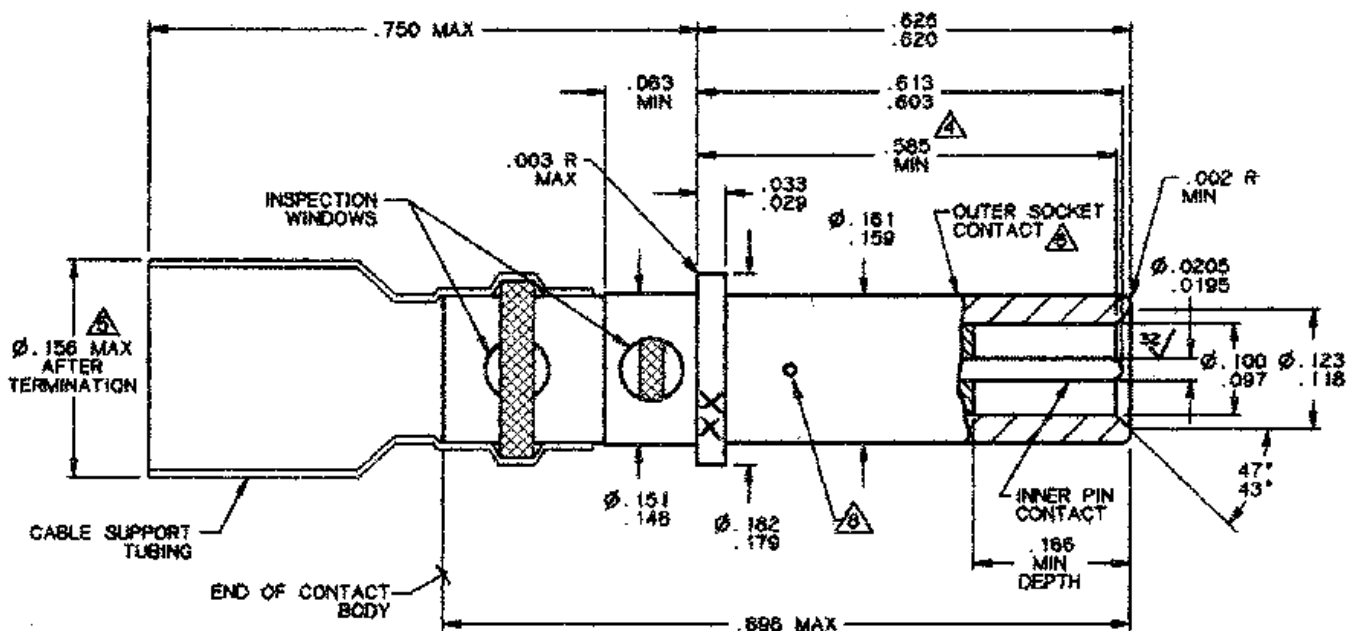


# SPECIFICATION CONTROL DRAWING

**CONTACTS, ELECTRICAL CONNECTOR, SOCKET, SOLDER TACT<sup>®</sup>**  
**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 ±

USERS OF RAYCHEM PRODUCTS SHOULD MAKE THEIR OWN EVALUATION TO DETERMINE THE SUITABILITY OF EACH SUCH PRODUCT FOR THE SPECIFIC APPLICATION.

PREPARED BY: <b>TJ</b>	CAD NAME: <b>001461-1</b>	CHECKED: <b>ZT</b>	APPROVED: <b>CP</b>	DOCUMENT NUMBER: <b>D-602-0145</b>
DATE:		DATE:	DATE:	SHEET 1 OF 5

# 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 I 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 ACCOMODATED <u>1/</u>	CONTACT CAVITY SIZE	TYPE	CLASS
M17/119 - RG 174 M17/084 - RG 179 M17/113 - RG 316 RAYCHEM 5024A1X*X RAYCHEM 5026A1X*X RAYCHEM 7528A1X*X RAYCHEM 7530A1X*X RAYCHEM 9530A1X*X RAYCHEM 9530H1X*X RAYCHEM 9532A1X*X	12	D	A

1/ 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 <u>2/</u>	REFLECTORS <u>2/</u>	STANDARD FIXTURE <u>2/</u>		REPAIR FIXTURE <u>2/</u>	INSTALLING TOOLS	REMOVAL TOOLS
		BASIC FIXTURE	ADAPTER			
AA-400 SUPER HEATER	#979863 MINI SOLDER SLEEVE	AD-1319 OR AD1567	AT-1319-24	AD-1568	M81969/8-09 OR M81969/14-04	M81969/8-10 OR M81969/14-04
CV-5300 MINI GUN	MG-1 SOLDERSLEEVE					

2/ SEE TERMINATION PROCEDURE: RAYCHEM ES-61206

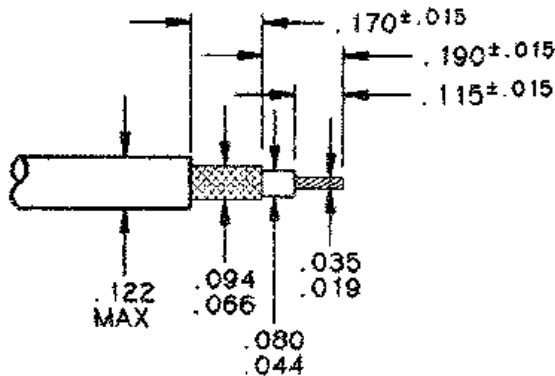
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# SPECIFICATION CONTROL DRAWING

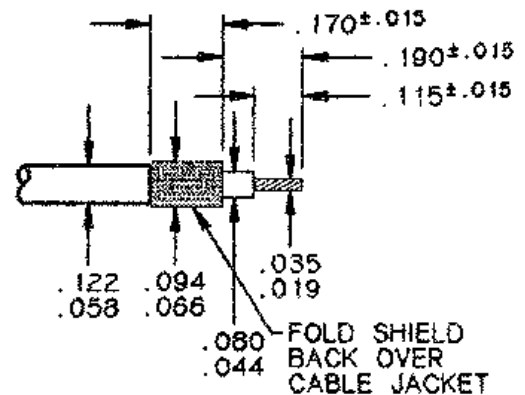
## ASSEMBLY INSTRUCTIONS

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

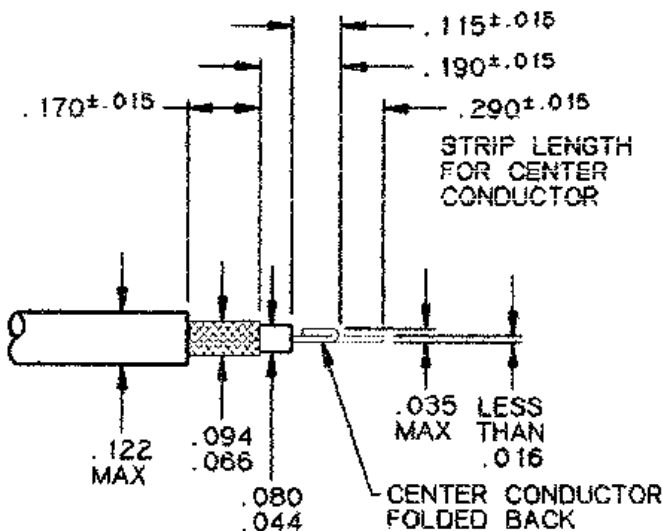


**CABLE PREPARATION FOR STRAIGHT SHIELD**

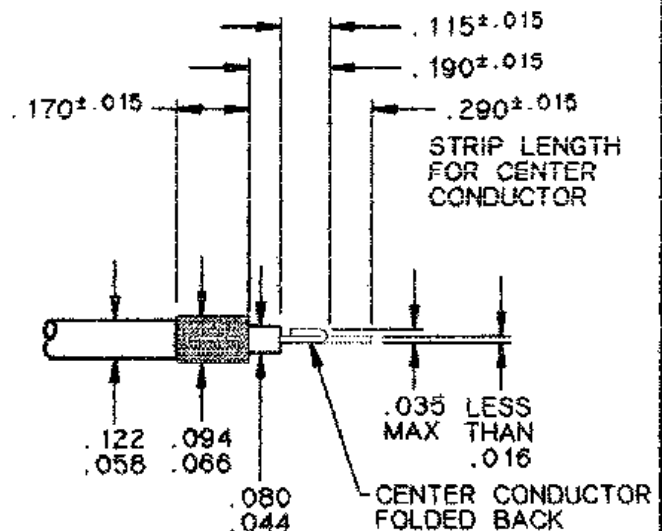


**CABLE PREPARATION FOR FOLDBACK SHIELD**

### 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 DIAMETER (INCH)	MINIMUM SEPARATION FORCE (OUNCES)		MAXIMUM ENGAGEMENT FORCE (OUNCES)	
	INITIAL	AFTER CONDITIONING	INITIAL	AFTER CONDITIONING
.0950 $\begin{matrix} +.0002 \\ -.0000 \end{matrix}$	N/A	N/A	30.0	36.0
.0930 $\begin{matrix} +.0000 \\ -.0002 \end{matrix}$	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 CURRENT (AMPS)	
	25° $\begin{matrix} +3° \\ -0° \end{matrix}$ C		25° $\begin{matrix} +3° \\ -0° \end{matrix}$ C <sub>3/</sub>		125° $\begin{matrix} +3° \\ -0° \end{matrix}$ 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 <sub>4/</sub>	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 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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CAD NAME: 001461-5	SHEET 5 OF 5



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