

†All housings are white colored, flame retardant, 94V-0, nylon material. Applications are not for interrupting current.

Figure 1

**1. INTRODUCTION**

This instruction sheet provides assembly and disassembly procedures for the Universal MATE-N-LOK II housing kits listed in Figure 1. Read instructions thoroughly before assembly.

**NOTE** All dimensions are in millimeters [with inch equivalents in brackets].

Reasons for reissue of this sheet are provided in Section 10, REVISION SUMMARY.

**2. DESCRIPTION**

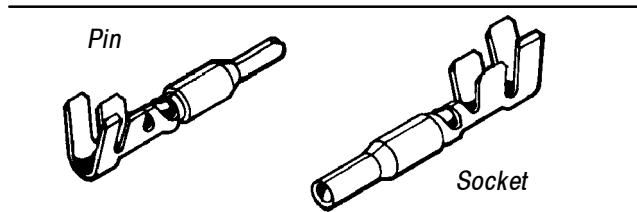
A mated assembly consists of a plug and a cap connector. Each connector includes a front and a rear housing section that latch together to protect the enclosed pin and socket contacts.

These connectors are intermateable with conventional Universal MATE-N-LOK connectors and headers, so long as both connectors have an identical number of circuit positions and housing configuration (matrix vs in-line), with a pin contact mating to a socket contact.

**3. CONTACTS**

**3.1. Selection**

Select appropriate pin and socket contacts to be used; refer to Figure 2 to identify the recommended contact. Grounding pin contacts (slightly longer than standard pin contacts) are designed for a mate first, break last grounding application.



WIRE SIZE (AWG)	CONTACT		
	TYPE	LOOSE	STRIP
30-26	PIN	770512	770011
	SKT	770416	770012
24-18	PIN	770252	770009
	SKT	770253	770010
20-14	PIN	770250	770007
	PIN●	770254	770193
	SKT	770251	770008
	PIN	770248	770005
	PIN●	770255	770194
	SKT	770249	770006
12-10	PIN	770246	770003
	SKT	770247	770004

- Grounding Pin
- Refer to catalog 82181 for catalog for contact material and plating specifications.

Figure 2

### 3.2. Crimping

Follow termination procedures shown in Application Specification 114-1043.

Strip form contacts are designed to be crimped with a miniature applicator in a semi-automatic or automatic machine.

Loose piece contacts are designed to be crimped with a hand crimping tool.

An insertion tool is generally NOT required for inserting contacts into the rear housing section. However, Insertion Tool 91002-1 is available for inserting contacts crimped to small wire sizes.

To insert a contact, grasp wire insulation (directly behind contact), and align contact with the desired circuit cavity at the BACK of the rear housing section. Push contact into cavity using a quarter twist motion, forcing the retention cones open. Continue to push until the cone re-closes behind the contact retention shoulder. See Figure 4.

## 4. ASSEMBLY PROCEDURES

### 4.1. Front And Rear Housings

For small wire, the contacts may be inserted with front and rear sections unassembled to prevent wire buckling.

For large wire or wire bundles, engage the rear section latch to its pre-stage position with the front section. See Figure 3. To do so, insert latches into front section latch shrouds until the initial lock is executed (there will be a single audible click for each latch). Pull back to ensure proper engagement and to prevent any deformation of the locking mechanism. Note that the width difference between the locking latches provides positive polarization.

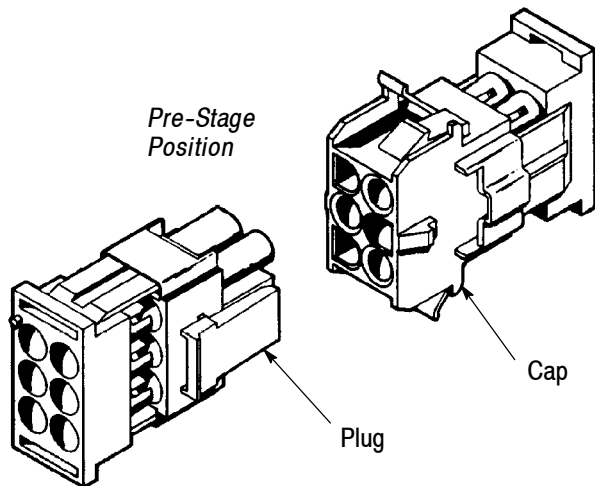


Figure 3

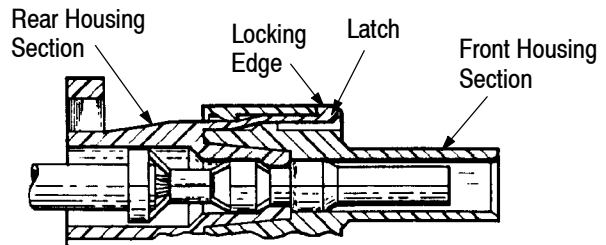
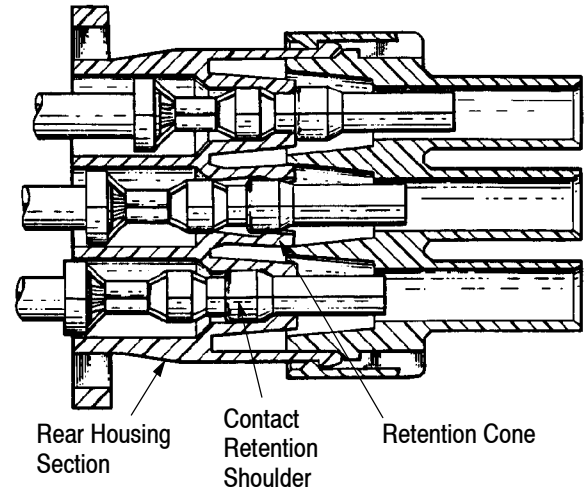


Figure 4

When all necessary contacts have been inserted, complete assembly of the connector by placing the thumbs behind the strain relief mounting ears and the index fingers against the mating face and squeezing the front and rear housing sections together. Afterwards, an additional squeeze across the latch shrouds will help the latches fully engage behind the locking edges.

### 4.2. Contact Insertion

Crimped pin and socket contacts may be inserted into either the plug or cap rear housing section, or they may be intermixed in each rear housing to provide multiple keying combinations. Both the plug and cap rear housing sections have individually numbered circuit identification plus an identification rib or button indicating the number one circuit location.

Visually inspect that latches have fully engaged behind locking edges and all contact insulation barrels are in housing. There will be little or no gap between front and rear housing sections when fully assembled.

**NOTE**

*The front and rear housing sections cannot be fully locked if any contact retention cones are open, indicating a contact is partially inserted.*

## 5. DISASSEMBLY PROCEDURES

### 5.1. Housing Disassembly (Figure 5)

Damaged contacts may be replaced on an individual basis by separating the front and rear housing sections to the pre-staged position.

1. Depress latch on each side individually with thumbnail or small (3-mm [1/8-in.]) blade screwdriver.

**NOTE** *Disengagement Tool 58382-1 is available to disengage the staging latch on the rear housing section; refer to 408-9436 for procedures.*

2. Pull on the rear housing section to retain the latch head beneath the shroud while depressing latch on other side. Once both latches have been started, the connector can be placed in the pre-stage position by pulling back against the strain relief mounting ears while holding the front housing section fixed.

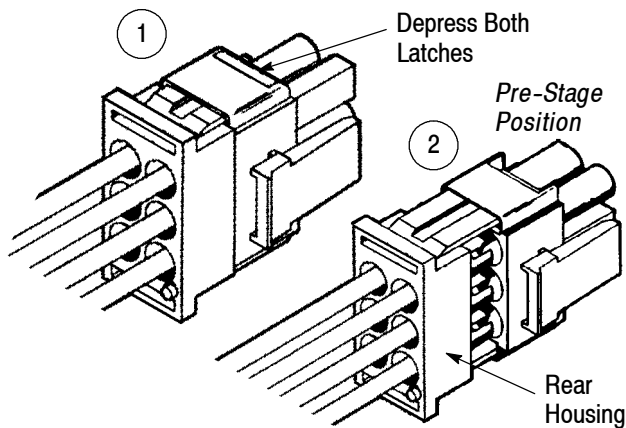


Figure 5

### 5.2. Contact Extraction

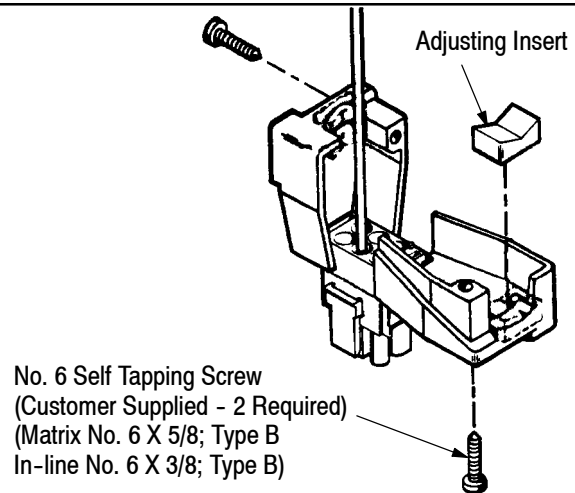
An extraction tool is generally NOT required for removing pin and socket contacts from plug and cap rear housing sections. Extraction Tool 318851-1 is available for extracting contacts crimped to small wire sizes or inaccessible wires.

To extract a contact, move the contact in a slight circular motion while pulling on the wire; this releases the retention shoulder from the housing cone.

## 6. STRAIN RELIEF CLAMPS

Strain relief clamps are designed to relieve the stress of the wires on the contacts. An attached adjusting insert is cut off for use with smaller wire bundles, or discarded if not needed. Two identical clamps are attached to the connector housing as follows:

1. Insert mounting legs into slots provided at BACK of plug or cap connector. See Figure 6.
2. Position the wire bundle between the two clamps and secure the clamps together with two No. 6 pan head self-tapping screws.



NO. OF CIRCUITS	WIRE DIAMETER RANGE		STRAIN RELIEF
	SINGLE WIRE	WIRE BUNDLE	
2	1.02-4.83 [.040-.190]	--	640713-1
2	--	5.08-8.89 [.200-.350]	640713-2
3	1.02-4.83 [.040-.190]	--	640714-1
3	--	5.08-8.89 [.200-.350]	641945-1
4	1.02-4.83 [.040-.190]	--	641776-1
4	--	5.08-8.89 [.200-.350]	641776-2
5	1.02-4.83 [.040-.190]	--	640030-1
5	--	5.08-8.89 [.200-.350]	640030-4
6	--	3.05-16.51 [.120-.650]	640715-1
9	--		640716-1
12	--	3.81-19.05 [.150-.750]	640717-1
15	--	5.08-21.59 [.200-.850]	640718-1

- Adjusting insert attached to strain relief
- Two strain relief sections required per connector assembly

Figure 6

### 7. KEYING PLUGS

Keying plugs provide additional polarization for the connectors. The keying plug may be inserted into the FRONT of the plug or the cap connector. Proceed as follows:

1. Locate contact cavity to be keyed on the FRONT (mating face) of the plug or cap connector. Contact cavity in mating connector must be empty for connector to engage.
2. Align split, tapered end of plug with contact cavity. Insert plug straight into cavity until it snaps into position as shown in Figure 7.

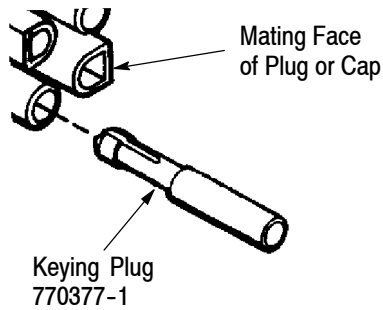


Figure 7

### 8. PANEL MOUNT LAYOUT

The cap housing features flexible mounting latches for easy insertion into the panel cutout. See Application Specification 114-1043 for panel cutout dimensions.

Push the cap connector through the panel in the same direction the panel cutout was made, until it snaps into place. See Figure 8.

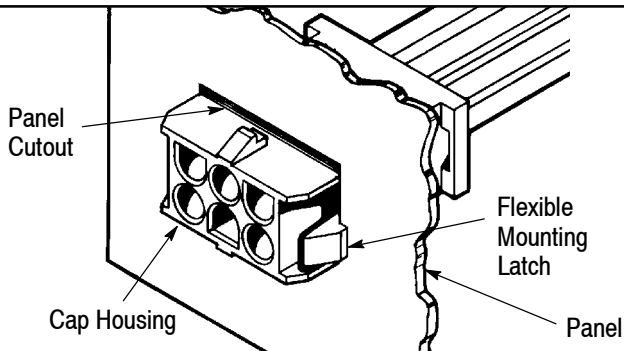


Figure 8

### 9. MATING AND UNMATING CONNECTORS

Mating connectors are fully polarized for proper engagement and employ a positive locking feature to prevent accidental disengagement. See Figure 9.

**NOTE** While mating or unmating, a straight axial push or pull should be used, rather than a rocking motion which may cause contact damage.

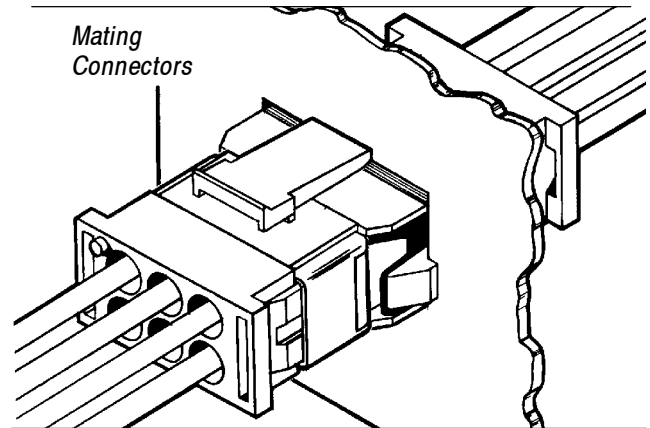
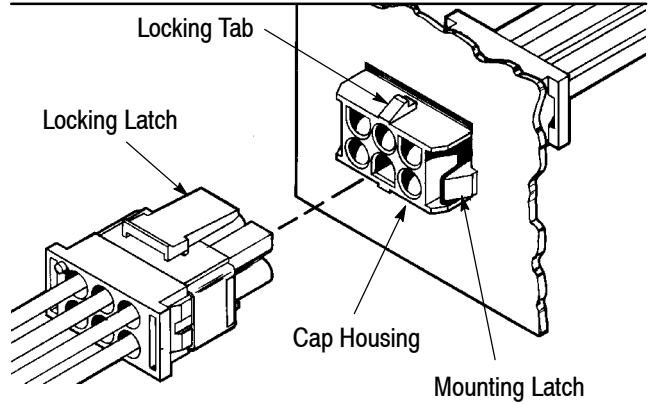


Figure 9

### 10. REVISION SUMMARY

Revisions to this document include:

- Updated to current specification requirements
- New logo