .077" nom. OD 16X30 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-21810	78-21840
Brown	78-21811	78-21841
Red	78-21812	78-21842
Orange	78-21813	78-21843
Yellow	78-21814	78-21844
Green	78-21815	78-21845
Blue	78-21816	78-21846
Violet	78-21817	78-21847
Gray	78-21818	78-21848
White.	78-21819	78-21849

16 AWG STRANDED .092" nom. OD 26X30 strands

Color	25 ft. Spool	100 ft. Spool
Black	78-21610	78-21640
Brown	78-21611	78-21641
Red	78-21612	78-21642
Orange	78-21613	78-21643
Yellow	78-21614	78-21644
Green	78-21615	78-21645
Blue	78-21616	78-21646
Violet	78-21617	78-21647
Gray	78-21618	78-21648
White.	78-21619	78-21649

SPECIFICATIONS
SOLID COPPER
PVC INSULATION (10 COLORS)
.016" Insulation thickness
UL STYLE 1007/1569 VM-1
CSA TR-64
TEMPERATURE -40 to 105° C.
Rated 300 volts

24 AWG SOLID Copper insulated

Color	25 ft. Spool	100 ft. Spool
Black	78-12410	78-12440
Brown	78-12411	78-12441
Red	78-12412	78-12442
Orange	78-12413	78-12443
Yellow	78-12414	78-12444
Green	78-12415	78-12445
Blue	78-12416	78-12446
Violet	78-12417	78-12447
Gray	78-12418	78-12448
White.	78-12419	78-12449

22 AWG SOLID Copper insulated

Color	25 ft. Spool	100 ft. Spool
Black	78-12210	78-12240
Brown	78-12211	78-12241
Red	78-12212	78-12242
Orange	78-12213	78-12243
Yellow	78-12214	78-12244
Green	78-12215	78-12245
Blue	78-12216	78-12246
Violet	78-12217	78-12247
Gray	78-12218	78-12248
White.	78-12219	78-12249

20 AWG SOLID Copper insulated

Color	25 ft. Spool	100 ft. Spool
Black	78-12010	78-12040
Brown	78-12011	78-12041
Red	78-12012	78-12042
Orange	78-12013	78-12043
Yellow	78-12014	78-12044
Green	78-12015	78-12045
Blue	78-12016	78-12046
Violet	78-12017	78-12047
Gray	78-12018	78-12048
White.	78-12019	78-12049

18 AWG SOLID Copper insulated

Color	25 ft. Spool	100 ft. Spool
Black	78-11810	78-11840
Brown	78-11811	78-11841
Red	78-11812	78-11842
Orange	78-11813	78-11843
Yellow	78-11814	78-11844
Green	78-11815	78-11845
Blue	78-11816	78-11846
Violet	78-11817	78-11847
Gray	78-11818	78-11848
White.	78-11819	78-11849

233

GROUND WIRES & SHIELDING

Grounding & Shielding Tinned Copper Braid

Product Construction
Conductor:
* Woven tinned copper wire constuction
* Each wire meets specification QQ-W-343
  type S and ASTM B-33
* 95% minumum shield coverage

Flat Tinned Copper Braid

Tubular Tinned Copper Braid

Standard 50 Ft. Spool

Applications:
* Shielding
* Ground straps
* Bonding Cable

Flat Tinned Copper Braid (Mil. spec. QQ-W-343)

Part No.	Nominal Width	Thick"	AWG	Construc. No. Ends	No. Carriers	Total Strands	Approx. AWG	CMA	Ampere Capacity
12-1386	1/32	.020	36	16	16	16 x 36	24	400	7
12-1390	1/8	.020	36	72	24	72 x 36	18	2,400	15
12-1391	3/16	.020	36	120	24	120 x 36	15	3,000	23
12-1392	1/4	.030	36	168	24	168 x 36	14	4,200	30
12-1393	3/8	.030	36	288	48	288 x 36	11	7,200	50
12-1394	1/2	.030	36	384	48	384 x 36	10	9,600	55

Tubular Tinned Copper Braid (Mil. spec. QQ-B-575)

Part No.	Nominal I.D.	AWG	Construc. No. Ends	No. Carriers	Total Strands	Approx. AWG	CMA	Ampere Capacity
12-1315	1/8	36	120	24	120 x 36	15	3,000	25
12-1319	1/4	36	384	24	384 x 36	10	9,600	53
12-1321	3/8	36	384	48	384 x 36	10	9,600	53
12-1323	1/2	36	528	48	528 x 36	9	13,200	62

* Capacity in amperes is a general guideline. User should determine appropriate size based upon voltage, current and copper conductivity when intended for use in critical applications. The "approx. AWG" provides nearest copper wire-size equivalents which can be helpful in determining current capacity for your application using standard industry methods.

ALUMINUM GROUND WIRE, for TV ANTENNA SYSTEMS

An excellent wire for the ground connection in TV antenna systems, heavy enough to bleed off even in major charges from tower, masts, mount etc. Will never rust or deteriorate and remains conductive virtually forever. A 9 gauge (1/8" dia.) 50 ft. wire, easy to handle. Can also be used for elements in home made UHF antennas etc.

No. 15-625 - 50 Ft. Coil Solid Aluminum Ground Wire

PURE COPPER ANTENNA WIRE

The best wire for most outdoor antennas or attic antennas. Used for making SWL (short wave listening), crystal set and ham radio dipoles, long wire antennas etc. Pure copper stranded 14 gauge. Includes basic instructions for making a long wire antenna and specific information for home brew ham radio dipoles. Pure copper wire will deliver more signal than any other wire available.

No. 15-630 - 50 Ft. Copper Antenna Wire
No. 15-635 - 100 Ft. Copper Antenna Wire

234

TOOLS KITS

20-pc. PERSONAL COMPUTER TOOL KIT

DELUXE TOOL KIT for complete field service work. Contains all the tools you need to add or remove parts, peripherals and printed circuit boards. All packaged in deluxe black vinyl zipper case (13" x 7-1/4" x 1-3/4") folded size.

CONTENTS:

1/4" nut driver • 3/16" nut driver #0 Phillips screwdriver
#1 Phillips screwdriver • 1/8" std. screwdriver
3/16" std. screwdriver • T-10 torx driver • T-15 torx driver • Mini long-nose plier
6" adjustable wrench • 4-3/4" long tweezer • 3-prong parts holder • 30W soldering iron •
Desolder pump • Rosin core solder • Brush Anti-static wrist strap • I.C. insertion tool •
I.C. extractor tool
7-1/4" 4-way crimper

No. CT225

PERSONAL COMPUTER TOOL KIT

A complete kit for servicing plus adding peripherals and printed circuit boards to your PC. In addition to being heat treated, these tools are shot peened, making them extra tough so as to avoid chipping and distortion.

The IC extractor, tweezer and retriever are fully insulated. Each tool handle is shaped for comfort while designed to give more power and extra torque.

The feature of the torx driver is its reversible bit having two sizes on a single handle: T-10 and T-15.

THE KIT HAS:

1/4" nut driver • 3/16" nut driver • 3-prong parts retriever/extractor
• 4-5/8" long assembly tweezer • T-10/T-15 reversible torx driver • 14-16 Pin I.C. Inserter
• #1 Phillips screwdriver, 6" overall • 3/16" slotted screwdriver, 6" overall
• Integrated circuit extractor • #0 Phillips screwdriver, 5-1/2" overall
1/8" slotted screwdriver, 5-1/2" overall

No. CT813

These tools are neatly secured in elastic straps enclosed in a compact, padded vinyl zipper case.

COAXIAL TOOL KITS

All the tools needed to cut, strip and install RG58, RG59, RG62 (Tool Kit No. WS600) plus RG6 (Tool Kit No. WS604) and center pin in a convenient storage and carrying case.

Tool Kit No. WS600 (for RG58, RG59 & RG62)
Includes:
(Fig. 1) **No. WS28** (Ratchet Crimp Tool)
(Fig. 2) **No. WS145** (Stripping Tool)
(Fig. 3) **No. WS50** (Cable Cutter)

Tool Kit No. WS604 (for RG58, RG59, RG62 & RG6)
Includes:
(Fig. 1) **No. WS36** (Ratchet Crimp Tool)
(Fig. 2) **No. WS145** (Stripping Tool)
(Fig. 3) **No. WS50** (Cable Cutter)

5 PIECE CHASSIS PUNCH SET

No. 110E
Complete set of punches in a leatherette carrying case. All precision machined of top grade steel. Following sizes: 5/8", 11/16", 3/4", 1", 1-3/16", plus burring reamer. (.47")

IDC CRIMPING TOOL

This all-steel construction tool with cushioned handle grips provides good short run production capabilities for all insulation displacement connector assembling. Works for D-Sub and Centronics.

No. HT214

No. HT214R - Replacement Crimping Block

235

TOOLS

CRIMPING TOOL for "D" SUBMINIATURE CONNECTORS

Hand held tool crimps D-Sub pins (male and female) with a single squeeze on the contact material. Has built-in wire cutter.
PVC handle allows crimping in comfort.

No. WS26

PROFESSIONAL D-SUB CONTACT RATCHET CRIMPING TOOL

No. YAC4 D-Sub Contact Crimping Tool

• 18-22 AWG, 24-30 AWG
• Six section pressure adjustment
• For female and male D-subminiature contacts

• Precision
• High Quality
• Durable

Crimping Tool for Small Pins & Sockets

Hand held tool crimps High - Density D-sub pins (Male & Female). Also will work with Philmore locking connector pins (No. 70-4800). Has built-in wire cutter.

No. 63-603

ECONOMY HEX CRIMPING TOOL

For a tight and perma-nent crimp. Designed for coaxial fittings on RG59/U, RG62/U and RG6/U. PE insulation grip handle for comfort and maximum crimp-ing force. Made of tempered steel. 8" long.

No. 12-170

PROFESSIONAL HEX CRIMP TOOL

Perfect for CATV, MATV and TVRO installations, when heavy duty crimping is required. It's light enough to fit conveniently in an installers belt. Features cushion plastic handles for comfortable grip-ping. 9" overall length. Works for all Philmore crimp-on connectors for stated wire type: 'F', BNC, TNC, UHF, Mini UHF, SMA.

No. WS25 - Crimps RG59/U, RG6/U

No. WS27 - Crimps RG58/U, RG59/U and Pin Crimping Position

No. WS29 - Crimps Philmore Pro-Crimp "F" connectors, RG11/U

PROFESSIONAL RATCHET COAXIAL CRIMPING TOOL

For CATV, MATV, and TVRO installations. This economically priced tool is just right for the professional installer and hobbi-est alike. Small enough to fit in the tool belt and rugged enough for any job. It works with most "F", BNC, TNC, UHF, Mini-UHF, SMA, & RCA connectors

Features
 Heavy-duty Steel construction
 Insulated Handle
 Non-replaceable Drop-forged jaws
 Overall length 9" (229mm)
 Hex Crimp for RG 59, RG62 (.255") RG6, (.322")

No. 63-116
Professional Ratcheting Hex Crimp Tool RG59, RG62, and RG6

CRIMPING TOOL for "F" CONNECTORS

For a tight, permanent crimp, this ferrule tool does the proper job every time. Two slots are provided for RG59/U and RG58/U coaxial cable. **No. WS17**

Professional Ratchet Crimp Tool w/ Interchangeable Dies

• Full cycle ratchet mechanism with quick release safety lock
• High carbon steel ratchet frame
• PE insulation grip handle for comfort and maximum crimping force
• Interchangeable dies for F, BNC, TNC, N, Teflon, Thinnet-PVC / Teflon and Fiber- Optic connectors

No. WS28 - (RG58/U, RG59/U and 1/16" pin)

No. WS34 - For Insulated Terminals: (22-18 AWG, 16-14 AWG and 12-10 AWG)

No. WS36 - (RG58/U, RG59/U and RG6/U)

INTERCHANGEABLE CRIMP DIES
for Nos. WS28, WS34, WS36

Part No. Dies Only	⬡	⬭	⬭	ᴏ	ᴏ Pin	• Sq Pin	For Crimping RG Type Cable
No. WS74		.256"	.213		.068"		59, 62, 140, 210, BELDEN 8279.55, 58, 141, 142, 223, 303, 400, Fiber Optic
No. WS76	.319"		.213"	.187"			6, 55, 58, 141, 142, 223, 303, 400.174, Fiber Optic
No. WS78	.319"	.256"	.213"		.068"		6, 59, 62, 140,210, BELDEN 8279.55, 58, 141, 142, 223, 303, 400, Fiber Optic.
No. WS80	.255"	.213"	.137"	.100"	.069"	.043"	59, 62, 8X, 140, 210, BELDEN 8279. 55, 58, 141, 142, 223, 303, 400, Fiber Optic
No. WS82	.178"	.151"	.128"	.078"	.068"	.042"	122, 174, 179, 180, 187, 188, 195, Fiber Optic 178, 316, BELDEN 8218.
No. WS84		.255"	.213"	.187"	.068"		55, 58, 59, 62, 140, 141, 142, 210, 223. 174, 303, 400, Fiber Optic, BELDEN 8279.
No. WS88	Coded: Red 22-18 Blue 16-14 Yellow 12-10						Insulated Terminals 10-22 ga.

Heavy Duty Crimp Tool

This crimp tool is designed for the per-son who needs a combination tool that will cut, and crimp all in one tool.

Features:
Cuts #10 - 22 AWG Wire
Precision Matched Dies
Chrome Vanadium Steel
Double Dipped Handles
Crimps Insulated and
    Uninsulated terminals

No. 63-601
Heavy Duty Crimp Tool

Economy "F" Compression Tool

A handy compression connector tool. A patented design to work with "F" connectors for both RG59 & RG6 coaxial cables.

No. 63-505

Economy Adjustable Compression Tool

Hand adjustment for different length connectors. Philmore No. 63-514 will work with "F", BNC and RCA compression type connectors.

No. 63-514

COMPRESSION CONNECTOR TOOL

This tool is especially designed for installation of "F" style compression connectors. It works with the Philmore FC306, FC346, & FC359 as well as the LRC, Augat, T&B, Paladin, AIM and other compatible connectors.

No. 63-508

ADJUSTABLE PROFESSIONAL COMPRESSION CONNECTOR TOOL

Features

Heavy-duty Steel Construction
Hand adjustment for different
   length connectors
Works with: Augat, T&B Snap-N-Seal^{tm}, Paladin
   SealTite, and AIM CATV F
   weatherproof connectors

No. 63-512 Professional Compression Tool
for "F", BNC, & RCA

Solderless Terminal Ratcheting Crimp Tools

Philmore offers two ratcheting tools especially designed for solderless terminals. These tools give the user uniform pressure on ALL crimps. They are forged of high carbon steel. The ratchet has a release, and the crimp pressure is adjustable.

No. **63-622** Non-Insulated
   Terminals 8-22 AWG
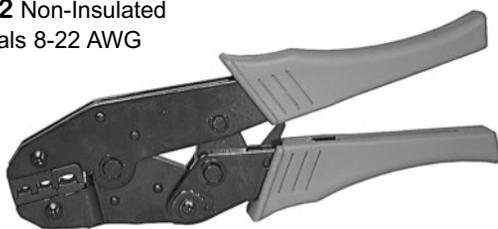
Professional Ratchet Crimp Tool For Solderless Terminal

No. WS34 - For Insulated Terminals: (22-18 AWG, 16-14 AWG and 12-10 AWG)
- **Full cycle ratchet mechanism with quick release safety lock**
- **High carbon steel ratchet frame**
- **PE insulation grip handle for comfort and maximum crimping force**

No. WS35 - For Insulated Flag Terminals: (22-18 AWG, 16-14 AWG)

Deluxe Swivel Base Bench Vise

This deluxe, swivel base bench vise has a one touch locking level for easy positioning.

Features
3" wide jaw with rubber pads
Ball Joint swivel for
Maximum Performance
Jaw opening 2 1/4"
All Metal Construction
Clamp Opening 2"

No. MUV-1 Large Swivel Vise

Swivel Base Bench Vise

Features
1 1/2" wide Nylon jaw
Ball Joint swivel for
Maximum Performance
Jaw opening 2 3/4"
All Metal Construction
Clamp Opening 2"

No. MUV-2 Small Swivel Vise

237

TOOLS

COAXIAL CABLE STRIPPER
FAST - EFFECTIVE - NEAT - SINGLE ACTION

With an easy twirl of the finger, this stripper prepares cable at once for attaching coax connectors. A convenient changeover method using a reversible V-block assembly switches the cable size effortlessly between RG58/U, RG59/U and RG6/U.

The cutters are easily adjusted for non-standard cables by turning two set screws using the hex wrench stored in the handle. After the cable is cut, it is automatically stripped in a single action by removing the tool from the cable. Spare cutting blades are available and are readily installed.

No. WS145 - Strips RG6/U, RG58/U, RG59/U & RG62/U

No. WSB - Package of (4) Replacement Blades

Coaxial Cable Stripper

A precision one blade coax wire stripper. For RG58, RG59 / RG62 and RG6. Body is made of durable ABS material. A simple adjustment for different cable O.D.

No. 63-229

Coaxial Cable Stripper

A multi-purpose two blade coax wire stripper. A patent design for RG174, RG58, RG59 / RG62 and RG6.

No. 63-232

TWO STEP COAXIAL CABLE STRIPPER

New patented design for RG59/U, RG62/U, RG6/U including Teflon insulation. Easy to use, perfect for compression type connectors.

No. 63-235 - Two Step Coaxial Cable Stripper

WIRE STRIPPER

Stripper automatically holds wire and strips in one cycle. For wire sizes 8 thru 22 gauge. An optional strip-length setting stop is included.

No. 63-369

PROFESSIONAL WIRE STRIPPER

This compact, self-adjust wire stripper is especially designed for smaller wire, Easily handles 16-30 gauge wire without adjustment. Tool has built in cutter. It is compact and operates with low force. Will strip stranded and solid wire with out nicking. Has adjustable stop for strip length.

- **PATENTED**
- **PRECISE**
- **DURABLE**
- **FINE QUALITY**

No. YY78318

WIRE STRIPPER & CUTTING TOOL

Dial-A-Wire Size
12-24 Gauge for Precision Stripping
Flush Cutting
The dial assures perfect stripping without a nick or break.
The tool has a black oxide finish with plastic cushion grip handles.

No. WS18

CABLE CUTTER

This heavy duty cable cutter features hardened carbon steel cutting blades and cushion handle grips. Cuts cable to 3/8" diameter. Perfect for coax and electrical cable. Length - 6-1/2" with closed lock feature.

No. WS50

5-WAY ALL-PURPOSE WIRE TOOL

The overall length of the tool is 9" and is made of hardened steel. Matte black permanent finish with bright, clear markings makes it an attractive and easy-to-use product.

Features large comfortable plastic grip handles

A one piece tool that shapes and cuts wire 5 different ways:
- Standard wire cutter
- Crimps insulated terminals 22-14 • 12-10 AWG
- Shears 5 bolt sizes: 4-40 • 6-32 • 8-32 • 10-24 • 10-32
- Crimps non-insulated terminals 10-12 AWG • 14-16 AWG • 18-22 AWG
- Strips wire 10 to 22 AWG

No. WS16

10 pc. TOOL SET

A tool for all applications for trimmer adjustments. Set includes square tips, hex tips, different size screwdriver blades and recessed blades. Manufactured with tough cel-con material.
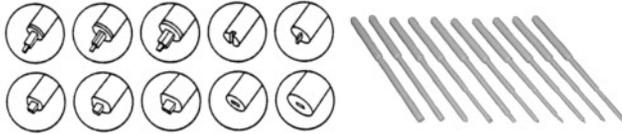
No. 63-910

10 PIECE ELECTRONIC COMBINATION WRENCH SET

This fine quality set of 10 combination wrenches is excellent for electronic repair and service. The size and thickness are especially suited for technician needs. The wrenches are the following sizes: 5/32", 3/16", 1/4", 7/32", 15/64", 5/16", 9/32", 3/8", 11/32", and 7/16". All are hot forged and chrome plated.

No. 63-608

ALIGNMENT TOOLS

MINIATURE POTENTIOMETER, "TRIMPOT" TOOL

One end is a recessed blade for non-slip adjustment of miniature potentiometers that have a protruding adjustment screw. The other end has a protruding metal blade for pots with flush screw-slot adjustment. Small steel tips have negligible flux-effect: body is molded of anti-static plastic. Replaces types 8608, AS8608.

No. 63-8608

SQUARE and HEX ALIGNMENT TOOL
Square: .060"   Hex: 0.10"

A double-ended, anti-static alignment tool for ferrite core transformers. One end is a square .060" Tip with an additional protruding flat (.024" thick) blade. The other end is a 0.10" hex with a protruding (.039" thick) blade. Replaces types 9440 and AS9440..

No. 63-9440

STEEL TIP DUAL ALIGNMENT TOOL

Recessed steel tip one end, protruding steel tip on the other. Tool shaft dia. 7/32" (5.5mm). The recessed tip fits a no.6 slotted shaft common to many I.F. transformers. The protruding tip is .130" wide and protrudes .190". Molded of anti-static material. Replaces types 8276 and AS8276.

No. 63-8276

DOUBLE HEX ALIGNMENT TOOL

A broad usage tool with stepped .078" hex and 0.10" hex on one end, preceded by a fine .020" x .065" flat blade. The opposite end is a 0.10" hex preceded by a .030" x .10" flat blade. Overall length is 7-9/16", molded of durable Nylon.

No. 63-9297

LONG REACH ALIGNER, WITH HANDLE

A plastic alignment tool with a 0.02" x .080" steel tip. Length of shaft from tip to handle is 5-3/4". overall tool length is 7-7/8". Shaft is somewhat flexible for tight spots; handle provides better grip than regular alignment tools.

No. 63-5001

DOUBLE 078 HEX ALIGNER
HEX: .078"

A Nylon tool .078" hex on both ends; one end undercut for reaching through to a bottom slug, the other with a stop to prevent over-reaching. Replaces type 9300.

No. 63-9300
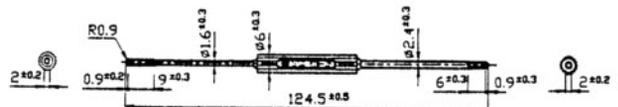
TOOLS

ALIGNMENT TOOLS

SPECIAL HEX-TIP TOOL
Hex: 0.10"

On one end, flat tip (0.025" thick x 0.10" wide) is followed by a 0.10" hex. The opposite end is an undercut 0.10" hex. Overall length, 5". Replaces type 8606.

No. 63-8606
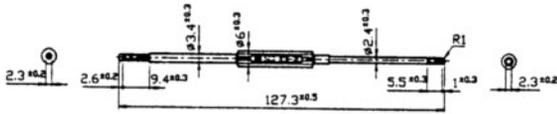
DOUBLE END HEX TOOL
Hex: .125"

One end is an under cut .125" and other is a .125" hex preceeded by a flat (.025" thick x .10" wide) blade. Entire tool is molded Nylon. Replaces type 9091.

No. 63-9091
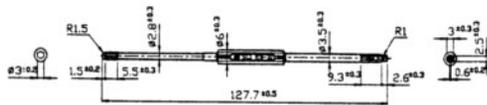
SCREWDRIVER-HEX COMBINATION TOOL
Hex: .078"

One end is an undercut 0.078" hex tip and other is a screwdriver style tip that is 0.10" in diameter and tapers to 0.015" thick. Overall length: 5-5/16", molded Nylon. Replaces type 9304.

No. 63-9304
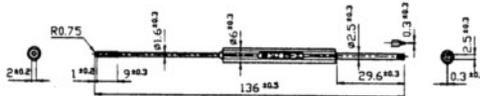
TECH'S ALIGNMENT TOOL KIT

A general purpose kit containing four tools with a variety of needed tips. Includes tools for most common ferrite core adjustments used in today's circuits. Supplied in a plastic pouch. Contains tool Nos.: 63-8603, 63-9301, 63-9442, and 63-9297.

No. 63-8420

TELEVISION ALIGNMENT TOOL SET

Kit contains the five most commonly needed tools for television service. Also included is an extender that may be used as an extension handle when a longer reach tool is needed. Kit is supplied in a segmented pouch to keep tools together.

Contains: **63-9300 63-8606**
63-8282 63-9091
63-9304 Extender

No. 63-8454

SQUARE and HEX ALIGNMENT TOOL
Square: .060" Hex: 0.10" & Blade

A double-ended, molded nylon tool: overall length is 4-3/4" One end is a square .060" tip with protruding blade from a 0.10" hex. The other end is a flat (.039" thick) blade which is followed by an undercut .10" hex. A tool frequently needed in color copier maintenance

No. 63-9442
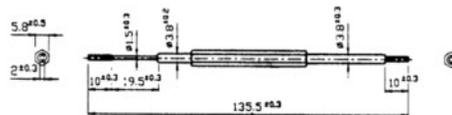
DOUBLE ENDED HEX TOOL
Hex: 0.078"

Undercut .078" hex on one end and on the other the hex is stopped with a larger diameter shaft. Overall length is 5.33". Molded Nylon.

No. 63-9301
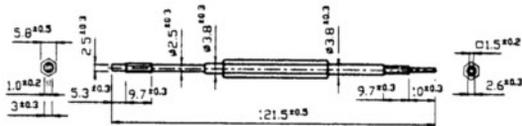
DOUBLE ENDED HEX TOOL
Hex: 0.10" & .087"

A dual ended tool with an undercut 0.10" hex on one end and a standard .087" (for 2.2mm cores) hex on the other. Overall length is 5.6". Molded Nylon.

No. 63-8603
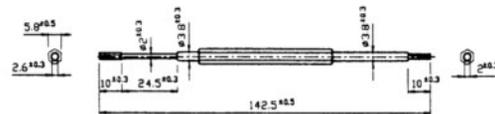
SCREWDRIVER-HEX COMBINATION TOOL
Hex: .092"

One end is an undercut 0.092" hex tip and other is a screwdriver style tip that is 0.10" in diameter and tapers to 0.015" thick. Overall length: 5-5/16", molded Nylon. Replaces type 8282.

No. 63-8282
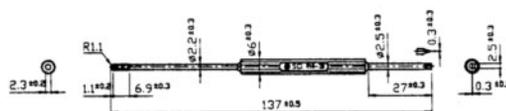
Pocket Hex Wrench Set with Pouch

This folding tool set opens like a pocket knife and has 6 of the most popular sizes of hex wrenches, open end wrench, socket set, phillips & slotted screw driver. Made of nickel chrome alloy steel and comes in a handy carrying case.

Features
Nickel Chrome Steel Alloy
Sizes: 3/32", 1/8", 5/32",
    3/16", 1/4", 5/16"
Wrench: 8mm, 10mm,
    15mm
Sockets: 1/4", 5/16", 3/8"
Screwdrivers: #0 phillips
    3/16" Slotted
Pouch: Vinyl

No. 63-15098 Pocket Hex set w/pouch

PRECISION KNIFE SET

No. 10250

This kit is a must for the hobbyist or anyone working with P.C. artwork. Very handy for many uses in the lab. Packaged in attractive four color box.

Kit Contains:
• (3) Knife Handle Sizes
• (1) Blade Holder
• (10) Assorted Blades
• Durable Solid Case for easy storing

HEX KEY WRENCH SET

The set contains US-SAE standard hex-wrenches in the most common sizes. For set screws used in electronics assemblies, for knobs and shaft couplers as well as numerous household and automotive products. Included is a molded plastic holder to help keep your wrench set together.
Sizes included are: 5/64, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16, and 3/8"

No. 63-10117

NUT TIGHTENING TOOL

No. NT500

Tool is specifically designed to tighten slotted knurled nuts on 3.5mm and some 2.5mm (i.e. Nos. 502JB, 502KB, 501JR, 702J and 666J).

NIBBLING TOOL

Unique hand-operated tool cuts metal and non-brittle plastic. Will cut any size or shape contour, starting from the edge or from a 3/8" inside hole. Tool cuts up to 18 gauge (0.046") as well as copper, brass, aluminum and plastics up to 1/16" (0.062").

No. 10150

PRECISION KNIFE

• **Knurled aluminum handle**
• **Precision ground blade**

No. 10260
No. 10265 - Package of 10 replacement blades

D-SUBMINIATURE PIN INSERTION TOOL

Tool is designed for insertion and extraction of crimp type pins for D-Subminiature connectors. Tool body is made of plastic; and ends are metal.

No. D004

INSPECTION MIRROR

A 1.25" diameter magnifying mirror, similar to a dentist's mirror except that this one has ball joints for adjusting to just about any angle. Makes seeing the problems while servicing in tight spots much easier. Length - 6"

No. 63-390

V.35 PIN EXTRACTION TOOLS

These tools are designed to remove the pins from Cisco Systems V.35 connectors. They are made of steel construction and have a manual operated plunger which pushes the pin from the housing.

Features
Steel Construction
Manual Push Plunger
Designed for V.35 Connectors

No. **61-396**
For V.35 Male Pins
No. **61-395**
For V.35 Female Pins

TELESCOPING MAGNETIC PICK-UP TOOL

No. 63-322
This handy magnetic pick-up tool telescopes from 4" to 16". Very strong magnetic tip. Will pickup 4 oz. weight.

SPRING HOOK TOOL

No. 63-317

The perfect tool for assembly of drive belts or assembly and disassembly of springs. One end is hook design for pulling. 2nd end is designed for pushing. Length is 8-1/2".

TOOLS

PRECISION SCREWDRIVER SET

• 6 pc. flat blades 1.0, 1.2, 1.4,
        1.8, 2.4, 3.0mm
• 3 pc. Phillips #00, #0, #1
• 1 Pick Up Tool and Pin Tip
• Molded Plastic case

No. JS7

JEWELERS' SCREWDRIVER SET

Set of six screwdrivers with free-turning heads, precision made for jewelers, watchmakers, gauge makers, hobbyists etc.. Sizes are 1.0, 1.4, 2.0, 2.4, 3.0 and 3.5mm. Packed in clear plastic case.

No. JS6

MINIATURE PRECISION NUTDRIVER SET

No. JS5

• 5 pc. nut driver
• 1/8", 9/64", 5/32", 11/32", 3/16"
• 1 piece cross bar

PRECISION TWEEZERS 4-1/2"

These quality, stainless steel tweezers are excellent for electronic and fine assembly.

No. 10132 - 4-1/2"
No. 10134 - Regular Fine Point 4-1/2"
No. 10136 - Curved Fine Point 4-1/2"
No. 10138 - Self Closing Fine Point 4-1/2"
No. 10140 - Self Closing 7"
No. 10130 - Kit of 4 Tweezers 4-1/2"
        (Nos. 10132, 10134, 10136 & 10138)

Electronic FORCEPS Stainless Steel

These are fine, high-quality forceps, or surgical hemostats, which have become a standard in electronic service and assembly. Small parts can be handled easily, solder will not stick to these Stainless Steel tools. Serrated jaws provide a good gripping surface and all models have a locking feature when needed. Smaller size is intended for persons with smaller to average hand size.

Part no.	Size	Style
63-382	5-1/8"	Straight
63-384	5-1/8"	Curved
63-386	6-1/4"	Straight
63-388	6-1/4"	Curved

HEAT GUN

The Philmore No. HD866 is a dual range gun. The low range covers 500° F and the high range covers 900° F - 1100° F. This fine quality product can be used for:
• **Heat shrink tubing**
• **Paint removal**
• **Drying metal**
• **Drying ignition systems**
• **Bending plastic/plexiglass**
• **Window shrink films**
• **Frozen locks**

No. HD866

UL LISTED 117VAC 1100 Watts Includes (2) tips and tip removal tool.

VACUUM SOLDER REMOVAL TOOL

Makes removal of molten solder from p.c. board easy. One hand operation. Nose is removable for easy clean-out. All-metal construction provides long, trouble-free service.
No. 10320
No. 10325 - Replacement Anti-Static Tip and "O" Ring

The BIG BLUE SolderSucker

This is an imported copy of a favorite American solder removal tool. It is an effective and economical tool for use in desoldering rework. Replacement "O" rings and tips are available for the only parts that will have noticeable wear.

Part no.	Description
10340	Big Blue Solder Sucker tool
10350	Anti-static version of "Big Blue" (all black color)
10342	Pack of three (3) replacement "O" rings
10341	Replacement Big Blue desoldering tip for no. 10340
10351	Replacement A/S desoldering tip for no. 10350

Dental Probe Sets

Philmore offers two dental probe sets for parts removal, lead bending, pc board cleaning and many other uses.

No. **63-376** (5) pc Set
(5) screw in probe + Handle 8.5"

STAINLESS STEEL PROFESSIONAL TOOLS

These finely machined stainless tools are durable and long-lasting. Extremely comfortable in user's hand. The cushioned handle grips provide very high insulation. All three tools are furnished with spring for ease-of-use. Philmore feels there is no finer value available today.

No. SA703 - side cutter

No. SA704 - needle point pliers

No.SA705- curved needle point pliers

40 mm (1.56") Square Cooling Fans

These miniature cooling fans are quite popular in small electronic equipment including computers where heat is a problem or can cause problems. The fans are available with brushless DC motors which are polarity protected.

Part No.	Thickness mm	Speed RPM	Max. CFM	Noise db	Bearing Style	Voltage	Current (ma)
70-4012	10	6500	7.7	29	Sleeve	12V DC	130
70-4128	10	6500	7.7	29	Ball	12V DC	130

Specifications:
Motor: DC Brushless
Case & Impeller: 94V-0 Plastic
Operating Temp.: -20° C - 80° C Ball Bearing
            -10°C- 50° C Sleeve Bearing
Life Expectancy: 70,000 Hours
UL, CUL, CSA Approvals

60 mm (2.36") Square Cooling Fans

These cooling fans are quite popular in electronic equipment. They are available in several voltages and CFM (cubic feet per minute) air flow types. The fans have brushless DC motors which are polarity protected.

Part No.	Thickness mm	Speed RPM	Max. CFM	Noise db	Bearing Style	Voltage	Current (ma)
70-6128	15	3900	15	28	Ball	12V DC	140
70-6012	25	4000	24	29	Sleeve	12V AC	140

Specifications:
Motor: DC Brushless
Case & Impellers: 94V-0 Plastic
Operating Temp.: -20° C - 80° C Ball Bearing
            -10°C- 50° C Sleeve Bearing
Life Expectancy: 70,000 Hours
UL, CUL, CSA Approvals
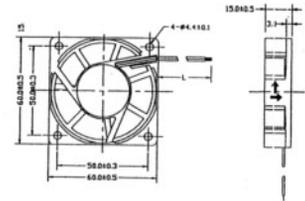
80 mm (3.15") Square Cooling Fans

These cooling fans are quite popular in electronic equipment including copiers, and computers. They are available in several voltages and CFM (cubic feet per minute) air flow types. The fans are available with brushless DC or AC motors which are polarity protected.

Part No.	Thickness mm	Speed RPM	Max. CFM	Noise db	Bearing Style	Voltage	Current (ma)
70-8275	25	3200	29	34	Sleeve	12V DC	190
70-8128	25	3000	22	35	Ball	24V DC	120
70-6275	25	3000	24	28	Ball	120V AC	140

Specifications:
Motor: AC or DC Brushless
Case & Impellers: 94V-0 Plastic
Operating Temp.: -20° C - 80° C Ball Bearing
            -10°C- 50° C Sleeve Bearing
Life Expectancy: 70,000 Hours
UL, CUL, CSA Approvals
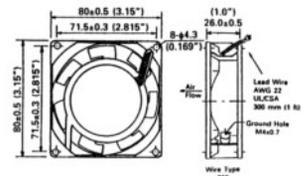
92 mm (3.62") Square Cooling Fans

These cooling fans are quite popular in electronic equipment including copiers, computers, & data processing. They are available in several voltages and CFM (cubic feet per minute) air flow types. The fans are available with brushless DC or AC motors which are polarity protected.

Part No.	Thickness mm	Speed RPM	Max. CFM	Noise db	Bearing Style	Voltage	Current (ma)
70-8325	25	2400	36	39	Sleeve	12V DC	220
70-9128	25	3000	50	33	Ball	24V DC	180
70-6325	25	2900	31	30	Ball	120V AC	140

Specifications:
Motor: AC or DC Brushless
Case & Impellers: 94V-0 Plastic
Operating Temp.: -20° C - 80° C Ball Bearing
            -10°C- 50° C Sleeve Bearing
Life Expectancy: 70,000 Hours
UL, CUL, CSA Approvals
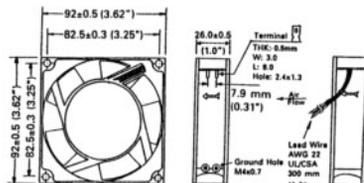
AMD K6-II CPU COOLING FAN

This CPU cooler is designed to fit the AMD K6-II processor with speeds up to 550MHz. The device has low acoustical noise, quick easy installation, and a ball bearing motor.

Features
>Fan size 50 x 50 x 10 mm
>Thermal interface: Chomerics T-725
>Operation Voltage: 7-12VDC
>Operating Current: 1.32W
>Noise Level: <30.4dB
>Rated Speed: 4800 RPM
>Air Flow: 11.5CFM
>Electrical Connection: 4 pin plug
>Dimensions w/ heat sink: 50x50x42mm

No. **70-8156** AMD K6-II CPU Cooler

120 mm (4.72") Square Cooling Fans

These cooling fans are quite popular in electronic equipment. They are available in several voltages and CFM (cubic feet per minute) air flow types. The fans have brushless DC motors which are polarity protected.

Specifications:
Motor: DC Brushless
Case & Impeller: 94V-0 Plastic
Operating Temp.: -20° C - 80° C Ball Bearing
            -10°C- 50° C Sleeve Bearing
Life Expectancy: 70,000 Hours
UL, CUL, CSA Approvals

Part No.	Thickness mm	Speed RPM	Max. CFM	Noise db	Bearing Style	Voltage	Current (ma)
70-8415	25	2400	69	35	Sleeve	12V DC	340
70-1128	25	3000	86	42	Ball	12V DC	240
70-1248	25	3000	86	42	Ball	24V DC	240
70-6412	25	2900	105	33	Ball	120V DC	140

COOLING FAN ACCESSORIES

Fan Guards

These guards are designed to fit the fans Philmore offers as well as other standard size models. They are to be used to keep foreign objects from interfering with the operation of the fan as well as for safety purposes.
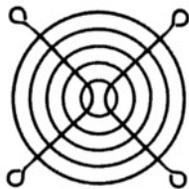
Part Number	Fan Size	Dimensions Dia.	Mt. Centers
70-6340	40mm	1.24"	1.26"
70-6360	60mm	1.97"	2.09"
70-6280	80mm	2.81"	3.02"
70-6330	92mm	3.25"	3.52"
70-6415	120mm	4.125"	4.31"

Specifications:
 Nickel Chrome Steel Wire
 Welded Joints
 Meets UL & CSA Standards

Plastic Fan Filter Kits

These kits are designed to reduce noise, and remove impurities up to 45 PPI (Parts Per Inch). These kits consist of three parts. A Fan Guard, Media Filter, and a Retainer.

Part Number	Fan Size (mm)	PPI Filtering
70-5340	40mm	45
70-5360	60mm	45
70-5380	80mm	45
70-5392	92mm	45
70-5312	120mm	45

Specifications:
 Guard;
  UL94V-0 Plastic
  UL .25 Spacing
  Reduces Noise Level
 Media Filter;
  PU (polyurethane) Foam
  45 PPI
  Easy Clean
 Retainer;
  UL94V-0 Plastic
  Low Air Resistance
  Snap-on Installation

Fan Power Cords

These fan power cords fit Philmore models and other competitor fans with plug-in terminals. Philmore offers several configurations for your convenience.

No. **70-6420 -** Straight 42" Long
No. **70-6424 -** 90° 24" long
No. **70-6436 -** 45° 36" long

No. **70-6420**   No. **70-6424**   No. **70-6436**

BAKELITE FLAT GRIP CAP

No. 1051B -
Brown
No. 1051V - Ivory
10A-250V
15A-125V
UL Approved
Non Polarized Plug

JIFFY PLUG

No tools, no stripping. Perfect contact in 5 seconds. Cords extends from side of plug.

Non Polarized. Color: White

No. 8901

Polyolefin Heat Shrink Tubing

This grade of heat shrink tubing is rated for general purpose Electrical & Mechanical Insulation. The construction is "Thin Wall Crosslinked Polyolefin". Thin wall heat shrinkable tubing is used in a variety of applications including: harness and strain relief, insulation and protection of electronic components, and Identification.

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
1/16"	Red	12-916RD	10	12-916RD-4	
	White	12-916WH	10	12-916WH-4	
	Blue	12-916BU	10	12-916BU-4	
	Yellow	12-916YE	10	12-916YE-4	
	Green	12-916GR	10	12-916GR-4	
	Black	12-916	10	12-916-4	12-916-100
	Clear	12 936	10	12-936-4	12-936-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
1/8"	Red	12-918RD	10	12-918RD-4	
	White	12-918WH	10	12-918WH-4	
	Blue	12-918BU	10	12-918BU-4	
	Yellow	12-918YE	10	12-918YE-4	
	Green	12-918GR	10	12-918GR-4	
	Black	12-918	10	12-918-4	12-918-100
	Clear	12 938	10	12-938-4	12-938-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
3/16"	Red	12-920RD	10	12-920RD-4	
	White	12-920WH	10	12-920WH-4	
	Blue	12-920BU	10	12-920BU-4	
	Yellow	12-920YE	10	12-920YE-4	
	Green	12-920GR	10	12-920GR-4	
	Black	12-920	10	12-920-4	12-920-100
	Clear	12 940	10	12-940-4	12-940-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
1/4"	Red	12-922RD	8	12-922RD-4	
	White	12-922WH	8	12-922WH-4	
	Blue	12-922BU	8	12-922BU-4	
	Yellow	12-922YE	8	12-922YE-4	
	Green	12-922GR	8	12-922GR-4	
	Black	12-922	8	12-922-4	12-922-100
	Clear	12 942	8	12-942-4	12-942-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
3/8"	Red	12-924RD	8	12-924RD-4	
	White	12-924WH	8	12-924WH-4	
	Blue	12-924BU	8	12-924BU-4	
	Yellow	12-924YE	8	12-924YE-4	
	Green	12-924GR	8	12-924GR-4	
	Black	12-924	8	12-924-4	12-924-100
	Clear	12 944	8	12-944-4	12-944-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
1/2"	Red	12-926RD	6	12-926RD-4	
	White	12-926WH	6	12-926WH-4	
	Blue	12-926BU	6	12-926BU-4	
	Yellow	12-926YE	6	12-926YE-4	
	Green	12-926GR	6	12-926GR-4	
	Black	12-926	6	12-926-4	12-926-100
	Clear	12 946	6	12-946-4	12-946-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
3/4"	Red	12-928RD	4	12-928RD-4	
	White	12-928WH	4	12-928WH-4	
	Blue	12-928BU	4	12-928BU-4	
	Yellow	12-928YE	4	12-928YE-4	
	Green	12-928GR	4	12-928GR-4	
	Black	12-928	4	12-928-4	12-928-100
	Clear	12 948	4	12-948-4	12-948-100

Size	Color	6" Length	QTY / Pack	4' Length	100' Roll
1"	Red	12-930RD	3	12-930RD-4	
	White	12-930WH	3	12-930WH-4	
	Blue	12-930BU	3	12-930BU-4	
	Yellow	12-930YE	3	12-930YE-4	
	Green	12-930GR	3	12-930GR-4	
	Black	12-930	3	12-930-4	12-930-100
	Clear	12 950	3	12-950-4	12-950-100

Specifications
Flame Retardant
Resistant to common Fluids
  and solvents
Recovery: 2:1
Shrink Temp.: 120ºC
Meets UL224, 125ºC
  CSA C22.2 No.198.1

Heat Shrink Tubing Assortments
These packages consist of assorted sizes depending on the popularity. 6" length.

Black
No. 12-960 (2) ea. 1/16", 1/8", 3/16", 1/4" (1) ea. 3/8", 1/2", 3/4", 1"

Clear
No. 12-962 (2) ea. 1/16", 1/8", 3/16", 1/4" (1) ea. 3/8", 1/2", 3/4", 1"

Installer Packs

Black
No. 12-970 (5) ea. 1/16", 1/8", 3/16", 1/4", 3/8",

Clear
No. 12-972 (5) ea. 1/16", 1/8", 3/16", 1/4", 3/8",

HEAT SHRINK TUBING
Color Pack Assortment

These assortments consist of the following: each has (10) pieces = (2) Black, (2) Clear, (2) Red, (1) White, (1) Blue, (1) Yellow, (1) Green, 6" Length.

No. 12-980 1/16"
No. 12-982 1/8"
No. 12-984 3/16"
No. 12-986 1/4"
No. 12-988 3/8"
No. 12-990 1/2"

SOLDERING IRONS

TEMPERATURE CONTROLLED SOLDER STATION

The electronic temperature control soldering station has been developed to meet the present and future needs of the electronics industry. It incorporates a sophisticated electronic circuit which enables the user to change the tip temperature from 300^0 F (150^0C) to 790^0F (420^0C) without the need to change the tip or heating element. The temperature is maintained within $\pm 10^0$F of its preset temperature. This is made possible by a unique temperature sensor that is located near the tip, resulting in rapid response and little temperature variation. The tip of the unit is isolated from the AC line by a transformer. Low voltage (24 Volts) is utilized to power the heating element. Completely electronic switching protects voltage and current sensitive components against transient spikes sometimes caused by other units utilizing mechanical switching circuits. This unit incorporates a linear LED array readout which accurately indicates the temperature of the tip.

REPLACEMENT TIPS
Iron Plated Copper for: **No. S4240** Philmore Solder Station
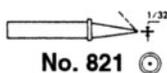
No. 821 **No. 827** **No. 828** Knurled Nut Barrel Assembly

No. S4240
No. S4240R - Solder Iron Replacement (with cord)

SOLDERING IRON for
Industry, Serious Experimenters and Serviceperson

Designed for safe, fast heating power up to 620^0 F at 30 watts. Heats up within 95 seconds. Ideal for printed circuit wiring. or where only thin tips are workable. Comfortable grip.
Well constructed, heavy-duty replaceable tip and element. Weighs only 4 oz.; 100-120 volts AC/DC; 10" long.

No. S530UL

No. S531UL - Replacement Tip

MULTIPLE SOLDER/ DESOLDER IRON

UL LISTED
117V AC
3 WIRE GROUND

This unique combination tool provides the user with soldering iron and solder removal tool for fast one hand operation. The vacuum pump is tightly sealed to provide thorough solder removal. Easy removal of vacuum pump for removal of solder. Also available are replacement tip and replacement "O" ring for solder pump.

No. S2157 - Solder/Desolder Tool
No. S2158R - Replacement Tip
No. S2159R - Replacement "O" Ring

SOLDERING and TOOL KIT

This kit is ideal for the hobbyist. Kit includes UL Approved 30 watt soldering iron, one package of .062" solder, solder aid tool, 4-1/2" diagonal cutter and 4-1/2" needle nose pliers.

No. S540

TEMPERATURE COMPENSATING SOLDERING IRON

• **Temperature Compensating Design**
• **Ceramic Heater**
• **Fast Soldering**
• **Extra Long Life**
• **High Performance**
No. S4140 • **40 Watt 117V**

The Temperature Compensating Design used on this iron controls damage to iron when left on for long periods of time. This well made soldering iron is designed for long life on the production line or in the engineering lab. The 40 watt rating guarantees being able to handle most soldering jobs. The iron is lightweight and compact for those delicate soldering applications. Handle has comfort grip for increased ease of use. Replacement tips for this iron are same tips as used on No. S4240 Solder Station.

No. S4140KN - Replacement Knurled Nut

REPLACEMENT TIPS

No. 822 **No. 823** **No. 824** **No. 825**

No. 826

SOLDERING AIDS

Reamer & Scraper Tip

Reamer and scraper tips for scraping joints or reaming out lug holes.
No. S969 - Plastic Handle 7" length

Brush & Forked Tip

Brush on one end, forked tip on the other is for twisting or holding wires.
No. S973 - Plastic Handle 7" length

Brush & Scraper Tip

Brush on one end for dusting away excess solder chips, and scraper tip for scraping joints.
No. S974 - Plastic Handle 7" length

Straight Reamer & Forked Tip

Made from stainless steel, solder will not stick to it. Forked tip on one end, straight reamer on the other.
No. S975 - Plastic Handle 7" length

Angle Reamer & Forked Tip
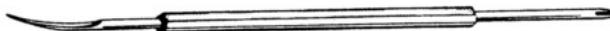
Heat treated tool steel prevents solder from sticking to tool. Forked tip for twisting or holding wires, angle reamer on the other.
No. S976 - Plastic Handle 7" length

Fyberiod "Fish Paper"

The insulating properties of this "Fish Paper" make it ideal for many uses. It is commonly used around the shop where electrical insulation is needed. It is tough, flexible, and combined with its edge-tearing resistance and high dielectric strength make it a great product for slot car insulation. It is also very absorbent of insulating varnishes.

Specifications:

Color: Blue Gray
Thickness: .010" ± 10%
Material: Vulcanized Cellulose Fiber
Tensile Strength: 15,000 PSI Typical
Insulating Properties: 300V/mil
Tearing Strength: 375 grams
Zn Cl Content = <.05%
UL94 Flame Class: 94HB UL file #E55656
Mil Spec # MIL-1-695A type F

No. 12-5600 10" x 26" rolled
No. 12-5602B 10" x 53" Flat

FiberGlass PrepPen®

The PrepPen® is a tool that has thousands of uses around the workbench and home. The PrepPen® will ready a spot on a PC board to receive solder, clean rust off your side cutters, remove oxidation from a bulb socket, clean corrosion off a battery connection, remove grit from a card edge contact finger, prepare a surface for solder or paint plus thousands of more uses too numerous to mention.

The 20,000 glass fibers in the PrepPen cartridge are finer than human hair yet stronger than steel when it comes to cleaning power.

PrepPen's ample sized body and finger grip makes it easy to hold for a comfortable, secure grip.

The cartridge can be extended as needed by turning and can be easily retracted when not in use.

Two long-lasting glass fiber cartridges come with every PrepPen, a refill is safely stored in the handle. Additional refills are available in a convenient package.

Clean and Sand Where Others Can't Reach!

Sand paper, being too rigid, only hits the high spots leaving the recesses untouched.
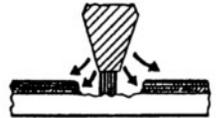
PrepPen is like a sand blaster in a pen point removing rust, wax and dirt from every corner, crevice and pocket.

The PrepPen® contains over 20,000 glass fibers that are thinner than human hair, but stronger than steel when it comes to cleaning and sanding strength. Further, the PrepPen's body is designed for comfortable, secure grip. Each pen comes with two cartridges, one installed and one in the handles storage compartment. The fibers retract into the handle when not in use.

The PrepPen® goes where other tools and sand paper can not reach. Use it like a pencil eraser, but it reacts like a sand blaster.

No. 12-437 - PrepPen® w/ 1 extra cartridge
No. 12-440 - Package of 2 PrepPen® refill cartridges

PrepPen® is a registered trademark of Pro Motor Car Products, Inc.

SOLDERING IRON HOLDER

This heavy duty solder iron stand features a die-cast base, and also a tip cleaning sponge and holder. The iron holder features bakelite iron tip insert. A must for every technician bench. Fits all Philmore Solder Irons.

No. S100

HELPING HAND DOUBLE CLIP HOLDER

The helping hand will hold components while you adjust or solder, and your hands are free. Dual crocodile clips are adjustable so that parts of various sizes can be held at nearly any angle. Indispensible for the service or lab bench.

No. S391
No. S393 - Helping Hand with Magnifier

EDSYN SOLDERING PRODUCTS

EDSYN ®

EDSYN is a world-class manufacturer of soldering, desoldering and SMT (Surface Mount Technology) rework products and systems. Established in 1961, EDSYN invented the industry's first patented desoldering hand tool known as SOLDAPULLT™. This spring-loaded hand held vacuum device launched an industry revolution in soldering and desoldering technology. Today EDSYN's general product line includes a wide array of hand tools, stations, systems and accessories used in the assembly, rework, and repair of all types of electronic assemblies, particularly those that incorporate SMT (Surface Mount Technology). All of the EDSYN products are available through Philmore Manufacturing, some of which include, but are not limited to:

**SOLDER STATION
SMT TOOLS**

**DESOLDER STATIONS
MULTI TASKING STATIONS**

**FUME EXTRACTION SYSTEMS
GAS POWERED SOLDER TOOLS**

LONER
Single & Dual Temperature Controlled Solder Station

EDSYN No. ED-951SX
-Better Tip Life-

This is EDSYN'S most popular station for both production and the service bench. User-controlled temperature ranging from 400º to 800º F., regulation of $\pm$6º F. Solid state controls and designed to avoid ESD problems. Employs a ceramic PTC element for fast heat up. A variety of soldering tips is available. The unique iron holder design reduces tip oxidation, wear during non-use periods and significantly reduces the probability of user burns. This unit complies with MIL spec. 45743E, DOD-STD-2000-1B, WS-6536E AND ESD Spec DOD-STD-1686, DOD-HDBK-263.
Operation from 110 Volts, 60 Hz, 15W to 22 Watts. Heater rated @ 120V, 95W. Supplied with No. LT375 tip.

Solder Station No. 951SX order number **ED-951SX.**
Replacement heater assembly for 951SX solder Station (not shown).
Part **No. ED-SR060**

Specifications for 951SX

Power Requirements 120V, 60Hz		Temperature Range ....400º F-800º F	
205ºC-427ºC			
Power Rating..................................15W-220W		Temperature Regulation ....$\pm$6º F/ $\pm$3ºC	
Heater Rating..................................120V 95W		Tip-to-Ground Voltage Leakage/Resistance........................< 2 mV/ <2 Ω	
Dimensions..................4.1" W x 8.2" H x 10" D			
104mm x 208mm x 254mm		Weight...2.5 lbs / 1.1kg	

LP200 SOLDAVAC SMD pick-up tool.
The LP200 SOLDAVAC Lifter is a fountain-pen size tool that can pick up small SMD components for moving and positioning them during either assembly or repair of circuit boards. Stops breakage that is common when using tweezers, contamination from fingers. Vacuum is formed with a simple squeeze and released just as easily. Three sizes of suction needle tips included. SOLDAVAC Pick-up tool, display packaged. **No. ED-LP200**

EDSYN **SOLDAPULLT** Products.
Setting the Industry Standards for Solder Removal Tools.

SILVERSTAT SOLDAPULLT ESD-Safe, conductive plating, this unit designed for heavy duty solder removal, professional and production usage. Tip and O-ring are replaceable.
Part No. ....ED-AS196 display packaged.

L=13" W= 3.5 oz.

Deluxe SOLDAPULLT is the original design solder removal tool. For use in heavy-duty, high-volume applications and specifically professional and production usage. Tip and O-ring are replaceable.
Part No. ....ED-DS017 display packaged.

L=13" W= 3.5 oz.

Low-Static Deluxe SOLDAPULLT is the original design but molded of conductive, static-dissipative materials. For professional and production usage. Tip and O-ring are replaceable.
Part No. ....ED-DS017LS display packaged.

L=13" W= 3.5 oz.

L=12" W= 2.5 oz.

PT109 SOLDAPULLT lll
A smaller "petite" barrel and lighter weight for smaller hands. Weighs 2.5 oz (1/3 less than standard models).
Part No. ....ED-PT109 packaged for display.

The Universal SOLDAPULLT delivers a powerful vacuum pulse, cocks (or loads) one handed. The loading stroke is adjustable to reduce hand strain.
Part No. ....ED-US140 packaged for display.
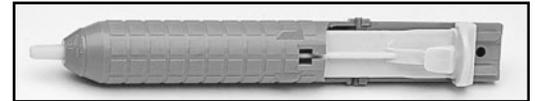
L=8" W= 2 oz.

Low-static Universal SOLDAPULLT Model No. US3440
The above unit but molded of static conductive materials to bleed off static, prevent ESD when used by a person wearing a wrist strap or similar grounding device.
Part No. ....ED-US340 packaged for display.

L=8" W= 2 oz.

The Challenger Standard Metric Low-static SOLDAPULLT EDSYN Model No. SS350
A high-quality, low cost solder remover molded of static disappative materials. Features an aluminum barrel for easy cleaning.
Part No. ....ED-SS350 packaged for display.
Replacement Tip **Part. No.ED-LS363**

L=8.5" W= 1.5 oz.

Standard Metric EDSYN Model SS750LS **SOLDAPULLT**
Another of the Challenger series of high quality, low cost units for desoldering basic electronics components. Suggested for the hobbyist and low volume users. Just 8.5" in length and weighs only 1 1/2 ounces.
Part No. ....ED-SS750LS packaged for display.
Replacement Tip **Part. No.ED-SRT751**

L=8.5" W= 1.5 oz.

EDSYN SOLDERING PRODUCTS
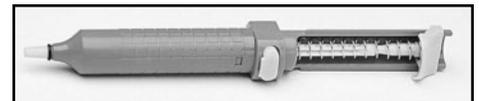
EDSYN ®

Solder Station Tips for Model 951SX and others.

A wide variety of longer tips makes your EDSYN solder station more versatile, more adaptable to changes as component shapes evolve. The LT375 tip is the standard, and included with the 951SX solder station. EDSYN soldering tips are machined from pure copper and then processed in a series of plating and tinning operations to create more reliable, longer lived tips.
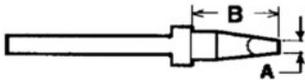
Spade Style Tips
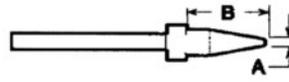
Conical Style Tips

Part No.	width A	width B	Tip drawing (not to scale)
ED-LT375 Spade tip	.06" (1.5mm)	.55" (14.0mm)	
ED-LT376 Spade tip	.12" (3.0mm)	.48" (12.2mm)	
ED-LT431 Spade tip	.07" (1.8mm)	.74" (18.8mm)	
ED-LT444 Spade tip	.04" (1.0mm)	.78" (19.8mm)	
ED-LT374 Conical tip	.03" (0.8mm)	.48" (12.2mm)	
ED-LT382 Conical tip	.02" (0.5mm)	.62" (15.8mm)	
ED-LT392 Conical tip	.01" (0.3mm)	1.13" (1.13mm)	

Replacement Parts

Parts For 951SX Solder Station

Replacement heater assembly for 951SX Solder Station (not shown).   Part **No. ED-SR060**
Replacement Sponge for solder stations   ....(not shown).   Part **No. ED-RS199**

Replacement tip for SOLDAPULLT

Replacement tip for the DS017, PT109 and the US140
  Replacement Tip............ Part **No. ED-SRT12**

  Replacement Tip for the PT309
Replacement Tip..............Part **No. ED-LRT14**

Static-Safe Replacement tip for SOLDAPULLT

Replacement tip for the DS017LS, AS196 and the US340
  Replacement Tip............ Part **No. ED-LS197**

Replacement "O" rings for SOLDAPULLT

Ring for model numbers AS196, DS017 and the US140, US340
Ring Part **No. ED-ODS31.**

Replacement ring for model numbers SS350, SS750LS etc...
Ring Part **No. ED-OS130.**

Replacement O-ring for PT109......Part **No. ED-OSB32**

EDSYN O-Ring Lubricant OL111.

An occasional application of lube to the O-ring in solder removal tools will expand the life of the ring and maintain vigorous motion needed to "snap" the solder from PC boards.

O-Ring lube in 0.5 gm tube.......
Part **No. ED-OL111**

QUALITEK SOLDERING PRODUCTS

QUALITEK WORLDWIDE

Established in 1980, Qualitek International is the fastest growing manufacturer of soldering materials for the Electronics assembly industry. Their rapid growth has been a result of their commitment to **QUALITY, QUICK SERVICE**, and state of the art **TECHNICAL SUPPORT**. Qualitek now has manufacturing facilities in **Illinois**, **Singapore**, the **Philippines, China, Mexico**, and the **United Kingdom**. Today Qualitek is a major supplier in the International manufacturing market and is currently ranked in the top THREE (3) suppliers. They manufacture solder paste, soldering chemicals, wire solder, and bar solder for the Electronics Industry using **all virgin materials**. LKG Industries is proud to be a Distributor of these Qualitek soldering products which we offer at substantial savings to the distributor and O.E.M. contract manufacturer. The following are the products that are currently available through your local Electronic Distributor.

Quality - Technology - Performance

Quality

Qualitek is an **ISO 9002** certified company
> All incoming raw materials are inspected
> Every manufacturing process is monitored
> Every item carries a lot # for tracking

Technology

Qualitek has developed a superior solder powder
> technology that is virtually oxide-free.

Qualitek solder paste manufacturing technology
> consistently delivers high quality solder paste.

Qualitek not only meets or exceeds Industry standards,
> but excel in performance against competition.

Performance

Qualitek's application laboratory is equipped with the
> latest SMT assembly & wave solder equipment.

Qualitek's application laboratory can build prototypes
> to suit customer needs.

Electronic Lead-Free Solder
LF217 type

Environmentally safe solder. This solder is designed to replace the standard lead barring type of solder for electronic connections. The reflow temperature is 217° - 219^OC. The alloy is 95.5% Tin (Sn) / 4 % Silver (Ag) / .5% (Cu). This combination is the best for soldering electronic connections while retarding the dissolution of copper. It has excellent wetting and spreading properties. Philmore offers this solder with a No-Clean Flux

50-21750	1/2 LB Spool
50-21700	Dispenser Pack
21 Gauge (.032" DIA.)	.6 oz

Qualitek Rosin Core Wire Solder

Qualitek wire solder is made in the U.S.A. of virgin materials to maintain the highest and most consistent quality

Rosin Core (RA300) Solder

The RA300 (Rosin Activated) cored solder is one of the most universally used types of solder wire used in the electronics and electrical markets today. It has rapid wetting and spreading properties and leaves little residue which usually needs NO cleaning. LKG Industries offers this solder in several gauges, several alloys, and both 1 LB and 1/2 LB spools

Part Number	Alloy Tin / Lead	Size Gauge	Dia. in.	Percent of Flux	Roll Size
50-30023	60/40	23	.025	3.3	1 LB
50-30523	60/40	23	.025	3.3	1/2 LB
50-30021	60/40	21	.032	3.3	1 LB
50-30521	60/40	21	.032	3.3	1/2 LB
50-30018	60/40	18	.050	3.3	1 LB
50-30518	60/40	18	.050	3.3	1/2 LB
50-30016	60/40	16	.062	3.3	1 LB
50-30516	60/40	16	.062	3.3	1/2 LB
50-33021	63/37	21	.032	3.3	1 LB
50-33521	63/37	21	.032	3.3	1/2 LB
50-33016	63/37	16	.062	3.3	1 LB
50-33516	63/37	16	.062	3.3	1/2 LB

251

QUALITEK SOLDERING PRODUCTS

Qualitek No-Clean Rosin Core Wire Solder

Qualitek wire solder is made in the U.S.A. of virgin materials to maintain the highest and most consistent quality

No-Clean (NC601) Rosin Activated Solder

This special no-clean flux volatilizes (vaporizes) at soldering leaving minimal clear residue which may be removed with HOT water if desired.

Part Number	Alloy Tin / Lead	Size Gauge	Dia. in.	Percent of Flux	Roll Size
50-60021	60/40	21	.032	1.1	1 LB
50-60521	60/40	21	.032	1.1	1/2 LB
50-63021	63/37	21	.032	1.1	1 LB
50-63521	63/37	21	.032	1.1	1/2 LB
50-63018	63/37	18	.050	1.1	1 LB
50-63518	63/37	18	.050	1.1	1/2 LB
50-63016	63/37	16	.062	1.1	1 LB
50-63516	63/37	16	.062	1.1	1/2 LB

Qualitek Silver Solder

These solders are specially formulated to be used with gold and silver plated contacts to prevent the leaching of precious metals which is easily dissolved into tin. Leaching is the tendency for tin/ lead-bearing solder to dissolve metallizations during reflow operations. The rate at which silver leaches into molten tin/ lead solder alloy is retarded by using solder alloys which contain a small amount of silver. These solders contain 2% silver in the alloy.

Part Number	Alloy Tin/Lead/Silver	Size Gauge	Dia. in.	Roll size	Flux
50-32021	62/36/2	21	.032	1 LB	RA300
50-32521	62/36/2	21	.032	1/2 LB	RA300
50-62021	62/36/2	21	.032	1 LB	NC601
50-62521	62/36/2	21	.032	1/2 LB	NC601

RA300= Rosin Activated core, **NC601** = No-Clean core

Qualitek Lead-Free Solder

Environmentally safe solder. This solder is designed to replace the standard lead barring type of solder for plumbing applications. The reflow temperature is 221° - 230°C. The alloy is 96.5% Tin (Sn) / 3.5 % Silver (Ag). This combination is the best for soldering plumbing or similar connections where excess heat will not destroy components. It has excellent wetting and spreading properties.

50-95505	1/2 LB Spool
50-95500	Dispenser Pack
16 Gauge (.062" DIA.)	.9 oz

Dispenser Packs of Wire Solder

These products are a convenient size to carry in your tool box or keep in the rework bench. They are available in several alloys and types of products.

Part Number	Alloy Tin/Lead/Silver	Dia. in.	Roll size	Carton Quantity	Flux Type
50-3000	60/40	.032	.6 oz	50	RA300
50-6000	60/40	.032	.7 oz	50	NC601
50-6200	63/36/2	.032	.7 oz	50	NC601

RA300= Rosin Activated core, **NC601** = No-Clean core

50-6322	Bar solder 2.2 LB / bar

50-6301 Q - Bar Chips
1 oz chip (size 1" x .5") for small solder pot.
1/2 lb Package Blister Card Display

Maximum Allowable Impurities			
Impurity	Q-Bar	J-STD-006	ASTM B-32
Antimony	0.050	0.200	0.120
Copper	0.010	0.080	0.080
Silver	0.010	0.050	0.015
Bismuth	0.050	0.100	0.250
Iron	0.010	0.020	0.020
Arsenic	0.010	0.030	0.030
Zinc	0.001	0.003	0.005
Aluminum	0.001	0.005	0.005
Cadmium	0.001	0.002	0.001
Nickel	0.005	0.010	n/a
Gold	0.002	0.050	n/a
Indium	0.050	0.100	n/a

Qualitek Bar Solder

Qualitek "Q-Bar" solder is made of the finest virgin metals. The quality standards for **ALL** Q-Bar products exceed the J-STD-006, ASTM B-32 and QQ-S-571 standards. They are available in 1 Kilogram (2.20 pound) bars and are sold in ten (10) bar packages which weighs 22 LB.

Qualitek Lead Free Supplier

Qualitek understands that implementation of Lead-Free processes can be complex and is prepared to help customers overcome the unique challenges that may arise. Qualitek offers an advanced solution for Lead-Free applications, which include No-Clean and Water-Soluble cored wire, liquid fluxes, and paste.

Lead Free Solder Composition

Several Lead-Free solders have been specified as alternatives for sn/pb alloys used in electronics assembly operations. Qualitek manufactures these alloys to exceed the impurity requirements of J-STD-006 and all other relevant international standards.

Lead Free Cored Solder Wire

Qualitek has developed a unique flux system designed specifically for high temperature Lead-Free alloys. It provides the fluxing activity levels that promote fast wetting action and maximum wetting spread.

Physical Property Alloy Analysis

	SnAgCu Sn/Ag/Cu (96.5/3.0/0.5)
Melting point, °C	217-221°C
Hardness, Brinell	15HB
Tensile strength, psi	4312
Density, g / cc	7.39
Coefficient of Thermal Expansion	Pure Sn=23.5
Electrical Resistivity (μohm - cm)	13.0
Electrical Conductivity, % IACS	16.6

Standard Core wire Solder

Flux 3.3% Flux 2.2% Flux 1.1%
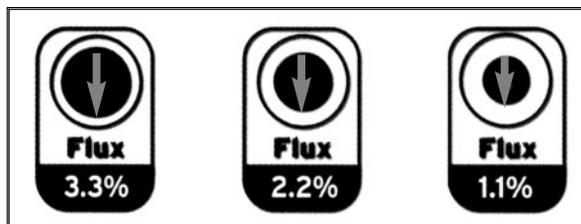
Flux Core Wire Solder				
Formulations:	NC600	WS700	RA 300	Test Method
Type	**No-Clean Wire Core**	**Water-Soluble Wire Core**	Rosin Core	
Flux classification:	REL0	ORH1		JSTD-004
Copper Mirror	No removal	Complete removal		IPC-TM-650 2.3.32
Silver Chromate	Pass	Fail		IPC-TM-650 2.3.33
Corrosion **SIR**	Pass	Pass (cleaned coupons)		IPC-TM-650 2.6.15
JSTD-004,	2.33×10^{11} ohms	1.49×10^{10} ohms (cleaned)		IPC-TM-650 2.6.3.3
Bellcore (Telecordia)	6.12×10^{11} ohms	4.12×10^{11} ohms (cleaned)		Bellcore GR-78-CORE 13.1.3
Electromigration	Pass	Pass (cleaned)		Bellcore GR-78-CORE 13.1.4
Post Reflow Flux Residue	55%	65%		TGA Analysis
Acid Value	190-210	120-130		IPC-TM-650 2.3.13
Flux Residue Dryness	Pass	Pass		IPC-TM-650 2.4.47
Spitting of Flux Cored Solder	0.3%	0.4%		IPC-TM-650 2.4.48
Solder Spread	>130mm^2	>130mm^2		IPC-TM-650 2.4.46

Wire Solder		
Wire Formula	**Residue Removal By**	**Flux Class per J-STD-004**
NC600 No-Clean	Not required. If Desired, Solvent/Semi Aqueous	REL0
NC601 No-Clean	Not required. If Desired, Hot water	ORL0
NC609 No-Clean Colophony free	Not required. If Desired, Hot water	REL0
WS700 Water-Soluble	Hot DI Water	ORH1
RMA200 Rosin Mildly acivated	Solvent/Semi-Aqueous	ROL1
RA 300 Activated Rosin	Solvent/Semi-Aqueous	ROL1
SRA 500 Rosin Super Activated	Solvent/Semi-Aqueous	ROM1
Solid Wire No Flux Core	NA	NA

Standard Wire Diameters										
Diameter (inch)	0.125	0.092	0.062	0.050	0.040	0.032	0.025	0.020	0.015	0.010
Diameter (mm)	3.18	2.33	1.57	1.27	1.01	0.81	0.63	0.50	0.38	0.25
Std. Wire Gauge	11	13	16	18	19	21	23	25	28	31

No-Clean (NC600) Wire Solder

A single core NC600 Flux-Filled lead free wire solder, NC600 flux. Use in high reliability assembly but with rapid wetting and spreading. Ideal for most consumer electronics and electrical soldering as well. Residue removal not required.

Part No.	Alloy Tin/Silver/Copper	Size Gauge	Dia. Inches	% of Flux	Roll Size
50-95021	96.5 / 3.0 / 0.5	21	.032	2.2	1 Lb.
50-95521	96.5 / 3.0 / 0.5	21	.032	2.2	1/2 Lb.
50-95018	96.5 / 3.0 / 0.5	18	.050	2.2	1 Lb.
50-95518	96.5 / 3.0 / 0.5	18	.050	2.2	1/2 Lb.
50-95500	96.5 / 3.0 / 0.5	16	.062	2.2	8 oz. Dispenser Pack

Water-Soluble (WS700) Wire Solder

The WS700 is formulated for electronic applications where rapid wetting action and ease of cleaning flux residue with water. This organic flux generally provides greater fluxing ability than rosin. Will not easily decompose and carbonize. Minimal spattering.

Part No.	Alloy Tin/Silver/Copper	Size Gauge	Dia. Inches	% of Flux	Roll Size
50-96023	96.5 / 3.0 / 0.5	23	.025	2.2	1 Lb.
50-96523	96.5 / 3.0 / 0.5	23	.025	2.2	1/2 Lb.
50-96021	96.5 / 3.0 / 0.5	21	.032	2.2	1 Lb.
50-96521	96.5 / 3.0 / 0.5	21	.032	2.2	1/2 Lb.
50-96018	96.5 / 3.0 / 0.5	18	.050	2.2	1 Lb.
50-96518	96.5 / 3.0 / 0.5	18	.050	2.2	1/2 Lb.

Rosin Core (RA300) Lead Free Wire Solder

Qualitek RA300 is an activated rosin cored solder wire developed for general hand soldering applications. Utilizing refined resin and a very effective activator, RA300 performs extremely well on hard to solder parts and surfaces in conjunction with high temperature lead free solder.

Qualitek RA300 is suitable for use in any commercial hand soldering application that specifies compliance to J-STD-004 ROM1. It is suited to such areas of industry as TV, Audio equipment, Video / DVD, toys and games and all types of household appliances.

Part No.	Alloy Tin/Silver/Copper	Size Gauge	Dia. Inches	% of Flux	Roll Size
50-94021	96.5 / 3.0 / 0.5	21	.032	2.2	1 Lb.
50-94521	96.5 / 3.0 / 0.5	21	.032	2.2	1/2 Lb.
50-94018	96.5 / 3.0 / 0.5	18	.050	2.2	1 Lb.
50-94518	96.5 / 3.0 / 0.5	18	.050	2.2	1/2 Lb.
50-94500	96.5 / 3.0 / 0.5	21	.032	2.2	8 oz. Dispenser Pack

Physical Property Alloy Analysis

Tensile strength, psi	4312
Density, g / cc	7.39
Electrical Resistivity (μohm - cm)	13.0
Electrical Conductivity, % IACS	16.6
Coefficient of Thermal Expansion	Pure Sn=23.5
Melting point, °C	217-221°C
Hardness, Brinell	15HB

lead free QUALITEK soldering

Lead Free Alternative

SN100e

Purity Improves Process

Qualiteks' lead free solder SN100e has been developed as a lead free alternative for those now using costly SAC alloys and for those switching from lead containing Sn63/Pb37 alloys to the lead free process.

SN100e is manufactured from tin, copper, and cobalt to create solder so pure it far exceeds the most common specification requirements. SN100e lead-free solder alloy is RoHS compliant and reduces copper dissolution.
This alloy provides brighter, shinier, less grainy solder joints when compared to SAC305 alloy and is much less expensive.

Qualiteks' manufacturing process assures batch-to-batch consistency for predictable solder performance.

Mixing Lead Free Alloys

SN100e is compatible with all SAC and Sn/Cu alloys. SN100e performs with ENIG, immersion tin, immersion silver, OSP, and hot air leveled board finishes. SN100e provides ability to standardize on one lead-free alloy for all soldering processes.

Benefit of SN100e vs SN100C

When nickel gets below .035%, the nickel no longer functions and product performance is negatively affected. The joints become dull in appearance.

Benefit of SN100e vs SN100C

The Nickel comes out of solution at a much faster rate than cobalt resulting in a duller solder joint.
Since nickel comes out of solution at a much faster rate than cobalt, SN100e offers greater product throughput.

SN100e grow smaller, tighter joint crystals compared to other lead free alloys.

Competitors brands contain Nickel and Nickel works by restricting the growth of the Sn/Cu crystals. SN100e is more uniformly homogenous compared to SAC or Sn/Cu/Ni alloys. Nickel part of the alloy composition of SN100C goes into the boundary of the crystals and is rapidly consumed. The nickel depletes from the alloy. More nickel is used, so a replenishment alloy is needed. SN100e offers more benefits and better product performance than any other lead free alloy and it is less expensive in comparison to most.

Physical Property And Alloy Comparison

Alloy	Composition	Melting Point °C	Density	Tensil Strength, MPa	Co-efficient Of Thermal Expansion	Electrical Resistivity, (µohm - m)	Thermal Conductivity (J/-m-s-K)
Sn100e	Sn99.5/Cu0.5/Co	228	7.4	28	Pure Sn = 23.5	0.123	82
Sn100C	Sn/Cu/Ni	227	7.4	32	Pure Sn = 23.5	0.13	64
SAC305	Sn96.5/Ag3.0/Cu0.5	217-221	7.39	52	Pure Sn = 23.5	0.15	64
Sn63/Pb37	Sn63/Pb37 Common Lead Alloy	183E	8.42	44	24.7	0.12	58

Rosin Core (RA300) Lead Free Wire Solder

Qualitek RA300 is an activated rosin cored solder wire developed for general hand soldering applications. Utilizing refined resin and a very effective activator, RA300 performs extremely well on hard to solder parts and surfaces in conjunction with high temperature lead free solder.

Qualitek RA300 is suitable for use in any commercial hand soldering application that specifies compliance to J-STD-004 ROM1. It is suited to such areas of industry as TV, Audio equipment, Video / DVD, toys and games and all types of household appliances.

Part No.	Alloy Tin / Copper / Cobalt	Size Gauge	Dia Inches	% of Flux	Roll Size
50-93021	99.5 / 0.5 / Co	21	0.032	2.2	1 lb
50-93521	99.5 / 0.5 / Co	21	0.032	2.2	1/2 lb
50-93018	99.5 / 0.5 / Co	18	0.050	2.2	1 lb
50-93518	99.5 / 0.5 / Co	18	0.050	2.2	1/2 lb
50-93500	99.5 / 0.5 / Co	21	0.032	2.2	7 oz Dispenser Pack

QUALITEK SOLDERING PRODUCTS

Qualitek Liquid Fluxes

Liquid Fluxes are formulated for general and specific applications. Qualitek offers a large variety of fluxes for the production industry. There are rosin based fluxes, Alcohol Based fluxes, and Water Soluble Fluxes as well. Liquid fluxes can be applied by brush, automation or spray depending upon the requirements. Philmore is offering two of the most popular types in several put ups.

RMA Flux

Rosin Based	
50-28532	32oz
50-28501	1 Gal

Rosin Based Flux Mildly Activated, clean with solvent

No- Clean Flux

No-Clean	
50-30232	32oz
50-30201	1 Gal

For Lead Free Soldering	
50-90232	32oz
(NC381)	

No Rosin, Low Solids, needs NO Cleaning, Good wetting

Water-Soluble Flux

Water Soluble	
50-73732	32oz
50-73701	1 Gal

For Lead Free Soldering	
50-93732	32oz
(WS775)	

Highly Active, MUST CLEAN RESIDUE, Distilled Water

Qualitek Super DEOX

This product is specially formulated to convert the oxides of solder (known as dross) that form on solder in solder pots into good solder. Use of **Super Deox** can reclaim over 80% of dross into usable solder. This substantially reduces solder cost.

50-6304	Super Deox 4 oz. jar

Qualitek Paste Flux

Fluxes are intended to be used to reduce solder balling, and bridging. The proper flux allows for proper solder flow and increased wetting of desired areas. Qualitek offers several different types of fluxes including Water Soluble Fluxes, and Rosin Fluxes to name only a few.

50-4002	2 oz container

Qualitek Rework-Wands

The Qualitek rework-wand is a unique tool for rework and touch-up soldering. It allows a controlled application of flux, eliminating the mess from flux bottles. Rework wands are ideally suited for SMT rework, TAB assembly operations, and component applications. There are three formulas available, R.M.A. (rosin mildly active), Water-soluble, No-clean.

Part Number	Description	Carton QTY
50-30233	#302 Low Solids No-Clean	20
50-73733	#737N Neutral PH Water Soluble	20

Delta Tip Tinner by Qualitek

This flux is designed to tin soldering Iron tips. This makes the tips last longer and conduct a more even heat. Philmore offers this in the most popular alloy in a convenient container with mounting tape.

50-63371	1 oz tin 63/37 alloy

LKG Acid & Cleaning Brushes

These brushes have a thousand uses. You may use them for applying flux, remove foreign material from the surface, or to clean parts.

50-5405	5 Pack
50-5400	Bulk Pack

10 oz. DUSTER AEROSOL
Non-Flammable

A high-pressure "air-blast" that will remove dust, lint that is too fine too difficult to simply brush or wipe away from tight places. Non-static and non-residue. Intended for use in office equipment/electronics, test equipment etc. Ten ounce can with extension tube; non-flammable and static-free.

Philmore Part no. 50-8711 ten ounce aerosol Duster

10 oz. FREEZE-SPRAY AEROSOL
Non-Flammable

Freeze Spray was developed to cool electronics components, one at a time, to aid in locating intermittent parts that fail when a circuit "warms up"; a quick blast helps find the failing part. The minus 60 degree F spray may also be used to shrink metal parts for press fittings, etc. Sometimes used to cool a component while leads are soldered. A non-flammable, static free aerosol with handy extension tube.

Philmore Part no. 50-8715 ten ounce aerosol Freeze Spray.

14 oz. SuperWASH AEROSOL
Non-Residue

SuperWASH is a water-free, liquid bath-blast for degreasing and de-gunking. It is suitable for everything from clockworks and motors to old TV tuners; any mechanics that will benefit from a fast blast of liquid cleaner. Fast evaporating, leaves no residue. Dissolves most oils and grease accumulations. Use on relay contacts, rheostats and potentiometers or degrease an entire PC board. Product is FLAMMABLE so do not spray into operating equipment, running motors, etc. Completely removes oils; be sure to re-lubricate bearings and contacts after use.

Philmore Part no. 50-8720 fourteen ounce aerosol SuperWash Spray.

EXTRA-POWER FLUX CLEAN
11 oz. Aerosol super cleaner

Well above average flux cleaning including fluxes from lead-free solders, no-clean fluxes, etc.; cleans all of them from PC board and leaves no residue of its own. Leaving solder fluxes on PC board can have long-term detrimental effects; always wash them away. This product is safe on most plastics and may also be used in a pinch as a general purpose cleaner/degreaser. FLAMMABLE, never spray near sparks, flame or on a live circuit board.

Philmore Part no. 50-8725 eleven ounce Aerosol Power Flux Cleaner

LCD and PLASMA SCREEN CLEANER

A non-flammable cleaner for the TV and Computer Monitor Screens. The cleaner is safe on non-glare screens and provides streak-free cleaning. Use with a lint-free cloth and never use ordinary window cleaners on your modern video screens. For safety sake, turn power off and be careful not to spray toward face and eyes. Non-aerosol, 6 oz. pump spray.

Philmore no. 50-8730 LCD and PLASMA SCREEN CLEANER

ULTRA-CHEM Isopropyl Alcohol

This is a great General Purpose cleaner which is safe on plastics. It can be used on Audio / Video Tape Heads, PC Boards, Connectors, Fiber Optics Devices, and contacts. LKG Industries offers this product in several forms for your convenience.

Specifications:
FLAMMABLE
Non Ozone Depleting
Safe on Plastics
Zero Residue
Non-Corrosive
Anhydrous Alcohol (contains no water)
Contains: Isopropanol (67-63-0)
VOCs (Volatile Organic Compounds) 787g /L

No. **50-1302** 2oz Squeeze Bottle
No. **50-1316** 16oz Pint Bottle

ULTRA-CHEM Glass Cleaner

This cleaner removes dirt, oil, fingerprints, nicotine, carbon, ink marks and other such soils from work areas and equipment. It is great for cleaning Monitors, Keyboards, Fax Machines, Photocopying Machines, Bar code readers, and is SAFE ON MOST PLASTICS.

Specifications:
Non-Flammable
Non-Ozone Depleting
Foaming Action
Non-Streaking
Safe on Most Plastics
VOCs: 99g/ L
Contains: Water, Isopropanol,
Butane, Propane

No. **50-9082** 18oz Aerosol

ULTRA-CHEM Swabs

No. **50-150**
Double Tipped 6" (100 pk)

No. **50-288**
Chamois 3/8" X 4 1/2" (25 pk)

LOCTITE® GLUES & ADHESIVES

DURO Quick Gel Super Glue

No run Quick Gel Super Glue. Works on wood, metal, rubber, plastics, vinyl, fabrics, and other such materials. The Gel works best on porous and vertical surfaces with small gaps. Bonds in 15 - 30 seconds.

LT- 81954 (2) .07 oz Tubes

DURO SUPER GLUE

America's favorite traditional super glue. Super strong, bonds in seconds. It is permanent & clear. Bonds in 15 - 30 seconds.

LT-81742 (2) .07 oz Tubes

LOCTITE® THREADLOCKER

These products lock and seal threaded parts against vibration loosening, corrosion,and rust lock. They may also be used as an anti-tamper indicator. They are available in several grades and put ups.

Removable
Medium grade (Blue) # 242

LT-24200 .20 oz tube

LOCTITE QUICKTITE® SUPER GLUE

This super glue has proven superior performance over ordinary super glues. This works faster and holds stronger than others thanks to a patented additive.

LT-21309
Super Glue Liquid
.18 oz (5g) Bottle

LT-26441
Brush-on Liquid
.18 oz (5g) Bottle

LT-30379
Super Glue Gel
.14 oz (4g)

LT-30622
Super Glue Liquid
.14 oz (4g)

LT-82192
Super Glue Pen
.07 oz (2g) tube

LT-82196
Super Glue Gel
.07 oz (2g) tube

LOCTITE® THREADLOCKER

These products lock and seal threaded parts against vibration loosening, corrosion,and rust lock. They may also be used as an anti-tamper indicator. They are available in several grades and put ups.

HIGH STRENGTH
(RED) #271

LT-27100

.20 fl oz (6ml)

LOCTITE® QUICK SET EPOXY

Super high strength, waterproof, sets in 5 minutes, and is solvent resistant. Bonds to wood, metal, ceramic, glass, plastic & tile.

LT-81501

1 oz Syringe

LOCTITE® GLUES & ADHESIVES

LOCTITE® SUPERFLEX RTV SEALER

These general purpose RTV sealants are usable indoor and out. They seal, bond and secure on metal, glass, rubber, and vinyl. They cure at room temperature, and are safe on <u>ELECTRICAL</u> wiring.

LT-30807

BLUE 3 fl oz (80 ml) tube

LT-30808

CLEAR 3 fl oz (80 ml) tube

LOCTITE® HANDYMANS CHOICE

This all purpose Non-Toxic adhesive sealant is strong, drys clear, water resistant, microwave safe and odor free. Use this product to mend brick, glassware, loose tiles & shoe soles.

LT-25827

2 fl oz (9ml)

LOCTITE® SPRAY SILICONE

This all purpose lubricant is great for many household uses. It will not stain or discolor. It provides an environmentally safe lubricant for locks, hinges, garage door openers, and many other uses.

LT-30809

10.25 oz

LOCTITE® PLASTIX BONDER

This advanced plastic repair kit repairs any plastic---GUARANTEED NO mixing required, just brush the surface with the activator and apply the fast-acting bonding agent. Formulated for vinyl, plexiglass, phenolics, PVC, styrenes, acrylic, ABS & others.

LT-82565

.10 oz Activator
.07 oz Bonder

LOCTITE® GLASS GLUE

This product works well on all glass. It bonds instantly and is dishwasher safe.

LT-29175

.07 fl oz (2g) tube

LOCTITE® MIRROR ADHESIVE KIT

Use this two (2) part kit to attach mirrors to glass, plastic, or metal. Great for attaching mirrors to windshields.

LT-30814

.01 oz Adhesive
.02 oz Primer

LOCTITE® STICK' N SEAL

This waterproof all purpose adhesive bonds all surfaces subjected to water & moisture. Seals leaks, repairs tears, and secures tile. Great on brick, aluminum, fiberglass, pool liners, and rain slickers.

LT-23782

1 fl oz (30ml)

259

LOCTITE® TAPES

667 Pro Series Vinyl Electrical Tape

This is a complete line of professional grade Electrical Tape. It is designed for performance and value. Manco's professional grade 667 series electrical tapes are UL and CSA approved. They are available in eight (8) colors designed for electrical coding and splicing applications. These tapes have excellent stretch, adhesion and conformability and perform well in both indoor and outdoor applications.

Part #
LT-04140 Green
LT-04141 White
LT-04142 Yellow
LT-04143 Red
LT-04144 Blue
LT-04145 Orange
LT-04147 Gray
LT-04149 Black

Features:
UL and CSA Listed
Flame-Retardant
7 mil Vinyl
Weather-Resistant
Up to 600 V rating
Temperature Range
-18° C to 105° C
0° F to 221° F
Resists Abrasion, Moisture
Solvents, & UV Rays
Convenient 3/4" X 66' Size

Economy Vinyl Electrical Tape

This electrical tape is designed to compete with the imports, however, the stretch, adhesion and weather-resistant qualities are far superior. They are packaged in a sleeve of ten (10) rolls and 250 rolls to a master carton.

No. **LT-1219-60** 3/4" X 60'

Double-Sided Mounting Tape

These Manco products are designed for semi-permanent and removable applications. These products are available in several put-ups.

No. **LT-01528** 3/4" X 10' Removable
No. **LT-HU-1** 1" X 60" Roll
No. **LT-HU15-6** 3/4" X 15' Roll

Assorted Vinyl Electrical Tape

These assortments are convenient sizes for color coding electrical connections. They are available in two different put-ups.

No. **LT-5CP**
5 colors (Red, Blue, Green, White, & Yellow)
3/4" X 12' ea

No. **LT-07205**
5 colors: Blue, Red, Green, Orange & White.
1/2" X 20' ea

X-Treme Duck Tape

It is not the same OLD DUCK TAPE anymore. These radically COOL colors are "hot". They are every bit as tough as traditional Duck Tape.

1.88" X 3yd Flat
No. **LT-02970** Gray

DUCK Tape

Just because it looks like Duck tape, feels like Duck tape and tears like duct tape does not mean they all are the same. There are as many types of DUCK tape as there are ducks. Manco manufactures several grades depending on usage.

Utility Grade
No. **LT-DX-660** 1.88" X 55yd Roll

All-Purpose Grade
No. **LT-B100** 1.88" X 10yd Roll
No. **LT-B200** 1.88" X 20yd Roll
No. **LT-B615** 1.88" X 60yd Roll

200 mph Reflective Auto Tape

This special tape was first discovered by race car drivers who used it on their vehicles and the tape would adhere to the cars at speeds up to 200mph. It is reflective and is great on mailboxes, bikes, Autos, tree stakes and emergency kits. There are over 1001 uses.

Features:
Self Adhesive
Indoor or Outdoor Use
Use at temperatures above 40° F

No. **LT-07891** 1.5" X 30" RED Roll
(REPLACES LT-RF-1)
No. **LT-07892** 1.5" X 30" WHITE Roll
(REPLACES LT-RF-2)

Adhesive Remover

The only complete solution for adhesive and stick residue removal. This product has a pleasant citrus scent and a built-in scraper top.

No. **LT-01560** 5.45 fl.oz

Features:
Safe on all types of surfaces
Sponge Applicator for easy application
Convenient built-in Scraper Tool
Removes all types of adhesive residue
Duct Tape
Masking Tape
Carpet Tape
Labels
Tar
Gum
Caulk
Easy to handle bottle

tyco Duct Tape

This **Polyken 203** Duct tape is an indispensable tool of the trade. We offer many colors for multipurpose use. With these colors to choose from it is easier than ever to pick the correct color for color coding, decoration, seat repair, carpet seaming, electrical protection, and caution. Professionals choose the best, **tyco** brand.

meets UL 723

Part Number	Color
12-2000	Black
12-2002	Red
12-2004	Yellow
12-2005	Green
12-2006	Blue
12-2009	White

2" x 60YD Roll

tyco / Adhesives Gaffer's Tape

The leading roll on the set

This tape is used by professionals on stages, sets, and on location. This versatile low gloss tape has become indispensable for the arts and entertainment industry. Users appreciate the aesthetics of the matte finish, low residue, and easy tear. Some applications include wire hold down, stack blocking and spiking, audio-electric overhead lighting, set and stage decoration, film canister sealing, carpet hold-down, splicing, bookbinding, seat repair, graphics and design, and waterproof packaging. We offer the tape in several of the most popular colors. **Meets Packard Electric 525-000 Specifications**

Part Number	Color
12-5100	Black

2" X 60YD Roll

tyco Electrical Tape

This high grade electrical tape is made by Tyco Adhesives, and through an exclusive agreement we are able to offer this quality tape at substantial savings over other nationally known brands of tape. The tape is made in the U.S.A. and we offer it in several popular colors.

Part Number	Color
12-8210	Black
12-8212	Red
12-8213	Orange
12-8214	Yellow
12-8215	Green
12-8216	Blue
12-8218	Gray
12-8219	White

3/4" x 66' Roll

DOUBLE - SIDED ADHESIVE BLACK TAPE

Foam type adhesive on both sides, .50" wide x 30' long.

No. 10-615 - .50" wide x 30' long.

VINYL PLASTIC ELECTRICAL TAPE

UL LISTED

66 ft. rolls x 3/4" wide, black vinyl tape, with a dielectric strength of 12,000 volts, and tensile strength of 15 lbs. per inch. Thickness 7-9 mils. Flexible stretch, waterproof, and will resist oil, gasoline, salt water, alkalis, and sunlight.

No. PT2
No. PT2B -bulk packaged

TECHNICIAN AIDS

FLUORESCENT MAGNIFYING WORK LAMP

This fine, precision product is excellent for inspection of printed circuit boards and inspection of any fine detail work. A must for the technician, the laboratory and the production line. Will clamp to any drafting board or work surface up to 2-1/4" thickness.

No. SL114

• UL/CSA Approved
• Steel Balanced 45" Extension Arm
• Adjustment Spring Tension Knobs at all joints
• 3 Conductor AC cord 120V AC / 60 Hz
• Precise 3 Diopter Lens
• Supplied with 22W Fluorescent Circular Tube
• Durable Baked Enamel Finish (White)
• Extra Strength Steel and Die Cast Base and Clamp
• Packaged in Four Color Box

REPLACEMENT PARTS	
No. SLR115 - Replacement Bulb	**No. SLR117** - C Clamp
No. SLR116 - Rocker Switch Assembly	**No. SLR118** - Base (Transformer Housing)
No. SLR119 - 3 Diopter Lens	**No. SLR124** - AC Receptacle for base Housing
No. SLR120 - 5 Diopter Lens	

PLASTIC RESTORER REFINISHING KIT

These products will work on Plexiglass®, Lexan®, Lucit®, UVEX® and Acrylite®. Polish #1 will clear up most surface blemishes on meter faces, etc. Polish #2 is for the truly bad situations; it actually removes damage instead of filling it. These polishes are free of any offensive odors and there is no toxic risk, The kit comes complete with handy polishing cloth. It's great for instrument faces, plexiglass windows, convertible rear windows, computer screens, copiers, safety goggles and motorcycle windows.

No. 10300 - Kit
No. 10301 - Polish #1
No. 10302 - Polish #2

I.C. EXTRACTION TOOL

Economical spring steel tool, one-piece construction, insulated, will work on all I.C. devices from 8 pin to 24 pin.
No. 10230

PLCC EXTRACTION TOOL

A tool for removing square I.C.'s such as CPU's, from their sockets without damage. Grips PLCC's by opposite corners; makes removal fast and very easy. Safe for the I.C.

No. 10270

Economy SOLDER WICK

Supplied on 5 ft. spool in .08" (2.0mm) width. Extremely high absorption capacity.

No. HSW15

HOOK-ON Test Prods
Completely INSULATED
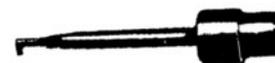
The injector-type prods that firmly clip onto large or small components for testing purposes. OBJECT: Meter reading for any required length of time while hands are free for other work.

No. 450 - Our most popular standard size, 2-1/4" long.
Set of two: BLACK and RED
No. 450B BLK - bulk, black
No. 450B BLU - bulk, blue
No. 450B GRN - bulk, green
No. 450B RED - bulk, red
No. 450B WHT - bulk, white
No. 450B YEL - bulk, yellow
No. 4504 - Set of four: BLACK, RED, GREEN and YELLOW
No. 4506 - Set of six: BLACK, BLUE, GREEN, RED, WHITE and YELLOW
No. 450S - This mini clip is ideal for those crowded, hard-to-get-at circuits, 1-9/16" long. Set of two: BLACK and RED
No. 450SB BLK - bulk, black
No. 450SB BLU - bulk, blue
No. 450SB GRN - bulk, green
No. 450SB RED - bulk, red
No. 450SB WHT - bulk, white
No. 450SB YEL - bulk, yellow
No. 4504S - Set of four: BLACK, RED, GREEN and YELLOW
No. 4506S - Set of six: BLACK, BLUE, GREEN, RED, WHITE and YELLOW

STACKABLE BANANA PLUGS

This quick design from Philmore allows user to assemble own test lead sets with quick assembly stackable design. Just insert wire into handle, solder to plug/jack assembly and snap together. Available in five colors.

No. BP1000B - bulk, black
No. BP1002B - bulk, red
No. BP1004B - bulk, yellow
No. BP1006B - bulk, green
No. BP1008B - bulk, blue

No. BP1010 - (1) red and black, display packaged
No. BP1014 - (1) red, black, yellow and green, display packaged

MULTITESTERS / CIRCUIT TESTERS

DIGITAL MULTI-TESTER

No. 903-150N

Specifications:

DISPLAY	3 1/2 digit LCD .5" height, with polarity.
OVERRANGE INDICATION	3 least significant digits blanked
MAXIMUM COMMON MODE VOLTAGE	500V peak.
OPERATING ENVIRONMENT	0 to 50 C, less than 80% relative humidity up to 35º C, less than 70% relative humidity from 35º C to 50º C.
STORAGE ENVIRONMENT	-15º C to 50º C
TEMPERATURE COEFFICIENT	(0 to 18 C, 28 to 50), less than 0.1x applicable accuracy specification per C.
POWER	9V alkaline or carbon-zinc battery (NEDA 1604)
BATTERY LIFE	100 hours typical with carbon-zinc cells, 200 hours with alkaline cells.
DIMENSIONS	126mm long x 70mm wide x 24mm thick. (4.96"x2.76"x0.94") Net weight 170g (6 oz)

HIGHER PERFORMANCE POCKET MULTITESTER

No. UM22

SPECIFICATIONS: 2000 OHMS--VOM

Sensitivity: 2000 ohms/volt
DC Volt Ranges: 2.5-10-50-500-100
DC Current Ranges: 0.5-10-250ma.
AC Volt Ranges: 10-50-500-1000
Resistances Ranges: 5K-50K-500K
Accuracy: 3%DC, 4%AC

Slip Grip Test Leads, Battery and Instructions are included

HI-VOLTAGE TESTING SCREWDRIVER

No. P5120

For testing 80-250 Volts AC or DC. This handy combination screwdriver/tester is used for testing ground lines, open or shorted circuits.

TEST LIGHT

No. P5100

For testing 80-500 Volts AC or DC. The 5" insulated leads with finger guard insulated tips make testing electrical circuits safe and easy. Red neon bulb glows with increasing intensity with increased voltage.

6 to 12 VOLT CIRCUIT TESTER with HEAVY DUTY PROBE

No. P5128

For testing all 6V and 12V systems: Auto, RV, Marine, Aircraft etc.. Quickly finds short, grounds and open circuit.

TEST LEADS

Plastic test prod handles, 4" long, 3/8" diameter, with prods 1" long. Red and Black. Equipped with 48" kinkless plastic-covered leads .135" O.D. Available with either insulated banana plugs or phone tips at other end, to fit standard American jacks.

No. 466
Phone Tips

No. 467
Banana Plugs

DELUXE UNIVERSAL SOLDERLESS TEST LEAD SET

Two 42" flexible, vinyl-covered test leads, heavily insulated to prevent high voltage breakdown and cut-through. 80 -strand copper conductors eliminate wire fatigue and assure long life. Equipped with adaptor accessories most often used by servicemen, this kit can perform virtually every test requirement. Each lead is attached to a 4-3/4" probe (1-red, 1-black). Banana plugs on each end have nickel-plated phosphor bronze springs to maintain rigid contact through many thousands of insertions. **Heavy plated BRASS Adaptors-Color-coded Spade Lugs***-large enough for lab. instruments (up to 1/4" dia. center post). **Test prod phone tips**(0.180" dia.) **Strong spring action alligator clips. NP phone tips.**-not insulated. Each insulated adaptor completely covers banana plugs to eliminate accidental contact, avoiding shorts.

No. SA15

TEST ACCESSORIES

JUMPER CABLE SETS
10-piece sets

Color coded lead wires with insulated alligator clips on each end. Each set includes ten leads, two each of five different colors. Indispensable for testing service, during circuit design etc.. We suggest the Tech's set to professional users, or the **No. SA44** below.

Colors: Black, Green, Red, White and Yellow

No. SA10 - Economy set, standard (3 strand wire) 14" long

No. SA22 - Tech's Jumper Cable Set, (12 strand wire), 22" long

IC TEST LEAD SET

No. 500

5 color-coded, 16" test leads with miniature hook-on prods at both ends. A must for technicians and experimenters who want temporary interconnects without danger of shorting.

Colors: Red, Black, Yellow, Green, White

HEAVY DUTY JUMPER CABLE SETS

For serious user in the lab or test bench, sets include five tough Jumper Cable, of five different colors, with insulated alligator clips one each end. 20 strand wire and flexible insulation is used for long life.

Colors: Black, Green, Red, White and Yellow

No.SA44 - Set of five, 22" long leads

No.SA45 - Set of five, 36" long leads

Test Lead Wire

Perfect for making test leads. This is same quality wire as used on Philmore Nos. 466 and 467 Test Leads. Wire is 18 Gauge tinned and stranded. O.D. of cable is .135". Lead wire is very flexible and guarantees no kinked leads. Available in RED and BLACK.

No. 472 - 25 ft., black
No. 476 - 25 ft., red
No. 474 - 100 ft., black
No. 478 - 100 ft., red

TEST LEADS

Plastic test prod handles, 4" long, 3/8" diameter, with prods 1" long. Red and Black. Equipped with 48" kinkless plastic-covered leads .135" O.D. Available with either insulated banana plugs or phone tips at other end, to fit standard American jacks.

No. 466
Phone Tips

No. 467
Banana Plugs

ALL-PURPOSE TEST LEAD SET

No.470

The most useful test leads yet devised. Use them in the conventional manner or adapt them to individual requirements.

• Tiny, sturdy, push-to -clip prods can be firmly attached to hard-to-reach components in chassis-whether large or small terminals. Clip-onto-component feature enables you to test parts for long periods without actually handling the test leads. Hands are free for other work.
• Each prod is connected with solderless, kinkless wire terminating in an insulated banana plug.
• A removable, nickel-plated phone tip (supplied) fits over the banana plug allowing the individual the option of using meters with either banana or phone tip jacks.
• Overall lead length is 36 inches.
• Two unbreakable high dielectric strength prods, black and red

DELUXE UNIVERSAL SOLDERLESS TEST LEAD SET

No. SA15

Two 42" flexible, vinyl-covered test leads, heavily insulated to prevent high voltage breakdown and cut-through. 80 -strand copper conductors eliminate wire fatigue and assure long life.
Equipped with adaptor accessories most often used by servicemen, this kit can perform virtually every test requirement. Each lead is attached to a 4-3/4" probe (1-red, 1-black). Banana plugs on each end have nickel-plated phosphor bronze springs to maintain rigid contact through many thousands of insertions.
Heavy plated BRASS Adaptors-Color-coded Spade Lugs*-large enough for lab. instruments (up to 1/4" dia. center post).
Test prod phone tips(0.180" dia.)
Strong spring action alligator clips.
NP phone tips.-not insulated.
Each insulated adaptor completely covers banana plugs to eliminate accidental contact, avoiding shorts.

4mm Stackable Jumper Leads

These high quality super-flexible jumper leads are made of the finest materials. The plugs are made of Nickel-Plated brass cage springs. They are available in three lengths and colors for use in Labs, by technicians, and do-it yourselfers.

Part Number	Color	Length
28-5110-25	Black	25cm
28-5112-25	Red	25cm
28-5114-25	Yellow	25cm
28-5115-25	Green	25cm
28-5116-25	Blue	25cm
28-5119-25	White	25cm
28-5110-50	Black	50cm
28-5112-50	Red	50cm
28-5114-50	Yellow	50cm
28-5115-50	Green	50cm
28-5116-50	Blue	50cm
28-5119-50	White	50cm
28-5110-100	Black	100cm
28-5112-100	Red	100cm
28-5114-100	Yellow	100cm
28-5115-100	Green	100cm
28-5116-100	Blue	100cm
28-5119-100	White	100cm

Specifications
Material: Nickel-Plated Brass
Handle: PVC
Wire: Soft Silicon Jacket
Current Rating: 19A @ 50V
Size: 4mm

Universal 4mm Banana Jacks

These banana jacks accept either standard or shrouded 4mm banana plugs. They are nut mounted into a 12mm mounting hole.

Specifications
Material: Nickel-Plated Brass
Body: PVC
Current Rating: 19A @ 50V
Mounting Hole: 12mm
Termination: Solder
Connection
Dimensions: L = 29mm
          Flange D = 14.5mm

Part Number	Color
29-2240	Black
29-2242	Red
29-2244	Yellow
29-2245	Green
29-2246	Blue
29-2249	White

(2) per package

Shrouded 4mm Test Lead Set

This pair of test leads is made for use with multimeters, and other test equipment requiring 4mm safety plugs. We offer 2 styles; a 180º style with retractable shroud, or a 90º style with a fixed shroud on one end and a rigid probe on the other end. The probe end has heavy duty cage spring tips and includes crocodile adaptor clips.

Specifications
Material: Nickel-Plated Brass
Handles: PVC
Rating: 1000V, 10A
Compatible w/ IEC1010
Length: 1M (39.6")
1 Red + 1 Black/ package
Red & Black Crocodile Clip
Cage spring tip on probe

No. **28-5621** 90º w/ fixed shrouds
No. **28-5623** 180º w/ retractable shrouds

Shrouded 4mm Test Lead Kit

This pair of test leads is made for use with multimeters, and other test equipment requiring 4mm safety plugs. We offer 2 styles; a 180º style with retractable shroud, or a 90º style with a fixed shroud on one end and a rigid probe on the other end. The probe end has needle tips. The kit includes crocodile adaptor clips.

Specifications
Material: Nickel-Plated Brass
Handles: PVC
Rating: 1000V, 10A
Compatible w/ IEC1010
Length: 1M (39.6")
1 Red + 1 Black/ package + 1ea
Red & Black Crocodile Clip
Needle probe

No. **28-5527** 90º w/ fixed shrouds
No. **28-5520** 180º w/ retractable shrouds

Stackable 4mm Safety Banana Plugs

These stackable banana plugs are machined from brass with movable multilam contact cage springs. The safety shroud is retractable.

Specifications
Material: Nickel-Plated Brass
Handle: PVC
Current Rating: 19A @ 50V
Size: Plug 8mm X 19mm
      Handle 12mm X 32mm

Part Number	Color
28-1240	Black
28-1242	Red
28-1244	Yellow
28-1245	Green
28-1246	Blue
28-1249	White

(2) per package

Stackable 4mm Banana Plugs

These stackable banana plugs are machined from brass with movable multilam contact cage springs.

Specifications
Material: Nickel-Plated Brass
Handle: PVC
Current Rating: 19A @ 50V
Size: Plug 4mm X 18mm
      Handle 7.5mm X 27.5mm

Part Number	Color
28-1140	Black
28-1142	Red
28-1144	Yellow
28-1145	Green
28-1146	Blue
28-1149	White

(2) per package

265

TERMINAL BLOCKS & KNOBS

TERMINAL BLOCKS

A terminal block designed to be end-stackable on a PC board so that the designer may have any number of contacts needed. The design provides secure wire protection for a broad range of wire sizes (up to 14 ga. max). The housing is molded of 94V-0 fire retardent plastic. Six pieces per package; available in bulk, add "B" suffix to part number. (i.e. TB132B for Bulk)
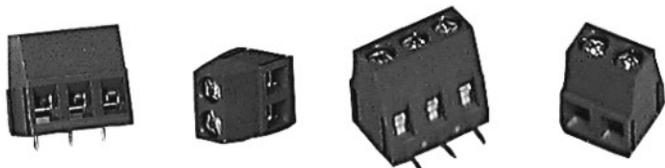
SPECIFICATIONS

Housing: Polymide 66 resin, blue
Terminals: 0.9 x 0.9 Brass, tin plated
Screws: M2.6 x 0.45P, steel, zinc plated
Wire cage: Brass, Nickle plated

Rated: 10 Amp. 300 VAC
Temperature rating: -55°C to + 125°C
Wire range: 14 AWG max.
Dielectric Strength: 2000 VAC min.
                         for 1 minute
Insulation Resistance: 500 M ohm min.
                         at 500 VDC

Pitch: 5 mm
Number of pole: 2, 3
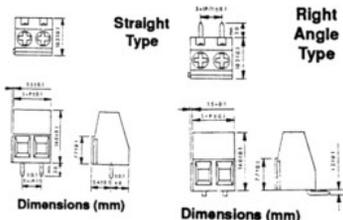
STRAIGHT TYPE
No. TB132 - 2 Pos. Pkg./6
No. TB133 - 3 Pos. Pkg./6

RIGHT ANGLE TYPE
No. TB142 - 2 Pos. Pkg./6
N0. TB143 - 3 Pos. Pkg./6

Precision Tuning
VERNIER DIAL CONTROL KNOBS

A vernier dial control knob will provide smooth and precise tuning for either a potentiometer or variable capacitor. Planetary drive provides 8 to 1 ratio, allowing for very fine adjustment of standard controls. The metal dial plate is calibrated by etching and paint filling on brushed satin finish for a very attractive appearance. Knob is calibrated over 180 degrees of turn, reading from zero to maximum setting by clockwise rotation. Fits standard 1/4" control shafts and mounts on surface of cabinet or chassis. Very useful with any circuit where fine "tuning" is going to make life easier.

No. S36   No. S38   No. S50

Rear View

Part no.	Diameter	Calibration
S36	1 1/2"	0 to 10
S38	1-1/2"	0 to 100
S50	2"	0 to 100

KNOBS
Black bakelite material, brass insert for 1/4" shaft with set screw.

Fluted with skirt indicator line on top
.75" Dia., .50" High
Color: Black
No. 3010

Fluted with taper skirt indicator line on top
.94" Dia., .60" High
Color: Black
No. 3035

Straight knurl with arrow head indicator on top
.82" Dia., .50" High
Color: Black with Aluminum top inlay
No. 3055

Control pointer knob with indicator line on top & side
1" Dia., .60" High
Color: Black
No. 3050

Black pointer knob with indicator line. 1.25" long
No. 277AP

Fluted grip with indicator line
Color: Black with Aluminum top inlay
.60" Dia., .46" High
No. 3025
.92" Dia., .62" High
No.3030

Straight knurl pointer indicator line on side pointer
.54" Dia., .48" High
Color: Black with Aluminum top inlay
No. 3060

Ribbed with skirt indicator line
Color: Black with Aluminum top inlay
.80" Dia., .67" High
No. 3015
1.35" Dia., .86" High
No.3040

Straight Knurl 0-9 numbers on aluminum skirt
1.15" Dia., .70" High
Color: Black with Aluminum top inlay
No. 3020

Straight knurl 0-10 numbers on aluminum skirt
1.46" Dia., .60" High
Color: Black with Aluminum top inlay
No. 3045

Straight knurl, aluminum skirt with black indicator arrow. 1.375" DIA., .56" high
Color; Black with aluminum top inlay.
No.337

For bulk pack add suffix letter "B"

5 WAY BINDING POST

No. 2352 - black
No. 2354 - red

DUAL BINDING POST

Five way binding posts on standard 3/4" spacing to mate with dual banana plugs. Posts accept bare wire, spade lug, tip jack or banana plugs. Both posts are electrically isolated from panel.

No. 2370 - both posts black
No. 2372 - both posts red
No. 2374 - (1) each red and black

DUAL BANANA PLUG

Set screws secure leads of cable or component. Cable guide on rear; stackable. Standard .75" center to center spacing.

No. 2360 - black
No. 2362 - red

BNC MALE to DUAL BANANA PLUG ADAPTOR

Standard .75" center to center spacing.
.161" holes in body for side stacking

No. 2380

BNC FEMALE to DUAL BANANA PLUG ADAPTOR

Standard .75" center to center spacing.
.161" holes in body for side stacking

No. 2382

DUAL BINDING POSTS to BNC MALE ADAPTOR

Standard .75" center to center spacing.
.161" holes in body for side stacking
No. 2390

DUAL BINDING POSTS to BNC FEMALE ADAPTOR

Standard .75" center to center spacing.
.161" holes in body for side stacking
No. 2392

Motorola TYPE ANTENNA PLUGS

Flange Type Female

No. 2322B -15/16" mounting centers, .136" dia. mounting holes.

Shell Type Female

No. 2323B - .136" dia. mounting holes.

No. 2321A -Tubular construction, male

INSULATED BANANA PLUG

Molded bakelite handle, 1" long, and brass nickel plated spring-type plug, with internal stud. Overall length 1-7/8".
Wire can be soldered to brass stud or plug. Stud locks wire to plug for solderless connection. Available in (6) colors:
black, blue, green, red, white and yellow.

No. 2349AP - (1) black, (1) red, display packaged
No. 2349A BL - bulk packaged, black
No. 2349A BU - bulk packaged, blue
No. 2349A GR - bulk packaged, green
No. 2349A RD - bulk packaged, red
No. 2349A WH - bulk packaged, white
No. 2349A YL - bulk packaged, yellow

SPRING-TYPE INSULATED BANANA PLUGS

Plastic insulated handle 3/4" long, spring type plug 3/4", overall 1-1/2". Wire connection is made by means of set screw in side of plug. Fits all standard American banana-type jacks and is exactly interchangeable with equivalent American plugs. Available in black and red.

No. 2349GP - (1) black, (1) red, display packaged
No. 2349G BL - bulk packaged, black
No. 2349G RD - bulk packaged, red

Heavy duty INSULATED BANANA JACK

.175", accepts standard banana plugs. Jack mounts in 5/16" dia. hole (or use 1/4" when jack will ground to panel) in panels up to 3/8" thick. Insulator and head is polycarbonate, body is nickel plated brass.

No. 2350AP - (1) black, (1) red, display packaged
No. 2350A BL - bulk packaged, jack w/black insulator
No. 2350A RD - bulk packaged, jack w/red insulator

BINDING POST

Round, knurled grip, removable head with molded-in brass bushing, Banana plug receptacle in stem. Solder lug termination on mounting stud.
• **Mounts in 3/8" dia. hole**
• **Diameter: 1/2" overall**
• **Height: 1-3/8" overall**
• **Height above panel: 5/8"**
No. 227 - (1) black, (1) red, display packaged
No. 227B BLK - bulk packaged, black
No. 227B RED - bulk packaged, red

Fully Insulated 5-WAY BINDING POST

Molded plastic bushing prevents shorting. Non- removable fluted head accepts banana plug. Transverse hole in center post for positive wire retention.
• **Mounts in 21/64" dia. hole**
  Non-rotational flats 9/32" across
• **Diameter: 29/64" overall**
• **Height: 1-7/8" overall**
• **Height above panel: 1"**
No. 229 - (1) black, (1) red, display packaged
No. 229B BLK - bulk packaged, black
No. 229B BLU - bulk packaged, blue
No. 229B GRN - bulk packaged, green
No. 229B RED - bulk packaged, red
No. 229B WHT - bulk packaged, white
No. 229B YEL - bulk packaged, yellow

INSULATED SR. SOLDERLESS PHONE TIP PLUG

Fits all standard phone tip jacks.
Insulated sleeve 3/4" long. Cable opening 3/16". Available in red or black.
• **Length: 1-15/16" overall**
No. 2348P - (1) black, (1) red, display packaged
No. 2348 BLK - bulk packaged, black
No. 2348 RED - bulk packaged, red

SOLDERLESS TEST PRODS

Made of non-breakable extruded plastic, and available in red and black. Equipped with brass nickel plated solderless phone tips 3/4"long.

No. 912J - Bulk ONLY, red handle, 4" long,
No. 913J - Bulk ONLY, black handle, 4" long

267

ALLIGATOR CLIPS

ALLIGATOR CLIPS with Plastic Boots

Strong spring sure-grip nickel plated alligator clips, with snug-fitting insulating plastic boots.
No. 268 BLK- (Black Boot)
No. 268 RED- (Red Boot)
Miniature, Clip Length 7/8", Boot Length 1"

No. 269 BLK - (Black Boot)
No. 269 RED - (Red Boot)
Medium, Clip Length 1-1/4", Boot Length 1-5/8"

No. 270 BLK - (Black Boot)
No. 270 RED - (Red Boot)
Large, Clip Length 1-1/2", Boot Length 2-1/8"

No. 10121 - display packaged, (1) each black and red of 268, 269 and 270

Nickel Plated SUBMINIATURE

Exceptionally small clip ideal for printed circuit and miniature testing. Strong spring for sure grip. Only 7/8" long.
No. 267 - bulk

Nickel plated with screw connection. Strong spring with hard bite. 2" long. No soldering necessary.
No. 10120 - bulk
No. 10120P - display packaged, (5) pieces

Insulated

Equipped with screw, making it ideal for solderless connection. Overall length 2", plastic insulating sleeve 5/8".
No. 10120B - bulk, black
No. 10120BP - display packaged (5) pieces, black
No. 10120R - bulk, red
No. 10120RP - display packaged (5) pieces, red

Miniature Automotive Plier-Type Clip - 15 AMP

• Red & Black insulator (7/8" long)
• Crimp or solder connection
• 2" long with jaws open 13/16"
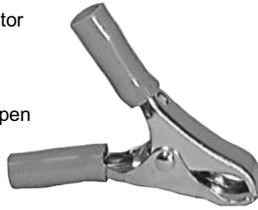
No. 10139 Display packaged (1) Red + (1) Black
No. 10139BLB Bulk Black
No. 10139RDB Bulk Red

Economy Battery Clip - 5 Amp

• Red & Black insulator (2" long)
• Crimp or screw connection
• 1-11/16" long with jaws open 3/8"

No. 10142 - Display packaged (1) Red + (1) Black
No. 10142BLB - Bulk Black
No. 10142RDB - Bulk Red

Battery Clip - 20 AMP

• Red & Black insulator (3-3/32" long)
• Crimp or screw connection
• 2-17/32" long with jaws open 5/8"

No. 10144 - Display packaged (1) Red + (1) Black
No. 10144BLB - Bulk Black
No. 10144RDB - Bulk Red

Insulated Alligator Clip

• Red & Black molded handle
• Screw connection
• 2" long with jaws open 7/16"

No. 10125 - Display packaged (1) Red + (1) Black
No. 10125BLB - Bulk Black
No. 10125RDB - Bulk Red

Plier-Type Automotive Clip - 50 Amp

• Red & Black insulator (1-3/4" long)
• Crimp or solder connection
• 3-29/32" long with jaws open 15/16"

No. 10141 - Display packaged (1) Red + (1) Black
No. 10141BLB - Bulk Black
No. 10141RDB - Bulk Red

Battery Clip - 10 Amp

• Red & Black insulator (2-3/4" long)
• Crimp or screw connection
• 2-3/32" long with jaws open 1/2"

No. 10143 - Display packaged (1) Red + (1) Black
No. 10143BLB - Bulk Black
No. 10143RDB - Bulk Red

Heavy Duty Battery Clip - 30 Amp

• Red & Black insulator (3-3/16" long)
• Crimp or screw connection
• 2-25/32" long with jaws open 1/2"

No. 10145 - Display packaged (1) Red + (1) Black
No. 10145BLB - Bulk Black
No. 10145RDB - Bulk Red

Alligator Clip with Barrel

• Standard clip with barrel for banana plug
• Solder or crimp connection
• 2" long with jaws open 3/8"

No. 10119 - Display packaged (5) pieces.
No. 10119B - Bulk

ALLIGATOR CLIPS & ACCESSSORIES

5A Miniature Battery Clip

These alligator clips are a medium size. They can handle current of up to 5A

Features:
Length: 1 3/32"
Jaw Opening: 3/8"
Nickel Plated Steel
Current Rating: 5A

No. **10151** (5) Pack
No. **10151B** Bulk

10A Medium Alligator Clips

The most handy size alligator clip ever manufactured. It has 1001 uses.

Features:
Length: 1 1/2"
Jaw Opening: 7/16"
Nickel Plated Steel
Current Rating: 10A

No. **10170** (5) pack
No. **10170B** Bulk

Miniature Alligator Clip Insulators

These insulators are intended to be used with 268, or equivalent alligator clips.

Part #	Color
10159 BK	Black
10159 RD	Red
10159 YE	Yellow
10159 GR	Green
10159 BU	Blue
10159 WH	White

Features:
Length: 1 5/16"
Material PVC
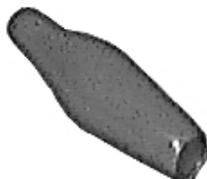
Package of 5

Medium Alligator Clip Insulators

These insulators are intended to be used with 10119,10120, 270, 10170 or equivalent alligator clips. They are the most popular size.

Part #	Color
10180 BK	Black
10180 RD	Red
10180 YE	Yellow
10180 GR	Green
10180 BU	Blue
10180 WH	White

Features:
Length: 1 15/16"
Material PVC

Package of 5

Medium Alligator Clip Insulators

These insulators are intended to be used with 269 or equivalent alligator clips.

Part #	Color
10179 BK	Black
10179 RD	Red
10179 YE	Yellow
10179 GR	Green
10179 BU	Blue
10179 WH	White

Features:
Length: 1 1/2"
Material: PVC
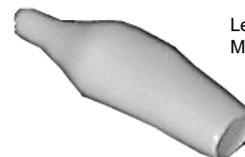
Package of 5

Crocodile Clip Insulators

These insulators are designed to work with 10143 or similar clips. They are available in several colors. 2 1/2" Long

Part #	Color
10190 BK	Black
10190 RD	Red
10190 YE	Yellow
10190 GR	Green
10190 BU	Blue
10190 WH	White
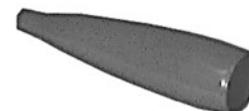
Package of 5

SLIK - CLIP® MINIATURE TEST LEAD CLIP
For Wire Sizes 24 to 20 AWG
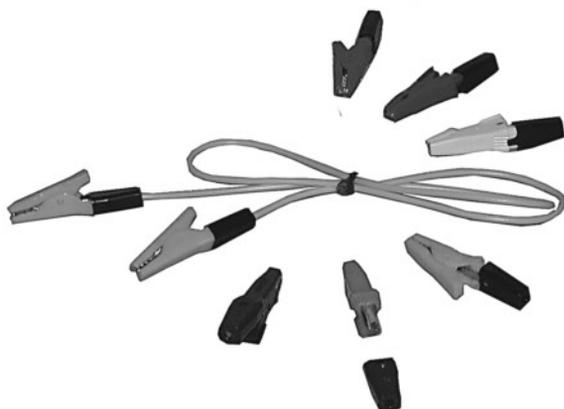
The Slik-Clip® is definitely intended for the serious user. This well designed new clip is entirely insulated and guards against accidental contact with adjacent wires or component leads far better than other insulated clips. Precise jaws will grip the finest component leads or Hook-Up wire, making a sure connection without slipping intermittent contacts. Fully assembled, clip length is only 1.4" which is comparable to other miniature "alligator clips".

Install on stranded wire (24 to 20 gauge) by crimping with either Philmore No. WS26 crimping tool or similar. Package includes clear assembly instructions. Available in 6 colors: Black, Green, Red, White, Yellow and Blue, and display packages as listed below.

No. 271 - One Red and one Black Slik - Clip®.
No. 272 - Two Red Slik - Clips®.
No. 273 - Two Black Slik - Clips®.
No. 276 - One Eack Black, Green, Red,
White, Yellow and Blue

JUMPER CABLE SETS 10-piece sets

Color coded lead wires with insulated alligator clips on each end. Each set includes ten leads, two each of five different colors. Indispensable for testing service, during circuit design etc.. We suggest the Tech's set to professional users, or the **No. SA44** below.
Colors: Black, Green, Red, White and Yellow

No. SA10 - Economy set, standard (3 strand wire) 14" long
No. SA22 - Tech's Jumper Cable Set, (12 strand wire), 22" long

HEAVY DUTY
JUMPER CABLE SETS

For serious user in the lab or test bench, sets include five tough Jumper Cables, of five different colors, with insulated alligator clips on each end. 20 strand wire and flexible insulation is used for long life.
Colors: Black, Green, Red, White and Yellow

No.SA44 - Set of five, 22" long leads
No.SA45 - Set of five, 36" long leads

SOLDERLESS TERMINALS & CONNECTORS

Male Bullet Connector Terminals
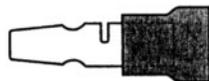
These bullet connectors are made of copper with tin plating. They are available in several wire sizes with receptacles to match.

Part #	Wire Size	Thick (in.)	Width (in.)	Insulation Material	Color
65-7521[F]	22-18	.032	.156	Vinyl	RED
65-7541[A]	16-14	.032	.156	Vinyl	BLUE
65-7542[F]	16-14	.032	.195	Vinyl	BLUE
65-7562[F]	12-10	.032	.195	Vinyl	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Non-Insulated Seamless Butt Connectors

These butt connectors are braised and seamless for a smoother and more uniform crimp. They are available in several wire sizes.

Part #	Wire Size	Barrel Length
65-3020[B]	22-18	15.0mm
65-3040[D]	16-14	15.0mm
65-3060[G]	12-10	20.0mm
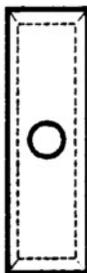
Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Nylon Insulated Close End Connectors

These close end or pigtail connectors are constructed of tin plated copper which has a clear nylon insulator. They are available to accommodate several different wire sizes.

Part #	Wire Range
65-1232[F]	22-14
65-1237[G]	18-10
65-1242[G]	18-8
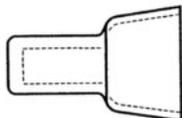
Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Wire Tap Splices

These connectors make it easy to splice into an existing cable in order to add another wire. They are available in three different sizes which are insulated and color coded for wire size identification.

Part #	Wire Range	Color
*65-1280[B]	22-18	Red
*65-1285[B]	16-14	Blue
*65-1290[B]	12-10	Yellow
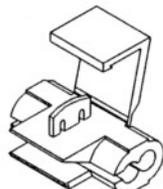
Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

* = Also Available in 50 Pack. Add - 50 After part Number
When ordering EX: 65-1280-50

Female Bullet Connector Receptacles

These bullet connectors are made of copper with tin plating. They are available in several wire sizes with male plugs to match. They are FULLY Insulated.

Part #	Wire Size	Thick (in.)	Width (in.)	Insulation Material	Color
65-6521[D]	22-18	.032	.156	Vinyl	RED
65-6541[D]	16-14	.032	.156	Vinyl	BLUE
65-6542[D]	16-14	.032	.195	Vinyl	BLUE
65-6562[D]	12-10	.032	.195	Vinyl	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Insulated Seamless Butt Connectors

These butt connectors are braised and seamless for a smoother and more uniform crimp. They are available in several wire sizes with color coded insulation.

Part #	Wire Size	Barrel Length	Material	Color
*65-1230[A]	22-18	30.0 mm	Vinyl	RED
*65-1235[B]	16-14	30.0 mm	Vinyl	BLUE
*65-1240[D]	12-10	33.0 mm	Vinyl	YELLOW
65-1830[B]	22-18	30.0 mm	Nylon	RED
65-1835[B]	16-14	30.0 mm	Nylon	BLUE
65-1840[G]	12-10	33.0 mm	Nylon	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

* = Also Available in 50 Pack. Add - 50 After part Number
When ordering EX: 65-1230-50

Insulated Solderless Terminal Assortment

This convenient assortment lets you have the most popular terminals and sizes right at your finger tips.

175 Assorted Terminals
Butt Splices
Ring Terminals
Spade Terminals
Quick Connects
3 Wire Sizes
22-18
16-14
12-10
H.D. Stripper & Crimp Tool

No. **65-1875**
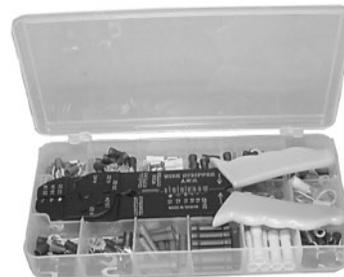
Reusable Case

Professional Ratchet Crimp Tool w/ Interchangeable Dies

• Full cycle ratchet mechanism with quick release safety lock
• High carbon steel ratchet frame
• PE insulation grip handle for comfort and maximum crimping force
• Interchangeable dies for F, BNC, TNC, N, Teflon, Thinnet-PVC / Teflon and Fiber-Optic connectors

No. WS34 - For Insulated Terminals:
(22-18 AWG, 16-14 AWG and 12-10 AWG)
No. 63-622 Non-InsulatedTerminals 8-22 AWG

SOLDERLESS TERMINALS & CONNECTORS

22-16 AWG Ring Terminals

Philmore's ring terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
65-1023[A]	4	5.7	65-1523[A]	4	5.7	RED
65-1024[A]	6	5.7	65-1524[A]	6	5.7	RED
65-1022[A]	8	8.0	65-1525[A]	8	8.0	RED
65-1026[A]	10	8.0	65-1526[A]	10	8.0	RED
65-1027[B]	1/4"	12.0	65-1527[B]	1/4"	12.0	RED
65-1028[B]	5/16"	12.0	65-1528[B]	5/16"	12.0	RED

Package Quantity: A = 15, B = 10   Add "C" to number = 100pk

16-14 AWG Ring Terminals

Philmore's ring terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
65-1043[A]	4	6.6	65-1543[F]	4	6.6	BLUE
65-1044[F]	6	8.0	65-1544[F]	6	8.5	BLUE
65-1042[F]	8	8.5	65-1545[F]	8	8.5	BLUE
65-1046[F]	10	8.5	65-1546[F]	10	8.5	BLUE
65-1047[B]	1/4"	12.0	65-1547[B]	1/4"	12.0	BLUE
65-1048[B]	5/16"	12.0	65-1548[B]	5/16"	12.0	BLUE

Package Quantity:A = 15, B = 10, D = 8, F = 12   Add "C" to # = 100pk

12-10 Ring Terminals

Philmore's ring terminals are constructed of high quality copper that are tin plated.   They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
			65-1563[D]	4	8.5	YELLOW
65-1064[B]	6	7.2	65-1564[D]	6	7.2	YELLOW
65-1065[D]	8	9.5	65-1565[D]	8	9.5	YELLOW
65-1066[D]	10	9.5	65-1566[D]	10	9.5	YELLOW
65-1067[G]	1/4"	12.0	65-1567[G]	1/4"	12.0	YELLOW
65-1068[G]	5/16"	15.0	65-1568[G]	5/16"	15.0	YELLOW
65-1069[G]	3/8"	15.0	65-1569[G]	3/8"	15.0	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

22-16 AWG Spade Terminals

Philmore's Spade terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
65-2023[A]	4	5.7	65-2523[A]	4	5.7	RED
65-2024[A]	6	5.7	65-2524[A]	6	5.7	RED
65-2025[A]	8	7.2	65-2525[A]	8	7.2	RED
65-2026[A]	10	9.5	65-2526[F]	10	9.5	RED
65-2027[D]	1/4"	12.0	65-2527[F]	1/4"	12.0	RED

Package Quantity: A = 15, B = 10, D = 8, F = 12   Add "C" to # = 100pk

16-14 AWG Spade Terminals

Philmore's Spade terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.
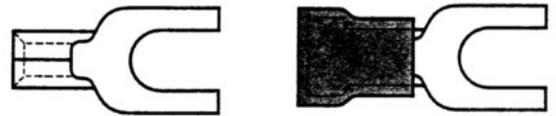
Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
65-2043[A]	4	5.7	65-2543[F]	4	5.7	BLUE
65-2044[A]	6	5.7	65-2544[F]	6	5.7	BLUE
65-2045[A]	8	7.2	65-2545[F]	8	7.2	BLUE
65-2046[A]	10	9.5	65-2546[F]	10	9.5	BLUE
65-2047[D]	1/4"	12.0	65-2547[D]	1/4"	12.0	BLUE

Package Quantity: A = 15, B = 10, D = 8, F = 12   Add "C" to # = 100pk

12-10 AWG Spade Terminals

Philmore's Spade terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Stud	Width (mm)	Part #	Stud	Width (mm)	Color
65-2064[D]	6	8.3	65-2564[D]	6	8.3	YELLOW
65-2065[D]	8	9.0	65-2565[D]	8	9.0	YELLOW
65-2066[D]	10	9.0	65-2566[D]	10	9.0	YELLOW
65-2067[G]	1/4"	12.0	65-2567[G]	1/4"	12.0	YELLOW

Package Qty: A = 15, B = 10, D = 8,F = 12, G = 5 Add "C" to # = 100pk

271

SOLDERLESS TERMINALS & CONNECTORS

22-16 AWG Quick Connect Female Terminals

Philmore's Quick connect terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-4021[A]	.020	.110	65-4521[A]	.020	.110	RED
65-4022[A]	.020	.187	65-4524[A]	.020	.187	RED
65-4025[A]	.032	.250	65-4525[F]	.032	.250	RED

16-14 AWG Quick Connect Female Terminal

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-4041[A]	.020	.110	65-4541[A]	.020	.110	BLUE
65-4042[A]	.020	.187	65-4542[A]	.020	.187	BLUE
65-4045[A]	.032	.250	65-4545[F]	.032	.250	BLUE

12-10AWG Quick Connect Female Terminals

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-4065[A]	.032	.250	65-4565[F]	.032	.250	YELLOW
65-4068[B]	.048	.375	65-4568[G]	.048	.375	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Fully Insulated Quick Connect Female Terminals

Part #	Wire Size	Thick. (in.)	Width (in.)	Insulation Material	Color
65-4322[B]	22-18	.020	.187	Vinyl	RED
65-4325[G]	22-18	.032	.250	Vinyl	RED
65-4327[G]	22-18	.032	.250	Nylon	RED
65-4342[B]	16-14	.020	.187	Vinyl	BLUE
65-4345[G]	16-14	.032	.250	Vinyl	BLUE
65-4347[G]	16-14	.032	.250	Nylonl	BLUE
65-4365[D]	12-10	.032	.250	Vinyl	YELLOW
65-4367[D]	12-10	.032	.250	Nylon	YELLOW
65-4368[G]	12-10	.048	.375	Vinyl	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Fully Insulated Nylon Female Flag Terminals
65-4725[G] .250" RED 22-18 AWG
65-4745[G] .250" BLUE 16-14 AWG

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

22-16 AWG Quick Connect Male Terminals

Philmore's Quick Connect terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-5021[A]	.020	.110	65-5521[F]	.020	.110	RED
65-5022[A]	.020	.187	65-5522[F]	.020	.187	RED
65-5025[A]	.032	.250	65-5525[F]	.032	.250	RED

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

16-14 AWG Quick Connect Male Terminals

Philmore's Quick Connect terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-5042[A]	.020	.187	65-5542[F]	.020	.187	BLUE
65-5045[A]	.032	.250	65-5545[A]	.032	.250	BLUE

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

12-10 AWG Quick Connect Male Terminals

Philmore's Quick Connect terminals are constructed of high quality copper that are tin plated. They are available in both non insulated and insulated types.

Non -insulated			Insulated			
Part #	Thick. (in.)	Width (in.)	Part #	Thick. (in.)	Width (in.)	Color
65-5065[A]	.032	.250	65-5565[F]	.032	.250	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

Fully Insulated Quick Connect Male Terminals
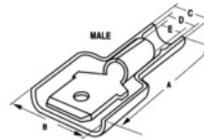
Part #	Wire Size	Thick. (in.)	Width (in.)	Insulation Material	Color
65-5725[G]	22-18	.032	.250	Nylon	RED
65-5745[G]	16-14	.032	.250	Nylon	BLUE
65-5765[G]	12-10	.040	.250	Nylon	YELLOW

Package Qty: A = 15, B = 10, D = 8, F = 12, G = 5 Add "C" to # = 100pk

RATCHET CRIMP TOOL for Insulated Flag Terminal

Full cycle Ratchet mechanism with quick release safety lock, high carbon steel ratchet frame.

No. WS35 - For Insulated Flag Terminal
(22 - 18 AWG & 16 - 14 AWG)

ELECTRONIC HARDWARE

Steel Machine Screws

All machine screws are Zinc plated for protection against corrosion.
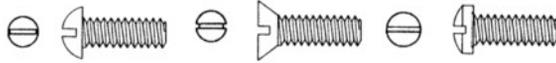
Size	Part Numbers Round Head	Part Numbers Flat Head	Part Numbers Binder Head
2-56 x 1/4"	10-422		
2-56 x 1/2"	10-425		
4-40 x 1/4"	10-442	10-342	10-242
4-40 x 3/8"		10-343	
4-40 x 1/2"	10-445	10-345	10-245
4-40 x 3/4"	10-447		10-247
6-32 x 1/4"	10-462	10-362	10-262
6-32 x 3/8"			10-263
6-32 x 1/2"	10-465	10-365	10-265
6-32 x 3/4"	10-467	10-367	
6-32 x 1"	10-468		
6-32 x 2"	10-469		
8-32 x 1/4"	10-482		10-282
8-32 x 1/2"	10-485		10-285
8-32 x 3/4"	10-487		
8-32 x 1"	10-488		
10-32 x 1/2"	10-405		10-215
10-32 x 3/4"	10-407		
10-32 x 1"	10-411		

Steel Hex Nuts

These nuts are Zinc Plated for protection against the environment.

Size	Part Number
2-56	10-102
4-40	10-104
6-32 x 1/4"	10-106
6-32 x 5/16"	10-107
8-32 x 1/4"	10-108
8-32 x 5/16"	10-109
10-32 x 3/8"	10-110
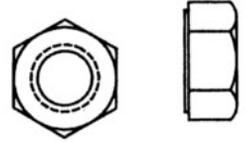
External Lock-washer / Nut

These hex nuts have a external star lock-washer attached

Size	Part Number
4-40	10-014
6-32	10-016
8-32	10-018

Internal Lock Washers

These washers are Zinc Plated

Size	Part Number
# 2	10-122
#4	10-124
#6	10-126
#8	10-128

Switch & Control Mounting Nuts

Size	Part Number
3/8-32 x 1/2 x 3/32"	10-133
15/32-32 X 9/16 x 5/64"	10-137

Knurled Dress Nut

These nuts are Nickel plated brass and are used on controls, switches, capacitors, and tip jacks.

Size	Part Number
15/32-32 x 5/8"	10-135

Brass SPACERS

Solid brass, chrome plated spacers. Size 1/4" across the flats, threaded inside either 4-40 or 6-32. Available in small packages and bulk as well; bulk buyers should add a "B" suffix to the number (example 10-1110B) and bulk minimum is fifty (50) pieces per stock number.

Threaded 4-40 Brass Spacers

Part No.	Length	Qty.. Per Pack
10-1110	.250	8
10-1111	.375	8
10-1113	.500	8
10-1114	.625	4
10-1116	.750	4
10-1119	.875	4
10-1120	1.00	4

Threaded 6-32 Brass Spacers

Part No.	Length	Qty.. Per Pack
10-1130	.250	8
10-1131	.375	8
10-1133	.500	8
10-1134	.625	4
10-1136	.750	4
10-1139	.875	4
10-1140	1.00	4

Zinc Plated Split Washers

Size	Part Number
#4	10-154
#6	10-156
#8	10-158
#10	10-151

Zinc Plated Flat Washers

Size	Part Number
#2	10-002
#4	10-004
#6	10-006
#8	10-008
#10	10-010
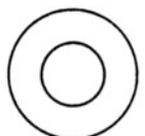
Note: All Hardware Available in 100 pack Add (C) suffix when ordering.
Package quantity is listed in Distributor price schedule.

ELECTRONIC HARDWARE

NYLON FASTENERS & MISC.

Nylon Machine Screws

Our Nylon machine screws come in a variety of styles and sizes. They are made of the highest quality nylon and to the toughest specifications.

Size Numbers	Part Numbers Round Head	Part Numbers Flat Head	Part Binder Head
2-56 x 1/4"	10-922	10-822	10-722
2-56 x 1/2"	10-925	10-825	10-725
4-40 x 1/4"	10-942	10-842	10-742
4-40 x 1/2"	10-945	10-845	10-745
4-40 x 3/4"	10-947	10-847	10-747
6-32 x 1/4"	10-962	10-862	10-762
6-32 x 3/8"	10-963	10-863	10-763
6-32 x 1/2"	10-965	10-865	10-765
6-32 x 5/8"	10-966	10-866	10-766
6-32 x 3/4"	10-967	10-867	10-767
8-32 x 3/8"	10-983	10-883	10-783
8-32 x 1/2"	10-985	10-885	10-785
8-32 x 3/4"	10-987	10-887	10-787
10-32 x 1/2"	10-905	10-805	10-705
10-32 x 1"	10-911	10-811	10-711
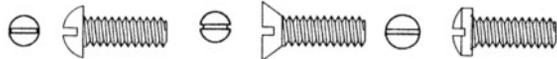
Nylon Hex Nuts

Size	Part Number
2-56 x 3/16"	10-512
4-40x 1/4"	10-514
6-32 x 1/4"	10-516
8-32 x 1/4"	10-518
10-32 x 3/8"	10-510
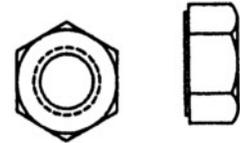
Nylon Flat Washers

Size	Part Number
#2x 1/4"	10-502
#4x 1/4"	10-504
#6 x 5/16"	10-506
#8 x 3/8"	10-508
#10 x 3/8"	10-501

Snap-In Hole Plugs

These plugs have excellent spring retention. They are made of Nickel plated steel. They may be used to cover chassis holes, access ports, and wiring outlets.

Part Number	Hole Dia.	"A"	"B"	"C"
10-025	1/4"	.406"	.234"	.062"
10-026	3/8"	.500"	.234"	.062"
10-027	1/2"	.656"	.281"	.078"
10-028	3/4"	.921"	.296"	.078"
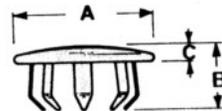
Nylon Finish Washers

These washers are used with flathead screws.

Size	Part Number
# 6	10-526
#8	10-528
#10	10-521

Rubber Grommets

Part Number	I.D. "A"	Hole Size "B"	"C"	"D"	"E"
10-046	.125"	.250"	.062"	.343"	.187"
10-047	.187"	.312"	.062"	.437"	.218"
10-048	.250"	.375"	.062"	.562"	.250"
10-049	.500"	.750"	.093"	.968"	.281"
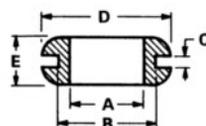
Lockwasher Solder Lugs

These nuts are Nickel plated brass and are used on controls, switches, capacitors, and tip jacks.

Size	Part Number
#4 (.120) x 7/8"	10-478
#6 (.140) x 23/32"	10-479
#8 (.171) x 47/64"	10-480

Note: All Hardware Available in 100 pack Add (C) suffix when ordering.
Package quantity is listed in Distributor price schedule.

PANEL LAMPS & INDICATOR LIGHTS

A quality series of indicator lights, offered with a choice of 6" lead wires or .187" quick connect tab electrical terminations. All of the light assemblies on this page are for insertion in a 0.50" diameter round hole in panels with a minimum thickness of .030". The high voltage neon lamps may be connected directly to rated powerline voltages without the need for additional components.

.50" HOLE SIZE - .187 "QUICK Connect"

Note: Green Neon lamps are genuine green light generating lamps and not simply green lenses on ordinary neon bulbs.
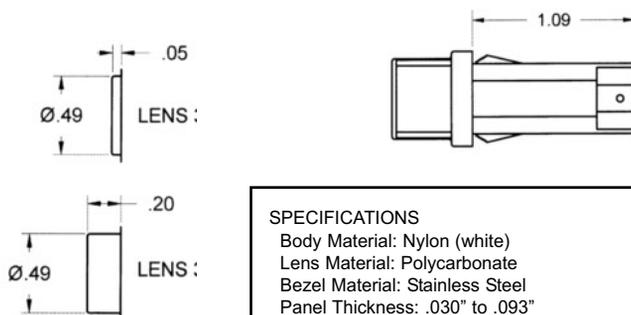
SPECIFICATIONS
- Body Material: Nylon (white)
- Lens Material: Polycarbonate
- Bezel Material: Stainless Steel
- Panel Thickness: .030" to .093"
- Mounting hole: 0.50" diameter
- Types: Neon and Incandescent
- Lens Styles: Cylinder diamond, (except white lens-cylinder translucent) two lens heights. (see chart, drawings)

Philmore Part No.	Lens Color	Lens Type	Lens Height	Lamp Type
11-2160	Red	Transparent	.20" high	12-14V INCANDESCENT
11-2162	Amber	Transparent	.20" high	12-14V INCANDESCENT
11-2164	White	Translucent	.20" high	12-14V INCANDESCENT
11-2166	Clear	Transparent	.20" high	12-14V INCANDESCENT
11-2168	Green	Transparent	.20" high	12-14V INCANDESCENT
11-2180	Red	Transparent	.20" high	28V INCANDESCENT
11-2182	Amber	Transparent	.20" high	28V INCANDESCENT
11-2184	White	Translucent	.20" high	28V INCANDESCENT
11-2186	Clear	Transparent	.20" high	28V INCANDESCENT
11-2188	Green	Transparent	.20" high	28V INCANDESCENT
11-2200	Red	Transparent	.20" high	125V NEON
11-2202	Amber	Transparent	.20" high	125V NEON
11-2204	White	Translucent	.20" high	125V NEON
11-2206	Clear	Transparent	.20" high	125V NEON
11-2208	Green	Transparent	.20" high	125V NEON
11-2210	Red	Transparent	.20" high	250V NEON
11-2212	Amber	Transparent	20" high	250V NEON
11-2214	White	Translucent	20" high	250V NEON
11-2216	Clear	Transparent	20" high	250V NEON
11-2218	Green	Transparent	20" high	250V NEON

Philmore Part No.	Lens Color	Lens Type	Lens Height	Lamp Type
11-2100	Red	Transparent	.05" low	28V INCANDESCENT
11-2102	Amber	Transparent	.05" low	28V INCANDESCENT
11-2104	White	Translucent	.05" low	28V INCANDESCENT
11-2106	Clear	Transparent	.05" low	28V INCANDESCENT
11-2108	Green	Transparent	.05" low	28V INCANDESCENT
11-2120	Red	Transparent	.05" low	125V NEON
11-2122	Amber	Transparent	.05" low	125V NEON
11-2124	White	Translucent	.05" low	125V NEON
11-2126	Clear	Transparent	.05" low	125V NEON
11-2128	Green	Transparent	.05" low	125V NEON
11-2140	Red	Transparent	.05" low	250V NEON
11-2142	Amber	Transparent	.05" low	250V NEON
11-2144	White	Translucent	.05" low	250V NEON
11-2146	Clear	Transparent	.05" low	250V NEON
11-2148	Green	Transparent	.05" low	250V NEON

110 - 120 VAC MULTI - LENS, NEON LAMP & LENSES KIT
.50" Hole Size - .187 "QUICK CONNECT"

A kit for designers and experimenters to keep on hand at the bench. The kit contains a NEON lamp assembly, with white lens ready to connect to AC power and included are three different colored snap-on/snap-off lenses; red, amber, and clear. The unit fits a .50" hole in panels a minimum of .030" thickness. Snap on the lens for the color that you want. Lamp terminals are 0.187" push-on quick-connect terminals (you could solder in a pinch).
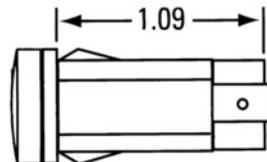
Philmore Part No.	Description
11-1990	NEON multi-lens Lamp Assembly

PANEL LAMPS & INDICATOR LIGHTS

.50" HOLE SIZE - 6" LEADS
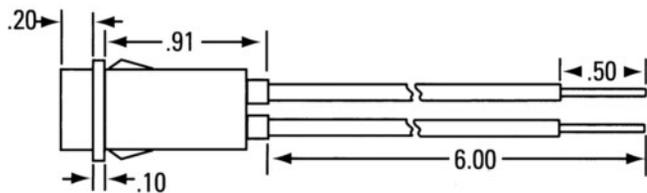
Note: Green Neon lamps are genuine green light generating lamps and not simply green lenses on ordinary neon bulbs.
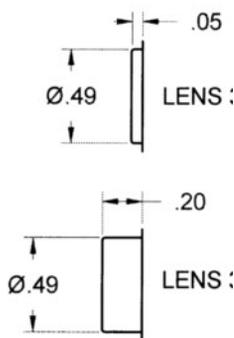
SPECIFICATIONS
Body Material: Nylon (white)
Lens Material: Polycarbonate
Bezel material: Stainless steel
Terminations: 6" Leads, .50" stripped
Panel Thickness: .030" to .093"
Mounting hole: 0.50" diameter
Types: Neon and Incandescent
Lens Styles: Cylinder diamond, (except white lens-cylinder translucent) two lens heights (see chart, drawings)

Philmore Part No.	Lens Color	Lens Type	Lens Height	Lamp Type	Philmore Part No.	Lens Color	Lens Type	Lens Height	Lamp Type
11-2230	Red	Transparent	.05" low	12-14V INCANDESCENT	11-2300	Red	Transparent	.20" high	12-14V INCANDESCENT
11-2232	Amber	Transparent	.05" low	12-14V INCANDESCENT	11-2302	Amber	Transparent	.20" high	12-14V INCANDESCENT
11-2234	White	Translucent	.05" low	12-14V INCANDESCENT	11-2304	White	Translucent	.20" high	12-14V INCANDESCENT
11-2236	Clear	Transparent	.05" low	12-14V INCANDESCENT	11-2306	Clear	Transparent	.20" high	12-14V INCANDESCENT
11-2238	Green	Transparent	.05" low	12-14V INCANDESCENT	11-2308	Green	Transparent	.20" high	12-14V INCANDESCENT
11-2239	Blue	Transparent	.05" low	12-14V INCANDESCENT	11-2310	Blue	Transparent	.20" high	12-14V INCANDESCENT
11-2250	Red	Transparent	.05" low	28V INCANDESCENT	11-2320	Red	Transparent	.20" high	28V INCANDESCENT
11-2252	Amber	Transparent	.05" low	28V INCANDESCENT	11-2322	Amber	Transparent	.20" high	28V INCANDESCENT
11-2254	White	Translucent	.05" low	28V INCANDESCENT	11-2324	White	Translucent	.20" high	28V INCANDESCENT
11-2256	Clear	Transparent	.05" low	28V INCANDESCENT	11-2326	Clear	Transparent	.20" high	28V INCANDESCENT
11-2258	Green	Transparent	.05" low	28V INCANDESCENT	11-2328	Green	Transparent	.20" high	28V INCANDESCENT
11-2259	Blue	Transparent	.05" low	28V INCANDESCENT	11-2329	Blue	Transparent	.20" high	28V INCANDESCENT
11-2270	Red	Transparent	.05" low	125V NEON	11-2346	Red	Transparent	.20" high	125V NEON
11-2272	Amber	Transparent	.05" low	125V NEON	11-2352	Amber	Transparent	.20" high	125V NEON
11-2274	White	Translucent	.05" low	125V NEON	11-2354	White	Translucent	.20" high	125V NEON
11-2276	Clear	Transparent	.05" low	125V NEON	11-2356	Clear	Transparent	.20" high	125V NEON
11-2278	Green	Transparent	.05" low	125V NEON	11-2358	Green	Transparent	.20" high	125V NEON
11-2280	Red	Transparent	.05" low	250V NEON	11-2366	Red	Transparent	.20" high	250V NEON
11-2282	Amber	Transparent	.05" low	250V NEON	11-2368	Amber	Transparent	.20" high	250V NEON
11-2284	White	Translucent	.05" low	250V NEON	11-2370	White	Translucent	.20" high	250V NEON
11-2286	Clear	Transparent	.05" low	250V NEON	11-2372	Clear	Transparent	.20" high	250V NEON
11-2288	Green	Transparent	.05" low	250V NEON	11-2374	Green	Transparent	.20" high	250V NEON

12 - 14 Volt Multi-Lens, Incandescent Lamp & Lenses Kit
.50" Hole Size - .187" "Quick Connect

A fine kit to keep on hand at the bench. The kit contains an incandescent lamp assembly, with white lens ready to connect to AC or DC (12-14 Volts) power and included are several different color snap-on/snap-off lenses: red, amber, green, clear and blue. The unit fits a .50" hole in panels a minimum of .030" thickness. Snap on the lens for the color that you want. Lamp terminals are 0.187" push-on quick-connect terminals (you could solder in a pinch). The assembly is non relampable.

Philmore Part No.	Description
11-1992	12 - 14V Multi-Lens lamp assembly

PANEL LAMPS & INDICATOR LIGHTS

The following indicator light selections, intended for both replacement and OEM usage, provide the buyer with a variety of lamp types for uses ranging from low voltages to direct AC power line connections. The neon lamps in this section do not require additional components when connecting to the rated voltages.

On this page are assemblies for insertion into .312" diameter round holes in panels with a minimum thickness of .030". See the previous pages for larger lamps intended for insertion in .500" diameter holes. Spring clips made to be used in cases where hole size or panel thickness do not provide a tight fit (See below).

.312" Hole Size - 6" Leads

FLUSH

HIGH

Note: Green Neon lamps are genuine green light generating lamps and not simply green lenses on ordinary neon bulbs.

All lamps in this series are for press-fit into .312" diameter holes and have the following features:

Body Material: Nylon
Lens Material: Polycarbonate
Lens Style: Flush diamond (except white lens-flush translucent), two lens style. (see chart drawing)
Bezel: None on flush lens,
Chrome plated Brass on high lens.
Wire gauge: 18awg
Wire strip: 1/2"
Termination: 6" wire leads
Panel thickness: .030" min.
125V and 250V lamp assemblies are UL Listed.
All products made in North America.
All are Non relampable.

Philmore Part No.	Lens Color	Lens Type	Lamp Type	Bezel Type	Lens Style
11-2000	Red	Transparent	12-14V INCANDESCENT	white	flush
11-2002	Amber	Transparent	12-14V INCANDESCENT	white	flush
11-2004	White	Translucent	12-14V INCANDESCENT	white	flush
11-2006	Clear	Transparent	12-14V INCANDESCENT	white	flush
11-2008	Green	Transparent	12-14V INCANDESCENT	white	flush
11-2010	Blue	Transparent	12-14V INCANDESCENT	white	flush
11-2018	Red	Transparent	28V INCANDESCENT	white	flush
11-2020	Amber	Transparent	28V INCANDESCENT	white	flush
11-2022	White	Translucent	28V INCANDESCENT	white	flush
11-2024	Clear	Transparent	28V INCANDESCENT	white	flush
11-2026	Green	Transparent	28V INCANDESCENT	white	flush
11-2028	Blue	Transparent	28V INCANDESCENT	white	flush
11-2035	Red	Transparent	125V NEON	white	flush
11-2037	Amber	Transparent	125V NEON	white	flush
11-2039	White	Translucent	125V NEON	white	flush
11-2041	Clear	Transparent	125V NEON	white	flush
11-2044	Green	Transparent	125V NEON	white	flush
11-2050	Red	Transparent	250V NEON	white	flush
11-2052	Amber	Transparent	250V NEON	white	flush
11-2054	White	Translucent	250V NEON	white	flush
11-2056	Clear	Transparent	250V NEON	white	flush
11-2059	Green	Transparent	250V NEON	white	flush
11-2062	Red	Transparent	125V NEON	chrome	High
11-2064	Amber	Transparent	125V NEON	chrome	High
11-2066	White	Translucent	125V NEON	chrome	High
11-2068	Clear	Transparent	125V NEON	chrome	High
11-2070	Green	Transparent	125V NEON	chrome	High

SPRING CLIPS

Spring clips for lamp assemblies. In situations where panel hole size and/or panel thickness does not allow a tight fit, a spring clip may be used to secure the assembly. Spring clips are available for both the .312" and .50" diameter lamp. In most installations, they will not be needed. A correctly sized hole will allow a secure installation.

Philmore Part No.	Description
11-2075	5 -PAK SPRING CLIP FOR .312" Indicator light assemblies
11-2375	5 -PAK SPRING CLIP FOR .50" Indicator light assemblies

add "B" suffix to the part number for the bulk stock purchase; min, 100 pieces.

PANEL LAMPS & INDICATOR LIGHTS LED

Flush Diamond lens and 6" stripped wire leads shown here.

Long Life, Solid State, light emitting diodes make this series of snap-in lamps a very dependable component. Available in popular voltages as well as the standard LED voltage (2 Volt series); use Ohm's law to calculate a series resistor if other voltages are needed. All LED'S on this page operate at 20 mA DC typical.

Specifications:
Body Material: Nylon
Lens Material: Polycarbonate
Bezel Material: Brass (plated)
Wire Gauge: 18 ga.
Wire Strip: 1/2"
Terminals: .187 QC
Panel Thickness: 0.030" min
Certifications: 2V - cUL, TUV
                   12 - 14V - UL, TUV
                   24-28V - TUV, CE

LED LAMP ASSEMBLIES are available in two sizes: for .312" diameter panel holes and for .500" diameter panel holes. Lens styles are either flush with the front of the lamp or about 0.30" above the front in the "high rings style".

LED LAMPS for .312" diameter mounting hole

Part no.	Voltage	Description	Terminals
11-2500	2-volt	RED flush diamond lens	6" stripped leads
11-2501	2-volt	GREEN flush diamond lens	6" stripped leads
11-2502	2-volt	AMBER flush diamond lens	6" stripped leads
11-2510	2-volt	RED-high rings lens	6" stripped leads
11-2511	2-volt	GREEN-high rings lens	6" stripped leads
11-2512	2-volt	AMBER high rings lens	6" stripped leads
11-2520	12-14 Volt	RED-flush diamond lens	6" stripped leads
11-2521	12-14 Volt	GREEN-flush diamond lens	6" stripped leads
11-2522	12-14 Volt	AMBER-flush diamond lens	6" stripped leads
11-2530	12-14 Volt	RED-high rings lens	6" stripped leads
11-2531	12-14 Volt	GREEN-high rings lens	6" stripped leads
11-2532	12-14 Volt	AMBER-high rings lens	6" stripped leads
11-2540	12-14 Volt	RED-flush diamond lens	.187" terminal lug
11-2541	12-14 Volt	GREEN-flush diamond lens	.187" terminal lug
11-2542	12-14 Volt	AMBER-flush diamond lens	.187" terminal lug
11-2550	24-28 Volt	RED-flush diamond lens	6" stripped leads *
11-2551	24-28 Volt	GREEN-flush diamond lens	6" stripped leads *
11-2552	24-28 Volt	AMBER-flush diamond lens	6" stripped leads *

NOTE: * = for 24-28 volt, lamp body is .94" (vs 1.43")
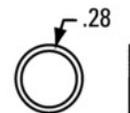
Flush Diamond Lens
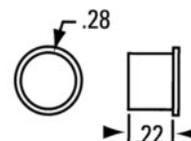
High Ring Lens
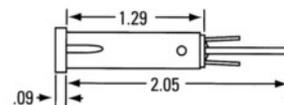
.187 Terminal Lugs
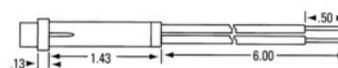
6" Stripped Leads

LED LAMPS for .50" diameter mounting hole

Part no.	Voltage	Description	Terminals
11-2560	2-volt	RED cylinder diamond lens	6" stripped leads
11-2561	2-volt	GREEN cylinder diamond lens	6" stripped leads
11-2562	2-volt	AMBER cylinder diamond lens	6" stripped leads
11-2570	12-14 volt	RED-cylinder diamond lens	6" stripped leads
11-2571	12-14 volt	GREEN-cylinder diamond lens	6" stripped leads
11-2572	12-14 volt	AMBER cylinder diamond lens	6" stripped leads
11-2580	12-14 Volt	RED-cylinder diamond lens	.187" tabs
11-2581	12-14 Volt	GREEN-cylinder diamond lens	.187" tabs
11-2582	12-14 Volt	AMBER-cylinder diamond lens	.187" tabs
11-2590	24-28 Volt	RED-cylinder diamond lens	6" stripped leads
11-2591	24-28 Volt	GREEN -cylinder diamond lens	6" stripped leads
11-2592	24-28 Volt	AMBER-cylinder diamond lens	6" stripped leads

6" Stripped Leads

.187 Terminal Lugs
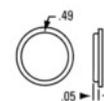
Cylinder Diamond Lens
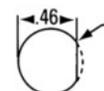
For 11-2580, 11-2581 & 11-2582 only

PANEL LAMPS & INDICATOR LIGHTS LED

Standard (T1-3/4) and miniature size (T1) LED's mounted in durable nylon cases and ready to speed mount and eliminate additional mounts and parts. Time saving with faster installation; drill a hole and snap-in. Select from several popular voltages that reduce assembly time and the need for extraneous parts. LED's are generally very long life devices and may never need replacing in many applications.

2 Volt Snap-In T1 LED LAMPS for .173" diameter mounting holes

Sub-miniature snap-in panel lamps press-fit into a 0.173" diameter hole. Uses the industry standard T1 size LED. Lead wires are 6" long, (26 Ga.), stripped .380" on ends (red and black insulation indicates polarity). The 2 volt values are regular LED's, use a resistor for voltages that are higher than 2 volts; package includes "how to" calculate resistor values.

Part No.	Voltage	Description	Terminals
11-2400	2-volt	RED	6" stripped leads
11-2402	2-volt	AMBER	6" stripped leads
11-2406	2-volt	GREEN	6" stripped leads

6" Stripped Leads

2 Volt Snap-In LED LAMPS for .250" diameter mounting holes

2 Volt LED Panel Lamp for 1/4" hole size. Considered the "universal" type as it can be used with virtually any DC voltage with a resistor (package shows how to determine resistor value). And it can be used with AC voltages with a diode and resistor. The lamp has 6" long wire lead set (black / red), which is stripped and tinned, ready to solder. Body color black (nylon).

Part No.	Voltage	Description	Terminals
11-2410	2-volt	RED	6" stripped leads
11-2412	2-volt	AMBER	6" stripped leads
11-2414	2-volt	GREEN	6" stripped leads

6" Stripped Leads

How to use a 2 Volt LED Lamp Assembly

A 2 volt LED may be used with practically any higher voltage, simply calculate the value of resistor to use in series with the LED.

For DC Circuits: Subtract two volts (needed for the LED) from your circuit voltage and multiply by 50. EXAMPLE: For a 12VDC circuit, subtract the "two" and multiply the answer ten times fifty. So a 500ohm resistor is needed (use a close standard value, such as 470 or 520 etc.)

For AC Circuits: Place a diode in series with the LED. Then, take your circuit voltage and subtract 2.7 from that voltage and then multiply the answer by 25. Example: In a 28 volt circuit, subtract 2.7 which gives you 25.3. Then multiply the 25.3 times 25 and the answer is 632 ohms. Use a close resistor value such as 680 ohms.
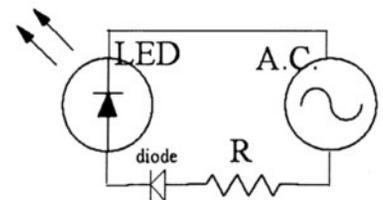
Typical voltages used in electronics and resistor values (rounded to nearest standard resistor).

DC Volts	5V	6V	12V	24V	AC Volts	6V	12V	24V	48V	117V
Resistor (ohms)	150	180	470	1200	Resistor (ohms)	82	220	560	1200	3K

PANEL LAMPS & INDICATOR LIGHTS LED

Standard (T1-3/4) LED's mounted in durable nylon cases and ready to speed mount and eliminate additional mounts and parts.

12-14 Volt Snap-In LED LAMPS for .250" diameter mounting holes

12-14 Volt LED Panel Lamp for .25" hole size. This series has typical LED (T1-3/4") Size. Lead wires are 6" long, stripped .380" on ends (red and black insulation indicates polarity).

Part No.	Voltage	Description	Terminals
11-2420	12-14 volt	RED	6" stripped leads
11-2422	12-14 volt	AMBER	6" stripped leads
11-2426	12-14 volt	GREEN	6" stripped leads
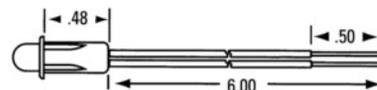
6" Stripped Leads

28 Volt Snap-In LED LAMPS for .250" diameter mounting holes

28 Volt LED Panel Lamp for 1/4" hole size. The series has 6" long black/red lead wires. Lead wires are stripped and tinned for quick soldering or adding crimp connectors. Body color and molded bezel is black in color.

Part No.	Voltage	Description	Terminals
11-2430	28-volt	RED	6" stripped leads
11-2432	28-volt	AMBER	6" stripped leads
11-2434	28-volt	GREEN	6" stripped leads

6" Stripped Leads

125 Volt Snap-In LED LAMPS for .250" diameter mounting holes

125 Volt LED Panel Lamp for 1/4" hole size. Use in appliances and similar applications where standard mains voltage is present. The series has 6" long black/red lead wires. Lead wires are stripped and tinned for quick soldering or adding crimp connectors. Body color and molded bezel is black in color.

Part No.	Voltage	Description	Terminals
11-2450	125-volt	RED	6" stripped leads
11-2452	125-volt	AMBER	6" stripped leads
11-2456	125-volt	GREEN	6" stripped leads
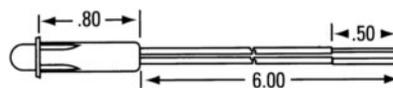
6" Stripped Leads

Use of LED Lamp Assembly.

Use this LED Lamp Assembly with the appropriate voltage (see front of card for voltage). NOTE: Correct polarity must be observed for this device to work properly; connect the red colored wire to positive and the black wire to the negative.

The 12-14 Volt Lamp Assemblies are intended for use in automobiles and trucks with about (standard) 13.8 volts (most vehicles). They may, of course, be used in other circuits that provide voltage in the twelve to fourteen volt range. No additional resistor needs to be used.

The 24-28 volt values are generally used in systems such as control panels. If you plan to use the lamp assembly with AC, then connect a diode in series with the lamp assembly. No additional resistor needs to be used.

Two volt LED assemblies are also available from your local supplier. A 2 volt LED may be used with practically any higher voltage, simply calculate the value of resistor to use in series with the LED. The 2-volt LED assemblies are supplied with information on each card describing how to determine the resistor value for both AC and DC with a simple formula or by following a chart.
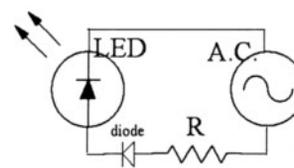
Above; Typical AC circuit using a diode. The "R", or resistor is not necessary for 12-14 or 24-28 volt assemblies when they are used @ rated voltages.

PANEL LAMPS & INDICATOR LIGHTS

Splash Proof Indicator Lamp (M-Series)
for Indoor or Outdoor Harsh Environments
.375" Hole Size - 6" leads

The "M" series splash proof indicator light mounts securely to the panel (3/8" Mtg. Hole) with an O-Ring, lock washer and hex nut to provide a weather proof seal. The "M" series is available in 14V and 125V AC rating and illumination is produced with incandescent lamp (14V) or neon lamp (125V). Termination is 6" leads.

The "M" series is supplied with a popular small dome lens in Red, Green, Amber, Blue and White. Stainless steel bezels are specified for an attractive look and durability against the front panel. Splash Proof, ideal for harsh environments and suitable for indoor or outdoor use.

NEMA 3R

Dome Indicator Lights (M-Series)		
12-14V Incandescent	Lens Color	125V Neon
11-2830	Red	11-2840
11-2832	Amber	11-2842
11-2834	White	11-2844
11-2838	Green	11-2848
11-2839	Blue	11-2849
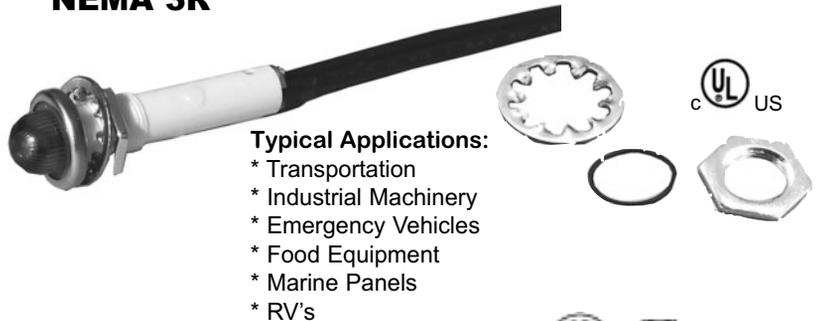
Typical Applications:
* Transportation
* Industrial Machinery
* Emergency Vehicles
* Food Equipment
* Marine Panels
* RV's

Technical Data:
* Fits into 0.375" panel hole.
* Incandescent and Neon illumination.
* Splash proof design
* Supplied with hex nut, lockwasher and O-Ring.
* Small dome lens
* Body Material: Nylon
* Lens Material: Polycarbonate
* Bezel Material: Stainless Steel
* Wire Gauge: 20ga
* Wire Strip 1/2"

1.50
3/8-32 Thread
6"
1/2"
.62
Mounting Hole
0.38
Panel Thickness
Range: .03 - .25
.26
0.36

* Mounting Hole Dimensions shown are TYPICAL. Customer is responsible for determining final size based on panel material and thickness.
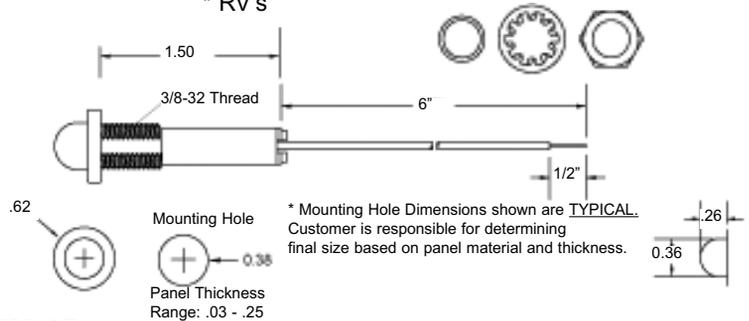
NEMA 3R

1" ROUND SEALED LED's PANEL LAMPS (K - Series)

The K series is a screw based indicator that is mounted in a 22mm (7/8") cut out and is fastened to the panel with a plastic nut and sealed with an "O" ring gasket for a tight panel seal. Nut & "O" ring are included.

Illumination is achieved by means of surface mount LED's on a sealed PCB board which provides bright and even lighting. The K series LED indicator is available in 5 colors with two transparent lens style: flat with diffuser and tapered with diffuser. The K series is available in 12V DC and 28V DC, screw clamp type terminal designed for quick termination for both solid and stranded wires.

Applications:
* Restaurant kitchen equipment
* Emergency vehicles
* Industrial machinery
* Marine panels
* Medical equipment
* Lab equipment

Electrical:
Dielectric withstanding voltage: 630V - terminal to housing
Insulation resistance: 380V AC - terminal to housing
Surge protection: 2000V @ 50 micro seconds

Materials:
Housing: PBT w/20% Glass
Lens: Polycarbonate
Diffuser: POM (polyacetal)
Hex nut: Polycarbonate

Part no.	Voltage	Lens Color	Lens Type
11-2630	12-14 Volt	RED	Flat Top with Diffuser
11-2632	12-14 Volt	YELLOW	Flat Top with Diffuser
11-2634	12-14 Volt	WHITE	Flat Top with Diffuser
11-2638	12-14 Volt	GREEN	Flat Top with Diffuser
11-2639	12-14 Volt	BLUE	Flat Top with Diffuser
11-2640	12-14 Volt	RED	Tapered with Diffuser
11-2642	12-14 Volt	YELLOW	Tapered with Diffuser
11-2644	12-14 Volt	WHITE	Tapered with Diffuser
11-2648	12-14 Volt	GREEN	Tapered with Diffuser
11-2649	12-14 Volt	BLUE	Tapered with Diffuser
11-2650	28 Volt	RED	Flat Top with Diffuser
11-2652	28 Volt	YELLOW	Flat Top with Diffuser
11-2654	28 Volt	WHITE	Flat Top with Diffuser
11-2658	28 Volt	GREEN	Flat Top with Diffuser
11-2659	28 Volt	BLUE	Flat Top with Diffuser

Screw Clamp Type Terminal

.49
1.50

Transparent tapered lens with Diffuser

.51"
1.18
1.06

Transparent flat lens with Diffuser

.25
1.14

Mounting Hole

22mm

281
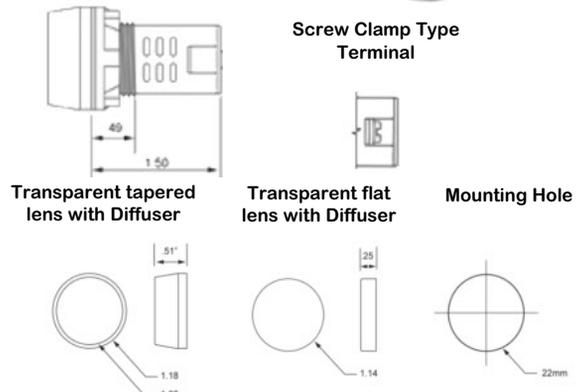
LED LIGHTING STRIP

HI - BRITE LED FLEX LITE

Hi-Brite (HB) Flex Lite strips employ Surface-Mount LED's on flexible printed circuit board strips. HB Strips use Ultra-bright SMD LED's which have approximately 150 - 200% more light output than average LED's. The Hi-Brite strips may be used to provide lighting in a variety of applications at safe, low-voltage (12 V DC) and energy stingy low current requirements. Hi-Brite Flex-Lite lighting can be ideal for emergency lighting powered by battery as well as for general use with a modest 12 volt DC power supply. The low profile strips may be installed in hundreds of locations where the use of older, incandescent bulbs would be bulky and impractical.

Two types of HB Flex-Lite are available. An economical unsealed type is supplied with an adhesive backing for quick and permanent installations. The unsealed type is not water proof and is less resistant to physical damage when used in areas where the strips may be vulnerable to bumps and scrapes. The Sealed HB Flex-Lite strips are water resistant and impact resistant as well. The Sealed type is a better choice for use in exposed locations such as stairwells and hallways where a physically more durable product is needed; its protective silicone sleeve is IP-67 rated.

HB Flex-Lite strips are long-life, low power usage lights with excellent light output. Available in warm, white light output (3,000-3,500K) as well as in a range of colors (see following charts). Strips are either 12" or 24" in length and supplied with 20 AWG lead wires attached.

FEATURES:
* CE, UL and RoHS compliant
* UV resistance
* IP 67 Sealing (Sealed Model)
* Working voltage is: 12V DC
* Cut length every three LEDs (4")
* Available sealed, unsealed
* Extremely high luminous flux with a wide viewing angle (120 degrees)
* PCB Color
 · Sealed: White
 · Unsealed: Brown

* Very flexible and easily curved to any shape
* Energy saving, long life and environmentally friendly
* Wide applicability and easy to install and maintain
* Flexible Single Color and RGB:
 · Current 20mA per each LED
 · 50/50 SMD LED

LED Light Outputs (mcd)		
Regular LED Flexible Strip	Color	LKG HB Series LED Flexible Strip
250	Red	800
200	Yellow	700
1500	Pure White	4000
1300	Warm White	4000
900	Green	2400
300	Blue	1800

Suggested Applications
* Cove Lighting
* Under-Shelf lighting
* Signage back-lighting
* Stairway accent lighting
* Emergency lighting
* Vehicle lighting
* Kitchen cabinet lighting
* Back-Up radio-room lighting
* Hobby projects

Sealed
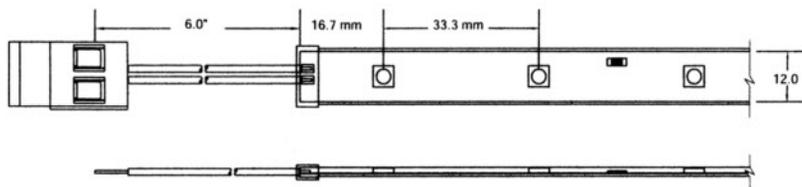
Unsealed
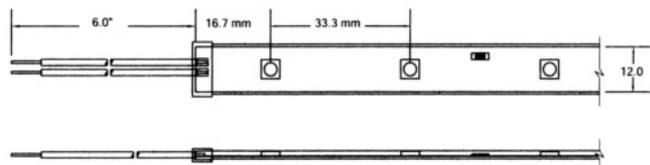
12" Strip Hi - Brite LED Flex - Lite		
Part No.	Sealed Type	LEDs Color
11-2730	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Red
11-2732	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Yellow
11-2734	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Pure White
11-2736	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Warm White
11-2738	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Green
11-2739	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	Blue
11-2733	12V, 12" Waterproof Strip, 9 LEDs 50/50 SMD	RGB (Red/Green/Blue)

24" Strip Hi - Brite LED Flex - Lite		
Part No.	Sealed Type	LEDs Color
11-2750	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Red
11-2752	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Yellow
11-2754	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Pure White
11-2756	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Warm White
11-2758	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Green
11-2759	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	Blue
11-2753	12V, 24" Waterproof Strip, 18 LEDs 50/50 SMD	RGB (Red/Green/Blue)

NOTE: 24" strips are packaged with additional 6" Leads, plus 1 each of wire cap and end cap.

HI - BRITE LED FLEX LITE

12" Strip Hi - Brite LED Flex - Lite		
Part No.	Unsealed Type	LEDs Color
11-2740	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Red
11-2742	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Yellow
11-2744	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Pure White
11-2746	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Warm White
11-2748	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Green
11-2749	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	Blue
11-2743	12V, 12" Non - Waterproof Strip, 9 LEDs 50/50 SMD	RGB (Red/Green/Blue)

24" Strip Hi - Brite LED Flex - Lite		
Part No.	Unsealed Type	LEDs Color
11-2760	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Red
11-2762	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Yellow
11-2764	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Pure White
11-2766	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Warm White
11-2768	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Green
11-2769	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	Blue
11-2763	12V, 24" Non - Waterproof Strip, 18 LEDs 50/50 SMD	RGB (Red/Green/Blue)

NOTE: 24" strips are packaged with additional 6" Leads.

HI - BRITE LED FLEX-LITE ACCESSORIES

Wire Cap
For Sealed Flex - Lite
No. 11-2704 - Single color Flex - Lite (package of 4)

No. 11-2706 - RGB Flex - Lite (package of 4)
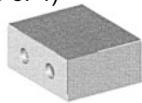
End Cap
For Sealed Flex - Lite
No. 11-2708 - Single color Flex - Lite & RGB (package of 4)

Mounting Clips
For Sealed Flex - Lite
No. 11-2712 - Single color Flex - Lite & RGB (package of 6)

Typical Data on 12 Inch Strip (Single Light)							
Total Length	# of LEDs	Color	Current Draw	Power	CCT/Wavelength	Single LED Luminous Flux / Intensity**	Luminous Flux per Intensity per foot
12	9	Red	180 mA	2.16	630 nm	900 mcd	8100 mcd
12	9	Green	180 mA	2.16	525 nm	2000 mcd	18000 mcd
12	9	Blue	180 mA	2.16	470 nm	600 mcd	5400 mcd
12	9	Yellow	180 mA	2.16	596 nm	1000 mcd	9000 mcd
12	9	Warm White	180 mA	2.16	3000-3500k	13.5 Lm	121.5 Lm
12	9	Pure White	180 mA	2.16	6000-6500k	14.5 Lm	130.5 Lm

Typical Data on 12 Inch Strip (RGB)								
Total Length in inches	# of LEDs	Color	Current Draw	Power	Color	CCT/Wavelength	Single LED Luminous Flux / Intensity**	Luminous Flux per Intensity per foot
12	9	RGB	180 mA	2.16	Red	630 nm	250	2250
					Green	525 nm	700	6300
					Blue	470 nm	150	1350

PANEL LAMPS & LED's

INCANDESCENT PANEL LAMPS

Grain of Wheat Lamps

These miniature lamps have many uses. They are used as dial lights in many consumer products. They are available in several voltages with 15 cm wire leads attached.

No. **11-706** 6V AC / DC - 40mA
No. **11-712** 12V AC / DC - 50mA
No. **11-724** 24V AC / DC - 50mA

12V High Flat-Top Indicator

These panel lamps have a 9 mm high X 12.5 mm diameter lens, a 12V lamp, and wire leads. The indicator will operate on AC or DC voltages and snaps into a 12.7mm (1/2") diameter hole.

No. **11-202** Red
No. **11-203** Orange
No. **11-205** Green

12V Flat-Top Snap-in Indicator

These panel lamps are 8.6 mm in diameter with a 5 mm high flat lens, a 12V incandescent lamp, and wire leads. They mount into a 7.5mm (19/64") hole and will work on either AC or DC voltages.

No. **11-282** Red
No. **11-283** Orange
No. **11-285** Green

SPRING CLIPS

Spring clips for lamp assemblies. In situations where panel hole size and/or panel thickness does not allow a tight fit, a spring clip may be used to secure the assembly. Spring clips are available for both the .312" and .50" diameter lamp. In most installations, they will not be needed. A correctly sized hole will allow a secure installation.

Philmore Part No.	Description
11-2075	5 -PAK SPRING CLIP FOR .312" Indicator light assemblies
11-2375	5 -PAK SPRING CLIP FOR .50" Indicator light assemblies

add "B" suffix to the part number for the bulk stock purchase; min, 100 pieces.

12V High Dome Indicator

Panel lamps with a 13 mm high X 12.7 mm dome lens, a 12V incandescent lamp, and wire leads. They snap into a 12.7mm (1/2") diameter hole. Lamps work on either AC or DC voltages.

No. **11-222** Red
No. **11-223** Amber
No. **11-225** Green

12V Flush Snap-In Indicator

These snap-in panel lamps are constructed to operate at 12V AC or DC with wire leads. The lens is flush with the chrome bezel. The mounting hole is 12.7mm (1/2") mm in diameter.

No. **11-212** Red
No. **11-213** Orange
No. **11-215** Green

LED PANEL LAMPS

Miniature Snap-In Indicator

Miniature snap-in panel lamps with a LED lamp and a built-in resistor for 12V DC operation. The device is 8.6 mm in diameter and snaps into a 7.6mm (19/64") hole.

No. **11-382** Red
No. **11-383** Orange
No. **11-385** Green

3 mm LED in Dome Chrome Bezel

These panel lamps are made to operate on 2V DC and need a resistor for any other voltage. They have a chrome Dome shaped Bezel which hold a 3 mm LED. The lamp mounts into a 5.9mm (15/64") mounting hole with a hex nut.

No. **11-362** Red
No. **11-363** Orange
No. **11-365** Green

5 mm LED in Dome Chrome Bezel

These panel lamps are made to operate on 2V DC and need a resistor for any other voltage. They have a chrome Dome shaped Bezel which hold a 5 mm LED. The lamp mounts into a 7.9mm (15/16") mounting hole with a hex nut.

No. **11-372** Red
No. **11-373** Orange
No. **11-375** Green

3 mm LED Lamp Holder

The holders hold a 3 mm LED (T-1). They are a chrome recessed style holder which mounts in a 5.9mm (15/64") hole with a hex nut.

No. **11-450**

LED PANEL LAMPS

3 mm LED in Recessed Chrome Bezel

These panel lamps are made to operate on 2V DC and need a resistor for any other voltage. They have a chrome recessed shaped Bezel which holds a 3 mm LED. The lamp mounts into a 5.9mm (15/64") mounting hole with a hex nut.

No. **11-302** Red
No. **11-303** Orange
No. **11-304** Yellow
No. **11-305** Green

3 mm LED in Recessed Chrome Bezel

These panel lamps are made to operate on 12V DC and has a built-in resistor. They have a chrome recessed Shaped Bezel which hold a 3 mm LED. The lamp mounts into a 5.9mm (15/64") mounting hole with a hex nut.

No. **11-312** Red
No. **11-314** Yellow
No. **11-315** Green

5 mm LED in Dome Chrome Bezel

These panel lamps are made to operate on 2V DC and need a resistor for any other voltage. They have a chrome Dome Shaped Bezel which hold a 5 mm LED. The lamp mounts into a 7.9mm (5/16") mounting hole with a hex nut.

No. **11-306** Red
No. **11-307** Orange
No. **11-308** Green

Large Rectangular Indicator

These panel lamps have a large rectangular 15.5 mm X 19.5 mm lens, a 120V AC Neon lamp (with resistor) and solder terminals. They mount into a 15.8mm (5/8") hole with a mounting nut.

No. **11-142** Red
No. **11-144** Amber
No. **11-145** Green

Flat-Top Snap-In Indicator

These panel lamps have a built-in resistor and are made to operate on 120V AC. The lens is 12.5 mm in diameter with a chrome bezel. The mounting hole is 12.7mm (1/2") and they have wire leads.

No. **11-102** Red
No. **11-103** Orange
No. **11-105** Green

High Dome Indicator

Panel Lamps with a 13 mm high dome shaped lens, wire leads, and a built-in resistor for operation at 120VAC. The mounting hole is 12.7mm (1/2") in diameter.

No. **11-122** Red
No. **11-123** Orange
No. **11-125** Green

Miniature Bayonet Lamp Holder

These lamp holders can house a standard miniature bayonet based lamp. They have a jeweled lens and mount into a 15.7mm (5/8") hole.

No. **11-542** Red
No. **11-543** Orange
No. **11-545** Green

Miniature Screw Base Lamp Holder

These lamp holders can house a standard miniature screw based lamp. They have a dome lens and mount into a 15.7mm (5/8") mounting hole.

No. **11-522** Red
No. **11-523** Orange
No. **11-525** Green

Midget Screw Base Lamp Holder-Flat Lens

Lamp holders for midget screw based lamps. They have a 9 mm high flat lens and mount into a 9.9mm (25/64") hole.

No. **11-512** Red
No. **11-513** Orange
No. **11-515** Green

Midget Screw Base Lamp Holder-Dome Lens

Lamp holders for midget screw based lamps. They have a 9 mm high dome lens and mount into a 9.9mm (25/64") hole.

No. **11-552** Red
No. **11-553** Orange
No. **11-555** Green

PANEL LAMPS & LED's

Rectangular LED's

2 mm X 5 mm X 7 mm

Part Number	Foreward Current (I$_f$) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-642	20 ma	2.0V	1.7V	Red	120°
11-643	20 ma	2.6V	2.0V	Orange	120°
11-644	20 ma	2.6V	2.1V	Yellow	120°
11-645	20 ma	2.6V	2.2V	Green	120°
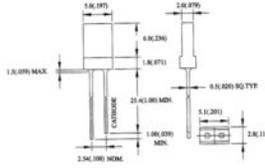
Square LED's

8 mm X 8 mm X 12 mm

Part Number	Foreward Current (I$_f$) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-632	20 ma	2.6V	2.2V	Bright Red	140°
11-633	20 ma	2.6V	2.0V	Bright Orange	140°
11-635	20 ma	2.6V	2.2V	Bright Green	140°

Silicon Photo Transistors

These devices are an electronic switch. When this unit is activated current is allowed to flow through the device. These items are used in Optical encoders, Automatic Control Systems, Photo Detectors and other applications where an optical switch is needed.

3 mm (T-1)

Part Number	Max Breakdown Voltage	Typical Voltage	Typical Carry Current	Viewing Angle
11-690	30V	5V	20 ma	30°

5 mm (T-1 3/4)

Part Number	Max Breakdown Voltage	Typical Voltage	Typical Carry Current	Viewing Angle
11-691	30V	5V	20 ma	35°

LED's

The LED (light emitting diode) offered in this section are without mounting hardware, or discrete devices. The LED consists of four components: a lead frame, a dice (or LED chip), and a fine wire bond which is encapsulated in an epoxy base. (see Below) Depending on the chip used, the observer will see a monochromatic red, green, orange, yellow or blue light. There are no moving parts, so these devices are considered a "solid state device". The LED's operate on from 1.7V-2.5V if you need the lamp to operate at a higher voltage a current limiting resistor is needed. The value of the resistor will vary depending upon the desired voltage and whether it is AC or DC volts. Each color of LED works at a different operating current which will change the value of the resistor.

3 mm (T-1) Round LED's

Part Number	Foreward Current (I$_f$) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-602	20 ma	2.0V	1.7V	Red	35°
11-604	20 ma	2.6V	2.1V	Yellow	35°
11-605	20 ma	2.6V	2.2V	Green	35°

5 mm (T-1 3/4) Round LED's

Part Number	Foreward Current (I$_f$) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-611	20 ma	2.0V	1.7V	Red	35°
11-612	20 ma	2.6V	2.2V	Bright Red	35°
11-614	20 ma	2.6V	2.1V	Yellow	35°
11-615	20 ma	2.6V	2.2V	Green	35°

12 mm Round LED's

Part Number	Foreward Current (I$_f$) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-662	20 ma	2.6V	2.2V	Bright Red	50°
11-663	20 ma	2.6V	2.0V	Orange	50°
11-664	20 ma	2.6V	2.1V	Yellow	50°
11-665	20 ma	2.6V	2.2V	Green	50°

Infrared Emitting Diodes

These diodes are used in remote controls, photo detectors, smoke detectors, etc.

3 mm (T-1) @ 50ma

Part Number	Max Forward Voltage	Typical Voltage	Viewing Angle
11-680	1.6V	1.4V	30°

5 mm (T-1 3/4) @ 50 ma

Part Number	Max Forward Voltage	Typical Voltage	Viewing Angle
11-681	1.6V	1.4V	45°

Press in Holders

Press to fit holders, hold flangeless LED's snuggly into mounting hole.

No. **11-400**
3 mm LED (5.5 mm hole)

No. **11-401**
5 mm LED (6.2 mm hole)

No. **11-404**
5 mm LED (6.2 mm hole) with lamp support
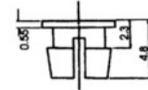
Bi-Polar 8 mm LED

Lamps are in a recessed chrome bezel which holds a 8 mm LED that operates at 2V. The LED glows Red if current is applied in one direction and Green if applied in the other direction, mounting hole 9.8mm (25/64")
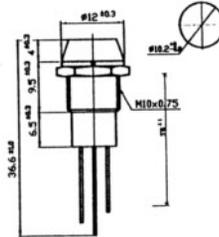
No. **11-352** Red / Green

5 mm LED Lamp Holder

The holders hold a 5 mm LED (T-1 3/4). They are a chrome recessed style holder which mounts into a 7.9mm (5/16") hole with a hex nut.
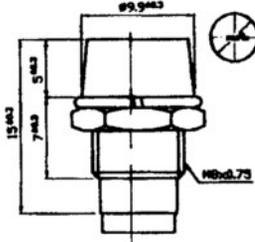
No. **11-480**

Blinking LED's

The blinking LED operates on 3 - 10 VDC at 25 milliamps. This seies of LED's have internal CMOS (or TTL circuits to drive the LED blinking and no external or additional circuitry is required.

5mm (T-1 3/4)

Part Number	Pulse Rate (VDD=5V)Hz	LED Color	Viewing Angle	Luminous Intensity
11-672	2.4Hz	Bright Red	45°	12.0
11-674	2.4Hz	Yellow	45°	35.0
11-675	2.4Hz	Green	45°	40.0

90° Surface Mt. Holders

Mount LED's at 90° to PCBoards
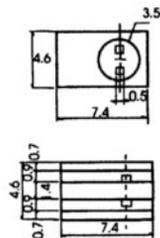
No. **11-409**
3 mm Single

No. **11-410**
5 mm Single

No. **11-412**
5 mm Dual

CABLE TIES & MOUNTS

Quick Release Cable Tie

• Quick release cable tie allows multiple use capabilities.

Part No. 25/pkg.	Part No. 100/pkg.	Length	Width	Max. Bundle Dia	Min. Tensile Strength
13-254	13-104	4”	.14”	1”	40 lbs.
13-256	13-106	6”	.19”	1-1/2”	50 lbs.
13-258	13-108	7”	.19”	2-1/8”	50 lbs.
13-259	13-109	8”	.19”	2-3/4”	50 lbs.
13-2511	13-1011	11”	.19”	3-1/2”	50 lbs.
13-2514	13-1014	14-1/2”	.19”	4”	50 lbs.
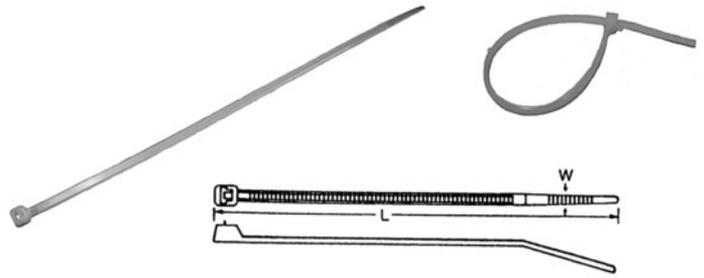
Push Mount Tie

• Material: UL approved NYLON 6/6, 94V-2
• Press cable tie into a pre-drilled hole of 3/16” for simple and secure one-piece harness tying and mounting.
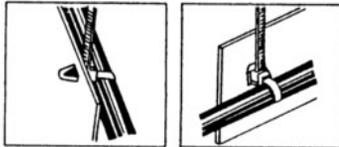
Part No. 25/pkg.	Part No. 100/pkg.	Length	Width	Max. Bundle Dia.	Min. Tensile Strength
13-105	13-1005	6-1/8”	.14”	1-9/16”	40 lbs.
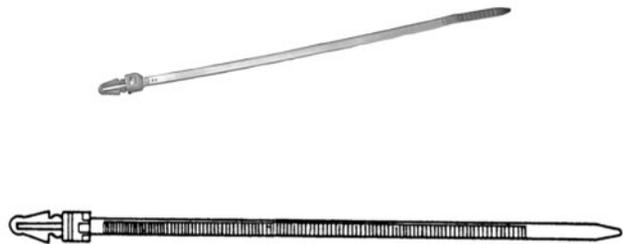
Saddle Type Tie Mounts

• Material: UL approved NYLON 6/6, 94V-2
• Saddle design provides maximum stability to bundles of wire.
• Attach to surface with a screw and secure wire bundles with cable ties.

Part No. 25/pkg.	Part No. 100/pkg.	H	L	W	T	B
13-125	13-100	.197”	.75”	.37”	.197”	.134”
13-225	13-200	.275”	.60”	.40”	.197”	.118”
13-325	13-300	.354”	.90”	.63”	.354”	.236”

No. 13-225
No. 13-200
No. 13-325
No. 13-300

No. 13-125
No. 13-100

Self-Adhesive Tie Mount
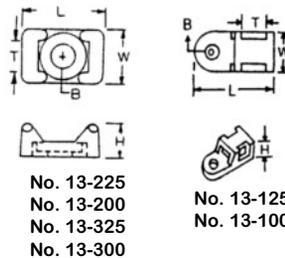
• Material: UL approved Nylon 6/6, 94V-2 (Back with adhesive tape)
• SELF-ADHESIVE TIE MOUNT is designed to support light weight wire bundles when properly applied on any clean, smooth, grease-free surface. For heavy support, mounting hole is supplied for screws
• To apply, simply peel off backing paper and apply mount to surface. Now cable ties can be inserted to secure wire bundles

Part No. 25/pkg.	Part No. 100/pkg.	L	W	H Without Tape	Mounting Hole	T
13-1025	13-1000	.50”	.50”	.125”	-	.12”
13-1125	13-1100	.75”	.75”	.153”	.126”	.17”
13-1225	13-1200	.83”	.83”	.137”	-	.18”
13-1325	13-1300	1.10”	1.10”	.157”	.197”	.19”

No. 13-1025 / No. 13-1000
No. 13-1125 / No. 13-1100
No. 13-1225 / No. 13-1200
No. 13-1325 / No. 13-1300
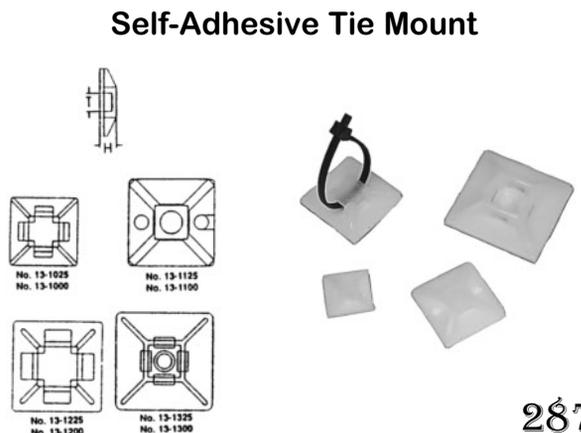
CABLE TIES & PCB MOUNTS

CIRCUIT BOARD SUPPORT

Part #	A
13-316	3/16"
13-180	1/8"
13-380	3/8"
13-120	1/2"
13-580	5/8"
13-340	3/4"
13-780	7/8"
13-110	1"
13-118	1-1/8"
13-138	1-3/8"

Material: UL approved NYLON 6/6, 94v-2
P.C.B. support can be removed easily for replacement

To fit 5/32" Hole
(.224")
(.07")
(.106")
(.217")
To fit 3/16" Hole
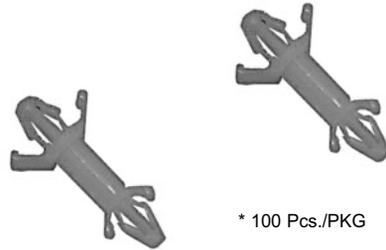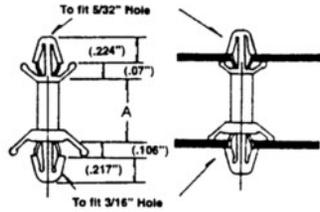
* 100 Pcs./PKG

CABLE TIE

• Material: Philmore standard cable ties made from U.L. approved nylon 6/6.
  Normal service temperature range: - 40° C to 85° C.
  Flammability rating: UL 94V-2

• Weather resistant nylon: Carbonate "A" was added for greater resistance to ultra
  violet light in outdoor application.
• Heat stabilized nylon: Service temperature 135° C
• Specification: Made to comply with mil-spec drawing No. MS-3367 tensile
  strength meets or exceeds MIL-S-23190D Standards.

Part No. Natural	Black UV Resistant	Length	Width	Max. Bundle Dia	Min. Tensile Strength
13-2004	13-3004	4"	.10"	31/32"	18 lbs.
13-2006	13-3006	6"	.14"	1-1/2"	50 lbs.
13-2008	13-3008	8"	.12"	2-5/32"	40 lbs.
13-2011	13-3011	11"	.18"	3-5/32"	50 lbs.
13-2145	13-3145	14-1/2"	.18"	4"	50 lbs.

*100 Pcs./Pkg.

W
L
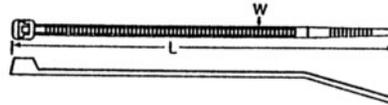
• Philmore cable ties are also available in 1000 pcs. Pack. Please add
  suffix letter "M" to the part number. **Example: No. 13-2004 - 100 pcs/pkg.**
  No. 13-2004M - 1000 pcs/pkg.

P.C.B Track

• Material: UL approved NYLON 6/6, 94V-2
• Mounted with No. 4 flat-head screws.

Part No.	A	B	C	D	E	F	G
13-350	3.50"	3.03"	.075"	.177"	.374"	.059"	.118"
13-351*	3.50"	3.03"	.075"	.177"	.374"	.059"	.118"
13-468	4.68"	4.72"	.075"	.177"	.374"	.059"	.118"
13-550	5.50"	4.53"	.075"	.177"	.374"	.059"	.118"
13-630	6.30"	5.30"	.075"	.177"	.374"	.059"	.118"

*No. 13-351 with snap in design.
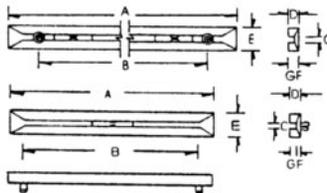
*25 Pcs./Pkg.

Snap Rivet

• Material: UL approved NYLON 6/6, 94V-2
• Rivet post pressure expands legs for fast and permanent fastening.

Part No.	A	B	C
13-355	.12"	.22"	.10"-.16"
13-365	.12"	.26"	.14"-.20"
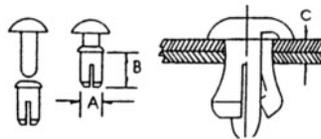
*100 Pcs./Pkg.

Push Mount Tie

• Material: UL approved NYLON 6/6, 94V-2
• Drill hole in panel to affix tie mount. Insert tie into mount for bundling cables.

Part No. 25/pkg.	100/pkg.	T	Hole Size
13-425	13-400	.15"	.15"
13-825	13-800	.30"	.30"

T
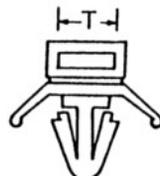
3U / 6U & EUROCARD / VME PROTOBOARDS

In association with BPS of Canada, Philmore has expanded the prototyping products group with a series of Eurocard style protoboards. Time Saving designs employing etched and drilled FR-4 fiberglass boards with patterns that accommodate just about any normal component. SMD types are available as well as style for leaded components.

The series is precision made, carefully etched and drilled; pads are on 0.10" centers. Solder masks have been applied wherever they are appropriate to reduce solder-bleeding or wicking errors. The entire series is appropriate for analog, digital, or R.F. circuits. Pads for popular, standard multi-pin connectors are included on most of the series.

BusBoard-3U

A standard height (3U) Eurocard/VME size; a zigzag circuit pattern keeps the opposite sides of IC's and connectors properly aligned. This is a FR-4 fiberglass board, solder masked to prevent solder bridges and speed assembly. Holes are drilled on 0.1" center and are .037" diameter to accommodate all IC's, square post headers etc..Total holes are 38 by 62 holes in 76 separate copper traces. Board size is 3.9" wide, 6.3" long and 1/16" thick (100 x 160 x 1.6mm) and a standard, 1 ounce copper is used.
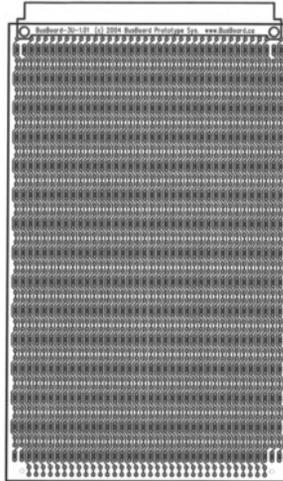
No. 12-300..........BusBoard-3U

PadBoard-3U

A general purpose board with individual pads on 0.10" centers; every fifth pad is square to help with component placement. Holes are drilled .037" to accommodate IC's, square posts and most components. The board accepts a 96 pin DIN-41612 VME connector for backplane or board-to-board connections; holes are provided for latches. The board material is etched FR-4 glass-epoxy with one ounce copper on both sides, tinned for easier soldering. The board size is 3.9" X 6.3 x 1/16" (100 x 160 x 1.6mm). Total holes are 38 rows by 62 columns.
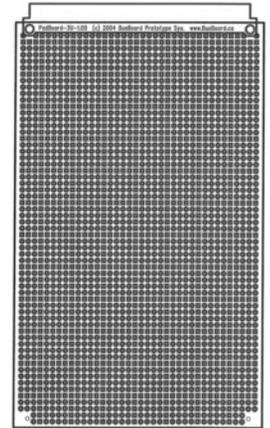
No. 12-308..........PadBoard 3U

BusBoard-3U w/connectors

A busboard much like the 3U but including footprints that will accommodate DB-9, sub-mini and handset jacks, BNC jacks, DB-25 jack, as well as two telephone jacks and a coaxial power jack. There is also a place for an SPDT switch. A standard 3U height, with a a zigzag circuit pattern that will accommodate IC's and all standard components. The one ounce copper is precision etched and a solder mask has been added to prevent soldering bridges. There are 76 separate copper traces with .037" diameter holes drilled on 0.10"

Board size 3.9" x 6.3" x 1/16"
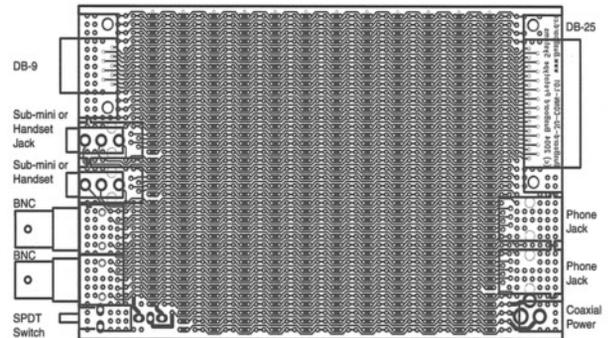
No. 12-303...............BusBoard 3U with connector pads.

PowerBoard-3U

The PowerBoard has inter - leaved power and ground rails to permit easier distribution of power for your circuit. This general purpose strip board has holes in patterns of six each, arranged for easy insertion of IC's, square post headers and components. Holes are, of course, spaced on 0.10" center and each is .037" in diameter. The board accepts a 96 pin DIN-41612 VME connector for backplane or board-to-board connections; holes are provided for latches.

The board material is etched FR-4 glass-epoxy with one ounce copper on both sides, tinned for easier soldering. The board size is 3.9" X 6.3 x 1/16" (100 x 160 x 1.6mm). Total holes are 38 rows by 62 columns.
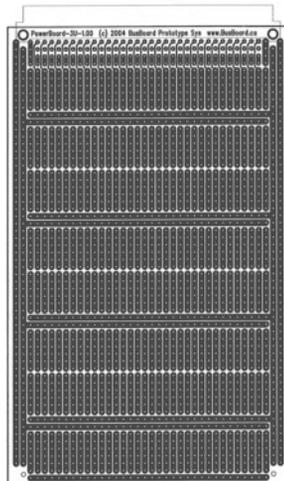
No. 12-311..........PowerBoard 3U

Proto Board-3U

General purpose prototyping board with holes in copper patterns in groups of six. IC's and other DIP components may be placed across gaps and there are plenty of holes for interconnections. Holes are, of course, spaced on 0.10" center and each is .037" in diameter.

The board accepts a 96 pin DIN-41612 VME connector for backplane or board-to-board connections; holes are provided for latches.

The board material is etched FR-4 glass-epoxy with one ounce copper on one side, tinned for better soldering. The board size is 3.9" X 6.3 x 1/16" (100 x 160 x 1.6mm). Total holes are 38 rows by 62 columns.
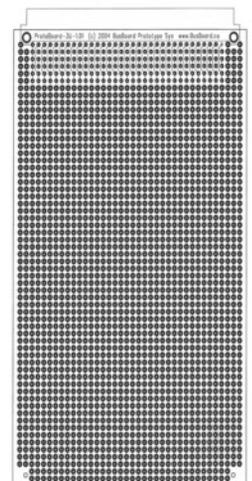
No. 12-313 ProtoBoard 3U

3U / 6U & EUROCARD / VME PROTOBOARDS

Protoboard-3U w/connectors

RoHS COMPLIANT

Pads are connected in groups of six, bridging these groups with dual in-line components can save a lot of assembly time. The board has footprints for standard sized DB-9 and DB-25 connectors as well as BNC's, phone jacks and a coaxial power connector. Pads are also provided to accommodate a SPDT switch. Holes are, of course, spaced on 0.10" center and each is .037" in diameter. The board material is etched FR-4 glass-epoxy with one ounce copper on both sides, tinned for easier soldering. The board size is 3.9" X 6.3 x 1/16" (100 x 160 x x 1.6mm). Total holes are 38 rows by 62 columns.
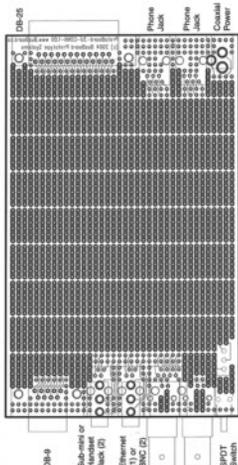
No. 12-315..........Proto Board 3U

StripBoard-3U

RoHS COMPLIANT

The StripBoard layout is very popular and found in many different (often cheap) materials. This one is much superior as the FR-4 material does not warp or suck up moisture from the environment. It can be recommended for R.F. circuits, digital etc.
 Copper thickness is a standard one ounce single sided. Holes are on 0.10" center and are .037" in diameter (for IC's etc.). The strips can be "broken" with your model knife to create separate areas, mount IC's, connectors etc. . The board is a standard 3U Eurocard size at 3.9" X 6.3 x 1/16" (100 x 160 1.6mm). Total holes are 38 strips, each with 62 holes.
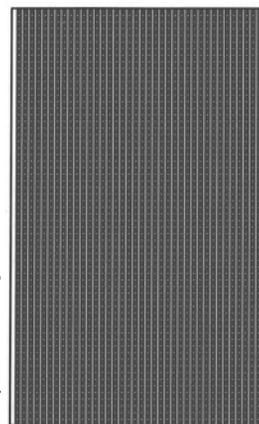
No. 12-333..........StripBoard 3U

SMT-ProtoBoard-3U
SMT ProtoBoard 3u thin

RoHS COMPLIANT

Note that this SMT product is available in a standard 1/16" thickness as well as in the 1/32" thickness that is needed in some applications. See below for part numbers.
Surface mount pads are spaced for 0805 and 1206 components. Three SOIC-32 footprints can handle IC's with up to 32 contacts. A solid ground plane on the backside can be reached via drilled holes for connection to the ground plane. The holes are not plated through, allowing the user to choose to make a connection ("via") with a jumper wire or not. A backplane makes this an excellent board for R.F. circuits as well as digital and analog. There are a dozen SOT23 footprints and the rectangular pads will accommodate SOT223 and as well as SOT23 components. As the rectangular pads are spaced on 1/10" centers, leaded components such as DIP IC's will fit well. Mounting holes (4) are in the corners. The board material is etched FR-4 glass-epoxy with one ounce copper on both sides, tinned for easier soldering. The board size is 3.9" X 6.3 x 1/16" (100 x 160 x 1.6mm).

No. 12-320...........SMT Protoboard 3U 1/16" board thickness
No. 12-323...........SMT Protoboard 3U thin 1/32" board thickness

Board Layout (component side)
SOIC-32 footprints routed to 32 pads.
SOT-23 footprints routed to four pads.
SMT pads are spaced for 0805 and 1206 SMT components.
Through-hole area for DIP ICs and headers.
Every second SMT pad has an unplated hole for easy connection to the ground plane. Just insert a wire and solder.
Two power rails.
SMT pads have 0.1" spacing. DIP ICs can be soldered to pads.
Four mounting holes.

SMTpads-3U thin

Good as a general purpose board for Surface Mount Technology circuits, the board has 42 mil copper squares on 50 mil centers. SMT components of various sizes and pitch (contacts per inch) may be mounted easily (see illustration). SOIC components, which are a 50 mil pitch and DIP components, which are a 100 mil pitch, can all be used on this board.
A solid ground plane on the reverse side of the board will provide low noise for amplifiers, solid for RF circuits etc. Both sides are one ounce copper. There are .031" holes through to the backside every four pads; holes are not plated through so that the user has the option of creating a via with a jumper wire, or not.
A Flux coating keeps the board prepared for soldering and prevents copper from oxidizing.
The board is a standard 3U Eurocard size at 3.9" X 6.3 x 1/32" (100 x 160 x 1.6mm).

No. 12-325..........SMT pads Board 3U

RoHS COMPLIANT
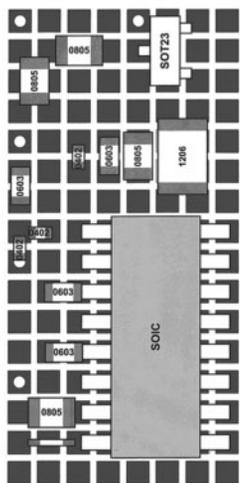
StripBoard-6U

Traces run the full length of the board. The board is single sided, and copper is tinned. Holes are on 0.10" center and are .037" (.94mm) in diameter (for IC's etc.). The strips can be "broken" with your model knife to create separate areas, mount IC's, connectors etc. The copper thickness is a standard one ounce.
The board accepts two standard 64-pin or 96 pin DIN-41612 connectors for backplane applications or expansion. The connector footprint gives access to connector rows 1 and 3; row 2 pads are unconnected.
The board is a standard, double-height 6U Eurocard size at 9.2 X 6.3 x 1/16" (233.4 x 160 x 1.6mm). Total holes are in 180 traces, 90 x 62 holes.

No. 12-335..........StripBoard 6U

RoHS COMPLIANT

In association with BPS of Canada, Philmore brings to you a new series of Printed Circuit Prototyping boards that have been designed by circuit builders. There are two major groups: 3U and 6U boards that can be used in any number of applications where a Eurocard/VME design will simplify integrating your circuit with power supplies as well as with other systems. The next NEW series of Protoboards have been designed to fit into standard (popular styles) of Hammond boxes. The new series of boards are now available either separately OR you can pick up the board and the Hammond box all in one package. All ProtoBox boards will have holes on 0.10" centers and .042" diameter.

All products in this series are manufactured Lead-Free and compliant with RoHS.

ProtoBox Kits with board and Hammond box.

A series of Protoboards that include a well made box from Hammond, one of our industry's leading box makers. If you need to replace the board due to circuit changes, each of the ProtoBox circuit boards included in these kits is also sold separately. Note: please be sure to use the Philmore part numbers when ordering, all of which begin with the 12– prefix (example 12-200 etc.) We do show Hammond numbers on packages for your convenience, but our systems will recognize only the Philmore numbers.

2.3" X 2.3" ProtoBox Kit

The box is the Hammond no. 1593K and the PC board is 2.3 X 2.3 inches. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Board mounts with two 4-40 screws, included. Box; ABS plastic black.

Box size: 3.6" x 2.6" x 1.1 inches.

ProtoBox (includes Box & board) **No. 12-200**
Protoboard only………………….. **No. 12-100**
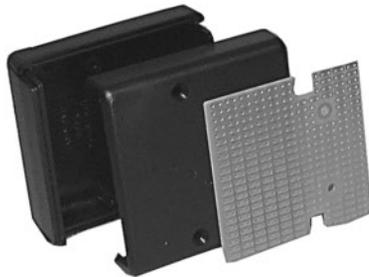
3.3" X 2.3" ProtoBox Kit

The box is the Hammond no. 1593L and the PC board is 3.3 X 2.3 inches. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Board mounts with four 4-40 screws, included.   Box: black ABS plastic.
Box size:3.6 x 2.6 x 1.1 inches.

ProtoBox (include Box & board) **No. 12-203**
Protoboard only………………….. **No. 12-103**

1.9" X 2.4" ProtoBox Kit

The box is the Hammond no. 1593P (black) and the PC board is 1.9 x 2.4inches. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Board mounts with four 4-40 screws, included. Box: ABS plastic color black,

Box size: 3.6 x 2.6 x 1.1 inches

ProtoBox (include Box & board) **No. 12-206**
Protoboard only………………….. **No. 12-106**

2.4" X 2.7" ProtoBox Kit

The box is the Hammond no. 1593Q (black) and the PC board is 2.4 x 2.7 inches. A "battery door" allows access for one or two AA, up to 4 AAA or a Nine volt battery. (user must supply holder). Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Board mounts with four 4-40 screws, included. Box color black, ABS plastic.
Box size: 4.4 x 2.6 x 1.1 inches.

ProtoBox (include Box & board) **No. 12-209**
Protoboard only………………… **No. 12-109**

PROTOBOARDS

In association with BPS of Canada, Philmore brings to you a new series of Printed Circuit Prototyping boards that have been designed by circuit builders. There are two major groups: 3U and 6U boards that can be used in any number of applications where a Eurocard/VME design will simplify integrating your circuit with power supplies as well as with other systems. The next NEW series of Protoboards have been designed to fit into standard (popular styles) of Hammond boxes. The new series of boards are now available either separately OR you can pick up the board and the Hammond box all in one package. All ProtoBox boards will have holes on 0.10" centers and .042" diameter.

All products in this series are manufactured Lead-Free and compliant with RoHS.

ProtoBox Kits with board and Hammond box.

A series of Protoboards that include a well made box from Hammond, one of our industry's leading box makers. If you need to replace the board due to circuit changes, each of the ProtoBox circuit boards included in these kits is also sold separately. Note: please be sure to use the Philmore part numbers when ordering, all of which begin with the 12– prefix (example (12-200 etc.) We do show Hammond numbers on packages for your convenience, but our systems will recognize only the Philmore numbers.

2.8" X 4.3" ProtoBox Kit
Hand-held case design

Designed for hand-held applications, the box is the Hammond no. 1553B (black) and the PC board is 2.8 x 4.3 inches. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Holes are spaced on 0.10" centers. Board mounts with four 4-40 screws, included.   Box color black, ABS plastic.
Box size: 4.6 x 3.1 x 1.0 inches.

ProtoBox (includes Box & board) **No. 12-212**
Protoboard only…………………. **No. 12-102**

2.9" X 5.5" ProtoBox Kit
Hand-held case, battery door

The box is the Hammond no.1553DB (black) and the PC board is 2.9 x 5.5 inches. The box has a battery door that will permit the use of two AA cells or a 9V transistor battery. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components. Board mounts with six 4-40 screws, included. Box color black, ABS plastic.
Box size is 4.4 x 2.6 x 1.1 inches.

ProtoBox (includes Box & board) **No. 12-215**
Protoboard only…………………. **No. 12-115**

4.05 X 2.05" ProtoBox Kit
with Shielded Metal Box

The box is the Hammond no.1590B and the PC board is 4.05 x 2.05 inches. The box is die cast aluminum and a natural aluminum color. Lap joint construction and IP54 dust/water protection provide an enclosure that is EMI/RFI tight. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components; holes are on .10" centers. Board mounts with two 4-40 screws, included.
Box size: 4.39 x 2.34 x 1.06 inches.

ProtoBox (includes Box & board) **No. 12-218**
Protoboard only…………………. **No. 12-118**

4.25 X 3.20" ProtoBox Kit
with Shielded Metal Box

The box is the Hammond no.1590BB and the PC board is 4.25 x 3.20 inches. The box is die cast aluminum and a natural aluminum color. Lap joint construction and IP54 dust/water protection provide an enclosure that is EMI/RFI tight. Board material: FR-4 with one ounce copper. Holes are paired and .042" in diameter to accept leads from common components; holes are on .10" centers. Board mounts with four 4-40 screws, included.
Box size: 4.67 x 3.68 x 1.18 inches.

ProtoBox (include. Box & board) **No. 12-221**
Protoboard only…………………. **No. 12-121**
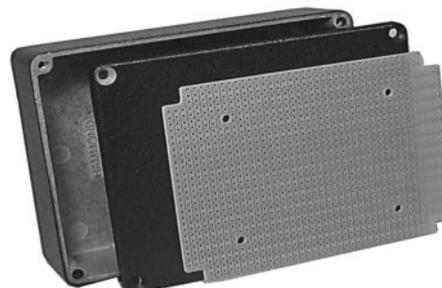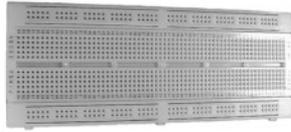
No. RH21

No. RH53
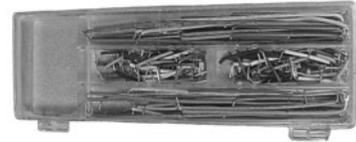
No. SWS02

No. RH32

No. RH21B

No. RH74

For prototype design, testing and modification of circuits. These breadboards will accept the leads of nearly any electronic components (up to 0.032") in the 0.1" x 0.1" grid of solderless tie points, dual in-line packages, or DIP's such as I.C.'s plug in for very fast assembly and modification of circuitry. Solid wire jumpers plug in for interconnections.

Contacts are a durable alloy with nickel plating;body is made of ABS polymer. Breadboards have indexing numerals on each row and column to speed assembly and eliminate errors. Ideal for the educator and in the designers lab also.

Part No.	Length	Width	Height	Tie Points	Busses of 5	Busses of 25	14 Pin I.C. Count
RH21	6.77"	2.56"	.394"	840	128	8	9
RH21B	7.68"	4.80"	.866"	840	128	8	9
RH32	7.60"	6.77"	.866"	1580	256	12	18
RH53	7.56"	10.0"	.866"	2420	384	20	27
RH74	9.72"	10.75"	.866"	3260	512	28	36

No. SWS02 - Breadboarding Wire Kit
Containing several different colors of insulated solid 22 AWG hook-up wire. Prestripped lengths for use between tiepoints, ten pieces of each color supplied in storage box.

Cadmium Sulfide PHOTO CELLS

The cadmium sulfide photo cell has a high resistance in darkness but resistance is quite low when in light of 100 foot-candles or more. A typical use is for switching on lighting after dark; also used in alarm systems, exposure meters, flame detectors, opto-couplers etc.. All three cells have a dark resistance of 5,000 ohms and 300 ohms in bright light (of 100 cds. or more).

Part No.	O.D.	Max. Power Dissipation	Qty. Per Pkg.
10805	5mm	125 mW	3
10807	7mm	150 mW	3
10810	10mm	400 mW	2
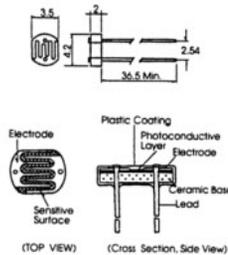
Features:
- **Epoxy - Coated Low Profile Cell**
- **High reliable power dissipation**
- **Compact dimensions**

Applications:
- **Auto - Focus Slide Projects**
- **Exposure Meters**
- **Contrast Control in TV sets**
- **Dimmer Switches**
- **Dimmers for LED and LCD Displays**
- **Flame Detectors in Oil Burners**
- **Street Lamp Switching**
- **Electronic Toys**
- **OPTO - Couplers**
- **Electronic Organs**

Electrical Characteristics at Ta=25C

ELECTRONIC XENON TUBE

- U-Shaped for high FPS timing and signal light
- Ideal for strobe light, photoflash, etc.
- Min. Anode Voltage - 200V
- Max. Anode Voltage - 400V
- Use with No. 486 Trigger Coil

No. 485

TRIGGER COIL

- 4 KV
- Use with No. 485 Xenon Flash Tube

No. 486

TELEGRAPHERS (CW code) KEY.

An old standard in a very economical design. Travel distance and tension are both adjustable. The key should be attached to counter top, a wood platform etc. Use with code practice oscillators, Ham transmitters.

Code Key **No. B53**

PROTOBOARDS

FR - 4 FIBERGLASS AND PHENOLIC PROTOBOARDS

Datak Protoboards, Available in fiberglass for R.F. and digital circuits. In addition to use at high frequencies, fiberglass provides better characteristics in higher temperature environments, those with exposure to humidity. Choose from phenolic for economy or the new fiberglass substrate.
Datak Protoboards have copper one side, and are printed on the (opposite) component side to aid in keeping track of where copper side traces are located. Holes accept standard component leads, including IC's, and are spaced on standard 0.10" centers. Board material is standard 1/16" thickness for both materials. FR-4 material dielectric constant is 4.7 at 1MHz and 4.25 at 1 GHz. typical.

Small General Purpose Protoboard. Size 1.8" wide by 3.6" long. The board is two smaller, identical boards and scored for easy break-apart when only a very small board is needed. This is a simple board with a matrix of (single) holes on 1/10" centers, copper one side.
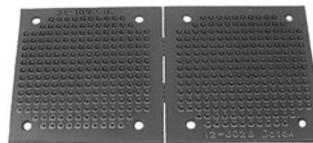
Small general purpose board in Phenolic.......Datak no. 12-602
Small general purpose board in Fiberglass......Datak no. 12-603

Small IC Protoboard. Size 1.8" wide by 3.6" long. The board accommodates standard DIP (dual inline) IC's. Two smaller, identical boards and scored for easy break-apart when only a very small board is needed. Hole spacing on 1/10" centers, copper one side.
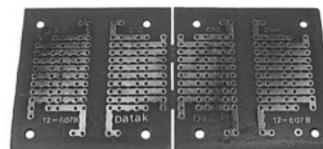
IC Protoboard in Phenolic.......Datak no. 12-607
IC Protoboard in Fiberglass......Datak no. 12-608

Small Protoboard. Size 1.7" wide by 2.9" long. Features drilled copper pads connected via traces in groups of two and three. A general purpose small board that can accommodate transistors and common passive components well.
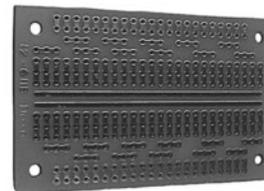
Protoboard in Phenolic.......Datak no. 12-611
Protoboard in Fiberglass......Datak no. 12-612

Medium size Protoboard. Size 5.16" x 1.90" and large enough to accommodate circuits containing several IC's. Forty-five rows of holes are set up so that IC's can straddle the center of the board and each IC pin has five pads for the connection of the IC pin to other components.

Medium Size Protoboard in Phenolic...................Datak no.12-617
Medium Size Protoboard in Fiberglass.................Datak no. 12-622

Large Protoboard 4.30" x 5.50" a board with over 1900 pad/holes and large enough to accommodate some large circuits. The component side pads are imprinted with ink so that the user will know where the copper is on the solder side. Holes are sized to accommodate standard, leaded components on 1/10" centers; bright copper accepts solder readily.

Large Protoboard in Phenolic.............Datak no. 12-600
Large Protoboard in Fiberglass..........Datak no. 12-601

Strip PROTOBOARDS

Copper strips on one side, 0.40" diameter holes are on 0.10" centers to accept common component leads. The strips run full length but user may break them up using an Exacto knife. These are handy for prototyping and may be cut with sheet metal sheer, hack saw etc. to make smaller boards. The board is xxp phenolic material .

No. 12-618...size 3 15/16" wide X 6 5/16" length

No. 12-619...size 3 15/16" wide X 9 13/16" length

PROTO TYPE & PRINTED CIRCUIT BOARDS

PREMIER PRINTED CIRCUIT BOARDS
POSITIVE ACTING, PRESENSITIZED
PC BOARDS USING FR - 4 FIBERGLASS
SUBSTRATE

These new sizes are in demand in many specialized applications. The thin 1/32" boards are light weight and fit edge connectors designed for that board thickness. And the 2oz. boards have exactly twice the standard thickness of copper; a requirement in applications where higher current will be used or when higher conductivity is imperative.

Like the standard series of 1/16" thickness, 1oz. Premier Printed Circuit boards, the new numbers may be exposed with any ordinary 100 watt lightbulb. Use with either Datak positive acting developer Nos. 12-402 or 12-404.
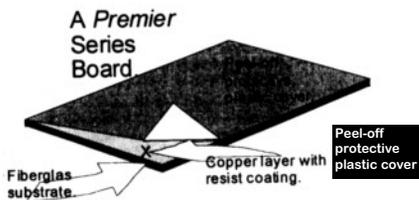
Board Size (Inches	Copper Wt.	Copper Sides	Thickness	Premier Number
2 x 4	1 oz.	1	1/16"	14-024
3 x 4	1 oz.	1	1/16"	14-034
3 x 4	1 oz.	2	1/16"	14-234
3 x 6	1 oz.	1	1/16"	14-036
4 x 6	1 oz.	1	1/16"	14-046
4 x 6	1 oz.	1	1/32"	14-446
4 x 6	1 oz.	2	1/32"	14-546
6 x6	1 oz.	1	1/16"	14-066
6 x 6	1 oz.	2	1/16"	14-266
6 x 9	1 oz.	1	1/16"	14-069
6 x 9	1 oz.	2	1/16"	14-269
6 x 9	1 oz.	1	1/32"	14-469
6 x 9	1 oz.	2	1/32"	14-569
6 x 12	2 oz.	1	1/16"	14-662
6 x 12	2 oz.	2	1/16"	14-762
7 x 10	1 oz.	1	1/16"	14-071
12 x 12	1 oz.	1	1/16"	14-112
12 x 12	1 oz.	2	1/16"	14-312

A Premier Series Board

Fiberglas substrate.

Copper layer with resist coating.

Peel-off protective plastic cover

NOTE: For complete printed circuit board accessories see pages 268 - 275.

COPPER CLAD BOARDS
Standard copper clad boards are made of an FR4 substrate with 1 oz. (.0014") copper surface.

THIN COPPER CLAD BOARDS

Copper One Side:
(1/32" Thickness)   Size

No.PCB71   6" x 9"

Copper Both Side:
(1/32" Thickness)   Size

No.PCB79   6" x 9"

Copper One Side:
(1/16" Thickness)   Size   Size
No.PCB24   2" x 4"   No. PCB69   6" x 9"
No.PCB35   3" x 5"   No. PCB810   8" x 10"
No.PCB46   4" x 6"   No.PCB1212   12" x 12"
No. ER11 PC two board set, one 5" x 6" and one 3" x 4.5"

Copper Both Sides:
(1/16" Thickness)   Size
No.PCB266   6" x 6"
No.PCB2810   8" x 10"

SMD SOLDERING PRACTICE BOARD for training rework personnel
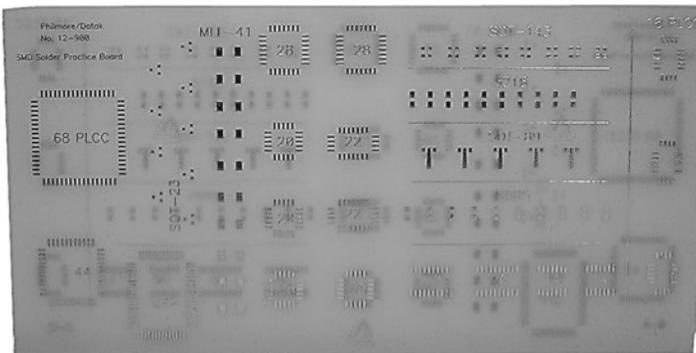
No. 12-900 - Double Sided SMD Soldering Training Board

Training employees to remove/replace Surface Mount Components is expensive if you have to draw from good inventory. The Datak No. 12-900 practice board provides a range of component pads intended to be used by new employees until they are competent with your desoldering/soldering equipment. Components themselves are not supplied and it is suggested that you use defectives from your inventory or the lowest cost components available from surplus dealers or distributors.
Both sides of the PC board are identical and each side contains the following component footprints: One each PLCC 68 pin and 44 pin, one each 68 pin PQFP Bumper pack, eight SOT-23, two PLCC 28, four PLCC20, one PLCC24, three PLCC18, two SOIC20, two SOIC14 and an assortment of SOT-143, 3216, SOT-89 and 0805 patterns. Employees can learn the job well even if your exact patterns are not on this training board.

PC BOARD MAKING CHEMICALS, ACCESSORIES

NEGATIVE ACTING LIQUID PHOTO RESIST

A liquid, spray-on coating in its own spray bottle. When a coated board is exposed to UV light, it is then developed in the ER-8 liquid developer. A remaining etch resist will protect the copper from an etchant bath, thus producing your circuit. Negative acting. Coats approx. 1700 sq. inches. May be flow coated or brushed.

4 oz. Bottle (Includes Sprayer)-No. ER71

PC BOARD ETCHING SOLUTION
(LIQUID FERRIC CHLORIDE)

This Ferric Chloride is one of the most popular and safest etching materials for copper clad boards available. A quart of etching solution will etch approximately 960 square inches of PC board.
Caution: use only with plastic or glass trays

12-2038 Quart (32 oz)

12-2039 Gallon (128 oz)

TINNIT ™   TIN PLATE

Tinnit ™ will plate a copper clad board with a bright tin plate approx. .0004" thick. Enhances solderability, resists oxidation. Also use on card edge contact fingers. Supplied as a dry concentrate; just add water. One pint plates up to 600 sq. inches of copper. May be used to plate some other metals such as brass, bronze, iron; anything more active than tin.
Plating is complete in about 10 minutes in a fresh solution.
Tinnit ™ is supplied as a dry mixture with indefinite shelf life.
When mixed with water, the solution has approximately a 2 month life.
TINNIT 1 Pint Size - No. ER18
TINNIT 1/2 Gallon Size - No. ER181

TINNIT   ™ KIT

This handy kit contains package of No. ER-18 Tinnit (sufficient to make 1 pint and plating 600 sq. in. of copper), plastic tray (8" x 6" x 2"), 16 oz. plastic bottle for storing tinnit between uses and tool for handling P.C. board during tinning process.

No.12-800

NEGATIVE RESIST DEVELOPER

This developer will develop the ER-71 Negative Acting Resist; resist areas not hardened via UV light are dissolved away. UV hardened areas remain to resist the etchant.

16 oz. Can Developer-No. ER8

DRY CONCENTRATE ETCHANT (FERRIC CHLORIDE)

Ferric Chloride is the best choice for etching copper PC boards. Datak supplies FeCl in a dry, powder form and the user must add it to water to make the etching solutions. The 1/4 lb. package produces 1 pint which will etch approx. 200 sq. inches of standard copper board.

1/4 lb. FeCl etchant powder-No. ER3
1 lb. FeCl etchant powder-No. ER21
2 lb. FeCl etchant powder-No. ER22

POWER ETCH PUMP

The etch pump and distributor tubing may be used to accelerate etching and free you from some of the constant agitating of the etch solution. Bubbles provide both agitation and also some oxygen which inhances the process

Etch Pump Set - No. ER12

DATAK SYSTEM INSTRUCTION MANUAL

A manual that gives detailed instructions for most of the Datak PC board making products including: NEG-FAST film, Negative Photo Resist, Presensitized PC Boards, Tinnit™ Tin Plating, Etching. A complete guide for PC board making via DATAK products.

No. 12-760A

PC BOARD MAKING CHEMICALS, ACCESSORIES

REPLACEMENT HEATER

Replacement heater for No. 12-700 etch tank system.

No.12-702

Also DATAK offers air pump as supplied with etch tank system as Part No. ER12.

PC DEVELOPING & ETCHING TRAYS

These are lightweight, tough, stain resistant developing trays. They are designed for use with printed circuit board developing solution such as Datak No. 12-402 & 12-404 and etching solution such as 12-2038, 12-2039 & ER-3, ER-21 & ER-22. We offer several sizes for your convenience.

12-515 8" x 6"

12-570 5" x 7"

12-810 8" x 10"

12-1114 11" x 14"

ALUMINUM TRAYS

8" x 8" x 1-3/4" aluminum trays for use with negative method developing chemicals.
Pkg. of 2
No.12-520

EXPOSURE BULB

UV source for Datak Neg-Fast film, Presensitized PC Boards, and Negative Acting Photo Resist

No.ER2000

HI-SPEED TOOL STEEL DRILL BITS

No.12-564 - #52 (.064" dia.) pkg 2
No.12-552 - #55 (.052" dia.) pkg 2
No.12-540 - #60 (.040" dia.) pkg 2
No.12-535 - #65 (.035" dia.) pkg 2
No.12-532 - #67 (.032" dia.) pkg 2
No.12-528 - #70 (.028" dia.) pkg 2

DATAK offers 6 popular size of hi-speed bits for drilling PC boards. 2 per pack

No.12-530-contains 1 each dia. .028/.032/.035
No.12-550-contains 1 each dia. .040/.052/.064

Replacement Hose For Nos. ER12 & 12-700
NO. 12-704

POSITIVE TYPE DEVELOPER CONCENTRATE

For developing Philmore precoated PC boards. Developer is mixed 10 parts tap water to 1 part concentrate. Ten fully diluted ounces will develop between 12 and 22 square feet of precoated board (depending upon circuit density). This mild sodium hydroxide solution with additives may be flushed down drain after use.

No. 12-402 - Two ounce concentrate

No. 12-404 - Four ounce bottle concentrate

Neg-Fast® Generation II Film

Allows user to quickly create a negative from their paper or transparent positive artwork. This film is U/V sensitive and should be handled under subdued light; we recommend a yellow 'bug' light of about 25 watts. For exposure, the Datak ER2000 is recommended. For developing, use only Datak No. 12-710. Use Neg-Fast film negatives with ER-71 negative acting Photoresist for quick and easy production of your PC Boards. Complete instructions are enclosed

Neg-Fast film is available in:
Cat No. 12-710 is 4 oz. each of developer and fixer concentrates.
Cat No. 12-720 is a package of six Neg-Fast sheets, 5"x6".
Cat No. 12-730 is a package of two Neg-Fast sheets, 8"x11".
Cat No. 12-740 is a package of four Neg-Fast sheets, 5"x6", and 4 oz. each of developer and fixer

SPECIALTY BOARD-LEVEL PRODUCTS

CIRCUIT-FIX ™ PC BOARD TRACE MAKER

The CIRCUIT-FIX system has been designed to allow you to cut accurate, burr-free copper foil traces for PC boards for the purpose of adding to or repairing a circuit board. CIRCUIT-FIX is a handy system whether for prototype modifications or for circuit repairs.

The system centers on a spring-loaded clamp and cutting guide that permits excellent trace cutting with a modeling knife. Both the knife and a sheet of self adhesive copper trace material are included. Also included is a sheet of (assorted sizes) pure copper self-adhesive donut pads. The cut trace and donuts are burnished to the board and then soldered to component leads.

CIRCUIT-FIX SYSTEM complete - No. CF1
Copper Donuts refill (308 pcs. assorted) - No. CF2
Copper Foil refill (2 sheets, 3.25" x 10") - No. CF3

(Note: Copper donuts and foil are 1 oz. copper,.0016" thickness. The copper is passivated to retard corrosion and permit easy soldering.)

CF1

CF3

CF2
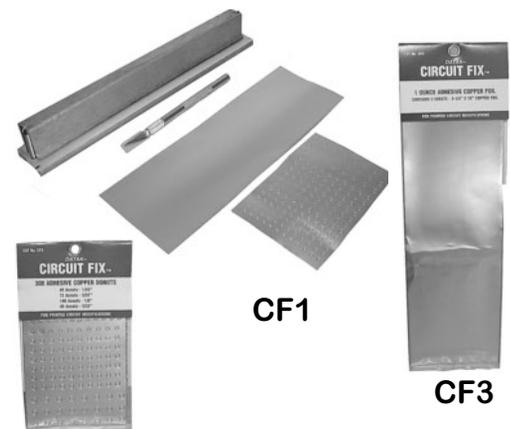
PROTECTIVE COATINGS & PCB ACCESSORIES

All dry transfers have limited resistance to abrasion and handling; they should be given a protective coating. A great deal of development has gone into creating Datak's protective coatings, which we believe to be the best that you can use on any brand of transfers.

DATAKOAT ™ for Hard Surfaces

Protects dry transfers with a tough, clear, weatherproof shield. Water clear and will not yellow with age.
RESISTANCE: unaffected by methanol, ethanol, isopropanol, hexane, naptha and mineral spirits. Unaffected by most lubricating oils and hydraulic fluids. But soluble in; Freon, methylene chloride, butanol, higher alcohols, acetone, ketones, toluene, xylene and glycol ethers.
Supplied in a brush-on package for local application to dry transfers. The dried brush-on leaves a shiny coating;

DATAKOAT brush-on liquid w/thinner (1 oz.) - No. 04176

UN No. 1294

HARDKOAT ™ for Paper or Cardboard...

Clear sprays protect dry transfers on absorbent surfaces such as paper. Abrasion resistance is superior to DATAKOAT, but resistance to weathering and UV is not as good.
One coat over paper will completely protect a dry transfer from scuffing and abrasion. Matte coats give a pleasing frosted effect. Heavy multiple spray coats may have a perceptible yellowish tint, so use DATAKOAT where an absolutely water-clear coat is essential. HARDKOAT films dry tack-free within a few minutes, but require several days to fully harden.
When coating a large area, the gloss spray can produce a pleasing, somewhat shiny appearance. If using on local area, the matte finish tends to be less visible.

HARDKOAT gloss spray (12 oz.) - No. 04170
HARDKOAT matte spray (12 oz.) -No. 04171

PC BOARD MAKING CHEMICALS, ACCESSORIES

COPY CLEAR SHEETS

For use in laser printers and most dry toner copy machines to make film positives. Great for copying circuits from magazine or printing out circuits designed on PC DATAK

Pkg. of 5 sheets (8-1/2" x 11")
No.12-500

1/10" GRID SHEETS

1/10" Grid Sheets printed in non-repro blue. Perfect for circuit layout when used under DATAK clear lay-out film (No. MS-21)

Pkg. of 3 sheets (8-1/2" x 11")
No.12-505

NITRILE DISPOSABLE GLOVE

These gloves are perfect for use when working with chemicals involved with making P.C. boards. Good for use with photo chemicals (negative or positive) and ferric chloride etching solution.

-1 Pair
No.12-510

LAB PC BOARD ETCHING TANK SYSTEM

This handy etching tank system will handle P.C. boards up to 8" x 9" and 2 at a time. The tank holds 1.35 gallons of etching solution. The system is supplied with air pump for etchant agitation, heater for keeping etchant at optimum temperature and convenient board holder. Tank has tight fitting top to prevent evaporation when not in use.
No. 12-700

PLASTIC STORAGE BOTTLES

DATAK offers 2 sizes (8 oz. and 16 oz.) plastic bottles for safe storage of your chemicals.

Pkg. of 2 Bottles
No.12-506- 8 oz.
No.12-516- 16 oz.

BURNISHING TOOLS

A quality stylus burnisher will give you a better, easier job with dry transfers than using a ball point pen. Polished metal tips provide even transfer, even if you use too much pressure.

STANDARD TOOL for characters and lines from .080" up to 1/4". The other end is a 3/8" felt, flexible burnisher.   **No. 04158**

SPOON TIP burnisher tool with tip suitable for transfers 1/4" and larger. Other end a 3/8" felt, flexible burnisher.   **No. 04159**

DRAFTING KNIVES

A standard No.1 modeler's knife, indispensable for drafting and printed circuit design; includes five assorted blades.

No 1. knife and blades-No. 12161
Refill package of five No.11 blades-No. 12182

STAINLESS TWEEZERS

Precision stainless steel tweezers with hand-ground, polished needle points. Handy in all PC, drafting work and also for handling tiny electronics components .

Stainless Steel Tweezer with #3C point-No. 04160
Stainless Steel Tweezer with #5 point- No. 04161

DIRECT ETCH ™ RESIST PENS

These pens are filled with lacquer ink that is resistant against aqueous PC etch solutions. Ideal for photo resist pattern touch-up or for direct-etched boards with tight spaces. Board must be clean for best results.

Fine Point-No. ER15
Extra Fine Point-No. ER25

PRECISION KNIFE SET

This kit is a must for hobbyist or anyone working with PC artwork. Very handy for many uses in the lab.

Precision Knife Set-No. 10250

Kit contains:
- **3 Knife Handle**
- **1 Blade Holder**
- **10 Assorted Blades**
- **Durable Solid Case for easy storing**

DRAFTING FILM for PC ARTWORK
(Carrier Film)

A translucent polyester film for use as a carrier film on which drafting symbols can be placed to make original artwork. One side is a matte finish to accept pencil or ink .

Drafting Film (2 Sheets) 8.5"x11"-No. MS21

CONTACT EXPOSURE FRAMES

A contact frame is needed to hold film and PC Boards during the exposure. Spring loaded, steel frame comes complete with glass, backboard, and complete instruction manual.

9"x12" EXPOSURE FRAME-No. ER10
5"X6" EXPOSURE FRAME-No. ER56

PROJECT CASES

Project Case w/ Battery Compartment

These are low profile hand held cases with such internal features as PCB (printed circuit board) standoffs, slots for PCB, and battery compartment. These cases are ideal for Remote Controls, Audio/Video Transmitters, Security Systems, etc. Made of high impact ABS plastic. Available in Black or Light Gray. Dimensions: 4.37"L X 3.25" W X1.5"H. 9V battery compartment

No. **PB520** Black
No. **PB524** Gray

Project Case w/ Battery Compartment

This convenient sized case has a sloped face area which measures 4" X 2.5" with a precut hole. There is a solid insert for the cutout on which you can mount your own components. The case has internal PCB standoffs, & rubber feet. These cases are ideal for keyboards, controllers, test instruments, etc. They are constructed from High Impact ABS plastic and are available in Black or Gray. Dimensions: 7.44" L x 4.11" W x 1.30" H(at the main part of the case.). 9V battery compartment

No. **PB530** Black
No. **PB534** Gray

Plastic Boxes with Aluminum Lids

Black ABS plastic boxes with aluminum lid. Resists breaking and easy to drill.

Part No.	L	W	H
PB140	3.0"	2.0"	1.0"
PB145	4-5/16"	2-1/4"	3/4"

With internal PC Board slots

Part No.	L	W	H
PB160	4-1/8"	2-1/8"	1-1/2"
PB165	5.0"	1-3/8"	1-1/2"
PB150	4.0"	3.0"	1-1/2"
PB170	5-3/4"	3-5/16"	2.0"
PB155	5-7/8"	4.0"	2-3/16"
PB175	7.0"	4-5/16"	2-3/8"

Plastic Instrument Cases with Plastic Lid

These instrument cases are made of ABS plastic with plastic lid and internal slots to hold PC boards.

Black

Part No.	L	W	H
PB100	3-1/4"	2-1/8"	1-1/4"
PB110	5-1/8"	2-3/4"	1-3/4"
PB120	6-1/4"	3-3/4"	2-1/8"
PB130	7-3/4"	4-3/8"	2-3/8"

Grey

Part No.	L	W	H
PB180	4.0"	2.0"	1-1/2"
PB185	5.0"	2-1/2"	1-1/2"
PB190	5-3/4"	3-5/16"	2.0"
PB195	7.0"	4-5/16"	2-3/8"

Sealed ABS Enclosures

These versatile cases have many uses in the electrical and electronic industries. They are easily drilled or punched, making them ideal as circuit enclosures and junction boxes.

External Dimensions

Part No.	L	W	H
PB404	4.5" x	2.55" x	1.158"
PB411	4.5" x	3.54" x	2.165"
PB413	6.75" x	4.75" x	2.165"

Features
 >High impact ABS material molded in dark grey color.
 >Lids & bases have tongue and groove sealing system with a neoprene gasket.
 > Wall mounting holes and lid fixing screws are outside sealing area thus preventing the ingress of dust and moisture.
 >Designed to meet IP65 of IEC529 and NEMA 4 specifications for dust & moisture.
 >Internal guide slots for mounting PC boards vertically
 >Bosses on internal base allows fixing of PC boards horizontally or for connection of terminals, etc. into threaded brass inserts.
 >Lid fixing screws are M4 stainless steel (non-magnetic) into threaded brass inserts.
 > Operating temperatures: -20⁰-+80⁰C

Sealed Die-Cast Aluminum Enclosures

These enclosures are ideal for housing sensitive electronic assemblies, pneumatic, hydraulic and electrical devices in commercial and industrial environments providing effective shielding of EMI & RFI signals.

External Dimensions

Part No.	L	W	H
PB306	4.5" x	2.55" x	1.180"
PB313	4.5" x	3.54" x	2.165"
PB320	6.75" x	4.75" x	2.165"

Features & Specifications
 >Die-cast aluminum alloy, resistant to atmospheric and marine corrosion. In natural finish
 >Lids incorporates a recessed oil resistant neoprene gasket.
 >Wall mounting holes and lid fixing screws are outside the sealing area thus preventing the ingress of dust & moisture.
 >Designed to meet IP65 of IEC529 and NEMA 4 specifications for dust & moisture.
 >Internal guide slots for mounting PC boards vertically
 >Bosses on internal base allows fixing of PC boards horizontally or for connection of earth grounding terminals, etc.
 >Lid fixing screws are recessed captive screws, M4 stainless steel (non -magnetic)
 >Screw holes for lid mounting are roll threaded.
 >Ground screw and washer provided are copper-plated.

Deluxe Molded Project Box

This fine project box provides user with professional finished product. The unit features threaded brass inserts in top & bottom for security circuit board assemblies. The case is secured together with 4 screws and threaded brass inserts for non stripping reuse. The front and back panes are removable for easy machining and drilling. Case top and bottom are light grey. The front and back are dark grey.

Part No.	L		W		H
PB275	7-1/2"	x	4.0"	x	2-7/8"

Removable front & back Dimensions **2-3/8" x 3-5/8"**

Test Equipment & Instrument Cases

These deluxe instrument cases feature separate front and back panels, internal slots to hold PC boards in place and internal mounting posts for securing PC boards. Case has metal studs for non stripping of screws holding the case together. Front & back panels are plastic and are easily machined and drilled. PB250 has grey case top and front & panels are black. PB200 is all black.

Part No.	L		W		H
PB200	8.0"	x	6-1/4"	x	2-1/2"
PB250	10-1/8"	x	7-3/8"	x	3-3/8"

RUBBER BUMPERS & PLASTIC FEET

For use on chassis boxes and equipment cabinets

Rubber feet/bumpers are self-adhesive and supplied on a backing sheet. Application simply requires peeling individual foot from the backing and sticking it to your cabinet or chassis box. Soft rubber but will not leave marks on hard surfaces.

Soft but firm, these three items make good bumpers, feet for chassis boxes and spacers for PC boards. All are black in color and about 70 durometer hardness.

Dome Shaped
RUBBER FOOT or BUMPER

Dome shaped, self adhesive foot. Peel off of backing and apply to any clean, smooth surface. Semi-soft rubber does not normally leave marks.
Diameter at base: .630" Height: .317"

No. 10-605 12 pack

Tapered Square
RUBBER FOOT or BUMPER

Self adhesive and will stick well to a chassis box. Semi-soft rubber will not easily leave marks.
Width at base: 0.50" Height: .237"
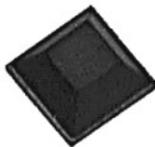
No. 10-610 12 pack

Tapered Cylinder
RUBBER FOOT or BUMPER

Shaped like a tapered cylinder, self adhesive and will stick well to a chassis box. May be used with a no. 8 wood screw or machine screw, if necessary. Semi-soft rubber will not easily leave marks.
Diameter at base: .870" Height: .40"

No. 10-602 12 pack

Plastic Cabinet Feet
Molded of durable, high-impact plastic. Generally used in sets of four on the bottoms of chassis boxes, equipment cases and cabinets. All are packaged four per display package and are also available in bulk.

"Tall" PLASTIC FOOT.

A standard style foot, tapered. Made of hard, high-impact plastic.
Mount with no. 8 screw (not supplied).
Color black.

No. 10-647 4 pack

"Low Profile"
PLASTIC FOOT

Semi-hard, molded plastic foot with just enough softness to improve durability and that softens the sound and shock a bit. Mount with a No.6 machine screw and nut or with wood screw. (not included)
Diameter: .986" Height: .235"

No. 10-650 4 pack

Collet Mounting
Plastic Foot

A clever design, the foot can be mounted on a cabinet from the outside. Drill a 5/16" hole and place the foot into the hole. Then press a plastic pin (supplied) through the center of the foot; the pin spreads the integral collets and the foot is attached .
Diameter: .775" Height: .388"

No. 10-644 4 pack

KITS - AUDIO PROJECTS

The Tone-Volume-Balance Control Kit

A serious audio (stereo) circuit; used much like a preamp (eliminates the need for one); that is, between the audio source and your stereo amplifier. Use with your amp or with our kit No. 80-088 ten watt stereo amplifier or with the No. 80-050 44-watt stereo amp (etc.). The kit has separate Bass, Treble, Balance and Volume controls; with loudness contour switch as well. Designed to run on 12 volts DC (@35mA), the circuit will work on "clean" DC voltage from 7.5 to 16 volts ("clean" means low ripple or using battery power). You will need to furnish the power supply and phono connectors and/ or cables.
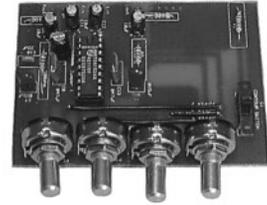
No. 80-075

RIAA Equalized PreAmplifier Stereo Kit

The grooves in phonograph records could not handle the deep bass and high treble in live music. The industry developed a standard recording curve and the missing sounds were compensated for by circuitry in playback preamplifiers. The R.I.A.A. (Recording Industry Association of America) set the standard for the "RIAA curve".

Today amplifiers are designed for flat response and they make the old phonograph recordings sound very flat. Using an RIAA preamplifier compensates for todays flat amplifiers exactly as the old phonographs were able to do. This kit duplicates the RIAA curve accurately; at a kit price. Operation on 9 to 12 V. DC.

No. 80-007

MONAURAL PREAMPLIFIER

Our audio amplifier kit works very well, but if your input is a tape head, magnetic phono cartridge or electric mike, the input level may be too low to do the job.
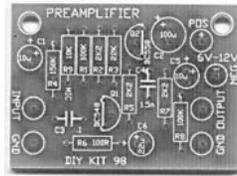
(PHOTO SHOWS BOARD ONLY)

This small preamp can be used in these applications; plus, we have included a mike that may be used with the circuit. Power at 6V to 12V (current at 12V is 3mA, only 2mA at 9V). The gain is more than 40 dB.

No. 80-980

STEREO VU METER

This is a very eye appealing audio accessory. Displays an approximate output level for each channel of stereo amplifier. Connects to the speaker terminals; levels are displayed in ten discrete steps. User may select a moving dot bar appearance. Uses two LM3915 IC's; includes a discussion of measuring audio power.

No. 80-880

Audio Amplifier Module

A good, variable gain amp to use with other projects, amplify radio circuit etc.. Uses the National Semiconductor LM386 Integrated Circuit; a well known and quality IC. Kit includes the data sheets from NS. Battery powered, may be operated from 4 to 12 volts DC. Powers a small speaker for personal listening.

No. 80-170

One Watt Audio Amplifier (monaural)

While one watt is plenty for personal use (most small radios that have speakers produce less than 1/4 watt) the size is quite small and easy to fit into a case with other projects.
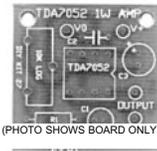
(PHOTO SHOWS BOARD ONLY)

Battery operated from 3 to 15 volts, six volts is optimum. Output into an eight ohm speaker. The PC board is just 1-13/16" square; tallest component about 5/8" tall.

No. 80-270

1 Watt Stereo Amplifier

An amplifier designed with portability in mind; ideal for battery applications. A full watt from each channel, excellent
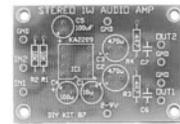
(PHOTO SHOWS BOARD ONLY)

fidelity. Uses a Samsung KA2209 IC. Small size: the board is 1-3/8" by 2". All basic parts supplied, including PC board; you supply two 8-ohm speakers. We suggest a six volt or nine volt battery pack using AA cells; use D cells if extra long battery life is required. Amplify your CD or Walkman etc..

No. 80-870

---

3 Watt Stereo Amplifier

The Rohm BA5406 IC is used to make this powerful little stereo amplifier. The entire circuit is on a 1-1/2" x 2-1/2" circuit board. You'll need to allow
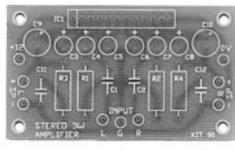
(PHOTO SHOWS BOARD ONLY)

added space of 1-1/2" x 1-1/2" x 2-1/2" for the heat sink, plus ventilation for same. In addition to a 12 VDC power supply (batteries), you will need to provide 4 or 8 ohm speakers, cables and a heatsink compound to put between the IC and the heatsink.

No. 80-900

8 Watt Audio Amplifier

Low voltage operation does not mean low-power. This amplifier can produce a full eight watts into a standard four or eight ohm "load", such as a speaker. Actually, it can deliver up to 11 watts if you use a 16 volt supply. You may use this amplifier with a wide range of power supplies, from 5 volts to 20 volts. The IC has built-in current limiting and over-heating protection. An ideal building block for use with many other projects. The audio quality is excellent.

No. 80-470

10 Watt x 10 Watt Stereo Amplifier

Employs the TDA2009 class AB audio power amplifier IC for quality stereo applications. May be operated on a supply voltage of 8 to 22 volts DC. This is a very straight forward stereo amplifier; complete with a PC board about (1-3/4" x 3"). Powerful enough to power your stereo for a mid-sized room and more than enough for use in an automobile.

No. 80-088

17-1/2 Watt Mono Amplifier

A high quality audio amp that can operate on a low voltage, 12 V DC recommended. Uses the Hitachi HA13001 IC and a dozen external components for a compact and powerful monaural amplifier. Builder must supply his choice of speaker (4 or 8 ohm) and some heatsink grease to apply between the IC and the heatsink. Includes PC board and all parts. Build two for stereo.
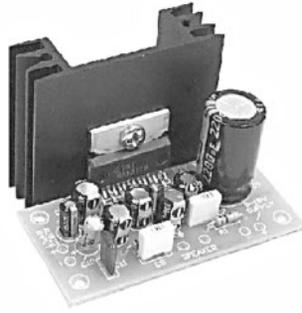
No. 80-1105

44 Watt Stereo Power Amplifier

The circuit is a gem; a TDA1554 IC is the heart of an amplifier that will output up to 22 watts per channel with excellent sound quality. (Typical THD less than 0.1%!).
 Originally intended for automobile use, but can be used as a home amplifier if you have a good power supply. Operates on 13 to 14.4 volts (typical automobile voltages with engine on) and can draw as much as five amps at 13.8 V DC.
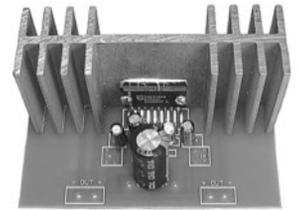
No. 80-050

BIG EAR AMPLIFIER

SNOOP ON WILDLIFE IN YOUR NEIGHBORHOOD. The circuit can do for your ears what a telescope does for your eyes. A sensitive dynamic microphone element feeds a high gain audio circuit that can drive headphones or a small speaker. Instructions tell how to make a "dish" from poster board or even a lampshade. (Poster board not included.) Listen in remotely on wildlife from a huge distance. Can hear a conversation from a block away!

No. 80-272

40 Second Message Recorder with Looping Option.

The circuit uses an information Storage Devices Corp. No. ISD2540 chip to store one or more audio/voice messages up to forty seconds (maximum time). If desired, the first message can be looped so that it plays repeatedly. Non-volatile; the message(s) is retained even when the power is removed. Output is to a User-supplied four or eight ohm speaker. The output is small, you may wish to add an LM386 amplifier kit (No. 80-170) or another amp to increase the volume for your application. The same circuit could be used with any of the ISD25xx chips in the series up to 120 seconds record time. Operates on 6 volts at 100mA maximum.
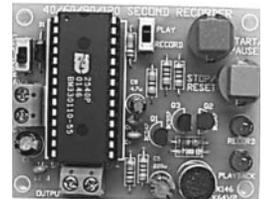
Message Recorder Kit..........................**Part No. 80-146**

Two Station Intercom
(or hard wired Listener)

Two units employ LM386 IC's in each station. These need to be connected using a pair of wires (about 22 or 20 gauge solid). you could power the remote from the base unit if you run four wires. Each station has its own mike, speaker and amplifier. May be set up to monitor baby's room etc..
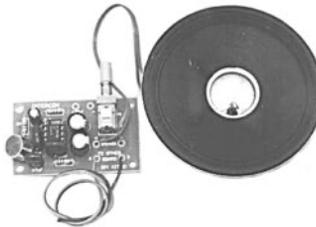
No. 80-210

Fiber Optic Audio Link

Uses a matched transmitter / receiver pair from either Motorola or Industrial Fiber Optics Co. Allows you to send sound through plastic 1mm fiber optic cable. Two circuit boards with a microphone at one end and a speaker at the other; (14' fiber optic cable included). The maximum range is about 220 yards. This can be a Science Fair winner.

(PHOTO SHOWS BOARDS ONLY)

No. 80-260

Voice Changer

Your voice can be changed to add a vibration, like those used to disguise secret witnesses. Or, you may change your voice tone upward or downward; women sound like men and vice versa. Includes a very ROBOTIC voice as well. A microphone and speaker are included on the PC board, all that you need to add is a nine volt, transistor battery. This is a very novel and entertaining circuit.

No. 80-105

Sound Effects Generator

Another novel circuit, that might be useful for special theatrical effects. Or, if you are simply a practical joker. The circuit can produce sounds such as the tick-tock of a grandfather's clock, a heart monitor (as in the hospital), water on a tin roof, a motor boat, cricket, etc.. Requires a 9 volt battery. Includes its own speaker.

No. 80-106

303

KITS - R.F. PROJECTS

Sound Activated FM Transmitter

Sound turns on the transmitter, which operates in the FM radio band. A neat way to catch a thief in another room or garage. The volume of sound needed to trigger the circuit is adjustable. The two stage transmitter has good range and the circuit powers down unless it "hears" sounds; reactivates with a sound.

No. 80-280

FM Telephone Transmitter

Miniature transmitter attaches to the phone line and transmits the conversation. Transmits 200 yards and more in most installations. Tunable to clear spot on the FM band of your radio. Completely parasitic; i.e. uses the power from the telephone line and needs no battery. The circuit might be used to share or record conversations, but please do not use illegally.

No. 80-160

Varactor Tuned FM Transmitter Wireless Mike Kit

This is the Cadillac of FM transmitters, and wireless mikes . Transmits in the standard FM radio band; tune to open frequency. Varactor tuning results in stable signal, free from stray capacitance and drifting. Sensitive, picks up conversations from several feet. Powerful operation on a nine volt battery but could use 12V DC if you are going for distance. Easy to build, good for teaching beginners with just a bit of supervision.

No. 80-065

FM Stereo Transmitter

This is a circuit that will broadcast CD quality sound to your FM Walkman, home stereo or automobile radio. It produces a strong signal that will generally cover the average home and yard. It is stable enough to use even with digitally tuned FM receivers. Typical uses include broadcasting your own music to a receiver at pool-side or in the garden. Or, you could broadcast from a personal, portable CD player to a car radio that has no CD player. School uses include running a "broadcast station" from another room as a speech class exercise. The unit is powered by a 9V transistor battery, or you could use an AC wall adaptor.

No. 80-060

R.F. Bug Sniffer (Locator)

If someone put a BUG   (listening device) in your meeting room, would you know it? Today's small circuits make listening devices too easy to conceal to ignore. You may want to assemble this one for resale to nervous and needy users. A high quality circuit, should be considered even by the professional. It will detect any transmitter sending A.M. or F.M. or just C.W. at frequencies anywhere from ten to 450 mHz; peak sensitivity is in the 80 to 120 MHz portion where many bugs would be found. The signal strength is indicated on a bargraph, so the closer to the source you get, the higher the indication. With some practice, you should be able to find a covert transmitter to within a few inches of its location. "Professional" bugs, placed by serious operators can be found easily. Operation on 9 Volt battery for portability.

No. 80-990

3 Volt FM Transmitter

The most powerful circuit we've seen that operates on such low voltage (just two AA cells). A range of 100 meters can be expected and given a good antenna and good conditions, 500 meters is not unusual. Can be operated on up to about 9 volts. Transmits to the FM radio band. Teaches basics of transmitters. Microphone is included.

No. 80-070

One Chip AM Radio

This is a complete AM radio for the standard broadcast band, most of which is on a single IC. Other components, such as the coils and variable capacitor to make a finished radio, are included. The IC is the RF amp, detector and AGC circuitry. The IC's output drives a two stage, transistor audio amplifier and 3" speaker. Operates from 9 volt battery. A good kit for beginners to see and build.
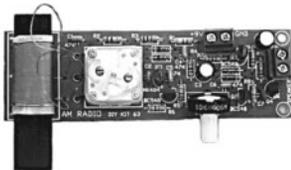
No. 80-630

Two-Stage FM Transmitter, or Wireless Microphone

A powerful little circuit with surprisingly good audio quality. Can transmit up to about 1/2 mile in open country. This is probably the most powerful FM transmitter that you can legally purchase. An electret microphone is used to add sensitivity. The circuit can run on six volts, greatest output is at 12 volts, but use 9 volts and short antenna wire to stay legal.

No. 80-320

PLL controlled FM Stereo Transmitter Kit - top of the line. The <u>finest in Stereo transmitters,</u> and latest technology.

A two board FM Stereo Transmitter kit with the best possible features that our designers could think of. In addition to very clean, accurate stereo reproduction, the PLL tuning provides stability that is simply not available in most transmitters. Unit has an LCD display with an EPROM memory to retain frequency setting even if powered down. Listen on your Walkman, or any stereo FM radio in your home or car. The top board is the controller, with the keypad switches and LCD readout. The bottom board is the transmitter, employing an NJM2035 for the stereo generator, buffered tuning from the PLL for quiet performance and an RF amp stage on the output. The circuit can be tuned in 5K steps, for fine tuning.
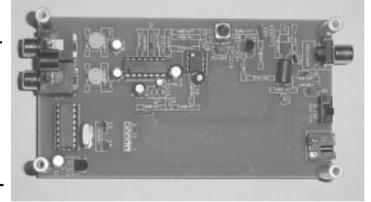
You will want to use a very "clean" power supply for this circuit; batteries (12 volts DC, at least 75mA.) are a perfect source of power. Or, a well filtered power supply to be sure to eliminate power line hum.

This circuit can broadcast any line-level input, such as a computer sound card, CD player, tape player etc. far enough to provide excellent reception around an average house and yard. Instructions for a low cost FM antenna are included.

The top board size is 5 1/2" long and 3.3" in width; the finished unit fits neatly into a Philmore No PB170 plastic case (which is not in the kit, sold separately). The unit will function on voltages as low as 9 volts and as high as 14.9 volts; at the suggested 12 VDC the unit needs up to 75mA supply. While assembly is easy and straight forward, we suggest the kit only for builders with some experience in kit building.

<div align="center">No. 80-057</div>

PLL Tuned FM-Stereo Transmitter

Try this with your computer to re-transmit Internet radio!

This is truly a slick product! The PLL (phase locked loop) tuning means stable broadcasting, which results in big advantages. Being on frequency and drift-free equals much better transmit distance and receive quality. Frequency is "entered-in" on a keypad, and the unit stays exactly on frequency. Transmit to your portable radio! For input use your CD player or tape player or your computer so that you can broadcast programming on the Internet to your portable radio; listen anywhere around the home. Operates on 9 to 12 Volts DC.
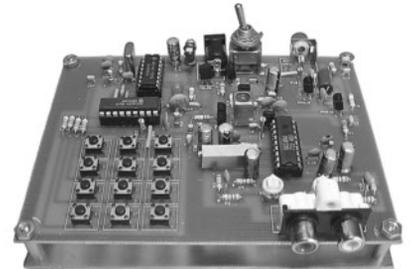
<div align="center">NO. 80-055</div>

PLL-VFO Experimenter Package

(experienced builder only)   440Khz to 185MHz.!

This new VFO Circuit is a two part (two board) system for the experimenter. The "Bottom Board" is the PLL and VFO, complete with an area for the experimenter to add whatever circuit he desires; such as a transmitter, receiver, transceiver etc.. The "Top Board" is a controller with a keypad for frequency entry and an LCD digital readout that displays frequency. The Top Board controller communicates with the MC145170 chip on boards may be stacked with spacers and will mount neatly in a Philmore No. PB170 plastic case (not included).
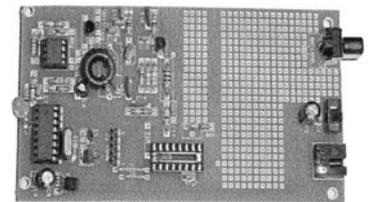
Not intended to be a complete kit, this circuit pair is intended to provide a highly-flexible platform for the experimenter, student or Ham radio builder etc.. The circuits provide Rock-Solid frequency control with a very easy to use human interface (that's fancy for push-bottom keypad and readout).

Included are circuit ideas, in schematic form, including a forty-meter transmitter and a radio receiver circuit. The prototyping area is large; the user can build a simple or multi-stage AM or FM receiver, CW rig, signal generator etc. The circuit may be used with various oscillator designs from 440Khz to 185Mhz.

The circuit employs an MC145170 PLL IC which provides drift-free tuning with considerable stability. Operates on 12 volts DC. You will need up to 100mA to power the kit plus don't forget to add enough current capability to handle your own addition to the PC board.

Top Board, with LCD readout and keypad entry
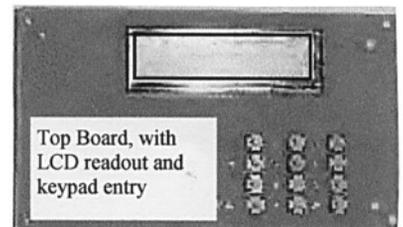
<div align="center">No. 80-1401</div>

PLL Experimenter Kit from KHz to 185MHz

An exciting circuit, the PLL Experimenter kit may be used for making a stable AM or FM transmitter, a Signal Generator (from low KHz to about 185MHz), a QRP Ham transmitter, circuit diagrams for all of these are included. What you get is a very high quality PLL circuit module, with touch-tone style keyboard (to set frequency) and you will have to add the components for the circuits mentioned above. Crystals can be expensive; here is the answer. Not a beginners kit; intended for the serious experimenter, Hams or very advanced beginner. Operation from 8 to 12V DC; a nine volt battery is ideal. Fine tuning in 10 KHz steps. Extra room on board for added components. This circuit is really worth having!
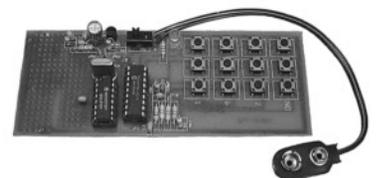
<div align="center">No. 80-035</div>

<div align="right">305</div>

Positive Adjustable Power Supply Module Kit
Negative Adjustable Power Supply Module Kit

These two kits can be used separately; or assembled together to create a dual rail power supply. Current up to 1.5 ampere output. Both kits feature; reverse polarity protection, LED power ON indicator, IC regulator, variable output voltage, low noise, AC or DC input and up to 37 volts output. Complete details for selecting a transformer (transformer is not included; you must supply input voltage of 3 volts more than desired output) are included. A thorough description of assembly options is included with each kit.
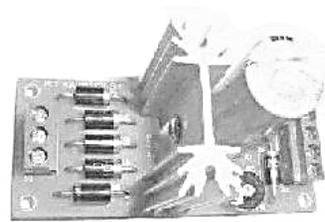
NO. 80-124- Positive Adjustable Power Supply Module

78XX Regulated Power Supply

This circuit can be made into a regulated power supply for voltages from five volts up to twenty-four volts. The user must add any of the standard 78xx TO-220 positive voltage regulators (7805 or 7806 or etc...thru 7824) and the voltage will equal whichever part you select (the last two digits of the number indicates voltage; 7805 = five volts etc.) . Input AC or DC (unregulated) about three volts greater than desired output voltage; complete instructions included. The 7800 series outputs up to 1 ampere typically. LED indicator and on-board on/off switch. You could use this with a junk box AC or DC power supply or supply your own transformer etc..
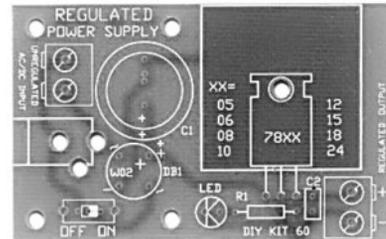
(PHOTO SHOWS BOARD ONLY)

No. 80-600

Light Alarm

A sensitive photo Darlington transistor is used with CMOS nand gate. The circuit detects light and triggers a siren.
You could add your own triac or relay and switch practically anything. The kit uses the MEL12 Darlington superalpha phototransistors, typically about ten times more sensitive than a normal phototransistor. The circuit usage includes burglar alarms, medicine cabinet alarm, automobile trunk alarm etc..
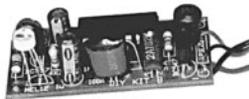
No. 80-080

Photo Sensor with Control Relay

The most popular usage for this kit is to make your own night-light. But, you could switch just about any appliance either on or off with either darkness or daylight. Light sensitivity is adjustable over quite a range. The relay can handle up to 10 amps AC. You need to add a nine volt transistor battery or a nine volt, 25 mA supply.

No. 80-103

Three Light/Dark Activated Relay Switches

This kit is one of our three separate circuits in one; three separate PC boards etc.. This one will give you both useful circuits and experience in different approaches, circuit-wise, to doing the same thing; controlling a device with a change to either light or darkness. Each kit is equipped with a relay rated up to 240VAC @ 5 Amps. You may either turn "on" or turn "off" the controlled device. A good kit for the student learning electronics.
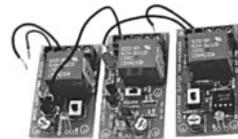
No. 80-790

Mini-VOX & Relay Kit
(Sound Activated Switch)

For the uninitiated, VOX = Voice Activated Switch. This is a switch (relay) that may be activated with any sound, including the human voice. A very sensitive circuit that may be adjusted to react to very low volume sounds or a yell or hand clap. While a VOX is often used to activate a sound recorder, it may be used to trigger an alarm (the mike easily picks up vibrations in windows, wall or door), activate a video camera, radio transmitter or simply turn on a light. The relay will release after a few seconds of silence, holding as long as sound continues. (Hold time may be changed up to 30 seconds)
Operates on 12V DC very low current.

No. 80-126

Sound Activated Switch
for Tape Recorder (VOX Switch)

Turn on any tape recorder that has a remote on/off jack (most cassettes). The circuit has a feed back and delay circuit for robust operation. You could add a relay for switching heavy loads; and tape recorders are not the limit. How about turning on lights via voice or a whistle? Circuit switches off after six seconds of silence.

(PHOTO SHOWS BOARD ONLY)

No. 80-130

KITS - SWITCHERS, TIMERS & COUNTER, POWER SUPPLY PROJECTS

Touch Switch with Relay Kit

The Touch switch may be used to turn on almost anything with a light touch of 'plate'. The circuit pulls in a relay which remains engaged for anything from five seconds to about a full minute, depending upon you changing just one resistor to set the time amount (default is five seconds). One of the unique features of this circuit is that the touch-plate may be located up to several yards away from the circuit board if necessary. It may also be battery powered if an AC supply is not convenient. An LM555 is used in the heart of the circuit.

The relay can handle up to 12A in its contacts. A 12V battery pack or AC power supply is recommended although we've used the circuit on an unregulated 9V supply.

No. 80-137

Touch or Contact Switch

Both a touch and a contact switch are built onto one PC board so that the builder can see how each works. A battery can power the contact switch but you'll need an AC power supply for the touch switch to work well (use No. 80-040) for reasons explained with the kit. The circuit switches a relay with a 3 amp, 110 volt rating. Use to switch lamps, other appliances.

No. 80-100

Variable Power Supply

A very basic power supply that can be adjusted over a range of about 1.5 to 35 volts DC. If you add a heat sink (included), you can run it as "hot" as 2 amps output; other-

(PHOTO SHOWS BOARD ONLY)

wise about 60mA @ 12 volts. This is a text book circuit using an LM317, which is a 3 terminal regulator in a TO-220 package. Input can be either AC or DC; DC input must be at least 2.5V above the required voltage output. You could use a surplus transformer from 12 volts up for input
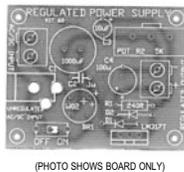
No. 80-680

Three Timer Circuits

Timer circuits are handy for many experimenters' laboratory functions, not to mention the photo or PC lab. This kit is another three-in-one in that all three circuits are complete and separate; simply using different types of circuits to do exactly the same job. All come complete with 5 amp relays for controlling pretty significant loads. All may be operated on battery or light weight (9V DC) supply. The advantages and disadvantages of each design are discussed in the text.

No. 80-850

Infrared Toggle Switch

Control about any device using the remote control from just about any TV set. The circuit switches an on-board SPDT relay; turn it on with the remote, and turn it off with another signal. The relay contacts are rated one amp at 125 volts AC. The circuit operates on any DC supply from 8 to 15 volts; use an old calculator supply etc.. This circuit can have some very practical applications, such as turning on a light by an invalid. Your imagination is the limit.
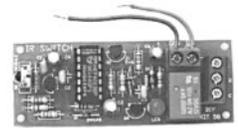
No. 80-580

INFRARED BEAM DOOR MINDER

A transmitter sends an I/R beam up to 75 feet to a receiver (on separate PC boards); break the beam and a relay is tripped. Use the relay to control a bell or light or other device ; even a video recorder and camera. Operation requires 9 to 12 VDC, a wall adaptor is fine and you may want two units (provision is made to power both boards with one supply via a two conductor wire). Use to watch a hallway or driveway, across the doors to a three or four car garage etc. and we know of a photographer taking wildlife photos this way. The uses for alarms, photography, door minding and so on are numerous. You could make weatherproof hoods to use out-of-doors but be sure to protect from moisture.
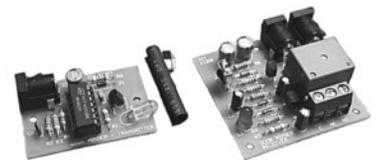
NO. 80-013

Variable Power Supply

The kit comes "complete", which means the transformer A.C. power cord and a fuse holder are included. Most power supply kits leave finding such things to the builder. Output via screw terminals, making this a good bench supply for kit builder. Voltage may be varied from a volt up to about

24 volts DC and is well regulated and voltage is very stable. Using the LM317T I.C. and including the Philmore TR241 (24 volt, 1 amp) transformer

NO. 80-970

permits an output range from about a volt to 21 volts. Higher current is available at the higher voltages but lower voltage are at lower currents; for example, around 5 volts output maximum is around 350 mA. Maximum current is available in the 18 to 22 volt range . Ripple (on line noise) is finite, making this a good kit for those audio and R.F. projects where you do not care to hear power line noise. Note: We do not recommend a beginner build this kit unless he has some experienced help. Any kit that connects to the A.C. power line is potentially dangerous to the inexperienced.

PC Board Mounted Relay

The output of many circuits have an alarm signal which must be connected to a remote switching device. Or, sometimes you will have a kit to test which needs a relay connected to it. For this purpose, this kit is perfect. A 12 volt (coil) relay mounts on the PC board which includes a protective diode and terminal blocks. The terminal blocks make for fast, easy screw-connection of wires to the coil and to the contacts.

If you prefer a different relay coil voltage, the boards are available separately. Either use Philmore TB132, TB133 terminals or solder to the board. Board accommodates any Philmore relay from 3V to 24V coils (all ten amp contacts).

NO. 80-043 Relay kit with 12 volt, ten amp relay, PC board and hardware.
NO. 12-605 Blank boards, Package of two.

KITS - SWITCHERS, TIMERS & COUNTER, POWER SUPPLY PROJECTS

R.F. Amplifier Kit

A small circuit, using the Mar-6 Amplifier IC, this kit will provide as much as 20 db gain. Connect at receiving antenna input; will boost signals from 1 Mhz to 1000MHz; two RF amplifier kits may be cascaded for even greater gain. Instructions tell how to substitute a couple of capacitors for use at low, broadcast-band frequencies. Use with Scanners, Ham receivers, SWL receiver etc. You could add a metal case and RF connectors for permanent use. May be used to boost signal for 'scope or frequency counter as well.
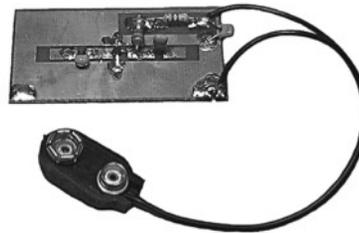
No. 80-045

High Accuracy Multi-MODE TIMER

Using a programmable IC, the circuit revolutionizes timers in terms of flexibility and accuracy. A number of triggering options are available, ranging from tripping a switch or a voltage or a relay.

Output relay is capable of handling up to ten amps. Time delay is simple selected (and accurately) with on-board dip switches. May be programmed from seconds up to 42 hours. Turn something on or off; seven different timing modes available to the user. The heart of the circuit is an Atmel 89C2051 IC, already preprogrammed for you. A versatile circuit may be used to open the relay after a time period, close the relay or even toggle the relay on for a time and off for that same amount of time (toggling).
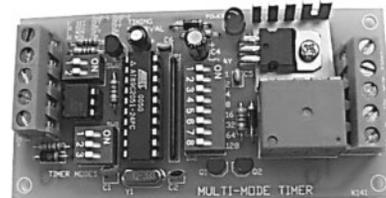
Multimode Timer Kit...........................**Part No. 80-141**

Three Digit Counter Module

An event counter; this economical counter module may be ganged for six or nine digits. Has count and reset switches with debounce built-in. Operates on a nine volt battery. This is a two board kit with the count and reset switches along with the debounce circuitry on one board, the LED digits and circuit on another.
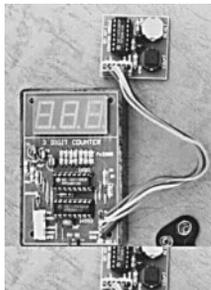
No. 80-010

4 digit UP/DOWN COUNTER

The kit is a low cost counter, counting from 0000 to 9,999 or down from 9,999 to 0000. The overflow output pulses low when the count wraps to zero; so, two counters could be connected together to make an eight digit counter. The clock input is debounced to prevent problems when using external mechanical switches. Operation on anywhere from 9 to 15 volts DC and 20 to 40 mA (depends upon how many display segments are lighted). The AT90s1200 is preprogrammed; builder is not required to program anything. There are five pairs of pins for external connections: RESET, CLOCK, DOWN, DISABLE, OVERFLOW. A Down connections sets the unit to count down. A Disable prevents counting at all; Resets sets the counter at zero (0000), Overflow outputs a pulse low when the counter reaches 0000. The Clock contact will pulse a 'count', and each time a switch connected to Clock is 'on' the unit increments a digit. The maximum speed of counting is a bit more than thirty (30) per second. The display is red LED digital 0.6" high.
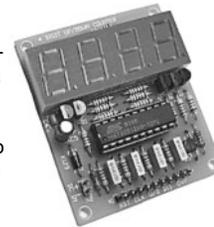
No. 80-129

Parallel Port Relay Board,

for the IBM PC (software included) With each advance in personal computers, a surplus of unwanted older machines increases, either at give-away prices or you may have one sitting on a shelf. Thus you can have a low cost, sophisticated "dedicated controller" to turn on or off devices in the home or lab or radio shack etc..The circuit includes eight relays controlled with (included) software for either DOS or Windows 3.1. Connects to the parallel port of any IBM-PC.

No. 80-740

Introduction to a Power Supply

(Practical hobbyist power supply) A practical battery eliminator for circuit projects at the bench. This is a basic power supply using two IC's (7805) regulators. User needs to supply a transformer up to 20V AC for input (we suggest scrounging from old radio or surplus catalog). Outputs are regulated, one variable and one constant 5V DC. A good introduction to power supplies.

No. 80-040

Ultrasonic Movement Detector

The circuit uses a matched pair of 40Khz transducer elements to detect movement out to about 22 feet. You may add a relay (not included) to switch a heavy appliance etc.; the unit switches just an LED as supplied. The circuit can be switched to latch "on". An ideal alarm circuit that can't be easily fooled.

No. 80-200

PIR Movement Detector

One of our favorite circuits. The circuit sees infrared heat, such as from an intruder's body. The kit uses a late development in movement IC's and employs a very sophisticated circuit. You may set it to non-trigger in daylight hours. When tripped, an LED indicator lights and relay is tripped. "Sees" up to about eighteen feet. Operation on 9 or 12 volt battery with very long life.

No. 80-300

Electronic Combination Lock

This really is an excellent introduction to electronic security systems. Set your own four digit code, a wrong sequence simply resets the lock. The correct code will activate a relay that can handle up to 240 volts AC. The nine digit key-pad is on a separate board connected to the circuit via a ribbon cable (30"), so a variety of mounting ideas are possible. Requires a 9 or 12 volt battery or supply.
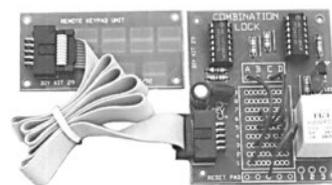
No. 80-290

Oscillator Building Blocks

Build and experiment with astable, monostable and RS flip-flop multivibrators on one PC board with six LED's. See and understand exactly how each works. This is a very educational kit and an excellent introduction to electronics. Operates on 9V battery.
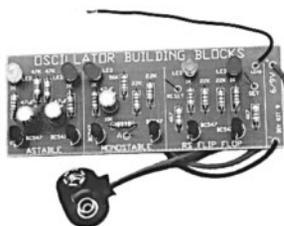
No. 80-090

(Loud) 9 Volt Siren

A simple circuit with a lot of output. Uses a voltage controlled oscillator; and includes a half watt speaker. Connect it to an alarm system, sound switch or whatever you dream up. 9 volt battery operation.

No. 80-310

General Purpose, 3-1/2 Digit LCD Panel Meter

A versatile meter, which may be set up for any one of many ranges; for voltage or current. The decimal point is selectable too (i.e. you may put it where you want it). Space is provided on the circuit board for scaling and shunt resistors. Runs on nine volts; very low current drain. Easy to read.

No. 80-340
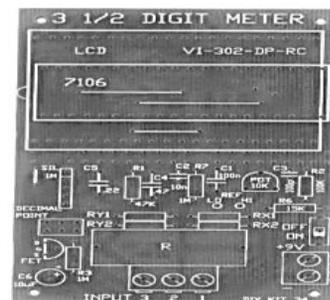
(PHOTO SHOWS BOARD ONLY)

BATTERY VOLTAGE MONITOR CIRCUIT

Assemble this kit for use with either 9V or 12V. Seven LED's indicate if the battery is fully charged, partially charged, or getting weak. The circuit could be wired permanently into an automobile or used with just about any circuit where charge condition is important information. Monitor that Gel cell used for radios during camping trips.
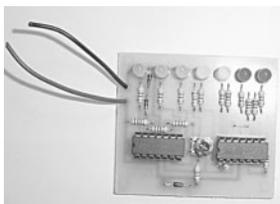
Voltage Monitor Kit Catalog ....No. 80-700

Square Wave Oscillator Kit

This is a very simple circuit, generating square waves for use with test equipment, teaching, etc. Generates square waves of approximately 1Hz, 10Hz, 100Hz, 1KHz, 10KHz, & 100KHz.

This is a good teaching aid kit, both for the instructor and the DIY user.

PC Board Only pictured, but ALL parts included
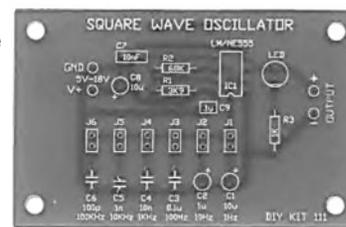
No. 80-111 .... Oscillator Kit

KITS - TEST, MEASUREMENT, & MOTOR CONTROLLER PROJECTS

Serial Port Temperature Data Logger

An 8 pin microcontroller based circuit for temperature data logging via the serial port or any PC; a good way to put that old 386 or 486 to work! Uses the Dallas Semiconductor DS1820 sensor (one supplied, will handle up to four). Assemble for either "C" or "F" temperature scales. Sensors may be located remotely, up to 200 yds. away from the PC. System provides real-time data via the serial port. Accuracy to .5o C.

No external power is required. The data stream is easily logged and processed. You must use a terminal program set at 2400 baud, 8 bits, no parity and 1 or 2 stopbits. Information is given about a free Term.exe program that you can download from our associates web site.

No. **80-145**

DC Electric Motor Kit

An introduction to the workings of an electric motor. A few pieces of metal, some wire and then add your own 1.5 volt AA battery and the whole concept of what makes an electric motor run will be yours. A number of experiments are included in the instructions, which the teacher could use to get young minds really wrapped up in this project. Snaps together, no soldering required. (Kit shown in knocked-down form.)

No. 80-077

OpAMP Function Generator

A very low cost and simple circuit to generate square, pseudo-sinewave and triangular waveforms in the audio frequency range. Uses a quad OpAMP type LM384. This is an educational kit and recommended to instructors and to the person wanting to understand electronics more thoroughly.
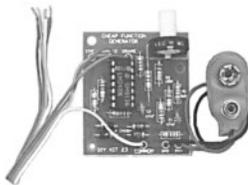
No. 80-230

Logic Probe

An indispensible piece of equipment for testing and measuring digital equipment. Normally used for fault finding and testing but can also be a great help in design work or to see how digital equipment works. Switch for use in both TTL and CMOS. Detects very fast pulses. Output is 3 LED's and audio indicator.

No. 80-240

LCD Temperature Meter (Celsius Only)

Designed around a single IC, the Harris No. 7106, is this temperature meter with excellent accuracy. All parts needed, even a case, are included except a nine volt transistor battery. Instructions also explain how to use this kit to make a volt or amp meter in various ranges. The circuit board has room for additional components if you use it to make a digital panel meter.

No. 80-020

DC Motor Speed Controller

Vary the speed of DC motors the very best way with this kit. Gear boxes can be costly and series resistors may cause stalling. This circuit delivers the voltage to the motor with pulses and the speed is controlled via pulse width modulation (PWM). The speed control is a potentiometer, for DC motors up to 100 Volts at a maximum of five amps.
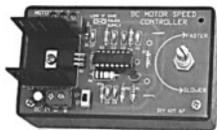
No. 80-670

PC DUAL STEPPER MOTOR CONTROLLER

The kit enables user to control two unipolar stepper motors via the parallel port. Four digital inputs are also included (these may be used for monitoring external switches, inputs etc.). The kit does not require a power supply.
Included, an extended D-shell plastic case (RS-232 style) and all parts. A DOS based program written specifically to drive 'steppers' is included on diskette, complete with C source code. (Above, only the PCB is shown.)
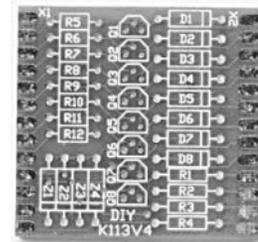
Stepper Controller Kit.................**Part No. 80-113**

Unipolar Stepper Motor Driver Kit

A stepper may be used to orient a video camera, antenna, spotlight etc.. or used for table position in production. This driver will control a 5, 6 or 8 lead unipolar stepper motor (often available from surplus dealers). The circuit permits fast or slow run rate and even single stepping into final position; uses the UCN5804B IC. Four LED's indicate (PHOTO SHOWS BOARD ONLY) movement if motor is remotely controlled (input from 6 to 35 volts). The kit is supplied with quite a bit of good information, how to identify motor connections, spec sheets and a list of references for reading about steppers etc.
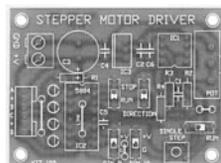
No. 80-109

STAIRWAY TO HEAVEN Game

Pressing the switch while a dual LED is green advances you to to the next stage; but mess-up and press while red, and you go back to the beginning. It can be tricky and a challenge. Fun and teaches some practical basic electronics. Operates on 9V battery.

No. 80-005

LED Dice with Slow-Down

This is an excellent kit for use as an introduction to electronics and circuit analysis. Seven LED's arranged like a real die face. Push the switch and the die rolls and then slows down and then stops. Uses an ingenious circuit design to minimize parts count. Uses a 555 and 14017 integrated circuits. Includes plastic case; battery operation.
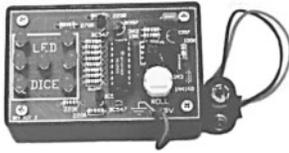
No. 80-030

Programmable Dice

The idea of an electronic dice game of one kind or another is almost as old as glaciers. But this one is very clever, plus a huge manual describing how such things work, software for other projects etc.. This may be the most educational kit in the line.

(PHOTO SHOWS BOARD ONLY)

No. 80-710

Two-LED Flasher Kit

The Two-LED Flasher kit is a very basic kit and it does nothing more (or less) than blink one LED and then the other. The back and forth flashing is reminiscent of a railroad cross signal light, and many times it is used by model railroaders for that purpose. Simple bi-stable oscillator circuit; operates on 3 VDC and two AA Cells will last for weeks. You can change out some of the components for faster and slower, details in the instructions.
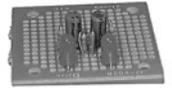
No. 80-012

5 LED Sequential Flasher

The circuit flashes five LED's in sequence repeatedly until you turn it off. Flash rate is user adjustable. The circuit uses an IC chip-on-board which you will then mount on the included motherboard; battery holder is included. Powered by a 3 Volt supply or battery; good for a child's toy or for those "high-tech" looking special effects for stage plays etc.

(PHOTO SHOWS BOARD ONLY)

No. 80-525

Xenon Tube Flasher (6 volt)

Bright, variable flash rate strobe light can serve as a beacon, signal etc.. A small circuit, easily transported for camping. Uses could include photography, spooky fun house etc.. (Try turning it on with the VOX switch No. 80-130). Flash rate may be varied to between 1 and four flashes per second.
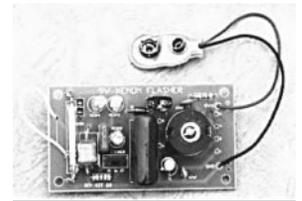
No. 80-162

ION Generator

Are there some healthful positive benefits caused by being in an environment that contains negative or positive ions? Some reports suggest a wide range of benefits. This generator can be set up to generate either negative or positive ions; the builder's choice. Operation is from 117 Volts AC power line. You will need to find a case or box for the final assembly, about 2" x 4-1/4" and an inch depth; and an AC power cord from an old lamp (or buy new). You can actually feel the flow of ions from the unit.

No. 80-570

110 Volt AC Strobe Light Kit

Usually more practical than a battery operated strobe, runs on standard house current. The flash rate is adjustable from about one every three seconds to about three per second. Uses are as signal beacon, trade show kiosks, discos, etc.. Very bright flash can be seen for miles at night, like those on airplanes. AC cord and plug not included.
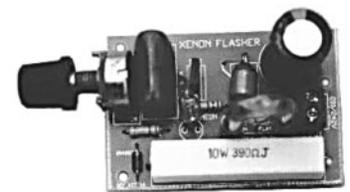
NO.80-140

For Fun, C.O.B. Project Kits

C.O.B. means **"Chip on Board"**; and most of the electronics are inside a tiny, application-specific chip, or integrated circuit, on a PC board. These circuits are fun but won't be much of a challenge or education as they are so simple; you add a battery and the circuit is ready to go.

No. 80-910 - Four Train Sound Effect. Ideal for model railroads; produces the whistle, train chugging sound, crossing bell and the 'clickety-clack of crossing a bridge.

311

TRANSFORMERS

CLASS 2 TRANSFORMERS
For security Cameras / Panels Primary: 120 Volt, 60 Hz

No. 48-1220 - 12V AC-20V A
No. 48-1240 - 12V AC-40V A
No. 48-1620 - 16V AC-20V A
No. 48-1640 - 16V AC-40V A
No. 48-2420 - 24V AC-20V A
No. 48-2440 - 24V AC-40V A

INPUT: 2 FLAT PINS
OUTPUT: SCREW TERMINALS

WITH LED INDICATOR LIGHT

Center-tapped, power supply or filament transformers.
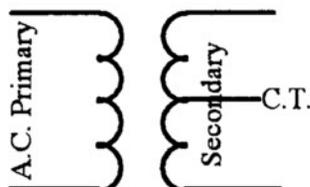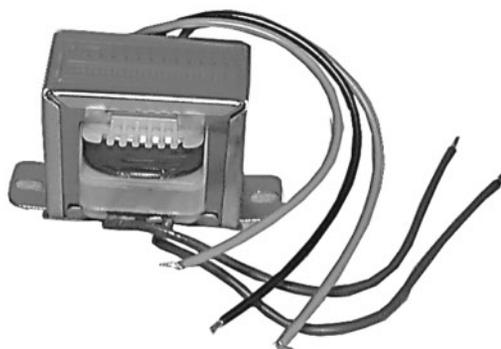
Primary wires are black, secondary are red with green insulation on the center tap.

Transformer voltage will vary with the circuit load; or: how much will be drawn by the circuit following the power supply. The following transformers will produce the "rated" voltage when loaded near its rated maximum current. Example: a 12 Volt transformer with a 120 VAC input will have an output around twenty volts A.C. when no load is attached. When a "test load" that draws close to the rated current is attached to the secondary, the output will be very close to the rated voltage. For reference, in the chart (below) we show the voltage at the secondary with no load and also with a resistive load that will draw the maximum rated current. Philmore transformers' "catalog voltage" is generally the target voltage that can be expected after rectification, allowing for voltage drop through diodes. Finally, it is common practice to use a power supply that can deliver twice the current that the circuit will require during its operational average current usage. See the Notes section on next page. The chart below shows not only the "catalog" voltage rating, but open circuit (no load) voltages and full load voltages for each transformer. The full, or "resistive load" is the value connected across the secondary, and the Output VAC w/load is the actual voltage from the test transformer. Any transformer will heat up considerably if constantly run at the full current rating. The "W" is the width of the frame and the "D" is the depth dimension measured at widest part of the coil.

Part Number	Rated (catalog) Voltage	Rated Current In mA	Secondary VAC with no load	Resistive load in Ohms	Output VAC w/load	Mounting hole center to center	Height (Inches)	W/D (Inches)
TR004	4.5	300	5.5	15	4.7	1.90"	1.20	1.47/1.3
TR006	6	300	7.4	20	6.3	1.90"	1.20	1.47/1.3
TR012	12.6	300	17.45	42	13.5	1.90"	1.24	1.47/1.3
TR015	15	300	21.0	50	15.4	1.90"	1.27	1.47/1.3
TR025	25.2	450	34.5	56	26.6	2.0"	1.4	1.69/1.6
TR030	6	500	7.82	12	6.72	2.05"	1.41	1.69/1.42
TR034	9	500	11.75	20	9.98	2.08"	1.4	1.7/1.5
TR038	12	500	16.02	24	12.98	2.08"	1.4	1.7/1.5
TR106	6	1000	7.86	6.8	7.05	2.30"	1.7	1.97/1.58
TR121	12	1000	15.5	13.8	13.3	2.30"	1.7	1.97/1.62
TR215	15	1000	19.64	15	15.82	2.30"	1.7	1.97/1.55
TR241	24	1000	31.0	27	25.8	2.30"	1.7	1.95/1.96
TR212	12	2000	14.9	6.8	13.0	2.70"	2.0	2.3/1.8
TR250	12.6	3000	15.1	4.4	13.78	3.20"	2.28	2.79/2.39
TR218	18	2000	23.4	9.6	18.98	2.80"	1.95	2.3/1.8

Center-tapped, power supply or filament transformers.

NOTES:
It is the users responsibility to determine which transformer is appropriate for his use, as well as which circuit provides an adequate and safe power supply. These notes are given as general guide-lines and are not intended for use by persons lacking technical expertise.

The current rating is the absolute maximum current output at the rated voltage. The transformer's rated current should be about twice your circuit's current needs. This will assure plenty of reserve power and a cool running power supply. Only for brief and infrequent peaks of a few seconds should your circuit draw as much current as the peak rating.

In short, if you have an amplifier (for example) that requires 250mA current during normal operation, then use at least a 500mA or larger transformer. Audio circuits in particular will require power above the circuit's average and there must be spare power to prevent distortion as well as over-heating.

DIODES; the current rating of diodes used in a full wave rectifier circuit should be at least twice the secondary current to be able to handle turn-on surge current. The reverse voltage rating of diodes should be at least 1.5 times the voltage of the secondary; most engineers prefer a bit more than that.

In half wave circuits, the diode's reverse rating must exceed 2.8 times (or more) the AC rating.

Don't forget to take into account voltage drop in your chosen components, especially diodes which can drop a half volt each.

Capacitors; the voltage rise in a capacitor will increase due to transformer regulation; use a capacitor rated about three times the DC load current.

DC REGULATORS; probably one of the best devices ever to come from the semi-conductor manufacturers are voltage regulators. Connected at the output of your power supply, a regulator can provide a fixed DC voltage . Look for the 78L series for small regulators (100mA) and the 78XX series can provide one amp at a fixed voltage. (7805=five volts, 7812=twelve volts etc.) The LM317T IC can provide an adjustable voltage; see industry texts for typical circuits.
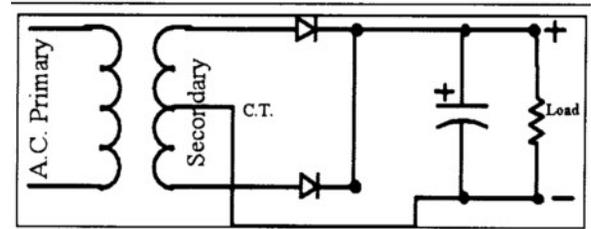
FULL WAVE Capacitor Input Load.
A typical power supply circuit using two diodes. As a general rule of thumb, multiply the transformer's secondary AC voltage times 0.45 to determine output average DC voltage.
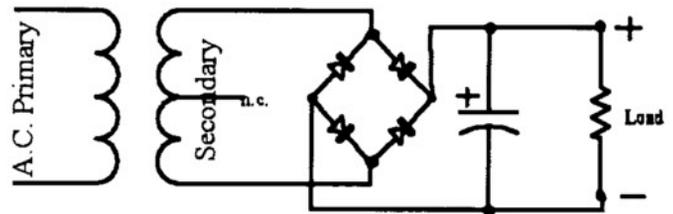
FULL WAVE BRIDGE
Typical full wave bridge rectifier; multiply the secondary ACV output by 0.90 to determine DC voltage. DC current is about 0.94 of the secondary current, or "rated current" in the part numbers chart on the preceding page.

POWER SUPPLY COMPONENTS
available in this catalog.
86-1105 5V regulator 78L05 100mA
86-1112 12V regulator 78L12 100mA
86-1117 LM317T variable regulator IC
86-1100 2 amp bridge rectifier
86-1217 Zener diode assortment
86-1225 1N4001 50V PIV diodes
86-1230 1N4004 400V PIV diodes
86-1235 1N4007 1000V PIV diodes
86-1137 5V regulator 7805 1Amp
86-1140 12V regulator 7812 1Amp
86-1237 3Amp diodes 1N5400
86-1239 6Amp diodes 6A05
86-1280 1Amp bridge rectifier.
85-1401 Electrolytic ass't 50V
SPT1182-6 series power cord w/plug
FH55 or 526 Fuse holders
FH503 Fuse holders
3AG series fuses
Switches-, binding posts etc. hundreds to choose from in this catalog.

COMPONENT PARTS

Philmore Component Parts program is a collection of electronic components intended to be of greatest interest to the experimenter. In addition to assortments of mundane but essential parts such as capacitors. LED's etc. the product group contains dozens of semiconductors and IC's that are truly exciting, 'gotta-try-it' products. Look for the items listed in this brochure on displays in your local distributor's store;

LED ASSORTMENT

Five LED's in a package; 2 red, 2 green, 1 yellow; diffused light type size 1 3/4. Typical output @ 10 mA as follows: red 10 mcd, green and yellow 80 mcd.

Part No. **85-100**

50Volt ELECTROLYTIC ASSORTMENT

Package contains one each of 10uF, 100uFD, 470uF, 1000uF all @ 50V. Temperature range:-40 to 85 C. Tolerance: +20% to -10%. Polarity clearly marked on cases.

Part No. **85-1401**

most popular ELECTROLYTIC ASSORTMENT

Contains the following electrolytics, one each: 100 @ 25V. 470 @ 25V, 10uF@16V, 1000uF all @ 50V. Temperature range: -40 to 85 C. Tolerance: +20% to -10% Polarity clearly marked on cases.   Part No. **85-1407**

pFd. values CERAMIC DISK CAPACITOR ASSORTMENT

Twelve pieces total, two each of very popular "pico values" used in many circuits. Content two each: 10pf, 47pf, 100pf, 220pf, 470pf, 1000pf

Part No. **85-1450**

SUPER BRIGHT RED LIGHT

Very HIGH light output from an LED (600mcd @ 20mA): use where you must have a strong indicator light. Standard, 1-3/4 size LED with a diffused output.

Part No. **85-105**

16 VOLT ELECTROLYTIC ASSORTMENT

The best values at this voltage, 3 each of 1uFd, 4.7uFD, 22uFd, 47uFd 220uFd.

Part No. **85-1404**

RESISTOR ASSORTMENTS

Handy package of resistors in common values. 1/4 watt, +/-5% tolerance.
Part No. **85-1005 LOW OHM** values, 3 each of: 10, 47, 100, 150, 220, 270, 330, 390, 470, 680, 1.5K, 2.2K, 3.3K, 4.7K, 5.1K, 5.6K, 6.8K

Part No. **85-1008 MID and HIGH OHM** values, 3 each of: 8.2K, 10K, 12K, 15K, 22K, 27K, 33K, 47K, 68K, 100K, 220K, 330K.

Part No. **85-1014** contains 5 each **hottest values**: 47, 100, 470, 1K, 4.7K, 10K, 47K, 100K, 470K, 680K, 1meg.

uFD. values CERAMIC DISK CAPACITOR ASSORTMENT

Five pieces total, 2 each of .01uF, 3 each of .1uF; commonly used as by pass capacitors.

Part No. **85-1453**

pFd. values MONOLITHIC CAPACITOR ASSORTMENT

50 Volt bypass capacitors, COG Temperature stable type. Contains 2 each 10pf. 22pf, 47pf, 100pf, 220pf (the values most used in RF circuits).

Part No. **85-1460**

uFd. values MONOLITHIC CAPACITOR ASSORTMENT

50 Volt bypass capacitors, Z5U Temp coefficient. Contains five each of .01ufd (103) and 0.1ufd (104).

Part No. **85-1464**

Mylar CAPACITOR ASSORTMENT

A selection of Mylars based upon those called for the most in various circuits. The package contains 2 each: .001uf, .01uf, .1uf, 1each .22uf, .047ufd.

Part No. **85-1469**

Tantalum CAPACITOR ASSORTMENT

The most called for Tantalums in one assortment, the package contains 2 each: .1uf/35V, 1uf/35V and 1 piece 10uf/25V.

Part No. **85-1473**

Voltage Regulators 78L series

Small regulators with a 100mA output, TO-92 case. These are fixed voltage regulators with very good regulation and ripple rejection (important for audio, RF circuits).

Part No. 86-1105 type 78L05 @5V. regulator
Part No. 86-1112 type 78L12 @12V. regulator

SHIELDED TUNABLE RF COILS

Useful for tuning RF circuits, filtering etc. Available in a wide range of values. All are enclosed in a square metal "can" dimensions are a 0.30" X 0.30" foot print, 0.435" nom. height and leads are spaced on .0265" centers.

PART #	min. (uH)	max. (uH)
86-1400	.032	.035
86-1402	.048	.059
86-1404	.066	.079
86-1408	.109	.132
86-1410	.130	.159

---

455 kHz IF TRANSFORMERS

Use as a 1st IF transformer. Primary: 50K. Secondary 500 ohms.

Part No. **86-1440**

10.7 MHz IF TRANSFORMER

Commonly used for the second IF in receivers. Primary: 15K, Secondary: 300 ohms.
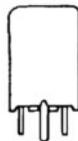
Part No.**86-1444**

Popular Crystals

The package style is HC-49/u. Most circuits will specify if Xtal needs to be series or parallel. Parallel resonant xtals are 20 pF loading capacitance (not important for series xtals). Generally, series or parallel types are specified by the circuit and not interchangeable.

Part No.	Frequency	Type
86-1380	3.58 mHz	color burst
86-1384	4 mHz	series
86-1385	4 mHz	parallel
86-1391	10 mHz	series
86-1393	10 mHz	parallel

LM317T 1.5 Amp Variable Regulator I.C.

Typically used in one amp variable power supplies, will produce as much as 1.5 amps but be sure to heatsink very well. Many circuits in books and magazines; used in Datakits projects tool
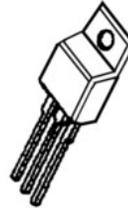
Part No. 86-1117 type LM317T I.C.

Hi Efficiency Red LED, 5pk.

Red LEDs do a good job at reduced current, such as in the 5 to 10 mA range; much brighter than other red LEDs at standard 10 to 20mA current. Unlike the highly directional super-bright types, these are bright when viewed from a wide angle, making them excellent indicator lamps. Five per pack.
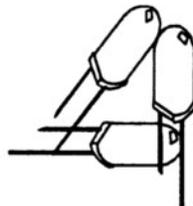
Part No. 85-102 Red LED five pack

2 AMP Bridge Rectifier

BR805 2 AMP Bridge Rectifier. In line SIP 4 lead package. This package equals the four diodes used in a full wave bridge circuit; may also be used on battery powered circuits to protect against accidental reverse polarity etc.
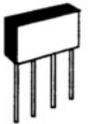
Part No. 86-1100 type BR805 bridge

Bright WHITE LED

LED, White Light This is an exceptional bright LED with a white light. If operated in its rated range, it should never burn out, ever. Current 10mA to 20mA. Use for power indicator or even for small, light-weight and low current flashlight, keyhole finder etc..
Millicandle power 7,000, 3.5-4.0 VDC.

Part No. 85-107 white LED

TOROID (FERRITE) BEADS

A package of a dozen small beads to slip over wires for RF noise suppression. For wire sizes up to 20 gauge insulated

Part No. **86-1570**

COMPONENT PARTS

500 mw AUDIO AMPLIFIER IC (Type LM386N)

This robust little amplifier is the heart of many audio devices such as radios, intercom's etc. Produces up to a half watt of output into a 4-ohm speaker. Operates on, low voltages for portable use (4 to 12 VDC, max. 15). Voltage gain up to 200!

Part No. 86-1050

VHF DOUBLE BALANCED MIXER IC (Type NE602AN)

This is an extremely flexible low power IF mixer. Noise is under 5.0 dB @ 45MHz; excellent gain and sensitivity. Useful in direct conversion receivers or mixer/oscillator application., portable radios, VHF transceivers etc. etc.

Part No. 86-1059

CMOS TIMER IC (Type ICM7555)

Because it is CMOS, this variation on the 555 timer is a very low power IC and ideal for battery operation. (It may not be plug-compatible for the 555 in all cases; pinouts are the same, however.) Usage is same as the popular 555 timer.

Part No. **86-1070**

Popular CMOS IC's, 4000 series

The most popular of this CMOS logic family of IC's. Called for in projects, magazine articles etc.. Packaged one per package
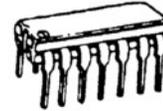
IC type	Description	Package	Part no.
CD4001	Quad 2-input Nor Gate	14-pin DIP	**86-4001**
CD4011	Quad 2-inut NAND Gate	14-pin DIP	**86-4011**
CD4013	Dual D-Flipflop	14-pin DIP	**86-4013**
CD4017	Decade Counter/Divider	16-pin DIP	**86-4017**
CD4046	Phase-locked loop	16-pin DIP	**86-4046**
CD4049	Hex Buffer, Inverting	16-pin DIP	**86-4049**
CD4066	Quad Analog Switch	16-pin DIP	**86-4066**

STEREO POWER AMPLIFIER IC 44 watts (type TDA1554)

Originally designed for hi-end automotive stereo applications, this is a top quality product for any hi-fidelity use. The case is a 17 lead single in-line (SIL) (every other pin bent to DIL) plastic power package. The circuit contains four 11 watt single-ended or two 22 watt bridge amplifiers. It features low harmonic distortion, excellent ripple rejection and no "plop" with power on/off.

Among the many extras are Mute facility, ESD protection, reverse polarity safe and thermal overload shut down. The operation range is from six to eighteen volts but typical is 14.4 volts DC. The circuit requires very few external components. Use with four ohm speakers is recommended; circuit diagram included
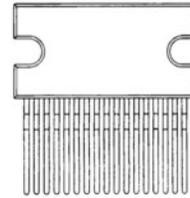
Part No. **86-1056**

POWER MOSFET TRANSISTORS

Popular N-channel MOSFETS; available in several power ratings; 100 V breakdown.

Part no.	Type	Amps	R
86-1273	IRF510	5.6	.54ohms
86-1275	IRF520	9.2A	.27
86-1277	IRF540	28A	.077
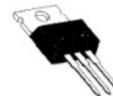
All Philmore components parts are prime devices and meet standard industry specifications.

NPN RF AMPLIFIER TRANSISTOR (Type PN918)

A package of five NPN transistors, 15V, 50mA, Ft 600MHz, H_{FE} P 20 minimum. For VHF and UHF use.
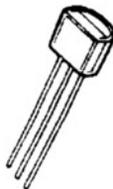
Part No. **86-1250**

JFET TRANSISTOR (Type MPF102)

An N-channel JFET transistor; depletion mode VHF amplifier; 25V, 20mA. A very popular, general purpose FET.

Part No. **86-1268**

COMPONENT PARTS

AM RADIO RECEIVER on a CHIP (type ZN414)

In a tiny (to-92) transistor size case, a ten transistor tuned RF circuit that requires no setup or alignment. Nearly a complete circuit; add battery (1.1 to 1.6 volts), tuning coil and capacitor and crystal earphone.
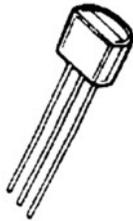
Part No. **86-1007**

Low-power AUDIO AMPLIFIER IC (type MC34119P)

A low power amp that may be used with two to six volts DC. Drives an 8 ohm speaker and up; maximum output power is 1/4 watt. Adjustable gain up to 46db, minimal external parts required. This IC is very useful in small, portable battery-powered circuits

Part No. **86-1047**

NOTE: The IC's in this product group are packaged with pinout information and a circuit diagram. Your stocking distributor has a detailed manual so that you may photocopy technical information, circuits etc. .

"White" Toroids

These toroid cores are very commonly called for in radio matching circuits, QRP transmitters and receivers as well as radio frequency amplifers. These are color coded with white enamel. 1MHz - 25MHz. Tempature stability 30, Magnetic tolerance +/- 5%.

Toroids are packaged one per display package.

Type	Part No.
T50-7	**86-1550**
T68-7	**86-1552**

7-Segment LED Display. LED .52" (height of digit) display

Standard, common anode red readout. A quality unit assures that several used together will have a uniform appearance. Pins on common centers with 0.30" between rows. One unit per package.

Part No. **85-1180** LED 7-Seg. display

MICROWAVE AMPLIFIER IC (type MAR-6)

A hybrid amplifier, typical gain of 11 dB at 2 GHz; may be cascaded for increased gain. Tiny device with four leads.
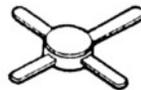
Part No. **86-1026**

STEREO TONE, VOLUME & BALANCE CONTROL IC (type TDA1524)

Active balance, volume, bass and treble control for audio systems. All functions may be controlled by single, non-critical potentiometer.
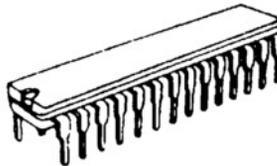
Part No. **86-1044**

STANDARD TOROID CORES

Useful for inductors in HF and VHF circuits, these are donut shaped cores of pressed ferrite; typically hard to find.
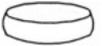
Part No.	Type	Freq. range (mHz)	Color	Size O.D.
86-1555	T50-2	2-30	red	0.5"
86-1557	T50-6	10-50	yellow	0.5"
86-1559	T68-2	2-30	red	0.68"
86-1561	T50-10	30-100	black	0.5"

Two Hole Balun Cores
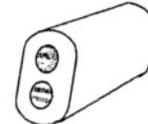
Most commonly used for broadband transfomers in transmitters.

Part No. 86-1575 type BN43-202 two hole balun

Part No. 86-1577 type BN43-2402 two hole balun

WIDE-BAND TOROID CORES

Use for inductors and wide band transformers. Use for antenna matching etc.

Part No.	Type	Size
86-1563	FT37-43	O.D. .37"
86-1565	FT50-43	O.D. 0.5"

Type T-37 Toroid Ferrite Cores

Used for baluns and RF toroidal transformers and frequently used for filtering.

Part No.	Industry Type	Marked
86-1554	T37-2	red
86-1556	T37-6	yellow
86-1560	T37-10	black

0.80" Type T-80 Toroid Core

Type T-80 is 0.8" diameter (RED) Ferrite core, commonly used in transformers between 2MHz and 30 MHz. Often used in filters.

(.486" I.D.)

Part No. 86-1567 Toroid T-80

COMPONENT PARTS

TUNING DIODES

The capacitance varies with voltage; so you can use voltage change to tune an RF circuit in place of using a (mechanical) variable capacitor. Current consumption is negligible

The following values are the nominal capacitance value at 45 volts; capacitance varies with voltage.
Part No. **86-1303**   6.8pF type MV2101
Part No. **86-1309**   33pF type MV2109

TUNING DIODE type MV209 has a capacitance of 450pF @ 1.6 volts, 5pF @ 12 volts
Part No. **86-1300**

Silicon Rectifier Diodes
1N4001 series Industry standard Silicon Rectifier Diodes rated 1 ampere, axial lead. Used in thousands of practical circuits.

Part No. 86-1225 type 1N4001 50V PIV
Part No. 86-1230 type 1N4004 400V PIV
Part No. 86-1235 type 1N4007 1000V PIV

ZENER DIODES Assortment

ZENERs low cost voltage regulation. These are the most needed values; one each of five values per package. Included are: 1N4733 5.1V zener, 1N4735 6.2V, 1N4739 9.1V diode, 1N4740 10V diode, 1N4742 12V diode. DO-41 type case.

Part No. 86-1217 five piece Zener assortment

1N4148/1N914 DIODES

DIODES ten-pack. Industry standard hi-speed silicon switching diodes called for in many circuits. Ten pieces per package

Part No. 86-1210 diodes ten pack.

Epoxy Conformal Coated R.F. CHOKES

Small chokes, slightly larger than resistors and marked with the same code as resistors to indicate value. Epoxy coating makes them nearly impervious to moisture, humidity etc...

Part No.	value uh	current mA DC	"Q" min.
86-1422	1	920	45
86-1420	2.2	750	55
86-1421	4.7	620	70
86-1424	10	500	65
86-1423	22	410	50
86-1425	47	340	40
86-1426	100	275	30
86-1427	220	155	60
86-1428	470	126	60
86-1430	1000	100	100

LM741 OpAMP
The LM741 is the most used single OpAmp, featuring differential inputs. Has provisions for external compensation and offset nulling. This is a general purpose workhorse and a direct replacement for LM709, LM201, and MC1439. Slew rate .5V/us., 1.5MHz bandwidth.
Part No. 86-1062 OpAmp LM741

MC33171 OpAmp
A single OpAmp optimized for single supply operation. The MC33171 has a lower power, wide bandwidth at 1.8MHz. Especially useful in low power circuits and modern PLL circuits; with provision for offset nulling if required. Wide supply range, from 3V to 44V operation.
Part No. 86-1063 OpAmp

TL072 Dual JFET OpAmp
TL074 Quad JFET OpAmp
A low noise, high impedance Operational Amplifier with a 4 MHz bandwidth. A favorite in audio designs. Has internal compensation and features very low harmonic distortion. The TL074 is the Quad version of the TL072 with same features. One per package
Part No. 86-1067 Dual JFET OpAmp 8-pin Dip
Part No. 86-1068 Quad JFET OpAmp 14-pin Dip

LM 324 OpAMP
LM324 Operational Amplifier. Most useful for DC voltage gain blocks, active filters and low frequency oscillators. The LM324 is an industry standard low-power Quad Op AMP, featuring differential inputs, and is optimized for single-ended power supply, +3.0V to 32V DC operation. Bandwidth-Unity gain at 1 MHz. 14pin DIP.
Part No. 86-1060 OpAmp LM324

NE555 TIMER
IC 8-pin TIMER. one of the most frequently used, industry standards. Timing from u/Seconds to hours. Can be used in astable or monostable modes. Adjustable duty cycle and frequency.
(See CMOS 555 elsewhere in this section.).
Part No. 86-1069 NE555 Timer IC NE555

TL082 Dual JFET Input OpAmp
TL084 Quad JFET Input OpAmp

Both OPAmps feature Internal compensation, high impedance inputs, and the TL082 is pin compatible with older types such as MC1458, MC4558, LM358. Bandwidth=3.0 mHz. The TL084 is a Quad version of the TL082.

Part No. 86-1065 Dual OpAmp 8-pin Dip
Part No. 86-1066 Quad OpAmp 14-pin Dip

78XX Series Voltage Regulators

These are the industry standard in voltage regulator IC's for power supplies with a fixed voltage. Rated at 1 amp (use heat sink), the last two digits indicate the voltage. Ripple rejection, load & line regulation are excellent.
Part No. 86-1137 type 7805 5V. regulator
Part No. 86-1140 type 7812 12V. regulator

MC33172 dual Op Amp

This is the Quad version of the MC33171 OpAmp and will operate from a single supply, which is probably its most important feature. This is a good low power unit with a wide bandwidth. Use with 3V to 44V.
Part No. 86-1064 type MC33172 OpAmp

TRANSISTOR PACKAGES

Popular transistors with broad applications; these numbers are both used in place of many industry types and called for by these numbers as well. All transistors are exactly the industry number shown, not fall-out tested, general replacements. Thousands of circuits call for these numbers. Note that packages contain anywhere from one to five pieces.

Philmore No.	Industry No.	Qty.per	TYPE	Outline Type
86-1604	2N3904	5	NPN	TO-92(92)
86-1606	2N3906	5	PNP	TO-92(92)
86-1622	PN2222A	5	NPN	TO-92(92)
86-1641	2N4401	5	NPN	TO-92(92)
86-1642	2N4403	5	PNP	TO-92(92)
86-1670	2N7000	3	FET n-channel	TO-92(92)
86-1673	BS170	3	FET n-channel	TO-92(97)
86-1650	2N2219A	1	NPN	TO-39

TO-92(97)
D G S

TO-92(92)
E B C

TO-39
B E C
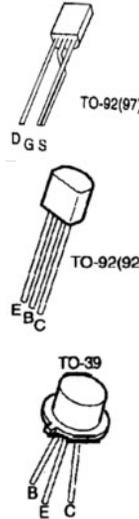
LM358N OpAmp

A popular IC used in many circuits ranging from Pre-amps to voltage monitors. I.C. is standard 8-pin package, pins on tenth inch centers.

No. 86-1072......... Pack of 2 LM358N

1 Amp Bridge Rectifier

A compact package containing the four diodes needed for a full-wave bridge rectifier circuit. Typical use is in power supplies for DC from an AC, 110V transformers. Rated 1 ampere at 50 volts.

No. 86-1280...... Package 1 bridge rectifier

Power Rectifiers

Commonly used for power supplies. These are four-packs so that the user can make a full-wave bridge, if needed.

No. 86-1237............4-pk of 3AMP 1N5400
No. 86-1239.......4-pack of 6AMP type 6A05

MINIATURE POWER RELAYS High Capacity (10 Amp)

This series of PC board mounting relays has high contact capacity (10 amps) in a very small package. They are completely sealed and protected from dust and solder flux. These relays can be used for flow soldered.

•Power Consumption - 0.36W
•Pull-in Voltage 75% max.
•Contact Capacity 10A 24V DC
•Resistive Load 10A 120V AC
•UL Recognized, CSA Certified

Bottom views
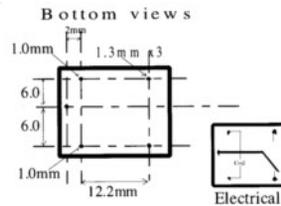
Part No.	Coil Voltage (V DC)	Normal Current (mA)	Coil Resistance (ohm)
86-103	3	120	25
86-105	5	73	70
86-106	6	60	100
86-109	9	40	225
86-112	12	30	400
86-118	18	20	900
86-124	24	15	1600

NOTE: Packaged Only, Not Available in Bulk.

Ceramic Trimmer Capacitors

Ceramic trimmer capacitors are used in all types of analog and digital electronic equipment. Typical uses may include setting time-out function, changing frequency, adjusting voltage and adjusting switching delay. We offer Vertical mount (screw on top of capacitor) which is encapaculated and color coded for easy identification.

3 per package

Part Number	Capacitance (pf) Min.	Max	Temp. Coeff. (XPPM/ºC)	Color Code
87-605	2.0	5.0	NP0	Blue
87-610	2.7	10	N470	White
87-620	4.2	20	N750	Red
87-630	5.5	30	N750	Green
87-640	6.8	40	N1200	Yellow
87-650	9.1	50	N1200	Brown
87-660	10.2	60	N1200	Brown
87-670	12.0	70	N1200	Blue

Features
A Variety of capacitance ranges up to 70pf
Linear capacitance change excellent moisture-proof characteristics

Specifications
Working Voltage: 50V DC
Maximum Voltage: 110V DC
Insulation Resistance: 100 Ohms @ 50V DC
Operating Temperature: -30ºC - +85ºC
Q Factor: >500

COMPONENT PARTS

20 Turn Vertical Mount Cermet Trimming Potentiometers

These precision made cermet element allows almost infinite resolution. With the multi-turn function the accuracy is <.01% variance. These cermet elements provide superior resistance stability and excellent voltage setting ability. These potentiometers are more stable and cost less than wirewound, carbon, or metal film competitors.

Specifications
Turns: 20
Element: Ceramic
Power: .5W
Size: 9mm X 9mm X 4.5mm
Lead Spacing: 2.54mm (.1")

Part Number	Value	Part Number	Value
68-050	50 Ohm	**68-103**	10K Ohm
68-100	100 Ohm	**68-203**	20K Ohm
68-200	200 Ohm	**68-503**	50K Ohm
68-500	500 Ohm	**68-104**	100K Ohm
68-102	1K Ohm	**68-254**	200K Ohm
68-202	2K Ohm	**68-504**	500K Ohm
68-502	5K Ohm	**68-105**	1 Meg Ohm

1 per Package

20 Turn Horizontal Mount Cermet Trimming Potentiometers

These precision made cermet element allows almost infinite resolution. With the multi-turn function the accuracy is <.01% variance. These cermet elements provide superior resistance stability and excellent voltage setting ability. These potentiometers are more stable and cost less than wirewound, carbon, or metal film competitors.

Specifications
Turns: 20
Element: Ceramic
Power: .75W
Size: 19mm X 6mm X 4.5mm

1 per Package

Part Number	Value	Part Number	Value
89-050	50 Ohm	**89-103**	10K Ohm
89-100	100 Ohm	**89-203**	20K Ohm
89-200	200 Ohm	**89-503**	50K Ohm
89-500	500 Ohm	**89-104**	100K Ohm
89-102	1K Ohm	**89-254**	200K Ohm
89-202	2K Ohm	**89-504**	500K Ohm
89-502	5K Ohm	**89-105**	1 Meg Ohm

1/4 watt RESISTORS

Carbon-film, 5% tolerance industry standard 1/4 watt resistors. Packaged in economically priced fifty-packs of each value. The package may be opened and then re-closed to store unused resistors

Ohms	Part no.	Ohms	Part no.
10	87-0010	5,100	87-5100
22	87-0022	5,600	87-5600
33	87-0033	6,800	87-6800
39	87-0039	8,200	87-8200
47	87-0047	10,000	87-010K
51	87-0051	12,000	87-012K
68	87-0068	15,000	87-015K
82	87-0082	18,000	87-018K
100	87-0100	22,000	87-022K
150	87-0150	27,000	87-027K
180	87-0180	33,000	87-033K
220	87-0220	39,000	87-039K
270	87-0270	47,000	87-047K
330	87-0330	51,000	87-051K
390	87-0390	56,000	87-056K
470	87-0470	68,000	87-068K
510	87-0510	82,000	87-082K
560	87-0560	100,000	87-100K
680	87-0680	120,000	87-120K
820	87-0820	150,000	87-150K
1,000	87-1000	180,000	87-180K
1,200	87-1200	220,000	87-220K
1,500	87-1500	270,000	87-270K
1,800	87-1800	330,000	87-330K
2,200	87-2200	470,000	87-470K
2,700	87-2700	1,000,000	87-001M
3,000	87-3000	1,500,000	87-01M5
3,300	87-3300	2,200,000	87-02M2
3,900	87-3900	4,700,000	87-04M7
4,700	87-4700	10,000,000	87-010M

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

322

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

336

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

ALPHA - NUMERIC INDEX

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

342

NOTE: When item is available in both display packaging and bulk packed, only the packaged part number appears in this index.

| INCHES FRACTIONAL	DECIMAL	METRIC mm	INCHES FRACTIONAL	DECIMAL	METRIC mm	INCHES FRACTIONAL	DECIMAL	METRIC mm
TO CONVERT TO MILLIMETERS; MULTIPLY INCHES X 25.4			TO CONVERT TO INCHES; MULTIPLY MILLIMETERS X 0.03937*			*FOR SLIGHTLY GREATER ACCURACY WHEN CONVERTING TO INCHES; DIVIDE MILLIMETERS BY 25.4		
.	0.0039	0.1000	.	0.5512	14.0000	.	1.8898	48.0000
.	0.0079	0.2000	9/16	0.5625	14.2875	.	1.9291	49.0000
.	0.0118	0.3000	.	0.5709	14.5000	.	1.9685	50.0000
1/64	0.0156	0.3969	37/64	0.5781	14.6844	2	2.0000	50.8000
.	0.0157	0.4000	.	0.5906	15.0000	.	2.0079	51.0000
.	0.0197	0.5000	19/32	0.5938	15.0813	.	2.0472	52.0000
.	0.0236	0.6000	39/64	0.6094	15.4781	.	2.0866	53.0000
.	0.0276	0.7000	.	0.6102	15.5000	.	2.1260	54.0000
1/32	0.0313	0.7938	5/8	0.6250	15.8750	.	2.1654	55.0000
.	0.0315	0.8000	.	0.6299	16.0000	.	2.2047	56.0000
.	0.0354	0.9000	41/64	0.6406	16.2719	.	2.2441	57.0000
.	0.0394	1.0000	.	0.6496	16.5000	2 1/4	2.2500	57.1500
.	0.0433	1.1000	21/32	0.6563	16.6688	.	2.2835	58.0000
3/64	0.0469	1.1906	.	0.6693	17.0000	.	2.3228	59.0000
.	0.0472	1.2000	43/64	0.6719	17.0656	.	2.3622	60.0000
.	0.0512	1.3000	11/16	0.6875	17.4625	.	2.4016	61.0000
.	0.0551	1.4000	.	0.6890	17.5000	.	2.4409	62.0000
.	0.0591	1.5000	45/64	0.7031	17.8594	.	2.4803	63.0000
1/16	0.0625	1.5875	.	0.7087	18.0000	2 1/2	2.5000	63.5000
.	0.0630	1.6000	23/32	0.7188	18.2563	.	2.5197	64.0000
.	0.0669	1.7000	.	0.7283	18.5000	.	2.5591	65.0000
.	0.0709	1.8000	47/64	0.7344	18.6531	.	2.5984	66.0000
.	0.0748	1.9000	.	0.7480	19.0000	.	2.6378	67.0000
5/64	0.0781	1.9844	3/4	0.7500	19.0500	.	2.6772	68.0000
.	0.0787	2.0000	49/64	0.7656	19.4469	.	2.7165	69.0000
.	0.0827	2.1000	.	0.7677	19.5000	2 3/4	2.7500	69.8500
.	0.0866	2.2000	25/32	0.7813	19.8438	.	2.7559	70.0000
.	0.0906	2.3000	.	0.7874	20.0000	.	2.7953	71.0000
3/32	0.0938	2.3813	51/64	0.7969	20.2406	.	2.8346	72.0000
.	0.0945	2.4000	.	0.8071	20.5000	.	2.8740	73.0000
.	0.0984	2.5000	13/16	0.8125	20.6375	.	2.9134	74.0000
7/64	0.1094	2.7781	.	0.8268	21.0000	.	2.9528	75.0000
.	0.1181	3.0000	53/64	0.8281	21.0344	.	2.9921	76.0000
1/8	0.1250	3.1750	27/32	0.8438	21.4313	3	3.0000	76.2000
.	0.1378	3.5000	.	0.8465	21.5000	.	3.0315	77.0000
9/64	0.1406	3.5719	55/64	0.8594	21.8281	.	3.0709	78.0000
5/32	0.1563	3.9688	.	0.8661	22.0000	.	3.1102	79.0000
.	0.1575	4.0000	7/8	0.8750	22.2250	.	3.1496	80.0000
11/64	0.1719	4.3656	.	.8858	22.5000	.	3.1890	81.0000
.	0.1772	4.5000	57/64	.89063	22.6219	.	3.2283	82.0000
3/16	0.1875	4.7625	.	.9055	23.0000	.	3.2677	83.0000
.	0.1969	5.0000	29/32	.90625	23.0188	.	3.3071	84.0000
13/64	0.2031	5.1594	59/64	.92188	23.4156	.	3.3465	85.0000
.	0.2165	5.5000	.	.9252	23.5000	.	3.3858	86.0000
7/32	0.2188	5.5563	15/16	.93750	23.8125	.	3.4252	87.0000
15/64	0.2344	5.9531	.	.9449	24.0000	.	3.4646	88.0000
.	0.2362	6.0000	61/64	.95313	24.2094	3 1/2	3.5000	88.9000
1/4	0.2500	6.3500	.	.9646	24.5000	.	3.5039	89.0000
.	0.2559	6.5000	31/32	.96875	24.6063	.	3.5433	90.0000
17/64	0.2656	6.7469	.	.9843	25.0000	.	3.5827	91.0000
.	0.2756	7.0000	63/64	.98438	25.0031	.	3.6220	92.0000

TO CONVERT TO MILLIMETERS; MULTIPLY INCHES X 25.4			TO CONVERT TO INCHES; MULTIPLY MILLIMETERS X 0.03937*			*FOR SLIGHTLY GREATER ACCURACY WHEN CONVERTING TO INCHES; DIVIDE MILLIMETERS BY 25.4		
INCHES FRACTIONAL	DECIMAL	METRIC mm	INCHES FRACTIONAL	DECIMAL	METRIC mm	INCHES FRACTIONAL	DECIMAL	METRIC mm
9/32	0.2813	7.1438	1	1.000	25.40	.	3.6614	93.0000
.	0.2953	7.5000	.	1.0039	25.5000	.	3.7008	94.0000
19/64	0.2969	7.5406	.	1.0236	26.0000	.	3.7402	95.0000
5/16	0.3125	7.9375	.	1.0433	26.5000	.	3.7795	96.0000
.	0.3150	8.0000	.	1.0630	27.0000	.	3.8189	97.0000
21/64	0.3281	8.3344	.	1.0827	27.5000	.	3.8583	98.0000
.	0.3346	8.5000	.	1.1024	28.0000	.	3.8976	99.0000
11/32	0.3438	8.7313	.	1.1220	28.5000	.	3.9370	100.0000
.	0.3543	9.0000	.	1.1417	29.0000	4	4.0000	101.6000
23/64	0.3594	9.1281	.	1.1614	29.5000	.	4.3307	110.0000
.	0.3740	9.5000	.	1.1811	30.0000	4 1/2	4.5000	114.3000
3/8	0.3750	9.5250	.	1.2205	31.0000	.	4.7244	120.0000
25/64	0.3906	9.9219	1 1/4	1.2500	31.7500	5	5.0000	127.0000
.	0.3937	10.0000	.	1.2598	32.0000	.	5.1181	130.0000
13/32	0.4063	10.3188	.	1.2992	33.0000	.	5.5118	140.0000
.	0.4134	10.5000	.	1.3386	34.0000	.	5.9055	150.0000
27/64	0.4219	10.7156	.	1.3780	35.0000	6	6.0000	152.4000
.	0.4331	11.0000	.	1.4173	36.0000	.	6.2992	160.0000
7/16	0.4375	11.1125	.	1.4567	37.0000	.	6.6929	170.0000
.	0.4528	11.5000	.	1.4961	38.0000	.	7.0866	180.0000
29/64	0.4531	11.5094	1 1/2	1.5000	38.1000	.	7.4803	190.0000
15/32	0.4688	11.9063	.	1.5354	39.0000	.	7.8740	200.0000
.	0.4724	12.0000	.	1.5748	40.0000	8	8.0000	203.2000
31/64	0.4844	12.3031	.	1.6142	41.0000	.	9.8425	250.0000
.	0.4921	12.5000	.	1.6535	42.0000	10	10.0000	254.0000
1/2	0.5000	12.7000	.	1.6929	43.0000	20	20.0000	508.0000
.	0.5118	13.0000	.	1.7323	44.0000	30	30.0000	762.0000
33/64	0.5156	13.0969	1 3/4	1.7500	44.4500	40	40.0000	1016.000
17/32	0.5313	13.4938	.	1.7717	45.0000	60	60.0000	1524.000
.	0.5315	13.5000	.	1.8110	46.0000	80	80.0000	2032.000
35/64	0.5469	13.8906	.	1.8504	47.0000	100	100.0000	2540.000

Metric Conversion Chart

US Units	Multiplied By	Equals Metric Units	Metric Units	Multiplied By	Equals US Units
Length					
Inches	2.5400	Centimeters	Centimeters	0.3937	Inches
Feet	0.3048	Meters	Meters	3.2808	Feet
Yards	0.9144	Meters	Meters	1.0936	Yards
Miles	1.6093	Kilometers	Kilometers	0.6214	Miles
Area					
Square inches	6.4516	Square centimeters	Square centimeters	0.1550	Square inches
Square feet	0.0929	Square meters	Square meters	10.7640	Square feet
Square yards	0.8361	Square meters	Square meters	1.1960	Square yards
Acres	0.4047	Hectares	Hectares	2.4710	Acres
Volume					
Cubic feet	0.0283	Cubic meters	Cubic meters	35.3144	Cubic feet
Cubic yards	0.7646	Cubic meters	Cubic meters	1.3079	Cubic yards
Gallons	3.7854	Liters	Liters	0.2642	Gallons
Weight					
Foot-pounds	1.3830	Newton-meters	Newton-meters	0.7380	Foot-pounds
Pounds	0.4536	Kilograms	Kilograms	2.2046	Pounds
Foot-pounds	1.3830	Newton-meters	Newton-meters	0.7380	Foot-pounds

Ohm's LAW CIRCLE

Ohm's Law
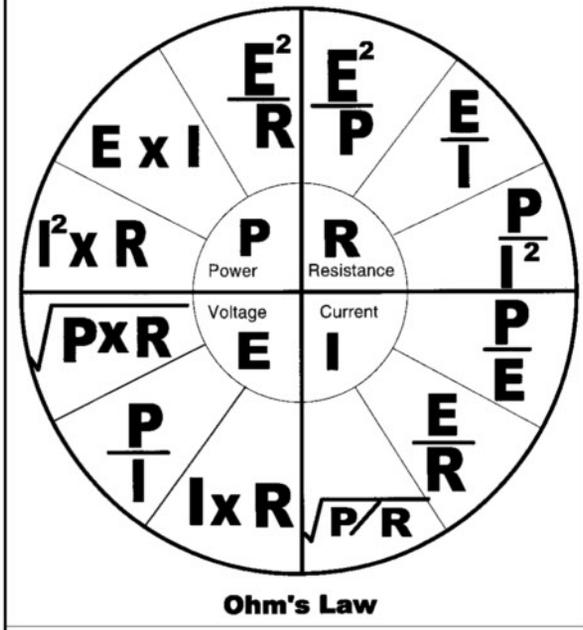
Select CAPACITOR MARKINGS

pico	nano	micro	code
1pF	.001nF	.000,001uF	*A Bar under*
4.7pF	.0047nF	.000,0047uF	*the number means*
10pF	.01nF	.000,01uF	*the value is in*
22pF	.022nF	.000,022uF	*pico farads*
100p	.1nF	.000,1uF	110
330pF	.33nF	.000,33uF	331
1000pF	1.0nF	.001uF	102
8200pF	8.2nF	.0082uF	822
10,000pF	10nF	.01uF	103
33,000pF	33nF	.033uF	333
100,000pF	100nF	.1uF	104
220,000pF	220nF	.22uF	224
1,000,000pF	1,000nF	1.0uF	105
4,700,000pF	4,700nF	4.7uF	475
10,000,000pF	10,000nF	10.0uF	106

<u>10</u> the underline indicates Picofarads, so <u>33</u> means thirty-three picofarads etc.

Simple Ohm's law Circle.

Cover the letter that represents the unknown value and calculate it with the other two values. Example, if you cover "E" then you would multiply I x R. If you cover "I", then you would divide E by R.
E=Voltage, I=Amps, R=Resistance.
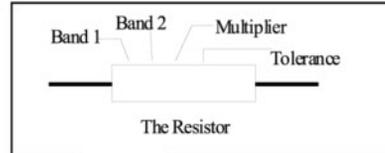
The Resistor

Simple POWER CIRCLE.

Cover the letter that represents the unknown value and calculate with the other two values. Example, cover "E" then you divide I into P.
E=Voltage, I=Amps, P=Power in watts.
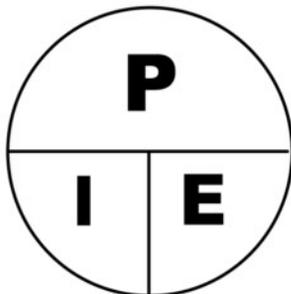
POWER CIRCLE

RESISTOR VALUES COLOR CODE CHART

Band three is the "multiplier band", the X means to multiply by the number shown in that column. A resistor with three brown bands is 110 ohms and so on.

*Gold fourth band, 5% tolerance.   Silver fourth band, 10% tolerance
No fourth band, 20% tolerance.*

Color	Band 1	Band 2	Band 3	tolerance band 4
Black	0	0	X1	
Brown	1	1	X10	1%
Red	2	2	X100	2%
Orange	3	3	X1,000	3%
Yellow	4	4	X10,000	4%
Green	5	5	X100,000	
Blue	6	6	X1,000,000	
Violet	7	7	X10,000,000	
Gray	8	8	X100,000,000	
White	9	9	(none)	

Stud	Size	mm	inch
●	#2	2.2	.087
●	#3	2.7	.106
●	#4	3.2	.126
●	#6	3.7	.146
●	#8	4.3	.169
●	#10	5.3	.209
●	1/4	6.4	.250
●	5/16	7.9	.312
●	3/8	9.5	.375
●	7/16	11.1	.437
●	1/2	12.7	.500

STUD DIMENSION CHART

Stud	Size	mm	inch
●	9/16	14.3	.562
●	5/8	15.9	.625
●	11/16	17.5	.687
●	3/4	19.0	.750

Temperature Conversion Chart
Celsius…………….Fahrenheit
0 C ....32.0 F
1 C ....33.8 F
2 C ....35.6 F
3 C ....37.4 F
4 C ....39.2 F
5 C ....41.0 F
6 C ....42.8 F
7 C ....44.6 F
8 C ....46.4 F
9 C ....48.2 F
10 C ....50.0 F
11 C ....51.8 F
12 C ....53.6 F
13 C ....55.4 F
14 C ....57.2 F
15 C ....59.0 F
16 C ....60.8 F
17 C ....62.6 F
18 C ....64.4 F
19 C ....66.2 F
20 C ....68.0 F
21 C ....69.8 F
22 C ....71.6 F
23 C ....73.4 F
24 C ....75.2 F
25 C ....77.0 F
26 C ....78.8 F
27 C ....80.6 F
28 C ....82.4 F
29 C ....84.2 F
30 C ....86.0 F
The equation for converting Fahrenheit to
Celsius is: ((Deg. F) - 32) x (5/9) = Deg. C

The Greek Alphabet-often used for math symblos.

- alpha α
- beta β
- gamma γ
- delta δ
- epsilon ε
- zeta ζ
- eta η
- theta θ
- iota ι
- kappa κ
- lambda λ
- mu μ
- nu ν
- xi ξ
- pi π
- piv ϖ
- rho ρ
- sigma σ
- sigmaf ς
- tau τ
- upsilon υ
- phi φ
- chi χ
- psi ψ

- omega ω
- Gamma Γ
- Delta Δ
- Theta Θ
- Lambda Λ
- Xi Ξ
- Pi Π
- Sigma Σ
- Upsilon Y
- Phi Φ
- Psi Ψ
- Omega Ω

Abbreviations common in Electronics

A (amp) - Ampere
AC - Alternating current
AC/DC - Alternating current or Direct current
A/D - Analog to digital
ADC - Analog-to-digital converter
AF - Audio frequency
AFT - Automatic fine tuning
AFC - Automatic frequency control
AFC - Automatic flow controller, used in controlling the flow of gasses under pressure into a vacuum system
AGC - Automatic gain control
Ah - Ampere hour
Ai - Current gain
AM - Amplitude modulation
AM/FM - Amplitude modulation or Frequency modulation
AMM - Analog multimeter
antilog - Antilogarithm
Ap - Power gain
apc - Automatic phase control
Av - Voltage gain
AVC - Automatic volume control
AWG - American wire gauge
B - Flux density
BCD - Binary coded decimal
bfo - Beat frequency oscillator
BJT - Bipolar junction transistor
BW - Bandwidth
c - Centi (10^{-2})
C - Capacitance or capacitor
CAD - Computer aided design
CAM - Computer aided manufacture
CATV - Cable TV
CB - Common base configuration
CB - Citizen's band
CC - Common collector
CE - Common emitter
cm - Centimeter
cmil - Circular mil
CPU - Central processing unit
C (Q) - Coulomb
CR cr - Junction diode
CRO - Cathode ray oscilloscope
CRT - Cathode ray tube
C_T - Total capacitance

cw - Continuous transmission
d - Deci (10^{-1})
D/A or D-A - Digital to analog
DC - Direct current
Di - Change in current
DIP - Dual in-line package
DMM - Digital multimeter
DPDT - Double pole double throw
Dt - Change in time
DTL - Diode transistor logic
Dv - Change in voltage
DVM - Digital voltmeter
E DC or Erms - Difference in potential
e - Instantaneous difference in potential
ECG - Electrocardiogram
ECL - Emitter coupled logic
EHF - Extremely high frequency
EHV - Extra high voltage
ELF - Extremely low frequency
EMF - Electromotive force
EMI - Electromagnetic interference
EW - Electronic warfare
f - Frequency
FET - Field effect transistor
FF - Flip Flop
fil - Filament
FM - Frequency modulation
fr - Frequency at resonance
fsk - frequency-shift keying
FSD - Full scale deflection
G - Gravitational force
G - Conductance
G - Giga (109)
H - Henry
H - Magnetic field intensity
H - Magnetizing flux
h - hecto (102)
h - Hybrid
HF - High frequency
hp - Horsepower
Hz – Hertz
I - Current
i - Instantaneous current
IB - DC Base current
IC - DC Collector current
IC - Integrated circuit
Ie - Total emitter current
Ieff - Effective current
IF - Intermediate frequency

Imax - Maximum current
Imin - Minimum current
I/O - Input/output
IR - Infrared
IR - Resistor current
IS - Secondary current
IT - Total current
JFET - Junction field effect transistor
K - Coefficient of coupling
k - Kilo (103)
kHz - Kilohertz
kV - Kilovolt
kVA - Kilovoltampere
kW - Kilowatt
kWh - Kilowatt-hour
L - Coil, inductance
LC - Inductance-capacitance
LCD - Liquid crystal display
L-C-R - Inductance-capacitance-resistance
LDR - Light-dependent resistor
LED - Light emitting diode
LF - Low frequency
L_M - Mutual inductance
LNA - Low noise amplifier
LO - Local oscillator
LSI - Large scale integration
L_T - Total inductance
M - Mega (10^6)
M - Mutual conductance
MI - Mutual inductance
m - Milli (10^{-3})
mA - Milliampere
mag - Magnetron
max - Maximum
MF - Medium frequency
mH - Millihenry
MHz - Megahertz
min - Minimum
mm - Millimeter
mmf - Magneto motive force
MOS - Metal oxide semiconductor
MOSFET - Metal oxide semiconductor field effect transistor
MPU - Microprocessor unit
MSI - Medium scale integrated circuit
mV - Millivolt
mW – Milliwatt

N - Number of turns in an inductor
N - Revolutions per minute
n - Nano (10^{-9})
N - Negative
nA - Nanoampere
NC - Normally closed
NC - No connection
NEG, neg - Negative
nF - Nanofarad
nH - Nanohenry
nm - Nanometer
NO - Normally open
NPN - Negative-positive-negative
ns - Nanosecond
nW – Nanowatt
OP AMP - Operational amplifier
P - Pico (10^{-12})
P - Power
p - Instantaneous power
P - Positive, also peak
PA - Public address or power amplifier
pA - Picoampere
PAL - Programmable Array Logic
PAM, pam - Pulse amplitude modulation
P_{ap} - Apparent power
P_{av} - Average power
PCB - Printed circuit board
PCM, pcm - Pulse-code modulation
PDM - Pulse-duration modulation
pF - Picofarad
PLD - Programmable Logic Device
PLL - Phase locked loop
PM - Phase modulation, also Permanent magnet
PNP - Positive-negative-positive
POT, pot - Potentiometer
P-P - Peak to peak
PPM - Pulse-position modulation
PRF - Pulse repetition frequency
PRT - Pulse repetition time
pw - Pulse width
PWM, pwm - Pulse width modulation

Q - Charge, also quality
q - Instantaneous charge
R - Potentiometer
R - Resistance
RAM - Random access memory
RC - Resistance-capacitance, also Radio controlled
rcvr - Receiver
rect - Rectifier
ref - Reference
rf - Radio frequencies
RF - Radio frequencies
RFI - Radio frequency interference
R_L - Load resistor
RLC - Resistance-capacitance-inductance
RMS, rms - Root mean square
ROM- Read only memory
rpm - Revolutions per minute
SCR - Silicon controlled rectifier
SHF - Super high frequency
SIP - Single in-line package
SNR - Signal-to-noise ratio
SPDT - Single pole double throw
sq cm - Square centimeter
SSB - Single sideband
SW - Short wave
SWR - Standing-wave ratio
SYNC, sync – Synchronous
T - Tera (10^{12})
T - Torque
T - Transformer
t - Time in seconds
TC - Time constant, also temperature coefficient
TE - Transverse electric
temp - Temperature
THz - Terahertz
TM - Transverse magnetic
TR - Transmit-receive
TTL - Transistor-transistor logic
TV - Television
TWT - Traveling wave tube
UHF - Ultra high frequency
UHV - Ultra high voltage
UJT - Unijunction transistor
UV – Ultraviolet
V - Vacuum tube
V, v - Volt
v - Instantaneous voltage
VA - Volt ampere

V_{av} - Voltage (average value)
V_{BE} - DC voltage base to emitter
V_c - Capacitive voltage
V_{CE} - DC voltage collector to emitter
VCO - Voltage controlled oscillator
VHF - Very high frequency
V_{in} - Input voltage
V_L - Inductive voltage
VLF - Very low frequency
V_m, V_{max} - Maximum voltage
VOM - Volt ohm milliameter
V_{out} - Output voltage
V_p - Primary voltage
V_s - Source voltage
VSWR - Voltage standing wave ratio
V_T - Total voltage
W – Watt
X_C - Capacitive reactance
X_L - Inductive reactance
Y – Admittance
Z - Impedance
Z_{in} - Input impedance
Z_o - Output impedance
Z_p - Primary impedance
Z_s - Secondary impedance
Z_T - Total impedance

RCR - 03132012

SYMBOLS of ELEMENTS

Name	Symb*	Atomic number	Atomic Weight	Spec.gravity (solid)	Name	Symb*	Atomic number	Atomic Weight	Spec. gravity
Actinium	Ac	89	227	10.07	Mendelevium	Md	101	256	
Aluminum	Al	13	26.982	2.7	Mercury	Hg	80	200.59	14.19
Americium	Am	95	243		Molybdenum	Mo	42	95.94	10
Antimony	Sb	51	121.75	6.697	Neodymium	Nd	60	144.24	7.05
Argon	Ar	18	39.948	1.784	Neon	Ne	10	20.183	0.9
Arsenic	As	33	79.922	5.73	Neptunium	Np	93	237	
Astatine	At	85	210		Nickel	Ni	28	58.71	8.9
Barium	Ba	56	137.34	3.8	Niobium	Nb	41	92.906	8.5
Berkelium	Bk	97	249		Nitrogen	N	7	14.007	1.027
Beryllium	Be	4	9.012	1.84	Nobelium	No	102	254	
Bismuth	Bi	83	208.98	9.8	Osmium	Os	76	190.2	22.48
Boron	B	5	10.811	2.45	Oxygen	O	8	15.999	1.426
Bromine	Br	35	79.904	3.19	Palladium	Pd	46	106.4	11.9
Cadmium	Cd	48	112.4	8.64	Phosphorus	P	15	30.974	1.83
Cesium	Cs	55	132.91	1.903	Platinum	Pt	78	195.09	22.5
Calcium	Ca	20	40.08	1.55	Plutonium	Pu	94	242	
Californium	Cf	98	251		Polonium	Po	84	210	
Carbon**	C	6	12.011	2.13	Potassium	K	19	39.102	0.859
Cerium	Ce	58	140.12	6.78	Praseodymium	Pr	59	140.91	6.6
Chlorine	Cl	17	35.453		Promethium	Pm	61	147	
Chromium	Cr	24	51.996		Protactinium	Pa	91	231	
Cobalt	Co	27	58.933		Radium	Ra	88	226	
Copper	Cu	29	63.546	8.94	Radon	Rn	86	222	
Curium	Cm	96	247		Rhenium	Re	75	186.2	
Dysprosium	Dy	66	162.5		Rhodium	Rh	45	102.91	12.1
Einsteinium	Es	99	254		Rubidium	Rb	37	85.57	1.525
Erbium	Er	68	162.26	4.8	Ruthenium	Ru	44	101.07	12.26
Europium	Eu	63	151.96		Samarium	Sm	62	150.35	7.7
Fermium	Fm	100	253		Scandium	Sc	21	46.956	
Fluorine	F	9	18.998	1.14	Selenium	Se	34	78.96	4.8
Francium	Fr	87	223		Silicon	Si	14	28.086	2.49
Gadolinium	Gd	64	157.25	5.9	Silver	Ag	47	107.87	10.47
Gallium	Ga	31	69.72	5.9	Sodium	Na	11	22.99	0.972
Germanium	Ge	32	72.59	5.36	Strontium	Sr	38	87.62	2.54
Gold	Au	79	196.97	19.5	Sulfur	S	16	32.064	2.1
Hafnium	Hf	72	178.49	13.07	Tantalum	Ta	73	180.95	16.6
Helium	He	2	4.003	0.178	Technetium	Tc	43	99	
Holmium	Ho	67	164.93		Tellurium	Te	52	127.6	6.24
Hydrogen	H	1	1.008	0.076	Terbium	Tb	65	158.92	
Indium	In	49	114.82	7.42	Thallium	Tl	81	204.37	11.85
Iodine	I	53	126.9	4.89	Thorium	Th	90	232	12.16
Iridium	Ir	77	192.2	22.42	Thulium	Tm	69	168.93	
Iron	Fe	26	55.847	7.85	Tin	Sn	50	118.69	7.3
Krypton	Kr	36	83.8	3.708	Titanium	Ti	22	47.9	5.17
Lanthanum	La	57	138.91	6.16	Tungsten	W	74	183.85	19.3
Lawrencium	Lw	103	257		Vanadium	V	23	50.94	6
Lead	Pb	82	207.19	11.4	Xenon	Xe	54	131.3	5,85
Lithium	Li3	3	6.939	0.59	Ytterbium	Yb	70	173.04	5.5
Lutetium	Lu	71	174.97		Yttrium	Y	39	88.91	4.57
Magnesium	Mg	12	24.312	1.74	Zinc	Zn	30	65.37	7.1
Manganese	Mn	25	54.938	7.39	Zirconium	Zr	40	91.22	6.53

Philmore

DISTRIBUTED BY:

* AUDIO   * VIDEO   * TELEPHONE   * DATA-COM   * HDTV
* HOME THEATRE   * WIRELESS DEVICES   * SWITCHES   * TOOLS