ASSEMBLY INSTRUCTIONS FOR 518 SERIES MINIATURE CYLINDRICAL CONNECTORS INCORPORATING REAR RELEASE CRIMP CONTACTS

Amphenol® 518 Series Miniature Cylindrical Connectors are qualified to MIL-C-83723, Series III. This series utilizes a non-metallic (polymer) molded one-piece contact retention disc and rear release crimp contacts in sizes 12, 16 and 20. This publication contains information for proper crimping, insertion and removal of crimp contacts in 518 Series connectors, as well as applicable tool information.

SECTION I: INSTALLATION

1. Wire Preparation

Strip wires to length shown in Table I. Do not cut or nick wire strands. Twist wire strands back to their original lay.

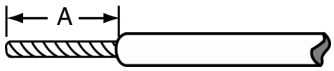

Table I

Contact Size	Wire Size	Insulation O.D.	Stripping Length A
20	20-22-24 AWG	.040 / .083 in.	.140 / .202 in.
16	20-18-16 AWG	.053 / .103 in.	.218 / .280 in.
12	14-12 AWG	.099 / .158 in.	.218 / .280 in.

2. Crimping Wire to Contacts

a. Insert the stripped end of wire into the contact wire-well and apply slight pressure until it is positively bottomed. Visually check to assure that wire strands are visible in the inspection hole provided in the wire-well.

b. Fully seat contact in crimping tool. M22520/1-01 Tool with M22520/1-02 Turret Head is recommended. See Table II to select the proper crimp indentor setting for the contact and wire being crimped.

c. Crimp in one full stroke. (The ratchet will not release jaws until tool has completed stoke).

d. Inspect crimp for wire visibility through inspection hole.

3. Inserting Contacts

a. Using Table III, determine the appropriate tool for contact insertion.

b. If a wire support is to be used, thread all wires through it in the proper direction.

c. Hold the colored half of the appropriate insertion/removal tool between the thumb and forefinger and lay the wire to be inserted along the slot, leaving about 1/2 in. of wire protruding.

d. Then snap the wire into the tool. Pull the wire back through the tool until the tip of tool seats against the contact shoulder.

e. Slowly push the contact straight into the cavity until positive resistance is felt. Contact is fully seated. Release wire and pull out the tool. Check for retention by pulling gently on wire.

SECTION II: REMOVAL/REPLACEMENT OF CONTACTS

1. Removing Contacts for Replacement

a. Loosen all rear accessories and unscrew them from the connector shell. Slide all parts back along the wires.

b. Determine the appropriate removal tool from Table III. Snap white end of appropriate insertion/removal tool over the wire of the contact to be removed. Slide tool along the wire into the insert cavity until it engages the contact rear and a positive resistance is felt. At this time, the contact retaining clip is in the unlocked position.

c. Press the wire of the contact to be removed against the serrations of the plastic tool and pull both the tool and the contact-wire assembly out of the connector.

d. To replace contacts follow the procedure given in Section I, “Installation”.

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Table II
Contact Crimping Tool M22520/1-01
with M22520/1-02 Turret Head

Contact Size	Wire Gage	Crimp Jaw Setting
20	24	2
	22	3
	20	4
16	20	4
	18	5
	16	6
12	14	7
	12	8

Table III
Insertion/Removal Tools

Military Part Number	Amphenol Part Number
MS81969/14-11	10-538988-20
MS81969/14-03	10-538988-16
MS81969/14-04	10-538988-12

SECTION III: PANEL MOUNTING & MATING
518 SERIES CONNECTORS

1. Mounting

a. Two receptacle shell styles are available for panel mounting. See the applicable MS drawing for mounting hole dimensions. One shell style has a square flange and is fastened to the panel with four size 4-40 machine screws. (Except 24 size shell is fastened with 6-32 machine screws). The second shell style mounts into a “D” hole panel cutout and is fastened to the panel with a jam nut torqued to the following values.

b. Recommended Minimum Torque for Jam Nut

Shell Size	8	10	12	14	16	18	20	22	24
Torque (Inch/lbs.)	33	36	60	65	73	82	106	123	133

2. Mating

a. Threaded Coupling – Bring connectors together so the polarizing keys fall into the proper keyways. Turn coupling ring until connector halves bottom metal to metal and visual indicator ring is covered. The connectors are then fully mated.

b. Bayonet Coupling – Polarize plug and receptacle as for threaded pair, then rotate coupling ring clockwise so the receptacle rivets engage the inner grooves of coupling ring. Continue rotation until rivets snap into detent and full mating indicators align. The connectors are then fully mated.

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