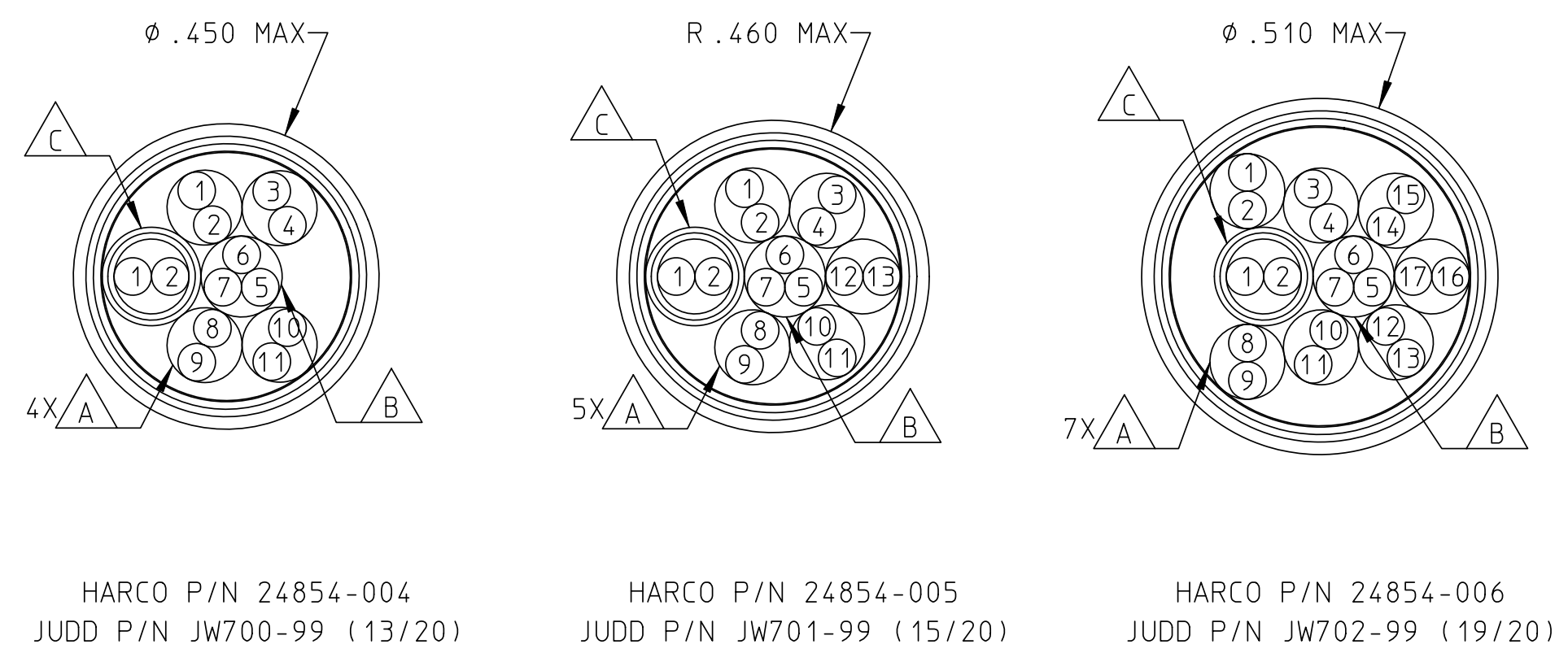
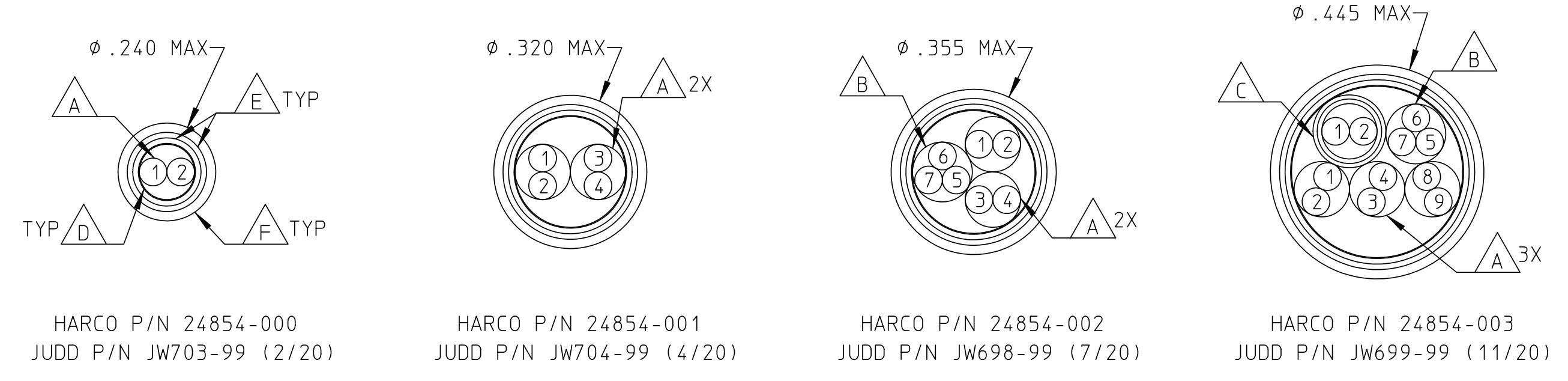


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 WRITTEN AGREEMENT WITH OR WRITTEN PERMISSION FROM HARCO LABORATORIES, INC.

| ECP | ECR | REL DATE | REV. LET. | REVISION | REV. BY | CHK BY | APPROVED BY |
|-----|-----|----------|-----------|--|---------|--------|-------------|
| | | 6-21-11 | D | DCRA 24854D. 011 IN TITLE BLOCK VENDOR 1 WAS VENDOR 2. SHEET 2 D2) CARLISLE/TENSOLITE WAS TENSOLITE. SHEET 3 IN TITLE BLOCK VENDOR 3 WAS VENDOR 2. ADDED SHEET 4. | RVA | RVA | RCG SMA WDG |
| | | 10-13-11 | E | DCRA 24854E. ON SHEET 4 E1, IN TENSILITE P/N /18004LT WAS /18004LT. E2, UPDATED OVERALL CABLE NOTE. E3, NOTE F WAS COMBINED WITH NOTE E. E4, IN NOTE 6 AS-85485 WAS MIL-C-85485 & .015 OHMS PER METER WAS 0.01 OHMS PER METER. ADDED FOR 24854-007 THROUGH 24854-013. E5, IN SOURCE OF SUPPLY TABLE P/N -007, -008 & -009 THROUGH -013 IN THE CARLISLE P/N /18004LT WAS /18004LT. ADDED SHEET 5. | RVA | RVA | RCG SMA WDG |
| | | 11-16-11 | F | DCRA 24854F. - ON SHT 4, 1.) ADDED NOTE 8. 2.) IN SOURCE OF SUPPLY CHART, NOMINAL WEIGHT COLUMN WAS CAGE NO. AND NOMINAL OD OVER JACKET COLUMN WAS NAME AND ADDRESS. 3.) Ø WAS .405 - .445 MAX NOM. 4.) Ø WAS (.547) 5.) WIRE IDENT. 10 & 11 WAS 14 & 15. 6.) WIRE IDENT 12 & 13 WAS 14 & 15. 7.) Ø WAS (.579) 8.) Ø WAS .593 - .623 NOM MAX. 9.) WIRE IDENT 12 & 13 WAS 14 & 15. 10.) Ø WAS (.547). 11.) TENSOLITE P/N WAS 20444/18004LT13. ON SHT 5, 12.) ADDED NOTE 8. 13.) WIRE IDENT. 10 & 11 WAS 14 & 15. 14.) WIRE IDENT. 12 & 13 WAS 14 & 15. 15.) WIRE IDENT. 12 & 13 WAS 14 & 15. 16.) THERMAX P/N WAS 1289-130. 17.) IN CHART, THERMAX WAS TENSOLITE. | JAV | JAV | RCG SMA WDG |
| | | 05-08-12 | G | DCRA 24854G. - 1.) REMOVED NOTES 4 & 5 ON SHEETS 2 THRU 5. 2.) NOTE 6 ON SHEETS 4 & 5 CHANGED, ADDED *TRANSFER IMPEDANCE PER METER SHALL BE LESS THAN (2 * P1) * FREQUENCY * 1 (mH) / METER FOR ALL MEASURED FREQUENCIES FROM 10 MHz THROUGH 100 MHz.* 3.) ADDED NOTE TO BOTTOM OF SHEET 5. ON SHT 4, 4.) Ø WAS (.257) 5.) Ø WAS (.391) 6.) Ø WAS (.409) 7.) Ø WAS (.512) 8.) Ø WAS (.527) 9.) Ø WAS (.530) 10.) Ø WAS (.503) 11.) IN SOURCE OF SUPPLY TABLE, CHANGED VALUES FOR WEIGHT AND OD FROM NOMINAL TO MAX. | JAV | JAV | RCG SMA WDG |
| | | 02-26-13 | H | DCRA 24854H. SHEET 4: 1) ADDED P/N 24854-014; 2) REVISED SOURCE OF SUPPLY TABLE; 3) DISCONTINUED P/N 24854-013; 4) REVISED NOTES 1F & 6. | WHH | WHH | RCG SMA WDG |
| | | 05-14-13 | J | DCRA 24854J; 1) REVISED NOTE 6 ON SHEET 4. 2) ON SHEET 4 HARCO P/N 24854-014 REVISED TENSILITE P/N. | WHH | WHH | RCG SMA WDG |



| WIRE NO. | COLOR(S) | OPTIONAL |
|----------|-------------|----------|
| 1 | WHT | |
| 2 | WHT/BLK | |
| 3 | WHT/BRN | |
| 4 | WHT/RED | |
| 5 | WHT/GRN | |
| 6 | WHT/ORG | |
| 7 | WHT/YEL | |
| 8 | WHT/BLU | |
| 9 | WHT/VIO | |
| 10 | WHT/GRY | |
| 11 | WHT/BLK/BRN | |
| 12 | WHT/BLK/RED | |
| 13 | WHT/BLK/ORN | |
| 14 | WHT/BLK/GRN | |
| 15 | WHT/BLK/YEL | |
| 16 | WHT/BLK/VIO | |
| 17 | WHT/BLK/BLU | |

NOTES:

- CONDUCTOR: 20AWG 7X9/38 NICKEL PLATED HIGH STRENGTH ALLOY 135 $\pm 0.0415 \pm .001$; DCR 13 OHM/1000FT MAXIMUM. DIELECTRIC. EXTRUDED XLETFE; .009 MINIMUM WALL; $0.059 \pm .002$, COLORS OPTIONAL.
 - A TWISTED PAIR: 2 CONDUCTOR; 1.50 INCH LH LAY; $\phi .122$ MAXIMUM.
 - B TWISTED TRIPLE: 3 CONDUCTOR; 1.75 INCH LH LAY; $\phi .132$ MAXIMUM.
 - C SHIELDED JACKETED TWISTED PAIR: 2 CONDUCTOR; 1.75 INCH LH LAY SHIELD: 38 AWG NICKEL COPPER BRAID; 50 MICROINCHES MINIMUM NICKEL, 90% COVERAGE MINIMUM, 5 ENDS, 16 CARRIERS. JACKET: EXTRUDED XLETFE (.009 NOMINAL) .005 MIN WALL THICKNESSS; $\phi .152$ ($\phi .164$ MAX).
 - D INNER TAPE WRAP: .004 X 10% MINIMUM OVERLAP, SKIVED PTFE.
 - E OVERALL SHIELDS: COATING THICKNES SHALL BE 40 TO 150 MICROINCHES OF NICKEL. SHIELDS SHALL BE CONTINUOUS (NO SPLICES) PER REEL. CABLE CONSTRUCTION SHALL IN ACCODANCE WITH MIL-C-27500. INNER SHIELD: 36 AWG NICKEL PLATED COPPER, 90% MINIMUM COVERAGE, 40-50 DEGREE BRAID ANGLE. OUTER SHIELD: 36 AWG NICKEL PLATED COPPER, 90% MINIMUM COVERAGE, 40-50 DEGREE BRAID ANGLE.
 - F OVERALL JACKETS: THE CABLES SHALL HAVE AN EXTRUDED YELLOW XLETFE FLEXIBLE JACKET. WALL THICKNESS = (.024 NOM, .012 MIN) THE JACKET MATERIAL SHALL BE 100% VIRGIN MATERIAL. VIRGIN MATERIAL SHALL BE NEW MATERIAL WHICH HAS BEEN THROUGH ONLY THE PROCESSES ESSENTIAL TO ITS MANUFACTURE OR APPLICATION AND HAS BEEN THROUGH THIS PROCESS ONE TIME ONLY. THE USE OF ANY RECLAIMED MATERIALS SHALL BE CAUSE FOR REJECTION. PRINT LEGEND *JUDD P/N 12703 MO YR LOT#*
 - G OUTER TAPE WRAP: .004" WITH A 25-50% OVERLAP, SKIVED PTFE.
- CABLES SUPPLIED TO THIS DRAWING CAN NOT BE CHANGED WITHOUT PRIOR APPROVAL OF HARCO LABORATORIES, INC.
- CABLES SUPPLIED TO THIS DRAWING SHALL BE CAPABLE OF NORMAL OPERATION AT ANY EXPOSURE TO TEMPERATURE LIMITS OF -75°C TO $+90^{\circ}\text{C}$.
- CABLES SUPPLIED TO THIS DRAWING SHALL BE QUALIFIED BY SIMILARITY IN ACCORDANCE WITH BOEING SPECIFICATION S280W501.
- KEY SHIELD PERFORMANCE: WHEN TESTED IN ACCORDANCE WITH MIL-C-85485, THE TRANSFER IMPEDANCE SHALL BE LESS THAN 0.01 OHMS PER METER.
- CABLE BUNDLE SHALL BE ROUND. USE OF FILLERS CREATE ROUND BUNDLE IS ALLOWED.
- WIRE COLOR CODING: WHITE BACKGROUND WITH COLOR STRIPE IS OPTIONAL. SOLID COLORS ARE ACCEPTABLE. i.e. WHT/ORG MAY BE ORANGE. WHT/GRN MAY BE GREEN.

UNCONTROLLED COPY - VERIFY REVISION BEFORE USE (Copia no controlada - verificar la revision antes de usar)

| SOURCE OF SUPPLY | | | |
|------------------|------------------|----------|------------------|
| SUPPLIER DATA | | | |
| HARCO P/N | PART NO. | CAGE NO. | NAME AND ADDRESS |
| 24854-000 | JW703-99 (2/20) | | JUDD |
| 24854-001 | JW704-99 (4/20) | | |
| 24854-002 | JW698-99 (7/20) | | |
| 24854-003 | JW699-99 (11/20) | | |
| 24854-004 | JW700-99 (13/20) | | |
| 24854-005 | JW701-99 (15/20) | | |
| 24854-006 | JW702-99 (19/20) | | |

IDENTIFICATION OF THE SUGGESTED SOURCE OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

SOURCE CONTROL DRAWING

(D1)

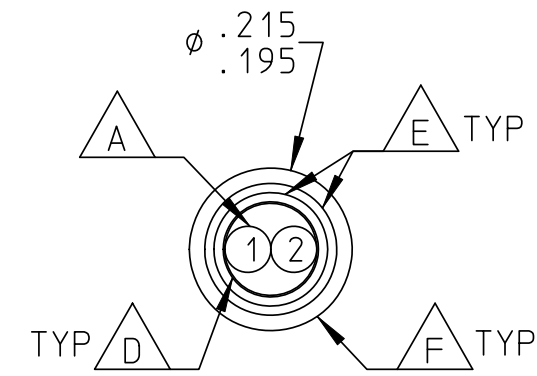
UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .010
 FRACTIONS 1/32
 ANGLES .010
 ALL DIAMETERS $\phi .010$
 BREAK EDGES .005-.020
 FILLETS TO BE .005-.020
 SURFACE FINISH 125

| APPROVALS | DATE |
|-------------|----------|
| DRAWN WAC | 03-16-05 |
| CHECKED WAC | 03-16-05 |
| ENGR - | |
| DE MW | 03-22-05 |
| M.E. PC | 03-30-05 |
| QA AJH | 03-29-05 |

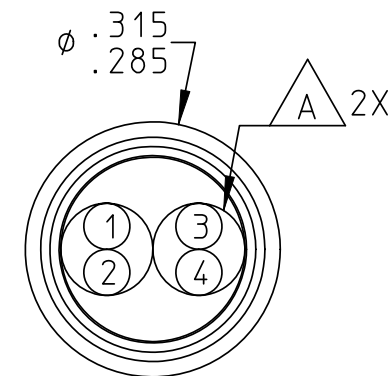
LABORATORIES, Inc.
 BRANFORD, CT 06405-0010
 CABLE, 20GA, MULTI-CONDUCTOR,
 JUMPER, FBW, VENDOR 1

| | | | | | | |
|---------------|-------------|--------------------------|-------|-----------|-------------|--------|
| MATERIAL SPEC | FINISH SPEC | PREPARED UNDER CONTRACT | SIZE | CAGE CODE | DRAWING NO. | REV. |
| | | | D | 00060 | 24854 | J |
| | | FURNISHED UNDER CONTRACT | SCALE | 1:1 | SHEET | 1 OF 5 |

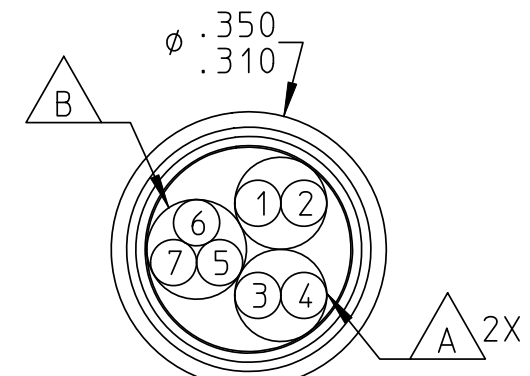
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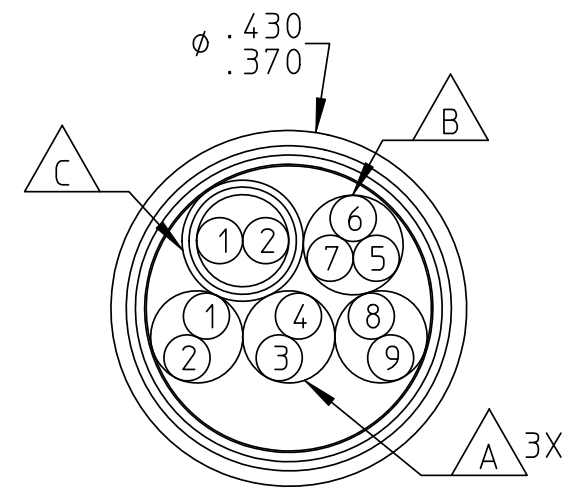
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 TENSOLITE P/N 20444/9E004LT-2



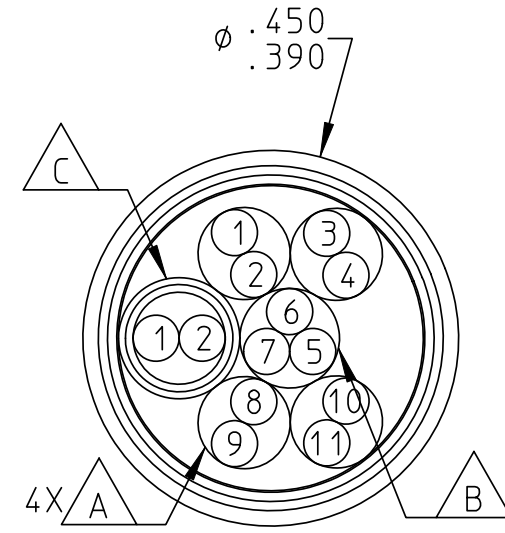
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 TENSOLITE P/N 20444/9E004LT-4



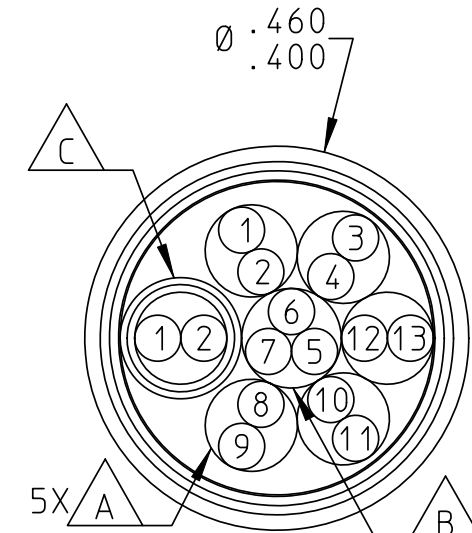
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 TENSOLITE P/N 20444/9E004LT-7



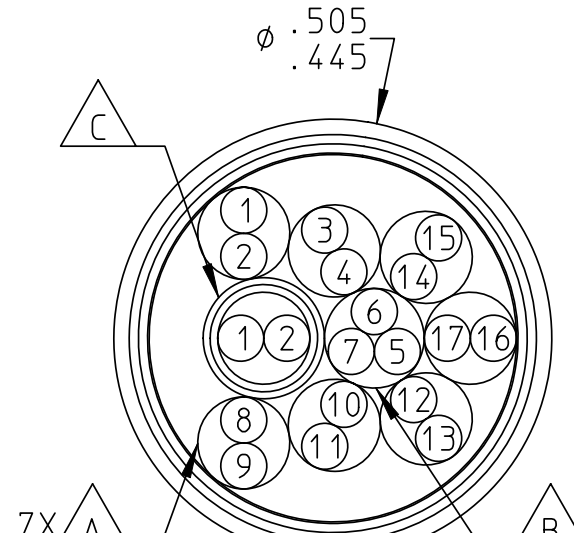
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 TENSOLITE P/N 20444/9E004LT-11



HARCO P/N 24854-004
 TENSOLITE P/N 20444/9E004LT-13



HARCO P/N 24854-005
 TENSOLITE P/N 20444/9E004LT-15



HARCO P/N 24854-006
 TENSOLITE P/N 20444/9E004LT-19

| WIRE NO. | HARCO TOP LEVEL | TENSOLITE |
|----------|-----------------|-----------|
| 1 | WHT | WHT |
| 2 | WHT/BLK | BLK |
| 3 | WHT/BRN | BRN |
| 4 | WHT/RED | RED |
| 5 | WHT/GRN | GRN |
| 6 | WHT/ORG | ORG |
| 7 | WHT/YEL | YEL |
| 8 | WHT/BLU | BLU |
| 9 | WHT/VIO | VIO |
| 10 | WHT/GRY | GRY |
| 11 | WHT/BLK/BRN | BLK/BRN |
| 12 | WHT/BLK/RED | BLK/RED |
| 13 | WHT/BLK/ORG | BLK/ORG |
| 14 | WHT/BLK/GRN | BLK/GRN |
| 15 | WHT/BLK/YEL | BLK/YEL |
| 16 | WHT/BLK/VIO | BLK/VIO |
| 17 | WHT/BLK/BLU | BLK/BLU |

NOTES:

1. CONDUCTOR: 20AWG 65/38 NICKEL PLATED HIGH STRENGTH ALLOY 135 \pm 0.0415 \pm .001; DCR 13 OHM/1000FT MAXIMUM. DIELECTRIC. EXTRUDED PTFE; .008 MINIMUM WALL; \pm 0.059 \pm .002, COLORS AS SHOWN.

A TWISTED PAIR: 2 CONDUCTOR; 1.50 INCH LH LAY.

B TWISTED TRIPLE: 3 CONDUCTOR; 1.75 INCH LH LAY.

C SHIELDED JACKETED TWISTED PAIR: 2 CONDUCTOR; 1.25 INCH LH LAY
 SHIELD: 38 AWG NICKEL COPPER BRAID; 50 MICROINCHES MINIMUM NICKEL, 90% COVERAGE MINIMUM.
 JACKET: 2 LAYERS CROSSWRAP UNSINTERED PTFE .003 X 3/4 45-50% LAP BOTH WRAPS, \pm 0.158 MAXIMUM.

D BINDER: PTFE TAPE .003 X 10% MINIMUM OVERLAP APPLIED AT CABLE OPERATION WITH FIBERGLASS FILLER AS REQUIRED.

E OVERALL SHIELDS: THE CABLES SHALL HAVE TWO (2) OVERALL BRAIDED SHIELDS OF #36 OR #34 AWG NICKEL COATED COPPER WITH EACH HAVING 40% COVERAGE OF NOT LESS THAN 90%. THE BRAID ANGLE SHALL BE 40°-50°. THE COATING THICKNESS SHALL BE 40 TO 150 MICROINCHES OF NICKEL. SHIELDS SHALL BE CONTINUOUS (NO SPLICES) PER REEL. CABLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH MIL-C-27500.

F OVERALL JACKETS: THE CABLES SHALL HAVE A PTFE TAPE WRAP JACKET. THE INNER TAPE SHALL BE WHITE. THE JACKET SHALL BE CONSTRUCTED AS FOLLOWS:

- TAPE ONE: .004" PTFE (WHITE) - 25-50% LAP
- TAPE TWO: .003" PTFE (YELLOW) - 25-50% LAP
- TAPE THREE: .003" PTFE (YELLOW) - 25-50% LAP
- TAPE FOUR (CABLE \pm 0.350" AND LARGER): .003" PTFE (YELLOW) - 25-50% LAP

JACKET MATERIAL SHALL BE 100% VIRGIN MATERIAL. VIRGIN MATERIAL SHALL BE NEW MATERIAL WHICH HAS BEEN THROUGH ONLY THE PROCESSES ESSENTIAL TO ITS MANUFACTURE OR APPLICATION AND HAS BEEN THROUGH THIS PROCESS ONE TIME ONLY. THE USE OF ANY RECLAIMED MATERIALS SHALL BE CAUSE FOR REJECTION. THE JACKET MUST BE PRINTED WITH THE TENSOLITE PART NUMBER, CAGE CODE, AND TRACEABILITY INFO.

2. CABLES SUPPLIED TO THIS DRAWING CAN NOT BE CHANGED WITHOUT PRIOR APPROVAL OF HARCO LABORATORIES, INC.

3. CABLES SUPPLIED TO THIS DRAWING SHALL BE CAPABLE OF NORMAL OPERATION AT ANY EXPOSURE TO TEMPERATURE LIMITS OF -75°C TO +90°C.

G1 4. REMOVED

G1 5. REMOVED

KEY 6. SHIELD PERFORMANCE: WHEN TESTED IN ACCORDANCE WITH MIL-C-85485, THE TRANSFER IMPEDANCE SHALL BE LESS THAN 0.01 OHMS PER METER.

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| SOURCE OF SUPPLY | | | |
|------------------|-----------------------------|----------|---|
| SUPPLIER DATA | | | |
| HARCO P/N | CARLISLE TENSOLITE PART NO. | CAGE NO. | NAME AND ADDRESS |
| 24854-000 | 20444/9E004LT-2 | 92607 | TENSOLITE COMPANY ST. AUGUSTINE, FLORIDA |
| 24854-001 | 20444/9E004LT-4 | | |
| 24854-002 | 20444/9E004LT-7 | | |
| 24854-003 | 20444/9E004LT-11 | | |
| 24854-004 | 20444/9E004LT-13 | | |
| 24854-005 | 20444/9E004LT-15 | | |
| 24854-006 | 20444/9E004LT-19 | | |

IDENTIFICATION OF THE SUGGESTED SOURCE OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

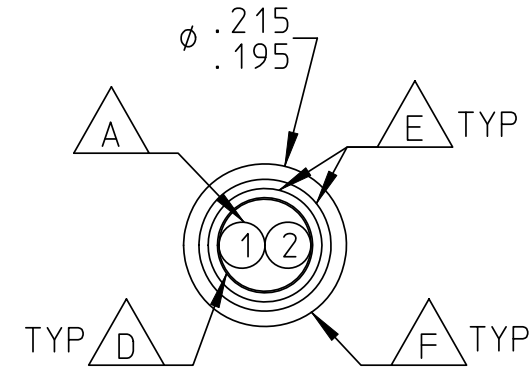
SOURCE CONTROL DRAWING

Laboratories, Inc.
 BRANFORD, CT 06405-0010

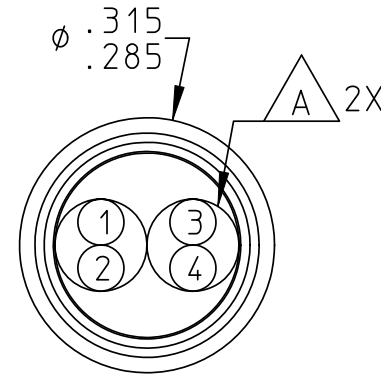
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| SCALE: NONE | SHEET 2 OF | | 5 |

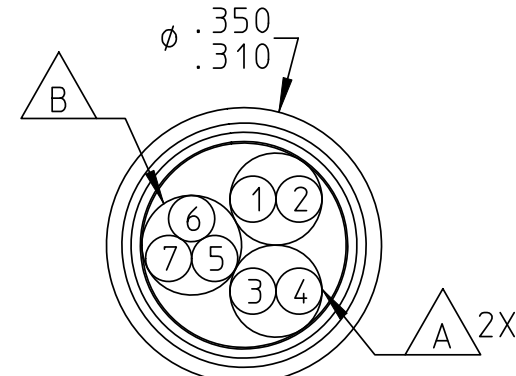
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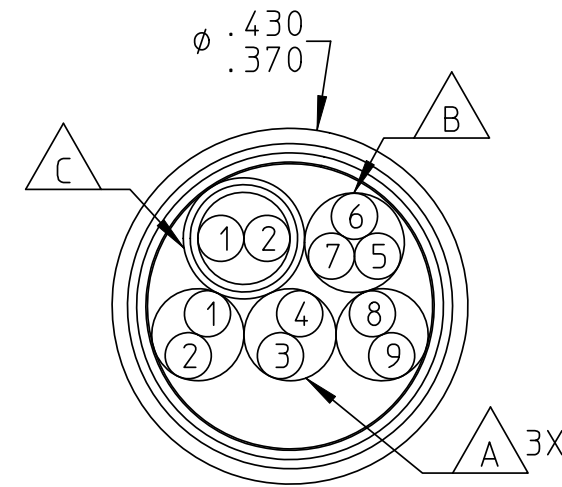
HARCO P/N 24854-000
 BRAND-REX P/N T-14299 (2/20)



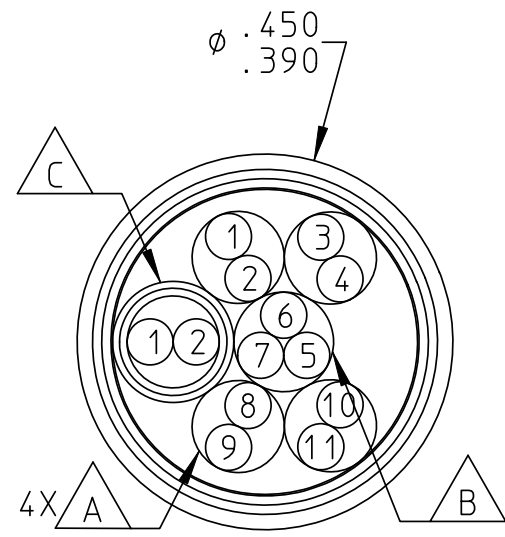
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 BRAND-REX P/N T-14299 (4/20)



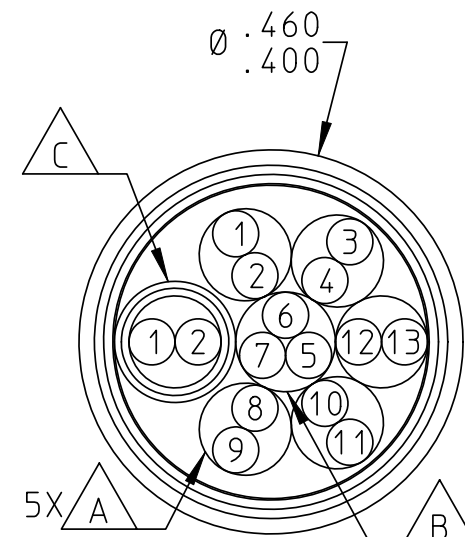
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 BRAND-REX P/N T-14299 (7/20)



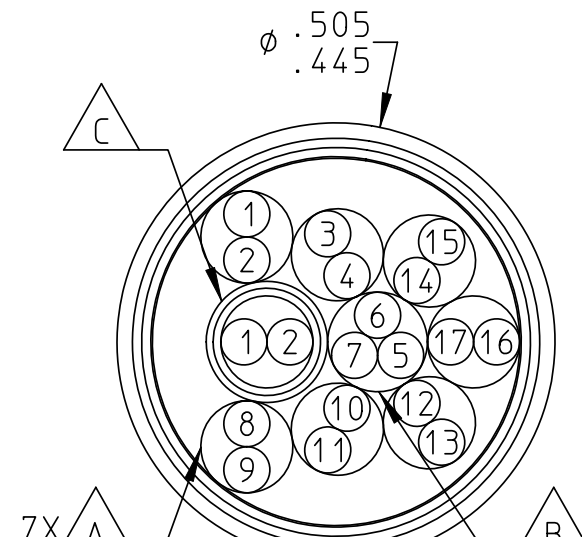
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 BRAND-REX P/N T-14299 (11/20)



HARCO P/N 24854-004
 BRAND-REX P/N T-14299 (13/20)



HARCO P/N 24854-005
 BRAND-REX P/N T-14299 (15/20)



HARCO P/N 24854-006
 BRAND-REX P/N T-14299 (19/20)

| WIRE NO. | COLOR(S) |
|----------|-------------|
| 1 | WHT |
| 2 | WHT/BLK |
| 3 | WHT/BRN |
| 4 | WHT/RED |
| 5 | WHT/GRN |
| 6 | WHT/ORG |
| 7 | WHT/YEL |
| 8 | WHT/BLU |
| 9 | WHT/VIO |
| 10 | WHT/GRY |
| 11 | WHT/BLK/BRN |
| 12 | WHT/BLK/RED |
| 13 | WHT/BLK/ORG |
| 14 | WHT/BLK/GRN |
| 15 | WHT/BLK/YEL |
| 16 | WHT/BLK/VIO |
| 17 | WHT/BLK/BLU |

NOTES:

1. CONDUCTOR: 20AWG 63/38 NICKEL PLATED HIGH STRENGTH ALLOY 135 \pm 0.0415 \pm .001; DCR 13 OHM/1000FT MAXIMUM. DIELECTRIC. EXTRUDED PTFE; .008 MINIMUM WALL; \pm 0.059 \pm .002, COLORS AS SHOWN.

A TWISTED PAIR: 2 CONDUCTOR; 1.50 INCH LH LAY. ϕ .122 MAXIMUM

B TWISTED TRIPLE: 3 CONDUCTOR; 1.75 INCH LH LAY. ϕ .132 MAXIMUM

C SHIELDED JACKETED TWISTED PAIR: 2 CONDUCTOR; 1.25 INCH LH LAY
 SHIELD: 38 AWG NICKEL COPPER BRAID; 50 MICROINCHES MINIMUM NICKEL, 90% COVERAGE MINIMUM. 5 ENDS, 16 CARRIERS.
 JACKET: 2 LAYERS CROSSWRAP UNSINTERED PTFE .003 X 3/4 45-50% LAP BOTH WRAPS, ϕ .158 MAXIMUM.

D BINDER: PTFE TAPE .003 X 10% MINIMUM OVERLAP.

E OVERALL SHIELDS: THE CABLES SHALL HAVE TWO (2) OVERALL BRAIDED SHIELDS OF #36 OR #34 AWG NICKEL COATED COPPER WITH EACH HAVING A COVERAGE OF NOT LESS THAN 90%. THE BRAID ANGLE SHALL BE 40°-50°. THE COATING THICKNESS SHALL BE 40 TO 150 MICROINCHES OF NICKEL. SHIELDS SHALL BE CONTINUOUS (NO SPLICES) PER REEL. CABLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH MIL-C-27500.

F OVERALL JACKETS: THE CABLES SHALL HAVE A PTFE TAPE WRAP JACKET. THE INNER TAPE SHALL BE WHITE. THE JACKET SHALL BE CONSTRUCTED AS FOLLOWS:

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- TAPE TWO: .003" PTFE (YELLOW) - 25-35% LAP
- TAPE THREE: .003" PTFE (YELLOW) - 25-35% LAP
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JACKET MATERIAL SHALL BE 100% VIRGIN MATERIAL. VIRGIN MATERIAL SHALL BE NEW MATERIAL WHICH HAS BEEN THROUGH ONLY THE PROCESSES ESSENTIAL TO ITS MANUFACTURE OR APPLICATION AND HAS BEEN THROUGH THIS PROCESS ONE TIME ONLY. THE USE OF ANY RECLAIMED MATERIALS SHALL BE CAUSE FOR REJECTION. AND TRACEABILITY INFO.

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G1 4. REMOVED

G1 5. REMOVED

KEY 6. SHIELD PERFORMANCE: WHEN TESTED IN ACCORDANCE WITH MIL-C-85485, THE TRANSFER IMPEDANCE SHALL BE LESS THAN 0.01 OHMS PER METER.

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| SOURCE OF SUPPLY | | | |
|------------------|-----------------|----------|---|
| SUPPLIER DATA | | | |
| HARCO P/N | PART NO. | CAGE NO. | NAME AND ADDRESS |
| 24854-000 | T-14299 (2/20) | 00012 | BRAND-REX COMPANY 1000 WEST MAIN ST. WILLIMANTIC, CT 06226-1128 |
| 24854-001 | T-14299 (4/20) | | |
| 24854-002 | T-14299 (7/20) | | |
| 24854-003 | T-14299 (11/20) | | |
| 24854-004 | T-14299 (13/20) | | |
| 24854-005 | T-14299 (15/20) | | |
| 24854-006 | T-14299 (19/20) | | |

IDENTIFICATION OF THE SUGGESTED SOURCE OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

SOURCE CONTROL DRAWING

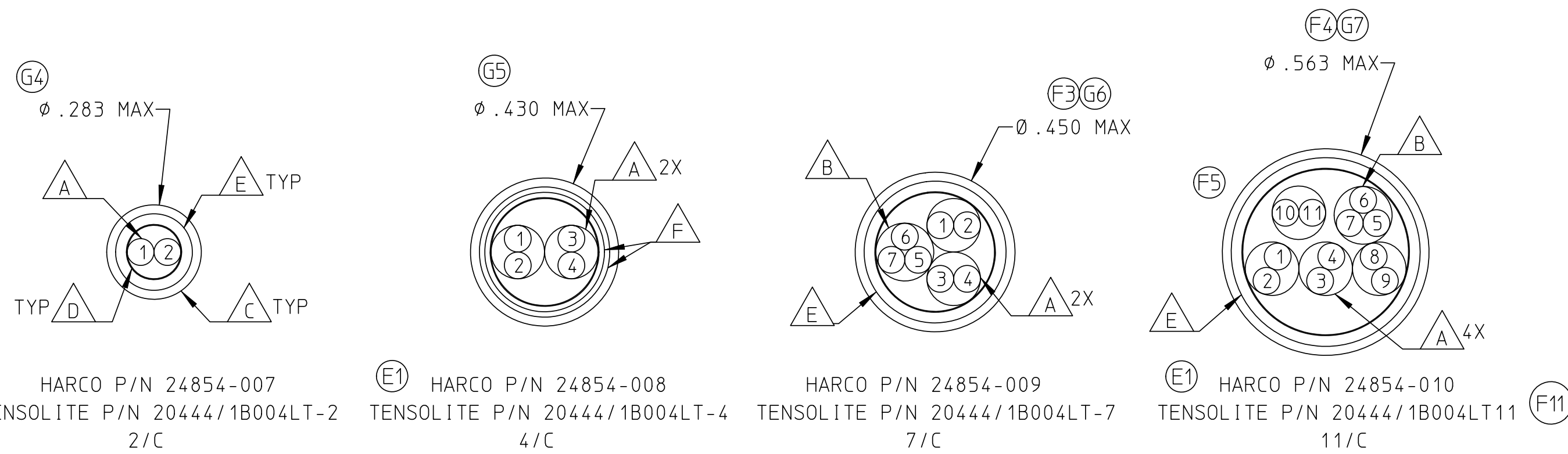
D3

Laboratories, Inc.
 BRANFORD, CT 06405-0010

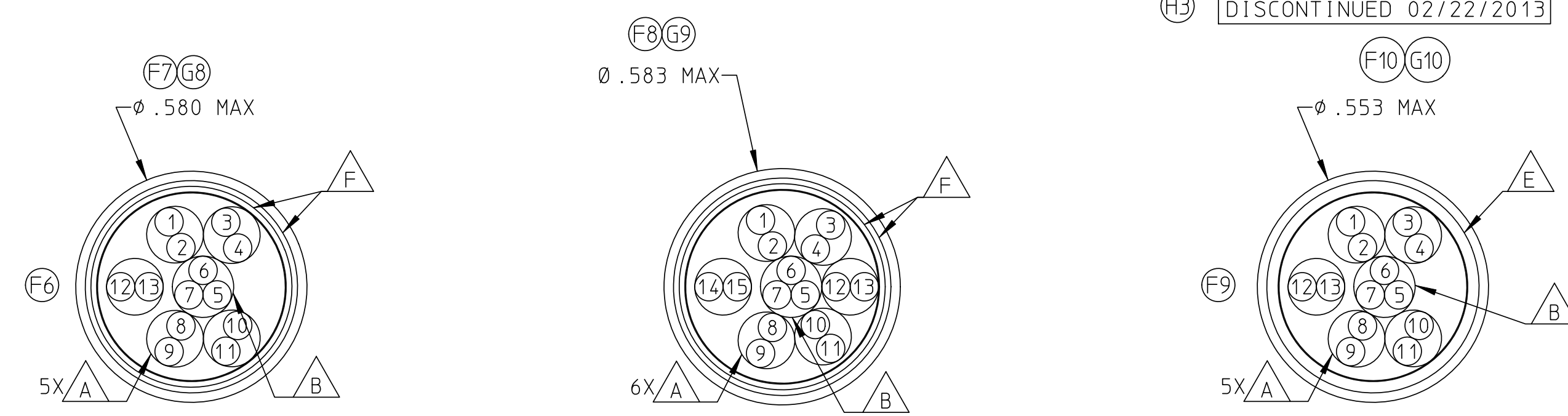
CABLE, 20GA, MULTI-CONDUCTOR,
 JUMPER, FBW, VENDOR 3

| | | | |
|-----------|--------------|-------------|------|
| SIZE | CAGE CODE | DRAWING NO. | REV. |
| D | 00060 | 24854 | J |
| SCALE 1:1 | SHEET 3 OF 5 | | |

NOTICE TO ALL PERSONS RECEIVING THIS DRAWING
 THIS DRAWING IS ONLY CONDITIONALLY ISSUED, AND NEITHER RECEIPT NOR POSSESSION THEREOF CONVEYS OR TRANSFERS ANY RIGHT IN, OR LICENSE TO USE THE SUBJECT MATTER OF THE DRAWING OR ANY DESIGN OR TECHNICAL INFORMATION THEREON, NOR ANY RIGHT TO REPRODUCE THIS DRAWING OR ANY PART THEREOF EXCEPT FOR MANUFACTURE BY VENDORS FOR HARCO LABORATORIES, INC. AND FOR MANUFACTURE UNDER THE CORPORATION'S WRITTEN LICENSE. NO RIGHT TO REPRODUCE THIS DRAWING IS GRANTED UNLESS BY WRITTEN AGREEMENT WITH OR WRITTEN PERMISSION FROM HARCO LABORATORIES, INC.

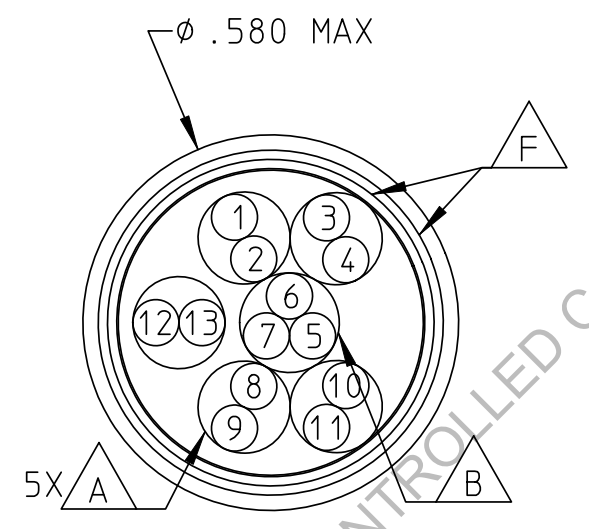


(E1) HARCO P/N 24854-007 TENSOLITE P/N 20444/1B004LT-2 2/C
 (E1) HARCO P/N 24854-008 TENSOLITE P/N 20444/1B004LT-4 4/C
 HARCO P/N 24854-009 TENSOLITE P/N 20444/1B004LT-7 7/C
 (E1) HARCO P/N 24854-010 TENSOLITE P/N 20444/1B004LT11 11/C



(E1) HARCO P/N 24854-011 TENSOLITE P/N 20444/1B004LT-13 (DBL) 13/C
 (E1) HARCO P/N 24854-012 TENSOLITE P/N 20444/1B004LT-15 15/C
 (H3) DISCONTINUED 02/22/2013
 (E1) HARCO P/N 24854-013 TENSOLITE P/N 20444/1B004LT-13 (SGL) 13/C

| WIRE NO. | HARCO TOP LEVEL | TENSOLITE |
|----------|-----------------|-----------|
| 1 | WHT | WHT |
| 2 | WHT/BLK | BLK |
| 3 | WHT/BRN | BRN |
| 4 | WHT/RED | RED |
| 5 | WHT/GRN | GRN |
| 6 | WHT/ORG | ORG |
| 7 | WHT/YEL | YEL |
| 8 | WHT/BLU | BLU |
| 9 | WHT/VIO | VIO |
| 10 | WHT/GRY | GRY |
| 11 | WHT/BLK/BRN | BLK/BRN |
| 12 | WHT/BLK/RED | BLK/RED |
| 13 | WHT/BLK/ORG | BLK/ORG |
| 14 | WHT/BLK/GRN | BLK/GRN |
| 15 | WHT/BLK/YEL | BLK/YEL |
| 16 | WHT/BLK/VIO | BLK/VIO |
| 17 | WHT/BLK/BLU | BLK/BLU |



(J2)(H1) HARCO P/N 24854-014 TENSOLITE P/N 20444/1D008LT-13 (DBL95) 13/C

| HARCO P/N | SOURCE OF SUPPLY | | MAX WEIGHT | MAX OD OVER JACKET | NOTES |
|-----------|-----------------------------|---------------|---------------|--------------------|--------------|
| | CARLISLE TENSOLITE PART NO. | SUPPLIER DATA | | | |
| 24854-000 | 20444/9E004LT-2 | | | | |
| 24854-001 | 20444/9E004LT-4 | | | | |
| 24854-002 | 20444/9E004LT-7 | | | | |
| 24854-003 | 20444/9E004LT-11 | | | | |
| 24854-004 | 20444/9E004LT-13 | | | | |
| 24854-005 | 20444/9E004LT-15 | | | | |
| 24854-006 | 20444/9E004LT-19 | | | | |
| 24854-007 | 20444/1B004LT-2 | | 52.5 LBS/MFT | .283* | |
| 24854-008 | 20444/1B004LT-4 | | 98.8 LBS/MFT | .430* | |
| 24854-009 | 20444/1B004LT-7 | | 123.1 LBS/MFT | .450* | |
| 24854-010 | 20444/1B004LT-11 | | 217.7 LBS/MFT | .563* | |
| 24854-011 | 20444/1B004LT-13 (DBL) | | 226.2 LBS/MFT | .580* | |
| 24854-012 | 20444/1B004LT-15 | | 241.7 LBS/MFT | .583* | |
| 24854-013 | 20444/1B004LT-13 (SGL) | | 192.0 LBS/MFT | .553* | DISCONTINUED |
| 24854-014 | 20444/1D008LT-13 (DBL95) | | 240.0 LBS/MFT | .580* | |

(E5) →
 (E5) →
 (H2)

NOTES:

1. CONDUCTOR: MATERIAL: NICKEL-COATED COPPER ALLOY (50 MICROINCHES MIN) SIZE:AWG 20
 COSTRUCTION: 19 X 32 OD(NOM): .0373" DC RESISTANCE (MAX): 11.4 OHMS/1,000FT.
 INSULATION: MATERIAL: EXTRUDED PTFE OD: .090" +/- .004
 CONCENTRICITY: 80% MIN @ PRIMARY EXTRUSION.

(A) COMPONENT #1 (TWISTED PAIR COMPONENT):
 CABLE TWO (2) INSULATED CONDUCTORS TOGETHER. LAY(NOM): 2 1/4" LHL
 (B) COMPONENT #2 (TWISTED TRIPLE COMPONENT)
 CABLE THREE(3) INSULATED CONDUCTORS TOGETHER. LAY(NOM): 2 1/2" LHL

(E2) OVERALL CABLE
 CABLE COMPONENTS ALONG WITH FIBERGLASS FILLERS AS NECESSARY FOR ROUNDNESS,
 AND TO MINIMIZE VISIBLE CONVOLUTIONS AND HIGH SPOTS.

(C) OVERALL JACKETS:
 1* LAYER: .004" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP
 2* LAYER: .003" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP
 3* LAYER: .003" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP
 4* LAYER: .003" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP

JACKET MARKING TO INCLUDE - VENDOR PART NUMBER, VENDOR CAGE CODE,
 VENDOR TRACCABILITY INFORMATION (WORKORDER, LOT#, DATE, ETC)

(D) BINDER: MATERIAL PTFE SKIVED TAPE OVERLAP: 10% (MIN)

(E) OVERALL SHIELDS: MATERIAL NICKEL-COATED COPPER (50 MICROINCHES MIN) CABLES WITH 1 SHIELD
 SHALL HAVE A COVERAGE OF NOT LESS THAN 90%. THE BRAID ANGLE SHALL BE 40°-50°

(H4)(E3)(F) CABLES WITH 2 SHIELDS SHALL NOT HAVE ANY SHIELD LESS THAN 80% COVERAGE, EXCEPT AS NOTED BELOW:
 HARCO P/N 24854-012 94% MIN COVERAGE.
 HARCO P/N 24854-014 94% MIN COVERAGE.

SEE CROSSSECTION VIEW FOR OD.(NOM) AND OD.(MAX), OD REF FOR DESIGNS NOT YET BUILT.

2. CABLES SUPPLIED TO THIS DRAWING CANNOT BE CHANGED WITHOUT PRIOR APPROVAL OF HARCO LABORATORIES, INC.

3. CABLES SUPPLIED TO THIS DRAWING SHALL BE CAPABLE OF NORMAL OPERATION AT ANY EXPOSURE TO TEMPERATURE
 LIMITS OF -75°C TO +90°C.

(G1) 4. REMOVED

(G1) 5. REMOVED

(J1)(H4)(G2)(E4)(KEY) 6. SHIELD PERFORMANCE:

| SHIELD PERFORMANCE TABLE | | | |
|--------------------------|-----------------------------|-------------------------|--------------------------------|
| HARCO P/N | CARLISLE TENSOLITE PART NO. | MAX TRANSFER INDUCTANCE | MAX TRANSFER SHIELD RESISTANCE |
| 24854-007 | 20444/1B004LT-2 | .500 nH/M | .0150 OHMS/METER |
| 24854-008 | 20444/1B004LT-4 | .500 nH/M | .0084 OHMS/METER |
| 24854-009 | 20444/1B004LT-7 | .500 nH/M | .0130 OHMS/METER |
| 24854-010 | 20444/1B004LT-11 | .500 nH/M | .0089 OHMS/METER |
| 24854-011 | 20444/1B004LT-13 (DBL) | .500 nH/M | .0052 OHMS/METER |
| 24854-012 | 20444/1B004LT-15 | .045 nH/M | .0038 OHMS/METER |
| 24854-014 | 20444/1D008LT-13 (DBL95) | .035 nH/M | .0037 OHMS/METER |

WHEN TESTED IN ACCORDANCE WITH AS-85485.

7. WEIGHT - SEE TABLE BELOW.

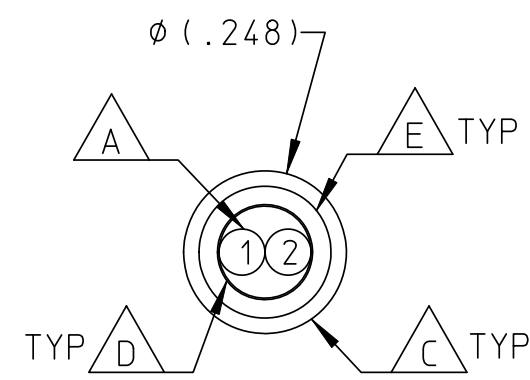
(F1) 8. WIRE COLOR CODING: WHITE BACKGROUND WITH COLOR STRIPE IS OPTIONAL. SOLID COLORS ARE ACCEPTABLE. i.e.
 WHT/ORG MAY BE ORANGE, WHT/GRN MAY BE GREEN

SOURCE CONTROL DRAWING

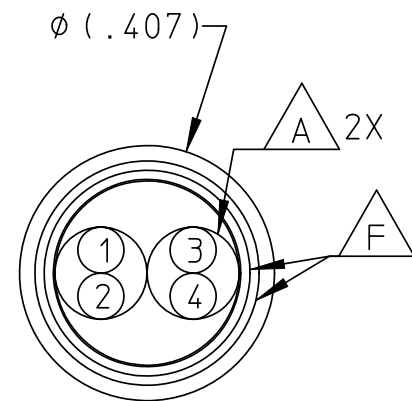
Laboratories, Inc.
 BRANFORD, CT 06405-0010
 CABLE, 20GA, MULTI-CONDUCTOR,
 JUMPER, FBW, VENDOR 2
 SIZE: D 00060 CAGE CODE: 24854 DRAWING NO: 24854 REV: J
 SCALE: 1:1 SHEET 4 OF 5

IDENTIFICATION OF THE SUGGESTED SOURCE OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A
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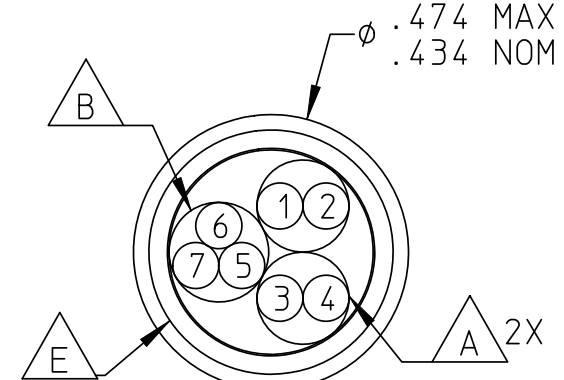
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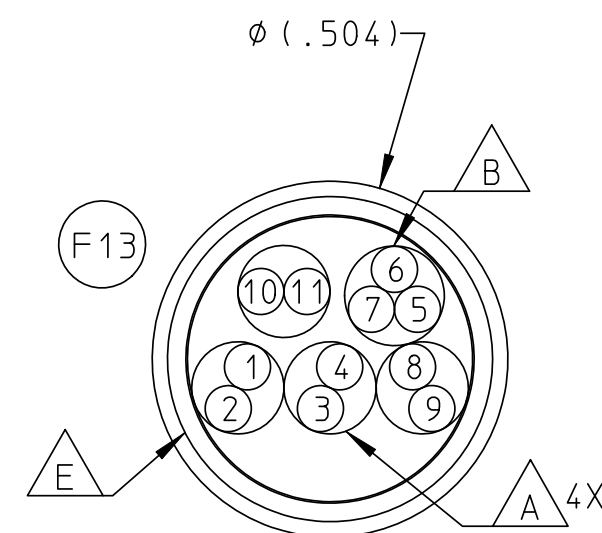
HARCO P/N 24854-007
 THERMAX P/N 1289-02



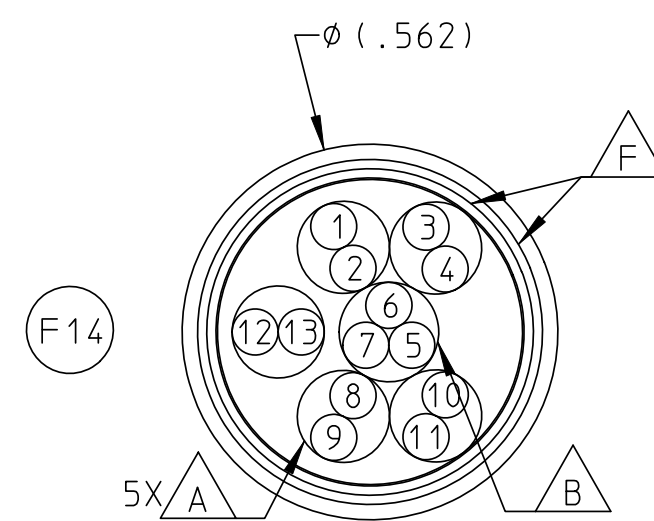
HARCO P/N 24854-008
 THERMAX P/N 1289-04



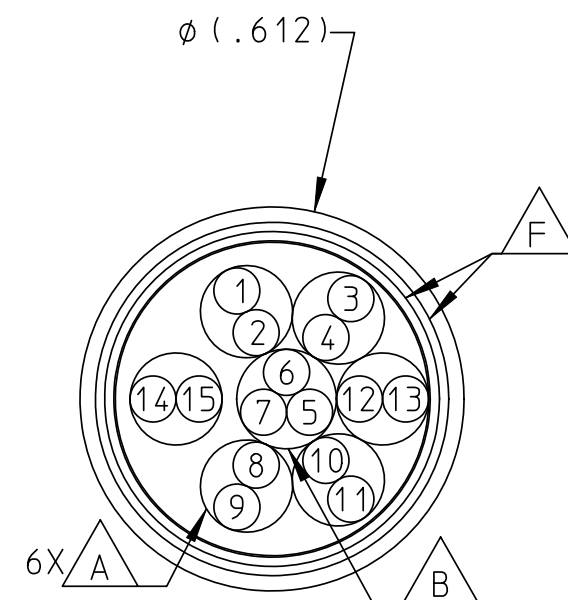
HARCO P/N 24854-009
 THERMAX P/N 1289-07



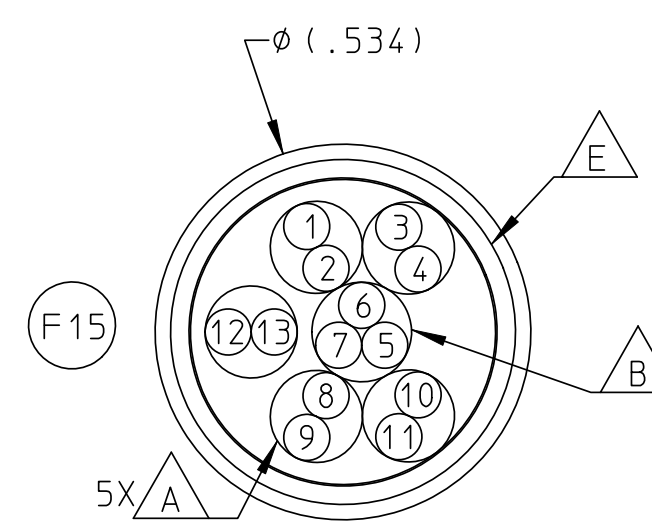
HARCO P/N 24854-010
 THERMAX P/N 1289-11



HARCO P/N 24854-011
 THERMAX P/N 1289-13D



HARCO P/N 24854-012
 THERMAX P/N 1289-15



HARCO P/N 24854-013
 THERMAX P/N 1289-13

| WIRE NO. | HARCO TOP LEVEL | THERMAX |
|----------|-----------------|---------|
| 1 | WHT | WHT |
| 2 | WHT/BLK | BLK |
| 3 | WHT/BRN | BRN |
| 4 | WHT/RED | RED |
| 5 | WHT/GRN | GRN |
| 6 | WHT/ORG | ORG |
| 7 | WHT/YEL | YEL |
| 8 | WHT/BLU | BLU |
| 9 | WHT/VIO | VIO |
| 10 | WHT/GRY | GRY |
| 11 | WHT/BLK/BRN | BLK/BRN |
| 12 | WHT/BLK/RED | BLK/RED |
| 13 | WHT/BLK/ORG | BLK/ORG |
| 14 | WHT/BLK/GRN | BLK/GRN |
| 15 | WHT/BLK/YEL | BLK/YEL |
| 16 | WHT/BLK/VIO | BLK/VIO |
| 17 | WHT/BLK/BLU | BLK/BLU |

NOTES:

1. CONDUCTOR: MATERIAL: NICKEL-COATED COPPER ALLOY (50 MICROINCHES MIN) SIZE:AWG 20
 COSTRUCTION: 19 X 32 OD(NOM): .0373" DC RESISTANCE (MAX): 11.4 OHMS/1,000FT.

INSULATION: MATERIAL: EXTRUDED PTFE OD: .090" +/- .004
 CONCENTRICITY: 80% MIN @ PRIMARY EXTRUSION.

A COMPONENT #1 (TWISTED PAIR COMPONENT):
 CABLE TWO (2) INSULATED CONDUCTORS TOGETHER. LAY(NOM): 2 1/4" LHL

B COMPONENT #2 (TWISTED TRIPLE COMPONENT)
 CABLE THREE(3) INSULATED CONDUCTORS TOGETHER. LAY(NOM): 2 1/2" LHL

OVERALL CABLE
 CABLE COMPONENTS ALONG WITH FIBERGLASS FILLERS AS NECESSARY FOR ROUNDNESS,
 AND TO MINIMIZE VISIBLE CONVOLUTIONS AND HIGH SPOTS.

C OVERALL JACKETS:

- 1* LAYER: .004" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP
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- 4* LAYER: .003" (NOM) PTFE TAPE; 50% MIN; 53% NOM OVERLAP

JACKET MARKING TO INCLUDE - VENDOR PART NUMBER, VENDOR CAGE CODE,
 VENDOR TRACABILITY INFORMATION (WORKORDER, LOT#, DATE, ETC)

D BINDER: MATERIAL PTFE SKIVED TAPE OVERLAP: 10% (MIN)

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F CABLES WITH 2 SHIELDS SHALL NOT HAVE ANY SHIELD LESS THAN 80% COVERAGE.

SEE CROSSSECTION VIEW FOR OD.(NOM) AND OD.(MAX), OD REF FOR DESIGNS NOT YET BUILT.

2. CABLES SUPPLIED TO THIS DRAWING CAN NOT BE CHANGED WITHOUT PRIOR APPROVAL OF HARCO LABORATORIES, INC.

3. CABLES SUPPLIED TO THIS DRAWING SHALL BE CAPABLE OF NORMAL OPERATION AT ANY EXPOSURE TO TEMPERATURE LIMITS OF -75°C TO +90°C.

G1 4. REMOVED

G1 5. REMOVED

G2 KEY 6. SHIELD PERFORMANCE: WHEN TESTED IN ACCORDANCE WITH AS-85485, THE TRANSFER IMPEDANCE SHALL BE LESS THAN 0.015 OHMS PER METER FROM DC TO 10 MHZ & LESS THAN .100 OHMS/M TO 100 MHZ FOR 24854-007 THROUGH 24854-013 TRANSFER RESISTANCE SHALL BE LESS THAN .015 OHMS PER METER. TRANSFER INDUCTANCE SHALL BE LESS THAN 3.0 nH PER METER FOR ALL MEASURED FREQUENCIES THROUGH 100 MHZ. TRANSFER IMPEDANCE PER METER SHALL BE LESS THAN (2 * PI() * FREQUENCY * 1 nH)/METER FOR ALL MEASURED FREQUENCIES FROM 10 MHZ THROUGH 100 MHZ.

7. WEIGHT - SEE TABLE BELOW.

F12 8. WIRE COLOR CODING: WHITE BACKGROUND WITH COLOR STRIPE IS OPTIONAL. SOLID COLORS ARE ACCEPTABLE. i.e. WHT/ORG MAY BE ORANGE. WHT/GRN MAY BE GREEN.

| SOURCE OF SUPPLY | | | |
|------------------|-------------|----------------|------------------------|
| SUPPLIER DATA | | | |
| HARCO P/N | THERMAX P/N | NOMINAL WEIGHT | NOMINAL OD OVER JACKET |
| 24854-007 | 1289-02 | 48 LBS/MFT | .248" |
| 24854-008 | 1289-04 | 85 LBS/MFT | .407" |
| 24854-009 | 1289-07 | 120 LBS/MFT | .434" |
| 24854-010 | 1289-11 | 166 LBS/MFT | .504" |
| 24854-011 | 1289-13D | 219 LBS/MFT | .562" |
| 24854-012 | 1289-15 | 247 LBS/MFT | .612" |
| 24854-013 | 1289-13 | 190 LBS/MFT | .534" |

IDENTIFICATION OF THE SUGGESTED SOURCE OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A
 GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

THIS DESIGN (.090" PRIMARY) BY THERMAX IS NOT YET APPROVED BY BOEING. HAS NOT PASSED FLEX & ROTATE QUALIFICATION.

SOURCE CONTROL DRAWING

Laboratories, Inc.
 BRANFORD, CT 06405-0010

TITLE: CABLE, 20GA, MULTI-CONDUCTOR, JUMPER, FBW, VENDOR 4

| | | | |
|------------|------------------|-------------------|--------|
| SIZE: D | CAGE CODE: 00060 | DRAWING NO: 24854 | REV: J |
| SCALE: 1:1 | | SHEET 5 OF 5 | |