1P Starter Motor Connector Using MCP 2.8 Contact System

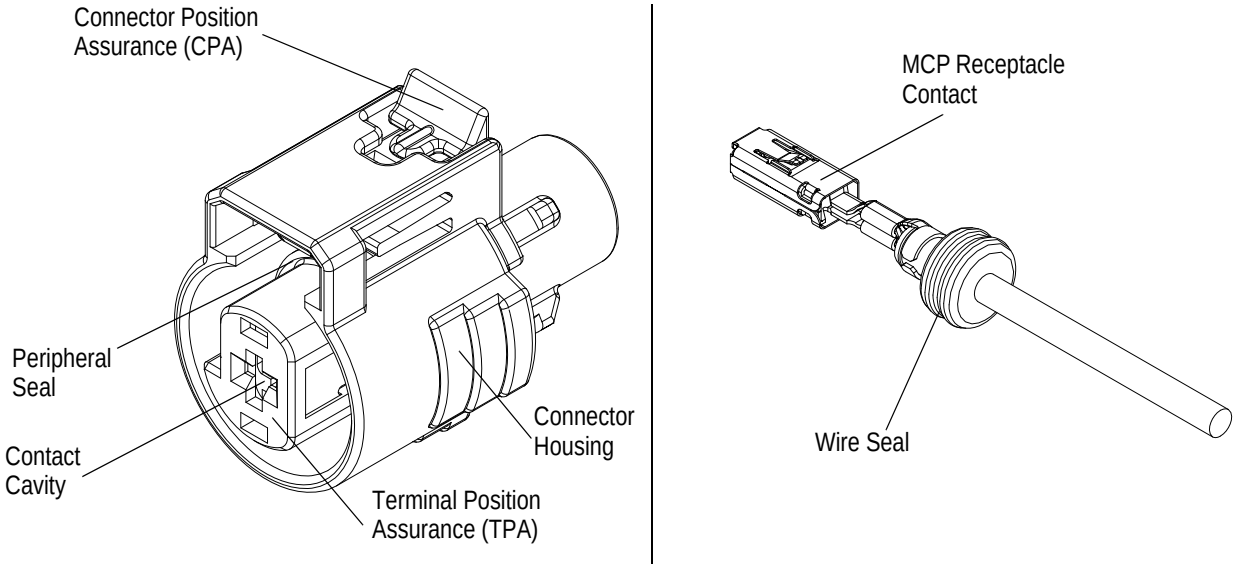

Figure 1

1. INTRODUCTION

This instruction sheet provides assembly and disassembly procedures for the sealed plug connector shown in Figure 1. The connector is designed to use MCP terminals using single wire seals, and is designed to mate with the USCAR interface 280-S-001-1-Z01 direct attached to starter solenoid devices.

NOTE

All dimensions on this document are in metric units. Figures and illustrations are for identification only and are not drawn to scale.

2. DESCRIPTION

Each connector consists of a housing with contact cavity, terminal position assurance (TPA) secondary lock, peripheral seal, and connector position assurance (CPA).

The peripheral seal prevents moisture from entering the connector to device interface. Two different keying configurations are designed (color and mechanical).

NOTE

At this time only the Key A configuration is tooled.

The contact cavity is polarized to prevent the contact from being inserted sideways (or 90° from correct). The terminal can be inserted in one of two directions as long as the orientation is correct.

After the contact is inserted, the TPA is used to ensure that the contact is fully seated and to provide additional contact retention. If a contact is not fully seated or improperly oriented in the contact cavity, the TPA will not move to the closed position.

The CPA component is used to provide a visual indication that the connector is fully mated to the device interface. If they are not fully mated, the CPA lock will not engage.

Moisture resistance for the contact cavity is provided through the use of wire seals (to be installed onto the wire during the crimping operation).

Applicable part numbers are provided on customer drawing 2098198.

3. ASSEMBLY PROCEDURE

3.1. Contact Insertion

NOTE

Make sure that the contacts are properly crimped and wire seals are installed onto the wires. Refer to Application Specification 114-13295 for inspection requirements.

NOTE

Refer to Customer Drawing 2098198 for a list of contacts that can be used with this connector.

1. Ensure that the TPA is in the open position as shown in Figure 2, Detail A. If it is not, open the TPA according to section 4.2.

2. Align a terminated contact with the contact cavity of the housing so that the locking lances face the vertical direction, see Figure 3, Detail A.

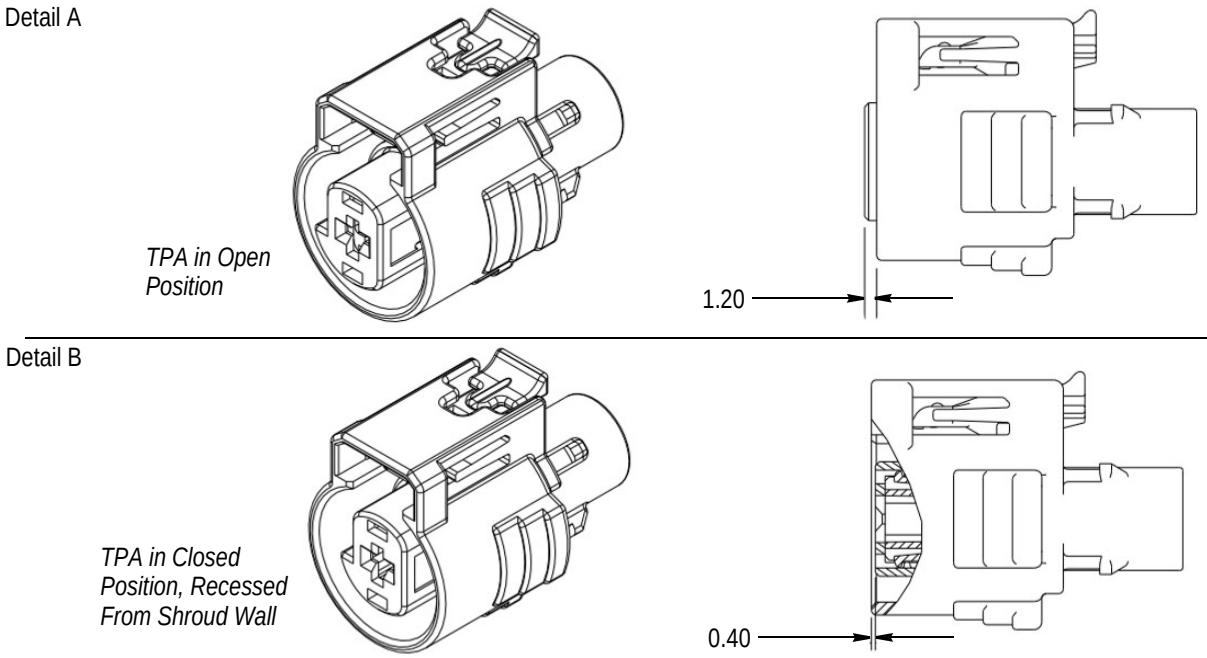

Figure 2

3. Insert the contact into the contact cavity until it bottoms. There should be an audible or tactile "click" when the contact locking lances seat in the contact cavity properly. The wire seal should be fully within the sealing cavity per Figure 3, Detail B.

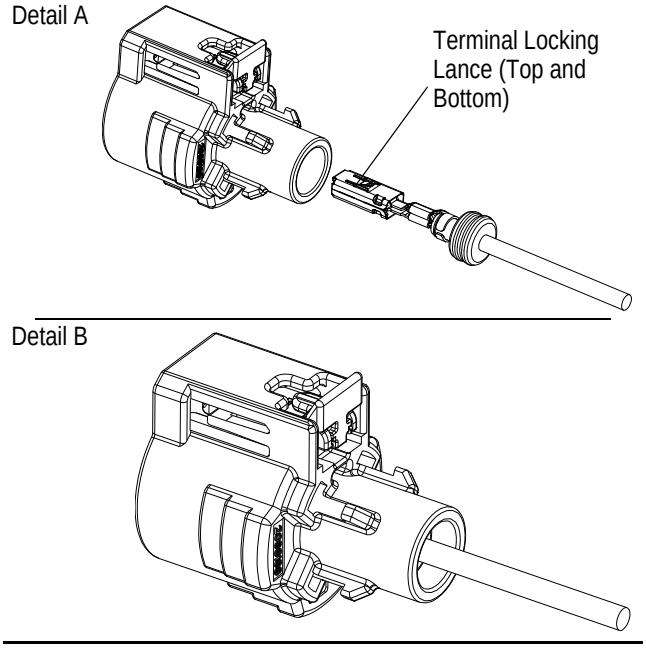

Figure 3

4. After contact has been inserted, push the TPA to the closed position. TPA will make a firm "click" sound when seated. The TPA should not protrude past the connector outer shroud when it is fully seated, as viewed from the side. See Figure 2, Detail B and Figure 4.

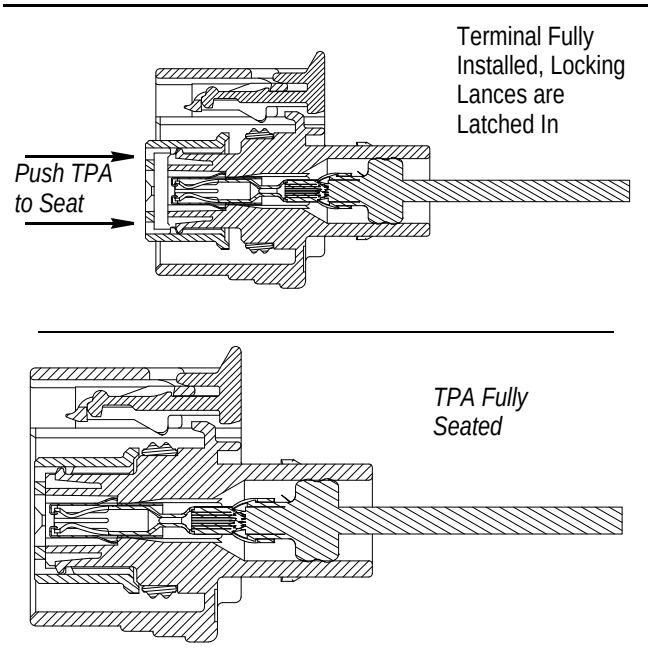

Figure 4

CAUTION

To prevent damage to the TPA, do not force the TPA to close. The TPA is designed to close only if the contact is properly oriented and fully seated in the contact cavity.

3.2. Connector Mating

1. Device design must adhere to USCAR interface drawing 280-S-001-1-Z01. For proper mating and sealing performance, the dimensions and tolerances of connector mating area must strictly follow all interface drawing details.

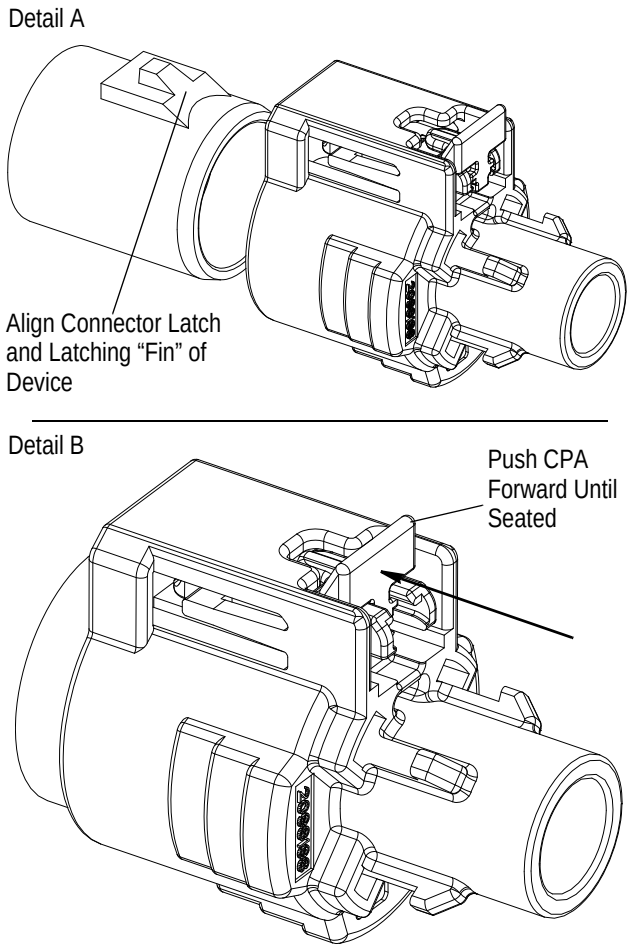

Figure 5

2. Align the connector with the interface device so that the connector latch faces the latching “fin” of the device.

3. Push the connector and interface device together. Refer to Figure 5, Detail A.

4. Push the CPA lock forward until there is an audible and tactile “click”; locking the connector and device together. See Figure 5, Detail B. The CPA lock should be easy to engage. It will be difficult to engage if:

a. The CPA lock is pushed at an angle or from the top.

b. The connector and device are not fully mated.

CAUTION

To prevent damage to the CPA lock or connector, do not force the CPA to engage. The CPA lock is designed to engage only if the connector and interface device are fully mated.

4. DISASSEMBLY PROCEDURES

4.1. Unmating

1. Pull back on the CPA lock to unlock the connector and device. Refer to Figure 6.

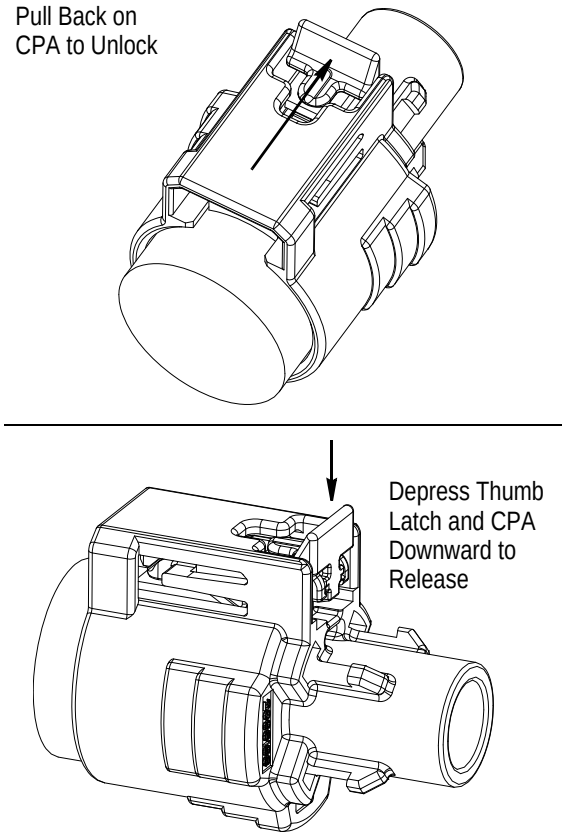

Figure 6

2. Depress the connector latch and CPA of the harness connector, and gently pull the connectors apart.

4.2. Contact Removal

1. Move the TPA to the open (pre-stage) position, by inserting a flat blade screwdriver of 3.3 mm max width into the side recess of the TPA (one recess is on each side) and prying the TPA outward as shown in Figure 7. The TPA will snap to the pre-stage open position with a “click”. The TPA does not need to be fully removed for terminal extraction.

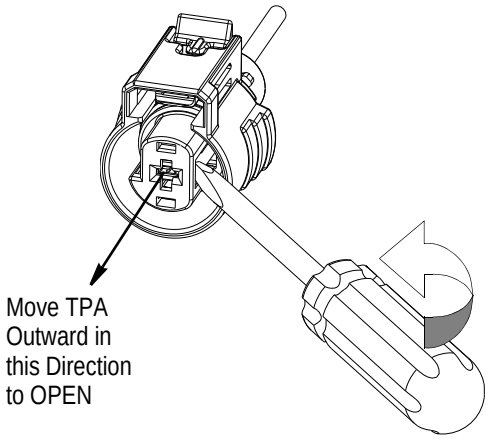

Figure 7

2. Insert terminal extraction tool into the front of the TPA, through the notches on top and bottom of the circuit. The extraction tool will release the metal locking lances of the terminal once it is inserted to the correct depth. General Motors (GM) tool J-38125-557 or TE Connectivity (TE) part number 1579007-1 are recommended extraction tools.

3. With the insertion tool inserted, then use the wire and pull the terminal and wire seal from the connector. See Figure 8.

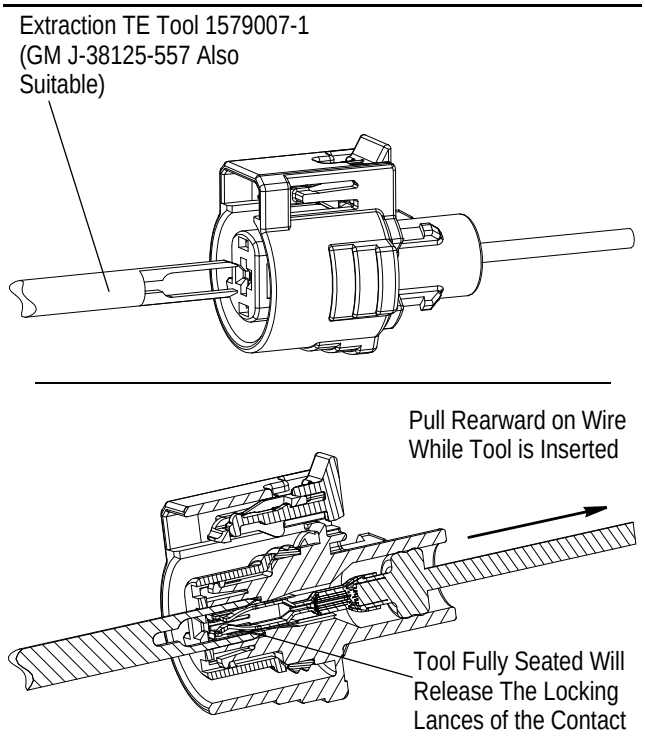

Figure 8

5. ELECTRICAL PROBING

See Figure 9 for the designated areas to electrically probe connector assemblies. Pogo pin or spring probe finger diameter of 1.50 mm max will fit through the open areas of the TPA component.

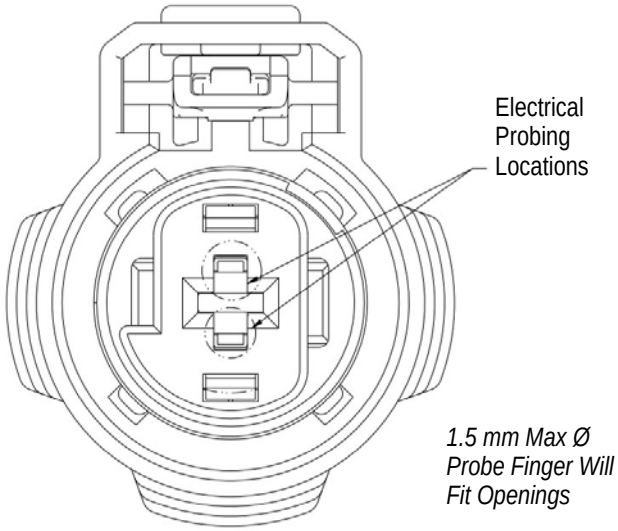

Figure 9

6. REVISION SUMMARY

- Initial release of document