Figure 1

PART NUMBER	DESCRIPTION
2177293-[ ]	1.2-mm MCON Long-Tab Male Terminal
2177290-[ ]	2.8-mm MPQ Long-Tab Male Terminal

1. INTRODUCTION

This instruction sheet covers the assembly procedure (terminal insertion and wire dress cover installation) and disassembly procedure (terminal extraction and wire dress cover removal) for 36-position hybrid transmission pass-through sealed cap assemblies 2138338-[ ]. The cap assembly mates with plug assembly 2138314-[ ], which is described on instruction sheet 408-32104.

i *NOTE*
All numerical values in this instruction sheet are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Figures are not drawn to scale.

2. DESCRIPTION

Each cap assembly consists of a cap housing, terminal block with 36 circuit cavities, an independent secondary lock (ISL), and two O-rings. The cap assembly is shipped with the terminal block in the staged position and ISL in the open (as shipped) position. The wire end of the terminal block features embossed circuit identification numbers. Terminals and a wire dress cover are required for assembly and must be purchased separately. See Figure 1 for applicable part numbers.

The wire dress cover features two locking tabs, a latch, and a straight wire exit and a right-angle wire exit.

3. ASSEMBLY PROCEDURE

3.1. Terminal Insertion

1. Crimp the terminals according to Application Specification 114-18464 for the 1.2-mm MCON terminals and 114-18141 for the 2.8-mm MPQ terminals. Ensure that the terminals are properly crimped.

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2. Ensure that the ISL of the cap assembly is in the open (as shipped) position as shown in Figure 1. If the ISL is closed or partially closed, refer to Step 1 of Paragraph 4.3.

3. Align a crimped terminal with the appropriate circuit cavity of the cap assembly so that the orientation tab of the terminal is aligned with the notch of the circuit cavity. See Figure 2.
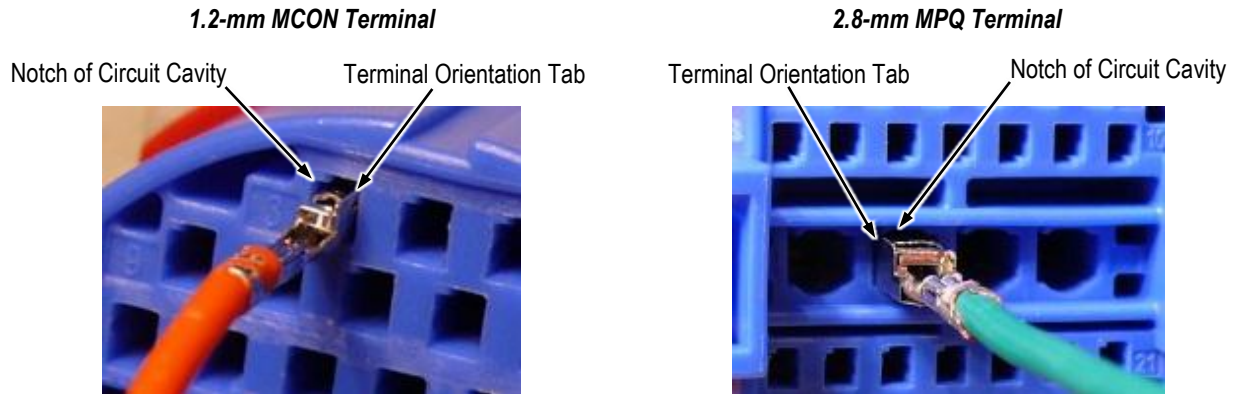
1.2-mm MCON Terminal

Notch of Circuit Cavity   Terminal Orientation Tab

2.8-mm MPQ Terminal

Terminal Orientation Tab   Notch of Circuit Cavity

Figure 2

4. Grasp the wire of the terminal, and insert the terminal straight into the circuit cavity until it is fully inserted as shown in Figure 3. If there is significant resistance during insertion, remove the terminal and verify proper orientation.

i *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 cap assembly.
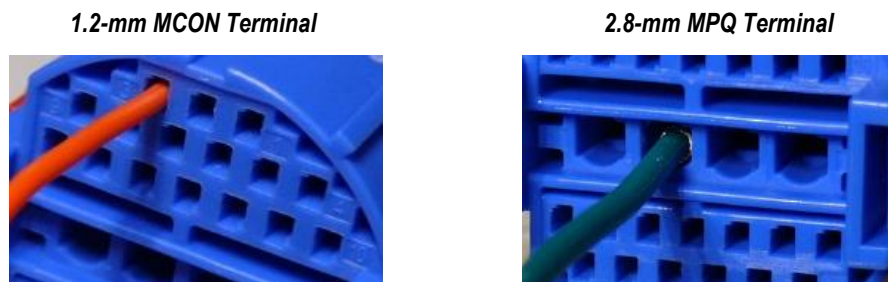
1.2-mm MCON Terminal   *2.8-mm MPQ Terminal*

Figure 3

5. Lightly pull the wire to ensure that the locking lance of the terminal is securing the terminal to the terminal block.

6. Follow step 3 through step 5 for the remaining terminals. After all terminals have been inserted, push the push pad of the ISL (see Figure 4, Detail A) until the ISL moves to the closed position. The ISL is in the closed position when it is flush with the terminal block. See Figure 4, Detail B.

i *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, then check that all terminals are fully inserted.
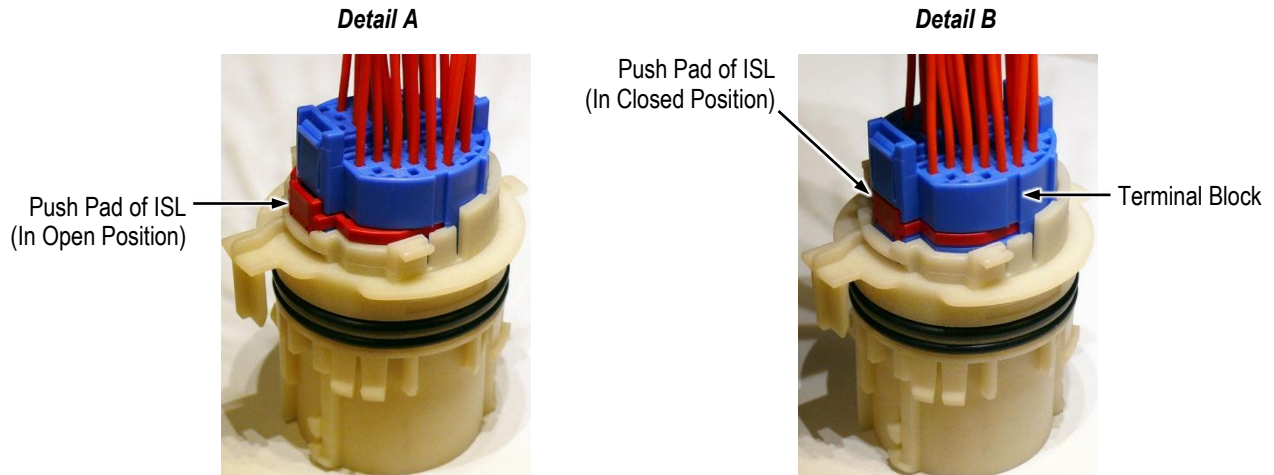
Detail A

Detail B

Push Pad of ISL
(In Closed Position)

Push Pad of ISL
(In Open Position)

Terminal Block

Figure 4

7. Push the terminal block into the cap housing until it is in the locked position. See Figure 5.

ℹ️ **NOTE**
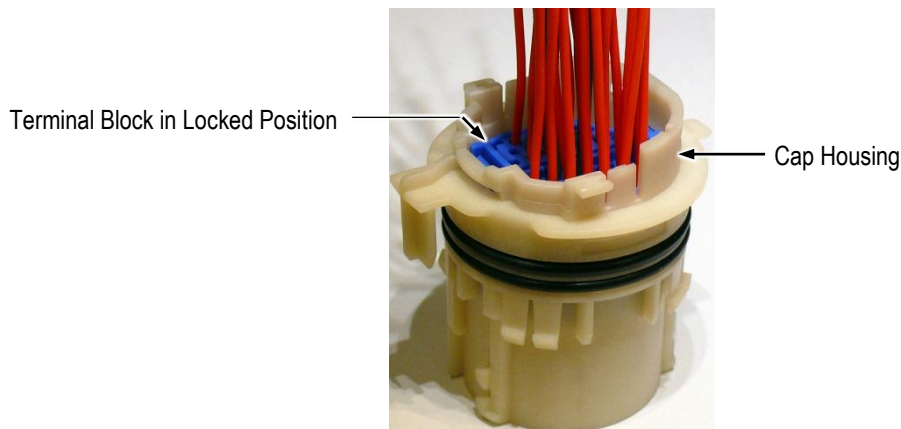*The terminal block will not move unless the ISL is in the closed position.*

Terminal Block in Locked Position

Cap Housing

Figure 5

3.2. Wire Dress Cover Installation

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

1. Bundle the wires to dress through the right-angle wire exit of the wire dress cover, and bend them toward the fine orientation feature of the cap housing. Bundle the remaining wires, which will be dressed through the straight wire exit of the wire dress cover, and bend them toward the gross orientation feature of the cap housing. See Figure 6.
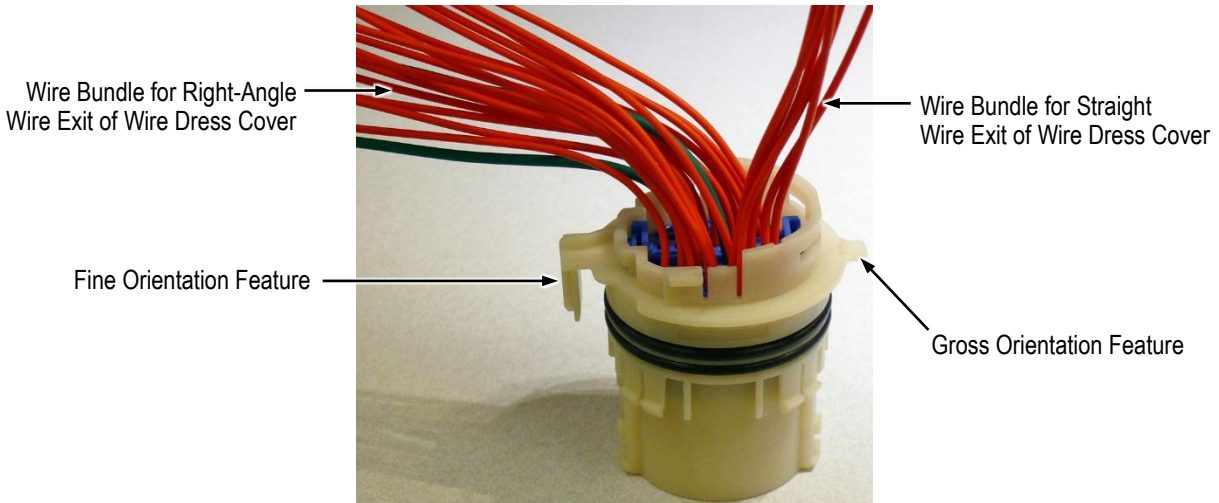
Wire Bundle for Right-Angle
Wire Exit of Wire Dress Cover

Wire Bundle for Straight
Wire Exit of Wire Dress Cover

Fine Orientation Feature

Gross Orientation Feature

Figure 6

2. Align the locking tabs of the wire dress cover with the windows of the cap housing (refer to mating face view in Figure 1), and place the wire dress cover onto the cap housing. See Figure 7, Detail A.

3. Ensure that each wire bundle is completely captured within the appropriate wire exit of the wire dress cover and no wires are pinched between the cap housing and the wire dress cover, then slide the wire dress cover over the cap housing until it locks into place. There will be an audible click. Figure 7, Detail B shows the wire dress cover fully installed onto the cap housing.

Detail A

Detail B

Wire Bundle Completely Captured in
Right-Angle Wire Exit of Wire Dress Cover

Wire Bundle Completely
Captured in Straight Wire Exit
of Wire Dress Cover

Wire Dress Cover Fully Installed
onto Cap Housing

Slide Wire Dress Cover
onto Cap Housing

Figure 7

4. Using tape or wire ties, attach the wire bundle to the wire dress cover.

4. DISASSEMBLY

Disassembly must be performed in the following order.

4.1. Wire Dress Cover Removal

Using the tip of a screwdriver, lift the latch of the wire dress cover, then pull the wire dress cover off of the cap assembly. See Figure 8.
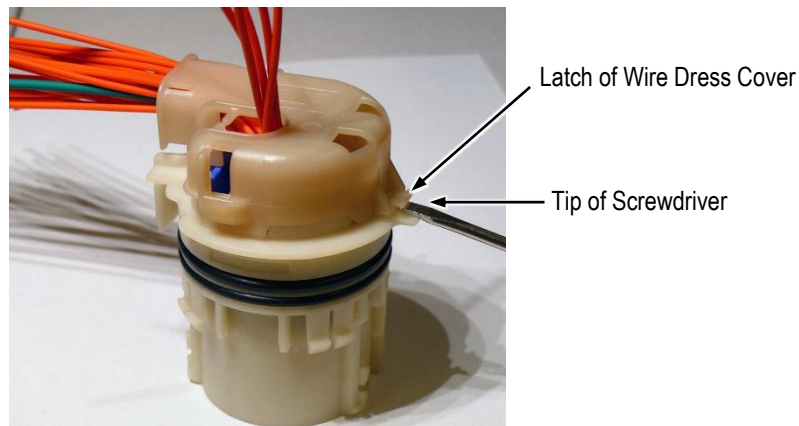

Latch of Wire Dress Cover

Tip of Screwdriver

Figure 8

4.2. Terminal Removal

1. Terminals can be removed only when the ISL is in the open position. Move the ISL to the open position as follows:

   a. Using the tip of a screwdriver, depress each retention latch (2 places) of the terminal block while pulling gently on the wire bundle until the terminal block is out of the cap housing. See Figure 9.

i **NOTE**
The ISL can only be moved to the open position if the terminal block is removed.

Wire Bundle

Terminal Block

Tip of Screwdriver (First Retention Latch)
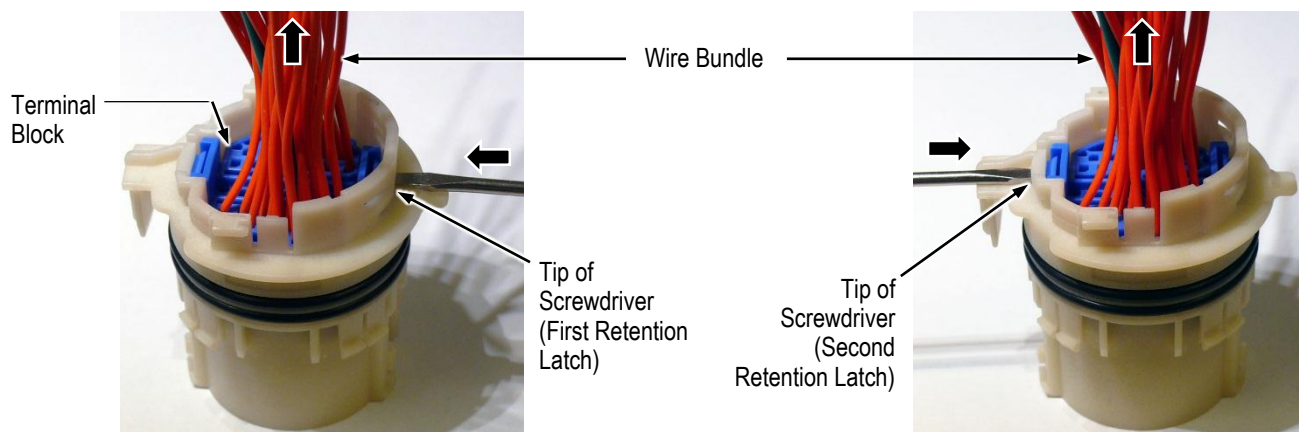
Tip of Screwdriver (Second Retention Latch)

Figure 9

   b. Insert the tip of the screwdriver into the large opening at the side of the terminal block. See Figure 10, Detail A.

   c. Rotate the screwdriver toward the outside of the terminal block until the ISL moves to the open position. There will be an audible click when the ISL is in the open position. See Figure 10, Detail B.

2. Push the wire of the terminal to be removed toward the circuit cavity so that the terminal moves toward the front of the terminal block.

Moving ISL to Open Position

Detail A

Large Opening at Side of Terminal Block

Push Screwdriver

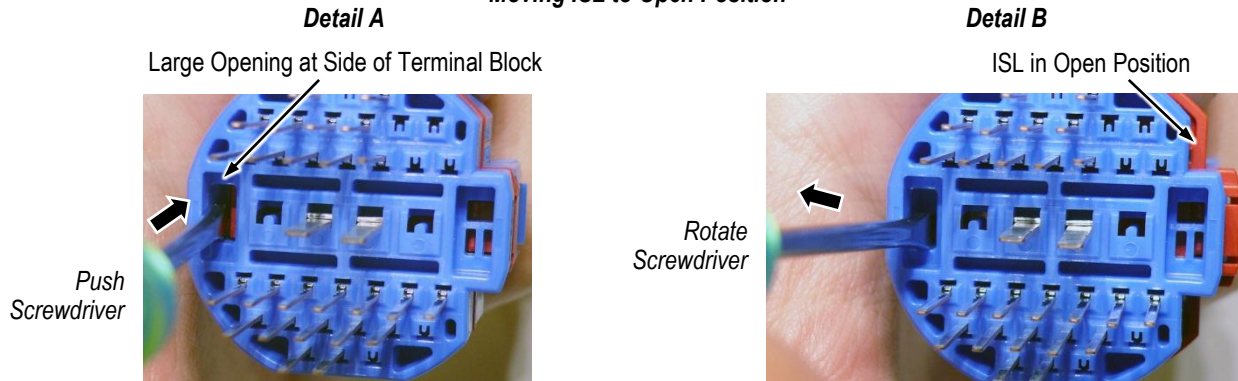*Detail B*

ISL in Open Position

Rotate Screwdriver

Figure 10

3. Insert the tip of the removal tool into the opening above the terminal to be removed, and depress the terminal locking lance. Then gently pull the wire of the terminal to be removed until the terminal is out of the terminal block. See Figure 11.
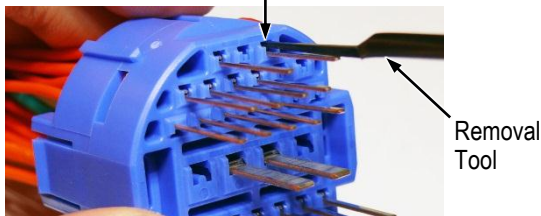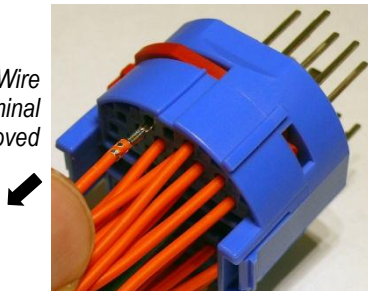
i **NOTE**
If the terminal is not removing easily, verify that the ISL is in the open position as shown in Figure 10.

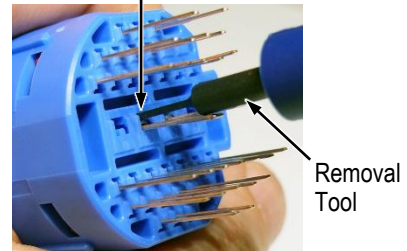*1.2-mm MCON Terminal*

Opening Above Terminal to Be Removed

Removal Tool

Gently Pull Wire of Terminal To Be Removed

2.8-mm MPQ Terminal

Opening Above Terminal to Be Removed

Removal Tool
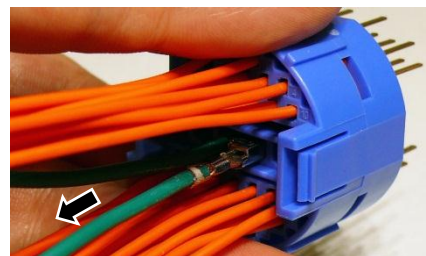
Gently Pull Wire of Terminal To Be Removed

Figure 11

4. To install the terminal block back into the cap housing, align the retention latches with the locking tabs of the cap housing, and insert the terminal block into the cap housing until there is an audible click.

5. REPLACEMENT AND REPAIR

DO NOT use defective or damaged product. The cap assembly, terminals, and wire dress cover are not repairable.

6. REVISION SUMMARY

Initial release of instruction sheet