

## SPECIFICATION CONTROL DRAWING

CONTACTS, ELECTRICAL CONNECTOR, SOCKET, SOLDER TACT®  
REMOVABLE, SHIELDED, SIZE 12, M39029/75 TYPE  
(FOR MIL-C-38999 SERIES I, III AND IV CONNECTORS)

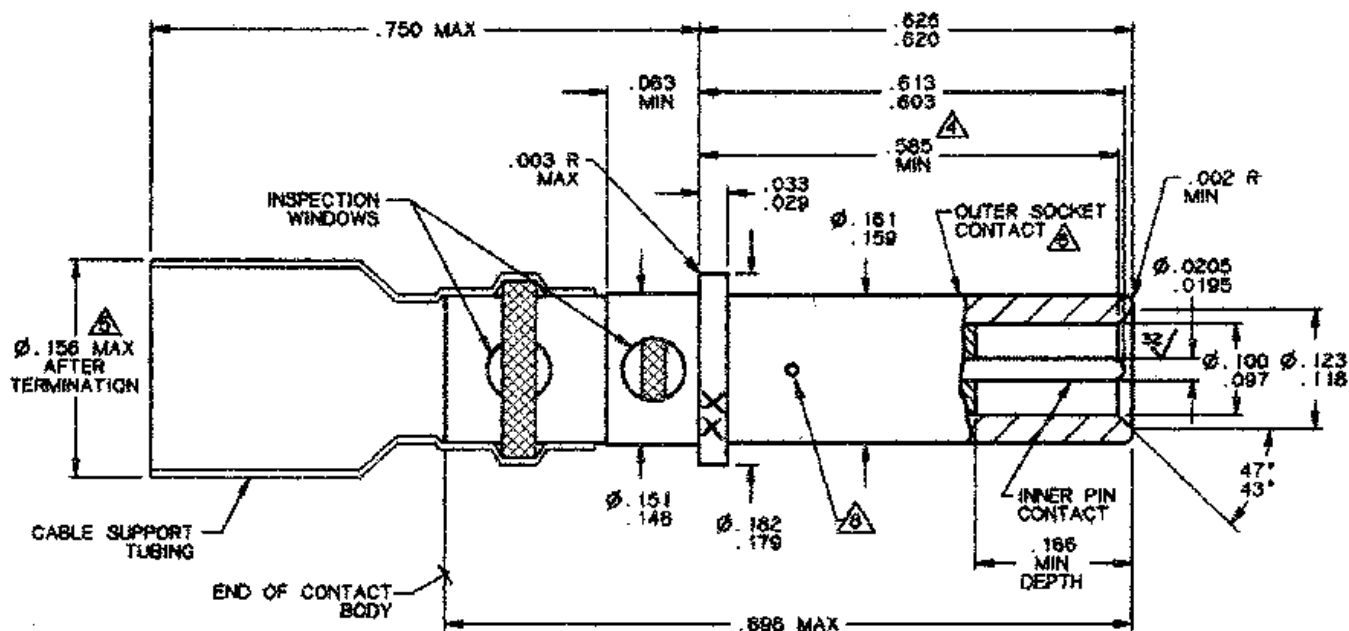


FIGURE 1.

1. DIMENSIONS ARE IN INCHES.
2. METRIC EQUIVALENTS CAN BE CALCULATED BASED UPON 1.00 INCH=25.4mm.
3. DIMENSIONS SHOWN APPLY AFTER PLATING.
4. POINT AT WHICH A SQUARE ENDED PIN OF THE SAME BASIC DIAMETER AS THE MATING CONTACT FIRST ENGAGES THE OUTER CONTACT SPRING. PROVISION FOR CLEARANCE HOLE SHALL BE PROVIDED.
5. SLEEVE RECOVERY: THE DIAMETER OF THE SHRINK TUBING OVER THE CABLE SHALL NOT EXCEED THE DIAMETER SHOWN.
6. MATES WITH .095/.093 DIA PIN
7. CONTACT WEIGHT: 1.441 GRAMS MAXIMUM UNTERMINATED.
8. THE FEATURES SHOWN ARE TWO HOLES REQUIRED TO ACCOMMODATE THE CONTACT MANUFACTURING PROCESS (REF).

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UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
METRIC DIMENSIONS ARE  
IN BRACKETS.

DECIMALS  
.XXX ± [ mm]  
.XX ± [ mm]  
ANGLES ±

PREPARED BY:

TJ

CAD NAME:

001461-1

CHECKED:

ZT

APPROVED:

CP

DOCUMENT NUMBER:

D-602-0145

DATE:

DATE:

DATE:

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# SPECIFICATION CONTROL DRAWING

## REQUIREMENTS:

DIMENSIONS (FIGURE 1), DESIGN CHARACTERISTICS, AND CONFIGURATIONS MEET THE REQUIREMENTS OF M39029/75 EXCEPT THAT THE TEMPERATURE RATING IS 125°C INSTEAD OF 200°C. TERMINATION IS BY SOLDERING INSTEAD OF CRIMPING. SEE TABLE 1 FOR CABLE ACCOMMODATIONS.

THIS CONTACT IS QUALIFIED TO RAYCHEM SPECIFICATION D-6002.

MATING CONTACT: D-602-0144 (M39029/28)

TOOLS: SEE TABLE II.

TABLE I. DESIGN CHARACTERISTICS

| CABLE ACCOMMODATED <sup>1/</sup>                                                                                                                                                                            | CONTACT CAVITY SIZE | TYPE | CLASS |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------|-------|
| M17/119 - RG 174<br>M17/094 - RG 179<br>M17/113 - RG 316<br>RAYCHEM 5024A1X*X<br>RAYCHEM 5026A1X*X<br>RAYCHEM 7528A1X*X<br>RAYCHEM 7530A1X*X<br>RAYCHEM 9530A1X*X<br>RAYCHEM 9530H1X*X<br>RAYCHEM 9532A1X*X | 12                  | D    | A     |

<sup>1/</sup> OTHER APPLICATIONS USING DIFFERENT CABLES MAY BE ACCOMMODATED. CONSULT CONTACT MANUFACTURER FOR DETAILS.

\* DESIGNATION CAN BE REPLACED WITH NUMBER 1 OR 2.

TABLE II. TOOLS

| HEATING TOOLS<br><sup>2/</sup> | REFLECTORS<br><sup>2/</sup>      | STANDARD FIXTURE <sup>2/</sup> |            | REPAIR FIXTURE<br><sup>2/</sup> | INSTALLING TOOLS                  | REMOVAL TOOLS                     |
|--------------------------------|----------------------------------|--------------------------------|------------|---------------------------------|-----------------------------------|-----------------------------------|
|                                |                                  | BASIC FIXTURE                  | ADAPTER    |                                 |                                   |                                   |
| AA-400<br>SUPER<br>HEATER      | #979663<br>MINI SOLDER<br>SLEEVE | AD-1319<br>OR<br>AD1567        | AT-1319-24 | AD-1566                         | M81969/8-09<br>OR<br>M81969/14-04 | M81969/8-10<br>OR<br>M81969/14-04 |
| CV-5300<br>MINI GUN            | MG-1<br>SOLDERSLEEVE             |                                |            |                                 |                                   |                                   |

<sup>2/</sup> SEE TERMINATION PROCEDURE: RAYCHEM ES-61206

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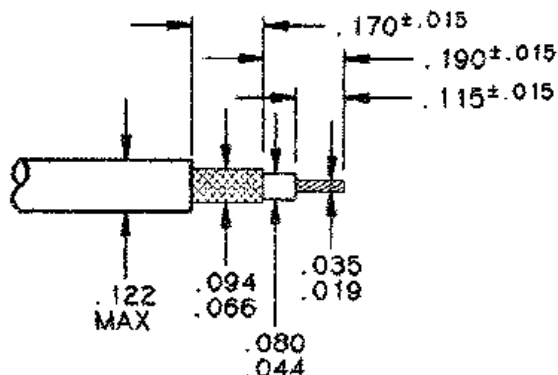
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## SPECIFICATION CONTROL DRAWING

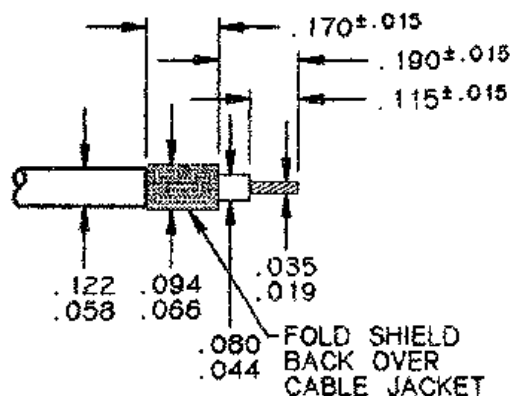
### ASSEMBLY INSTRUCTIONS

1. STRIP CABLE AS SHOWN ON FIGURE 2.
2. INSERT CABLE INTO CONTACT UNTIL IT IS FULLY SEATED.
3. HEAT CONTACT WITH APPROPRIATE TOOLS AS SHOWN ON TABLE II UNTIL SOLDER MELTS AND FLOWS AND STRAIN RELIEF TUBING CONFORMS TO CABLE.
4. SEE TABLE I FOR CABLE ACCOMMODATION.

### PREPARATION OF COAXIAL CABLE: 26 AWG AND LARGER CENTER CONDUCTOR

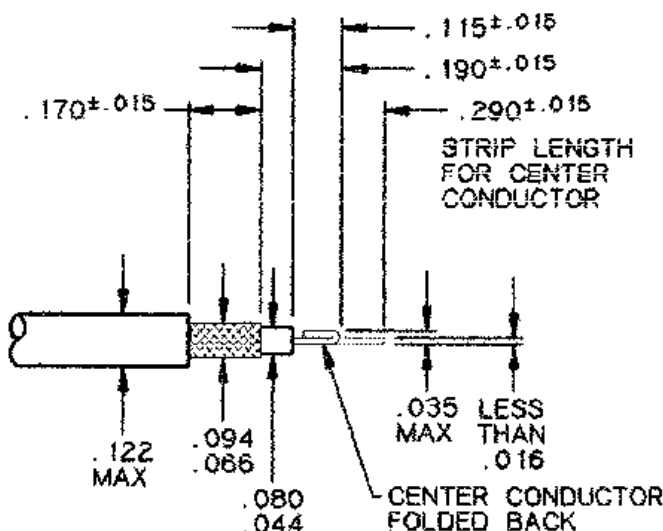


CABLE PREPARATION FOR  
STRAIGHT SHIELD

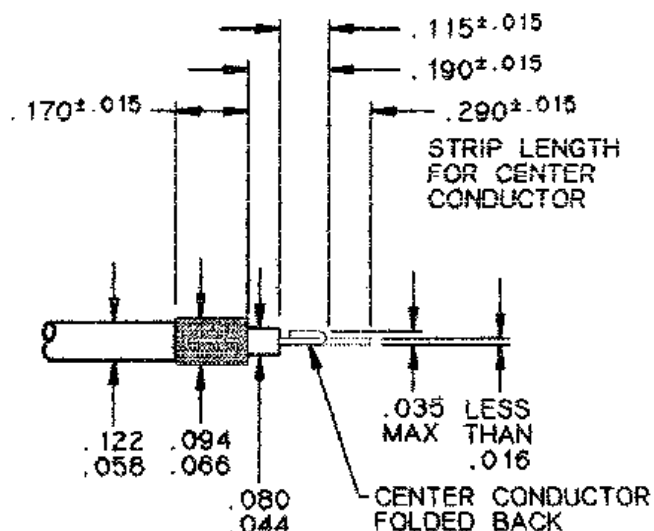


CABLE PREPARATION FOR  
FOLDBACK SHIELD

### PREPARATION OF COAXIAL CABLE: 28 AWG AND SMALLER CENTER CONDUCTOR



CABLE PREPARATION FOR  
STRAIGHT SHIELD  
FOLDBACK CENTER CONDUCTOR



CABLE PREPARATION FOR  
FOLDBACK SHIELD  
FOLDBACK CENTER CONDUCTOR

FIGURE 2.

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## SPECIFICATION CONTROL DRAWING

CONTACT ENGAGEMENT AND SEPARATION FORCES (OUTER SOCKET CONTACT ONLY): THE ENGAGEMENT DEPTH SHALL BE AS ENCOUNTERED IN NORMAL SERVICE. THE TEST PINS SHALL BE IN ACCORDANCE WITH MS3197 EXCEPT THE DIAMETERS SHALL BE AS SPECIFIED IN THE FOLLOWING. AND SURFACE ROUGHNESS SHALL NOT EXCEED 3 MICROINCHES. PROVISIONS FOR CLEARANCE HOLE SHALL BE PROVIDED.

TABLE III

| TEST PIN<br>DIAMETER<br>(INCH)                                 | MINIMUM SEPARATION<br>FORCE (OUNCES) |                       | MAXIMUM ENGAGEMENT<br>FORCE (OUNCES) |                       |
|----------------------------------------------------------------|--------------------------------------|-----------------------|--------------------------------------|-----------------------|
|                                                                | INITIAL                              | AFTER<br>CONDITIONING | INITIAL                              | AFTER<br>CONDITIONING |
| .0950 $\begin{smallmatrix} +.0002 \\ -.0000 \end{smallmatrix}$ | N/A                                  | N/A                   | 30.0                                 | 36.0                  |
| .0930 $\begin{smallmatrix} +.0000 \\ -.0002 \end{smallmatrix}$ | 3.0                                  | 2.5                   | N/A                                  | N/A                   |

DIELECTRIC WITHSTANDING VOLTAGE (APPLIED BETWEEN INNER AND OUTER CONTACT):  
TEST VOLTAGE:

AT SEA LEVEL: 1000 VAC. RMS.  
AT 50,000 FEET: 250 VAC. RMS.

CONTACT RESISTANCE: SEE TABLE IV

TABLE IV. CONTACT RESISTANCE

| TEST CABLE          | MAXIMUM VOLTAGE DROP (MILLIVOLTS)                                      |       |                                                                                  |       |                                                                         |       | TEST<br>CURRENT<br>(AMPS) |       |
|---------------------|------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------|-------|---------------------------|-------|
|                     | 25° $\begin{smallmatrix} +3^{\circ} \\ -0^{\circ} \end{smallmatrix}$ C |       | 25° $\begin{smallmatrix} +3^{\circ} \\ -0^{\circ} \end{smallmatrix}$ C <u>3/</u> |       | 125° $\begin{smallmatrix} +3^{\circ} \\ -0^{\circ} \end{smallmatrix}$ C |       |                           |       |
|                     | CONTACT                                                                |       | CONTACT                                                                          |       | CONTACT                                                                 |       | CONTACT                   |       |
|                     | INNER                                                                  | OUTER | INNER                                                                            | OUTER | INNER                                                                   | OUTER | INNER                     | OUTER |
| M17/119 - RG 174    | 110                                                                    | 54    | 132                                                                              | 65    | 165                                                                     | 81    | 2.0                       | 7.5   |
| M17/094 - RG 179    | 120                                                                    | 47    | 144                                                                              | 57    | 180                                                                     | 71    | 1.0                       | 7.5   |
| M17/113 - RG 316    | 110                                                                    | 47    | 132                                                                              | 57    | 165                                                                     | 71    | 2.0                       | 7.5   |
| RAYCHEM             |                                                                        |       |                                                                                  |       |                                                                         |       |                           |       |
| 5024A1311           | 60                                                                     | 47    | 72                                                                               | 57    | 90                                                                      | 71    | 3.0                       | 7.5   |
| 5024A1314           | 60                                                                     | 47    | 72                                                                               | 57    | 90                                                                      | 71    | 3.0                       | 7.5   |
| 5026A1311           | 55                                                                     | 54    | 66                                                                               | 65    | 83                                                                      | 81    | 2.0                       | 7.5   |
| 5026A1317 <u>4/</u> | 100                                                                    | 54    | 120                                                                              | 65    | 150                                                                     | 81    | 2.0                       | 7.5   |
| 7528A1114           | 90                                                                     | 47    | 108                                                                              | 57    | 135                                                                     | 71    | 1.5                       | 7.5   |
| 7530A1314           | 66                                                                     | 54    | 80                                                                               | 65    | 99                                                                      | 81    | 1.0                       | 7.5   |
| 9530A1314           | 66                                                                     | 47    | 80                                                                               | 57    | 99                                                                      | 71    | 1.0                       | 7.5   |
| 9530H1014           | 66                                                                     | 47    | 80                                                                               | 57    | 99                                                                      | 71    | 1.0                       | 7.5   |
| 9532A1314           | 55                                                                     | 69    | 66                                                                               | 83    | 83                                                                      | 104   | 0.5                       | 7.5   |

3/ AFTER CONDITIONING.

4/ CENTER CONDUCTOR PLATED STEEL

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## SPECIFICATION CONTROL DRAWING

LOW SIGNAL LEVEL CONTACT RESISTANCE (INNER CONTACT ONLY): SEE TABLE V.  
TENSILE STRENGTH (INNER AND OUTER CONTACT SOLDER JOINT): SEE TABLE V.

TABLE V. LOW SIGNAL LEVEL CONTACT RESISTANCE  
(INNER CONTACT ONLY) AND TENSILE STRENGTH

| TEST CABLE          | MAXIMUM CONTACT RESISTANCE (MILLIOHMS) |                    | MINIMUM TENSILE STRENGTH (POUNDS) |               |
|---------------------|----------------------------------------|--------------------|-----------------------------------|---------------|
|                     | INITIAL                                | AFTER CONDITIONING | INNER CONTACT                     | OUTER CONTACT |
| M17/113 - RG 174    | 62                                     | 75                 | 15.0                              | 15.0          |
| M17/094 - RG 179    | 120                                    | 144                | 3.5                               | 15.0          |
| M17/093 - RG 316    | 55                                     | 66                 | 10.0                              | 15.0          |
| <b>RAYCHEM</b>      |                                        |                    |                                   |               |
| 5024A1311           | 20                                     | 24                 | 6.0                               | 25.0          |
| 5024A1314           | 20                                     | 24                 | 6.0                               | 25.0          |
| 5026A1311           | 28                                     | 34                 | 6.0                               | 25.0          |
| 5026A1317 <u>4/</u> | 50                                     | 60                 | 6.0                               | 25.0          |
| 7526A1114           | 60                                     | 72                 | 6.0                               | 25.0          |
| 7530A1314           | 66                                     | 80                 | 3.5                               | 25.0          |
| 9530A1314           | 66                                     | 80                 | 3.5                               | 25.0          |
| 9530H1014           | 66                                     | 80                 | 3.5                               | 25.0          |
| 9432A1314           | 110                                    | 132                | 2.9                               | 15.0          |

4/ CENTER CONDUCTOR PLATED STEEL.

|           |                                                |                                                                                                                                                                                   |
|-----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MATERIAL: | CONTACT BODY                                   | BERYLLIUM COPPER, ALLOY 173, CONDITION H<br>PER ASTM B196                                                                                                                         |
|           | INNER CONTACT                                  | BERYLLIUM COPPER, ALLOY 173, CONDITION H<br>PER ASTM B196                                                                                                                         |
|           | PLATING<br>(CONTACT BODY AND<br>INNER CONTACT) | GOLD PLATE PER MIL-G-45204 TYPE II, GRADE C<br>50 MICROINCHES MINIMUM<br>OVER<br>NICKEL PER QQ-N-290A<br>50 MICROINCHES MINIMUM<br>OVER<br>COPPER STRIKE - 40 MICROINCHES MAXIMUM |
|           | SOLDER                                         | Sn63 PER QQ-S-571                                                                                                                                                                 |
|           | FLUX                                           | TYPE RMA PER QQ-S-571                                                                                                                                                             |
|           | SHRINK TUBING                                  | HEAT-SHRINKABLE, RADIATION-CROSSLINKED<br>POLYVINYLIDENE FLUORIDE                                                                                                                 |
|           | DIELECTRIC                                     | ETFE FLUOROPOLYMER PER ASTM D3159                                                                                                                                                 |

SHIPPING FIGURE 1 INDICATES THE ONE-PIECE ASSEMBLY. TERMINATION INSTRUCTIONS  
ARE TO BE SHIPPED WITH THE UNIT PACKAGE.

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