tycoElectronics

Raychem
Products

Tyco Electronics Corporation 305 Constitution Drive Menlo Park, CA 94025 U.S.A. FSCM 06090 REVISION:

ECN#: T-15710 APPROVED:

DATE:

SPECIFICATION CONTROL DRAWING

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

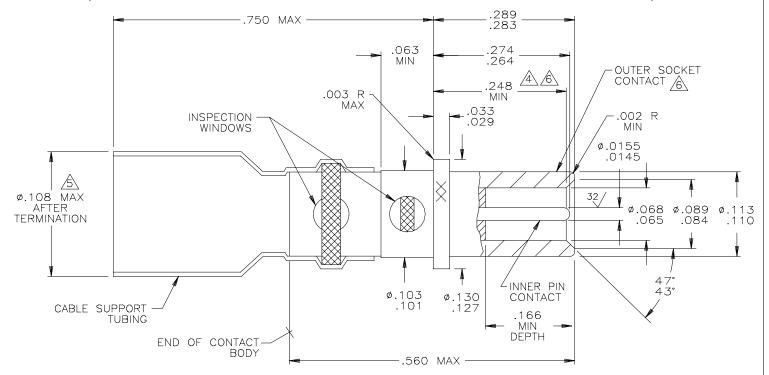


FIGURE 1.

- 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.

POINT AT WHICH A SQUARE ENDED PIN OF THE SAME BASIC DIAMETER AS THE MATING CONTACT FIRST ENGAGES THE OUTER CONTACT SPRING. PROVISION FOR CLEARENCE HOLE SHALL BE PROVIDED.

riangle sleeve recovery: the diameter of the shrink tubing over the cable shall not exceed the diameter shown.

⚠ MATES WITH .0635/.0615 DIA PIN

7. CONTACT WEIGHT: 0.362 GRAMS MAXIMUM UNTERMINATED.

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NOTICE: THE INFORMATION GIVEN HEREIN IS BELIEVED TO BE RELIABLE, HOWEVER, RAYCHEM MAKES NO WARRANTIES AS TO ITS ACCURACY OR COMPLETENESS AND DISCLAIMS ANY LIABILITY IN CONNECTION WITH ITS USE. RAYCHEM'S OBLIGATIONS SHALL BE ONLY AS SET FORTH IN RAYCHEM'S STANDARD TERMS AND CONDITIONS OF SALE FOR THIS PRODUCT AND IN NO CASE WILL RAYCHEM BE LIABLE FOR ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE SALE, RESALE, USE OR MISUSE OF THE PRODUCT.

USERS OF RAYCHEM PRODUCTS SHOULD MAKE THEIR OWN EVALUATION TO DETERMINE .XXX ANGLES

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

DECIMALS

.XXX ± [mm]

.XX ± [mm]

ANGLES ±

PREPARED BY: CAD NAME: CHECKED: APPROVED: DOCUMENT NUMBER:

7J ZT DEV MGR. D-602-0171

DATE: 8/20/85 DATE: SHEET 1 of 6



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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 1/	CONTACT CAVITY SIZE	TYPE	CLASS
M17/093 - RG 178 2/ 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	Α

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

TABLE II. TOOLS

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

3/ SEE TERMINATION PROCEDURE: RAYCHEM ES-61226

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

^{*} DESIGNATION CAN BE REPLACED WITH NUMBER 1 OR 2.

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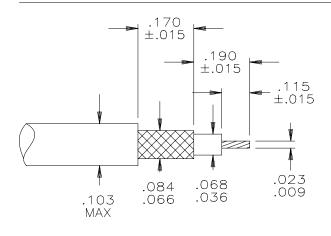
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SPECIFICATION CONTROL DRAWING ASSEMBLY INSTRUCTIONS

- 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 TABLES I FOR CABLE ACCOMMODATION.

preparation of coaxial cable: 30 awg and larger center conductor

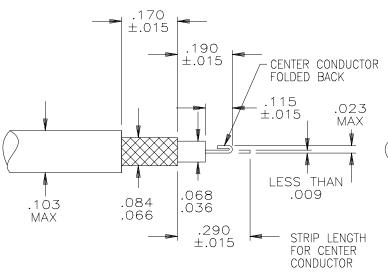


.170 ±.015 190 $\pm .015$.100 $\pm .030$.115 $\pm .015$.068 .023 .103 .084 .036 .009 .050 .066 FOLD SHIELD JACKET BUILD-UP BACK OVER CABLE JACKET FOR CONNECTOR SEALING

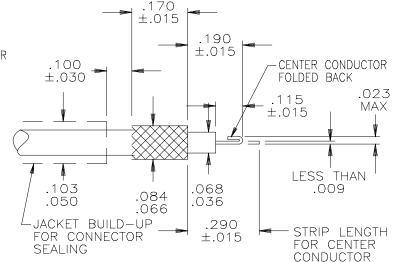
CABLE PREPARATION FOR STRAIGHT SHIELD

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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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.)

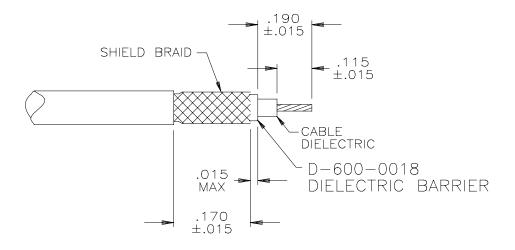


FIGURE 3.



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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	MINIMUM SE FORCE (C		MAXIMUM ENGAGEMENT FORCE (OUNCES)		
DIAMETER (INCH)	INITIAL	AFTER CONDITIONING	INITIAL	AFTER CONDITIONING	
.0635 +.0002 0000	N/A	N/A	30.0	36.0	
.0615 +.0000 0002	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

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

⁴ AFTER CONDITIONING.

5/ CENTER CONDUCTOR PLATED STEEL

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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 RESISTANCE		MINIMUM TENSILE STRENGTH (POUNDS)		
	INITIAL	AFTER CONDITIONING	INNER CONTACT	OUTER CONTACT	
M17/093 - RG 178 M17/094 - RG 179 M17/113 - RG 316	120 120 55	144 144 66	3.5 3.5 10.0	10.0 15.0 15.0	
RAYCHEM 5026A1311 5026D1028 5/ 5028A1114 5030A1114 7528A1317 5/ 7530A1118 5/	33 58 45 66 93 120	40 70 54 80 112 144	6.0 6.0 6.0 3.5 6.0 3.5	15.0 15.0 15.0 10.0 15.0 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

GOLD PLATE PER MIL-G-45204 TYPE II, GRADE C

(CONTACT BODY AND 50 MICROINCHES MINIMUM

INNER CONTACT) 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

FIGURE 1 INDICATES THE ONE-PIECE ASSEMBLY. TERMINATION INSTRUCTIONS

ETFE FLUOROPOLYMER PER ASTM D3159 DIELECTRIC

SHIPPING

ARE TO BE SHIPPED WITH THE UNIT PACKAGE.

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