



Product Catalogue

# Providing superior protection for automotive wiring harnesses

**Harnessflex**  
SPECIALIST CONDUIT SYSTEMS

Power and productivity  
for a better world™ **ABB**



## Providing superior protection for automotive wiring harnesses

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# Introduction

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## Introduction

### Company overview

Harnessflex was established in 1984 and is a leading designer and manufacturer of flexible conduit systems and connector interfaces, protecting critical electrical and electronic wiring assemblies in the automotive industry.

#### Applications

Harnessflex provides harness solutions for:

- Agricultural vehicles
- Construction vehicles
- Engine manufacturers
- Harness Manufacturers
- Truck & bus manufacturers
- Tanker & trailer manufacturers
- Specialist vehicle components
- Military vehicles

Harnessflex offers complete system solutions for the routing and protection of electrical wiring against damage by mechanical abrasion, liquid ingress and corrosion salts. Their use ensures that vulnerable connectors are not exposed to the elements, impact of foreign bodies and jet washing, which can cause malfunction and failure.

Our success has come from our systematic commitment to providing an extensive range of high-grade quality components. Combining a full range of slit and un-slit conduit, fittings and connectors, we also offer a large range of hinged system components and connector interfaces.

#### Our Customers

We work extremely closely with vehicle manufacturers and OEMs in the development of connector interfaces to suit individual applications. Offering bespoke design solution utilising our extensive range of interfaces, mean we can often offer tailored and innovative solutions for a range of applications.

#### Quality approvals and standards

Manufacturing is controlled in accordance with BS EN ISO 9001 whilst ongoing testing & approval to international standards, which provides any additional confidence required to specify appropriate Harnessflex products across the widest variety of automotive applications including harsh and aggressive environments.

All components comply with End of Life Vehicle (ELV) directive EU2000/53/EC. Harnessflex also comply to ISO14001 - Environmental Standard.



# Selection table for conduit

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Conduits									
Conduit Type	NC	NCV	CTPA	HNC	CPC	PP	DSPP	PKC	HTC
Conduit material	Polyamide 6	FR Polyamide 6	Polyamide 6	Polyamide 12	FR Co-Polyester	Polypropylene	Modified Polypropylene	Polyether-etherketone	Modified Co-Polyester
Conduit weight	Standard weight	Standard weight	Lightweight	Standard weight	Medium weight	Medium weight	Medium weight	Standard weight	Medium weight
Slit version available	•	–	•	–	–	•	Slit only	–	–

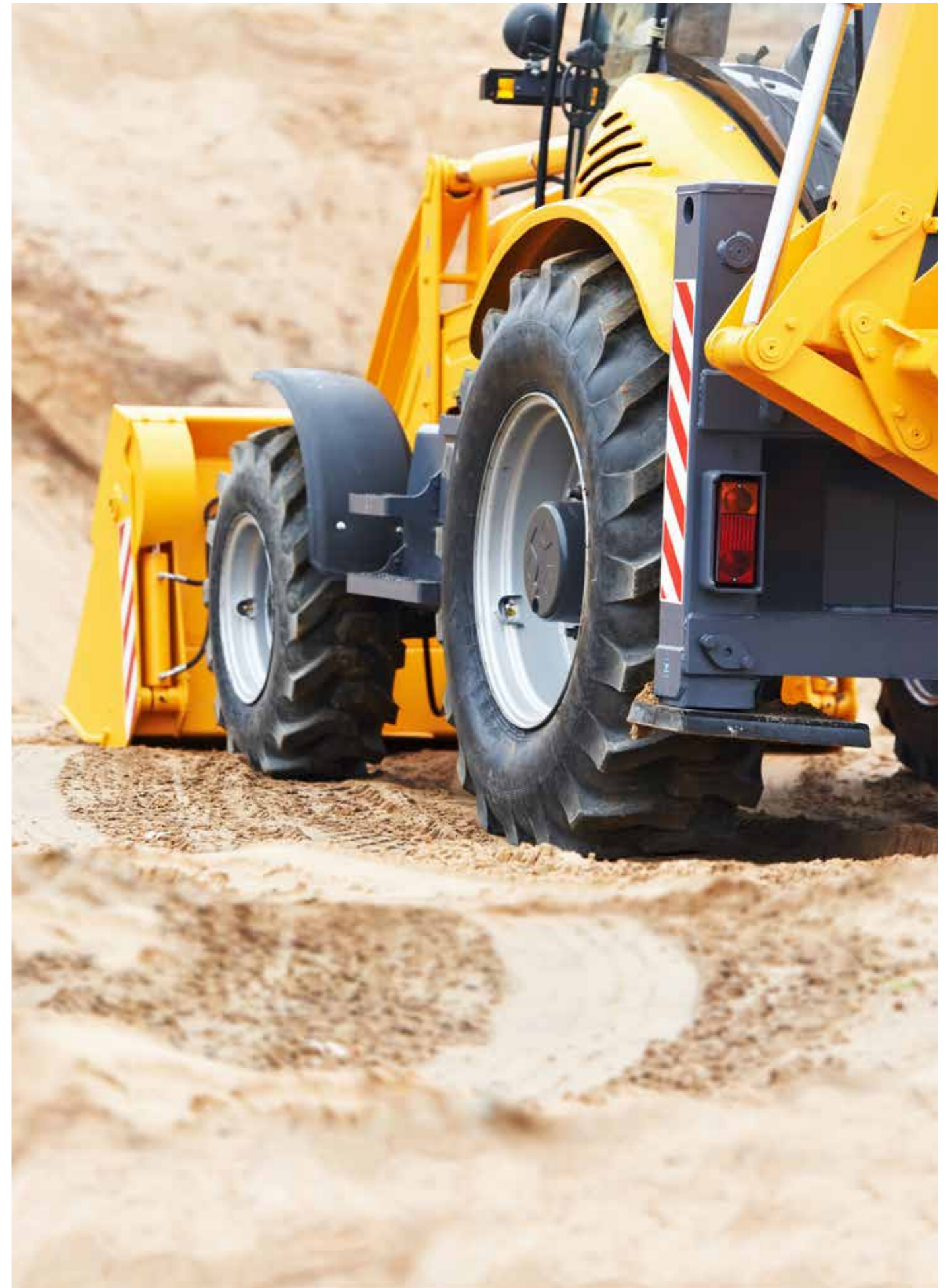
Characteristics									
Temperature Range									
Long term static min.	-40°C	-40°C	-40°C	-45°C	-50°C	-20°C	-20°C	-60°C	-40°C
Long term static max.	+120°C	+120°C	+120°C	+105°C	+135°C	+90°C	+90°C	+260°C	+175°C
Maximum temperature	+150°C	+150°C	+150°C	+120°C	+175°C	+105°C	+105°C	+300°C	190°C
UV Resistance	■■■■	■■■■	■■■■	■■■■	■■■■	■■■□	■■■■	■■■■	■■■■
Flexibility	■■■□	■■■□	■■■□	■■■■	■■■■	■■■□	■■■□	■■■□	■■■■
Fatigue life	■■■□	■■■□	■■■□	■■■■	■■■■	■■■□	■■■□	■■■■	■■■■
Ext. wear resistance	■■■■	■■■■	■■■■	■■■□	■■■□	■■■□	■■■□	■■■■	■■■□
Self extinguishing	•	•	•	•	•	–	•	•	•
Halogen free	•	•	•	•	•	•	•	•	•
Low smoke toxicity	•	•	•	•	•	–	–	•	•

Approvals									
CE	•	•	•	•	•	•	•	•	•
UL94 V0	–	•	–	–	–	–	–	•	–
UL94 V2	–	–	–	–	•	–	•	–	–
UL94 HB	•	–	•	•	–	•	–	–	•
RoHS Compliant	•	•	•	•	•	•	•	•	•
ADR Approved	•	–	–	–	–	–	–	–	–
(ELV) EU200/53/EC	•	•	•	•	•	•	•	•	•

Chemical resistance									
IRM 903 (ASTM Oil No.2)	S	S	S	S	S	S	S	S	S
Diesel Oil	S	S	S	S	S	S	S	S	S
Ethylene Glycol (Anti-freeze)	S	S	S	S	S	S	S	S	S
Lubricating Oil	S	S	S	S	S	S	S	S	S
Methyl Alcohol	L	L	L	S	S	S	S	S	S
Parafin Oil	S	S	S	S	S	S	S	S	S
Petrol	S	S	S	S	S	S	S	S	S
Sodium Chloride	S	S	S	S	S	S	S	S	S
Sodium Hydroxide (10%)	S	S	S	S	S	S	S	S	S
Transformer Oil	S	S	S	S	S	S	S	S	S
Urea	S	S	S	S	NT	NT	NT	S	S
Vegetable Oil	S	S	S	S	S	S	S	S	S
Sea (Water)	S	S	S	S	S	S	S	S	S

Key: S = Suitable / L = Limited Suitability / U = Unsustainable / NT = Not Tested / Maximum Performance = ■■■■ All chemicals tested for resistance at 23°C

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1

# Providing superior protection for automotive wiring harnesses Conduit

## General Purpose Conduit

NC Standard weight, Polyamide 6	2/3
NC Slit standard weight, Polyamide 6	2/4

## Extra Flexible Conduit

CTPA Lightweight, Polyamide 6	2/5
CTPA Slit lightweight, Polyamide 6	2/6
HNC Standard weight, Polyamide 12	2/7

## Flame Retardant Conduit

NCV Standard weight, FR Polyamide 6	2/8
CPC Medium weight, FR Co-Polyester	2/9

## Polypropylene Conduit

PP Medium weight, Polypropylene	2/10
DSPP Deep section, medium weight, Modified Polypropylene	2/11

## Super Low Fire Hazard Conduit

PKC Standard weight, Polyketone	2/12
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## High Temperature Conduit

HTC High temperature, Modified Co-Polyester	2/13
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## General purpose conduit NC Standard weight, Polyamide 6



NC Standard Weight  
General Purpose Conduit

### NC Standard Weight - Conduit

General purpose conduit / **Materials:** Polyamide 6

**Colour:** Black (BL), Grey (RAL7031), Red (RAL3031) & Orange (RAL2003)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
NC06	06	4.5	7.1mm	4.5mm	5mm	100m
NC08	08	7.5	10.0mm	6.5mm	15mm	100m
NC10	10	8.5	11.5mm	8.4mm	15mm	100m
NC12	12	10	13.0mm	9.9mm	20mm	100m
NC16	16	13	16.0mm	11.8mm	30mm	100m
NC20	20	17	21.2mm	16.6mm	35mm	50m
NC25	25	22	25.6mm	21.3mm	40mm	50m
NC28	28	23	28.5mm	22.6mm	45mm	50m
NC30	30	26	31.6mm	26.0mm	50mm	50m
NC32	32	29	34.5mm	28.8mm	55mm	50m
NC40	40	36	42.5mm	34.8mm	65mm	25m
NC50	50	48	54.5mm	46.9mm	70mm	25m



#### Approvals

**ADR Approved** (Sealed fittings)

**UL94 HB** rated

**CE Mark** to the Low Voltage Directive

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle  
directive (ELV) EU200/53/EC**

#### IP Rating

IP40

IP67

IP68 (2 bar 30mins)

#### Appropriate Fitting

Hinged fittings

Sealed fittings

Sealed fittings

#### Temperature Range

-40°C to +120°C

Short-term: +150°C

#### UV Resistance

Very High (Black)

Medium (Grey, Orange  
and Red)

#### Degree of Mechanical Protection

High flexibility & fatigue life

Very high abrasion, impact and shock resistance

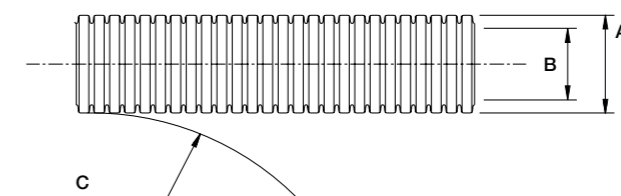
#### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

#### Dimensions



#### Description

Flexible standard weight nylon (PA6) conduit is a general-purpose conduit suitable for automotive harness applications. Able to withstand extremes of temperatures and resistant to automotive oils and solvents. It is extremely tough and has a high impact strength and fatigue life.

#### Applications

NC standard weight is extensively used in harnesses on HGV and off road vehicle applications where a superior protection against impact and mechanical shock is preferred. The conduit is used for both chassis and engine applications and can be used in a wide range of temperatures. Polyamide 6 is highly resistant to all hydrocarbon based oils and fluids and many types of solvents.

# General purpose conduit NC Slit standard weight, Polyamide 6



NC Slit Standard Weight  
General Purpose Conduit

## NC Slit standard Weight - Conduit

General purpose conduit / Materials: Polyamide 6

Colour: Black (BL), Grey (RAL7031), Red (RAL3031) & Orange (RAL2003)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
NC06-S	06	4.5	7.1mm	4.5mm	5mm	100m
NC08-S	08	7.5	10.0mm	6.5mm	15mm	100m
NC10-S	10	8.5	11.5mm	8.4mm	15mm	100m
NC12-S	12	10	13.0mm	9.9mm	20mm	100m
NC16-S	16	13	16.0mm	11.8mm	30mm	100m
NC20-S	20	17	21.2mm	16.6mm	35mm	50m
NC25-S	25	22	25.6mm	21.3mm	40mm	50m
NC28-S	28	23	28.5mm	22.6mm	45mm	50m
NC32-S	32	29	34.5mm	28.8mm	55mm	50m
NC40-S	40	36	42.5mm	34.8mm	65mm	25m
NC50-S	50	48	54.5mm	46.9mm	70mm	25m

To order quote part number & reel length, e.g. NC06-S/100m

For colours other than standard Black also add colour, i.e. /OR for Orange conduit or /RD for Red conduit, e.g. NC06-S/OR/100m



### Approvals

CE Mark to the Low Voltage Directive

UL94 HB rated

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

### IP Rating

IP40

### Appropriate Fitting

Hinged fittings

### Temperature Range

-40°C to +120°C

Short-term: +150°C

### UV Resistance

Very High (Black)

Medium (Grey, Orange  
and Red)

### Degree of Mechanical Protection

High flexibility & fatigue life

Very high abrasion, impact and shock resistance

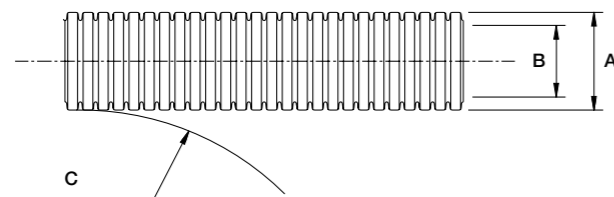
### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

### Dimensions



### Applications

NC standard weight is extensively used in harnesses on HGV, off road vehicles and marine applications where a superior protection against impact and mechanical shock is preferred. The conduit is used for both chassis and engine applications and can be used in a wide range of temperatures. Polyamide 6 is highly resistant to all hydrocarbon based oils and fluids and many types of solvents.



# Extra flexible conduit CTPA Lightweight, Polyamide 6



CTPA Lightweight  
Flexible Conduit

## CTPA Lightweight - Conduit

Flexible conduit / Materials: Polyamide 6

Colour: Black (BL), Red (RAL3031) & Orange (RAL2003)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
CTPA08	08	7.5	10.0mm	6.5mm	10mm	100m
CTPA10	10	8.5	11.5mm	8.7mm	15mm	100m
CTPA12	12	10	13.0mm	10.1mm	20mm	100m
CTPA16	16	13	16.0mm	11.8mm	35mm	100m
CTPA20	20	17	21.2mm	16.9mm	45mm	100m
CTPA25	25	22	25.6mm	21.3mm	45mm	100m
CTPA28	28	23	28.5mm	23.1mm	45mm	100m
CTPA32	32	29	34.5mm	28.8mm	55mm	50m
CTPA40	40	36	42.5mm	35.0mm	65mm	25m
CTPA50	50	48	54.5mm	46.0mm	90mm	25m

To order quote part number & reel length, e.g. CTPA08/100m

For colours other than standard Black also add colour, i.e. /OR for Orange conduit or /RD for Red conduit, e.g. CTPA08/OR/100m



### Approvals

CE Mark to the Low Voltage Directive

UL94 HB rated

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

### IP Rating

IP40

IP67

### Appropriate Fitting

Hinged fittings

Sealed fittings

### Temperature Range

-40°C to +120°C

Short-term: +150°C

### UV Resistance

Very High (Black)

Medium (Red and Orange)

### Degree of Mechanical Protection

High flexibility & fatigue life

Very high abrasion, impact and shock resistance

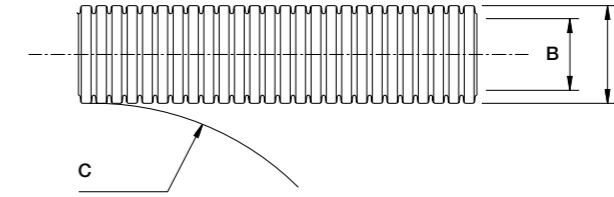
### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

### Dimensions



### Applications

General purpose, lightweight loom applications.





## Extra flexible conduit CTPA Slit lightweight, Polyamide 6



CTPA Slit Lightweight Flexible Conduit

### CTPA Slit Lightweight - Conduit

Flexible conduit / Materials: Polyamide 6

Colour: Black (BL), Red (RAL3031) & Orange (RAL2003)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
CTPA08-S	08	7.5	10.0mm	6.5mm	10mm	100m
CTPA10-S	10	8.5	11.5mm	8.7mm	15mm	100m
CTPA12-S	12	10	13.0mm	10.1mm	20mm	100m
CTPA16-S	16	13	16.0mm	11.8mm	35mm	100m
CTPA20-S	20	17	21.2mm	16.9mm	45mm	100m
CTPA25-S	25	22	25.6mm	21.3mm	45mm	100m
CTPA28-S	28	23	28.5mm	23.1mm	45mm	100m
CTPA32-S	32	29	34.5mm	28.8mm	55mm	50m
CTPA40-S	40	36	42.5mm	35.0mm	65mm	25m
CTPA50-S	50	48	54.5mm	46.0mm	90mm	25m

To order quote part number & reel length, e.g. CTPA08-S/100m

For colours other than standard Black also add colour, i.e. /OR for Orange conduit or /RD for Red conduit, e.g. CTPA08-S/OR/100m



#### Approvals

CE Mark to the Low Voltage Directive

UL94 HB rated

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

#### IP Rating

IP40

#### Appropriate Fitting

Hinged fittings

#### Temperature Range

-40°C to +120°C

Short-term: +150°C

#### UV Resistance

Very High (Black)

Medium (Red and Orange)

#### Degree of Mechanical Protection

High flexibility & fatigue life

Very high abrasion, impact and shock resistance

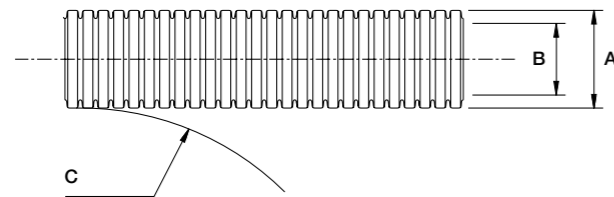
#### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

#### Dimensions



#### Description

General purpose, lightweight loom applications.



## Low temperature, extra flexible conduit HNC Standard weight, Polyamide 12



HNC Standard Weight Low Temperature, Extra Flexible Conduit

### HNC Standard Weight - Conduit

Low temperature, extra flexible conduit / Materials: Polyamide 12 / Colour: Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
HNC08	08	7.5	10.0mm	6.2mm	15mm	100m
HNC12	12	10	13.0mm	9.9mm	25mm	100m
HNC16	16	13	15.8mm	11.7mm	30mm	100m
HNC20	20	17	21.2mm	16.6mm	35mm	50m
HNC25	25	22	25.3mm	21.0mm	40mm	50m
HNC28	28	23	28.5mm	21.7mm	45mm	50m
HNC32	32	29	34.5mm	27.7mm	55mm	50m
HNC40	40	36	42.5mm	35.5mm	60mm	25m
HNC50	50	48	54.5mm	46.6mm	70mm	25m

To order quote part number & reel length, e.g. HNC08/100m



#### Approvals

CE Mark to the Low Voltage Directive

UL94 HB rated

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

#### IP Rating

IP40

IP67

IP68 (2 bar 30 mins)

#### Appropriate Fitting

Hinged fittings

Sealed fittings

Sealed fittings

#### Temperature Range

-45°C to +105°C

Short-term: -50°C to +120°C

#### UV Resistance

Very High

#### Degree of Mechanical Protection

Very high flexibility & fatigue life

Very high abrasion, impact and shock resistance at low temperatures

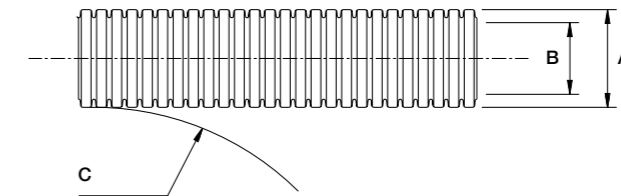
#### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

#### Dimensions



#### Applications

HNC Conduit is particularly used in applications requiring repeated flexing such as dynamic couplings, i.e. hydraulic arms and trailer couplings or rapid continuous motion, demanding high fatigue life and extra flexibility even in low temperature environments. Highly resistant to low temperature impact.

HNC Standard weight conduit is designed for connection to all Harnessflex hinged and sealed fittings. Contact us for slit conduit options.



# Flame retardant conduit NCV Standard weight, FR Polyamide 6



NCV Standard Weight  
General Purpose Conduit

## NCV Standard Weight - Conduit

General purpose conduit / Materials: FR Polyamide 6 / Colour: Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
NCV06	06	4.5	7.1mm	4.5mm	5mm	100m
NCV08	08	7.5	10.0mm	6.5mm	15mm	100m
NCV10	10	8.5	11.5mm	8.4mm	15mm	100m
NCV12	12	10	13.0mm	9.9mm	20mm	100m
NCV16	16	13	16.0mm	11.8mm	30mm	100m
NCV20	20	17	21.2mm	16.6mm	35mm	50m
NCV25	25	22	25.6mm	21.3mm	40mm	50m
NCV28	28	23	28.5mm	22.6mm	45mm	50m
NCV32	32	29	34.5mm	28.8mm	55mm	50m

To order quote part number & reel length, e.g. NCV06/100m

For colours other than standard Black also add colour, i.e. /OR for Orange conduit or /RD for Red conduit, e.g. NCV06/OR/100m



### Approvals

CE Mark to the Low Voltage Directive

UL94 V0 rated

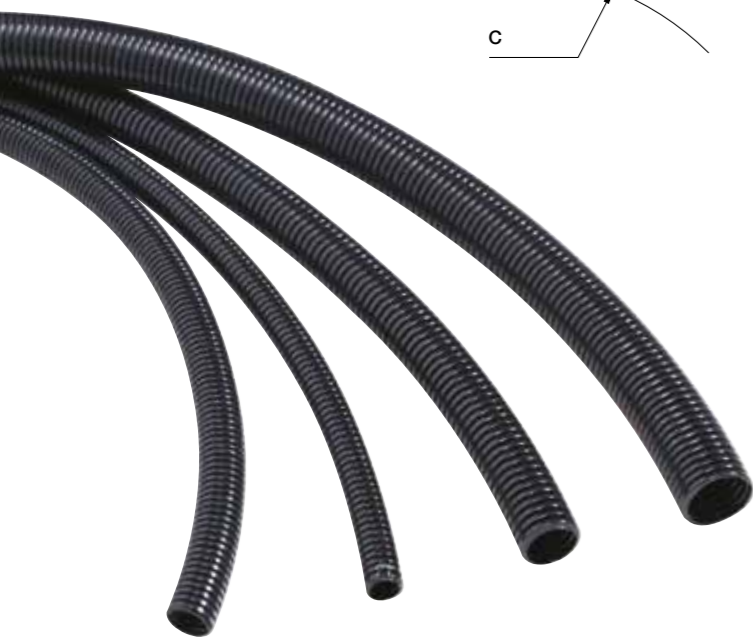
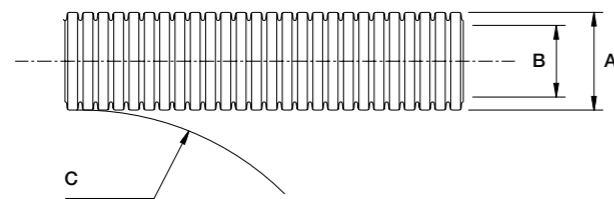
RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

IP Rating	Appropriate Fitting	Temperature Range	UV Resistance
IP40	Hinged fittings	-40°C to +120°C	Very High
IP67	Sealed fittings	Short-term: +150°C	
IP68 (2 bar 30 mins)	Sealed fittings		
Degree of Mechanical Protection		Fire Performance	
High flexibility & fatigue life		Self Extinguishing	
Very high abrasion, impact and shock resistance		Low Smoke Toxicity	
		Halogen Free	
		UL94 V0 Rated	

### Dimensions



# Flame retardant conduit CPC Medium weight, FR Co-Polyester



CPC Medium Weight  
Flame Retardant Conduit

## CPC Medium Weight - Conduit

Flame retardant conduit / Materials: FR Co-Polyester / Colour: Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
CPC08	08	7.5	9.8mm	6.2mm	20mm	50m
CPC12	12	10	13.0mm	9.4mm	25mm	50m
CPC16	16	13	16.0mm	11.0mm	30mm	50m
CPC20	20	17	21.2mm	16.1mm	40mm	50m
CPC25	25	22	25.3mm	21.0mm	45mm	50m
CPC28	28	23	28.5mm	22.5mm	45mm	50m
CPC32	32	29	34.5mm	27.2mm	55mm	50m
CPC40	40	36	42.5mm	34.2mm	60mm	25m

To order quote part number & reel length, e.g. CPC08/50m



### Approvals

CE Mark to the Low Voltage Directive

UL94 V2 rated

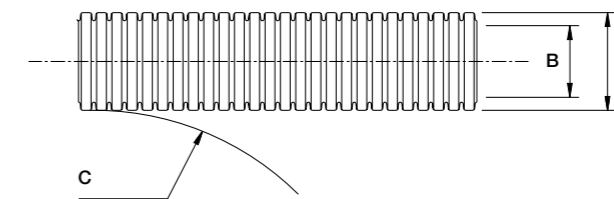
RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

IP Rating	Appropriate Fitting	Temperature Range	UV Resistance
IP40	Hinged fittings	-50°C to +135°C	Very High
IP67	Sealed fittings	Short-term: +175°C	
Degree of Mechanical Protection		Fire Performance	
Very high flexibility & fatigue life		Self Extinguishing	
Very high abrasion, impact and shock resistance at low temperatures		Halogen Free	

### Dimensions



### Description

A low smoke, low toxicity conduit, CP has excellent high and low temperature properties, making it ideal for harness applications such as engine, body section and chassis. CPC is resistant to hydrocarbons, greases, fuels and oils.

Contact us for slit conduit options.



# Polypropylene conduit

## PP Medium weight, Polypropylene



PP Medium Weight Polypropylene Conduit

### PP Medium Weight - Conduit

Polypropylene conduit / Materials: Modified Polypropylene / Colour: Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
PP08	08	7.5	10.0mm	6.4mm	15mm	100m
PP10	10	8.5	11.5mm	8.6mm	20mm	100m
PP12	12	10	13.0mm	9.6mm	25mm	50m
PP16	16	13	16.2mm	11.2mm	35mm	50m
PP20	20	17	21.2mm	16.9mm	35mm	50m
PP25	25	22	25.6mm	21.5mm	40mm	50m
PP28	28	23	28.5mm	23.2mm	45mm	50m
PP32	32	29	34.5mm	29.1mm	55mm	50m

To order quote part number & reel length, e.g. PP08/100m  
For slit conduit options add -S to part number, e.g. PP08-S/100m



#### Approvals

CE Mark to the Low Voltage Directive  
UL94 HB rated

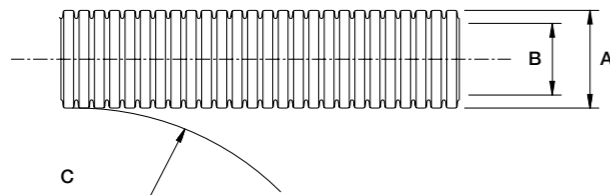
RoHS Compliant to 2011/65/EU  
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Fitting	Temperature Range	UV Resistance
IP40	Hinged fittings	-20°C to +90°C	High
IP67	Sealed fittings	Short-term: +105°C	

Degree of Mechanical Protection	Fire Performance
High flexibility and acid resistance Medium fatigue life, impact and shock resistance	Halogen Free

#### Dimensions



#### Applications

PP is particularly used in lighter applications where compression strength and LFH is not so important. The main property of this conduit is acid resistance.

PP is designed for connection to all Harnessflex Sealed and Hinged system fittings.

# Modified Polypropylene conduit

## DSPP Deep section, medium weight, Modified Polypropylene



DSPP Deep Section Medium Weight Polypropylene Conduit

### DSPP Deep Section Medium Weight - Conduit

Polypropylene conduit / Materials: Modified Polypropylene / Colour: Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
DSPP12	12	10	13.0mm	8.5mm	18mm	100m
DSPP16	16	13	16.2mm	11.1mm	32mm	100m
DSPP20	20	17	21.2mm	15.0mm	40mm	100m
DSPP28	28	23	28.5mm	21.7mm	50mm	100m
DSPP32	32	29	34.5mm	27.7mm	58mm	50m
DSPP40	40	36	42.5mm	34.6mm	80mm	25m

To order quote part number & reel length, e.g. DSPP12/100m



#### Approvals

CE Mark to the Low Voltage Directive  
UL94 V2 rated

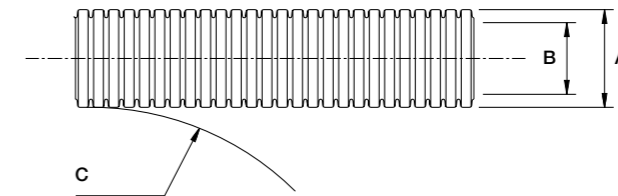
RoHS Compliant to 2011/65/EU  
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Fitting	Temperature Range	UV Resistance
IP40	Hinged fittings	-20°C to +90°C Short-term: +105°C	Very High

Degree of Mechanical Protection	Fire Performance
High flexibility and acid resistance Medium fatigue life, impact and shock resistance	Halogen Free

#### Dimensions



#### Applications

DSPP has a deep section to maintain the conduit shape during bending. Deep Section Conduits are supplied in slit form to facilitate rapid cable installation and are designed for connection to all Harnessflex hinged fittings.

# Super low fire hazard conduit PKC Standard weight, Polyketone



PKC Standard Weight  
Super Low Fire Hazard Conduit

## PKC Standard Weight - Conduit

Super low fire hazard conduit / **Materials:** Polyketone / **Colour:** Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
PKC12	12	10	13.0mm	10.0mm	35mm	25m
PKC16	16	13	15.8mm	11.9mm	45mm	25m
PKC20	20	17	21.2mm	16.6mm	60mm	25m
PKC28	28	23	28.5mm	21.7mm	65mm	25m
PKC32	32	29	34.5mm	27.7mm	80mm	25m

To order quote part number & reel length, e.g. PKC12/25m



### Approvals

**CE Mark** to the Low Voltage Directive

**UL94 V0** rated

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**

**directive (ELV) EU200/53/EC**

### IP Rating

IP40

### Appropriate Fitting

Hinged fittings

IP67

Sealed fittings

IP68 (2 bar 30 mins)

Sealed fittings

### Temperature Range

-60°C to +260°C

Short-term: +300°C

### UV Resistance

Very High

### Degree of Mechanical Protection

High flexibility

Very high fatigue life & abrasion, impact and shock resistance

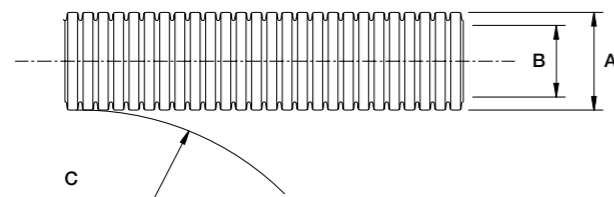
### Fire Performance

Self Extinguishing

Halogen Free

UL94 V0 Rated

### Dimensions



### Description

Super Low Fire Hazard PK is a standard weight conduit, which offers superior mechanical strength as well as high radiation and chemical protection in extreme temperatures.

# High temperature conduit HTC High temperature, Modified Co-Polyester



HTC Medium Weight  
High Temperature Conduit

## HTC Medium Weight High Temperature - Conduit

High temperature conduit / **Materials:** Modified Co-Polyester / **Colour:** Black (BL)

Part No.	Conduit Size		Nominal O/D A	Min. Bore B	Min. Static Bend Radius C	Reel Length
	NC	NW				
HTC08	08	7.5	9.8mm	6.2mm	20mm	50m
HTC10	10	8.5	11.5mm	8.7mm	15mm	50m
HTC12	12	10	13.0mm	9.4mm	25mm	50m
HTC16	16	13	16.0mm	11.0mm	30mm	50m
HTC20	20	17	21.2mm	16.1mm	40mm	50m
HTC25*	25	22	25.3mm	21.0mm	45mm	50m
HTC28*	28	23	28.5mm	22.5mm	45mm	50m

\*Parts numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

To order quote part number & reel length, e.g. HTC08/50m



### Approvals

**CE Mark** to the Low Voltage Directive

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**

**directive (ELV) EU200/53/EC**

### IP Rating

IP40

### Appropriate Fitting

TempGuard & standard hinged fittings

IP67

Sealed fittings

### Temperature Range

-40°C to +175°C

Short-term: +190°C

### UV Resistance

Very High

### Degree of Mechanical Protection

Very high flexibility & fatigue life

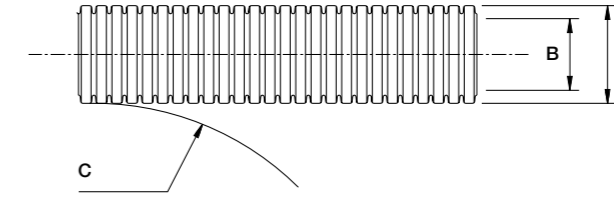
Very high elevated temperature, abrasion, impact and shock resistance

### Fire Performance

Self Extinguishing

Halogen Free

### Dimensions



### Applications

This conduit has been developed for use in where elevated temperatures occur. Suitable for long term exposure, up to 190°C.

# Providing superior protection for automotive wiring harnesses

## Hinged fittings

<b>Hinged Fittings</b>	
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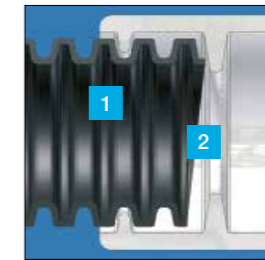
## Hinged fittings Introduction

Hinged fittings are designed to protect against ingress, excessive cable strain and mechanical abrasion.

### Quality approvals and standards

Manufacturing is controlled in accordance with BS EN ISO 9001 whilst ongoing testing & approval to international standards, provides additional confidence in specifying Harnessflex products across a variety of automotive applications.

All components comply with End of Life Vehicle (ELV) directive EU2000/53/EC. Harnessflex also comply to ISO14001 - Environmental Standard.



Design features include:

1. Radiussed internal form of conduit protects cables from abrasion
2. Internal backstop (found on all hinged fittings) alleviates any potential problems caused by unevenly cut conduit and ensures correct assembly.



# Hinged fittings

## External hinged joiner



External Hinged Joiner

### External Hinged Joiner

One-piece joiner and elbow hinged fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore. Can be used as an in-line reducer as well as an enlarger.

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	
JPS1208	12	08	10	7.5	38mm	16mm	10mm	10mm	
JPS1212	12	12	10	10	36mm	16mm	10mm	10mm	
JPS1612	16	12	13	10	36mm	21mm	10mm	10mm	
JPS1616	16	16	13	13	36mm	21mm	10mm	10mm	
JPS2008	20	08	17	7.5	38mm	26mm	12mm	10mm	
JPS2012	20	12	17	10	38mm	26mm	12mm	10mm	
JPS2016	20	16	17	13	38mm	26mm	12mm	10mm	
JPS2020	20	20	17	17	38mm	26mm	12mm	12mm	
JPS2520	25	20	22	17	39mm	33mm	12mm	12mm	
JPS2525	25	25	22	22	39mm	33mm	13mm	13mm	
JPS2820	28	20	23	17	39mm	33mm	13mm	13mm	
JPS2825	28	25	23	22	39mm	33mm	13mm	13mm	
JPS2828	28	28	23	23	39mm	33mm	13mm	13mm	



### Approvals

CE Mark to the Low Voltage Directive  
 RoHS Compliant to 2011/65/EU  
 Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

### IP Rating

IP Rating	Appropriate Conduit
IP40	Yes
IP67	N/A
IP68	N/A

### Fire Performance

For use with: All conduits in the Harnessflex range  
 Self Extinguishing  
 Low Smoke Toxicity  
 Halogen Free

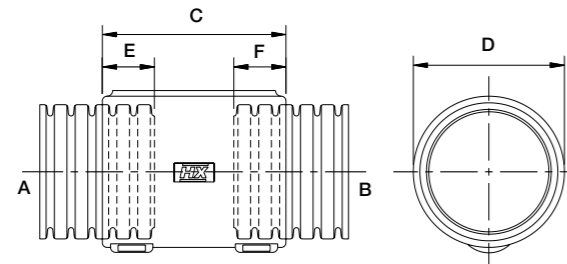
### Temperature Range

-40°C to +120°C

### UV Resistance

Very High

### Dimensions



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

# Hinged fittings

## External hinged elbow



External Hinged Elbow

### External Hinged Elbow

One-piece joiner and elbow hinged fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore. Can be used as an in-line reducer as well as an enlarger.

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	G
EPS08S08*	08	08	7.5	7.5	38mm	29mm	20mm	10mm	10mm
EPS12S12*	12	12	10	10	38mm	29mm	20mm	10mm	10mm
EPS1608	16	08	10	7.5	34mm	34mm	21mm	10mm	10mm
EPS1612	16	12	13	10	34mm	34mm	21mm	10mm	10mm
EPS1616	16	16	13	13	34mm	34mm	21mm	10mm	10mm
EPS2008	20	08	17	7.5	41mm	39mm	26mm	12mm	10mm
EPS2012	20	12	17	10	41mm	41mm	26mm	10mm	10mm
EPS2016	20	16	17	13	41mm	41mm	26mm	12mm	10mm
EPS2020	20	20	17	17	41mm	41mm	26mm	12mm	12mm
EPS2520	25	20	22	17	48mm	48mm	33mm	13mm	12mm
EPS2525	25	25	22	22	48mm	48mm	33mm	13mm	13mm
EPS2812	28	12	23	10	48mm	48mm	33mm	13mm	10mm
EPS2816	28	16	23	13	48mm	48mm	33mm	13mm	10mm
EPS2820	28	20	23	17	48mm	48mm	33mm	13mm	12mm
EPS2825	28	25	23	22	48mm	48mm	33mm	13mm	13mm
EPS2828	28	28	23	23	48mm	48mm	33mm	13mm	13mm
EPS3232**	32	32	29	29	60mm	60mm	38mm	12mm	12mm
EPS4040**	40	40	36	36	67mm	67mm	47mm	15mm	15mm

\*NOTE: Swivel fitting \*\*NOTE: Split fitting not hinged



### Approvals

CE Mark to the Low Voltage Directive  
 RoHS Compliant to 2011/65/EU  
 Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

### IP Rating

IP Rating	Appropriate Conduit
IP40	Yes
IP67	N/A
IP68	N/A

### Fire Performance

For use with: All conduits in the Harnessflex range  
 Self Extinguishing  
 Low Smoke Toxicity  
 Halogen Free

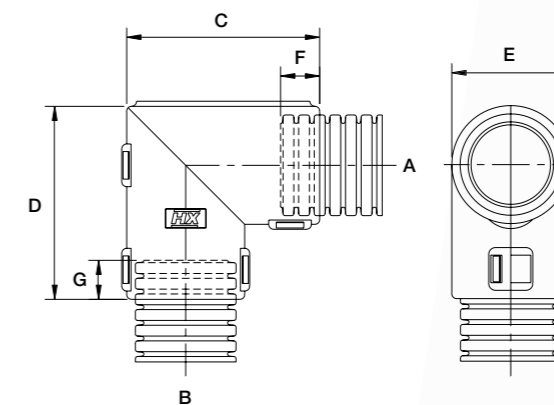
### Temperature Range

-40°C to +120°C

### UV Resistance

Very High

### Dimensions



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.



# Hinged fittings

## External hinged Y-piece

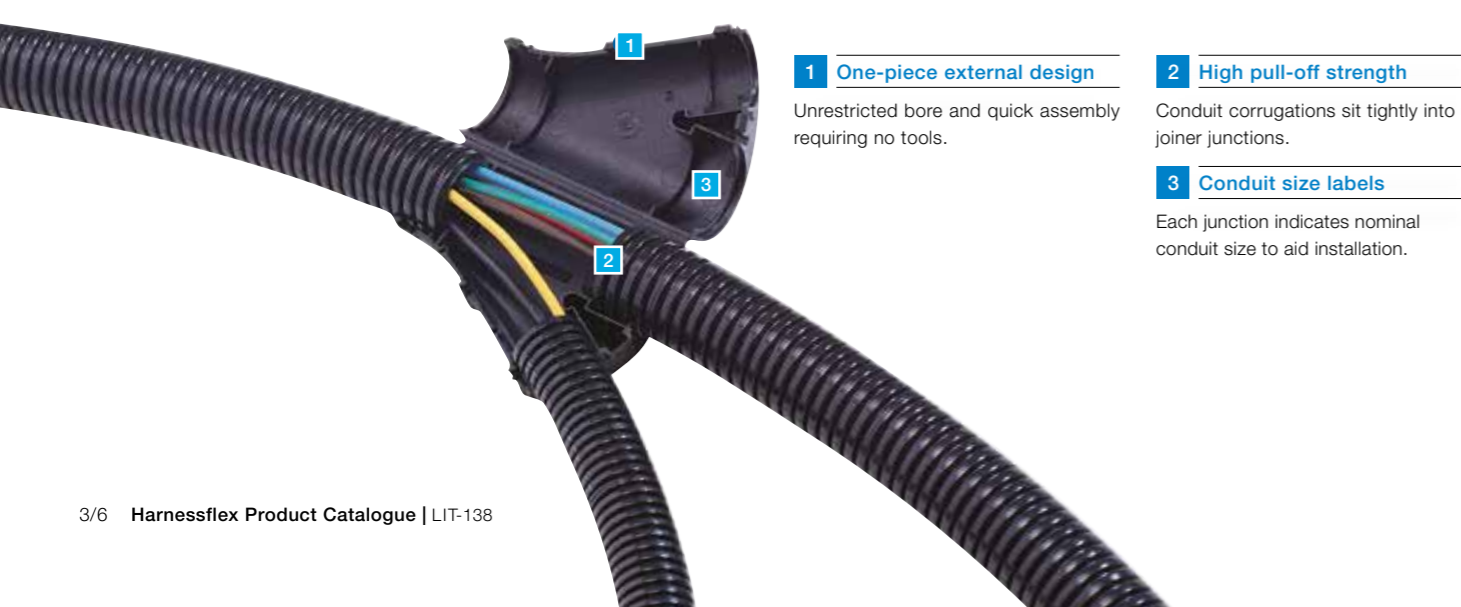


External Hinged Y-piece

### External Hinged Y-piece

One-piece asymmetrical 3 junction fittings allow a variety of conduit variations. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions				
	A	B	C	A	B	C	D	E	F	G	H
YPS080808	08	08	08	7.5	7.5	7.5	55mm	37mm	10mm	10mm	10mm
YPS080812	08	08	12	7.5	7.5	10	55mm	37mm	10mm	10mm	10mm
YPS081208	08	12	08	7.5	10	7.5	55mm	37mm	10mm	10mm	10mm
YPS101010	10	10	10	8.5	8.5	8.5	55mm	37mm	10mm	10mm	10mm
YPS120808	12	08	08	10	7.5	7.5	55mm	37mm	10mm	10mm	10mm
YPS120810	12	08	10	10	7.5	8.5	55mm	37mm	10mm	10mm	10mm
YPS120812	12	08	12	10	7.5	10	55mm	37mm	10mm	10mm	10mm
YPS121010	12	10	10	10	8.5	8.5	55mm	37mm	10mm	10mm	10mm
YPS121208	12	12	08	10	10	7.5	55mm	37mm	10mm	10mm	10mm
YPS121210	12	12	10	10	10	8.5	55mm	37mm	10mm	10mm	10mm
YPS121212	12	12	12	10	10	10	55mm	37mm	10mm	10mm	10mm
YPS160812	16	08	12	13	7.5	10	55mm	37mm	10mm	10mm	10mm
YPS161010	16	10	10	13	8.5	8.5	55mm	40mm	10mm	10mm	10mm
YPS161208	16	12	08	13	10	7.5	55mm	40mm	10mm	10mm	10mm
YPS161210	16	12	10	13	10	8.5	55mm	40mm	10mm	10mm	10mm
YPS161212	16	12	12	13	10	10	55mm	40mm	10mm	10mm	10mm
YPS161608	16	16	08	13	13	7.5	55mm	40mm	10mm	10mm	10mm
YPS161610	16	16	10	13	13	8.5	55mm	40mm	10mm	10mm	10mm
YPS161612	16	16	12	13	13	10	55mm	40mm	10mm	10mm	10mm
YPS200808	20	08	08	17	7.5	7.5	43mm	37mm	12mm	10mm	10mm
YPS201208	20	12	08	17	10	7.5	43mm	37mm	12mm	10mm	10mm
YPS201210	20	12	10	17	10	8.5	43mm	37mm	12mm	10mm	10mm
YPS201212	20	12	12	17	10	10	43mm	37mm	12mm	10mm	10mm
YPS201608	20	16	08	17	13	7.5	43mm	37mm	12mm	10mm	10mm
YPS201612	20	16	12	17	13	10	48mm	40mm	12mm	10mm	10mm
YPS201616	20	16	16	17	13	13	48mm	40mm	12mm	10mm	10mm
YPS202008	20	20	08	17	17	7.5	56mm	45mm	12mm	10mm	10mm
YPS202010	20	20	10	17	17	8.5	58mm	45mm	12mm	12mm	10mm
YPS202012	20	20	12	17	17	10	58mm	45mm	12mm	12mm	10mm
YPS202016	20	20	16	17	17	13	64mm	48mm	12mm	12mm	10mm



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

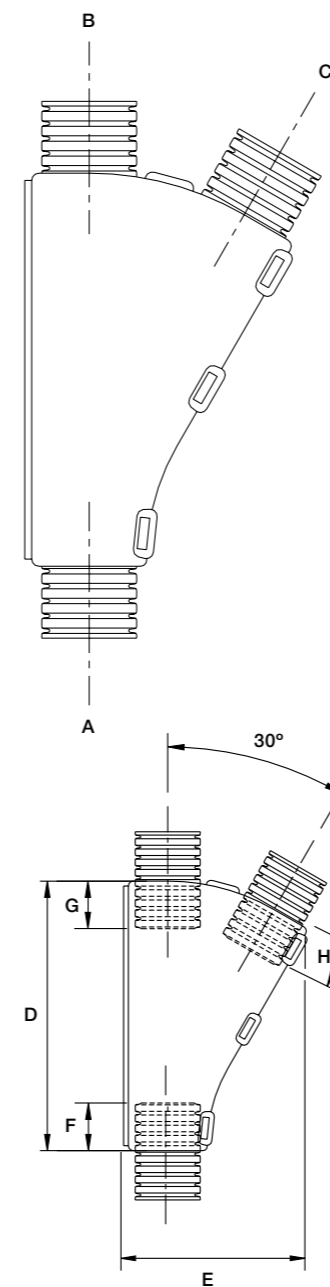
#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

### Dimensions



### Approvals

CE Mark to the Low Voltage Directive  
 RoHS Compliant to 2011/65/EU  
 Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions				
	A	B	C	A	B	C	D	E	F	G	H
YPS252012	25	20	12	22	17	10	54mm	49mm	13mm	12mm	10mm
YPS252016	25	20	16	22	17	13	54mm	49mm	10mm	12mm	10mm
YPS252020	25	20	20	22	17	17	54mm	49mm	10mm	12mm	12mm
YPS252508	25	25	08	22	22	7.5	67mm	56mm	10mm	12mm	10mm
YPS252510	25	25	10	22	22	8.5	67mm	56mm	10mm	13mm	10mm
YPS252512	25	25	12	22	22	10	67mm	56mm	10mm	13mm	10mm
YPS252516	25	25	16	22	22	13	67mm	56mm	10mm	13mm	10mm
YPS252520	25	25	20	22	22	17	77mm	60mm	10mm	13mm	12mm
YPS252525	25	25	25	22	22	22	91mm	67mm	10mm	13mm	13mm
YPS282012	28	20	12	23	17	10	54mm	49mm	10mm	13mm	10mm
YPS282016	28	20	16	23	17	13	54mm	49mm	10mm	12mm	10mm
YPS282020	28	20	20	23	17	17	54mm	49mm	10mm	12mm	12mm
YPS282512	28	25	12	23	22	10	67mm	56mm	10mm	12mm	10mm
YPS282520	28	25	20	23	22	17	77mm	60mm	10mm	13mm	12mm
YPS282525	28	25	25	23	22	22	91mm	67mm	10mm	13mm	13mm
YPS282808	28	28	08	23	23	7.5	67mm	56mm	10mm	13mm	10mm
YPS282812	28	28	12	23	23	10	67mm	56mm	10mm	13mm	10mm
YPS282816	28	28	16	23	23	13	67mm	56mm	10mm	13mm	10mm
YPS282820	28	28	20	23	23	17	77mm	60mm	10mm	13mm	12mm
YPS282825	28	28	25	23	23	22	91mm	67mm	12mm	13mm	13mm
YPS282828	28	28	28	23	23	23	91mm	67mm	12mm	13mm	13mm
YPS322516	32	25	16	29	22	13	100mm	75mm	12mm	13mm	10mm
YPS322520	32	25	20	29	22	17	100mm	76mm	12mm	13mm	12mm
YPS322525	32	25	25	29	22	22	100mm	79mm	12mm	13mm	13mm
YPS322532	32	25	32	29	22	29	100mm	82mm	12mm	13mm	13mm
YPS323216	32	32	16	29	29	13	100mm	75mm	12mm	13mm	10mm
YPS323220	32	32	20	29	29	17	100mm	76mm	12mm	13mm	12mm
YPS323225	32	32	25	29	29	22	100mm	79mm	12mm	13mm	13mm
YPS323232	32	32	32	29	29	29	100mm	82mm	13mm	13mm	13mm
YPS403212*	40	32	12	36	29	10	133mm	91mm	15mm	12mm	10mm
YPS403216*	40	32	16	36	29	13	133mm	92mm	15mm	12mm	10mm
YPS403225*	40	32	25	36	29	22	133mm	92mm	15mm	12mm	12mm
YPS403228*	40	32	28	36	29	23	133mm	92mm	15mm	12mm	12mm
YPS404012*	40	40	12	36	36	10	135mm	93mm	15mm	15mm	10mm
YPS404016*	40	40	16	36	36	13	135mm	93mm	15mm	15mm	10mm
YPS404025*	40	40	25	36	36	22	135mm	93mm	15mm	15mm	12mm
YPS404028*	40	40	28	36	36	23	135mm	93mm	15mm	15mm	12mm
YPS404032*	40	40	32	36	36	29	135mm	96mm	15mm	15mm	12mm
YPS404040*	40	40	40	36	36	36	135mm	100mm	15mm	15mm	15mm

\*Size 40 YPS fittings are not hinged. They are a two part fitting

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +120°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	UV Resistance
IP68	N/A		Very High



# Hinged fittings

## External hinged T-piece



External Hinged T-piece

### External Hinged T-piece

One-piece symmetrical 3 junction fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
TPS080808	08	08	08	7.5	7.5	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS081208	08	12	08	7.5	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS081612	08	16	12	7.5	13	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS100808	10	08	08	8.5	7.5	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS100810	10	08	10	8.5	7.5	8.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS101010	10	10	10	8.5	8.5	8.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS101012	10	10	12	8.5	8.5	13	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS120808	12	08	08	10	7.5	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS120812	12	08	12	10	7.5	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121010	12	10	10	10	8.5	8.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121012	12	10	12	10	8.5	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121208	12	12	08	10	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121210	12	12	10	10	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121212	12	12	12	10	10	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPS121612	12	16	12	10	13	10	45.2mm	31.1mm	21mm	10mm	10mm	10mm
TPS160808	16	08	08	13	7.5	7.5	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS160812	16	08	12	13	7.5	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS160816	16	08	16	13	7.5	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161012	16	10	12	13	8.5	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161016	16	10	16	13	8.5	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161212	16	12	12	13	10	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161216	16	12	16	13	10	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161608	16	16	08	13	13	7.5	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161612	16	16	12	13	13	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS161616	16	16	16	13	13	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS162012	16	20	12	13	17	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS162016	16	20	16	13	17	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS200816	20	08	16	17	7.5	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS200820	20	08	20	17	7.5	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm

3

3



**1 One-piece external design**

Unrestricted bore and quick assembly requiring no tools.

**2 High pull-off strength**

Conduit corrugations sit tightly into joiner junctions.

**3 Conduit size labels**

Each junction indicates nominal conduit size to aid installation.

**4 Integral retaining clips**

Retains conduit in position during assembly.



**Approvals**

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

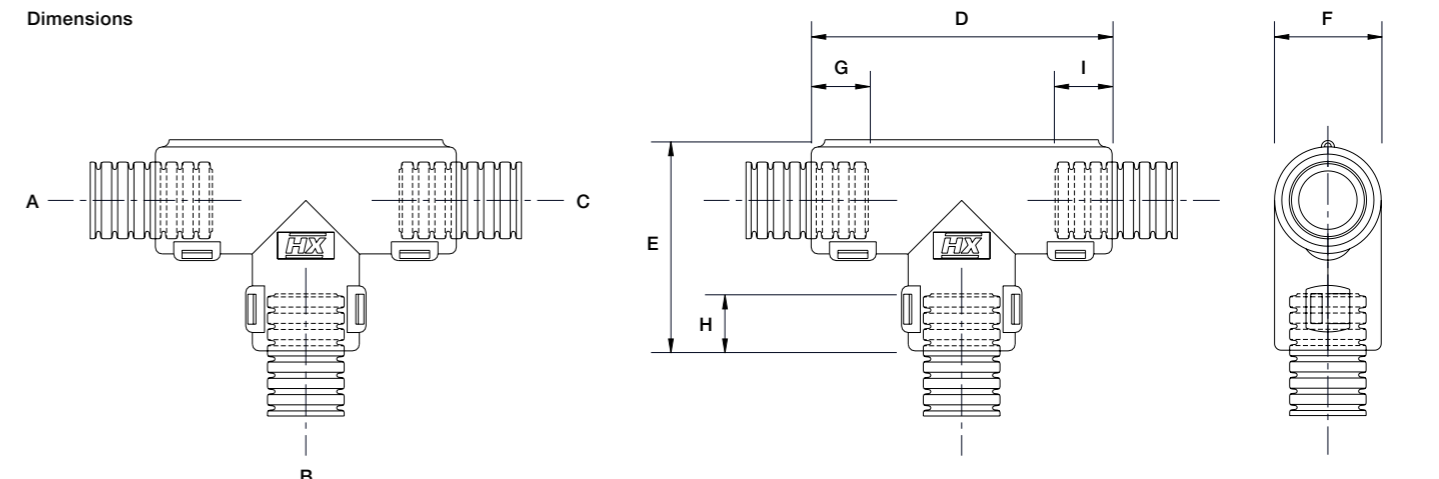
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
TPS201016	20	10	16	17	8.5	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS201020	20	10	20	17	8.5	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPS201216	20	12	16	17	10	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS201220	20	12	20	17	10	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPS201612	20	16	12	17	13	10	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS201616	20	16	16	17	13	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS201620	20	16	20	17	13	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPS202012	20	20	12	17	17	10	56.5mm	41.0mm	26mm	12mm	12mm	10mm
TPS202016	20	20	16	17	17	13	56.5mm	41.0mm	26mm	12mm	12mm	10mm
TPS202020	20	20	20	17	17	17	56.5mm	41.0mm	26mm	12mm	12mm	12mm
TPS202516	20	25	16	17	22	13	64.5mm	48.5mm	33mm	12mm	13mm	10mm
TPS250820	25	08	20	22	7.5	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS250825	25	08	25	22	7.5	22	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS251025	25	10	25	22	8.5	22	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS251220	25	12	20	22	10	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS251225	25	12	25	22	10	22	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS251620	25	16	20	22	13	17	64.5mm	48.5mm	33mm	13mm	12mm	12mm
TPS251625	25	16	25	22	13	22	64.5mm	48.5mm	33mm	13mm	12mm	13mm
TPS252020	25	20	20	22	17	17	64.5mm	48.5mm	33mm	13mm	13mm	12mm
TPS252025	25	20	25	22	17	22	64.5mm	48.5mm	33mm	13mm	13mm	13mm
TPS252520	25	25	20	22	22	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS252525	25	25	25	22	22	22	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS280820	28	08	20	23	7.5	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS280828	28	08	28	23	7.5	23	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS281020	28	10	20	23	8.5	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS281028	28	10	28	23	8.5	23	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS281220	28	12	20	23	10	17	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS281225	28	12	25	23	10	22	64.5mm	48.5mm	33mm	13mm	10mm	12mm

NOTE: Part numbers are continued on page 3/10

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range		Self Extinguishing	-40°C to +120°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A		Very High

**Dimensions**



# Hinged fittings

## External hinged T-piece (continued)

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
TPS281228	28	12	28	23	10	23	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS281620	28	16	20	23	13	17	64.5mm	48.5mm	33mm	13mm	10mm	12mm
TPS281625	28	16	25	23	13	22	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS281628	28	16	28	23	13	23	64.5mm	48.5mm	33mm	13mm	10mm	13mm
TPS282020	28	20	20	23	17	17	64.5mm	48.5mm	33mm	13mm	12mm	12mm
TPS282025	28	20	25	23	17	22	64.5mm	48.5mm	33mm	13mm	12mm	13mm
TPS282028	28	20	28	23	17	23	64.5mm	48.5mm	33mm	13mm	12mm	13mm
TPS282525	28	25	25	23	22	22	64.5mm	48.5mm	33mm	13mm	13mm	13mm
TPS282528	28	25	28	23	22	23	64.5mm	48.5mm	33mm	13mm	13mm	13mm
TPS282828	28	28	28	23	23	23	64.5mm	48.5mm	33mm	13mm	13mm	13mm
TPS300830	30	08	30	26	7.5	26	72.0mm	55.3mm	39mm	12mm	10mm	12mm
TPS301230	30	12	30	26	10	26	72.0mm	55.3mm	39mm	12mm	10mm	12mm
TPS301625	30	16	25	26	13	22	72.0mm	55.3mm	39mm	12mm	10mm	12mm
TPS301630	30	16	30	26	13	26	72.0mm	55.3mm	39mm	12mm	10mm	12mm
TPS302020	30	20	20	26	17	17	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS302025	30	20	25	26	17	22	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS302030	30	20	30	26	17	26	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS302525	30	25	25	26	22	22	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS303025	30	30	25	26	26	22	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS303030	30	30	30	26	26	26	72.0mm	55.3mm	39mm	12mm	12mm	12mm
TPS321625	32	16	25	29	13	22	72.0mm	55.3mm	39mm	13mm	10mm	13mm
TPS321632	32	16	32	29	13	29	72.0mm	55.3mm	39mm	13mm	10mm	13mm
TPS322532	32	25	32	29	22	29	72.0mm	55.3mm	39mm	13mm	10mm	13mm
TPS322025	32	20	25	29	17	22	72.0mm	55.3mm	39mm	13mm	12mm	13mm
TPS322028	32	20	28	29	17	23	72.0mm	55.3mm	39mm	13mm	12mm	13mm
TPS322032	32	20	32	29	17	29	72.0mm	55.3mm	39mm	13mm	12mm	13mm
TPS322525	32	25	25	29	22	22	72.0mm	55.3mm	39mm	13mm	13mm	13mm
TPS322532	32	25	32	29	22	29	72.0mm	55.3mm	39mm	13mm	13mm	13mm
TPS323225	32	32	25	29	29	22	72.0mm	55.3mm	39mm	13mm	13mm	13mm
TPS323232	32	32	32	29	29	29	72.0mm	55.3mm	39mm	13mm	13mm	13mm
TPS401232*	40	12	32	36	10	29	85.0mm	65.0mm	47mm	15mm	10mm	12mm
TPS401240*	40	12	40	36	10	36	87.0mm	65.0mm	47mm	15mm	10mm	15mm
TPS401632*	40	16	32	36	13	29	85.0mm	65.0mm	47mm	15mm	10mm	12mm
TPS401640*	40	16	40	36	13	36	87.0mm	65.0mm	47mm	15mm	10mm	15mm
TPS402040*	40	20	40	36	17	36	87.0mm	65.0mm	47mm	15mm	12mm	15mm
TPS402540*	40	25	40	36	22	36	87.0mm	65.0mm	47mm	15mm	12mm	15mm
TPS402840*	40	28	40	36	23	36	87.0mm	65.0mm	47mm	15mm	12mm	15mm
TPS404016*	40	40	16	36	36	13	85.0mm	70.0mm	47mm	15mm	15mm	12mm
TPS404032*	40	40	32	36	36	29	85.0mm	70.0mm	47mm	15mm	15mm	12mm
TPS404040*	40	40	40	36	36	36	87.0mm	70.0mm	47mm	15mm	15mm	15mm

\*Size 40 TPS fittings are not hinged. They are a two part fitting



Approvals	IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
CE Mark to the Low Voltage Directive	For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +120°C
RoHS Compliant to 2011/65/EU	IP40	Yes	Low Smoke Toxicity	
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC	IP67	N/A	Halogen Free	UV Resistance
	IP68	N/A		Very High

# Hinged fittings

## External hinged protective shroud



External Hinged Protective Shroud



**Approvals**  
 CE Mark to the Low Voltage Directive  
 RoHS Compliant to 2011/65/EU  
 Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

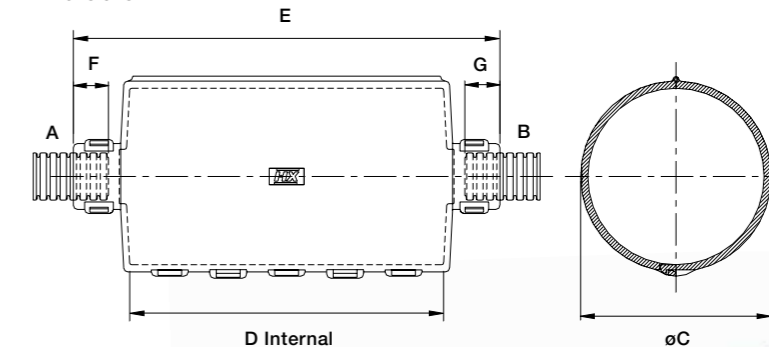
### External Hinged Protective Shroud

One-piece cover providing protection for in-line connectors, fuse links, circuit breakers and splicing areas. The CPS shrouds can be used as a harness datum, due to the integrated cable tie/fir tree facility. The strong construction allows for the protection of delicate connections, or as an alternative when an interface / backshell isn't available. These fittings are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore.

Part No.	Internal Diameter	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
		A	B	A	B	C	D	E	F	G
CPS341212	35mm	12	12	10	10	38mm	73mm	100mm	10mm	10mm
CPS421212	43mm	12	12	10	10	47mm	77mm	104mm	10mm	10mm
CPS421616	43mm	16	16	13	13	47mm	77mm	104mm	10mm	10mm
CPS422020	43mm	20	20	17	17	47mm	77mm	104mm	12mm	12mm

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +120°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	UV Resistance
IP68	N/A		Very High

### Dimensions



### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

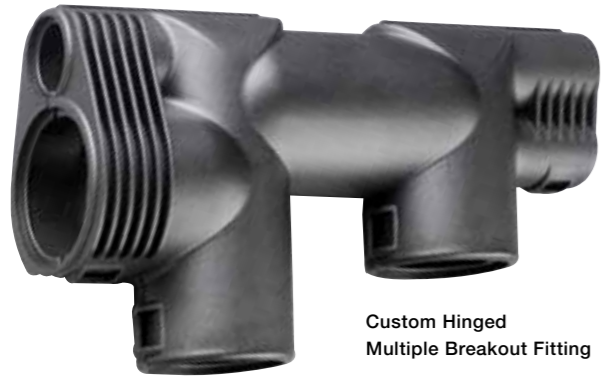
### 3 Ease of installation

Provides easy access to re-enter after installation.



## 2 piece fittings

### Custom two piece multiple breakout fitting



Custom Hinged  
Multiple Breakout Fitting

#### Custom Two Piece Multiple Breakout Fitting

One-piece hinged fittings designed to suit specific project or application requirements.

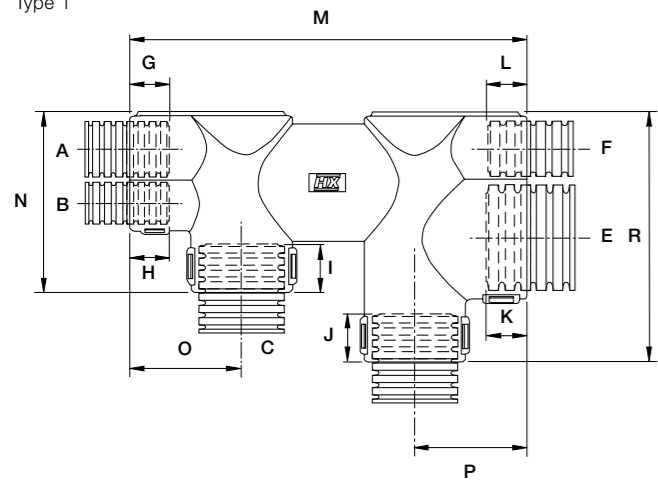
Part No.	Type	Conduit Size (NC)						Conduit Size (NW)						Conduit Engagement						Nominal Dimensions					Weight
		A	B	C	D	E	F	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	
MPS100	1	12	08	20	20	25	12	10	7.5	17	17	22	10	10	10	12	12	13	12	98mm	43mm	28mm	28mm	59mm	22kg
MPS102	2	16	08	16	08	25	-	13	7.5	16	7.5	22	-	10	10	10	10	13	-	97mm	-	-	-	-	23kg



Approvals	IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
CE Mark to the Low Voltage Directive	For use with: All conduits in the Harnessflex range		Self Extinguishing	-40°C to +120°C
RoHS Compliant to 2011/65/EU	IP40	Yes	Low Smoke Toxicity	
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC	IP67	N/A	Halogen Free	UV Resistance
	IP68	N/A		Very High

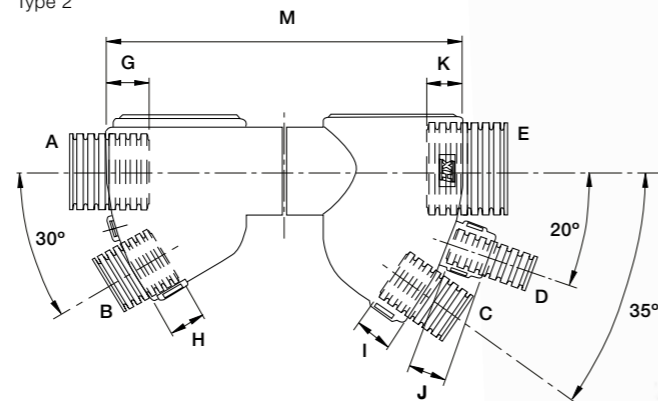
#### Dimensions

Type 1



#### Dimensions

Type 2



#### 1 Multi outlet options

Connect multiple pieces of conduit to one fitting.

#### 2 Outlets can be blanked

Certain outlets can be blanked using BPST08, BCH12 & BCH20 - See page 4/33.



## TempGuard hinged fittings Introduction



### Approvals

**CE Mark** to the Low Voltage Directive

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**  
**directive (ELV) EU200/53/EC**



Designed to operate at temperatures up to 200°C, TempGuard systems provide a complete high temperature cable routing solution for the automotive market.

Modern engine design has continually evolved to meet changing times. Global regulations such as Euro 6, USA10, and Tier 4 for off-highway heavy duty vehicles have mandated that manufacturers reduce emission levels. This required reduction, along with changes to engine design to improve safety, reduce noise and improve efficiency, have resulted in higher engine temperatures and led to the automotive industry actively looking for a complete and effective solution to protect the wiring and connectors in their engines.

Harnessflex have responded to market demand, by creating it's new range of high temperature conduits and fittings, designed to operate at temperatures up to 200°C. Created from the outset for use as a full system, the range is made from specialist co-polyester and polyamide respectively, that provide long-term heat, age, tensile, and impact strength to protect vital cable connections. The system has endured long term heat age testing to ensure consistent performance.

The TempGuard system is manufactured from low smoke, zero halogen materials, with a temperature operating range suited to the heat demands of today's engines.

The system provides higher performance levels of flexibility, impact and abrasion resistance, combined with enhanced chemical resistances especially to oils and greases for aggressive engine compartment environments. The range includes HTC08 - HTC20 conduit, with respective T and Y-Piece fittings, straight and elbow joiners, along with connector interfaces for AMP, Bosch, Deutsch and FCI.

**A working high temperature sample harness is available for order and global shipping.**

# TempGuard hinged fittings

## Type JPH - External hinged joiner



**3** Type JPH  
External High Temperature  
Hinged Joiner

### Type JPH - External High Temperature Hinged Joiner

One-piece joiner and elbow hinged fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit Harnessflex conduit, maintaining maximum conduit bore. Can be used as an in-line reducer as well as an enlarger.

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	
JPH1212	12	12	10	10	36mm	16mm	10mm	10mm	
JPH1612	16	12	13	10	36mm	21mm	10mm	10mm	

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	
JPH1208*	12	08	10	7.5	38mm	16mm	10mm	10mm	
JPH1616*	16	16	13	13	36mm	21mm	10mm	10mm	
JPH2008*	20	08	17	7.5	38mm	26mm	12mm	10mm	
JPH2016*	20	16	17	13	38mm	26mm	12mm	10mm	
JPH2020*	20	20	17	17	38mm	26mm	12mm	12mm	

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

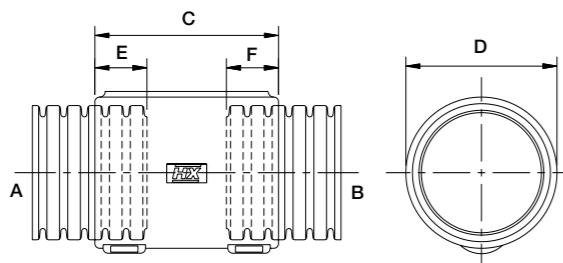


#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range		Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A	UL94 V2 / UL94 RT1 150 (Elec)	High

#### Dimensions



1

#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

# TempGuard hinged fittings

## Type EPH - External hinged elbow



**3** Type EPH  
External High Temperature  
Hinged Elbow

### Type EPH - External High Temperature Hinged Elbow

One-piece joiner and elbow hinged fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit Harnessflex conduit, maintaining maximum conduit bore. Can be used as an in-line reducer as well as an enlarger.

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	G
EPH1612	16	12	13	10	34mm	34mm	21mm	10mm	10mm
EPH1616	16	16	13	13	34mm	34mm	21mm	10mm	10mm
EPH2020	20	20	17	17	41mm	41mm	26mm	12mm	12mm

Part No.	Conduit Size (NC)		Conduit Size (NW)		Nominal Dimensions				
	A	B	A	B	C	D	E	F	G
EPH08S08*	08	08	7.5	7.5	38mm	29mm	20mm	10mm	10mm
EPH12S12*	12	12	10	10	38mm	29mm	20mm	10mm	10mm
EPH1608*	16	08	10	7.5	34mm	34mm	21mm	10mm	10mm
EPH2008*	20	08	17	7.5	41mm	39mm	26mm	12mm	10mm
EPH2016*	20	16	17	13	41mm	41mm	26mm	12mm	10mm

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

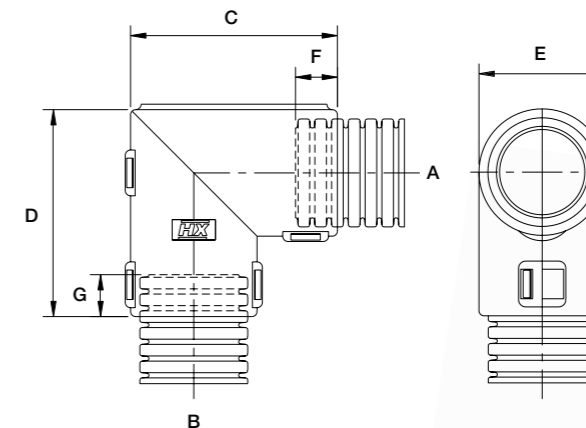


#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range		Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A	UL94 V2 / UL94 RT1 150 (Elec)	High

#### Dimensions



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

1

3

2

# TempGuard hinged fittings

## Type TPH - External hinged T-piece

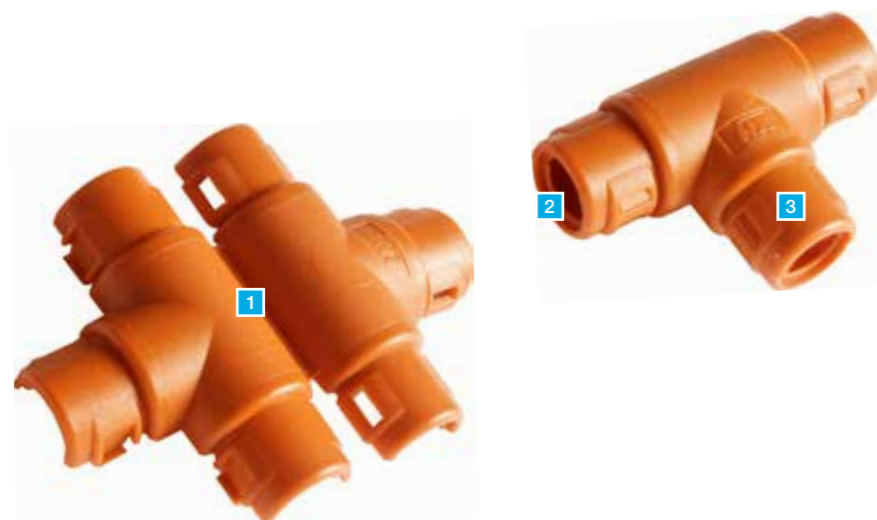


Type TPH  
External High Temperature  
Hinged T-piece

### Type TPH - External High Temperature Hinged T-piece

One-piece symmetrical 3 junction fittings allow a variety of conduit size variations. These fittings are designed to snap together over all types of slit and unslit Harnessflex conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
TPH080808	08	08	08	7.5	7.5	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH081208	08	12	08	7.5	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH120808	12	08	08	10	7.5	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH120812	12	08	12	10	7.5	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH121208	12	12	08	10	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH121212	12	12	12	10	10	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH121612	12	16	12	10	13	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH160812	16	08	12	13	7.5	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH160816	16	08	16	13	7.5	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161212	16	12	12	13	10	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161216	16	12	16	13	10	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161608	16	16	08	13	13	7.5	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161612	16	16	12	13	13	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161616	16	16	16	13	13	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH162012	16	20	12	13	17	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH162016	16	20	16	13	17	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH200816	20	08	16	17	7.5	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPH200820	20	08	20	17	7.5	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPH201216	20	12	16	17	10	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPH201220	20	12	20	17	10	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPH201616	20	16	16	17	13	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPH201620	20	16	20	17	13	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPH202012	20	20	12	17	17	10	56.5mm	41.0mm	26mm	12mm	12mm	10mm
TPH202016	20	20	16	17	17	13	56.5mm	41.0mm	26mm	12mm	12mm	10mm
TPH202020	20	20	20	17	17	17	56.5mm	41.0mm	26mm	12mm	12mm	12mm



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.



#### Approvals

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

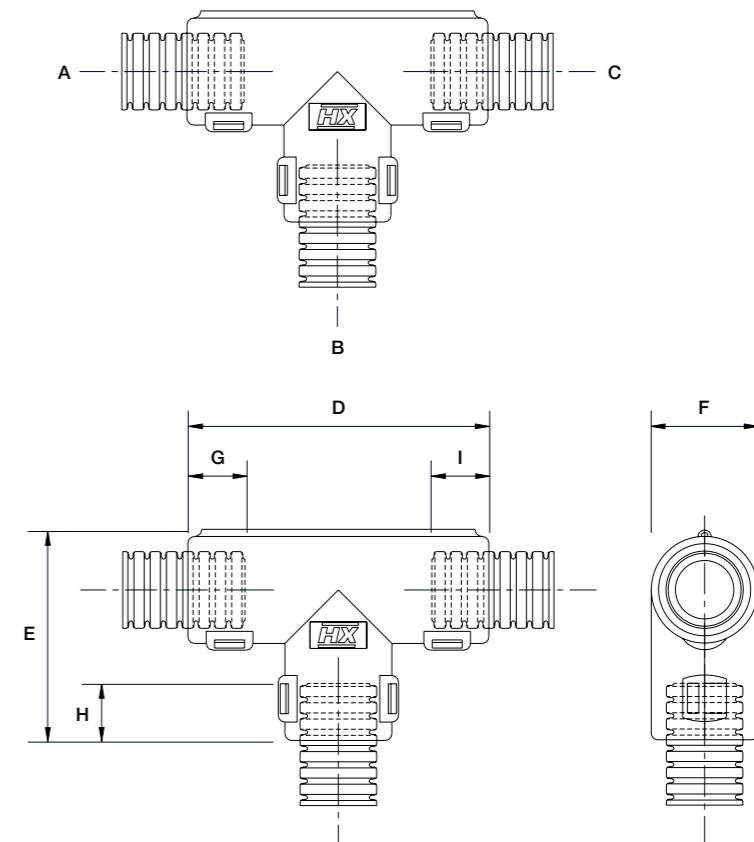
directive (ELV) EU200/53/EC

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
TPH081612*	08	16	12	7.5	13	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH100808*	10	08	08	8.5	7.5	7.5	45.2mm	31.7mm	17mm	10mm	10mm	10mm
TPH101010*	10	10	10	8.5	8.5	8.5	45.2mm	31.7mm	17mm	10mm	10mm	10mm
TPH101012*	10	10	12	8.5	8.5	13	45.2mm	31.7mm	17mm	10mm	10mm	10mm
TPH121010*	12	10	10	10	8.5	8.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH121012*	12	10	12	10	8.5	10	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH121210*	12	12	10	10	10	7.5	45.2mm	31.1mm	17mm	10mm	10mm	10mm
TPH160808*	16	08	08	13	7.5	7.5	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161012*	16	10	12	13	8.5	10	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPH161016*	16	10	16	13	8.5	13	49.1mm	34.8mm	21mm	10mm	10mm	10mm
TPS201016*	20	10	16	17	8.5	13	56.5mm	41.0mm	26mm	12mm	10mm	10mm
TPS201020*	20	10	20	17	8.5	17	56.5mm	41.0mm	26mm	12mm	10mm	12mm
TPS201612*	20	16	12	17	13	10	56.5mm	41.0mm	26mm	12mm	10mm	10mm

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	UV Resistance
IP68	N/A	UL94 V2 / UL94 RTI 150 (Elec)	High

#### Dimensions



# TempGuard hinged fittings

## Type YPH - External hinged Y-piece



Type YPH  
External High Temperature  
Hinged Y-piece

### Type YPH - External High Temperature Hinged Y-piece

One-piece asymmetrical 3 junction fittings allow a variety of conduit variations. These fittings are designed to snap together over all types of slit and unslit Harnessflex conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions				
	A	B	C	A	B	C	D	E	F	G	H
YPH080808	08	08	08	7.5	7.5	7.5	55mm	37mm	10mm	10mm	10mm
YPH120808	12	08	08	10	7.5	7.5	55mm	37mm	10mm	10mm	10mm
YPH120810	12	08	10	10	7.5	8.5	55mm	37mm	10mm	10mm	10mm
YPH121208	12	12	08	10	10	7.5	55mm	37mm	10mm	10mm	10mm
YPH121212	12	12	12	10	10	10	55mm	37mm	10mm	10mm	10mm
YPH161208	16	12	08	13	10	7.5	55mm	40mm	10mm	10mm	10mm
YPH161212	16	12	12	13	10	10	55mm	40mm	10mm	10mm	10mm
YPH161608	16	16	08	13	13	7.5	55mm	40mm	10mm	10mm	10mm
YPH161612	16	16	12	13	13	10	55mm	40mm	10mm	10mm	10mm
YPH201212	20	12	12	17	10	10	43mm	37mm	12mm	10mm	10mm
YPH201616	20	16	16	17	13	13	48mm	40mm	12mm	10mm	10mm
YPH202008	20	20	08	17	17	7.5	56mm	45mm	12mm	10mm	10mm
YPH202012	20	20	12	17	17	10	58mm	45mm	12mm	12mm	10mm
YPH202016	20	20	16	17	17	13	64mm	48mm	12mm	12mm	10mm



#### 1 One-piece external design

Unrestricted bore and quick assembly requiring no tools.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Conduit size labels

Each junction indicates nominal conduit size to aid installation.



Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions				
	A	B	C	A	B	C	D	E	F	G	H
YPH080812*	08	08	12	7.5	7.5	10	55mm	37mm	10mm	10mm	10mm
YPH081208*	08	12	08	7.5	1	7.5	55mm	37mm	10mm	10mm	10mm
YPH101010*	10	10	10	8.5	8.5	8.5	55mm	37mm	10mm	10mm	10mm
YPH121010*	12	10	10	10	8.5	8.5	55mm	37mm	10mm	10mm	10mm
YPH121210*	12	12	10	10	10	8.5	55mm	37mm	10mm	10mm	10mm
YPH161010*	16	10	10	13	8.5	8.5	55mm	40mm	10mm	10mm	10mm
YPH161210*	16	12	10	13	10	8.5	55mm	40mm	10mm	10mm	10mm
YPH161610*	16	16	10	13	13	8.5	55mm	40mm	10mm	10mm	10mm
YPH200808*	20	08	08	17	7.5	7.5	43mm	37mm	12mm	10mm	10mm
YPH201208*	20	12	08	17	10	7.5	43mm	37mm	12mm	10mm	10mm
YPH201210*	20	12	10	17	10	8.5	43mm	37mm	12mm	10mm	10mm
YPH201608*	20	16	08	17	13	7.5	43mm	37mm	12mm	10mm	10mm
YPH201612*	20	16	12	17	13	10	48mm	40mm	12mm	10mm	10mm
YPH202010*	20	20	10	17	17	8.5	58mm	45mm	12mm	12mm	10mm

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime



#### Approvals

CE Mark to the Low Voltage Directive

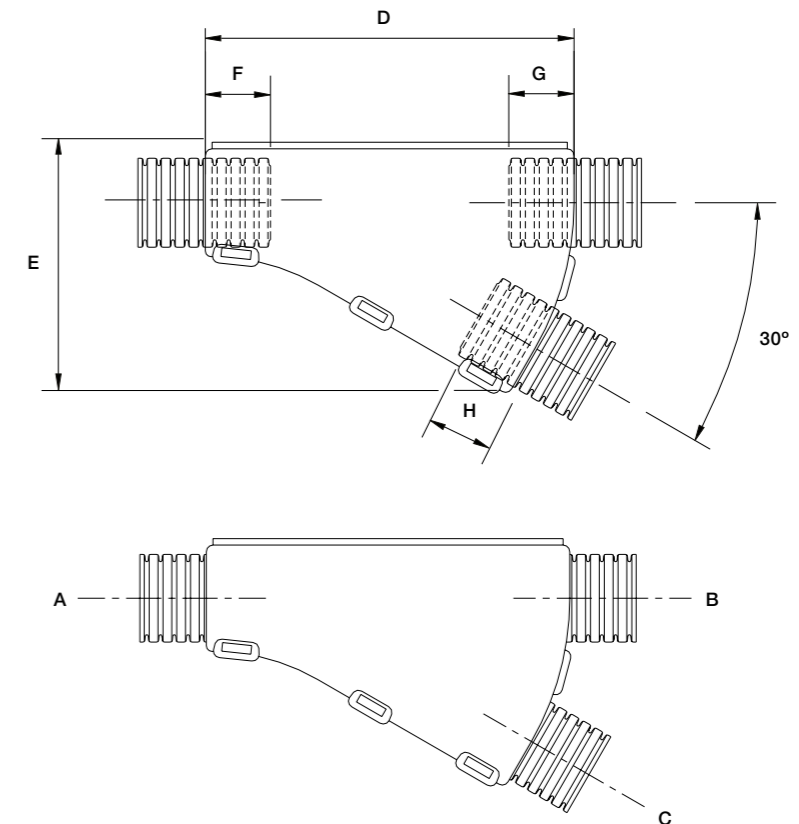
RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

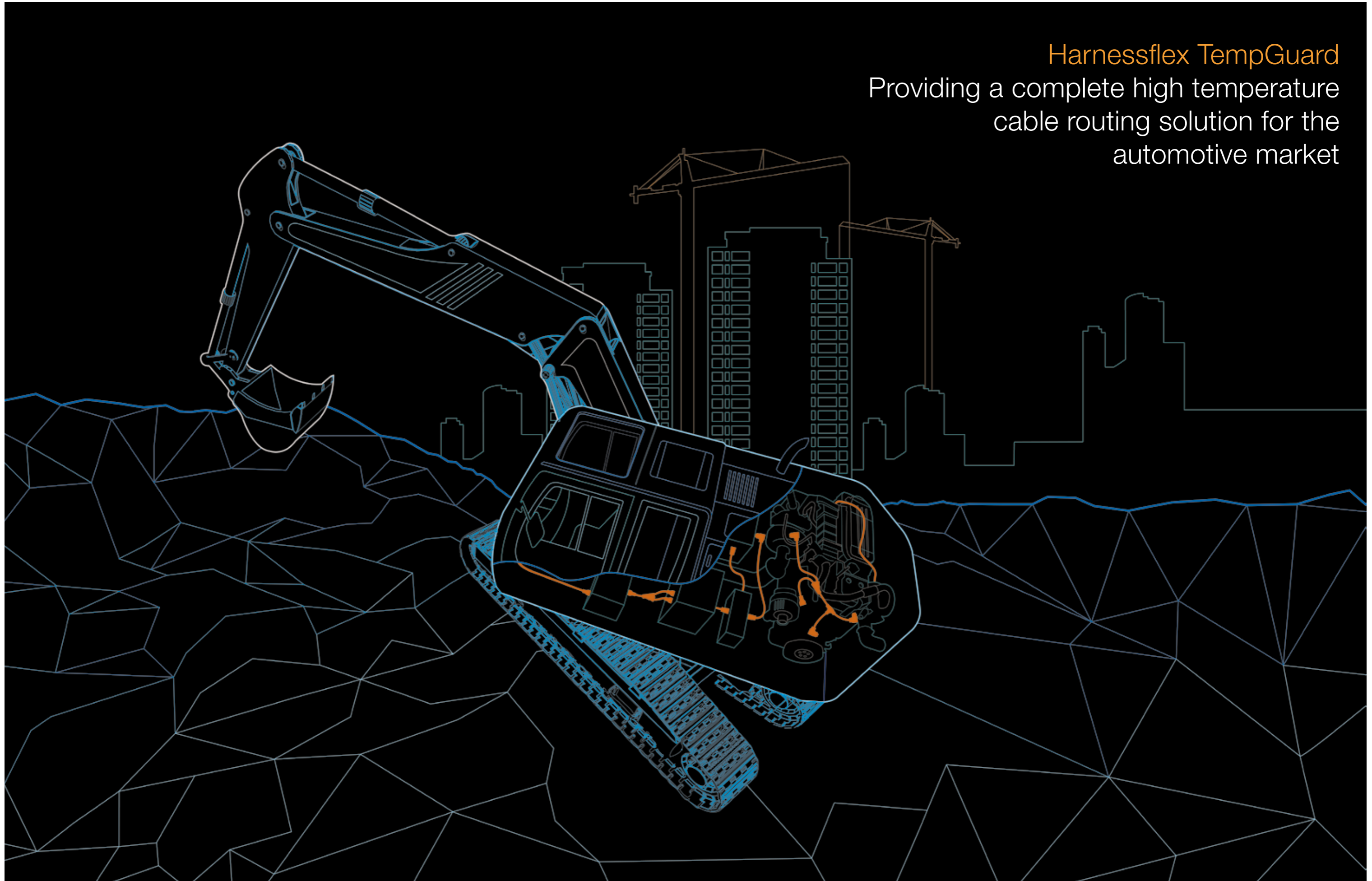
IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	UV Resistance
IP68	N/A	UL94 V2 / UL94 RTI 150 (Elec)	High

#### Dimensions



## Harnessflex TempGuard

Providing a complete high temperature cable routing solution for the automotive market





# TempGuard two-piece fittings

## Two-piece X configuration fitting



### Two-piece X Configuration Fitting

Two-piece X configuration fitting providing protection for in-line connectors, fuse links, circuit breakers and splicing areas. The strong construction allows for the protection of delicate connections, or as an alternative when an interface/backshell isn't available. These fittings are designed to snap together over all types of slit and unslit Harnessflex conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)				Conduit Size (NW)				Conduit Engagement				Nominal Dimensions		
	A	B	C	D	A	B	C	D	E	F	G	H	I	J	K
XPH1208	12	08	12	08	10	7.5	10	7.5	9.5mm	7mm	9.5mm	7mm	42.3mm	5.5mm	38mm

Two-piece X Configuration Fitting



#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
 Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

#### IP Rating

**Appropriate Conduit**  
**For use with:** All conduits in the Harnessflex range  
 IP40  
 IP67  
 IP68

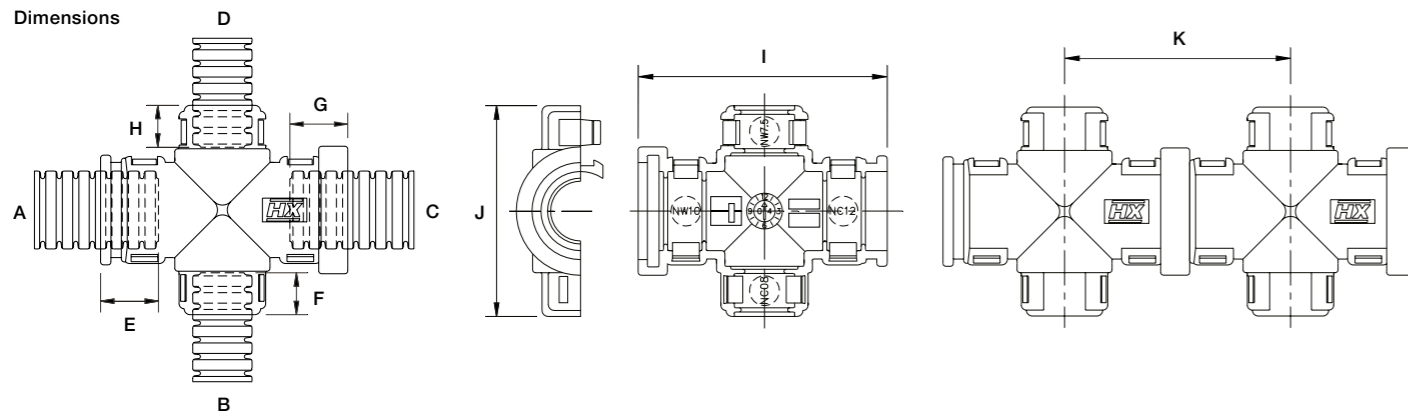
#### Fire Performance

Self Extinguishing  
 Low Smoke Toxicity  
 Halogen Free  
 UL94 V2 / UL94 RT1 150 (Elec)

#### Temperature Range

-40°C to +200°C  
**UV Resistance**  
 High

#### Dimensions



#### 1 Compact design

Reducing distance between centres.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Snap together

Fittings can be linked together for multiple outlet options without the need for short conduit joints.

# Two-piece fittings

## Two-piece X configuration fitting



### Two-piece X Configuration Fitting

Two-piece X configuration fitting providing protection for in-line connectors, fuse links, circuit breakers and splicing areas. The GPS shrouds can be used as a harness datum, due to the interated cable tie/fir tree facility. The strong construction allows for the protection of delicate connections, or as an alternative when an interface/backshell isn't available. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore.

Part No.	Conduit Size (NC)				Conduit Size (NW)				Conduit Engagement				Nominal Dimensions		
	A	B	C	D	A	B	C	D	E	F	G	H	I	J	K
XPS1208	12	08	12	08	10	7.5	10	7.5	9.5mm	7mm	9.5mm	7mm	42.3mm	5.5mm	38mm

Two-piece X Configuration Fitting



#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
 Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

#### IP Rating

**Appropriate Conduit**  
**For use with:** All conduits in the Harnessflex range  
 IP40  
 IP67  
 IP68

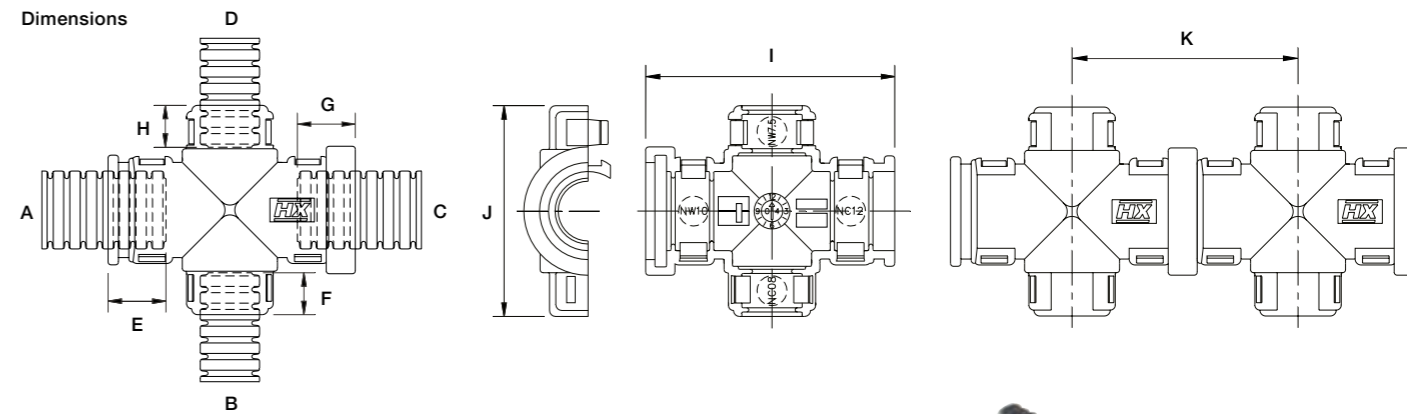
#### Fire Performance

Self Extinguishing  
 Low Smoke Toxicity  
 Halogen Free

#### Temperature Range

-40°C to +120°C  
**UV Resistance**  
 Very High

#### Dimensions



#### 1 Compact design

Reducing distance between centres.

#### 2 High pull-off strength

Conduit corrugations sit tightly into joiner junctions.

#### 3 Snap together

Fittings can be linked together for multiple outlet options without the need for short conduit joints.

## Two-piece fittings

### Two-piece 5 way fitting



Two-piece  
5 Way Fitting

#### Two-piece 5 Way Fitting

Two identical half shells snap together to give a 5 Way conduit fitting. Designed to fit all Harnessflex conduit. Additional configurations possible (dependent on volume).

Part No.	Conduit Size (NC)					Conduit Size (NW)					Nominal Dimensions								
	A	B	C	D	E	A	B	C	D	E	F	G	H	I	J	K	L	M	
MPS121212-2020	12	12	12	20	20	10	10	10	17	17	10mm	7mm	10mm	10mm	10mm	59mm	92mm	32mm	
MPS122812-2020	12	28	12	20	20	10	23	10	17	17	10mm	12mm	10mm	10mm	10mm	67mm	92mm	32mm	
MPS201220-2020	20	12	20	20	20	17	17	10	17	17	12mm	7mm	12mm	10mm	10mm	59mm	92mm	32mm	
MPS202820-2020	20	28	20	20	20	17	23	17	17	17	12mm	12mm	12mm	10mm	10mm	67mm	92mm	32mm	
MPS251225-2020	25	12	25	20	20	22	10	22	17	17	11mm	7mm	11mm	10mm	10mm	59mm	92mm	32mm	
MPS252825-2020	25	28	25	20	20	22	23	22	17	17	11mm	12mm	11mm	10mm	10mm	67mm	92mm	32mm	



#### Approvals

CE Mark to the Low Voltage Directive  
RoHS Compliant to 2011/65/EU  
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

#### IP Rating

IP40  
IP67  
IP68

#### Appropriate Conduit

For use with: All conduits in the Harnessflex range  
Yes  
N/A  
N/A

#### Fire Performance

Self Extinguishing  
Low Smoke Toxicity  
Halogen Free

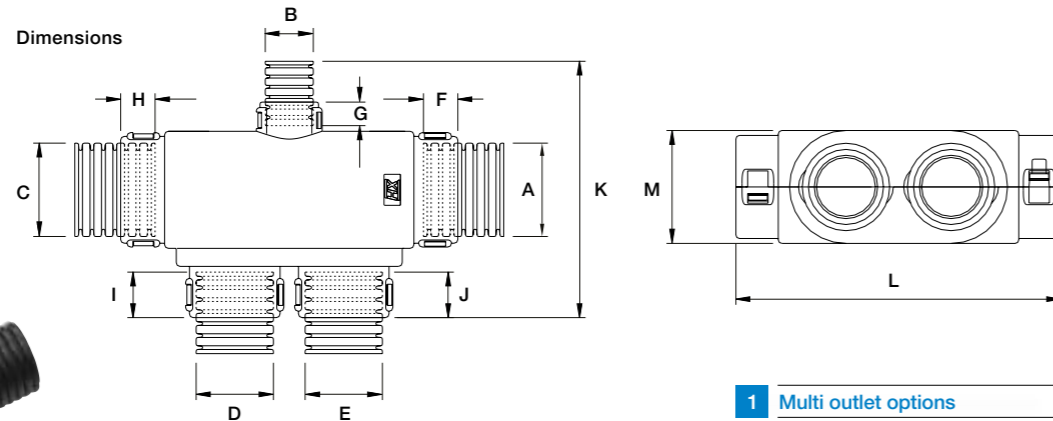
#### Temperature Range

-40°C to +120°C

#### UV Resistance

Very High

#### Dimensions



#### 1 Multi outlet options

Connect multiple pieces of conduit to one fitting.

#### 2 Outlets can be blanked

Outlets can be easily blanked using BPST08, BCH12 & BCH20 - See page 4/33.

## Accessories

### In-line hinged circular fitting



In-line Hinged  
Circular Fitting



#### Approvals

CE Mark to the Low Voltage Directive  
RoHS Compliant to 2011/65/EU  
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

#### In-line Hinged Circular Fitting

One-piece straight fittings providing in-line 'customised' combinations of multiple conduit breakouts. ST break out disk configuration can be made to order, for more details see website for specification and ordering sheet.

Part No.	Conduit Size (A)		Nominal Dimensions		
	NC	NW	B	C	D
CI20-A31	20	17	62mm	45mm	12mm
CI25-A31	25	22	62mm	45mm	13mm
CI32-A31	32	29	62mm	45mm	13mm

#### IP Rating

IP40  
IP67  
IP68

#### Appropriate Conduit

For use with: All conduits in the Harnessflex range  
Yes  
N/A  
N/A

#### Fire Performance

Self Extinguishing  
Low Smoke Toxicity  
Halogen Free

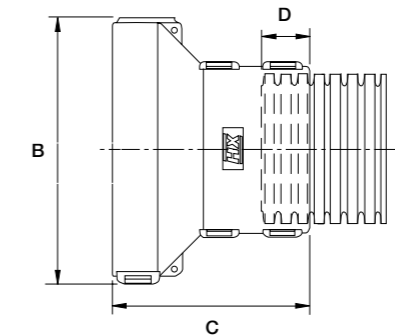
#### Temperature Range

-40°C to +120°C

#### UV Resistance

Very High

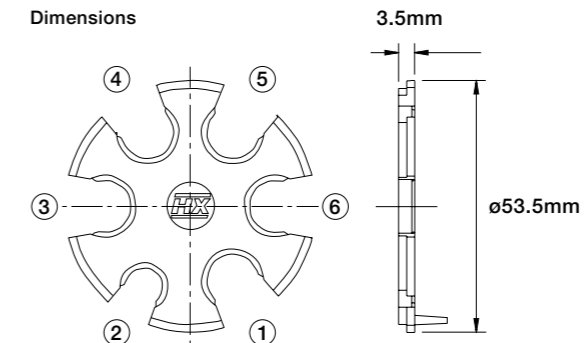
#### Dimensions



Part No.	Breakout Type					
	1	2	3	4	5	6
ST31-100	NC08	NC08	NC08	BLANK	NC08	NC08
ST31-101	NC12	NC12	NC08	BLANK	BLANK	NC12
ST31-102	NC08	NC08	NC08	NC08	NC08	NC08
ST31-103	NC12	NC12	NC12	NC12	NC12	NC12

NOTE: Other configurations available on request

#### Dimensions



Circular  
Breakout Fitting

# Providing superior protection for automotive wiring harnesses

## Interfaces

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<b>External Hinged Connector Interfaces</b>	
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AMP Junior & Mini timer	4/6
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FCI Automotive Apex 2.8	4/14
Bosch Compact	4/15
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<b>TempGuard External Hinged Connector Interfaces</b>	
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<b>External Split Connector Interfaces</b>	
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Multi-way reducers	4/32
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## Interfaces Introduction

Vehicle electrical system faults are often traced to problems at the cable entry points of electrical connectors. Harnessflex connector interfaces are designed to protect against the high pressure wash-down, excessive cable strain and mechanical abrasion identified as the principle causes.

### Capabilities

Harnessflex works closely with many OEM's to develop protection for electrical connectors (a critical area of an engine harness).

Our experienced internal design team uses 3D CAD modelling software to produce various concepts for customer approval.

Once a design is selected, a rapid prototype of the interface can be supplied to assist pre-production process.

These prototype parts can be used for validation, due to the close approximation of properties of the material used in the prototyping process and materials used in our injection moulded components.

With Harnessflex's history of connector interface design and our understanding of customers requirements, we are well placed to produce bespoke designs to integrate electrical connectors into a harness design.

### Features & benefits

- Interfaces can be used in areas where electrical connectors are vulnerable to high pressure washing
- Our interfaces offer strain relief to crimped contacts
- When our 90° swivel elbows are used with interfaces they allow the harness to self level
- Using our part CI-MF-90, in addition to a standard 90° swivel fitting, a 180° swivel bend is possible



# External hinged connector interfaces

## AMP Superseal



AMP Superseal Straight Interface

### AMP Superseal Swivel Interface - External Hinged Connector Interface

Single junction straight and 90° elbow interfaces providing high integrity connections between AMP Superseal or Junior timer connectors and Harnessflex conduit systems. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Superseal Straight Interface</b>								
CI08-AS1	08	7.5	23.6mm	16.1mm	18mm	10mm	1 Way	282079-2*
CI08-AS2	08	7.5	22.4mm	20.5mm	18mm	10mm	2 Way	282080-1*
CI08-AS3	08	7.5	22.4mm	26.5mm	18mm	10mm	3 Way	282087-1*
CI08-AS4	08	7.5	34.0mm	33.0mm	18mm	10mm	4 Way	282088-1*
CI10-AS2	10	8.5	34.0mm	21.0mm	20mm	10mm	2 Way	282080-1*
CI10-AS3	10	8.5	34.0mm	27.0mm	20mm	10mm	3 Way	282087-1*
CI10-AS4	10	8.5	34.0mm	33.0mm	20mm	10mm	4 Way	282088-1*
CI12-AS1	12	10	23.6mm	16.1mm	18mm	10mm	1 Way	282079-2*
CI12-AS2	12	10	22.4mm	20.5mm	18mm	10mm	2 Way	282080-1*
CI12-AS3	12	10	22.4mm	26.5mm	18mm	10mm	3 Way	282087-1*
CI12-AS4	12	10	34.0mm	33.0mm	19mm	10mm	4 Way	282088-1*

\*All Colour and Wire variants



AMP Superseal 90° Elbow Swivel Interface

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Superseal 90° Elbow Swivel Interface</b>								
CI08-90-AS1	08	7.5	37.5mm	30.3mm	18.0mm	10mm	1 Way	282079-2*
CI08-90-AS2	08	7.5	33.3mm	30.3mm	18.0mm	10mm	2 Way	282080-1*
CI08-90-AS3	08	7.5	22.4mm	26.5mm	18.0mm	10mm	3 Way	282087-1*
CI08-90-AS4	08	7.5	33.3mm	30.3mm	18.0mm	10mm	4 Way	282088-1*
CI10-90-AS2	10	8.5	35.0mm	38.0mm	19.0mm	10mm	2 Way	282080-1*
CI10-90-AS3	10	8.5	35.0mm	38.0mm	19.0mm	10mm	3 Way	282087-1*
CI10-90-AS4	10	8.5	41.2mm	38.0mm	19.0mm	10mm	4 Way	282088-1*
CI12-90-AS2	12	10	33.3mm	30.3mm	20.5mm	10mm	2 Way	282080-1*
CI12-90-AS3	12	10	33.3mm	30.3mm	26.7mm	10mm	3 Way	282087-1*
CI12-90-AS4	12	10	37.0mm	30.3mm	33.0mm	10mm	4 Way	282088-1*

\*All Colour and Wire variants



#### Approvals

**CE Mark** to the Low Voltage Directive

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All	conduits in the Harnessflex range	Self Extinguishing	-40°C to +120°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A		Very High



#### 1 High pull-off strength

Conduit corrugations locate securely providing high pull off strength.

#### 2 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

#### 3 Straight or 90° elbow versions

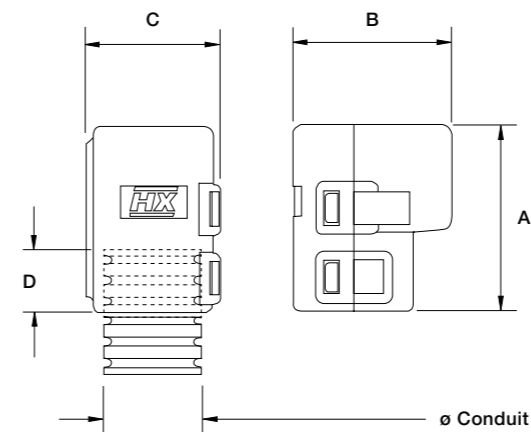
Compact design ideal for use where space is limited.

#### 4 Swivel elbow

Allowing 360 degree rotation for ease of routing.

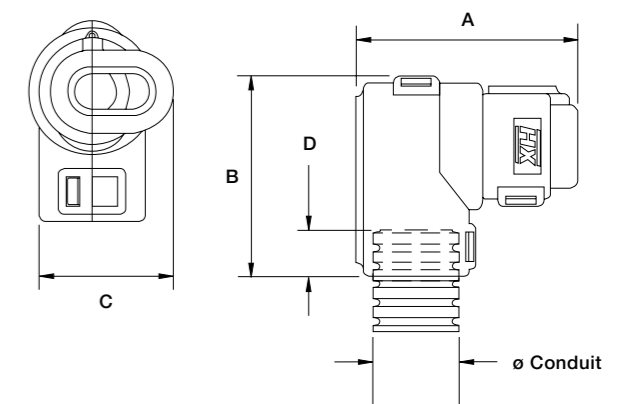
#### Dimensions

External straight connector interface



#### Dimensions

External 90° elbow connector interface



# External hinged connector interfaces

## AMP Junior & Mini timer



AMP Junior & Mini Timer Straight Interface

### AMP Junior & Mini Timer - External Hinged Connector Interface

Single junction straight and 90° elbow interfaces providing high integrity connections between AMP Superseal or Junior timer connectors and Harnessflex conduit systems. These fittings are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Junior Timer Straight Interface</b>								
CI08-AM2	08	7.5	24.9mm	21.3mm	18mm	10mm	2 Way	347887-3*
CI08-AM3	08	7.5	24.9mm	27.2mm	18mm	10mm	3 Way	1-827578-1*
CI08-AM4	08	7.5	37.0mm	32.0mm	19mm	10mm	4 Way	281804-1*
CI10-AM2	10	8.5	37.0mm	21.0mm	19mm	10mm	2 Way	347887-3*
CI10-AM3	10	8.5	37.0mm	27.0mm	19mm	10mm	3 Way	1-827578-1*
CI10-AM4	10	8.5	37.0mm	32.0mm	19mm	10mm	4 Way	281804-1*
CI12-AM2	12	10	24.9mm	21.3mm	18mm	10mm	2 Way	347887-3*
CI12-AM3	12	10	24.9mm	27.2mm	18mm	10mm	3 Way	1-827578-1*
CI12-AM4	12	10	37.0mm	32.0mm	19mm	10mm	4 Way	281804-1*

\*All Colour and Wire variants

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Mini Timer Straight Interface</b>								
CI12-X01	12	10	34mm	16.2mm	19.6mm	10mm	-	-



AMP Junior & Mini Timer 90° Elbow Swivel Interface

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Junior Timer 90° Elbow Swivel Interface</b>								
CI08-90-AM2	08	7.5	35.7mm	30.3mm	21.3mm	7mm	2 Way	347887-3*
CI08-90-AM3	08	7.5	35.7mm	30.3mm	27.2mm	7mm	3 Way	1-827578-1*
CI08-90-AM4	08	7.5	39.5mm	30.3mm	32.0mm	7mm	4 Way	281804-1*
CI10-90-AM2	10	8.5	37.5mm	38.0mm	21.3mm	10mm	2 Way	347887-3*
CI10-90-AM3	10	8.5	37.5mm	38.0mm	27.2mm	10mm	3 Way	1-827578-1*
CI10-90-AM4	10	8.5	41.2mm	38.0mm	32.0mm	10mm	4 Way	281804-1*
CI12-90-AM2	12	10	35.7mm	30.3mm	21.3mm	7mm	2 Way	347887-3*
CI12-90-AM3	12	10	35.7mm	30.3mm	27.2mm	7mm	3 Way	1-827578-1*
CI12-90-AM4	12	10	39.5mm	30.3mm	32.0mm	7mm	4 Way	281804-1*

\*All Colour and Wire variants

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Mini Timer 90° Elbow Swivel Interface</b>								
CI12-90-X01	12	10	37mm	30.3mm	19mm	10mm	-	-



#### Approvals

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

#### IP Rating

For use with: All conduits in the Harnessflex range

IP40

IP67

IP68

#### Appropriate Conduit

Yes

N/A

N/A

#### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

#### Temperature Range

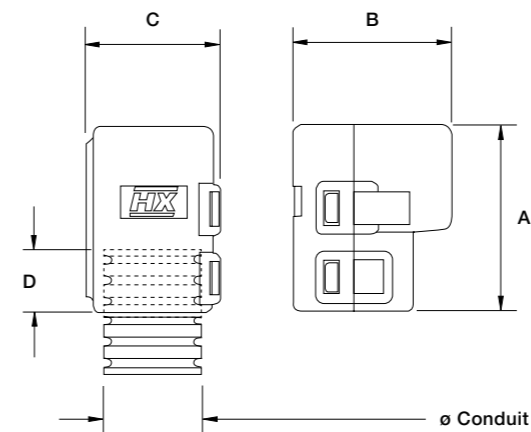
-40°C to +120°C

#### UV Resistance

Very High

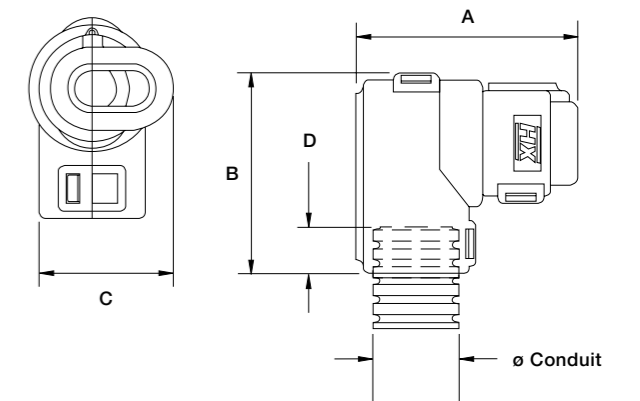
#### Dimensions

External straight connector interface



#### Dimensions

External 90° elbow connector interface



#### 1 High pull-off strength

Conduit corrugations locate securely providing high pull off strength.

#### 2 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

#### 3 Straight or 90° elbow versions

Compact design ideal for use where space is limited.

#### 4 Swivel elbow

Allowing 360 degree rotation for ease of routing.

# External hinged connector interfaces

## Ampseal 16



AMPSEAL 16  
Straight & 90° Elbow Swivel Interface

### Ampseal 16 Interface - External Hinged Connector Interface

A range of straight and 90° elbow interfaces offering a compact and high integrity connection between Ampseal automotive connectors and Harnessflex conduit systems. These interfaces provide complete cable protection right up to the connector. They also provide strain relief and protection from high pressure washing, helping to maintain the sealing integrity of the connector. The 90° elbow allows the conduit to swivel 360° around the connector housing. These fittings are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 Straight Interface</b>								
CI08-AT2PL	08	7.5	23mm	18mm	34mm	12mm	2 Way	776427-1*
CI08-AT3PL	08	7.5	28mm	18mm	33mm	11mm	3 Way	776427-1*
CI08-AT4PL	08	7.5	29mm	23mm	39mm	13mm	4 Way	776487-1*
CI12-AT4PL	12	10	29mm	23mm	37mm	11mm	4 Way	776487-1*
CI12-AT6PL	12	10	29mm	23mm	37mm	11mm	6 Way	776433-1*
CI12-AT8PL	12	10	32mm	23mm	37mm	11mm	8 Way	776494-1*
CI12-AT12PL	12	10	41mm	23mm	37mm	11mm	12 Way	776494-1*
CI16-AT8PL	16	13	32mm	23mm	37mm	11mm	8 Way	776494-1
CI16-AT12PL	16	13	41mm	23mm	37mm	11mm	12 Way	776494-1*

\*All Colour and Wire variants

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 90° Elbow Interface - Standard Profile Plugs</b>								
CI08-90-AT2PL	08	7.5	49mm	32mm	20mm	7.1mm	2 Way	776427-1*
CI08-90-AT3PL	08	7.5	49mm	34mm	20mm	7.1mm	3 Way	776427-1*
CI08-90-AT4PL	08	7.5	53mm	34mm	23mm	7.1mm	4 Way	776487-1*
CI12-90-AT2PL	12	10	49mm	32mm	20mm	7.1mm	2 Way	776427-1*
CI12-90-AT3PL	12	10	49mm	34mm	20mm	7.1mm	3 Way	776427-1*
CI12-90-AT4PL	12	10	53mm	35mm	23mm	7.1mm	4 Way	776487-1*

\*All Colour and Wire variants



Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 90° Elbow Interface - Low Profile Plugs &amp; Receptacles</b>								
CI08-90-AT2LP	08	7.5	37.3mm	25.0mm	17.0mm	7.1mm	2 Way	776427-1*
CI08-90-AT2LR	08	7.5	37.3mm	25.0mm	20.0mm	7.1mm	2 Way	-
CI08-90-AT3LP	08	7.5	39.8mm	29.0mm	17.1mm	7.1mm	3 Way	776427-1*
CI08-90-AT3LR	08	7.5	39.8mm	29.0mm	17.1mm	7.1mm	3 Way	-
CI08-90-AT4LP	08	7.5	40.8mm	29.4mm	20.6mm	7.1mm	4 Way	776487-1*
CI08-90-AT4LR	08	7.5	40.8mm	29.4mm	20.6mm	7.1mm	4 Way	-
CI08-90-AT6LP	08	7.5	42.8mm	29.4mm	22.5mm	7.1mm	6 Way	776433-1*
CI08-90-AT6LR	08	7.5	42.8mm	29.4mm	22.5mm	7.1mm	6 Way	-

NOTE: LP = Plug, LR = Receptacle

\*All Colour and Wire variants

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 90° Elbow Interface - Low Profile Plugs &amp; Receptacles</b>								
CI12-90-AT2LP	12	10	38.0mm	23.0mm	20.0mm	7.1mm	2 Way	776427-1*
CI12-90-AT2LR	12	10	38.0mm	23.0mm	20.0mm	7.1mm	2 Way	-
CI12-90-AT3LP	12	10	40.2mm	27.1mm	17.1mm	7.1mm	3 Way	776427-1*
CI12-90-AT3LR	12	10	40.2mm	27.1mm	17.1mm	7.1mm	3 Way	-
CI12-90-AT4LP	12	10	41.1mm	27.5mm	20.6mm	7.1mm	4 Way	776487-1*
CI12-90-AT4LR	12	10	41.1mm	27.5mm	20.6mm	7.1mm	4 Way	-
CI12-90-AT6LP	12	10	43.1mm	27.5mm	22.5mm	7.1mm	6 Way	776433-1*
CI12-90-AT6LR	12	10	43.1mm	27.5mm	22.5mm	7.1mm	6 Way	-

NOTE: LP = Plug, LR = Receptacle

\*All Colour and Wire variants



### Approvals

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

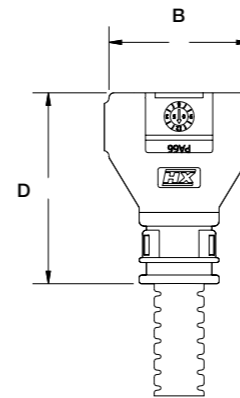
Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +120°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	UV Resistance
IP68	N/A		Very High

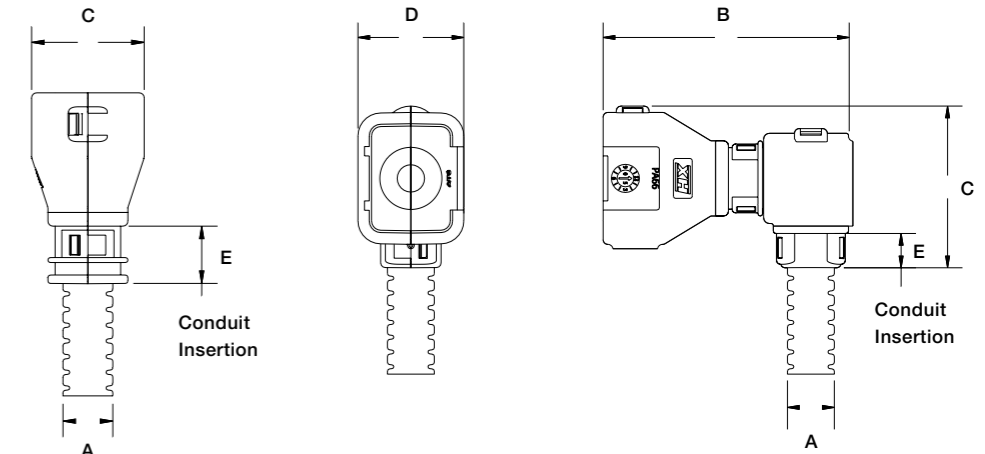
### Dimensions

External straight connector interface



### Dimensions

External 90° elbow connector interface



#### 1 High pull-off strength

Conduit corrugations locate securely providing high pull off strength.

#### 2 Conduit size labels

Each junction indicates nominal conduit size to aid installation.

#### 3 Straight or 90° elbow versions

Compact design ideal for use where space is limited.

#### 4 Swivel elbows

Allowing 360 degree rotation for ease of routing.

# External hinged connector interfaces

## Deutsch - DT Series



Deutsch - DT Series Straight Interfaces

### Deutsch - DT Series Straight Interface - External Hinged Connector Interface

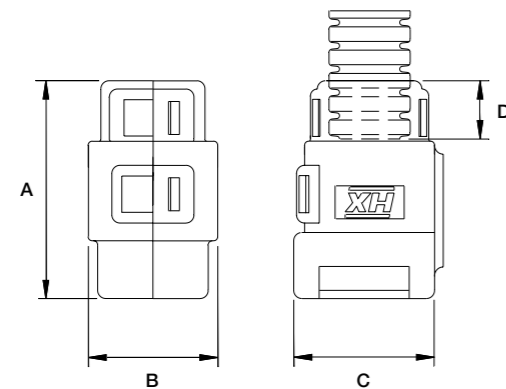
Straight and 90° elbow interfaces providing high integrity connections between Deutsch DT connectors and Harnessflex conduit systems. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing. Also compatible with Amphenol and Molex connector versions.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Deutsch - DT Series Straight Interface</b>								
CI08-DT2	08	7.5	26mm	16mm	18mm	7mm	2 Way	DT06-2S*
CI08-DT3	08	7.5	30mm	22mm	24mm	12mm	3 Way	DT06-3S*
CI08-DT4	08	7.5	42mm	18mm	27mm	12mm	4 Way	DT06-4S*
CI08-DT6	08	7.5	42mm	22mm	27mm	12mm	6 Way	DT06-6S*
CI12-DT2	12	10	26mm	16mm	18mm	7mm	2 Way	DT06-2S*
CI12-DT3	12	10	29mm	22mm	24mm	7mm	3 Way	DT06-3S*
CI12-DT4	12	10	40mm	18mm	27mm	7mm	4 Way	DT06-4S*
CI12-DT6	12	10	40mm	22mm	27mm	10mm	6 Way	DT06-6S*
CI12-DT8	12	10	40mm	25mm	30mm	10mm	8 Way	DT06-8SA*
CI16-DT12	16	13	44mm	24mm	40mm	10mm	12 Way	DT06-12SA*

\*All Colour variants

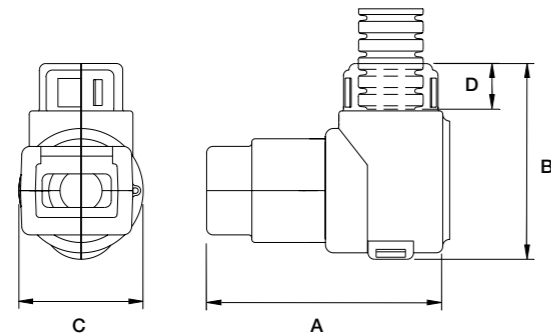
#### Dimensions

Straight connector



#### Dimensions

90° Connector



Deutsch - DT Series 90° Elbow Swivel Interfaces



#### Approvals

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

#### Deflects water from connector

During high pressure cleaning.

#### High pull-off strength

Conduit corrugations locate securely providing high pull off strength.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Deutsch - DT Series 90° Elbow Swivel Interface</b>								
CI08-90-DT2	08	7.5	36mm	30mm	19mm	7mm	2 Way	DT06-2S*
CI08-90-DT3	08	7.5	44mm	30mm	23mm	7mm	3 Way	DT06-3S*
CI08-90-DT4	08	7.5	48mm	30mm	25mm	7mm	4 Way	DT06-4S*
CI08-90-DT6	08	7.5	48mm	34mm	25mm	7mm	6 Way	DT06-6S*
CI12-90-DT2	12	10	36mm	30mm	19mm	7mm	2 Way	DT06-2S*
CI12-90-DT3	12	10	44mm	30mm	23mm	7mm	3 Way	DT06-3S*
CI12-90-DT4	12	10	48mm	30mm	25mm	7mm	4 Way	DT06-4S*
CI12-90-DT6	12	10	48mm	34mm	25mm	7mm	6 Way	DT06-6S*
CI12-90-DT8	12	10	63mm	37mm	30mm	10mm	8 Way	DT06-8S*
CI12-90-DT12	12	10	68mm	36mm	38mm	10mm	12 Way	DT06-12SA*
CI16-90-DT8	16	13	63mm	37mm	30mm	10mm	8 Way	DT06-8SA*
CI16-90-DT12	16	13	68mm	36mm	38mm	10mm	12 Way	DT06-12SA*

\*All Colour variants

#### IP Rating

For use with: All conduits in the Harnessflex range

IP40

Yes

IP67

N/A

IP68

N/A

#### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

#### Temperature Range

-40°C to +120°C

#### UV Resistance

Very High

#### Conduit size labels

Each junction indicates nominal conduit size to aid installation.

#### Straight or 90° elbow versions

Compact design ideal for use where space is limited.





## External hinged connector interfaces Deutsch - DTP04 Series



### Deutsch - DTP04 Series Interface - External Hinged Connector Interface

Single compact 90° elbow interfaces providing a dual orientation high integrity connection between the Deutsch DTP04 and Harnessflex conduit systems. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore. The 16-90-DTP04 adaptor will snap into the outlet of a 16mm hinged fitting including types 'Y' (YPS), 'T' (TPS), elbows (EPS) and joiners (JPS).

Deutsch - DTP04 Series  
90° Elbow Interface



#### Approvals

CE Mark to the Low Voltage Directive

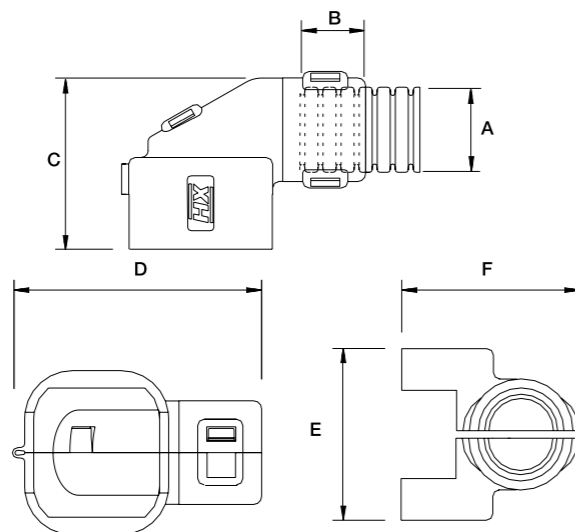
RoHS Compliant to 2011/65/EU

Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

Part No.	Conduit Size (A)		Nominal Dimensions				
	NC	NW	B	C	D	E	F
CI12-90-DTP04	12	7.5	10mm	27mm	37mm	25mm	28mm
16-90-DTP04	-	-	-	27mm	35mm	25mm	27mm

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	UV Resistance
IP68	N/A	Halogen Free	

#### Dimensions



## 2 piece connector interfaces Deutsch - DRC50



### Deutsch - DRC50 Interface - External 2 piece Connector Interface

Two identical half shells snap together onto the twin outlets of the Deutsch DRC50 interface giving a 3 Way conduit fitting. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore.

Deutsch - DRC50  
3 Way Interface

Part No.	Conduit Size (NC)			Conduit Size (NW)			Nominal Dimensions					
	A	B	C	A	B	C	D	E	F	G	H	I
CI122812-DRC50	12	28	12	10	23	10	8mm	10mm	8mm	58mm	92mm	36mm
CI201220-DRC50	20	12	20	17	10	17	10mm	8mm	10mm	50mm	92mm	36mm
CI202820-DRC50	20	28	20	17	23	17	10mm	10mm	10mm	58mm	92mm	36mm
CI251225-DRC50	25	12	25	22	10	22	10mm	8mm	10mm	50mm	92mm	36mm
CI252825-DRC50	25	28	25	22	23	22	10mm	10mm	10mm	58mm	92mm	36mm



#### Approvals

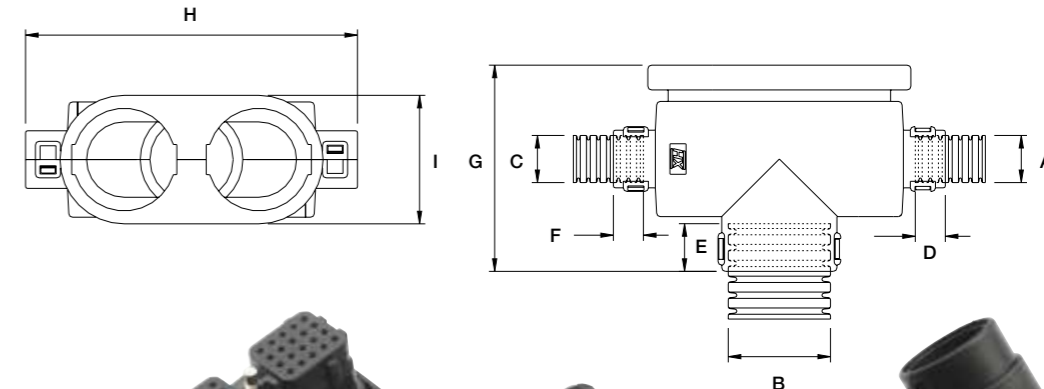
CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	UV Resistance
IP68	N/A	Halogen Free	

#### Dimensions



# External hinged connector interfaces

## FCI Automotive Apex 2.8



FCI Automotive Apex 2.8  
Straight & 90° Elbow Swivel Interface

### FCI Automotive Apex 2.8 Interface - External Hinged Connector Interface

Single junction, straight and 90° elbow interfaces providing high integrity connections between FCI Apex connectors or Junior timer connectors and Harnessflex conduit systems. These interfaces are designed to snap together over all types of slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>FCI Automotive Apex 2.8 Straight Interface</b>						
CI08-FCI02	08	7.5	25.0mm	17.0mm	33.0mm	12mm
CI08-FCI03	08	7.5	34.0mm	17.0mm	34.0mm	12mm
CI08-FCI04	08	7.5	39.0mm	17.0mm	34.0mm	12mm
CI12-FCI02	12	10	25.0mm	17.0mm	27.0mm	7mm
CI12-FCI03	12	10	35.0mm	17.0mm	29.0mm	7mm
CI12-FCI04	12	10	38.0mm	17.0mm	29.0mm	7mm
CI12-FCI14	12	10	53.0mm	26.0mm	34.0mm	10mm
CI16-FCI14	16	13	53.0mm	26.0mm	59.0mm	10mm
16-FCI14	16	13	53.0mm	26.0mm	33.0mm	-
CI17-FCI10	16	13	39.2mm	25.5mm	44.0mm	10.6mm
CI25-FCI50	25	22	56.0mm	37.0mm	50.7mm	13mm

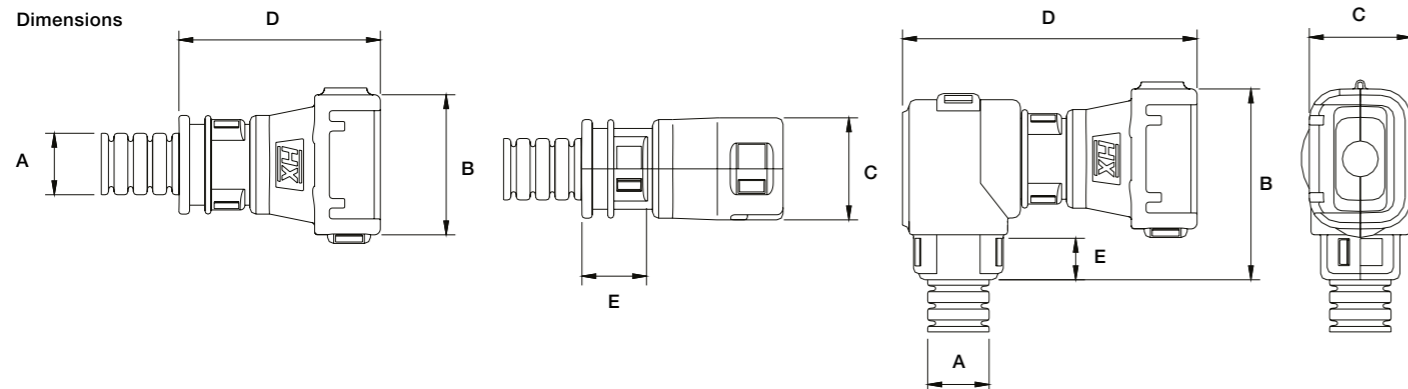
Part No.	Conduit Size		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>FCI Automotive Apex 2.8 90° Elbow Swivel Interface</b>						
CI08-90-FCI02	08	7.5	31mm	19mm	48mm	10mm
CI08-90-FCI03	08	7.5	35mm	19mm	49mm	10mm
CI08-90-FCI04	08	7.5	38mm	19mm	49mm	10mm
CI12-90-FCI02	12	10	32mm	19mm	48mm	10mm
CI12-90-FCI03	12	10	37mm	19mm	49mm	10mm
CI12-90-FCI04	12	10	38mm	19mm	49mm	10mm
CI16-90-FCI14	16	13	38mm	24mm	57mm	10mm
CI08-90-FCS02	16	13	30mm	19mm	33mm	10mm



#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	N/A	Halogen Free	



# External hinged connector interfaces

## Bosch Compact



Bosch Compact  
Straight & 90° Elbow Swivel Interface

### Bosch Compact Interface - External Hinged Connector Interface

Single junction, straight and 90° elbow interfaces providing high integrity connections between various Bosch Compact connectors and Harnessflex conduit systems. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Bosch Compact Straight Interface</b>								
CI08-BC2	08	7.5	25.0mm	21.3mm	18mm	10mm	2 Way	1 928 403 137*
CI08-BC3	08	7.5	25.0mm	26.7mm	18mm	10mm	3 Way	1 928 403 110*
CI08-BC4	08	7.5	25.0mm	29.0mm	18mm	10mm	4 Way	1 928 403 112*
CI12-BC2	12	10	25.0mm	21.3mm	18mm	10mm	2 Way	1 928 403 137*
CI12-BC3	12	10	25.0mm	26.7mm	18mm	10mm	3 Way	1 928 403 110*
CI12-BC4	12	10	25.0mm	29.0mm	18mm	10mm	4 Way	1 928 403 112*
CI28-BC40	28	23	44.4mm	40.0mm	-	-	40 Way	-

\*All Bosch Kompact variants

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Bosch Compact 90° Elbow Swivel Interface</b>								
CI08-90-BC2	08	7.5	33.3mm	30.3mm	20.5mm	10mm	2 Way	1 928 403 137*
CI08-90-BC3	08	7.5	33.3mm	30.3mm	26.7mm	10mm	3 Way	1 928 403 110*
CI08-90-BC4	08	7.5	37.0mm	30.3mm	33.0mm	10mm	4 Way	1 928 403 112*
CI12-90-BC2	12	10	33.3mm	30.3mm	20.5mm	10mm	2 Way	1 928 403 137*
CI12-90-BC3	12	10	33.3mm	30.3mm	26.7mm	10mm	3 Way	1 928 403 110*
CI12-90-BC4	16	13	37.0mm	30.3mm	33.0mm	10mm	4 Way	1 928 403 112*

\*All Bosch Kompact variants



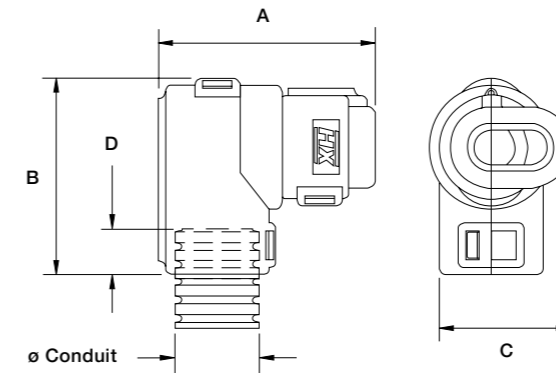
#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	N/A	Halogen Free	

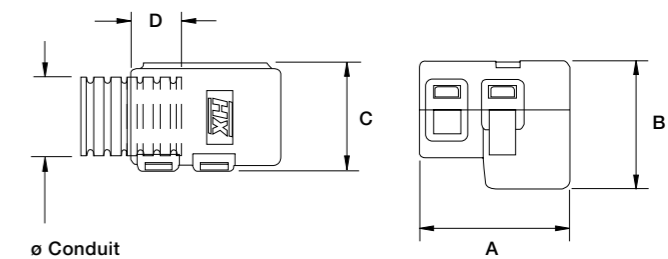
#### Dimensions

External 90° elbow connector interface



#### Dimensions

External straight connector interface



# External hinged connector interfaces

## Delphi Series external hinged connector interfaces



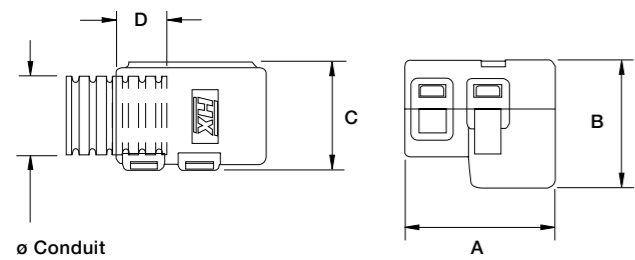
Delphi Series Straight Interfaces

### Delphi Series Interface - External Hinged Connector Interface

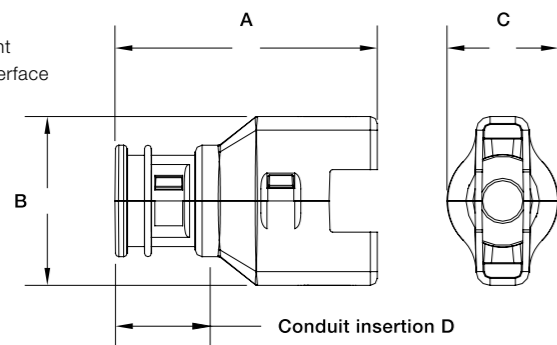
Straight and 90° elbow interfaces providing high integrity connections between various Delphi series connectors and Harnessflex conduit systems. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size		Nominal Dimensions			
	NC	NW	A	B	C	D
<b>Delphi Series Straight Interface</b>						
CI08-DE001	08	7.5	18.0mm	17.0mm	17.0mm	6.0mm
CI08-MP2	08	7.5	20.0mm	16.0mm	28.9mm	12.3mm
CI08-MP3	08	7.5	43.0mm	20.0mm	28.0mm	10.0mm
C108-MMP2	08	7.5	30.0mm	17.0mm	18.0mm	10.0mm
CI08-WP2	08	7.5	31.3mm	16.1mm	28.3mm	10.0mm
CI08-PTD2	08	7.5	20.2mm	20.5mm	18.0mm	14.7mm
CI08-GT153	08	7.5	38.0mm	24.0mm	16.0mm	10.0mm
16-GT284	16	13	37.3mm	21.3mm	40.0mm	29.5mm

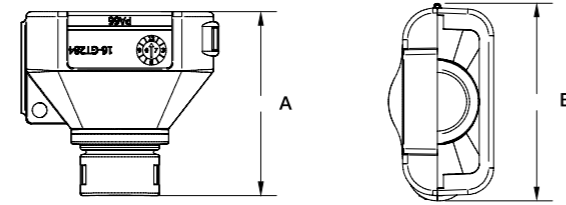
Dimensions External straight connector interface



Dimensions GT153 straight connector interface



Dimensions GT284 straight connector interface



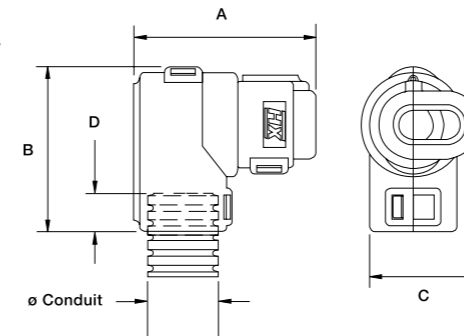
Delphi Series 90° Elbow Swivel Interfaces

Dimensions External 90° elbow connector interface

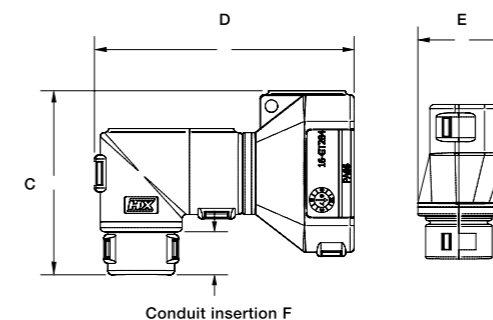


**Approvals**  
**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
 Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

Dimensions External elbow connector interface



Dimensions GT284 elbow connector interface

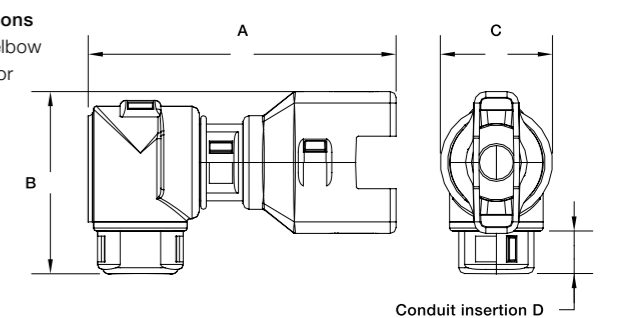


Part No.	Conduit Size		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>Delphi Series 90° Elbow Swivel Interface</b>						
CI08-90-DE001	08	7.5	32.0mm	30.0mm	17.5mm	7.3mm
CI08-90-MP2	08	7.5	35.0mm	42.0mm	29.5mm	7.3mm
CI08-90-MP3	08	7.5	56.9mm	30.0mm	20.0mm	10.0mm
C108-90-MMP2	08	7.5	45.0mm	30.0mm	19.0mm	7.3mm
CI12-90-MP2	12	10	20.0mm	42.0mm	30.5mm	7.3mm
CI12-90-MP3	12	10	56.9mm	31.0mm	20.0mm	10.0mm
CI12-90-MMP2	12	10	-	-	-	-
CI08-90-WP2	08	7.5	45.2mm	33.3mm	19.5mm	10.0mm
CI12-90-WP2	12	10	45.2mm	34.3mm	19.5mm	10.0mm
CI08-90-PTD2	08	7.5	33.8mm	30.0mm	22.0mm	10.0mm
CI12-90-PTD2	12	10	33.8mm	21.0mm	22.0mm	10.0mm
CI08-90-GT153	08	7.5	53.0mm	31.0mm	19.0mm	7.0mm
CI12-90-GT153	12	10	53.0mm	32.0mm	19.0mm	10.0mm
CI12-90-GT284	12	10	62.6mm	44.4mm	-	10.0mm
CI16-90-GT284	16	13	62.6mm	44.4mm	-	-

Part Reference	Connector System	
MP	Delphi Metri-Pack	To suit Metripack
MMP	Delphi Metri-Pack	To suit Metripack
WP	Delphi Weatherpack	To suit Weatherpack
PTD	Power Timer	
GT	Delphi GT Series 150 and 180	

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	
IP68	N/A	Halogen Free	
			<b>UV Resistance</b> Very High

Dimensions GT153 elbow connector interface





## TempGuard external hinged connector interfaces Introduction



### Approvals

**CE Mark** to the Low Voltage Directive

**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**  
**directive (ELV) EU200/53/EC**



The TempGuard range of external hinged connector interfaces has been designed to satisfy the market demand for a complete wiring harness protection solution, which can handle long term exposure to high temperatures.

As a leading designer and manufacturer of flexible conduit systems, fittings and connector interfaces, Harnessflex is well known for providing automotive manufacturers across the globe, with solutions that protect vehicle wiring against damage from mechanical abrasion, liquid and dust ingress, and corrosive salts.

Our TempGuard external hinged connector interfaces have been designed to meet the increasing demands of today's engines. EGR systems that recycle an engine's waste gases, the use of single or multiple turbos to improve tractability, power and fuel efficiency have all contributed to higher temperature areas within a vehicle's engine. The TempGuard conduit and fittings system is designed to work specifically with high temperature wiring, allowing them to successfully operate at up to 200°C, with long term heat aging, tensile and impact strength testing carried out to ensure the reliability and validity of the range. Through improved system performance and integrity TempGuard reduces running costs, minimises breakdowns and downtime, increasing overall productivity.

### Features & benefits

- High temperature range up to 200°C of hinged connector interface
- Very high fatigue life, with protection from heat, abrasion, vibration and automotive fluids in all harness routing areas
- High temperature Polyamide material
- UL94 V2 certified
- Products tested for tensile and impact strength

# TempGuard external hinged connector interfaces

## AMP AS Superseal



AMP AS Superseal High Temperature Straight & 90° Elbow Swivel Interface

### AMP AS Superseal Swivel Interface - High Temperature External Hinged Connector Interface

Single junction straight and 90° elbow interfaces providing high integrity, high temperature connection protection between AS - AMP Superseal connectors and Harnessflex conduit systems. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing, sufficient to avoid the problems associated with one-piece interfaces of overflexing due to movement or vibration.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP AS Superseal Straight Interface</b>								
CIH08-AS2	08	7.5	22.4mm	20.5mm	18.0mm	10.0mm	2 Way	282080-1*
CIH08-AS3	08	7.5	22.4mm	26.5mm	18.0mm	10.0mm	3 Way	282087-1*
CIH08-AS4	08	7.5	34.0mm	33.0mm	18.0mm	10.0mm	4 Way	282088-1*
CIH12-AS2	12	10	22.4mm	20.5mm	18.0mm	10.0mm	2 Way	282080-1*
CIH12-AS4	12	10	34.0mm	33.0mm	19.0mm	10.0mm	4 Way	282088-1*
CIH10-AS2*	10	8.5	34.0mm	21.0mm	20.0mm	10.0mm	2 Way	282080-1*
CIH10-AS3*	10	8.5	34.0mm	27.0mm	20.0mm	10.0mm	3 Way	282087-1*
CIH10-AS4*	10	8.5	34.0mm	33.0mm	20.0mm	10.0mm	4 Way	282088-1*
CIH12-AS1*	12	10	23.6mm	16.1mm	18.0mm	10.0mm	1 Way	282080-1*
CIH12-AS3*	12	10	22.4mm	26.5mm	18.0mm	10.0mm	3 Way	282088-1*

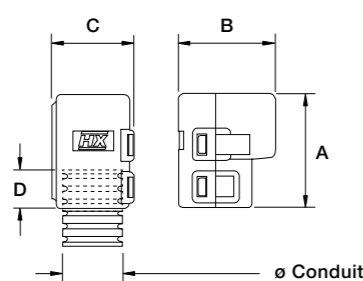
\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP AS Superseal 90° Elbow Swivel Interface</b>								
CIH08-90-AS2	08	7.5	33.3mm	30.3mm	18.0mm	10.0mm	2 Way	282080-1*
CIH08-90-AS1*	08	7.5	37.5mm	30.3mm	18.0mm	10.0mm	1 Way	
CIH08-90-AS3*	08	7.5	33.3mm	30.3mm	18.0mm	10.0mm	3 Way	
CIH08-90-AS4*	08	7.5	37.0mm	30.3mm	18.0mm	10.0mm	4 Way	
CIH10-90-AS2*	10	8.5	35.0mm	38.0mm	19.0mm	10.0mm	2 Way	
CIH10-90-AS3*	10	8.5	35.0mm	38.0mm	19.0mm	10.0mm	3 Way	
CIH10-90-AS4*	10	8.5	41.2mm	38.0mm	19.0mm	10.0mm	4 Way	
CIH12-90-AS1*	12	10	33.3mm	30.3mm	18.0mm	10.0mm	1 Way	
CIH12-90-AS2*	12	10	33.3mm	30.3mm	20.5mm	10.0mm	2 Way	
CIH12-90-AS3*	12	10	33.3mm	30.3mm	26.7mm	10.0mm	3 Way	
CIH12-90-AS4*	12	10	37.0mm	30.3mm	33.0mm	10.0mm	4 Way	

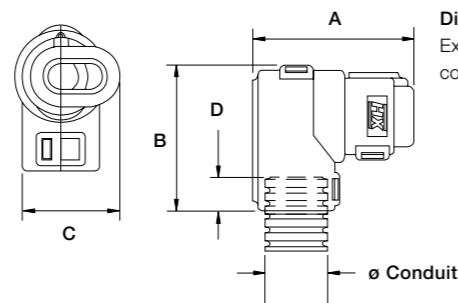
\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range		Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A	UL94 V2 / UL94 RTI 150 (Elec)	High

Dimensions External straight connector interface



Dimensions External 90° elbow connector interface



# TempGuard external hinged connector interfaces

## AMP Junior & Mini timer



AMP Junior & Mini Timer High Temperature Straight & 90° Elbow Swivel Interface

### AMP Junior & Mini Timer - High Temperature External Hinged Connector Interface

Single junction straight and 90° elbow interfaces providing high integrity, high temperature connection protection between AMP Superseal or Junior timer connectors and Harnessflex conduit systems in elevated temperature areas. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing, sufficient to avoid the problems associated with one-piece interfaces of overflexing due to movement or vibration.

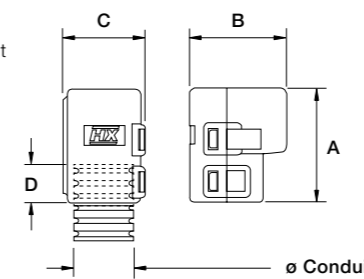
Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Junior &amp; Mini Timer Straight Interface</b>								
CIH08-AM2	08	7.5	24.9mm	21.3mm	18.0mm	10.0mm	2 Way	347887-3*
CIH08-AM3	08	7.5	24.9mm	27.2mm	18.0mm	10.0mm	3 Way	1-827578-1*
CIH08-AM4	08	7.5	37.0mm	32.0mm	19.0mm	10.0mm	4 Way	281804-1*
CIH12-AM2	12	10	24.9mm	21.3mm	18.0mm	10.0mm	2 Way	347887-3*
CIH12-AM4	12	10	37.0mm	32.0mm	19.0mm	10.0mm	4 Way	281804-1*
CIH08-AM1*	08	7.5	23.6mm	16.1mm	18.0mm	10.0mm	1 Way	
CIH08-AM3*	08	7.5	22.4mm	26.5mm	18.0mm	10.0mm	3 Way	
CIH08-AM4*	08	7.5	34.0mm	33.0mm	18.0mm	10.0mm	4 Way	
CIH10-AM2*	10	8.5	34.0mm	21.0mm	20.0mm	10.0mm	2 Way	
CIH10-AM3*	10	8.5	34.0mm	27.0mm	20.0mm	10.0mm	3 Way	
CIH10-AM4*	10	8.5	34.0mm	33.0mm	20.0mm	10.0mm	4 Way	
CIH12-AM1*	12	10	24.9mm	21.3mm	18.0mm	10.0mm	2 Way	
CIH12-AM3*	12	10	37.0mm	32.0mm	19.0mm	10.0mm	4 Way	

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

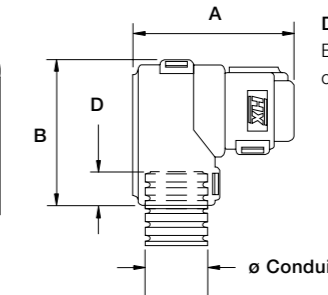
Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>AMP Junior &amp; Mini Timer 90° Elbow Swivel Interface</b>								
CIH08-90-AM2	08	7.5	35.7mm	30.3mm	21.3mm	7.0mm	2 Way	347887-3*
CIH08-90-AM3	08	7.5	35.7mm	30.3mm	27.2mm	7.0mm	3 Way	1-827578-1*
CIH08-90-AM4	08	7.5	39.5mm	30.3mm	32.0mm	7.0mm	4 Way	281804-1*
CIH12-90-AM2	12	10	35.7mm	30.3mm	21.3mm	7.0mm	2 Way	347887-3*
CIH08-90-AM1*	08	7.5	37.5mm	30.3mm	18.0mm	10.0mm	1 Way	
CIH10-90-AM2*	10	8.5	35.0mm	38.0mm	19.0mm	10.0mm	2 Way	
CIH10-90-AM3*	10	8.5	41.2mm	38.0mm	19.0mm	10.0mm	3 Way	
CIH10-90-AM4*	12	10	33.3mm	30.3mm	18.0mm	10.0mm	4 Way	
CIH12-90-AM1*	12	10	33.3mm	30.3mm	20.5mm	10.0mm	1 Way	
CIH12-90-AM3*	12	10	33.3mm	30.3mm	26.7mm	10.0mm	3 Way	
CIH12-90-AM4*	12	10	37.0mm	30.3mm	33.0mm	10.0mm	4 Way	

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range		Self Extinguishing	-40°C to +200°C
IP40	Yes	Low Smoke Toxicity	
IP67	N/A	Halogen Free	<b>UV Resistance</b>
IP68	N/A	UL94 V2 / UL94 RTI 150 (Elec)	High

Dimensions External straight connector interface



Dimensions External 90° elbow connector interface



# TempGuard external hinged connector interfaces

## Ampseal 16



AMPSEAL 16  
High Temperature Straight  
& 90° Elbow Interface

### Ampseal 16 - High Temperature External Hinged Connector Interface

A range of straight and 90° elbow fittings offering a compact and high integrity connection between Ampseal automotive connectors and Harnessflex conduit systems. These interfaces provide complete cable protection right up to the connector. They also provide strain relief and protection from high pressure washing, helping to maintain the sealing integrity of the connector.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 Straight Interface</b>								
CIH08-AT2PL	08	7.5	23.0mm	18.0mm	34.0mm	12.0mm	2 Way	776427-1*
CIH08-AT3PL	08	7.5	28.0mm	18.0mm	33.0mm	11.0mm	3 Way	776427-1*
CIH08-AT4PL	08	7.5	29.0mm	23.0mm	39.0mm	13.0mm	4 Way	776487-1*
CIH12-AT4PL	12	10	29.0mm	23.0mm	37.0mm	11.0mm	4 Way	776487-1*
CIH12-AT6PL	12	10	29.0mm	23.0mm	37.0mm	11.0mm	6 Way	776433-1*
CIH12-AT8PL	12	10	32.0mm	23.0mm	37.0mm	11.0mm	8 Way	776494-1*
CIH12-AT12PL*	12	10	41.0mm	23.0mm	37.0mm	11.0mm	12 Way	
CIH16-AT8PL*	16	13	32.0mm	23.0mm	37.0mm	11.0mm	8 Way	
CIH16-AT12PL*	16	13	41.0mm	23.0mm	37.0mm	11.0mm	12 Way	
CIH20-AT20PL*	20	17	41.0mm	23.0mm	48.0mm	12.0mm	8 Way	

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	B	C	D	E		
<b>Ampseal 16 90° Elbow Interface</b>								
CIH08-90-AT2LP	08	7.5	37.3mm	25.0mm	17.0mm	7.1mm	2 Way	776427-1*
CIH08-90-AT3LP	08	7.5	39.8mm	29.0mm	17.1mm	7.1mm	3 Way	776427-1*
CIH08-90-AT2PL	08	7.5	49.0mm	32.0mm	20.0mm	7.1mm	2 Way	776427-1*
CIH08-90-AT3PL	08	7.5	49.0mm	34.0mm	20.0mm	7.1mm	3 Way	776427-1*
CIH12-90-AT2LP	12	10	38.0mm	23.0mm	20.0mm	7.1mm	2 Way	776427-1*
CIH12-90-AT3LP	12	10	40.2mm	27.1mm	17.1mm	7.1mm	3 Way	776427-1*
CIH12-90-AT3LR	12	10	40.2mm	27.1mm	17.1mm	7.1mm	3 Way	-
CIH12-90-AT6LP	12	10	43.1mm	27.5mm	22.5mm	7.1mm	6 Way	776433-1*
CIH08-90-AT2LR*	08	7.5	37.3mm	25.0mm	20.0mm	7.1mm	2 Way	
CIH08-90-AT3LR*	08	7.5	39.8mm	29.0mm	17.1mm	7.1mm	3 Way	
CIH08-90-AT4LP*	08	7.5	40.8mm	29.4mm	20.6mm	7.1mm	4 Way	
CIH08-90-AT4LR*	08	7.5	40.8mm	29.4mm	20.6mm	7.1mm	4 Way	
CIH08-90-AT6LP*	08	7.5	42.8mm	29.4mm	22.5mm	7.1mm	6 Way	
CIH08-90-AT6LR*	08	7.5	42.8mm	29.4mm	22.5mm	7.1mm	6 Way	

NOTE: LP = Plug, LR = Receptacle

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

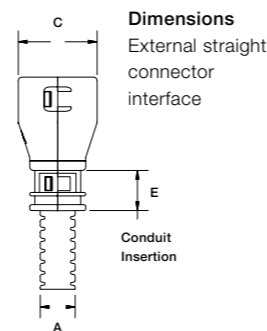
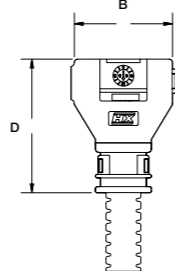
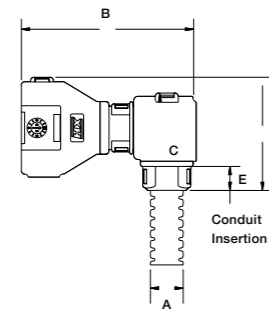
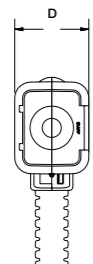


#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +200°C
IP67	N/A	Low Smoke Toxicity	
IP68	N/A	Halogen Free	<b>UV Resistance</b>
		UL94 V2 / UL94 RTI 150 (Elec)	High

Dimensions  
External 90° elbow  
connector interface



# TempGuard external hinged connector interfaces

## Bosch Compact



Bosch Compact  
High Temperature Straight  
& 90° Elbow Interface

### Bosch Compact - High Temperature External Hinged Connector Interface

Single junction straight and 90° elbow fittings providing high integrity, high temperature connection between Bosch Compact connectors and Harnessflex conduit systems in elevated temperature areas. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing, sufficient to avoid the problems associated with one-piece interfaces of overflexing due to movement or vibration.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Bosch Compact Straight Interface</b>								
CIH08-BC2	08	7.5	25.0mm	21.3mm	18.0mm	10.0mm	2 Way	1 928 403 137*
CIH08-BC3	08	7.5	25.0mm	26.7mm	18.0mm	10.0mm	3 Way	1 928 403 110*
CIH12-BC2	12	10	25.0mm	21.3mm	18.0mm	10.0mm	2 Way	1 928 403 137*
CIH12-BC3	12	10	25.0mm	26.7mm	18.0mm	10.0mm	3 Way	1 928 403 110*
CIH08-BC4*	08	7.5	25.0mm	29.0mm	18.0mm	10.0mm	4 Way	
CIH12-BC4*	12	10	25.0mm	29.0mm	18.0mm	10.0mm	4 Way	

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Bosch Compact 90° Elbow Swivel Interface</b>								
CIH08-90-BC2	08	7.5	33.3mm	30.3mm	20.5mm	10.0mm	2 Way	1 928 403 137*
CIH08-90-BC3	08	7.5	33.3mm	30.3mm	26.7mm	10.0mm	3 Way	1 928 403 110*
CIH12-90-BC2	12	10	33.3mm	30.3mm	20.5mm	10.0mm	2 Way	1 928 403 137*
CIH08-90-BC4*	08	7.5	37.0mm	30.3mm	33.3mm	10.0mm	4 Way	
CIH12-90-BC4*	12	10	37.0mm	30.3mm	33.3mm	10.0mm	4 Way	

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime



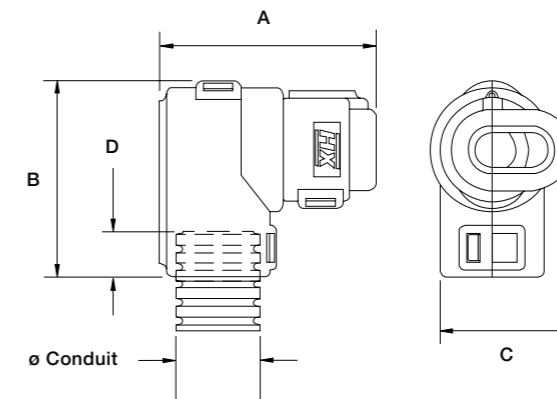
#### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +200°C
IP67	N/A	Low Smoke Toxicity	
IP68	N/A	Halogen Free	<b>UV Resistance</b>
		UL94 V2 / UL94 RTI 150 (Elec)	High

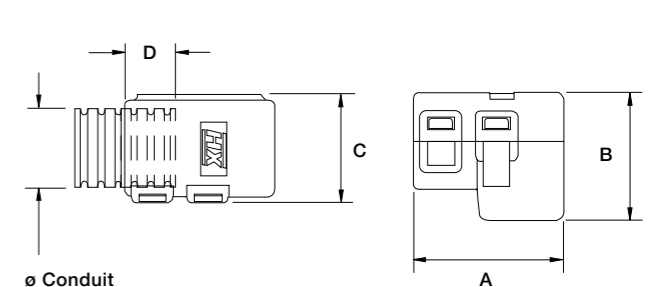
#### Dimensions

External 90° elbow connector interface



#### Dimensions

External straight connector interface



# TempGuard external hinged connector interfaces Deutsch - DT Series



Deutsch - DT Series  
High Temperature Straight &  
90° Elbow Swivel Interface

## Deutsch - DT Series Interface - High Temperature External Hinged Connector Interface

Single junction straight and 90° elbow fittings providing high integrity connections between Deutsch DT connectors and Harnessflex conduit systems. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing, sufficient to avoid the problems associated with one-piece interfaces of overflexing due to movement or vibration.

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Deutsch - DT Series Straight Interface</b>								
CIH08-DT2	08	7.5	26.0mm	16.0mm	18.0mm	7.0mm	2 Way	DT06-2S*
CIH08-DT3	08	7.5	30.0mm	22.0mm	24.0mm	12.0mm	3 Way	DT06-3S*
CIH08-DT4	08	7.5	42.0mm	18.0mm	27.0mm	12.0mm	4 Way	DT06-4S*
CIH12-DT2	12	10	26.0mm	16.0mm	18.0mm	7.0mm	2 Way	DT06-2S*
CIH12-DT3	12	10	29.0mm	22.0mm	24.0mm	7.0mm	3 Way	DT06-3S*
CIH12-DT4	12	10	40.0mm	18.0mm	27.0mm	7.0mm	4 Way	DT06-4S*
CIH12-DT6	12	10	40.0mm	22.0mm	27.0mm	10.0mm	6 Way	DT06-6S*
CIH12-DT8	12	10	40.0mm	25.0mm	30.0mm	10.0mm	8 Way	DT06-8S*
CIH08-DT6*	08	7.5	42.0mm	22.0mm	27.0mm	12.0mm	6 Way	
CIH16-DT12*	16	13	44.0mm	24.0mm	40.0mm	10.0mm	12 Way	

Part No.	Conduit Size		Nominal Dimensions				Interface Reference	Connector Reference
	NC	NW	A	B	C	D		
<b>Deutsch - DT Series 90° Elbow Swivel Interface</b>								
CIH08-90-DT2	08	7.5	36.0mm	30.0mm	19.0mm	7.0mm	2 Way	DT06-2S*
CIH08-90-DT4	08	7.5	48.0mm	30.0mm	25.0mm	7.0mm	4 Way	DT06-4S*
CIH12-90-DT2	12	10	36.0mm	30.0mm	19.0mm	7.0mm	2 Way	DT06-2S*
CIH08-90-DT3*	08	7.5	44.0mm	30.0mm	23.0mm	7.0mm	3 Way	
CIH08-90-DT6*	08	7.5	48.0mm	34.0mm	25.0mm	7.0mm	6 Way	
CIH12-90-DT3*	12	10	44.0mm	30.0mm	23.0mm	7.0mm	3 Way	
CIH12-90-DT4*	12	10	48.0mm	34.0mm	25.0mm	7.0mm	4 Way	
CIH12-90-DT6*	12	10	44.0mm	30.0mm	23.0mm	7.0mm	6 Way	
CIH12-90-DT8*	12	10	63.0mm	37.0mm	30.0mm	10.0mm	8 Way	
CIH12-90-DT12*	12	10	68.0mm	36.0mm	38.0mm	10.0mm	12 Way	
CIH16-90-DT8*	16	13	63.0mm	37.0mm	30.0mm	10.0mm	8 Way	
CIH16-90-DT12*	16	13	68.0mm	36.0mm	38.0mm	10.0mm	12 Way	

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime



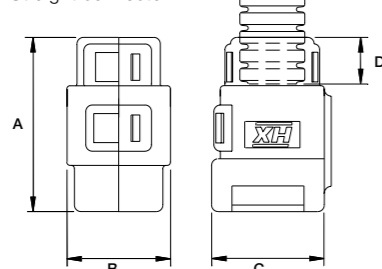
### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +200°C
IP67	N/A	Low Smoke Toxicity	
IP68	N/A	Halogen Free	<b>UV Resistance</b>
		UL94 V2 / UL94 RTI 150 (Elec)	High

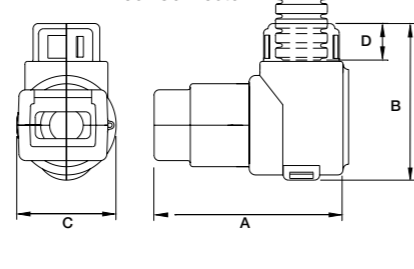
### Dimensions

Straight connector



### Dimensions

90° Connector



# TempGuard external hinged connector interfaces FCI Automotive Apex



FCI Automotive Apex  
High Temperature Straight &  
90° Elbow Swivel Interface

## FCI Automotive Apex Interface - High Temperature External Hinged Connector Interface

A range of straight and 90° elbow fittings offering a compact and high integrity, high temperature connection protection between FCI Apex automotive connectors or junior timer connectors and Harnessflex conduit systems in elevated temperature areas. These interfaces provide complete cable protection right up to the connector. They also provide strain relief and protection from high pressure washing, helping to maintain the sealing integrity of the connector.

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>FCI Automotive Apex Straight Interface</b>						
CIH08-FCI02	08	7.5	25.0mm	17.0mm	33.0mm	12.0mm
CIH08-FCI03	08	7.5	34.0mm	17.0mm	34.0mm	12.0mm
CIH08-FCI04	08	7.5	39.0mm	17.0mm	34.0mm	12.0mm
CIH12-FCI02	12	10	25.0mm	17.0mm	27.0mm	7.0mm
CIH12-FCI03	12	10	35.0mm	17.0mm	29.0mm	7.0mm
CIH12-FCI04	12	10	38.0mm	17.0mm	29.0mm	7.0mm
CIH12-FCI14	12	10	53.0mm	26.0mm	34.0mm	10.0mm
CIH16-FCI14*	-	-	53.0mm	26.0mm	34.0mm	n/a
CIH17-FCI10*	17	14	39.2mm	25.5mm	44mm	10.6mm

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>FCI Automotive Apex 90° Elbow Swivel Interface</b>						
CIH08-90-FCI02	08	7.5	31.0mm	19.0mm	48.0mm	10.0mm
CIH08-90-FCI03	08	7.5	35.0mm	19.0mm	49.0mm	10.0mm
CIH12-90-FCI02	12	10	32.0mm	19.0mm	48.0mm	10.0mm
CIH08-90-FCS02*	08	7.5	30.0mm	19.0mm	33.0mm	10.0mm
CIH08-90-FCI04*	08	7.5	38.0mm	19.0mm	49.0mm	10.0mm
CIH12-90-FCI03*	12	10	37.0mm	19.0mm	49.0mm	10.0mm
CIH12-90-FCI04*	12	10	38.0mm	19.0mm	49.0mm	10.0mm
CIH08-90-FCI14*	08	7.5	38.0mm	24.0mm	57.0mm	10.0mm
CIH12-90-FCI14*	12	10	38.0mm	24.0mm	57.0mm	10.0mm
CIH16-90-FCI14*	16	13	38.0mm	24.0mm	57.0mm	10.0mm

\*Made to order - Part numbers listed are available to order but not stocked items, and would therefore be subject to manufacturing leadtime

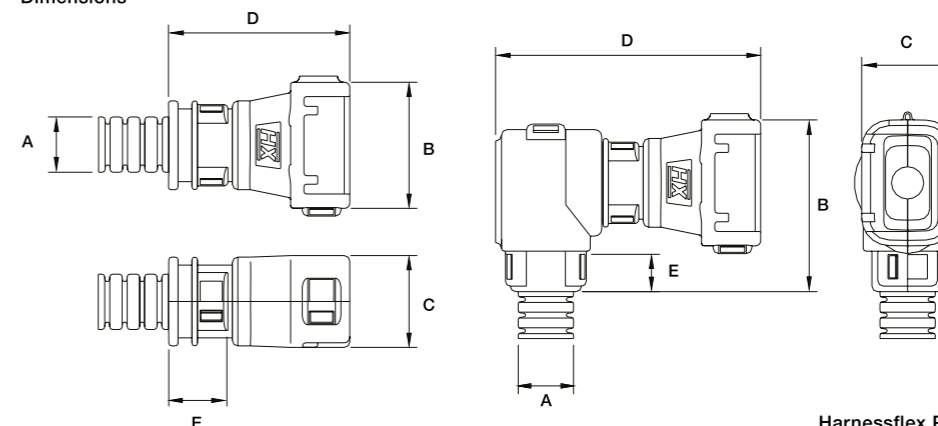


### Approvals

**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	Yes	Self Extinguishing	-40°C to +200°C
IP67	N/A	Low Smoke Toxicity	
IP68	N/A	Halogen Free	<b>UV Resistance</b>
		UL94 V2 / UL94 RTI 150 (Elec)	High

### Dimensions



# HX Interfaces

## HX 93286 Series external split connector interface



HX 93286 Series  
Straight & 90° Elbow HX Interface

### HX 93286 Series - HX Interface

Split type customised interfaces providing high integrity connections to the Molex SRC series of connectors and Harnessflex conduit systems. The system offers connections to all types of slit and un-slit Harnessflex conduit systems multiple configurations both straight and at right angles to the connector to offer the maximum flexibility and space utilisation for harness design. Additionally, using the male type fitting the interface can be connected to Harnessflex hinged JPS, EPS, YPS and TPS fitting for multiple cable configuration outlet options. The interfaces provide a cable routing solution whilst also offering mechanical, abrasion and jet washing protection for both the connector and cabling.

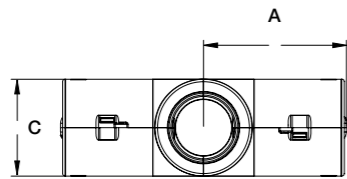
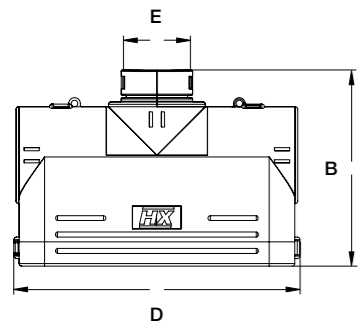
Straight Interface Part No.	Conduit Size (E)		Nominal Dimensions			
	NC	NW	A	B	C	D
<b>HX 93286 Straight Interface</b>						
CI28-MX93286	28	23	56.6mm	77.5mm	38.3mm	113.2mm
CI32-MX93286	32	29	56.6mm	77.5mm	38.3mm	113.2mm
CI40-MX93286	40	36	56.6mm	83.3mm	46.8mm	113.2mm

NOTE: Other configurations available on request

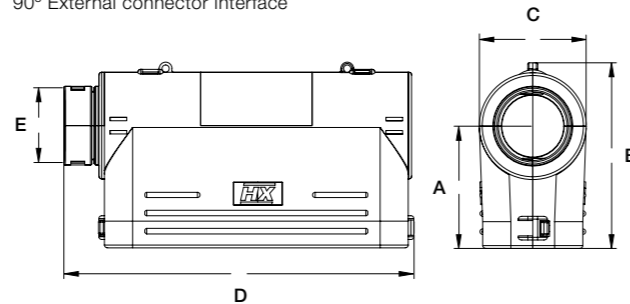
90°Elbow Interface Part No.	Conduit Size (E)		Nominal Dimensions			
	NC	NW	A	B	C	D
<b>HX 93286 90° Elbow Interface</b>						
M28-90-MX93286	-	-	43.8mm	66.6mm	38.3mm	125.6mm
CI28-90-MX93286	28	23	43.8mm	66.6mm	38.3mm	125.6mm
CI32-90-MX93286	32	29	43.8mm	66.6mm	38.3mm	125.6mm
CI40-90-MX93286	40	36	43.8mm	68.5mm	46.8mm	131.4mm

NOTE: Other configurations available on request

Dimensions  
External connector interface



Dimensions  
90° External connector interface



#### 1 Split external design

Unrestricted bore and quick assembly no tools required.

#### 2 Multiple Configuration options

Provides the right conduit and outlet position option.

#### 3 High strength

Provides protection and security for connector and cable outlet options without the need for short conduit joints.

# Special customised products

## Kostal Hinged Interface



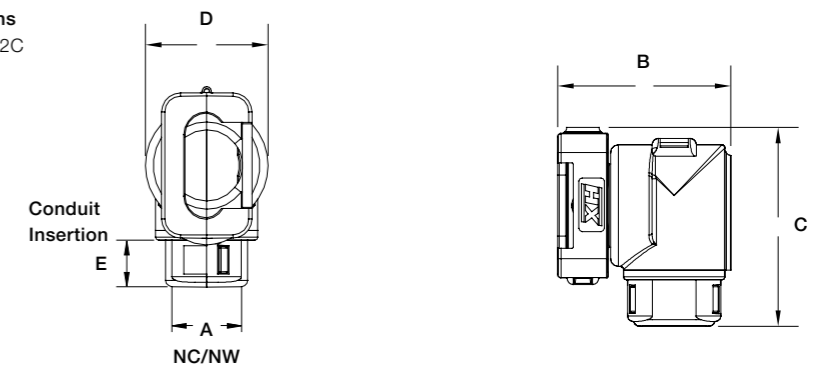
Kostal Hinged Interface  
Special Customised Product

### Kostal Hinged Interface - Special Customised Product

Clip-on elbow interface for Kostal in-line connector.

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>Kostal 90° Elbow Swivel Interface</b>						
CI08-90-K2C	08	7.5	27.4mm	30.0mm	19.5mm	10mm
CI08-90-K3C	08	7.5	27.4mm	31.4mm	19.5mm	10mm
CI12-90-K2C	12	10	27.4mm	31.0mm	19.5mm	10mm
CI12-90-K3C	12	10	27.4mm	32.4mm	19.5mm	10mm

Dimensions  
CI08-90-K2C



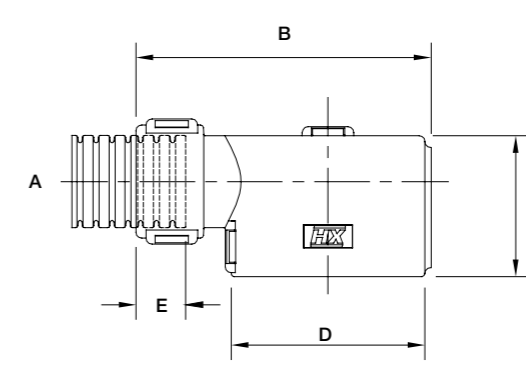
Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
<b>Kostal Straight Interface</b>						
CI16-LK20	16	13	51mm	28mm	34mm	10mm

Dimensions  
CI16-LK20

Part No.	Thread Type	Thread Length	Nominal Dimensions	
			A/F	I.D
<b>PG Thread LK20</b>				
PG21-LK20	PG21	12.2mm	37.8mm	22.6mm

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
CI08-SLK28-3	8	7.5	51mm	28mm	34mm	10mm

Dimensions  
CI16-LK20





## Special customised products Millflex hinged ABS interfaces & Sumitomo hinged interface



### Millflex Hinged ABS Interface - Special Customised Product

Clip-on straight interface for Millflex ABS connectors.

Part No.	Conduit Size (A)		Nominal Dimensions	
	NC	NW	B	C
CI08-MF2	08	7.5	35.6mm	10mm
CI10-MF2	10	8.5	35.6mm	10mm
CI12-MF2	12	10	35.6mm	10mm

Millflex Hinged ABS Interface  
Special Customised Product



#### Approvals

**CE Mark** to the Low Voltage Directive

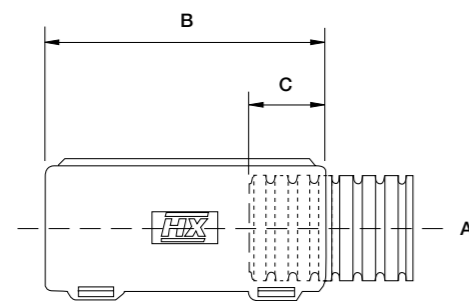
**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**

**directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	N/A	Halogen Free	

#### Dimensions



## Special customised products Sumitomo hinged interface



Sumitomo  
4 Way Hinged Interface  
Special Customised Product

### Sumitomo 4 Way Hinged Interface - Special Customised Product

Straight and 90° elbow interfaces providing high integrity connections between Sumitomo connectors and Harnessflex conduit systems. These interfaces are designed to snap together over all types of Harnessflex slit and unslit conduit, maintaining maximum conduit bore. In addition, 90° elbow versions allow the conduit to swivel 360° around the connector housing.

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	E
CI08-SU4	08	7.5	34.4mm	31.5mm	16.1mm	12.3mm
CI08-90-SU4	08	7.5	48.2mm	34.8mm	19.3mm	7.3mm

NOTE: 180° versions are available



#### Approvals

**CE Mark** to the Low Voltage Directive

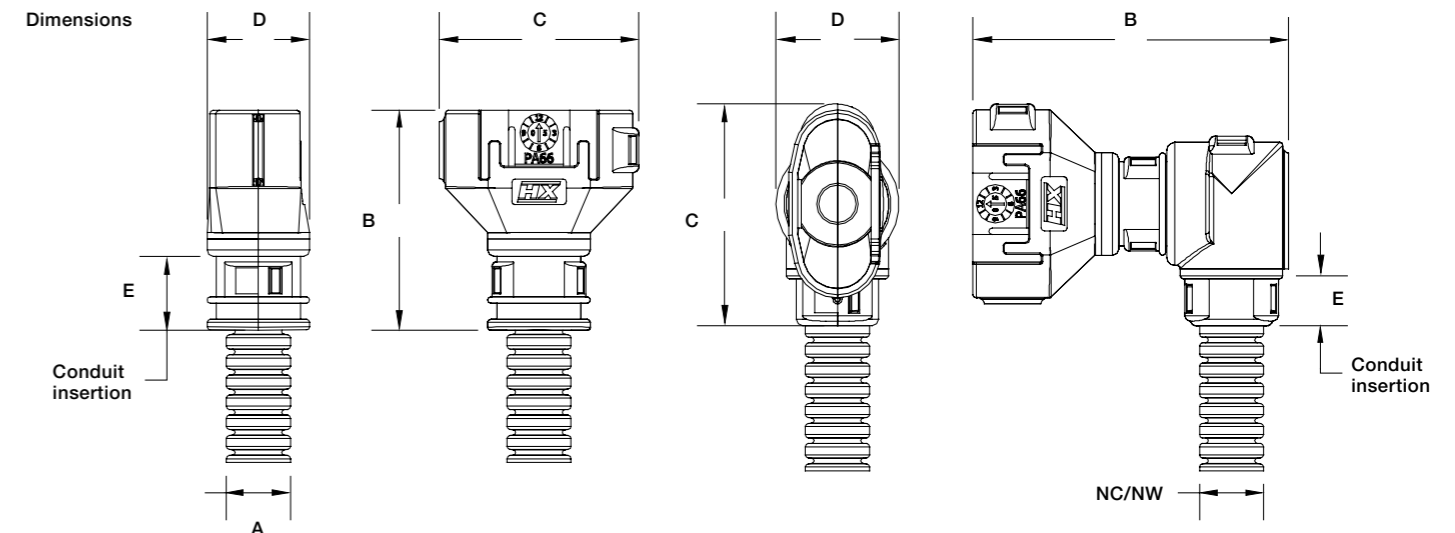
**RoHS Compliant** to 2011/65/EU

Conforms with **End of Life Vehicle**

**directive (ELV) EU200/53/EC**

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	N/A	Halogen Free	

#### Dimensions



## Special customised products DIN 72585 Hinged interface & Blanking plug



DIN 72585 Hinged Interface  
Special Customised Product

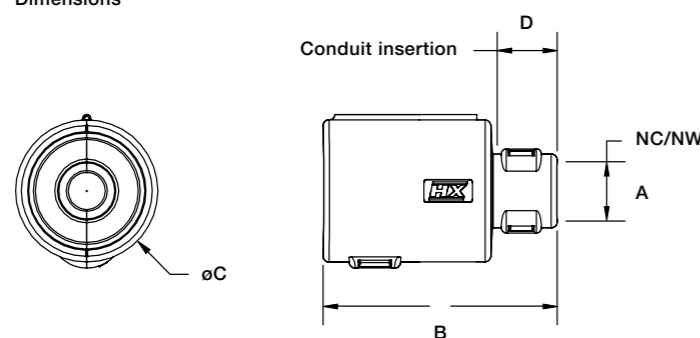
### DIN 72585 Hinged Interface - Special Customised Product

Circular interface to fit DIN 72585 STYLE connectors. Connector is free to swivel after interface is installed.

Part No.	Conduit Size (A)		Nominal Dimensions			
	NC	NW	B	C	D	
CI08-72585	08	7.5	40.9mm	24.9mm	10mm	

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	UV Resistance
IP68	N/A	Halogen Free	

#### Dimensions



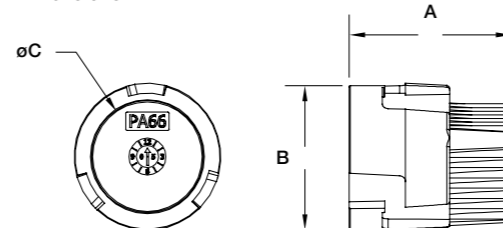
Blanking Plug  
Special Customised Product

### Blanking Plug - Special Customised Product

Plastic blanking plug to seal female DIN 72585 circular connectors. Prevents the ingress of water/dust, during transport or harness storage.

Part No.	Nominal Dimensions		
	A	B	C
BP72585	26.3mm	23.8mm	17.8mm

#### Dimensions



IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	UV Resistance
IP68	N/A	Halogen Free	

## Special customised products Interfaces for circular connectors



Interfaces for Circular Connectors  
Special Customised Products

### Interfaces for Circular Connectors - Special Customised Products

Interface provides connection between electrical circular connectors and hinged conduit system. Due to the innovative design, the interface can freely rotate without any harness movement.

Part No.	Shell Size	Fitting Size		Thread Size
		NC	NW	
<b>Hinged Fitting</b>				
NEPA14-16	14mm	16	13	13/16"-20 UNEF
NEPA16-20	16mm	20	17	15/16"-20 UNEF
NEPA24-28	24mm	28	23	17/16"-18 UNEF
CI20-CCU100	18/16mm	20	17	1"-20 UNEF
CI20-CCU119	18/16mm	20	17	13/16"-18 UNEF
CI28-CCU138	24mm	28	23	13/8"-18 UNEF

Part No.	Shell Size	Fitting Size		Nominal Dimensions			
		NC	NW	A	B	C	D
<b>Interface for Circular Connector</b>							
NEPA14-16	14mm	16	13	14.4mm	25.3mm	25.0mm	12.5mm
NEPA16-20	16mm	20	17	14.4mm	30.0mm	26.3mm	16.4mm
NEPA24-28	24mm	28	23	17.0mm	42.0mm	29.8mm	22.8mm
CI20-CCU100	18/16mm	20	17	11.0mm	30.0mm	26.0mm	16.4mm
CI20-CCU119	18/16mm	20	17	11.0mm	33.0mm	26.0mm	16.5mm
CI28-CCU138	24mm	28	23	13.0mm	41.5mm	30.0mm	22.8mm

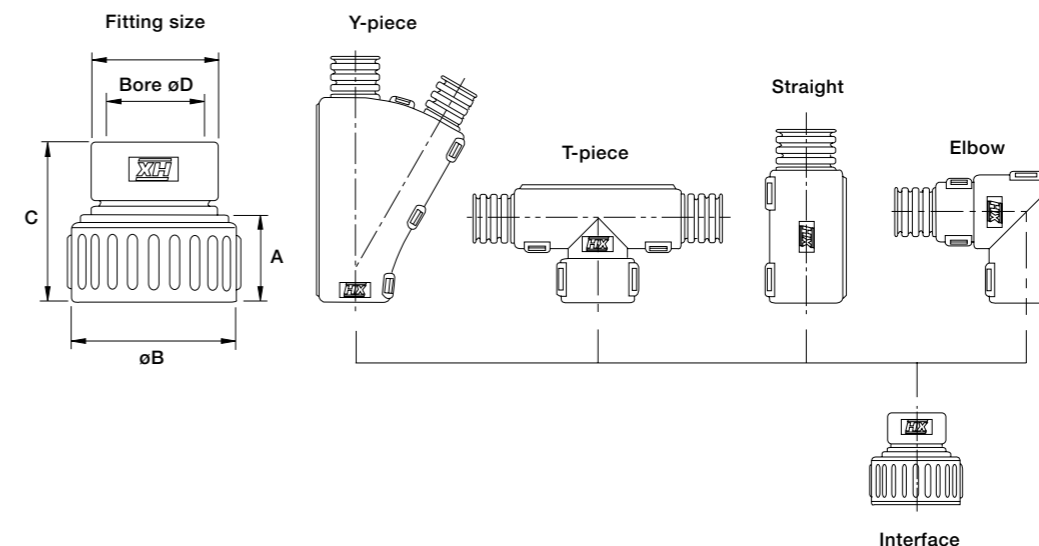


#### Approvals

CE Mark to the Low Voltage Directive  
RoHS Compliant to 2011/65/EU  
Conforms with End of Life Vehicle  
directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
IP40	Yes	Self Extinguishing	-40°C to +120°C
IP67	N/A	Low Smoke Toxicity	UV Resistance
IP68	N/A	Halogen Free	

#### Interface for circular connector configurations Hinged fittings



# Accessories

## Multi-way reducers

### Multi-way Reducers

One-piece, multi-way breakout inserts providing reducing options to a variety of conduit sizes from a single hinged fitting junction. These reducers can accommodate all types of Harnessflex slit and unslit conduit and may be used with all Harnessflex hinged fittings.

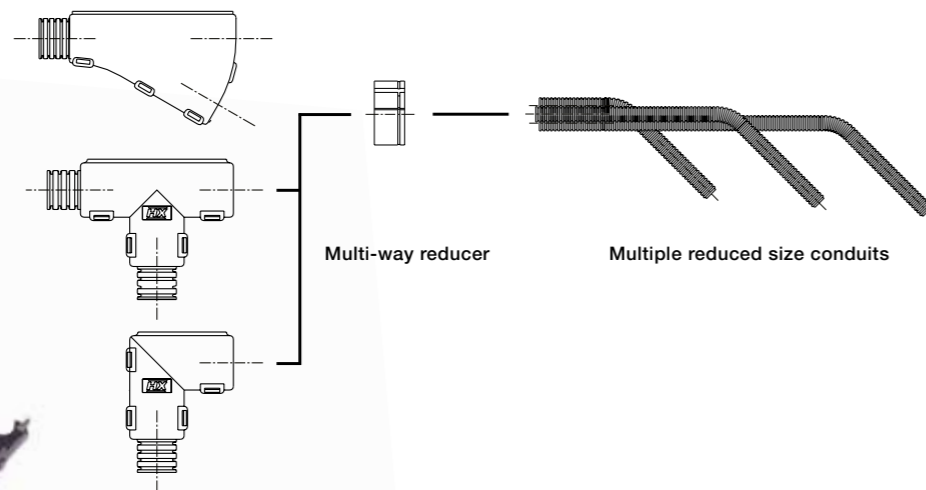
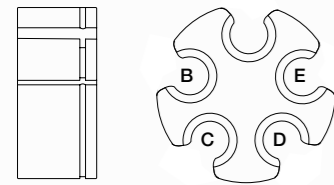
Part No.	From Conduit Size		To Conduit Size (NC)					To Conduit Size (NW)			
	NC	NW	A	B	C	D	E	A	B	C	D
ST20-2x08	20	17	08	08	-	-	-	7.5	7.5	-	-
ST20-12	20	17	12	-	-	-	-	10	-	-	-
STN25-3x08	25	22	08	08	08	-	-	7.5	7.5	7.5	-
ST25-12	25	22	12	08	-	-	-	10	-	-	-
ST25-1208	25	22	12	08	-	-	-	10	7.5	-	-
ST28-4x08	28	23	08	08	08	08	-	7.5	7.5	7.5	7.5
ST30-4x08	30	26	08	08	08	-	-	7.5	7.5	7.5	7.5
ST32-12-4x08	32	29	12	08	08	08	08	7.5	7.5	7.5	7.5



Approvals	IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
CE Mark to the Low Voltage Directive	For use with: All conduits in the Harnessflex range		Self Extinguishing	-40°C to +120°C
RoHS Compliant to 2011/65/EU		IP40	Yes	Low Smoke Toxicity
Conforms with End of Life Vehicle directive (ELV) EU200/53/EC		IP67	N/A	Halogen Free
	IP68	N/A		Very High

### Multi-way reducer configurations

Hinged fittings



#### 1 Split external design

Unrestricted bore and quick assembly no tools required.

#### 2 Multiple Configuration options

Provides the right conduit and outlet position option.

# Accessories

## Blanking caps

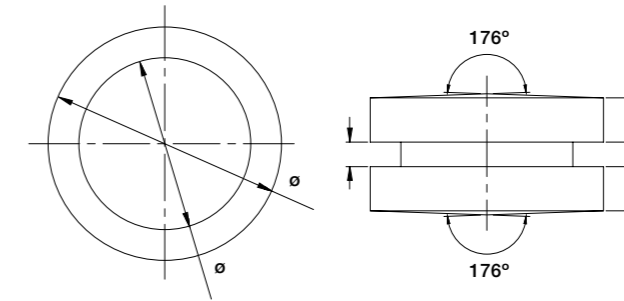


Blanking Cap  
Accessories

### Blanking Caps

Part No.	Conduit Size	
	NC	NW
BPST08	08	7.5
BCH12	08	7.5
BCH20	20	17

### Dimensions



# Providing superior protection for automotive wiring harnesses

## Sealed fittings

<b>Sealed Fittings</b>	
Introduction	5/3
Straight fittings	5/4
90° Elbow	5/6
90° Flange	5/8
T-piece	5/9
X-piece	5/10
Multi-way fittings	5/11
Circular UNEF connector interfaces	5/12
Solenoid connector interfaces	5/13
Reducing sealing bushes	5/14
Cable glands	5/15
<b>Accessories</b>	
Locknuts & face sealing washers	5/16
Conduit clips	5/18
P-clips	5/19



## Sealed fittings Introduction

Sealed fittings are designed to protect against high pressure washing, excessive cable strain and mechanical abrasion.

### Capabilities

Through our internal design team we are able to offer unique solutions, specific to our customers applications. Using the latest 3D CAD modelling software we are able to communicate new product designs quickly and efficiently.

Rapid prototype parts can be made to order to enable product evaluation early on in the design cycle.

If you have a requirement for a dedicated sealed fitting please contact us to discuss your requirements.

### Features & Benefits

- The anti-vibration spring clips can be released easily if access is needed - no tool required
- In order to maintain the IP rating of the sealed fittings face sealing washers must be used with all threaded fittings
- Our sealed T & X pieces and our sealed manifolds have inspection covers, which can be removed during installation to aid cable routing



# Sealed fittings

## Straight fitting



Straight Sealed Fittings

### Straight Fitting - Sealed Fittings

Straight compression type fitting incorporating fixed or swivel male threads to provide connection to knockouts and threaded entries. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

### Straight (Metric versions) - Sealed Fittings

Straight Body Part No.	Cap Nut	Sealing Bush	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	A/F Size F	G
			NC	NW								
AB12-M16	CN07	SRN07	10	8.5	M16 x 1.5mm	34mm	12mm	23mm	11mm	M16 x 1.5mm	22mm	17mm
AB12-M20	CN07	SRN07	10	8.5	M20 x 1.5mm	37mm	14mm	23mm	15mm	M20 x 1.5mm	27mm	17mm
AB12-M16	CN09	SRN09	12	10	M16 x 1.5mm	34mm	12mm	26mm	11mm	M16 x 1.5mm	22mm	17mm
AB12-M20	CN09	SRN09	12	10	M20 x 1.5mm	37mm	14mm	26mm	15mm	M20 x 1.5mm	27mm	17mm
AB16-M16	CN11	SRN11	16	13	M16 x 1.5mm	35mm	12mm	26mm	11mm	M16 x 1.5mm	27mm	17mm
AB16-M20	CN11	SRN11	16	13	M20 x 1.5mm	37mm	14mm	26mm	15mm	M20 x 1.5mm	27mm	17mm
AB20-M20	CN16	SRN16	20	17	M20 x 1.5mm	39mm	14mm	31mm	15mm	M20 x 1.5mm	30mm	20mm
AB25-M25	CN21	SRN21	25	22	M25 x 1.5mm	43mm	15mm	39mm	19mm	M25 x 1.5mm	38mm	21mm
AB25-M25	CN28	SRN28	28	23	M25 x 1.5mm	43mm	15mm	39mm	19mm	M25 x 1.5mm	38mm	21mm
AB32-M32	CN32	SRN29	32	29	M32 x 1.5mm	49mm	16mm	46mm	26mm	M32 x 1.5mm	46mm	27mm
AB40-M40	CN36	SRN36	40	36	M40 x 1.5mm	59mm	16mm	58mm	31mm	M40 x 1.5mm	59mm	35mm
AB50-M50	CN48	SRN48	50	48	M50 x 1.5mm	59mm	16mm	72mm	41mm	M50 x 1.5mm	73mm	35mm

NOTE: Order elbow bodies, cap nuts, sealing bushes separately

NOTE: Dimensions refer to an overall assembly

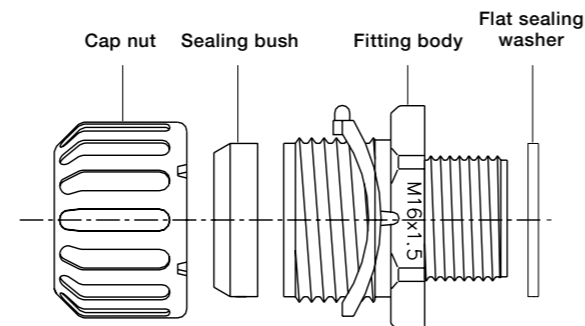
### Straight (PG version) - Sealed Fittings

Straight Body Part No.	Cap Nut	Sealing Bush	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	A/F Size F	G
			NC	NW								
AB12-PG09	CN07	SRN07	10	8.5	PG09	32mm	10mm	23mm	10mm	PG09	22mm	17mm
AB12-PG11	CN07	SRN07	10	8.5	PG11	32mm	10mm	23mm	14mm	PG11	22mm	17mm
AB12-PG13	CN07	SRN07	10	8.5	PG13.5	32mm	10mm	23mm	16mm	PG13.5	22mm	17mm
AB12-PG09	CN09	SRN09	12	10	PG09	32mm	10mm	23mm	10mm	PG09	22mm	17mm
AB12-PG11	CN09	SRN09	12	10	PG11	32mm	10mm	23mm	14mm	PG11	22mm	17mm
AB12-PG13	CN09	SRN09	12	10	PG13.5	32mm	10mm	26mm	16mm	PG13.5	27mm	17mm
AB16-PG09	CN11	SRN11	16	13	PG09	32mm	10mm	26mm	10mm	PG09	27mm	17mm
AB16-PG11	CN11	SRN11	16	13	PG11	32mm	10mm	26mm	14mm	PG11	27mm	17mm
AB16-PG13	CN11	SRN11	16	13	PG13.5	32mm	10mm	26mm	16mm	PG13.5	27mm	17mm
AB20-PG16	CN16	SRN16	20	17	PG16	35mm	11mm	31mm	18mm	PG16	30mm	20mm
AB25-PG21	CN21	SRN21	25	22	PG21	40mm	12mm	39mm	23mm	PG21	38mm	21mm
AB25-PG21	CN28	SRN28	28	23	PG21	40mm	12mm	39mm	23mm	PG21	38mm	21mm
AB32-PG29	CN32	SRN32	32	29	PG29	45mm	12mm	46mm	31mm	PG29	46mm	27mm
AB40-PG36	CN36	SRN36	40	36	PG36	55mm	12mm	58mm	38mm	PG36	59mm	35mm
AB50-PG48	CN48	SRN48	50	48	PG48	55mm	12mm	72mm	50mm	PG48	73mm	35mm

NOTE: Order fitting bodies, cap nuts and sealing bushes separately

NOTE: Dimensions refer to an overall assembly

Part numbers for NPT and PF threads available on request



### Straight (Swivel Metric version) - Sealed Fittings

Straight Body Part No.	Cap Nut	Sealing Bush	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	A/F Size F	G
			NC	NW								
ABS12-M16	CN07	SRN07	10	8.5	M16 x 1.5mm	44.5mm	11mm	23.0mm	12.0mm	M16 x 1.5mm	24.0mm	17.0mm
ABS12-M20	CN07	SRN07	10	8.5	M20 x 1.5mm	44.5mm	11mm	23.0mm	12.0mm	M20 x 1.5mm	24.0mm	17.0mm
ABS12-M16	CN09	SRN09	12	10	M16 x 1.5mm	44.5mm	11mm	23.0mm	12.0mm	M16 x 1.5mm	24.0mm	17.0mm
ABS12-M20	CN09	SRN09	12	10	M20 x 1.5mm	44.5mm	11mm	23.0mm	12.0mm	M20 x 1.5mm	24.0mm	17.0mm
ABS20-M20	CN16	SRN16	20	17	M20 x 1.5mm	47.0mm	11mm	31.0mm	16.0mm	M20 x 1.5mm	33.0mm	22.5mm

NOTE: Order fitting bodies, cap nuts and sealing bushes separately

NOTE: Dimensions refer to an overall assembly

Other thread options available including PF, PG, NPT and UNEF - contact us for further information



#### Approvals

**ADR Approved** (NC conduits ONLY)  
**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
 Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

#### IP Rating

**For use with:** All conduits in the Harnessflex range  
 IP40 N/A  
 IP67 Yes  
 IP68 Yes (2 bar 30mins)

#### Appropriate Conduit

Yes (2 bar 30mins)

#### Fire Performance

Self Extinguishing  
 Low Smoke Toxicity  
 Halogen Free

#### Temperature Range

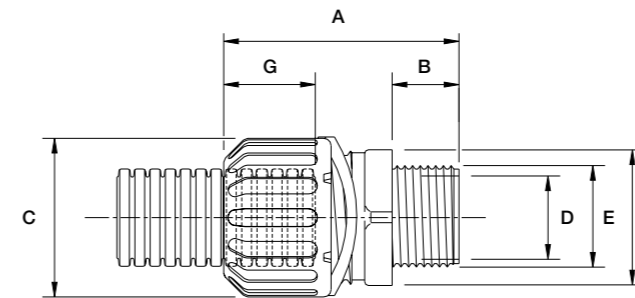
-40°C to +150°C

#### UV Resistance

Very High

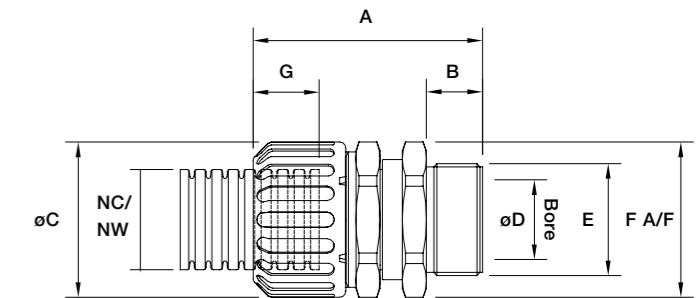
#### Dimensions

Straight fitting



#### Dimensions

Straight swivel fitting



#### 1 IP66, IP67 & IP68 Sealing

SRN sealing bush protects against ingress of water and dust.

#### 2 Cap-nut retention ring

Ensures integrity of assembly under extreme vibration (suits NC10-32 size elbows).

#### 3 Choice of threads

Available with metric, PG fixed male threads, NPT & PF.

#### 4 Includes flat seal washer

Provides seal between panel / bulkhead and fitting.



# Sealed fittings 90° Elbow



90° Elbow Sealed Fitting

## 90° Elbow - Sealed Fittings

90° compression type fitting incorporating fixed or swivel male threads to provide connection to knockouts and threaded entries. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

## 90° Elbow (Metric version) - Sealed Fittings

Elbow Body Part No.	Cap Nut	Sealing Bush	Face Sealing Washer	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	F	G	H
				NC	NW									
AB16-M16-90	CN11	SRN11	SWM16	16	13	M16 x 1.5mm	46mm	12mm	26mm	15mm	M16 x 1.5mm	22mm	48mm	17mm
AB16-M20-90	CN11	SRN11	SWM20	16	13	M20 x 1.5mm	46mm	13mm	26mm	15mm	M20 x 1.5mm	27mm	49mm	17mm
AB20-M20-90	CN16	SRN16	SWM20	20	17	M20 x 1.5mm	47mm	13mm	31mm	15mm	M20 x 1.5mm	27mm	51mm	20mm
AB25-M25-90	CN21	SRN21	SWM25	25	22	M25 x 1.5mm	56mm	15mm	39mm	20mm	M25 x 1.5mm	33mm	62mm	21mm
AB25-M25-90	CN28	SRN28	SWM25	25	23	M25 x 1.5mm	56mm	15mm	39mm	20mm	M25 x 1.5mm	33mm	62mm	21mm
AB32-M32-90	CN32	SRN29	SWM32	32	29	M32 x 1.5mm	66mm	16mm	46mm	26mm	M32 x 1.5mm	40mm	76mm	27mm
AB40-M40-90	CN36	SRN36	SWM40	40	36	M40 x 1.5mm	77mm	16mm	59mm	34mm	M40 x 1.5mm	48mm	93mm	35mm
AB50-M50-90	CN48	SRN48	SWM50	50	48	M50 x 1.5mm	94mm	16mm	72mm	40mm	M50 x 1.5mm	59mm	114mm	35mm

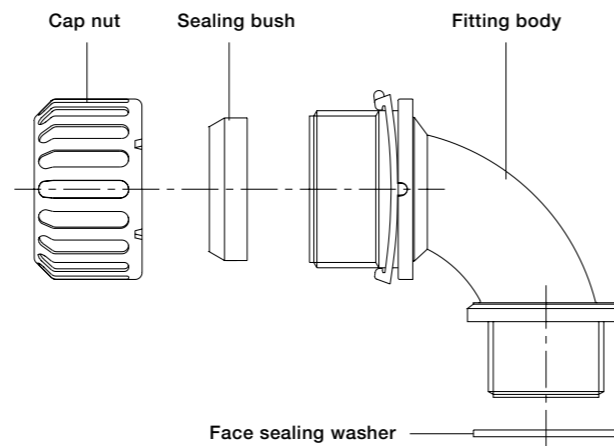
NOTE: Order elbow bodies, cap nuts, sealing bushes separately

NOTE: Dimensions refer to an overall assembly

## 90° Elbow (PG version) - Sealed Fittings

Elbow Body Part No.	Cap Nut	Sealing Bush	Face Sealing Washer	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	F	G	H
				NC	NW									
AB12-PG09-90	CN07	SRN07	SWPG09	10	8.5	PG09	46mm	10mm	23mm	11mm	PG09	22mm	44mm	17mm
AB12-PG09-90	CN09	SRN09	SWPG09	12	10	PG09	46mm	10mm	23mm	11mm	PG09	22mm	44mm	17mm
AB16-PG11-90	CN11	SRN11	SWPG11	16	13	PG11	46mm	10mm	26mm	14mm	PG11	25mm	46mm	17mm
AB20-PG16-90	CN16	SRN16	SWPG16	20	17	PG16	46mm	12mm	31mm	15mm	PG16	28mm	50mm	20mm
AB25-PG21-90	CN21	SRN21	SWPG21	25	22	PG21	56mm	12mm	39mm	22mm	PG21	36mm	59mm	21mm
AB25-PG21-90	CN28	SRN21	SWPG21	28	23	PG21	56mm	12mm	39mm	22mm	PG21	36mm	59mm	21mm
AB32-PG29-90	CN32	SRN29	SWPG29	32	29	PG29	66mm	12mm	46mm	29mm	PG29	44mm	72mm	27mm

NOTE: Order elbow bodies, cap nuts, sealing bushes and face sealing washers separately



## 90° Elbow (Swivel Metric version) - Sealed Fittings

Elbow Body Part No.	Cap Nut	Sealing Bush	Face Sealing Washer	Conduit Size		Thread Size	A	B	C	Min Bore D	Thread E	A/F Size F	G	H
				NC	NW									
ABS12-M16-90	CN07	SRN07	SWM16	10	8.5	M16 x 1.5mm	45mm	12mm	23mm	12mm	M16 x 1.5mm	24mm	45mm	17mm

NOTE: Order elbow bodies, cap nuts, sealing bushes and face sealing washers separately  
Other thread options available including PF, PG, NPT and UNEF - contact us for further information



### Approvals

ADR Approved (NC conduits ONLY)

CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle

directive (ELV) EU200/53/EC

### IP Rating

For use with: All conduits in the Harnessflex range

IP40

IP67

IP68

### Appropriate Conduit

N/A

Yes

Yes (2 bar 30mins)

### Fire Performance

Self Extinguishing

Low Smoke Toxicity

Halogen Free

### Temperature Range

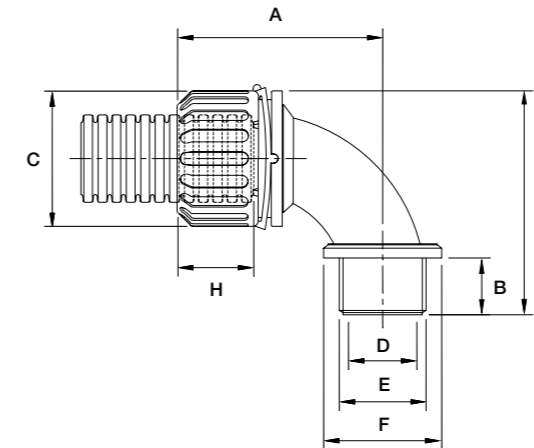
-40°C to +150°C

### UV Resistance

Very High

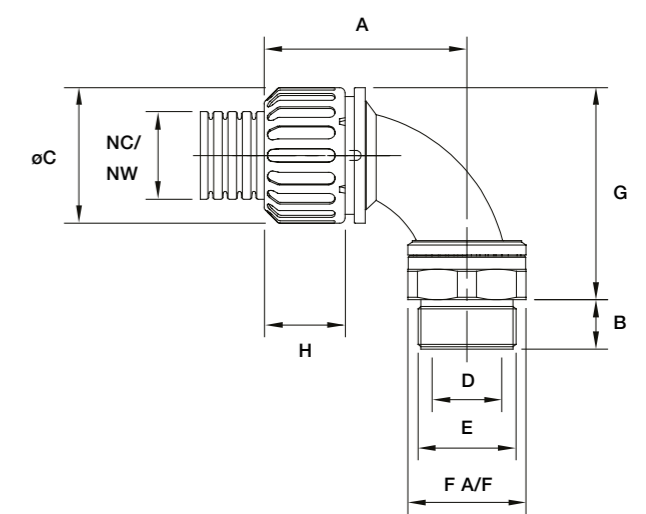
### Dimensions

90° Elbow fitting



### Dimensions

90° Elbow swivel fitting



### 1 IP66, IP67 & IP68 Sealing

SRN sealing bush protects against ingress of water and dust.

### 2 Cap-nut retention ring

Ensures integrity of assembly under extreme vibration (suits NC10-32 size elbows).

### 3 90° Swept elbow

Avoids cable damage and abrasion.

### 4 Choice of threads

Available with Metric, PG fixed male threads and optional face sealing washer.



# Sealed fittings 90° Flange



## 90° Flange - Sealed Fittings

90° elbow compression type fitting providing a 4 hole panel mounting facility. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

Flange Body Part No.	Cap Nut	Sealing Bush	Conduit Size	
			NC	NW
AB32-F90	CN32	SRN29	32	29
AB40-F90	CN36	SRN36	40	36
AB50-F90	CN48	SRN48	50	48

NOTE: Order flange bodies, cap nuts and sealing bushes separately

Flange Body Part No.	Nominal dimensions									
	A	B	C	D	E	F	G	H	I	J
AB32-F90	66mm	54mm	46mm	36mm	95mm	36mm	17mm	63mm	53mm	27mm
AB40-F90	86mm	73mm	63mm	46mm	115mm	30mm	27mm	77mm	64mm	35mm
AB50-F90	86mm	73mm	73mm	59mm	125mm	30mm	30mm	86mm	77mm	35mm

NOTE: Dimensions refer to an overall assembly

5 90° Flange Sealed Fitting



### Approvals

ADR Approved (NC conduits ONLY)

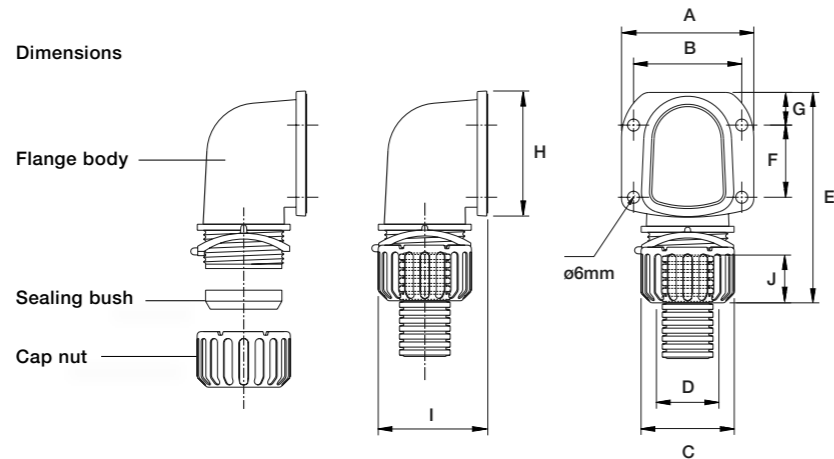
CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +150°C
IP40	N/A	Low Smoke Toxicity	
IP67	Yes	Halogen Free	
IP68	Yes (2 bar 30mins)		UV Resistance Very High

### Dimensions



Flange body

Sealing bush

Cap nut

#### 1 IP67 Sealing bush

Protects against the ingress of water and dust.

#### 2 Cap-nut retention ring

Ensures integrity of assembly under extreme vibration.

#### 3 90° Flange design

Avoids cable damage and abrasion.

#### 4 Integral O ring face seal

Provides seal between panel / bulkhead and fitting.

# Sealed fittings T-piece



T-piece Sealed Fitting

## T-piece - Sealed Fittings

Symmetrical, 3 junction compression type fittings providing a variety of conduit size configurations. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

T-piece with Bracket Part No.	T-piece No Bracket Part No.	Cap Nut	Sealing Bush	Conduit Size						Nominal Dimensions				
				NC			NW			D	E	F	G	H
-	TP12	CN07	SRN07	10	10	10	8.5	8.5	8.5	68mm	50mm	39mm	27mm	17mm
-	TP12	CN09	SRN09	12	12	12	10	10	10	68mm	50mm	39mm	27mm	17mm
-	TP16	CN11	SRN11	16	16	16	13	13	13	69mm	51mm	38mm	31mm	17mm
TPB20	TP20	CN16	SRN16	20	20	20	17	17	17	80mm	58mm	43mm	35mm	20mm
TPB28	TP28	CN21	SRN21	25	25	25	22	22	22	95mm	71mm	52mm	43mm	21mm
TPB28	TP28	CN28	SRN28	28	28	28	23	23	23	95mm	71mm	52mm	43mm	21mm
TPB32	-	CN32	SRN29	32	32	32	29	29	29	109mm	84mm	61mm	51mm	27mm

NOTE: Order T-piece bodies, cap nuts and sealing bushes separately. Dimensions refer to an overall assembly



### Approvals

ADR Approved (NC conduits ONLY)

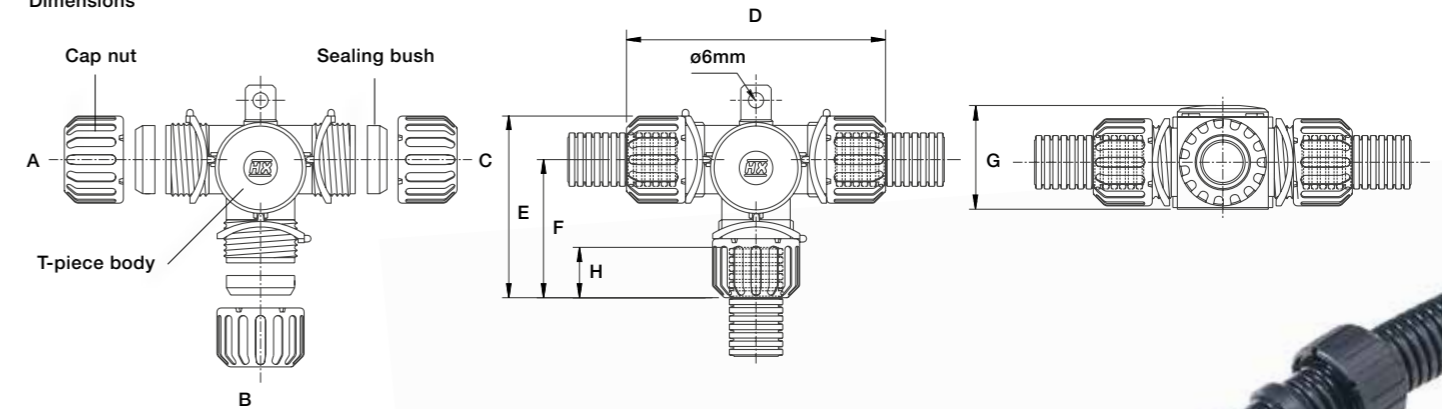
CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +150°C
IP40	N/A	Low Smoke Toxicity	
IP67	Yes	Halogen Free	
IP68	Yes (2 bar 30mins)		UV Resistance Very High

### Dimensions



Cap nut

T-piece body

Sealing bush

#### 1 IP67 Sealing bush

Protects against the ingress of water and dust.

#### 2 Cap-nut retention ring

Ensures integrity of assembly under extreme vibration.

#### 3 Smooth contoured internal form

Protects cables from damage during installation.

#### 4 Integral mounting bracket

Provides secure external fixing point.

#### 5 Removable IP67 inspection lid

Provides easy access to cables during installation.



# Sealed fittings X-piece



## X-piece - Sealed Fittings

Symmetrical 4 junction compression type fitting providing a variety of conduit size configurations. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

X-piece Part No.	Cap Nut	Sealing Bush	Conduit Size (NC)				Conduit Size (NW)			
			A	B	C	D	A	B	C	D
XP20	CN16	SRN16	20	20	20	20	17	17	17	17

NOTE: Order X-piece bodies, cap nuts and sealing bushes separately

X-piece Part No.	E	F	G	H
XP20	80mm	80mm	35mm	20mm

X-piece Sealed Fitting



### Approvals

ADR Approved (NC conduits ONLY)

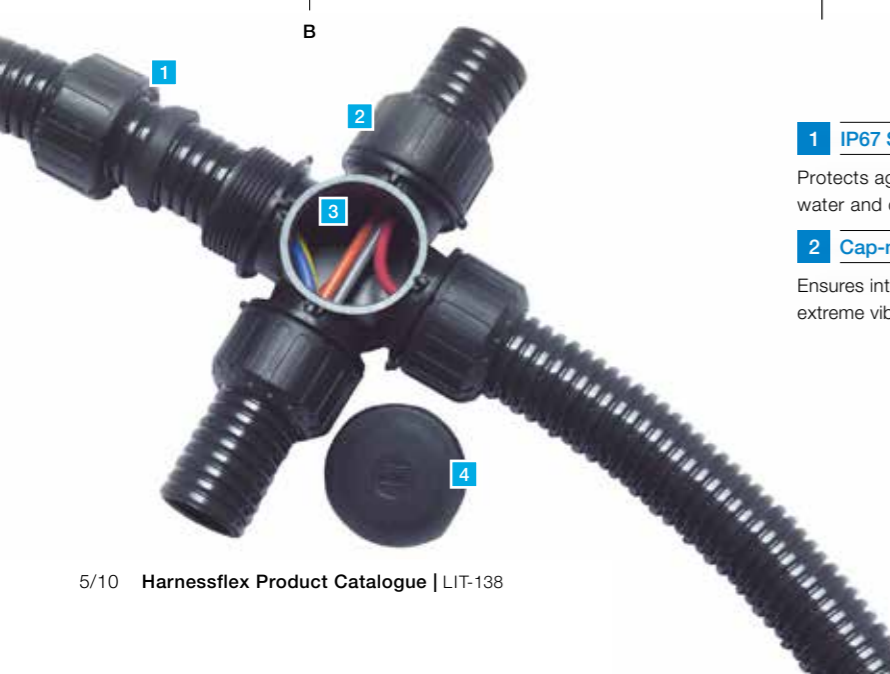
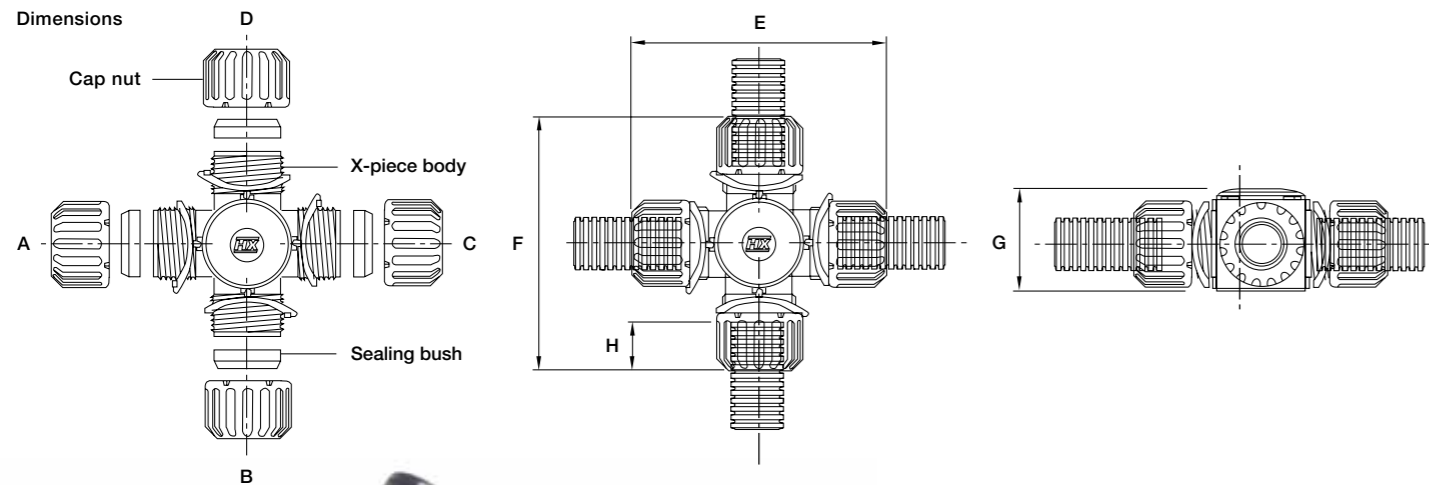
CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +150°C
IP40	N/A	Low Smoke Toxicity	
IP67	Yes	Halogen Free	UV Resistance
IP68	Yes (2 bar 30mins)		Very High

### Dimensions



- 1 IP67 Sealing bush**  
Protects against the ingress of water and dust.
- 2 Cap-nut retention ring**  
Ensures integrity of assembly under extreme vibration.
- 3 Smooth contoured internal form**  
Protects cables from damage during installation.
- 4 Removable IP67 inspection lid**  
Provides easy access to cables during installation.

# Sealed fittings Multi-way fitting



## Multi-way Fitting - Sealed Fittings

Asymmetrical 4 junction compression fitting. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

Multi-way Fitting Part No.	Cap Nut		Sealing Bush		Conduit Size (NC)		Conduit Size (NW)	
	A	B	A	B	A	B	A	B
TPM2512	CN21	CN07	SRN21	SRN07	25	10	22	8.5
TPM2512	CN21	CN09	SRN21	SRN09	25	12	22	10
TPM2512	CN28	CN07	SRN28	SRN07	28	10	23	8.5
TPM2512	CN28	CN09	SRN28	SRN09	28	12	23	10

NOTE: Order Multi-way fitting, cap nuts and sealing bushes separately

Multi-way Fitting Part No.	C	D	E	F	G	H
TPM2512	105mm	74mm	55mm	40mm	21mm	17mm

NOTE: Dimensions refer to an overall assembly



### Approvals

ADR Approved (NC conduits ONLY)

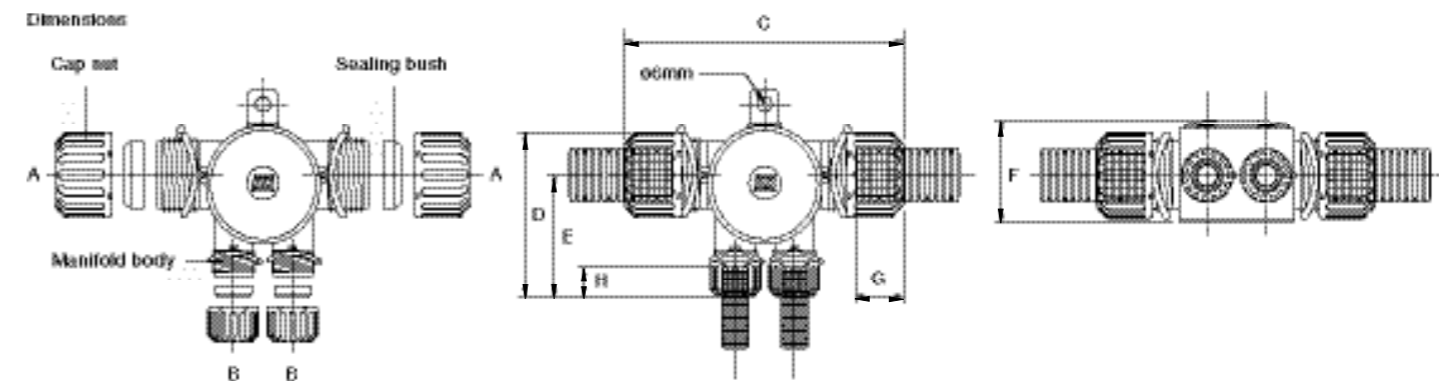
CE Mark to the Low Voltage Directive

RoHS Compliant to 2011/65/EU

Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
For use with:	All conduits in the Harnessflex range	Self Extinguishing	-40°C to +150°C
IP40	N/A	Low Smoke Toxicity	
IP67	Yes	Halogen Free	UV Resistance
IP68	Yes (2 bar 30mins)		Very High

### Dimensions



- 1 IP67 Sealing bush**  
Protects against the ingress of water and dust.
- 2 Cap-nut retention ring**  
Ensures integrity of assembly under extreme vibration.
- 3 Smooth contoured internal form**  
Protects cables from damage during installation.
- 4 Integral mounting bracket**  
Provides secure external fixing point.
- 5 Removable IP67 inspection lid**  
Provides easy access to cables during installation.

# Sealed fittings Circular UNEF connector interfaces



Circular UNEF Connector Interface Sealed Fitting

## Circular UNEF Connector Interfaces - Sealed Fittings

Straight compression type fittings providing connection between UNEF style circular connections and conduit systems. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

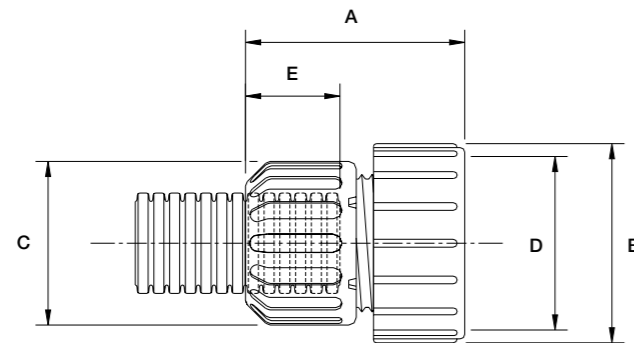
Interface Body Part No.	Cap Nut	Sealing Bush	Face Sealing Washer	Conduit Size		Thread Size
				NC	NW	
MPA01	CN07	SRN07	SWPG07	10	8.5	5/8"-24 UNEF
MPA01	CN09	SRN09	SWPG07	12	10	5/8"-24 UNEF
MPA03	CN16	SRN16	SWM20	20	17	1"-20 UNEF
MPA04	CN16	SRN16	SWPG16	20	17	13/16"-18 UNEF
MPA08	CN07	SRN07	SWPG09	10	8.5	3/4"-20 UNEF
MPA08	CN09	SRN09	SWPG09	12	10	3/4"-20 UNEF

NOTE: Order interface bodies, cap nuts, sealing bushes and sealing washers separately  
Specials available upon request, please contact our technical team for further details

Interface Body Part No.	Nominal Dimensions			Thread Size D	E
	A	B	C		
MPA01	30mm	24mm	23mm	5/8"-24 UNEF	17mm
MPA03	33mm	36mm	31mm	1"-20 UNEF	20mm
MPA04	32mm	37mm	31mm	13/16"-18 UNEF	20mm
MPA08	30mm	32mm	23mm	3/4"-20 UNEF	17mm

\*NOTE: Dimensions refer to overall assembly

## Dimensions



# Sealed fittings Solenoid connector interfaces



Solenoid Connector Interfaces Sealed Fittings

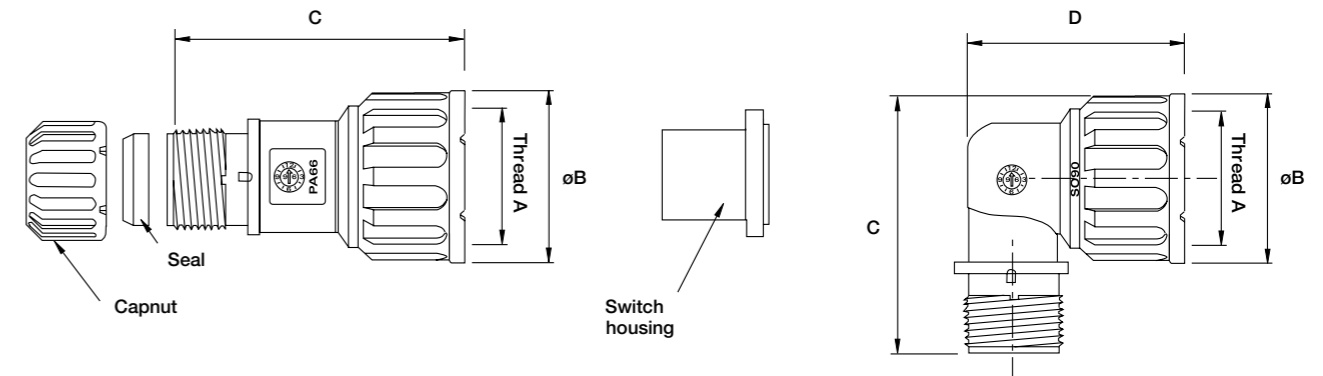
## Solenoid Connector Interfaces - Sealed Fittings

Screw-thread straight and elbow connectable interfaces for circular solenoids, sensors and switches. These fittings are designed for use with all types of unslit Harnessflex conduit, maintaining maximum conduit bore.

Elbow Fitting Part No.	Thread A	Nominal Dimensions			Nut Colour
		B	C	D	
SC-M24-90	M24 x 1.0mm	31.3mm	8.5mm	40.5mm	Black
SC-M27-90	M27 x 1.0mm	34.0mm	40.4mm	0.5mm	Grey

Straight Fitting Part No.	Thread A	Nominal Dimensions			Nut Colour
		B	C	D	
SC-M24-S	M24 x 1.0mm	31mm	53mm	-	Black
SC-M27-S	M27 x 1.0mm	34mm	54mm	-	Grey

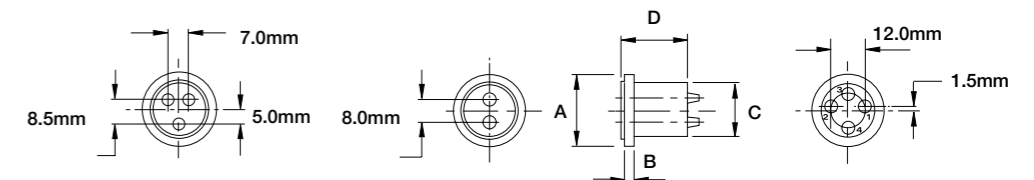
## Dimensions



## RSG Housing - Sealed Fittings

Part No.	Suitable for Connector Type	Number of Pins	Nominal Dimensions			
			A	B	C	D
RSG02	M27	2	25.0mm	3.5mm	18.7mm	23mm
RSG03	M27	3	25.3mm	3.5mm	18.0mm	21mm
RSG04	M27	4	25.3mm	3.5mm	18.7mm	23mm
RSG05	M24	2	22.5mm	3.5mm	18.0mm	23mm
RSG06	M24	3	22.3mm	3.5mm	18.0mm	21mm

## Dimensions



# Sealed fittings Reducing sealing bushes



5 Reducing Sealing Bushes Sealed Fitting



### Approvals

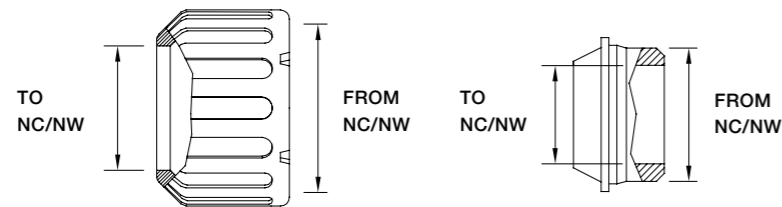
**ADR Approved**  
**CE Mark** to the Low Voltage Directive  
**RoHS Compliant** to 2011/65/EU  
 Conforms with **End of Life Vehicle directive (ELV) EU200/53/EC**

### Reducing Sealing Bushes - Sealed Fitting

Cap Nut Part No.	R/S Bushes Part No.	From Conduit Size		To Conduit Size	
		NC	NW	NC	NW
CN09-08	RSB12-08	12	10	08	7.5
CN11-08	RSB16-08	16	13	08	7.5
CN11-12	RSB16-12	16	13	12	10.0
CN16-08	RSB20-08	20	17	08	7.5
CN16-12	RSB20-12	20	17	12	10.0
CN16-16	RSB20-16	20	17	16	13.0
CN21-12	RSB25-12	25	22	12	10.0
CN21-16	RSB25-16	25	22	16	13.0
CN21-20	RSB25-20	25	22	20	17.0
CN21-12	RSB28-12	28	23	12	10.0
CN21-16	RSB28-16	28	23	16	13.0
CN21-20	RSB28-20	28	23	20	17.0
CN32-20	RSB32-20	32	29	20	17.0
CN32-25	RSB32-25	32	29	25	22.0
CN32-28	RSB32-28	32	29	28	23.0

IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> All conduits in the Harnessflex range			
IP40	N/A	Self Extinguishing	-40°C to +150°C
IP67	Yes	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	N/A	Halogen Free	

### Dimensions



# Sealed fittings Cable glands



Cable Gland Sealed Fitting

### Cable Glands - Sealed Fittings

Straight compression type cable glands incorporating fixed male threads to provide secure cable connections through knockouts and threaded entries.

Metric Part No.	Metric Thread A	Cable OD Range B	Nominal Dimensions			
			C	D	E	F
CGS-M16	M16 x 1.5mm	4.0 - 10.0mm	9mm	34.5mm	21mm	23.5mm
CGS-M20	M20 x 1.5mm	6.0 - 12.0mm	10mm	37.0mm	24mm	27.0mm
CGS-M25	M25 x 1.5mm	13.0 - 18.0mm	11mm	40.0mm	30mm	33.0mm
CGS-M32	M32 x 1.5mm	17.0 - 25.0mm	12mm	49.0mm	41mm	45.5mm
CGS-M40	M40 x 1.5mm	24.0 - 32.0mm	13mm	55.0mm	50mm	55.5mm

NOTE: OD = Outside diameter

PG Part No.	PG Thread A	Cable OD Range B	Nominal Dimensions			
			C	D	E	F
CGS-PG07	PG7	2.0 - 6.5mm	8mm	31.0mm	17mm	19.0mm
CGS-PG09	PG9	4.0 - 10.0mm	8mm	33.5mm	21mm	23.5mm
CGS-PG11	PG11	6.0 - 12.0mm	8mm	35.0mm	24mm	27.0mm
CGS-PG13	PG13.5	6.0 - 12.0mm	9mm	36.0mm	24mm	27.0mm
CGS-PG16	PG16	10.0 - 14.0mm	10mm	38.5mm	27mm	30.0mm
CGS-PG21	PG21	13.0 - 18.0mm	11mm	40.0mm	30mm	33.0mm
CGS-PG29	PG29	17.0 - 25.0mm	11mm	48.0mm	41mm	45.5mm

\*NOTE: OD = Outside diameter

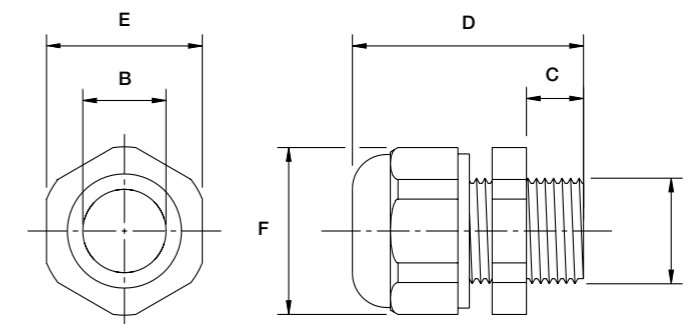


### Approvals

**CE Mark** to the Low Voltage Directive  
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IP Rating	Appropriate Conduit	Fire Performance	Temperature Range
<b>For use with:</b> N/A			
IP40	N/A	Self Extinguishing	-40°C to +120°C
IP67	Yes	Low Smoke Toxicity	<b>UV Resistance</b> Very High
IP68	Yes (5 bar 30mins ONLY)	Halogen Free	

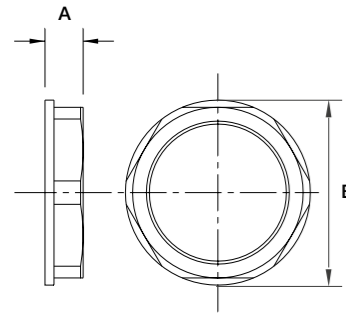
### Dimensions



# Accessories

## Locknuts & Face sealing washers

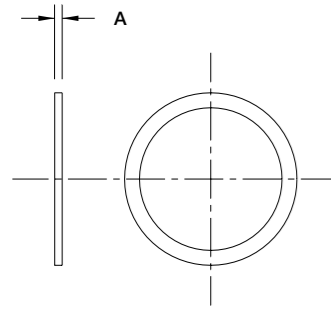
### Dimensions



### Locknut

Part No.	Thread size	A	B (A/F)	Part No.	Thread size	A	B (A/F)
LNP-M16	M16 x 1.5mm	7mm	19mm	LNP-PG07	PG07	5mm	19mm
LNP-M20	M20 x 1.5mm	8mm	23mm	LNP-PG09	PG09	5mm	22mm
LNP-M25	M25 x 1.5mm	9mm	28mm	LNP-PG11	PG11	5mm	24mm
LNP-M32	M32 x 1.5mm	9mm	36mm	LNP-PG13	PG13.5	6mm	27mm
LNP-M40	M40 x 1.5mm	10mm	46mm	LNP-PG16	PG16	6mm	30mm
LNP-M50	M50 x 1.5mm	10mm	60mm	LNP-PG21	PG21	7mm	36mm
				LNP-PG29	PG29	7mm	46mm
				LNP-PG36	PG36	9mm	56mm
				LNP-PG48	PG48	9mm	59mm

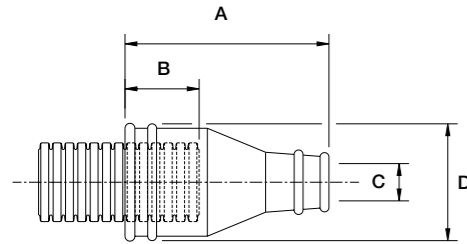
### Dimensions



### Face Sealing Washer

Part No.	Thread	A	Part No.	Thread size	A
SWM16	M16	1.5mm	SWPG07	PG07	1.2mm
SWM20	M20	1.5mm	SWPG09	PG09	1.2mm
SWM25	M25	1.5mm	SWPG11	PG11	1.2mm
SWM32	M32	1.5mm	SWPG13	PG13.5	1.2mm
SWM40	M40	1.5mm	SWPG16	PG16	1.2mm
SWM50	M50	1.5mm	SWPG21	PG21	1.2mm
			SWPG29	PG29	1.2mm
			SWPG36	PG36	1.2mm
			SWPG48	PG48	1.2mm

### Dimensions



### End Sleeve

Part No.	Conduit Size		Outlet Dia. Range (C)	Nominal Dimensions		
	NC	NW		A	B	D
ESN12	12	10	4 - 8mm	28mm	17mm	19mm
ESN16	16	13	5 - 9mm	35mm	17mm	23mm
ESN20	20	17	7 - 14mm	42mm	20mm	28mm
ESN25	25	22	9 - 17mm	50mm	21mm	31mm
ESN28	28	23	14 - 22mm	50mm	21mm	34mm
ESN32	32	29	16 - 32mm	53mm	27mm	40mm
ESN40	40	36	16 - 30mm	56mm	35mm	50mm

#### 1 Integral cable tie grooves

With twin location points to assist fixing to conduit or connector.

#### 2 Internal location lip

Provides internal protection during cable installation.

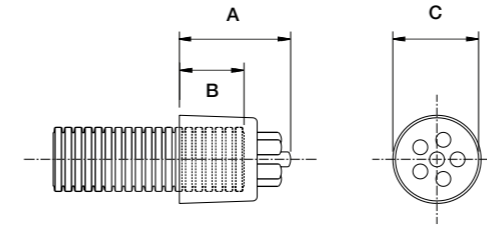
#### 3 Multiple cable carrying capacity

Provides cable breakout facility in situations where sealing is not required.

### End Cap

Part No.	Conduit Size		Outlet Dia. Range	Nominal Dimensions		
	NC	NW		A	B	C
EK03-08	08	7.5	3mm	19mm	13mm	14mm
EK03-08	10	8.5	3mm	19mm	13mm	14mm
EK05	12	10	5mm	22mm	14mm	17mm

### Dimensions

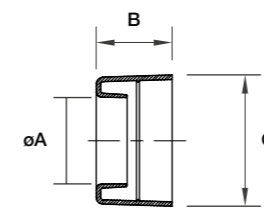


### Smooth End Cap

Part No.	Conduit Size		Nominal Dimensions		
	NC	NW	A	B	C
CES12	12	10	8.0mm	15mm	16mm
CES16	16	13	9.5mm	15mm	18mm
CES20	20	17	13.5mm	18mm	25mm
CES28	28	23	20.5mm	20mm	32mm
CES32	32	29	25.7mm	20mm	38mm

NOTE: Push in one piece fitting leaving a smooth exit from conduit when fittings not used

### Dimensions



#### 1 Swivel capability

Converts sealed fittings into freely rotating IP40 fittings for dynamic applications.

#### 2 High pull-off strength

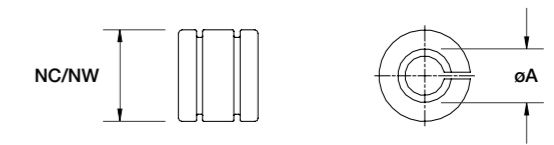
Split C ring design sits tightly into conduit corrugations.

### Smooth Entry Grommet

Part No.	Conduit Size		A
	NC	NW	
SEG12	12	10	8mm
SEG20	20	17	16mm
GROM08	08	7.5	8mm
GROM12	12	10	12mm

NOTE: Smoothbore. One piece slit insert providing abrasion protection for cables passing through a hinged junction where conduit is not used

### Dimensions

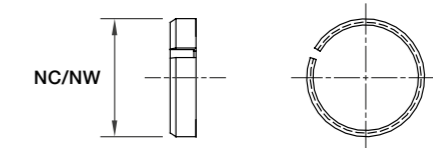


### Swivel C Ring

Part No.	Conduit Size	
	NC	NW
SC16HX	16	13
SC20HX	20	17
SC28HX	28	23
SC32HX	32	29
SC40HX	40	36
SC50HX	50	48

NOTE: Replaces SRN seal to provide a rotating joint

### Dimensions



## Accessories Conduit clip



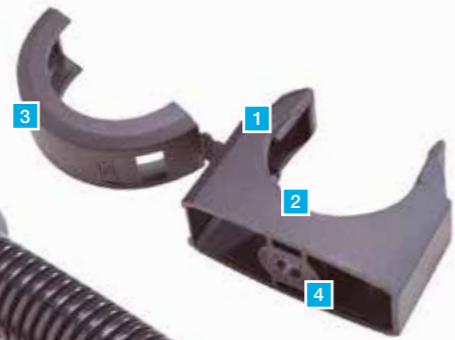
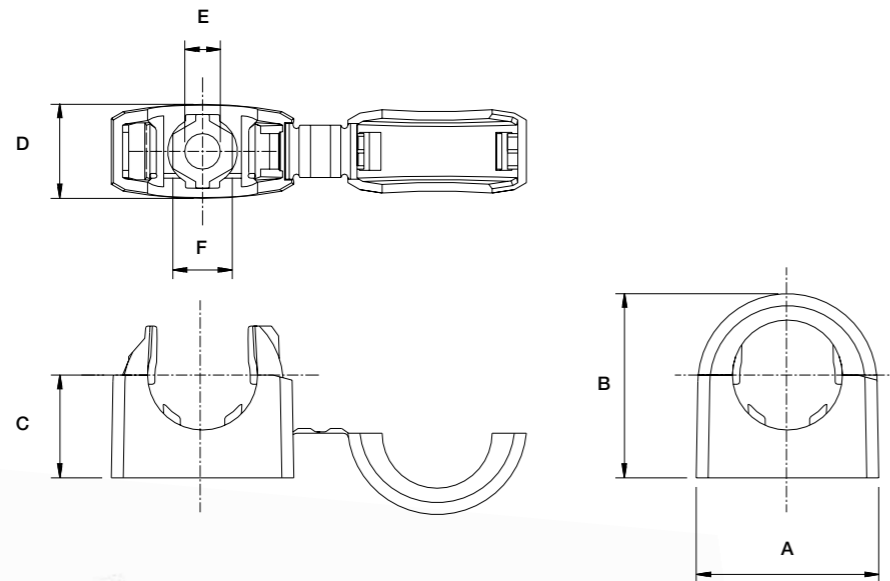
Conduit Clip

### Conduit Clip

One piece non-metallic conduit clips providing secure mounting points for Harnessflex conduit systems. These fittings are designed to snap together over all types of Harnessflex slit and unslit conduit.

Part No.	Conduit Size		Nominal Dimensions				Fixing Hole Size E	A/F Counter Bore Size F
	NC	NW	A	B	C	D		
HCB08	08	7.5	23mm	23mm	13mm	12mm	4mm	8mm
HCB12	12	10	23mm	23mm	13mm	12mm	4mm	8mm
HCB16	16	13	27mm	27mm	15mm	14mm	5mm	9mm
HCB20	20	17	34mm	35mm	20mm	18mm	6mm	10mm
HCB28	28	23	44mm	44mm	23mm	21mm	6mm	10mm
HCB32	32	29	53mm	52mm	27mm	23mm	6mm	10mm
HCB40	40	36	65mm	63mm	32mm	27mm	6mm	10mm
HCB50	50	48	81mm	77mm	39mm	32mm	6mm	10mm

### Dimensions



#### 1 One-piece design

Overcentre facility holds conduit securely in place during harness fabrication.

#### 2 Internal conduit location step

Prevents lateral movement of conduit even when lid is open.

#### 3 Integral hinged lid

Provides added security when closed and can be removed if not required.

#### 4 Integral fixing hole

Provides centre location point with hexagonal counter-bore for use with captive nuts.

## Accessories Metallic P-clip & Modular conduit clip



Metallic P-clip

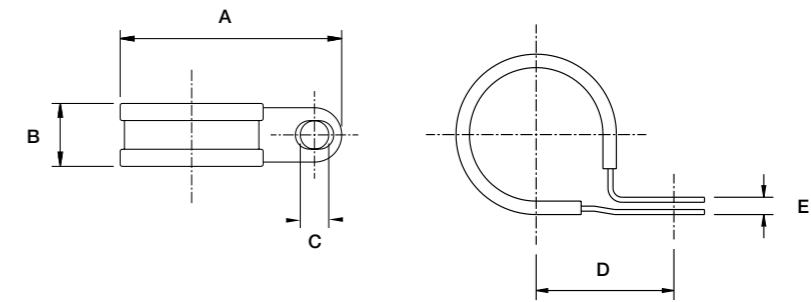
### Metallic P-clip

One-piece, metallic P-clips providing secure mounting points for conduit systems within a harness installation. These clips are designed to accommodate all Harnessflex slit and unslit conduits.

**Materials:** Galvanised steel with rubberised insert

Part No.	Conduit Size		Fixing Hole Size				
	NC	NW	A	B	C	D	E
PCS10	10	8.5	31mm	13mm	5mm	16mm	1.5mm
PCS12	12	10	33mm	13mm	5mm	17mm	1.5mm
PCS16	16	13	36mm	13mm	5mm	19mm	1.5mm
PCS20	20	17	41mm	13mm	5mm	21mm	1.5mm
PCS25	25	22	45mm	13mm	5mm	23mm	1.5mm
PCS32	32	29	53mm	13mm	5mm	27mm	1.5mm

### Dimensions



# Technical section

## Technical Section

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## Material Data Sheets

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# Technical section

## Storage recommendation for polyamide products

**Storage recommendation for polyamide products**  
Polyamide is widely and successfully used for products in the electrical and electronics industries. Thanks to its excellent mechanical and physical properties over a wide range of application temperatures and its very good weather resistance, polyamide can be used to make products for interior and external use that meet the most stringent of demands.

As a hygroscopic material, polyamide has the ability to absorb moisture in molecular form into the plastic matrix. As the moisture content goes up, product properties may change slightly. Absorbed water acts as a plasticiser reducing strengths and moduli and increasing the toughness of the polyamide.

Although at room temperature the stiffness and strength of PA6 is more reduced by the moisture uptake than those of PA66, this difference can be considered to be non-significant. PA6 absorbs more water than PA66, especially under high humidity conditions. But the resulting dimensional change is still of a similar order.

Figure 1 shows how the moisture content of polyamides comes into balance with the ambient air in a normal climate of 50% relative humidity and 23°C:

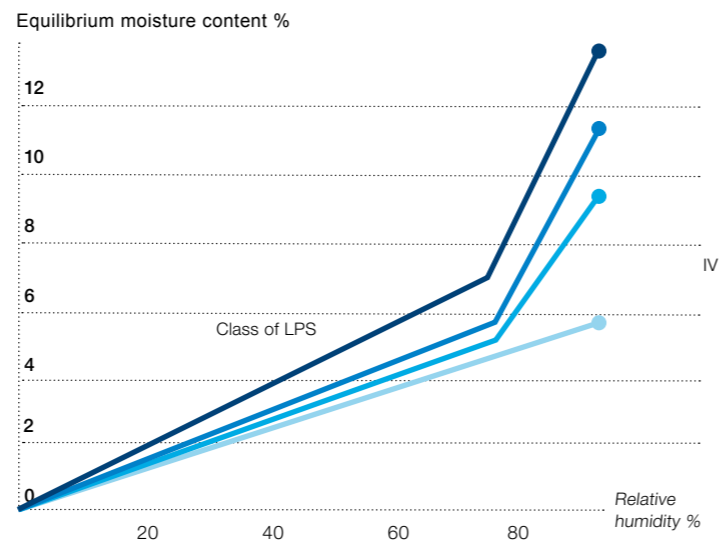
Material	In air (23°C / 50% rh)
Polyamide 6	3.0-3.5% by weight
Polyamide 66	2.5-3.0% by weight

To maintain balanced moisture content, Harnessflex recommends storing products under the following conditions:

Storage temp	Processing temp.	Rel. humidity
18°C to 30°C	>18°C	>30%

At lower processing temperatures and in particular when subjected to unnatural drying, corrugated pipes display increased flexural rigidity.

Figure 1. Moisture content of polyamides



In the very dry winter months the moisture balance may go down slightly as the material releases moisture to the environment (owing to lower relative humidity). Compared to natural outdoor conditions\* at around 0°C (40... 80% rh), the humidity in heated rooms may drop by half to below 20% rh if no humidification is present. (Even extremely dry regions such as the Sahara Desert record average humidity of 20% to 60% rh) (\*Central European climate).

If products from an outside environment are brought into a heated processing area, the change in climate may suddenly cause temporary de-moisturisation around the edges. After one or two days in the processing area a natural balance will be restored.

Observing this storage recommendation ensures optimum processability and material properties.

# Technical section

## IP ratings & fitting characteristics

### IP Ratings

IP suitability ratings are a system for classifying the degree of protection provided by enclosures of electrical equipment.

#### Protection against Solid Bodies

Degree of protection for persons against access to hazardous parts inside the enclosure and/or against the ingress of solid foreign objects.

	0	No protection
	1	Objects greater than 50 mm, accidental touch by hands
	2	Objects greater than 12 mm, accidental touch by fingers
	3	Objects greater than 2.5 mm, e.g. tools/wires
	4	Objects greater than 1 mm, e.g. tools/wires/small wires
	5	Protected against dust - limited ingress (no harmful deposits)
	6	Totally protected against dust (Dust-tight)

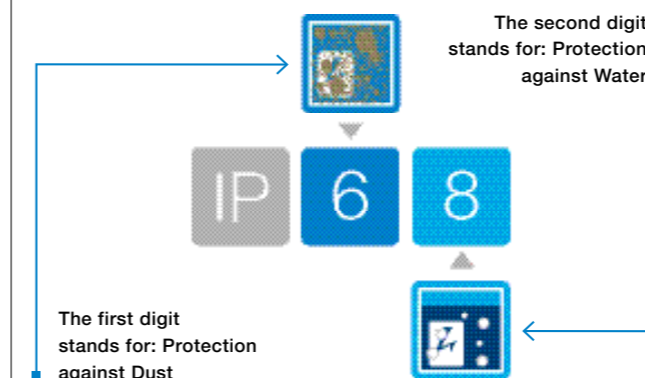
#### Protection against Water

Degree of protection of equipment inside enclosures against damage from the ingress of water.

	0	No protection
	1	Protected against vertically falling drops of water
	2	Protected against direct sprays of water up to 15° from vertical
	3	Protected against sprays of water to 60° from vertical
	4	Protected against water sprayed from all directions - limited ingress permitted
	5	Protected against low pressure jets of water from all directions - limited ingress permitted
	6	Protected against strong pressure jets of water, heavy seas - limited ingress permitted
	7	Protection against the effects of immersion between 15cm - 1 m
	8	Protection against long periods of immersion under a quoted pressure, e.g. 2 bar at 24 hours
	9	IP69k Automotive standard DIN40050 and signifies resistance to high pressure jets of water (up to 80bar) from any angle

#### IP Ratings

The higher the number, the greater the degree of protection; they apply ONLY to properly installed equipment. The numerals stand for the following:



## Technical section Nylon (PA) 6

### Nylon (PA) 6 - Material Data Sheet

Used on: All Harnessflex NC and CTPA nylon conduits

Properties	Test Method	Value	Unit
<b>General</b>			
Density	ISO 1183	1.13	g/cm <sup>3</sup>
Melting point	ISO 11357-1/-3	220	°C
<b>Mechanical</b>			
Tensile strength	ISO 527	55 (con)	MPa
Elongation at break	ISO 527	>50 (con)	%
Youngs modulus	ISO 527	3100 (Dry)	MPa
Charpy impact strength	ISO 179	DNB (Dry)	kJ/m <sup>2</sup>
Charpy notched impact strength	–	11 (Dry)	kJ/m <sup>2</sup>
IZOD impact strength	ISO 180C	DNB (Dry)	kJ/m <sup>2</sup>
IZOD notched impact strength	ISO 180A	4 (Dry)	kJ/m <sup>2</sup>
<b>Thermal</b>			
Heat distortion temperature-A	ISO 75	100	°C
Heat distortion temperature-B	ISO 75	>200	°C
<b>Flammability</b>			
Flammability	UL94	HB	N/A
<b>Electrical</b>			
Dielectric strength	IEC 243	14 (Dry)	MV/m
Surface resistivity	IEC 93	15 (Dry)	log10Ω
Volume resistivity	IEC 93	15 (Dry)	log10Ω
Comparative tracking index	IEC 112	>600	V

NOTE: All tests undertaken at 23°C where applicable

#### Notes

- DNB = Did not break
- Dry = Dry as moulded
- Con = Conditioned 168hrs @ 23°C, 50% RH

#### Chemical resistance

Nylon 6 Harnessflex conduits are resistant to all underbonnet oils, greases, fuels, cleaning fluids and synthetic fluids. Like all Nylons they are resistant to weak acids but not resistant to strong or oxidizing acids.

## Technical section Peek (Polyetheretherketone)

### PEEK (Polyetheretherketone) - Material Data Sheet

Used on: PKC conduit

Properties	Test Method	Value	Unit
<b>General</b>			
Density	ISO 1183	1.32	g/cm <sup>3</sup>
Melting point	DEC	343	°C
<b>Mechanical</b>			
Tensile strength	ISO 527	97	MPa
Elongation at break	ISO 527	<60	%
Youngs modulus	ISO 527	3600	MPa
Charpy impact strength 2mm notch	ISO 179	35	kJ/m <sup>2</sup>
Charpy impact 0.25mm notch	ISO179	8.2	kJ/m <sup>2</sup>
IZOD impact strength	ISO 180	DNB	kJ/m <sup>2</sup>
IZOD impact strength 0.25mm notch	ISO 180	6.4	kJ/m <sup>2</sup>
<b>Thermal</b>			
Heat distortion temperature-A	ISO 75	152	°C
Heat distortion temperature-B	ISO 75	–	°C
<b>Flammability</b>			
Flammability	UL94	V0	N/A
<b>Electrical</b>			
Dielectric strength	IEC 243	190	kV/m-1
Surface resistivity	IEC 93	–	–
Volume resistivity	IEC 93	4.9	10 <sup>16</sup> Ω cm
Comparative tracking index I	EC 112	150	V

NOTE: All tests undertaken at 23°C where applicable

#### Notes

- DNB = Did not break
- This linear aromatic polymer is semi-crystalline and is widely regarded as the highest performance thermoplastic material currently available

A summary of key physical properties is as follows:

#### High temperature performance

PEEK polymer and compounds typically have a glass transition temperature of 143°C and a melting temperature of 343°C and a Continuous Use Temperature of 260°C (UL 746B).

#### Wear resistance

PEEK polymer has excellent friction and wear properties exhibiting outstanding wear resistance over wide ranges of pressure, velocity, temperature and counterfacial roughness.

#### Chemical resistance

PEEK polymer has excellent resistance to a wide range of chemical environments, even at elevated temperatures. The only common environment which dissolves PEEK polymer is concentrated sulphuric acid.

#### Fire, smoke and toxicity

PEEK polymer is highly stable and requires no flame-retardant additives to achieve a V-0 rating at 1.4mm thickness. The composition and inherent purity of the material results in extremely low smoke and toxic gas emission in fire situations.

#### Hydrolysis resistance

PEEK polymer and compounds are not chemically attacked by water or pressurized steam. Components which are constructed from these materials retain a high level of mechanical properties when continuously conditioned in water at elevated temperatures and pressures.

#### Electrical properties

The electrical properties of PEEK™ polymer are maintained over a wide frequency and temperature.



## Technical section Nylon (PA) 66 - Heat stabilised

### Nylon (PA) 66 - Heat Stabilised - Material Data Sheet

#### All Harnessflex un-reinforced nylon fittings

Properties	Test Method	Value	Unit
<b>General</b>			
Density	ISO 1183	1.14	g/cm <sup>3</sup>
Melting point	ISO 1218	263	°C
<b>Mechanical</b>			
Tensile strength	ISO 527	95 (Dry)	MPa
Elongation at break	ISO 527	23 (Dry)	%
Youngs modulus	ISO 527	3400 (Dry)	MPa
Flexural modulus	ISO 178	2850 (Dry)	MPa
Charpy impact strength	ISO 179	DNB (Dry)	kJ/m <sup>2</sup>
Charpy notched impact strength	-	6 (Dry)	kJ/m <sup>2</sup>
IZOD impact strength	ISO 180C	DNB (Dry)	kJ/m <sup>2</sup>
IZOD notched impact strength	ISO 180A	5 (Dry)	kJ/m <sup>2</sup>
<b>Thermal</b>			
Heat distortion temperature-A @1.8Mpa	ISO 75-2	85	°C
Heat distortion temperature-B @ 0.45MPa	ISO 75-2	230	°C
<b>Flammability</b>			
Flammability	ISO 527	95 (Dry)	MPa
Glow wire flammability @ 1.5mm	IEC 695-2-1/2	850 (Con)	°C
<b>Electrical</b>			
Dielectric strength	IEC 243	60 (Dry)	MV/m
Surface resistivity	IEC 60093	1E+15	Ω
Volume resistivity	IEC 60093	1E+15	Ω.cm
Comparative tracking index	IEC 60112	600	V

NOTE: All tests undertaken at 23°C where applicable

## Technical section Nylon (PA) 66 - 30% Glass fibre filled

### Nylon (PA) 66 - 30% Glass Fibre Filled - Material Data Sheet

#### Used on: SC-M27 and SC-M24 Swivel nuts

Properties	Test Method	Value	Unit
<b>General</b>			
Density	ISO 1183	1.36	g/cm <sup>3</sup>
Moisture absorption <sup>(1)</sup>	Sim to ISO 62	1.6	%
<b>Mechanical <sup>(2)</sup></b>			
Tensile stress at yield/break <sup>(3)</sup>	ISO 527	195	N/mm <sup>2</sup>
Elongation at break ISO 527 3%			
Modulus of elasticity <sup>(4)</sup>	ISO 527	10000	N/mm <sup>2</sup>
IZOD notched impact strength - @ +23°C			
- @ -30°C 10 kJ/m <sup>2</sup>	ISO 180/1A	13	kJ/m <sup>2</sup>
<b>Thermal</b>			
Heat deflection temperature (HDT)	ISO 75/A	250	°C
Ball pressure test	IEC 60695-10-2	> 200	°C
<b>Flammability</b>			
Flammability (1.6mm thickness)	UL94	HB	
Oxygen index	ISO4589	24	%
Glow wire test extinguishing time <sup>(5)</sup>	IEC60695-2-1/1	<15	s
Hot wire ignition (HWI) (1.5mm thickness)	IEC60695-2-20	>15	s
High current arc ignition (HAI) (0.7mm thickness)	IEC60947	>120	No of arcs
<b>Electrical <sup>(2)</sup></b>			
Dielectric strength	IEC 60243-1	>30	kV/mm
Specific surface resistivity	IEC 60093	10 <sup>15</sup>	Ω
Specific volume resistivity	IEC 60093	10 <sup>15</sup>	Ω.cm
Dielectric constant - @ 100Hz	IEC60250	3.8	
- @ 1MHz		3.5	
Dissipation factor - @ 100Hz	IEC60250	90	x10 <sup>-4</sup>
- @ 1MHz		160	x10 <sup>-4</sup>
Comparative tracking index	IEC 60112	600	V
168h/100°C ref fuel B	-	+91	%

NOTE: All tests undertaken at 23°C where applicable

<sup>(1)</sup> Moisture absorption, saturation at +23°C and 50% RH (ref. DIN53495)

<sup>(2)</sup> Dry as moulded

<sup>(3)</sup> Test speed 5mm/min

<sup>(4)</sup> Test speed 1mm/min

<sup>(5)</sup> Glow wire applied during 30secs, temperature 750°C, thickness 1.6mm

#### Notes

- DNB = Did not break
- Dry = Dry as moulded
- Con = Conditioned 168hrs @ 23°C, 50% RH

#### Chemical resistance

Polyamide (Nylon) 66 Harnessflex fittings are resistant to all underbonnet oils, greases, fuels, cleaning and synthetic fluids. Like all Nylons they are resistant to weak acids but not resistant to strong or oxidizing acids.

# Technical section

## Thermoplastic elastometer TPV

### Thermoplastic Elastometer TPV

#### Used on: Sealing products

A polypropylene based elastomer designed primarily for demanding automotive applications. This material exhibits excellent compression set, flex fatigue and high and low temperature performance.



Properties	Test Method	Value	Unit
<b>General</b>			
Density	ISO 1183	0.96	g/cm <sup>3</sup>
Hardness shore A (5 sec)	ISO 868	56	–
Brittleness temperature	ISO 812	-62	°C
Flammability	UL94	HB	–
Stress/strain properties	ISO 37 (II)	–	–
<b>Flow Direction</b>			
Tensile strength	–	3.8	MPa
Modulus 100%	–	2.7	MPa
Elongation at break cross direction	–	280	%
Tensile strength	–	5.1	MPa
Modulus 100%	–	1.9	MPa
Elongation at break	–	470	%
<b>Tear Strength (cross direction)</b>			
Trouser	ISO 34 A	7	kN/m
Un-nicked angle	ISO 34 B (a)	22	kN/m
Compression set	ISO 815	–	–
72h/23°C	–	22	%
72h/70°C	–	26	%
72h/100°C	–	34	%
<b>Hot Air Ageing</b>			
1000h/125°C - Change in hardness	–	2	pts
Retention tensile strength	–	90	%
Retention - elongation at break	–	96	%
336h/150°C - Change in hardness	–	0	pts
Retention tensile strength	–	90	%
Retention elongation at break	–	87	%
<b>Volume Swell</b>			
72h/100°C water	–	+3	%
168h/100°C ASTM oil 1	–	+43	%
168h/100°C ref fuel B	–	+91	%

NOTE: Tests are conducted on injection moulded plaques. All tests undertaken at 23°C where applicable

#### Chemical resistance

TPV fittings are resistant to: Water, acids, ethanol, glycerol, methanol and propanol, hydraulic brake fluid and antifreeze. Large volume swell (>60%) is experienced with certain oils and fuels.

#### Approvals

Individual parts are approved to different standards including NFR 13-903. Others are manufacturer specific or are new developments and may not be approved to certain standards. Please contact the technical office for specific enquiries.

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# Contact us

## **Harnessflex**

Station Road

Coleshill

Birmingham B46 1HT

Tel: +44 (0) 1675 468 222

Fax: +44 (0) 1675 464 930

ABB UK Sales Tel: +44 (0) 333 999 9900

ABB UK Sales Fax: +44 (0) 333 999 9901

E-Mail: [sales@harnessflex.co.uk](mailto:sales@harnessflex.co.uk)

**[www.harnessflex.com](http://www.harnessflex.com)**

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