

# SPECIFICATION CONTROL DRAWING

CONTACTS, ELECTRICAL CONNECTOR, SOCKET  
 SOLDERCONTACT<sup>®</sup>, REMOVABLE, SHIELDED, SIZE 16, M39029/78 TYPE  
 (FOR MIL-C-38999 SERIES II AND MIL-C-24308 CONNECTORS)

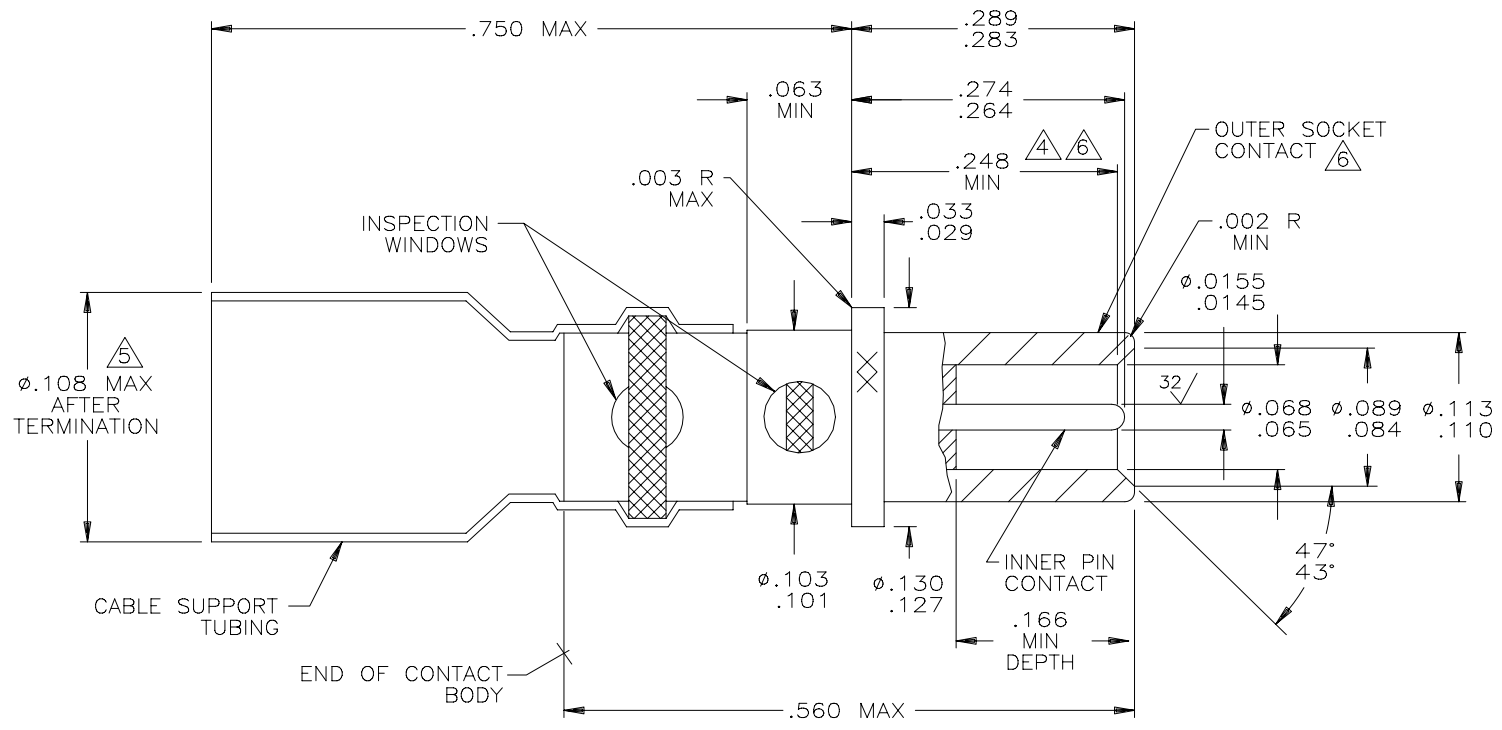


FIGURE 1.

1. DIMENSIONS ARE IN INCHES.
  2. METRIC EQUIVALENTS CAN BE CALCULATED BASED UPON 1.00 INCH=25.4 m.m.
  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 .0635/.0615 DIA PIN
7. CONTACT WEIGHT: 0.362 GRAMS MAXIMUM UNTERMINATED.

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

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

PREPARED BY: <i>TJ</i>	CAD NAME: <i>XX1434-1</i>	CHECKED: <i>ZT</i>	APPROVED:  DEV MGR.	DOCUMENT NUMBER: <i>D-602-0171</i>
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# SPECIFICATION CONTROL DRAWING

**REQUIREMENTS:**

DIMENSIONS (FIGURE 1), DESIGN CHARACTERISTICS, AND CONFIGURATION MEET THE REQUIREMENTS OF M39029/78 EXCEPT THAT THE TEMPERATURE RATING IS 125°C INSTEAD OF 200°C, TERMINATION IS BY SOLDERING INSTEAD OF CRIMPING. SEE TABLE I FOR CABLE ACCOMODATIONS.

THIS CONTACT IS QUALIFIED TO RAYCHEM SPECIFICATION D-6002.

MATING CONTACT: D-602-0140 (M39029/76)

TOOLS: SEE TABLE II.

TABLE I. DESIGN CHARACTERISTICS

CABLE ACCOMODATED <u>1/</u>	CONTACT CAVITY SIZE	TYPE	CLASS
M17/093 – RG 178 <u>2/</u> M17/094 – RG 179 M17/113 – RG 316 RAYCHEM 5026A1X*X RAYCHEM 5026D1X*X RAYCHEM 5028A1X*X RAYCHEM 5030A1X*X RAYCHEM 7528A1X*X RAYCHEM 7530A1X*X	16	D	A

1/ OTHER APPLICATIONS USING DIFFERENT CABLES MAY BE ACCOMODATED. CONSULT CONTACT MANUFACTURER FOR DETAILS.

2/ ADDITIONAL DIELECTRIC BARRIER IS REQUIRED. (RAYCHEM P/N D-600-0018 OR EQUIVALENT).

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

TABLE II. TOOLS

HEATING TOOLS <u>3/</u>	REFLECTORS <u>3/</u>	STANDARD FIXTURE <u>3/</u>		REPAIR FIXTURE <u>3/</u>	INSTALLING TOOLS	REMOVAL TOOLS
		BASIC FIXTURE	ADAPTER			
AA-400 SUPER HEATER	#979663 MINI SOLDER SLEEVE	AD-1319 OR AD1567	AT-1319-27	AD-1572	M81969/8-07 OR M81969/14-03	M81969/8-08 OR M81969/14-03
CV-5300 MINI GUN	MG-1 SOLDER SLEEVE					

3/ SEE TERMINATION PROCEDURE: RAYCHEM ES-61226

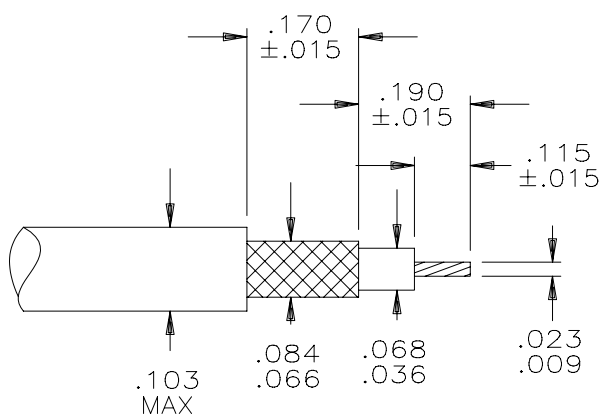
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# SPECIFICATION CONTROL DRAWING

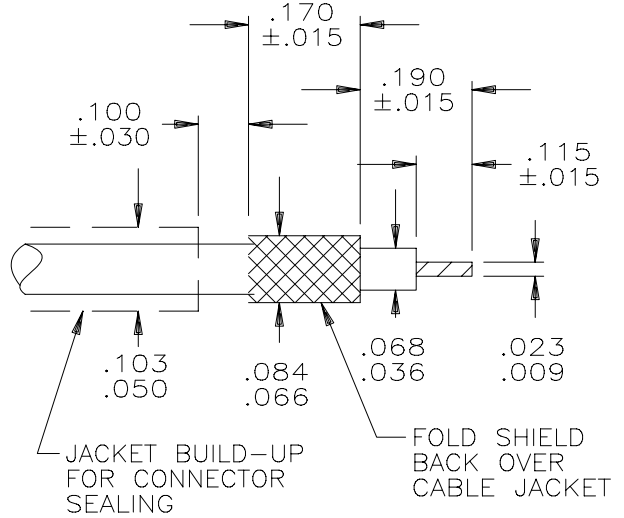
## ASSEMBLY INSTRUCTIONS

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 TABLES I FOR CABLE ACCOMMODATION.

### PREPARATION OF COAXIAL CABLE: 30 AWG AND LARGER CENTER CONDUCTOR

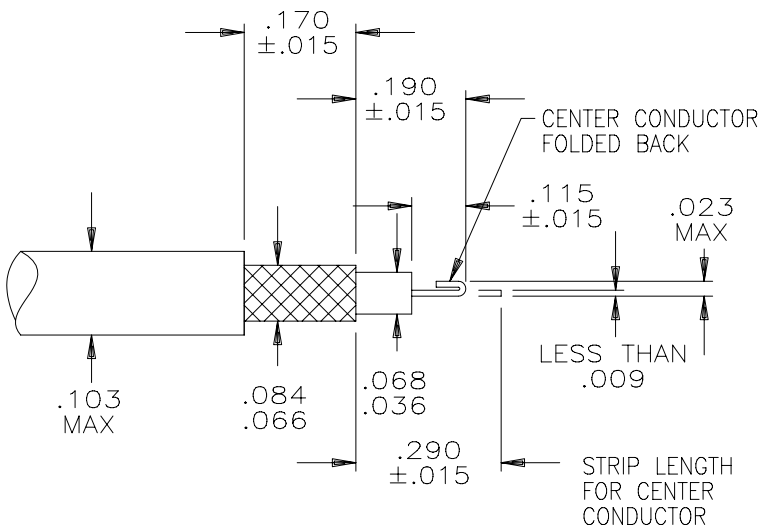


CABLE PREPARATION FOR  
STRAIGHT SHIELD

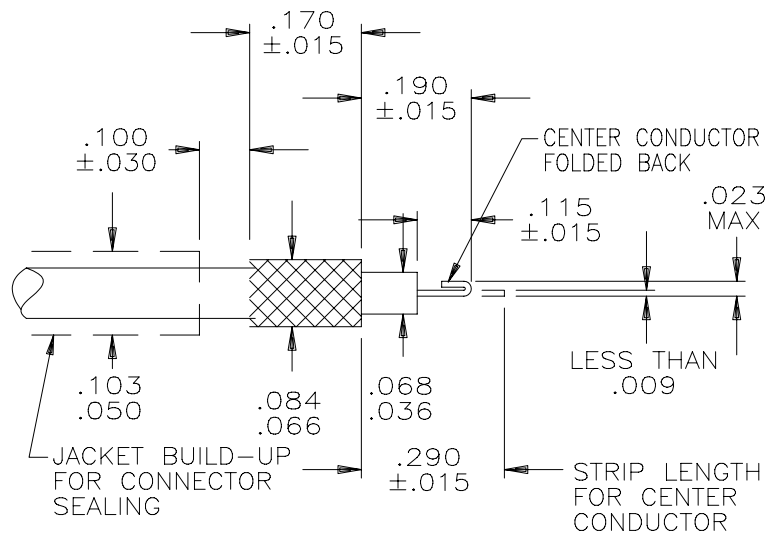


CABLE PREPARATION FOR  
FOLDBACK SHIELD

### PREPARATION OF COAXIAL CABLE: 32 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

## PREPARATION OF COAXIAL CABLE: RG-178B/U COAXIAL CABLE

1. STRIP THE RG-178B/U COAXIAL CABLE AS SHOWN.
2. SLIP THE D-600-0018 DIELECTRIC BARRIER BETWEEN THE SHIELD BRAID AND THE CABLE DIELECTRIC (FIGURE 3.)

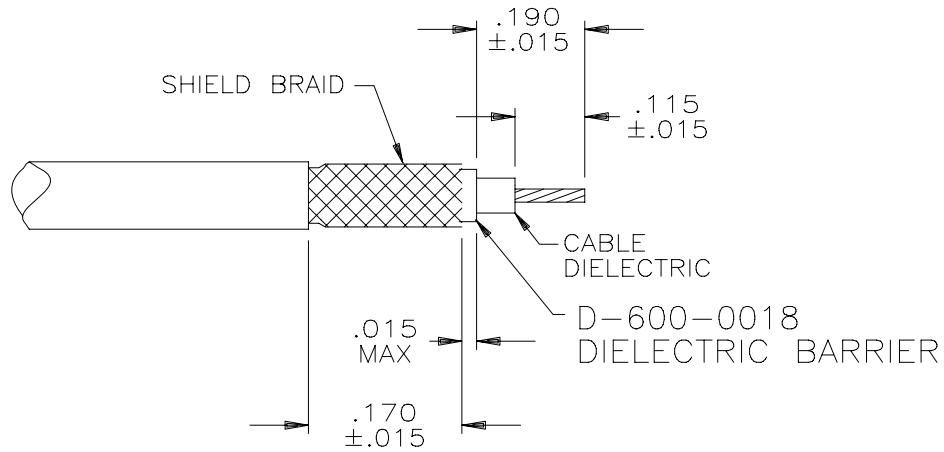


FIGURE 3.

## 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 DIAMETER (INCH)	MINIMUM SEPARATION FORCE (OUNCES)		MAXIMUM ENGAGEMENT FORCE (OUNCES)	
	INITIAL	AFTER CONDITIONING	INITIAL	AFTER CONDITIONING
.0635 $\begin{matrix} +.0002 \\ -.0000 \end{matrix}$	N/A	N/A	30.0	36.0
.0615 $\begin{matrix} +.0000 \\ -.0002 \end{matrix}$	2.0	1.5	N/A	N/A

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

AT SEA LEVEL:            800 VAC. RMS.  
AT 50,000 FEET:        250 VAC. RMS.

CONTACT RESISTANCE: SEE TABLE IV.

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TABLE IV. CONTACT RESISTANCE

TEST CABLE	MAXIMUM VOLTAGE DROP (MILLIVOLTS)						TEST CURRENT (AMPS)	
	$25^{\circ} \begin{matrix} +3^{\circ} \\ -0^{\circ} \end{matrix} C$		$25^{\circ} \begin{matrix} +3^{\circ} \\ -0^{\circ} \end{matrix} C$ <sub>4/</sub>		$125^{\circ} \begin{matrix} +3^{\circ} \\ -0^{\circ} \end{matrix} C$			
	CONTACT		CONTACT		CONTACT		CONTACT	
	INNER	OUTER	INNER	OUTER	INNER	OUTER	INNER	OUTER
M17/093 – RG 178	120	69	144	83	180	104	1.0	7.5
M17/094 – RG 179	120	44	144	53	180	66	1.0	7.5
M17/113 – RG 316	110	47	132	57	165	71	2.0	7.5
<u>RAYCHEM</u>								
5026A1311	55	54	66	65	83	81	2.0	7.5
5026D1028 <sub>5/</sub>	115	54	138	65	172	81	2.0	7.5
5028A1114	65	69	78	83	98	104	1.5	7.5
5030A1114	60	110	72	132	90	165	1.0	7.5
7528A1317 <sub>5/</sub>	135	47	162	57	203	71	1.5	7.5
7530A1118 <sub>5/</sub>	120	54	144	65	180	81	1.0	7.5

4/ AFTER CONDITIONING.

5/ 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
M17/093 - RG 178	120	144	3.5	10.0
M17/094 - RG 179	120	144	3.5	15.0
M17/113 - RG 316	55	66	10.0	15.0
<u>RAYCHEM</u>				
5026A1311	33	40	6.0	15.0
5026D1028 <u>5/</u>	58	70	6.0	15.0
5028A1114	45	54	6.0	15.0
5030A1114	66	80	3.5	10.0
7528A1317 <u>5/</u>	93	112	6.0	15.0
7530A1118 <u>5/</u>	120	144	3.5	15.0

5/ CENTER CONDUCTOR PLATED STEEL.

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