

58P Female Connector, 2298453-[ ] / 2336163-[ ]  
58P Female Wire Dress Assembly, 2298465-1

58P Male Connector, 2298446-[ ] / 2336170-[ ]  
58P Male Wire Dress Cover, 2298452-1

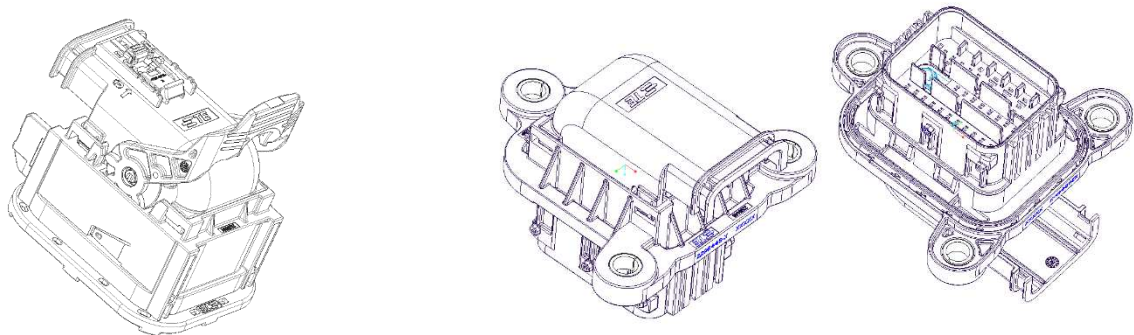


Figure 1

## 1. INTRODUCTION

This instruction sheet provides assembly, disassembly, mating, and un-mating procedures for the sealed harness connectors shown in Figure 1. The connectors are designed to use 1.2 MCON, 2.8 MCP, and TE FAKRA 180° Sealed (coax) terminal systems. Connector assemblies can be configured with specific patterns of blocked circuits, or in “all open” configuration and blocking of unused circuits accomplished by using “sealing plug” components. The lever mechanical assist component as well as the CPA (Connector Position Assurance) are contained in the female Wire Dress Assembly which is a required component for mating/un-mating the connectors (purchased separately). The male Wire Dress Cover is an optional component (purchased separately).



### NOTE

Terminal, wire seal, and sealing plug part numbers, are listed on connector customer drawings.



### CAUTION

Sealing plugs (blind plugs) are intended to be used only for prototyping purposes. Approval must be obtained from the end customer before using on a production intent harness.

## 2. DESCRIPTION

Each female connector assembly consists of front / rear housings with circuit cavities, slide mechanical assist components, terminal secondary lock (ISL), and a peripheral seal. The female Wire Dress Assembly acts to route the wires exiting the rear of the connector as well as contain the lever component and CPA. Because the female Wire Dress Assembly contains the lever component, it is a required part to be placed on the female connector after wire loading is complete.

Each male connector assembly consists of front / rear housings with circuit cavities, pin protection plate, terminal secondary lock (ISL), panel seal, and compression limiting bushings. A male Wire Dress component to tie or route the wires exiting the rear of the connector 90° is optional.

The peripheral seal in the female connector prevents moisture from entering the connector interface. The panel seal on the male connector flange prevents moisture from entering the interior of the vehicle floor pan or panel that it is mounted on. The male connector has 3 bolt-down feet with compression limiting bushings designed to work with an M6 drawn-arc weld stud and flange nut hardware. The male connector is designed to seal on sheet metal panels of 0.7 to 0.9mm nominal thickness.

The female connector mechanical-assist system is of the “lever driven slide” type. The outer housing contains latch arms on each side that retain the slide components in the shipping position. These side latching features are designed to keep the female connector in the shipping position until properly pre-staged to the male

connector shroud, after which the latch arms release the slides and allow the lever assist to move and draw the connectors together with low effort.

Once the lever is fully rotated completing the mating sequence, it will latch into the thumb latch of the female Wire Dress Assembly. The CPA component is released at this point and able to be pushed to the locked state. The CPA is used to provide a visual indication that the connectors are fully mated and provide reinforcement to the latch so that it is unable to be inadvertently released during high shock or vibration loads, water spray, or during vehicle maintenance procedures on surrounding areas.

A Wire Dress component is available for the male connector and is an optional component.

### 3. ASSEMBLY PROCEDURE

#### 3.1. Terminal Insertion and Secondary Locking

1. Crimp terminals according to the TE Application Specifications (reference the customer drawings of each terminal). Terminals crimped without significant bend or twist is critical.
2. Confirm ISLs are positioned in the open state as shown in Figure 2. When viewed in this orientation, the ISL should be slid fully to the left (away from large circuit #21 Co-ax). If they are not, refer to Step 1 of Paragraph 4.3.

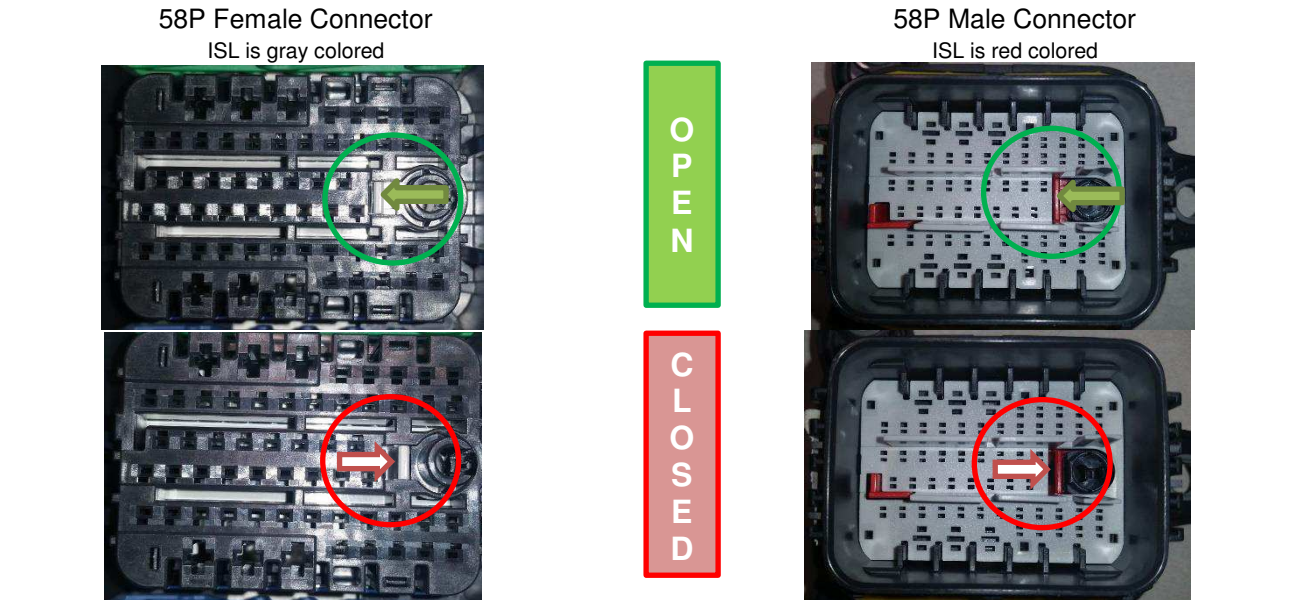


Figure 2

3. Align a crimped terminal with the appropriate circuit cavity of the connector so that the terminal is oriented as shown in Figure 3. Terminal orientation is the same as shown in Figure 3 for both male and female connectors. The 1.2 MCON circuits should have the orientation feature either inward or outward depending on the row being inserted, the rows are symmetric about the center of connector. The 2.8 circuits can be oriented either of 2 ways, as shown. The FAKRA / Co-ax terminal for circuit #21 does not require orientation.

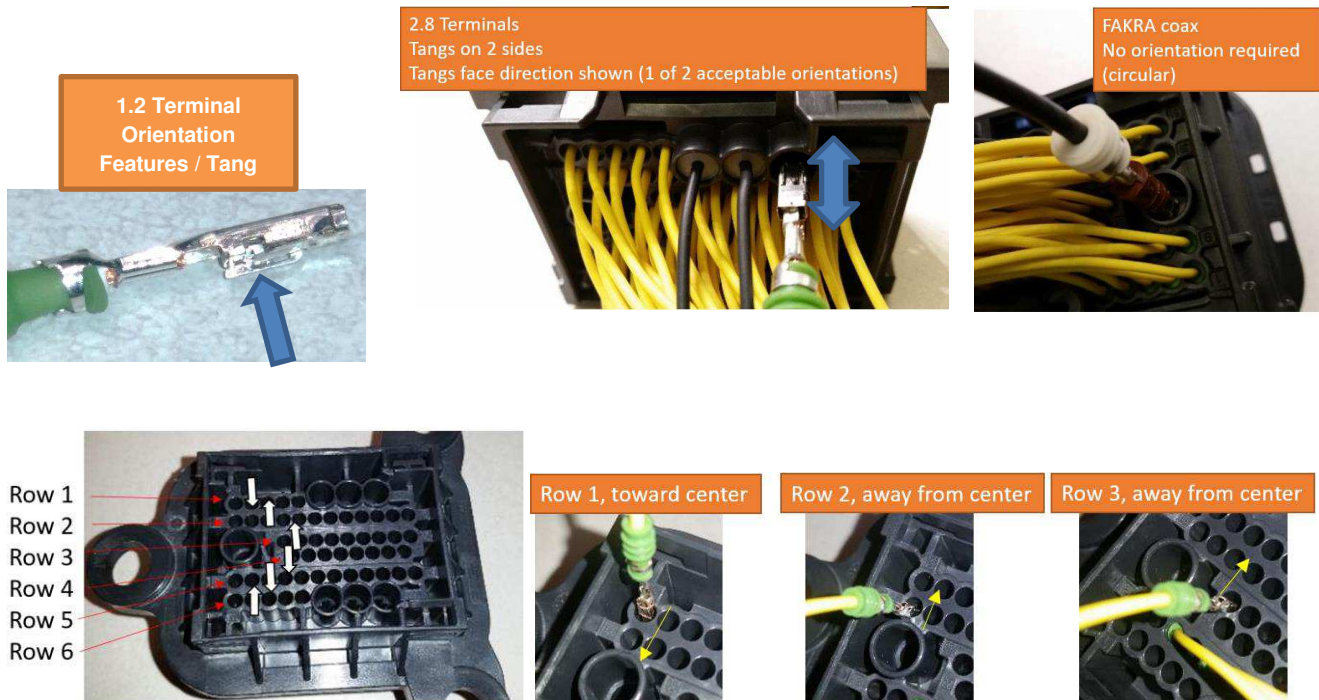


Figure 3

- Grasp the wire of the crimped terminal and insert the terminal straight into the circuit cavity until it is fully inserted. If there is significant resistance during insertion, remove the terminal and verify proper orientation and ISL position. An audible and tactile click should be felt when terminals are fully latched into the circuit.



**NOTE**

If the terminal is difficult to insert into the circuit cavity, check for a de-populated arrangement. Refer to the wiring diagram on the customer drawing for the specific connector assembly.

- Lightly pull the wire to ensure that the terminal is latched.
- Follow step 3 through step 5 for the remaining terminals.
- After all terminals have been inserted, insert a small screwdriver or other suitable device as shown in Figure 4, to engage ISLs to the closed position by sliding towards circuit #21 / FAKRA. Tool should be inserted as far down the ISL feature as possible, then simply pry the ISL over.

58P Female Connector

58P Male Connector

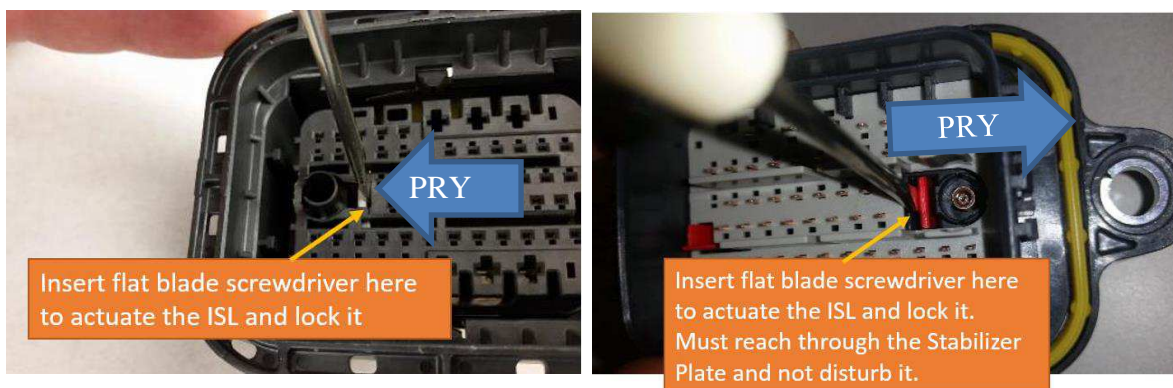


Figure 4





**NOTE**

If the ISL does not move easily into the closed position, one or more of the terminals is not fully inserted. Move the ISL to the open position (as described in Step 1 of Paragraph 4.3), then check that all terminals are fully inserted.

**3.2. Wire Dress Cover Installation and Removal**



**NOTE**

The wire dress cover should be installed after all terminals have been fully inserted.

1. Bundle the wires and bend them in a shape that will fit into the wire exit of the cover. Take special note and care of the Coax cable installed in circuit 21, the cable must be laid on top of the wire bundle and not kinked or bent sharply. A smooth bend radius is critical to function of this cable, tight bends will damage the dielectric core of the cable and can affect the Insertion Loss and Voltage Standing Wave Ratio performance.
2. Align and insert the front locking tabs of the wire dress cover into the windows of the connector outer housing. See Figure 5.

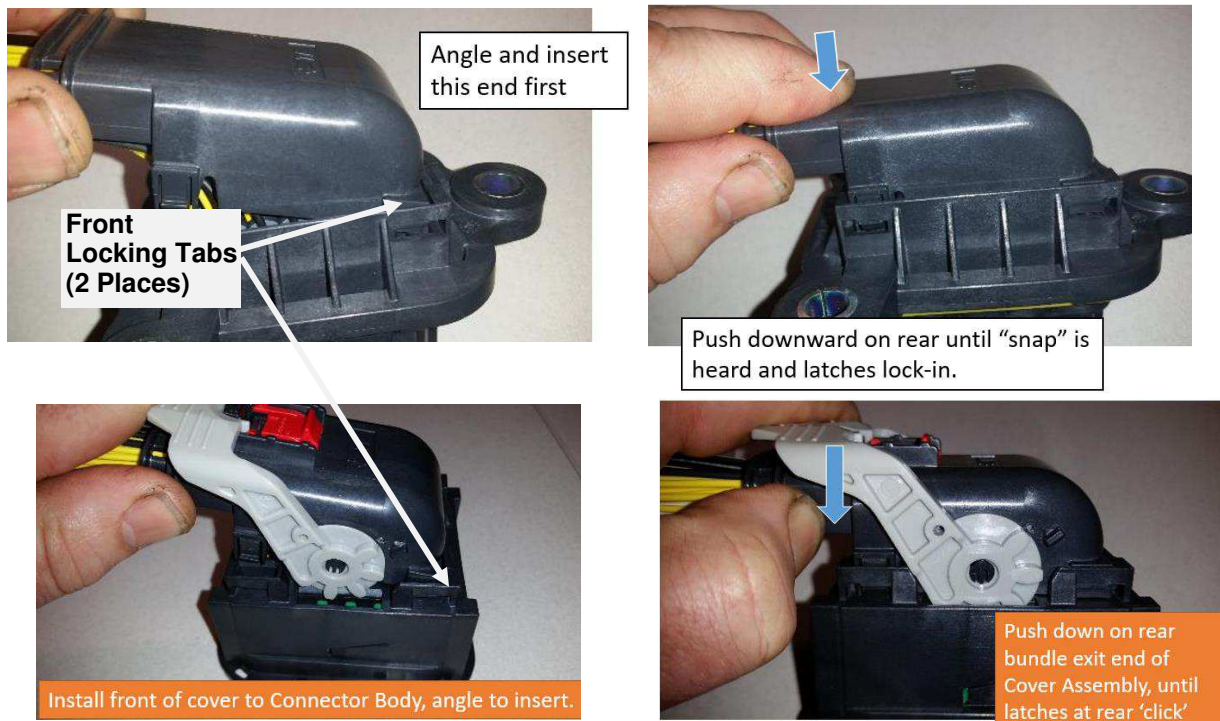


Figure 5 (Male Connector Top / Female Connector Bottom Views)

3. Ensure that the wire bundle is completely captured within the wire exit of the wire dress cover and no wires are pinched between the connector housing and the wire dress cover, then rotate the wire dress cover toward the housing until the rear latches click into place. There will be an audible click.

NOTE: For the female Connector Assembly and its Wire Dress (with lever), the lever and mechanical assist slides must be in synchronized positions for correct gear teeth engagement. The state supplied to harness builders from TE is:

- Female Connector Assembly: slides in locked position (inside the housing).
- Wire Cover Assembly: Lever in locked position.

The lever may be moved to the open position (pre-set as ready to mate with male connector), after the harness is completed. If the Wire Cover is removed for any reason with the lever in open position,

then care must be taken to re-install the cover with lever in open position. See Figure 6 for details of these 2 states.

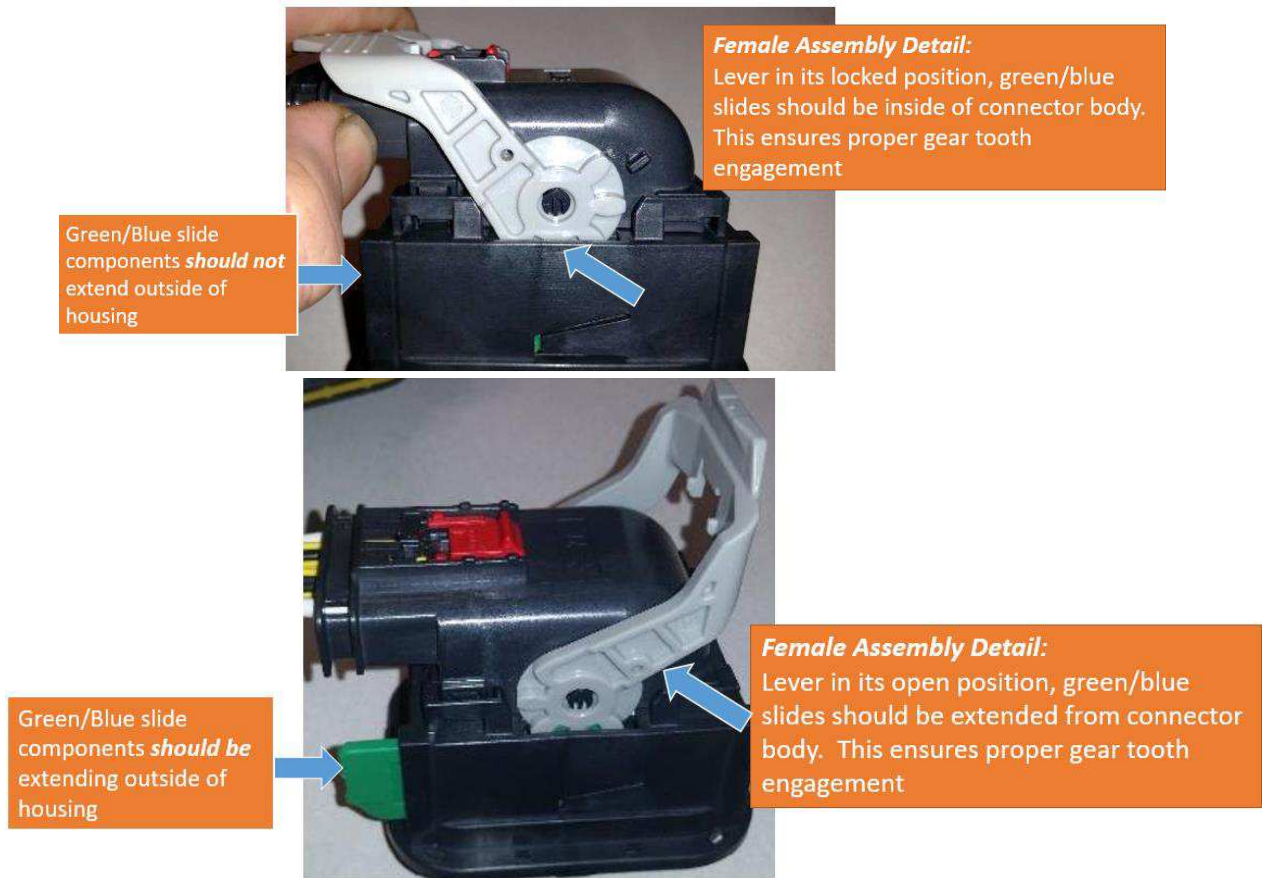


Figure 6

4. Using tape or wire tie, attach the wire bundle to the wire dress cover. If tape is used on the female connector harness, ensure that tape does not extend up onto the CPA / lever latching area of the female Wire Dress Assembly.
5. Wire Dress removal: using a small flat blade screwdriver or similar tool, insert the tool where the 2 rear latches protrude through the locking windows of the main housing. Depressing each latch with the tool and rotating the rear of the Wire Cover upward will unlatch it from the main housing. See Figure 7 for detail.

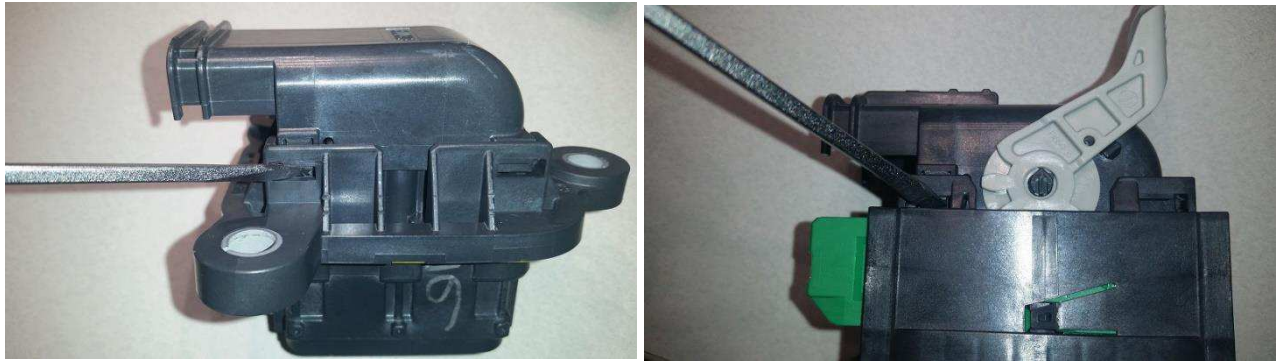


Figure 7: Tool Insertion Points for Wire Dress Removal (one each side)

### 3.3. Connector Mating

1. If lever is not in the position shown in Figure 8, depress lever lock and rotate lever to the Pre-Set position.
2. Align connectors as shown in Figure 8, and push female connector onto the male connector shroud firmly.



Step 1: Must depress latch and rotate the Lever Assist on the Female Connector to Open State. Slides (green/blue) will extend outside of connector body.



Step 2: Push Female Assembly straight onto the Male Assembly, until a firm 'click' is felt. This is the pre-stage position and releases the Lever retention features.

Figure 8



**NOTE**

The force to reach pre-stage 'click' should be no more than 40N, if significant resistance is encountered, one or more ISLs may not be correctly located. Ensure that the ISLs are in the closed position (as described in Step 7 / Figure 4 of Paragraph 3.1).



3. After proper pre-stage position is reached (firm 'click'), the lever can then be rotated through its arc until reaching the locked position. The lever will latch into the thumb latch area of the Wire Dress Cover.



Step 3: Once pre-stage is reached, Rotate the Lever Assist in the mating direction. See note \*\*

**Note \*\***

If the pre-stage position cannot be reached or very high effort to reach, unmate the parts and verify:

- Both secondary locks (male and female) are in correct Locked state.
- Lever is in correct open state, and Blue and Green slides are extended.

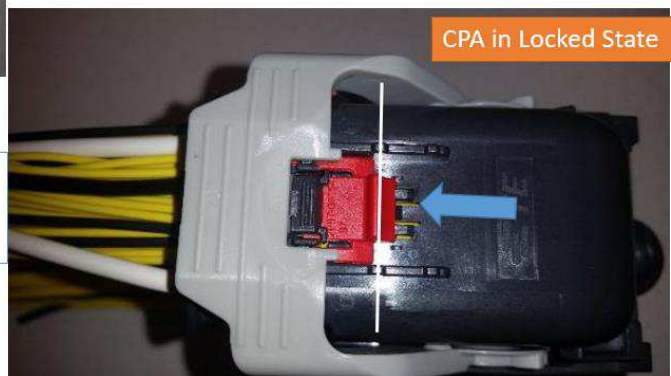
Figure 9

4. The CPA should be locked by sliding it toward the cable exit of the female Wire Dress. See Figure 10.



**NOTE**

If there is significant resistance when sliding the CPA, ensure that the mating lever is completely latched in the closed position as shown in Figure 10.



Step 4: Move the CPA to the Locked Position. When locked properly Alignment with the rear set of bumps will be like shown.

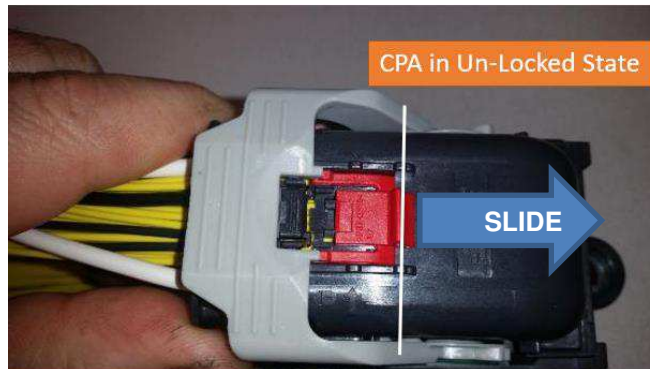
Figure 10

## 4. DISASSEMBLY PROCEDURES

Disassembly must be performed in the following order.

### 4.1. Connector Un-Mating

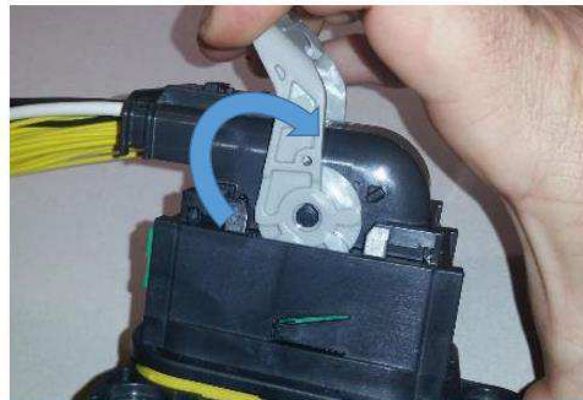
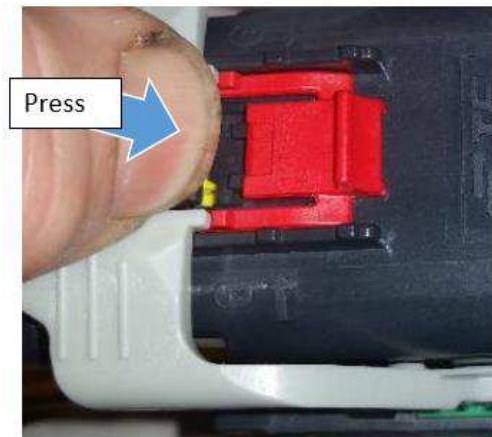
1. Disengage CPA by sliding it back to the pre-set position. See Figure 11.



Step 1: Move the CPA back to the Un-locked position. Alignment with the front set of bumps will be like shown.

Figure 11

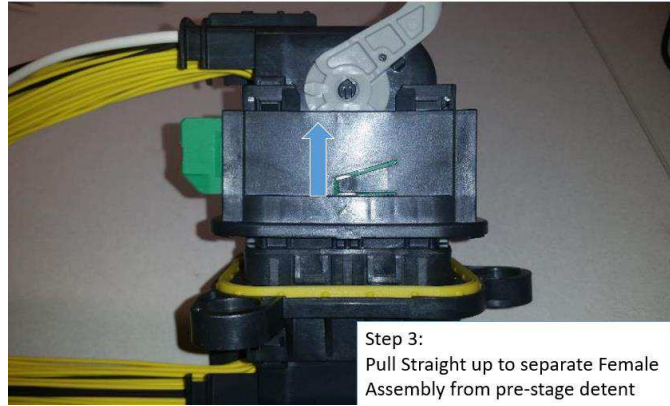
2. Depress connector latch as shown in Figure 12 until lever is free to rotate. Rotate lever to open position.



Step 2:  
Pull up/rotate the Lever assist in the un-mating direction.

Figure 12





Step 3:  
Pull Straight up to separate Female  
Assembly from pre-stage detent

Figure 13

3. Pull female connector away from the male shroud as shown in Figure 13.

#### 4.2. Terminal Removal

1. Wire Dress Covers must first be removed, reference section 3.2 for procedure.
2. Terminals can be removed only when the ISL is in the open position. Insert a small screwdriver or other suitable device as shown in Figure 15, to disengage ISL's by sliding to the unlocked position. Tool should be inserted as far down the tower of the ISL as possible.

**NOTE:** The ISL of the Male connector can only be unlocked if the Pin Protection Plate is pulled back up to the pre-set position. Needle nose pliers recommended to grab the plate and pull on one of the ribs to reset it.

58P Male Connector

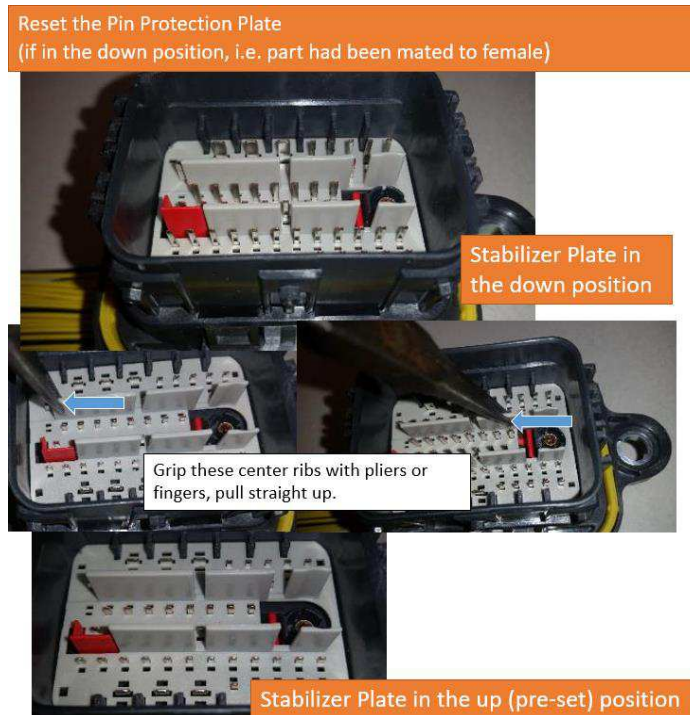


Figure 14

58P Male Connector

58P Female Connector

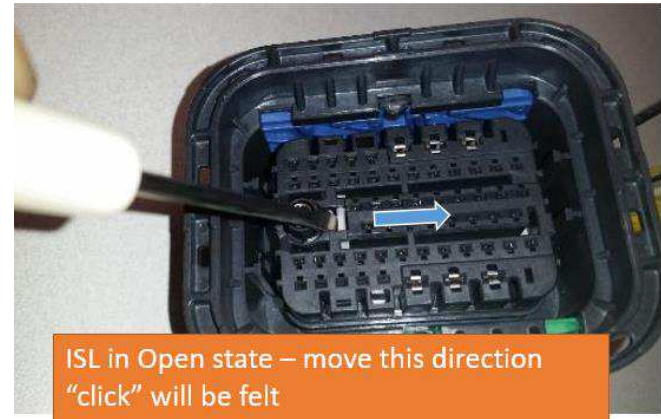
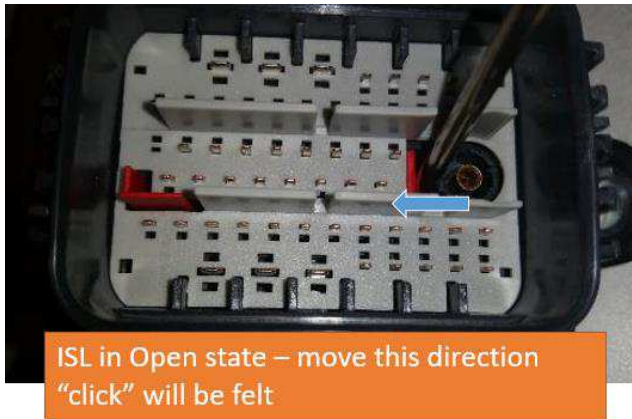
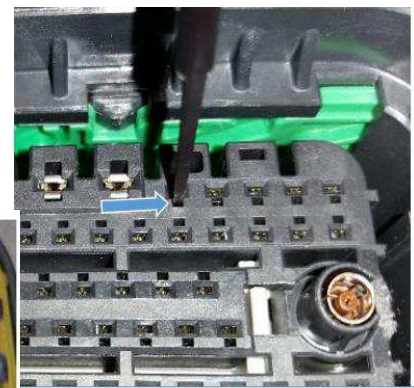


Figure 15

3. Push the wire of the terminal to be removed forward in the circuit cavity so that the terminal moves toward the front of the housing.
4. Remove each terminal as follows (Female and Male shown):
  - a. MCON 1.2: From the mating face of the connector assembly, insert the tip of removal tool into the opening below the circuit cavity of the terminal to be removed. Terminals are the locking lance style (tanged) so the tool should be pushed straight into the opening until it stops. For male connector, the tool will pass through the Pin Protection Plate and then into the terminal cavity. Suggested removal tools that fit both male and female connectors: 12152110 (Delphi); or J-38125-12A (Kent Moore)

1.2 MCON & FAKRA recommended tool



1.2 Female MCON insertion point

**Pull wire back while tool is depressing tang, terminal will release from housing.**

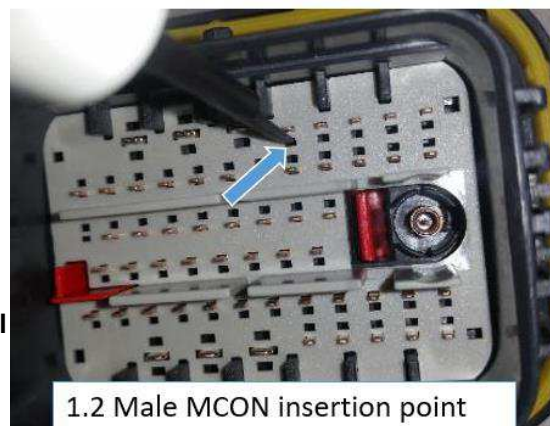


Figure 16



- b. MCP 2.8: From the mating face of the connector assembly, insert the tool straight into the openings on either side of the circuit cavity until tangs are depressed and forward movement of the tool stops. For male connector, the tool will pass through the Pin Protection Plate and then into the terminal cavity.

Suggested removal tools that fit both male and female connectors:

MCP 2.8: 1-1579007-6 (TE Connectivity); or J-38125-36 (Kent Moore)

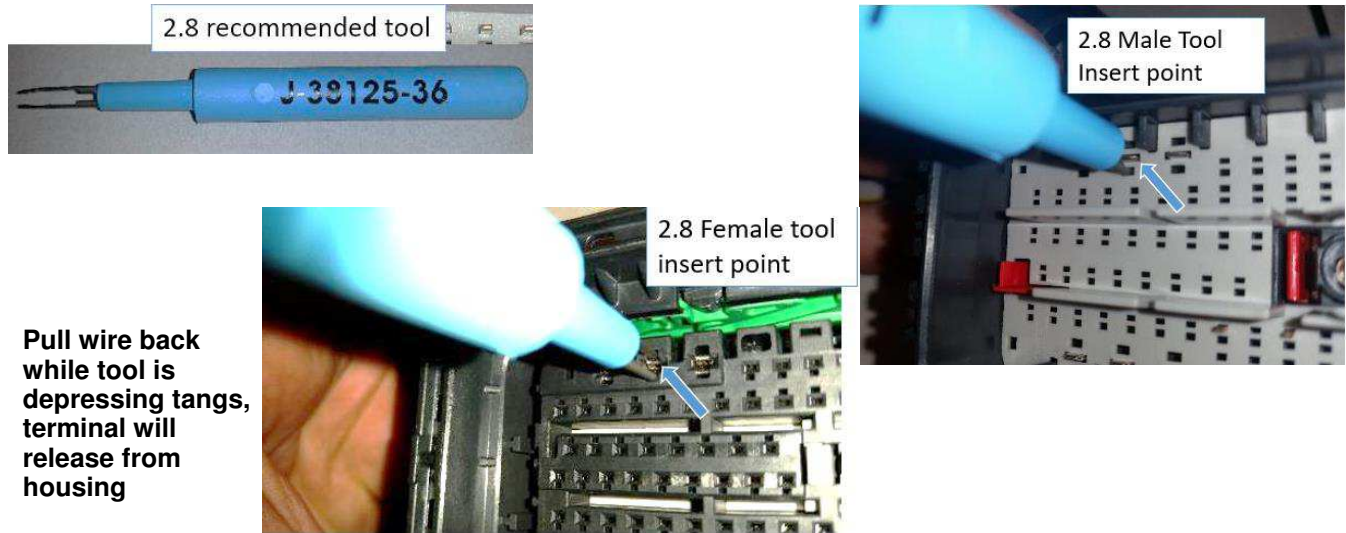


Figure 17

- c. FAKRA (coax circuit #21): This circuit uses a plastic primary latch finger, that must be reached with a tool inserted from the mating face of the connector. Once tool is inserted the latch finger can be lifted gently to release the FAKRA sub-assembly from housing and it can be pulled out.

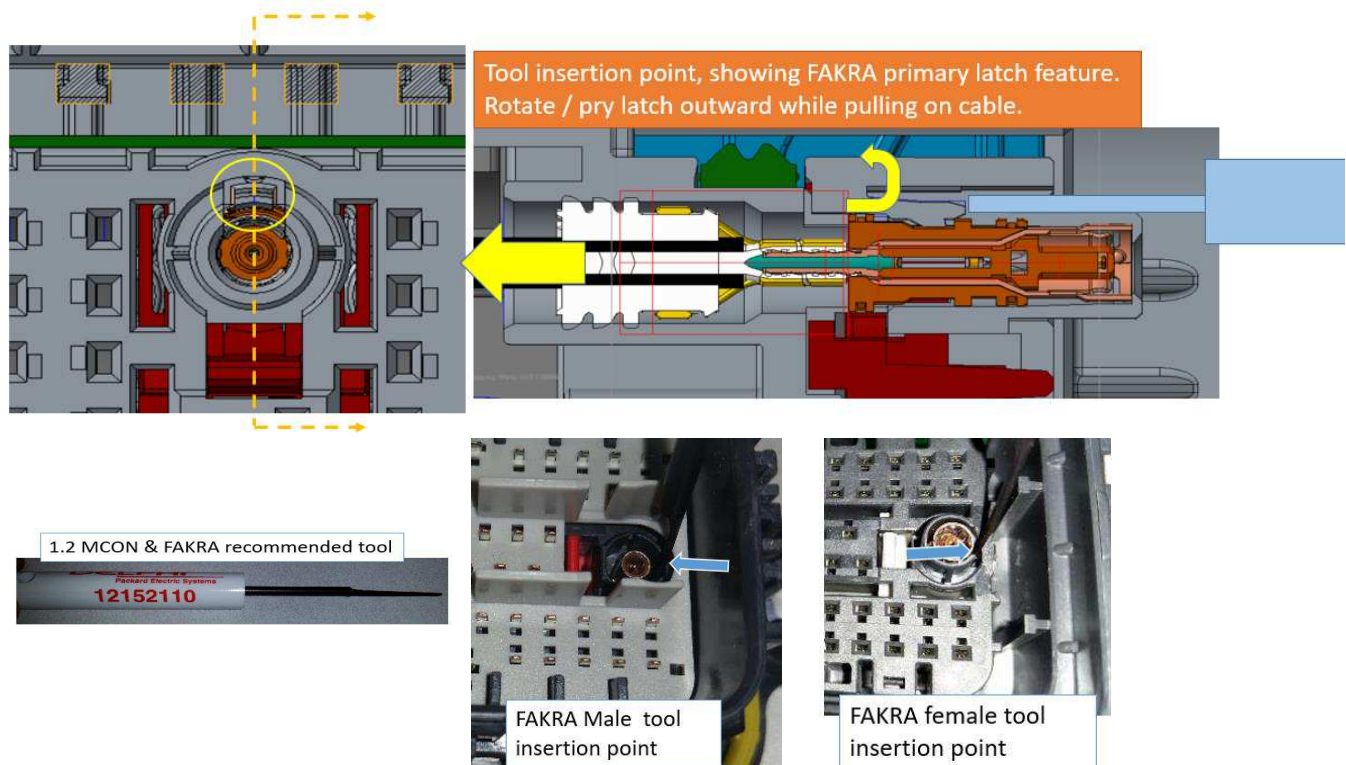


Figure 18





**NOTE**

If any of the terminals will not remove easily, verify that the ISL is in the open position as shown in Figure 15, and terminal is pushed forward in the cavity as described in Step 3.

**5. ELECTRICAL PROBING**

See Figures 19 and 20 for the designated areas to electrically probe connector assemblies.

**NOTE:** The 1.2 MCON center 2 rows are staggered by 0.35mm compared to the outside 4 rows.

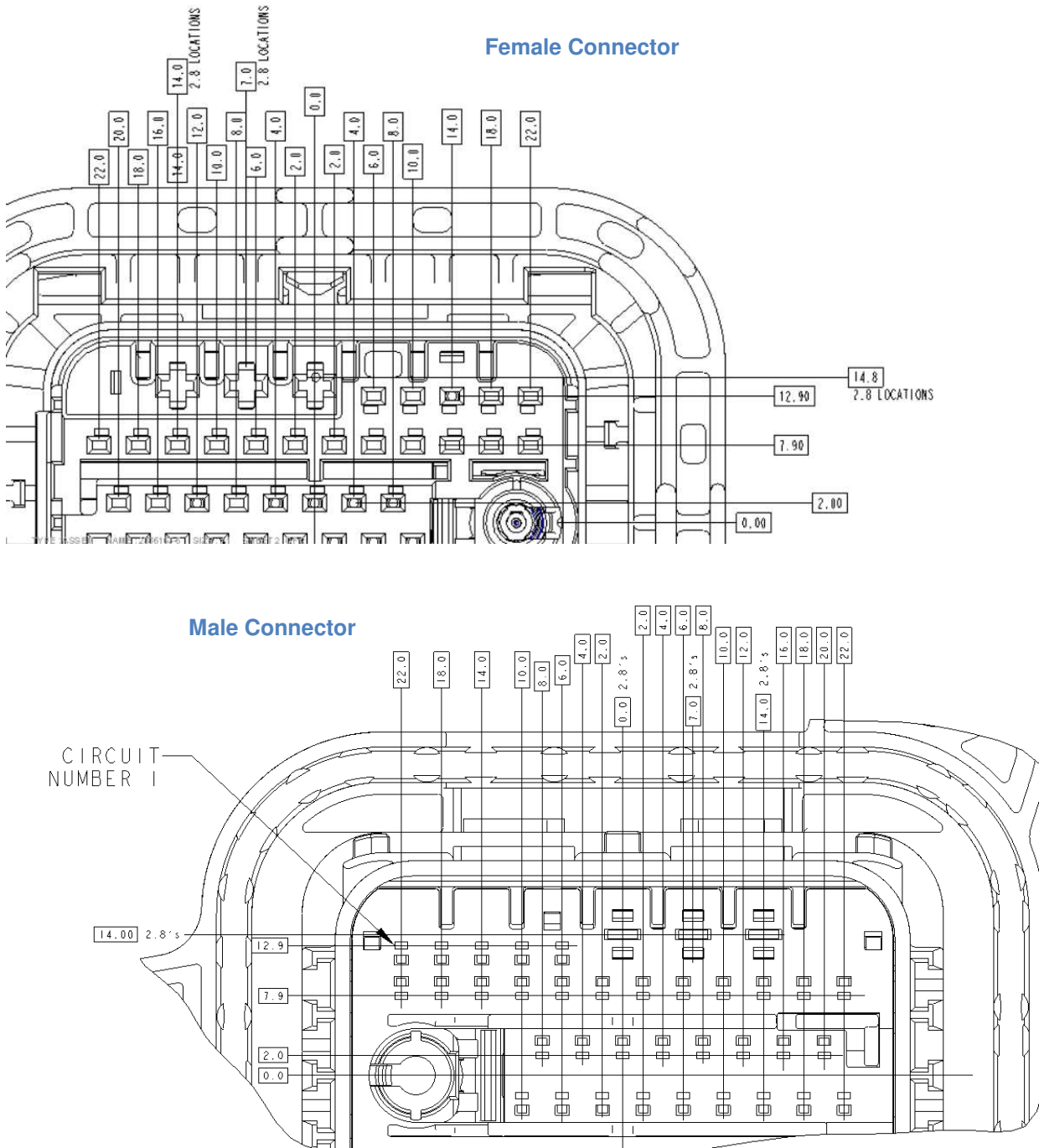
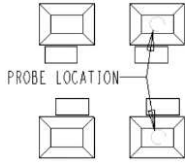
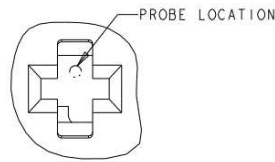


Figure 19 (Probe Spacing)

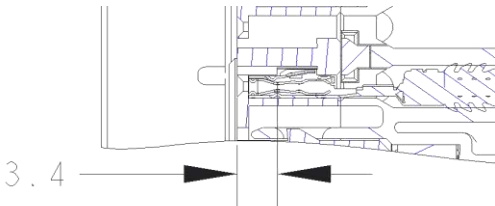
**MCON 1.2 Female**



**MCP 2.8 Female**

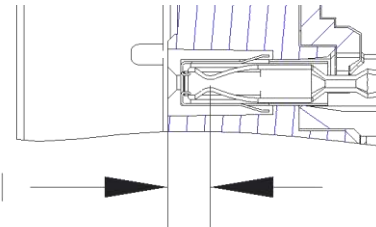


**MCON 1.2 Female**



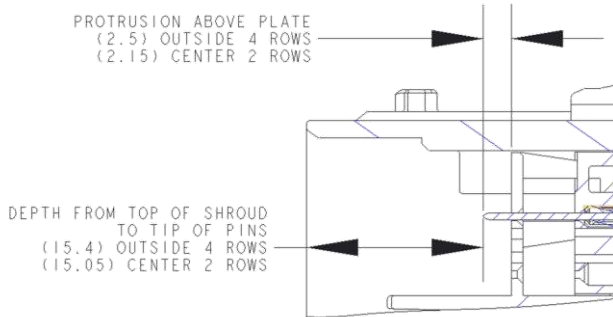
3.4  
 DEPTH FROM FRONT FACE OF  
 INNER HOUSING (PROBE CONTACT SPRING)  
 MAX WIDTH / DIA - 0.6  
 RECOMMENDED SPRING FORCE = 1.2N MAX

**MCP 2.8 Female**



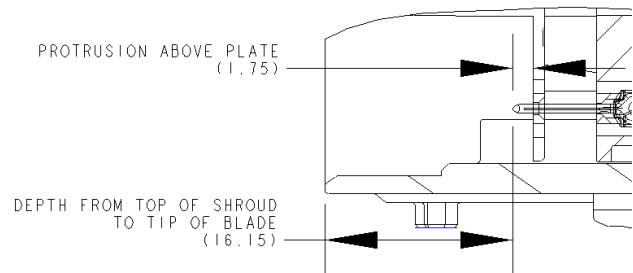
3.1  
 DEPTH FROM FRONT FACE OF  
 INNER HOUSING (PROBE CONTACT SPRING)  
 MAX WIDTH / DIA - 1.0  
 RECOMMENDED SPRING FORCE = 2.0N MAX

**MCON 1.2 Male Blade**



PROTRUSION ABOVE PLATE  
 (2.5) OUTSIDE 4 ROWS  
 (2.15) CENTER 2 ROWS  
 DEPTH FROM TOP OF SHROUD  
 TO TIP OF PINS  
 (15.4) OUTSIDE 4 ROWS  
 (15.05) CENTER 2 ROWS

**2.8 Male Blade**



PROTRUSION ABOVE PLATE  
 (1.75)  
 DEPTH FROM TOP OF SHROUD  
 TO TIP OF BLADE  
 (16.15)

Figure 20 (Probe Details)

**6. REPLACE AND REPAIR**



**CAUTION**

Damaged or defective terminals **MUST NOT** be used. A crimped terminal **CANNOT** be re-terminated. The female Wire Dress Assembly, slide assist components, yellow male panel sealing element, Pin Protection Plate, and male Wire Dress Covers (if equipped), can all be replaced if damaged.

**7. REVISION SUMMARY**

- Initial release of document