

HC-STAK25-2phi High Voltage 4-Bolt Header



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.



HIGH-VOLTAGE - MORTAL DANGER

- This connector is intended for use in high-voltage applications. Special care must be applied to ensure that the connector functions as intended.
- If you suspect that the connector has been modified, damaged, contaminated, or otherwise compromised, please discontinue its use immediately.
- This connector should only be serviced by a trained and qualified technician.

1. INTRODUCTION

This specification covers the requirements for assembly and mating/un-mating of the HC-STAK25-Header.



These high-voltage connectors must NOT be mated with any other type of connector.

When corresponding with TE Connectivity Personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of components are provided in Figure 1.

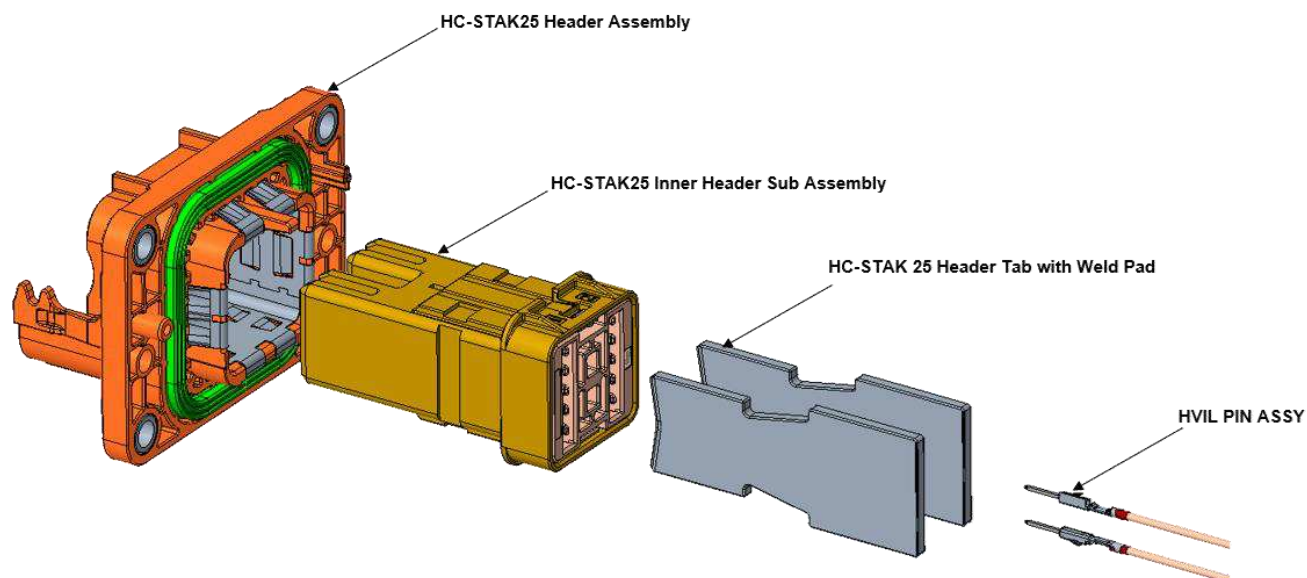


Figure 1: Exploded View HC-STAK25, 4-Bolt Header

2. REFERENCE MATERIAL

2.1. Revision Summary

- Revision A - Initial release
- Revision B – Update Section 3.8 (Pogo Pin Dimensions)

2.2. Customer Assistance

Base product drawing number 2343034 (4 Bolt header) and Product Code L983 represent the HC-STAK25 Header assembly. Use of this base number and product code will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative or, after purchase, by calling the Product Information Center at the number at the bottom of page 1.

2.3. Drawings

2.3.1 Customer drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the Customer Drawing takes preference.

2.3.2 Reference drawings



Reference Drawing C-2379307 is available for part number relationships only and is not a saleable item. Refer to this drawing only for compatible part numbers for customer inquiry. For more information on Reference Drawing, call PRODUCT INFORMATION at the number at the bottom of page 1.

2.4. Cable and Subcomponent Specification

The following cable and subcomponent combinations must be used together to ensure optimum connector performance.



Do NOT nick, scrape, or cut the wire conductor during the stripping process.

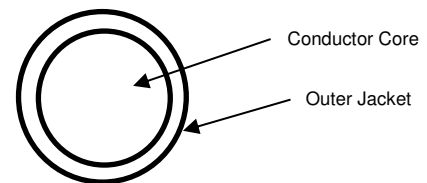


Figure 2: Single Conductor Cable

A. Cable Specification (HVIL Connection)

Construction:

- Conductor: 0.5mm², stranded bare copper
- Outer Jacket: Cross-linked polyethylene

Voltage rating: 600V (per ISO 6722)

Temperature rating :125°C

RECOMMENDED SUBCOMPONENTS			
HEADER SERIES	PART NUMBER	Quantity	DESCRIPTION
4-Bolt Header	3-2343034-1 OR 3-2343034-2	1	HC-STAK25 Header Assembly, Key-A OR HC-STAK25 Header Assembly, Key-B
	2359563-1	1	Inner Header Sub Assembly
	2360888-1	2	HC-STAK 25 TAB TERMINAL
	5-963716-3	2	MQS Terminal

Table 1: TE Part numbers for cable assembly



See the reference drawing C-2379307 for specific validated wire sizes and part numbers

3. REQUIREMENTS

3.1. Safety

Do not stack contact packages so high that the shipping containers buckle or deform.

3.2. Shelf Life

The contacts should remain in the shipping containers until ready for use to prevent deformation to the contacts and/or damage to the housings. The products should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.

3.3. Chemical Exposure

Do not store contacts near any chemicals listed below, as they may cause stress corrosion cracking in the contacts.

Alkalis	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites		Tartrates

3.4. Material

The connector assemblies are made of thermoplastic materials and the terminals, shields, and ferrules are tin- and silver-plated copper alloy.

3.5. Circuit Identification

The terminal cavities are numbered on the outer housing of the connector at the wire entry end.

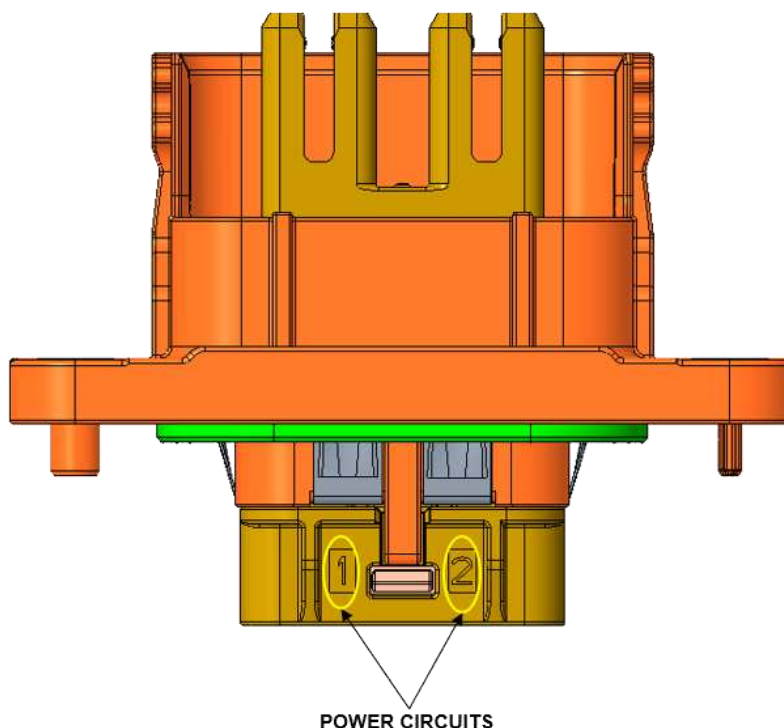


Figure 3: Circuit Identification

3.6. Header Assembly Procedures

The following procedures show the details of the cable assembly and insertion instructions into the plug subassembly.



Refer to Table 1 for the various components of the cable as shown in an end view of the cable.

Step 1

In the orientation shown in Figure 4, HVIL MQS pin terminals selection and preparation must be in accordance with Customer Drawing 929453-C and application spec 114-18021.

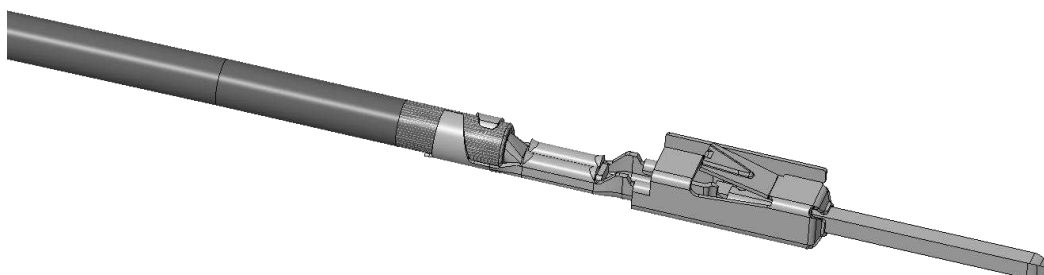


Figure 4: Crimp the terminals to the cables

Step 2

In the orientation shown in Figure 5, push the HVIL terminals into the header cavities until a tactile and audible “click” is felt and heard. Pull back slightly to confirm the terminal is latched into the primary locked position.

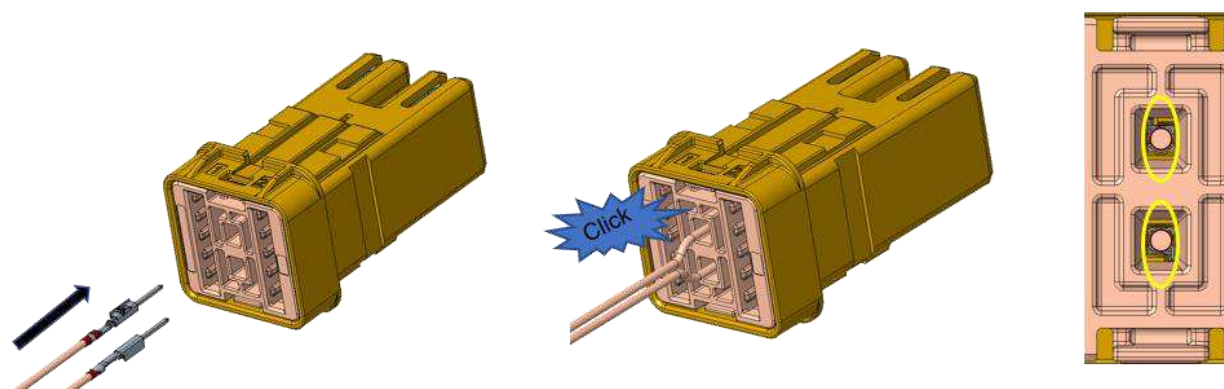


Figure 5: HVIL cable sub-assembly inserting in the Header assembly

Step 3

In the orientation shown below Figure 6A, Align poka-yoke slot on the inner housing, with the corresponding poka-yoke post on the header outer housing, push the header inner assembly into the header outer assembly until a tactile and audible “click” is felt and heard. Pull back slightly to confirm the header Inner assembly is locked to the shield.

In case the inner housing assembly is assembled to the outer housing in the wrong orientation, the poka-yoke post on the outer will interfere and prevent full assembly as shown in Figure 6B.

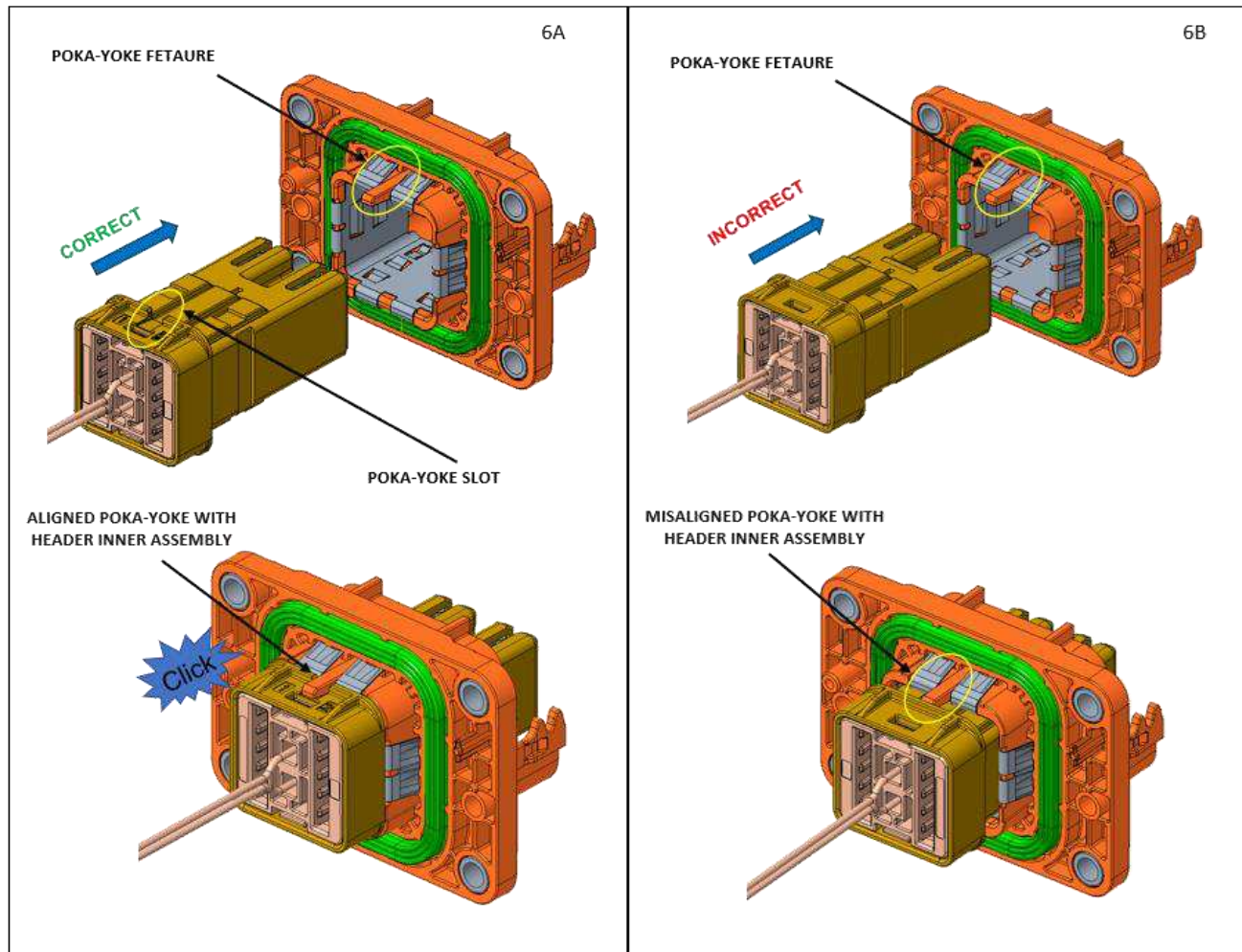


Figure 6: Inner Header Assembly shown before locking & After Locking

Step 4

In the orientation shown in Figure 7A & 7B, push the tabs into the header cavities until a tactile and audible “click” is felt and heard. Pull back slightly to confirm the terminal is latched into the primary locked position.

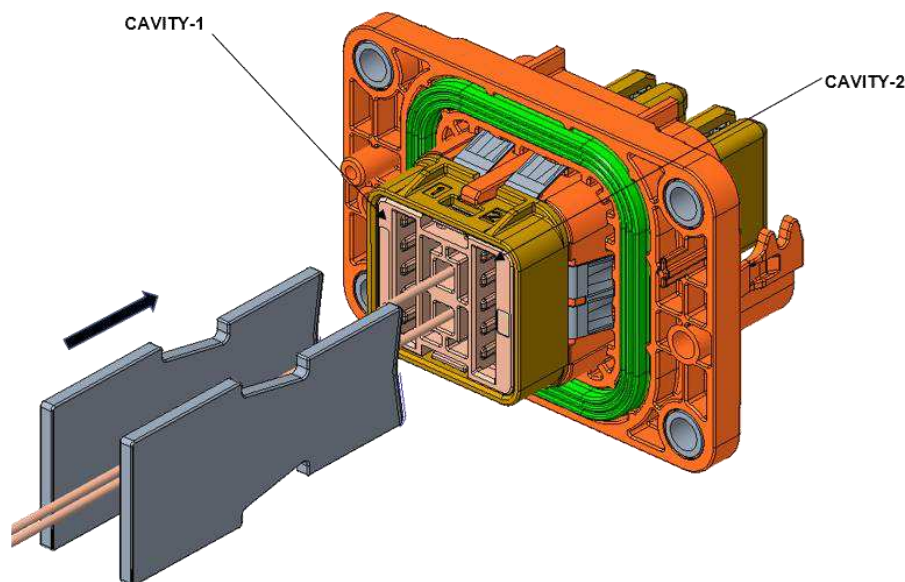


Figure 7A: Tabs shown before locking

Insertion Forces of the weld tabs range from 60N-200N so manual assembly is difficult. The weld tabs need to be assembled using fixtures/press to ensure proper mating/locking.

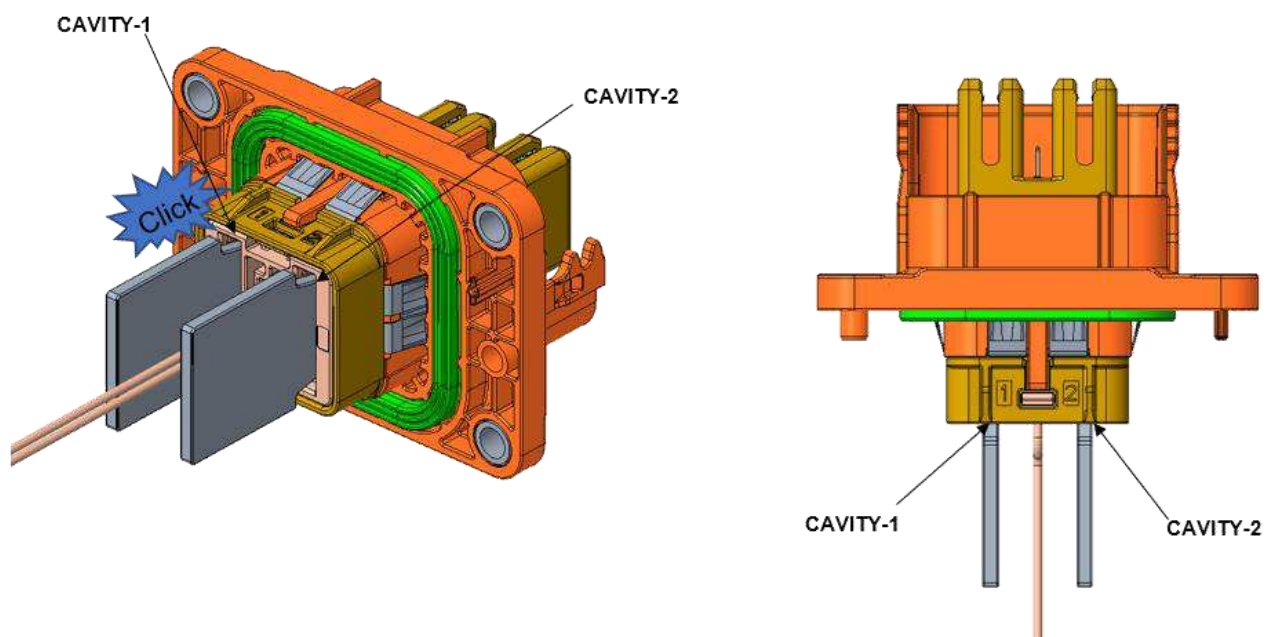


Figure 7B: Tabs in locked position

3.7. Connector Application

A. Header Mating on the Header Plate

The following procedures provide steps to mate the high-voltage header assembly and the Battery Flange.

Step 1

Align the header locating posts with locating holes on device as shown in Figure 8A. In case to assembly the header in the wrong orientation, the header will not allow to seat properly, and the battery flange holes will be unaligned with the compression limiter holes as shown in Figure 8B.

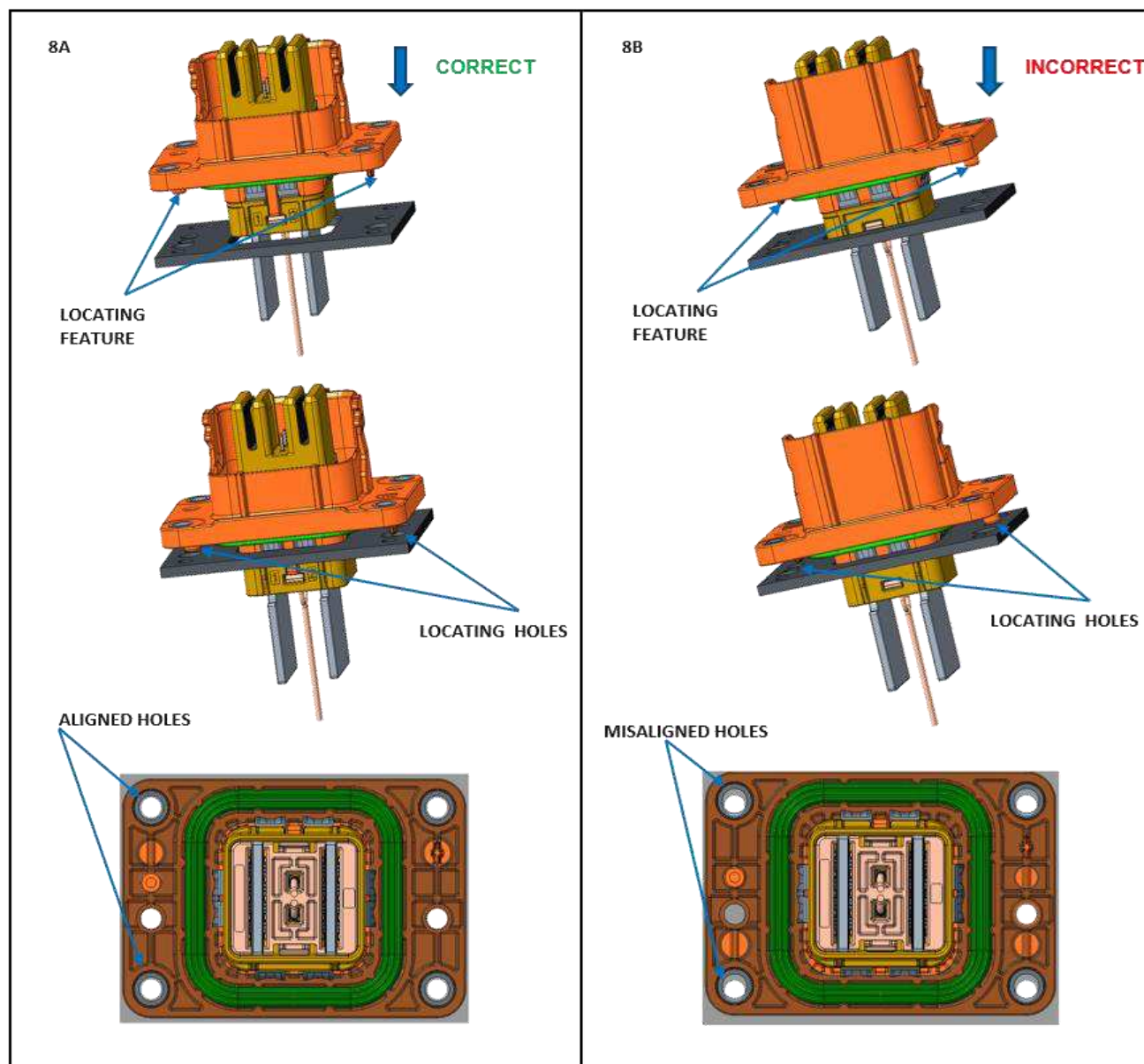


Figure 8: 4-Bolt Header positioned on a device

Step 2

Torque the four M4 screws (Figure 9). The Torque recommended is 1.92-3.28Nm.

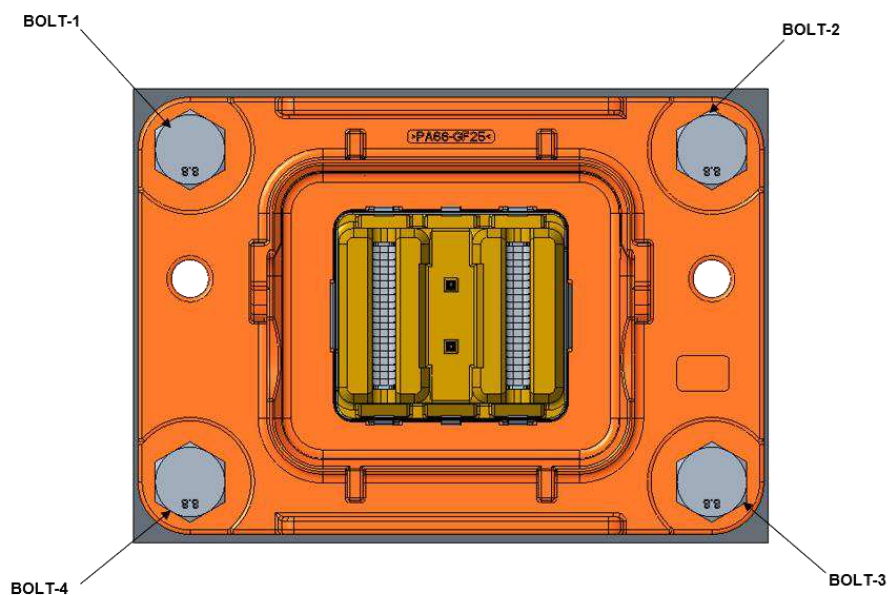


Figure 9: 4-Bolt Header fixed on battery flange

3.8. Power Contact Probe Area

For end of line continuity testing on the power contacts, the areas shown below are the preferred locations for EOL checks or probing. Any deviations to this must be approved by TE engineering.

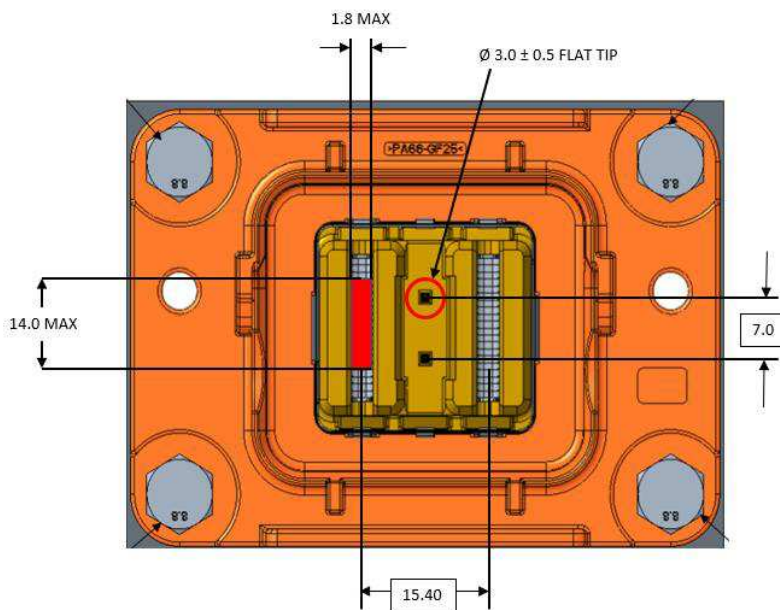


Figure 10: Pogo pin requirement

3.9. Keying Capability

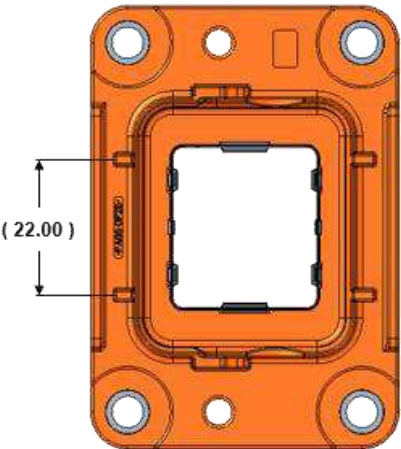
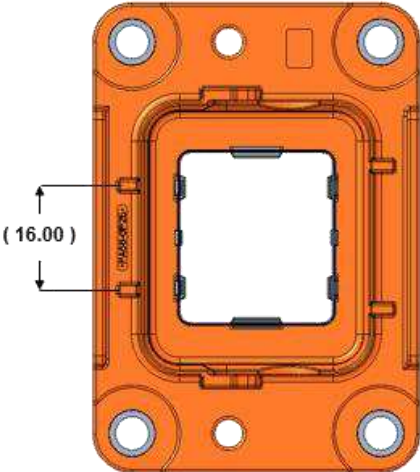
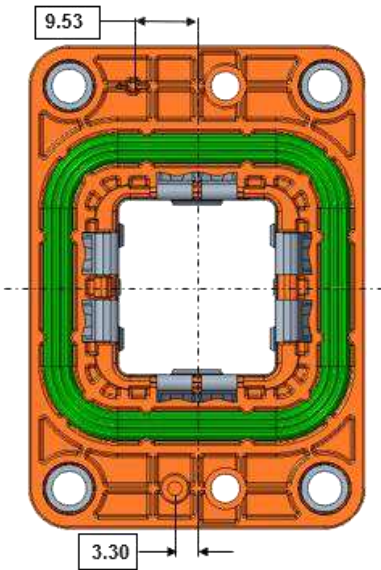
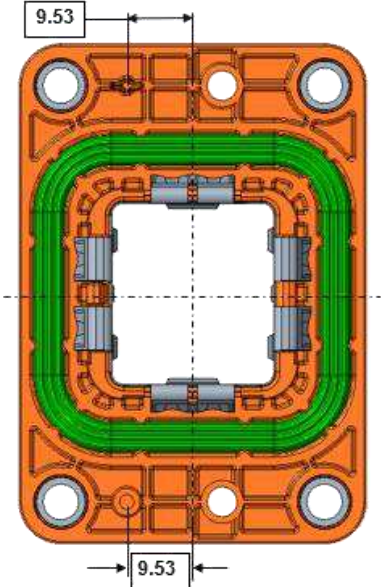
KEYING FOR MATING PLUG CONNECTOR		
KEYING FOR DEVICE INTERFACE		
	CODE A	CODE B

Figure 11:4-Bolt Header Assembly Keying Capability

3.10. Connector Mating

1. If the assembly is shipped with the Lever and/or red Connector Position Assurance (CPA) in the closed position, first if necessary, actuate the CPA to the open position, then open the lever to the open position as shown in Figure 12.

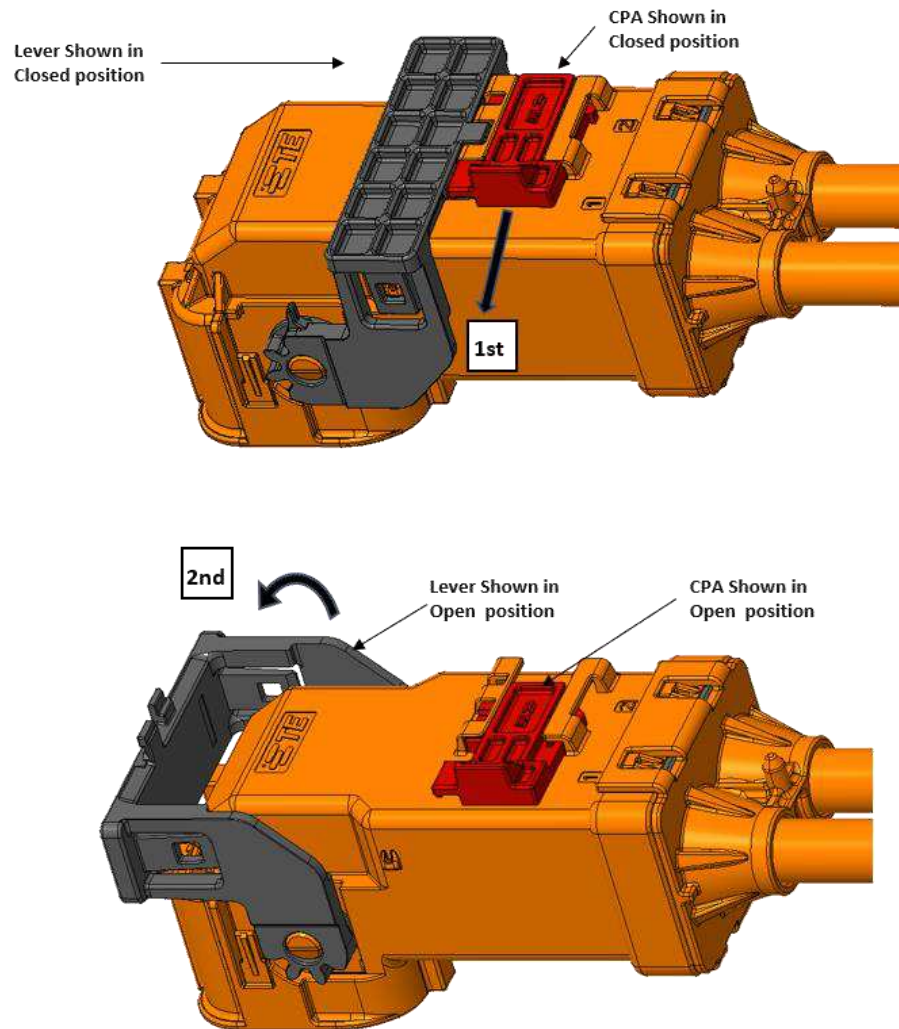


Figure 12: Assembly Lever and CPA Closed

2. Align the plug and header connectors as shown in Figure 13.



Make sure that the lever is still in the fully open position prior to engagement with the mating header.

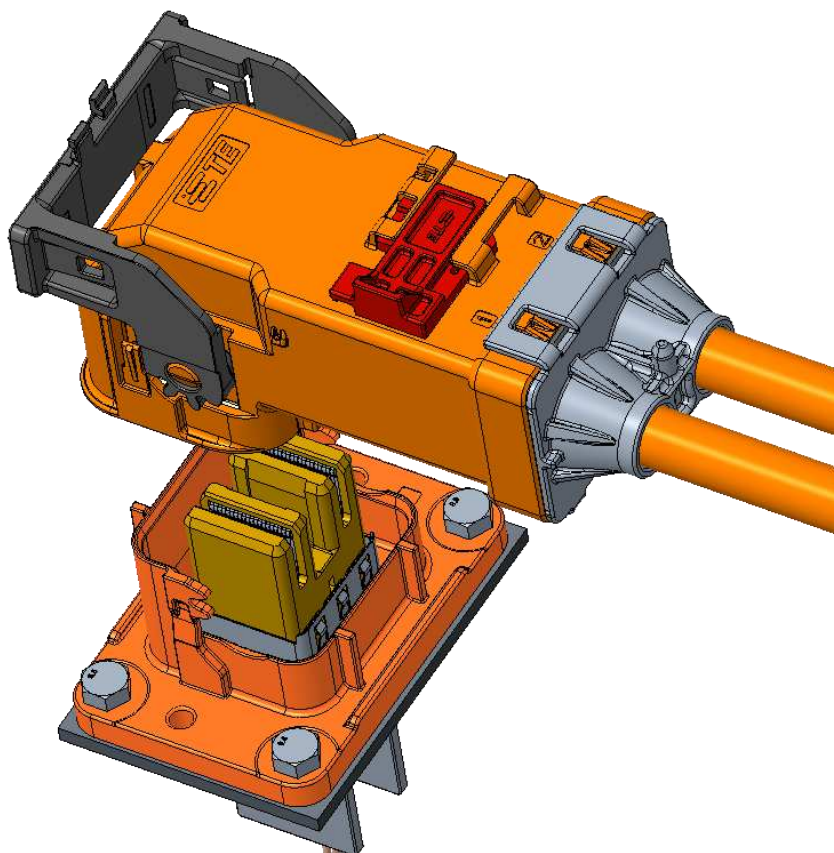


Figure 13: Plug and Header Alignment

3. Holding the Plug connector body, push the connector halves together until the Header gear teeth completely engage with the Lever gear teeth as shown in Figure 14. Lever may start to rotate slightly at this point.

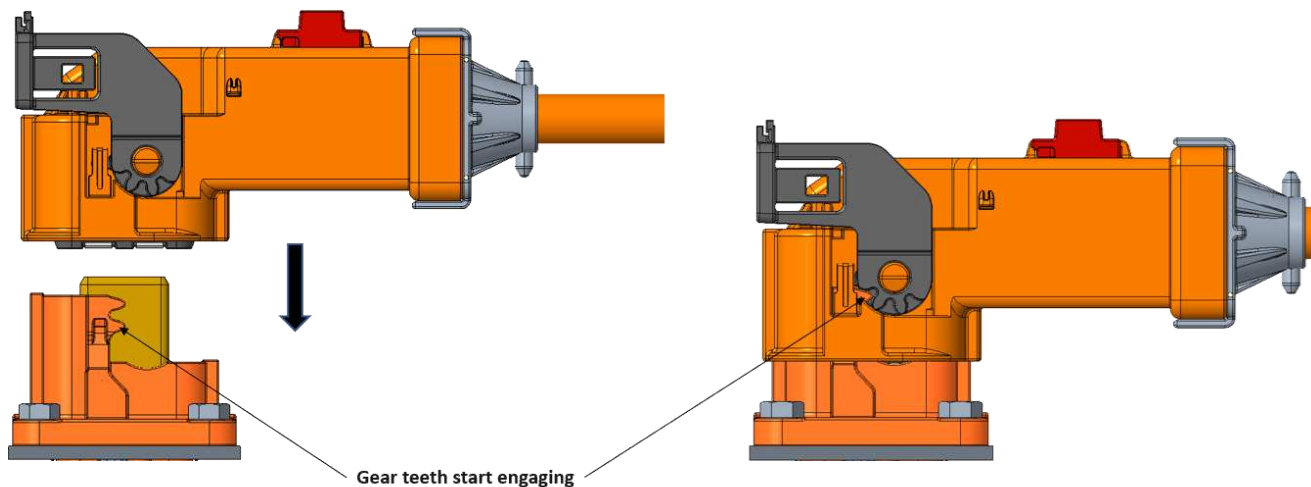


Figure 14: Plug and Header Pre-Lock

4. Rotate the lever towards the connector body until it is completely in the closed position as shown in Figure 15.

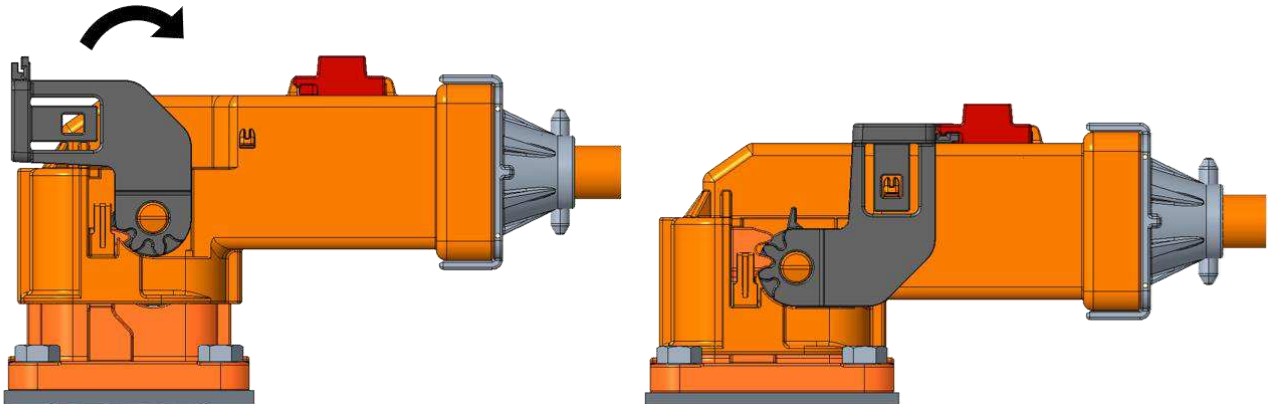


Figure 15: Lever Actuation from Open to Close

5. Push the red CPA forward until it stops as shown in Figure 16.

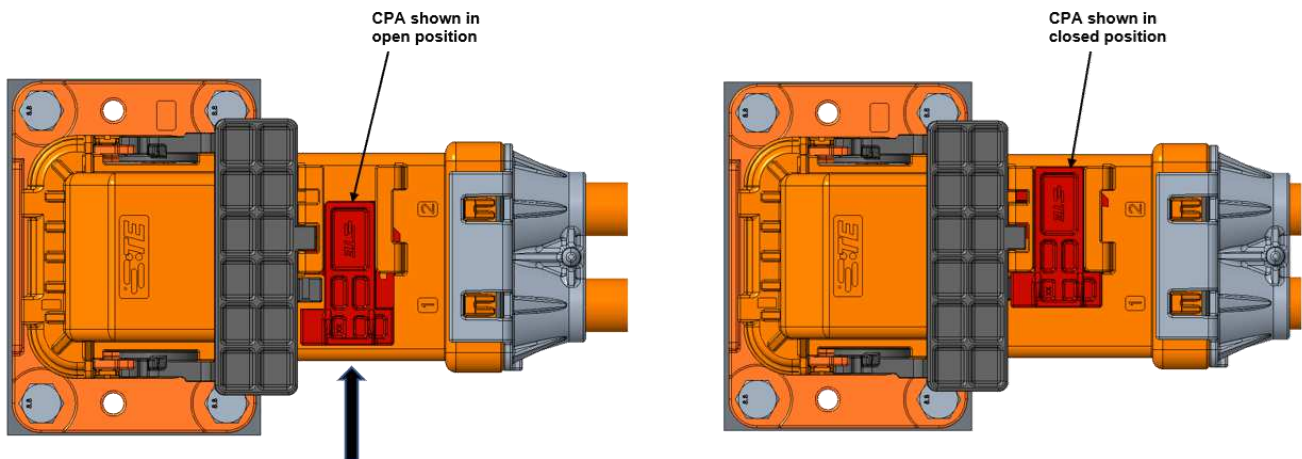
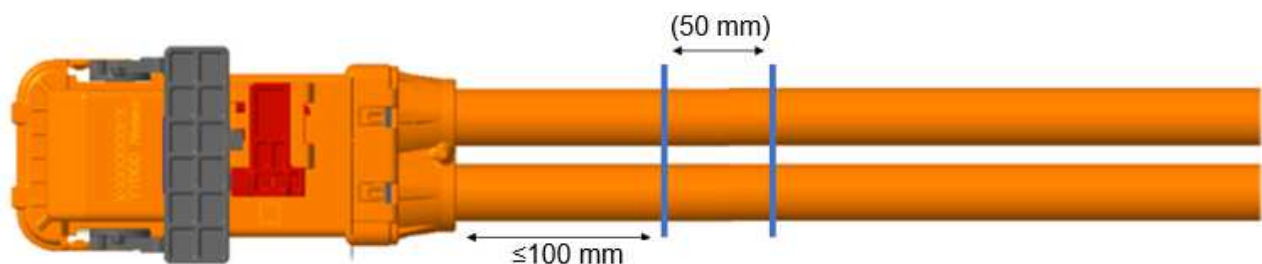


Figure 16: CPA Actuation from Open to Close

6. Ensure that the cables are rigidly secured at harness tie-down point as shown, and that the tie-down point is static relative to the header mounting location. A single tie-down point is required, but at least one additional tie-down point is recommended. See example:



3.11. Connector Unmating

1. Push the red CPA forward until it stops as shown in Figure 17.

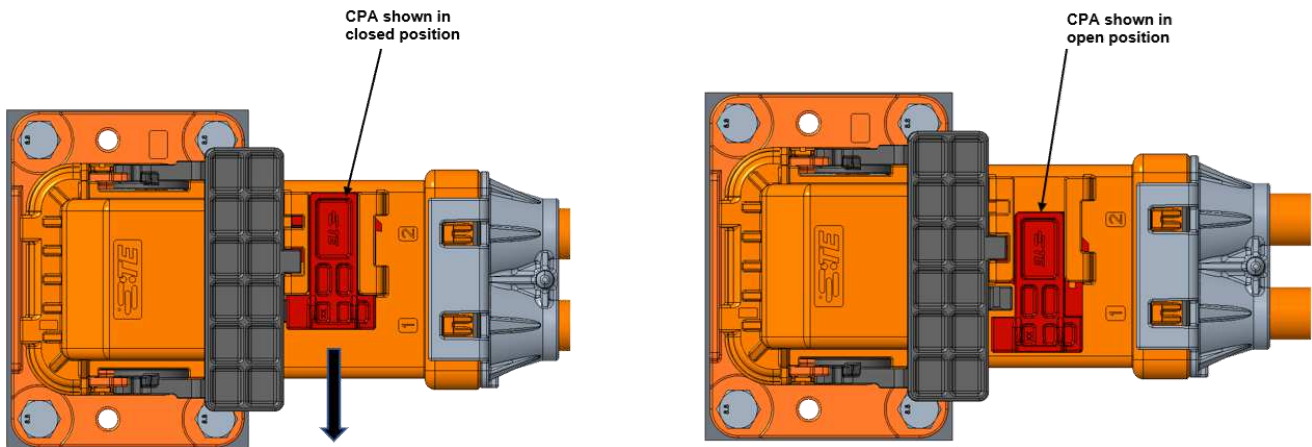


Figure 17: Lever from Close to Open

2. Rotate the lever away from the connector body until it is completely in the open position as shown in Figure 18.

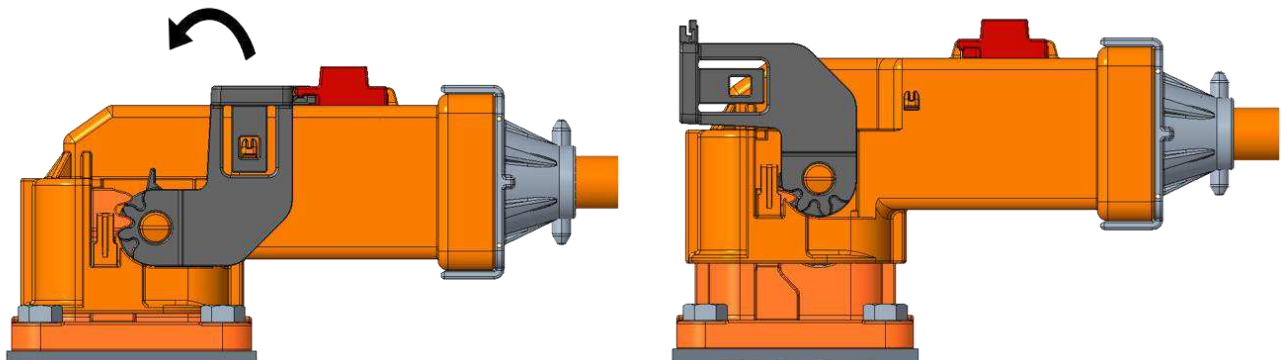


Figure 18: Lever from Close to Open

3. Holding the connector body pull the plug until it is completely separated from the header as shown in Figure 19.



Do not use the lever as a handle to pull the plug apart.

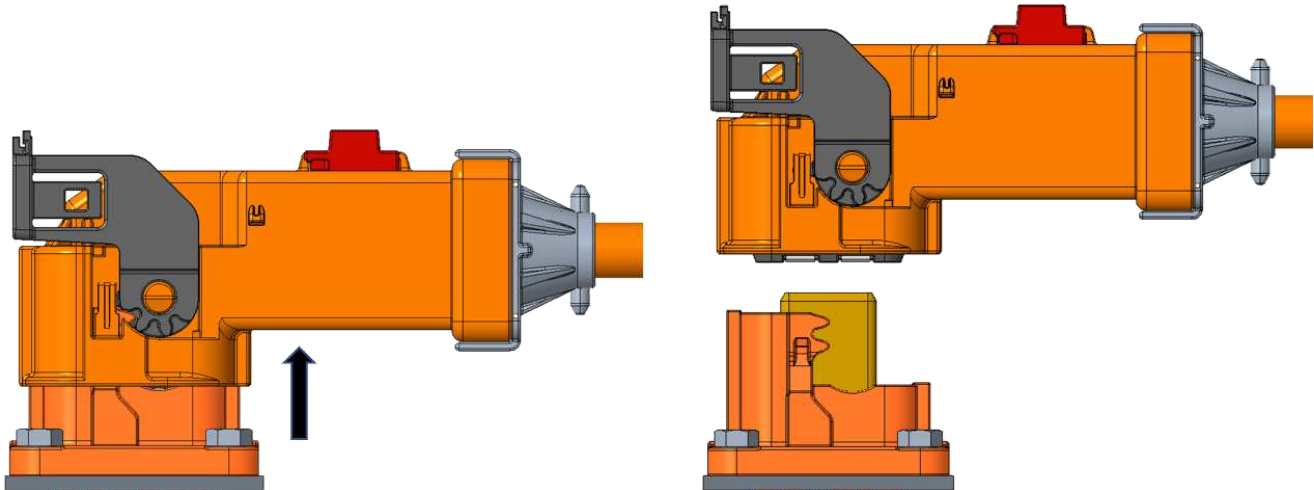


Figure 19: Plug and Header Unmate

3.12. Inspecting

For the inspection, refer to the customer drawing number 2343034-C (4-Bolt header).

3.13. Other

The following table specifies the sealable loose parts.

Table 2: TE Part Numbers for saleable loose parts

RECOMMENDED SUBCOMPONENTS			
HEADER SERIES	PART NUMBER	Quantity	DESCRIPTION
4-Bolt Header	3-2343034-1 OR 3-2343034-2	1	HC-STAK25 Header Assembly, Key-A OR HC-STAK25 Header Assembly, Key-B
	2359563-1	1	Inner Header Sub Assembly
	2360888-1	2	HC-STAK 25 TAB TERMINAL
	5-963716-3	2	MQS Terminal

4. END OF LINE TESTING

If pressure testing is used to validate sealing function, pressure shall not exceed 7 PSI [48 kPa].

5. VISUAL AID

Refer to the reference drawings 2379307-C for visual aid.

6. NOTE, CAUTION, AND DANGER STATEMENTS



NOTE

Highlights special or important information



CAUTION

Denotes a condition which may result in product or equipment damage.



DANGER

Denotes an imminent hazard which may result in moderate or severe bodily injury.