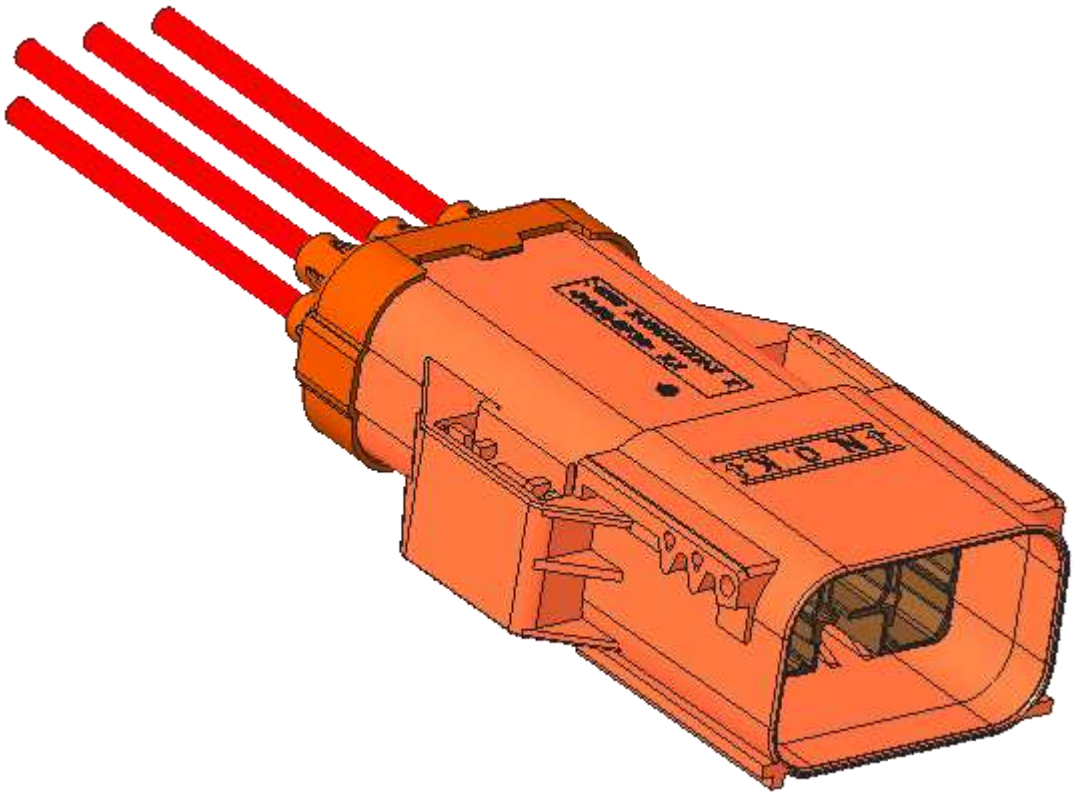
Document Class 1

HVA 630 - 5 phi connector
Tab Housing for in-line Connection



Content

1. SCOPE

This specification describes the assembly of the HVA 630 5 phi connector. This specification applies to hand-assembly of the coupling.

2. PROCESSING NOTE

The following technical documents, if referred to, are part of this specification. In case of a contradiction between this specification and the product drawing or this specification and the specified documentation then the product specification has priority.
The processor is responsible for ensuring the quality of the manufacturing process and the proper function of the system. The warranty and liability is excluded if quality deficiency or damages occurs by failing compliance to this specification or using not specified, not released tools and connector components.
The assembly should only be performed by trained personnel.

2.1 TE Connectivity Documentation

a) Customer drawings

2349365	HVA 630 5 phi TAB HSG, UNSHIELD CONNECTOR (TAB 5.8 + MQS PIN)
2318821	OUTER HOUSING, HV CONNECTOR, 5 phi
2349374	TAB INNER HOUSING, HV CONNECTOR, 5 phi,
2349813	SECONDARY LOCK HVIL, HV TAB HOUSING, 5 phi
828986	BLIND PLUG, HV CONNECTOR, 5 phi
2349369	COVER ASSY, HV CONNECTOR, 5 phi
967056	CAVITY PLUG MQS/MCON
828922	CAVITY PLUG TAB 5.8

b) Specifications

108-94235	**Product Specification HVA 630 - 5 phm connector**
114-18052	**Application Specification TAB 5.8x0.8**
114-18021	**Application Specification MQS Pin Contact System**
114-20233	**Application Specification HVA630 - 5 phi connector - Plug housing for in-line and Header connection.**

2.2 General Documentation

Cable specifications of prescribed cables

Cross-section 6,0mm²

Supplier:Huber+Suhner, Lower Frequency Division – CH 8330 Pfaffikon

Outer Diameter:	**4,15±0.15 mm**
Cable Description:	***Automotive cable, flexible* / T=150°C**
Dimension according to:	**ISO 6722-1 / ISO19642, structure B**
Huber+Suhner Part No.:	**STD 548776 M / 12-02-2018**
TE Part No.:	-

Cross-section 0,5mm²

Supplier:according to FCA spec. MS.90034

Outer Diameter:	**1.5±0.10 mm**
Cable Description:	***Automotive cable, flexible* / T=150°C**
Dimension according to:	**ISO 6722-1 / MS.90034**
TE Part No.:	-

3. APPLICATION TOOLS

Required application tools

Application device	Tool Nr.:
TAB 5.8x0.8	See Application Specification 114-18052
MQS Pin Contact System	See Application Specification 114-18021

Table 1

4. ASSEMBLY INSTRUCTIONS

4.1 Assembly overview

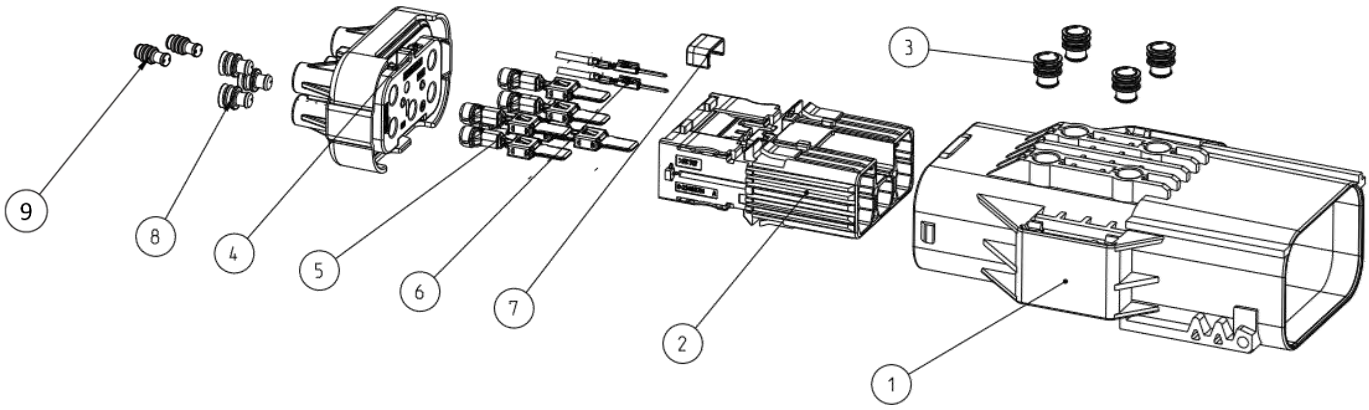


Figure 1

4.2 Parts of Assembly to order

(For detailed versions combination see customer drawing PN 2349365)

Wire / Part			6 mm²
Pos	Qty	Name	P/N
1	1	TAB OUTER HOUSING CODE A	2318821-1
2	1	TAB INNER HOUSING	2349374-1
3	4	CAVITY PLUG	828986-1
4	1	COVER CABLE SEAL ASSY	2349369-1
5	2/3/4/5	TAB CONTACT 5.8x0.8	2-968050-2
6	2	MQS PIN CONTACT	5-963716-3
7	1	SECONDARY LOCK (MQS)	2349813-1
8	1/2/3	CAVITY PLUG (AMP MCP)	828922-1
9	2	CAVITY PLUG (MQS/MCON)	967056-1

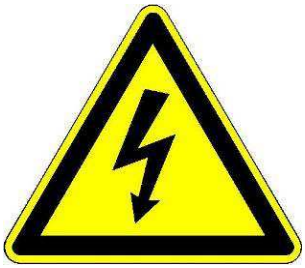
Table 2

4.3 **Security Advice**

ATTENTION!
- HIGH VOLTAGE APPLICATION –

HAZARD OF SEVERE ELECTRICAL SHOCK OR BURN

DISCONNECT POWER BEFORE HANDLING



The assembly should only be performed by trained personnel.

4.4 **Assembly Steps**

Step 1 – Cover assembly

Take the cover assembly which is already sold as P/N 2349369-1
(For detailed instructions see production drawing PN 2349369)

1. SEAL RETAINER
2. SEAL
3. COVER

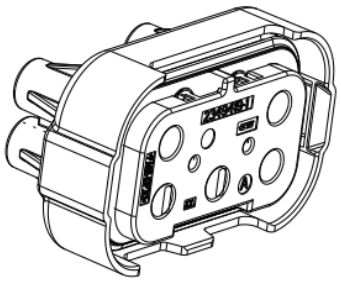


Figure 2.a

Step 2

Alignment and insertion of wires before insulation stripping, through the holes of cover assy.
The number of wires must be evaluated specific to each application.

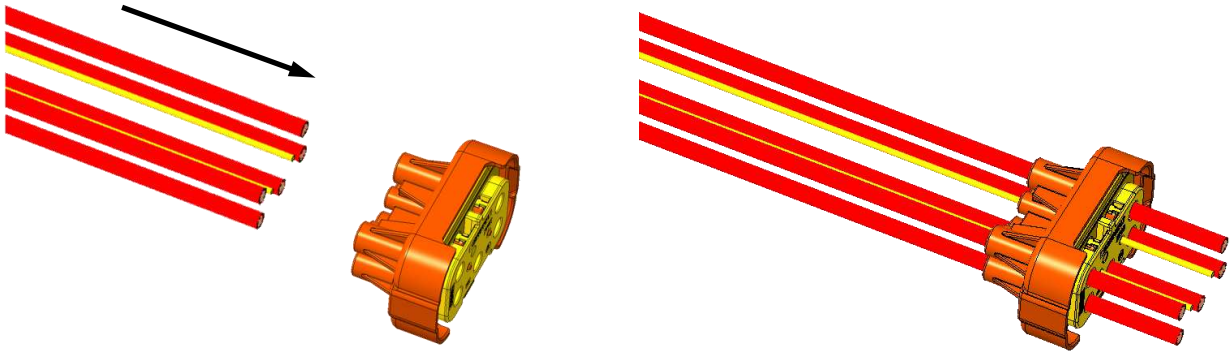


Figure 2.b

Step 3

a) Perform crimping operation according to application spec. 114-18052 for TAB 5.8x0.8

Remove wire insulation (stripped length) according to spec. 114-18052

Crimp on all conductors TAB 5.8x0.8 contact with the specified tool according to TE spec. 114-18052. Avoid twisting of the conductors. For easy insertion into TAB HOUSING all should have the same orientation (Figure 3).

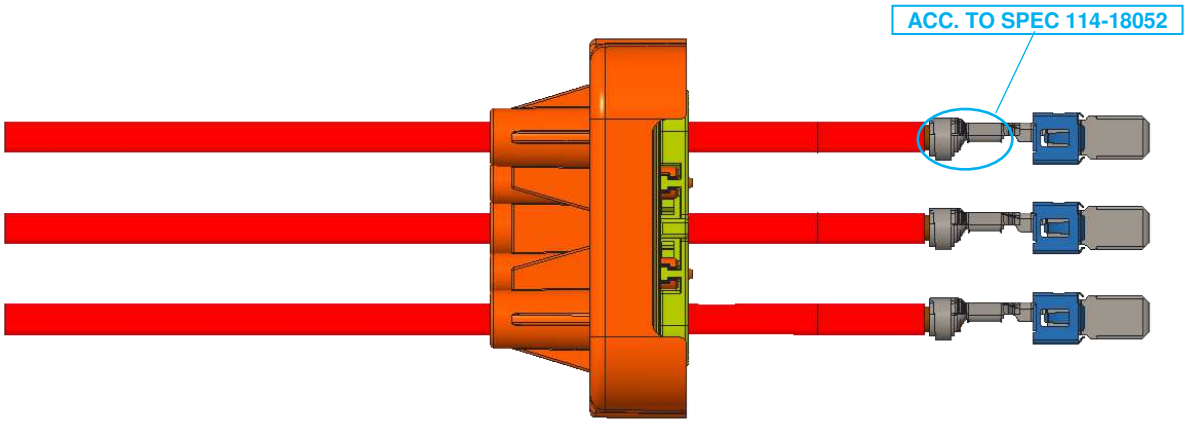


Figure 3

b) Perform crimping operation according to application spec. 114-18021 for MQS PIN contact with 0.5 mm² insulation diameter wires.

Remove wire insulation (stripped length) according to spec. 114-18021

Crimp on all conductors MQS PIN contact with the specified tool according to TE spec. 114-18021. Avoid twisting of the conductors. For easy insertion into TAB HOUSING all should have the same orientation (Figure 4).

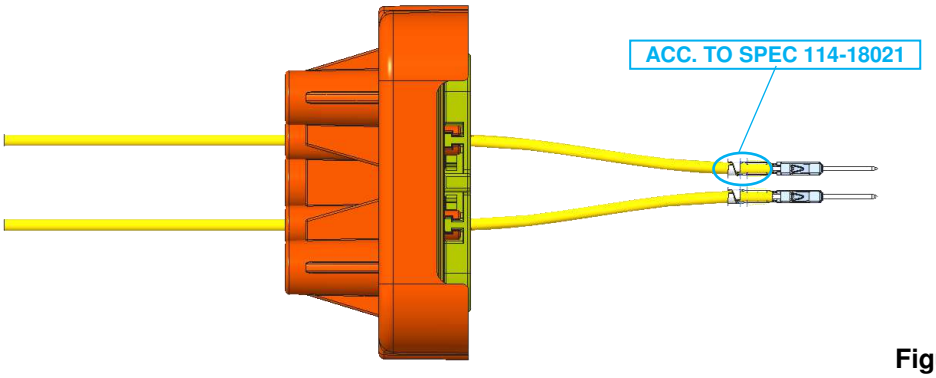


Figure 4

Step 4

Slide the COVER ASSEMBLY to assure a suitable overhang of the crimped wires, which guarantees its stable position before the contacts insertion in the TAB HOUSING and cover fixing on OUTER HOUSING.

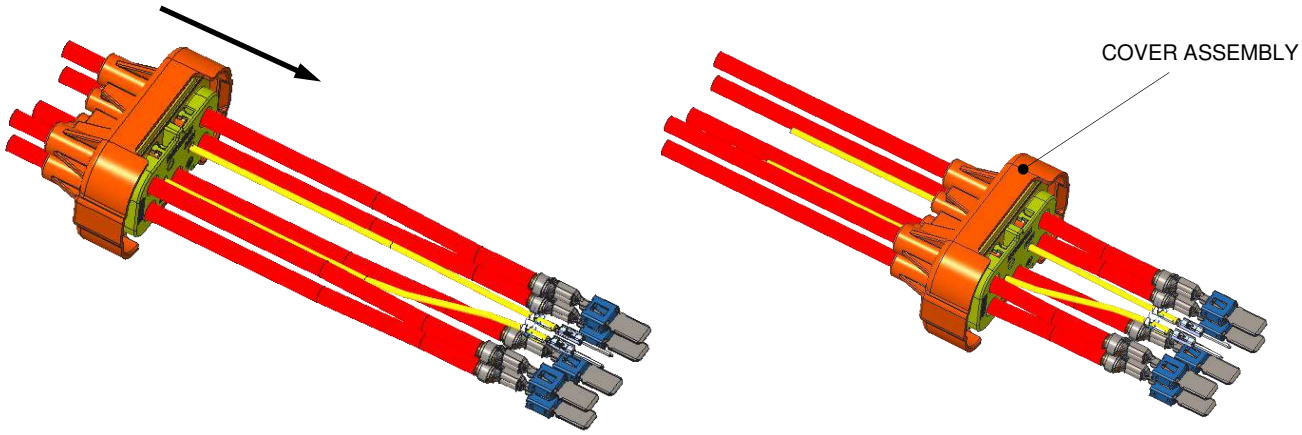


Figure 5

Step 5

Align the COVER ASSEMBLY with TAB HOUSING and insert the contacts into the TAB HOUSING (according to the cavity numbers shown in Figure 6a) into their locking position. The contacts are locked when a click is heard on insertion. To ensure that the contacts are correctly inserted, push/pull with a force on the cables (max. 10N). After the contacts have been controlled for correct positioning and locking, the secondary locks of the TAB HOUSING must be locked (Figure 6b). The adequate locking is audible (snap in) but must be controlled by visual inspection.

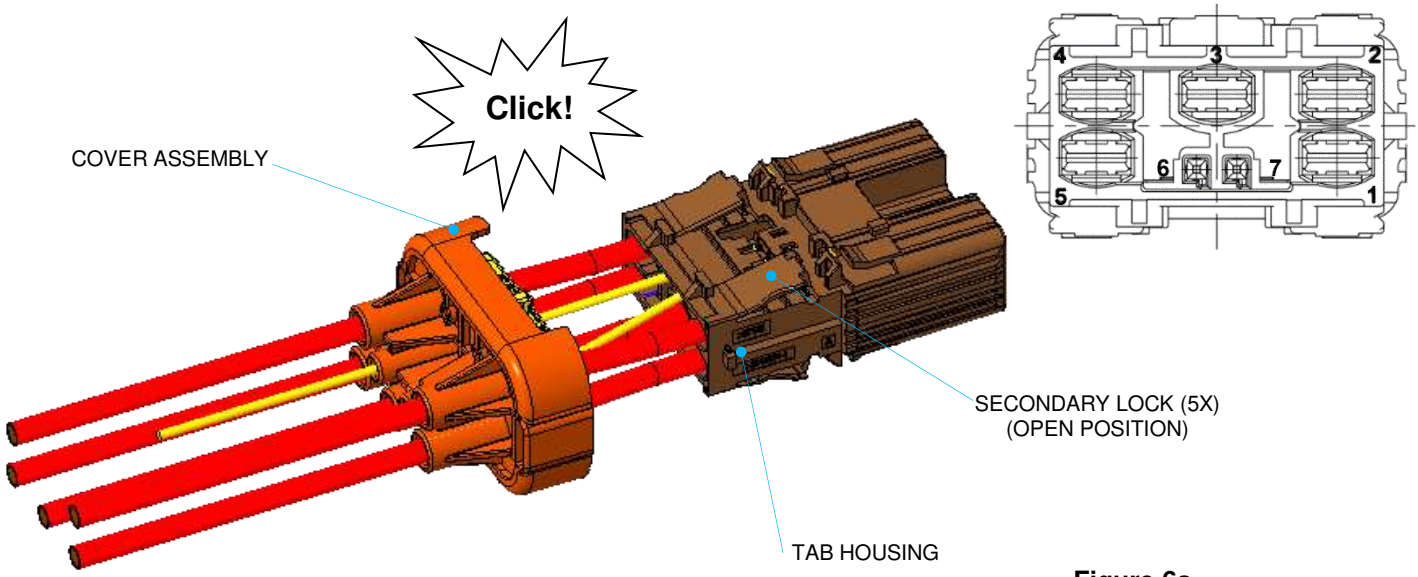


Figure 6a

Notes:

a) **Do not twist the wires.**
b) **Do not exchange/cross the wires one to each other's.**

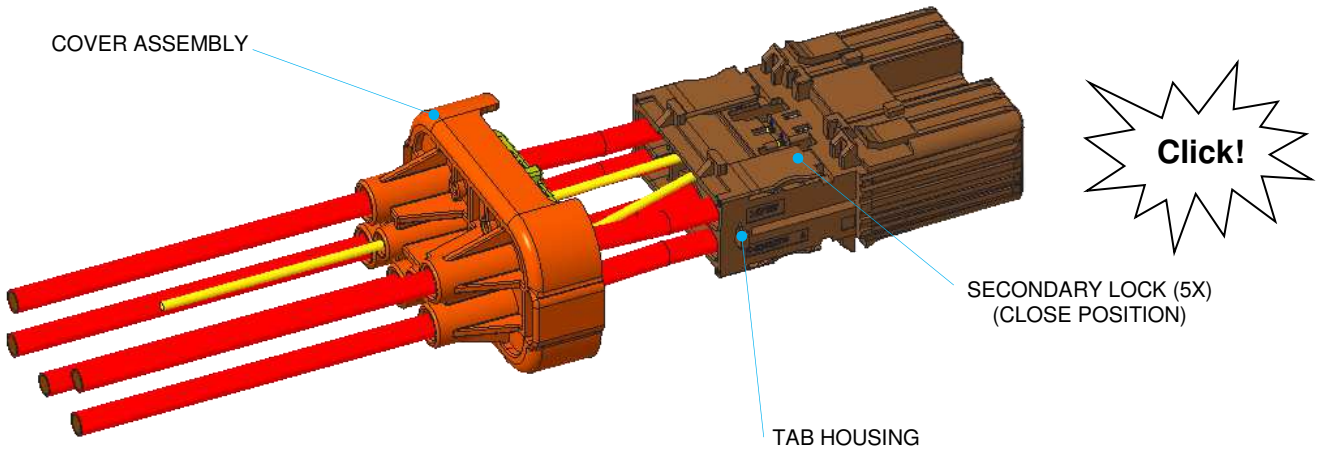


Figure 6b

Step 6

Align the INTERLOCK SECONDARY LOCK with its seat on the TAB HOUSING and assembly it (Figure 7).

Note: Pay attention to the MQS secondary lock polarization feature.

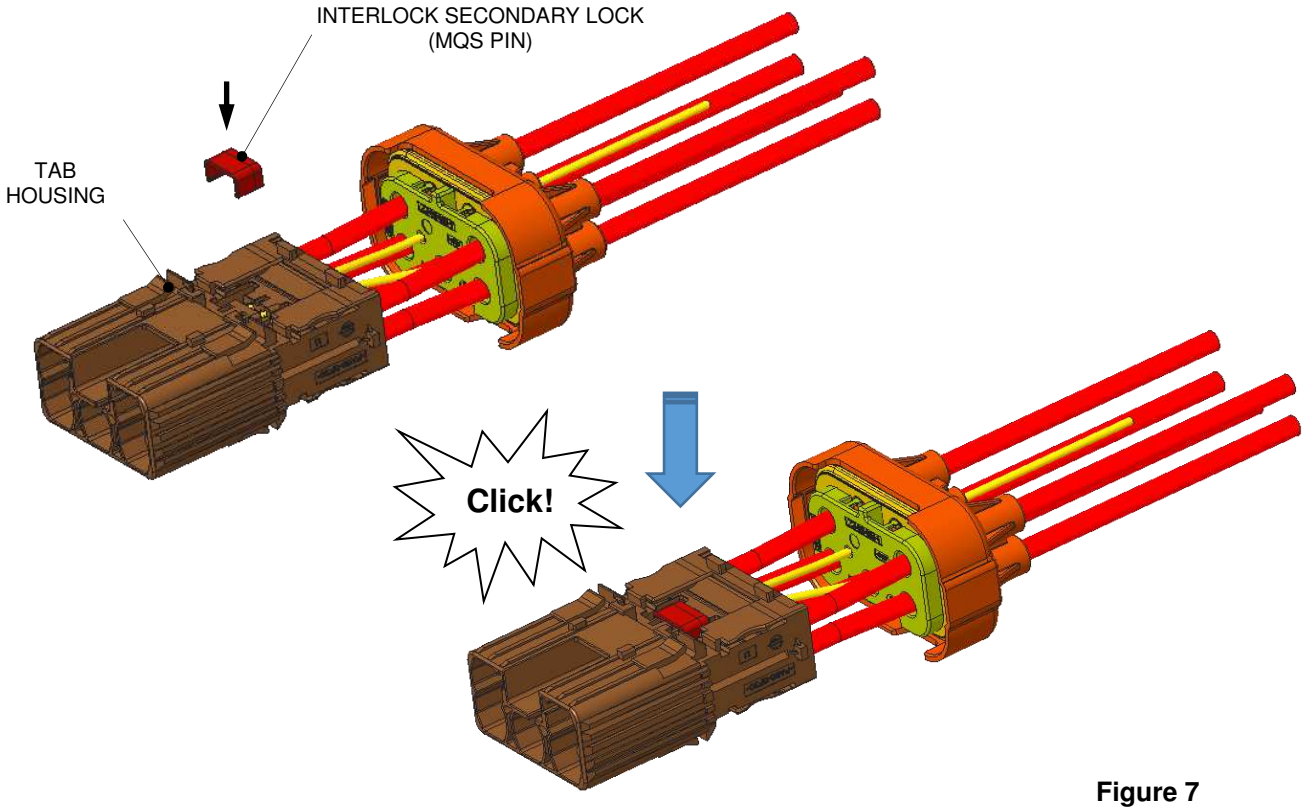


Figure 7

Notes:

If a dismounting of TAB 5.8 contact is necessary, use auxiliary tool according contact specification 114-18052. For opening the secondary locks use a flat screwdriver (e.g. 2.3x0.5) (Figure 8). If a secondary lock has been opened the TAB HOUSING has to be exchanged.

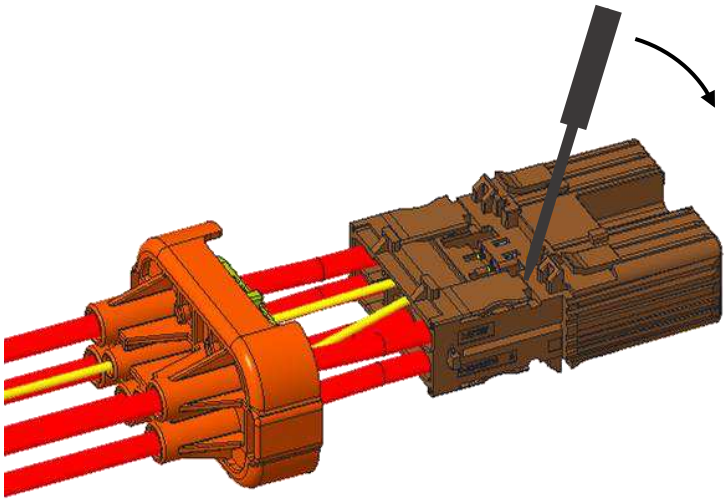


Figure 8

Step 7

Push 4 ´Blind Plug Seals` (TE PN 828986-1) into the respective cavities of the OUTER HOUSING (TE PN 2318821-1) until the stop, as shown in Fig. 9

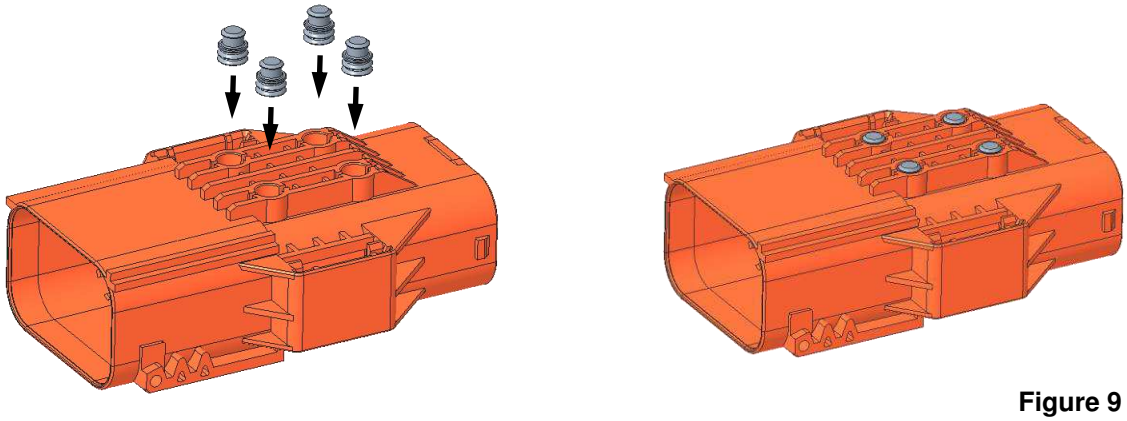


Figure 9

Step 8

Insert the cable assembly into the OUTER HOUSING. The TAB HOUSING ensures with its coding the correct polarization in the OUTER HOUSING (Figure 10a, 10b). To ensure that the cable assembly is correctly snapped in, pull with a force on the cable (max. 10N).

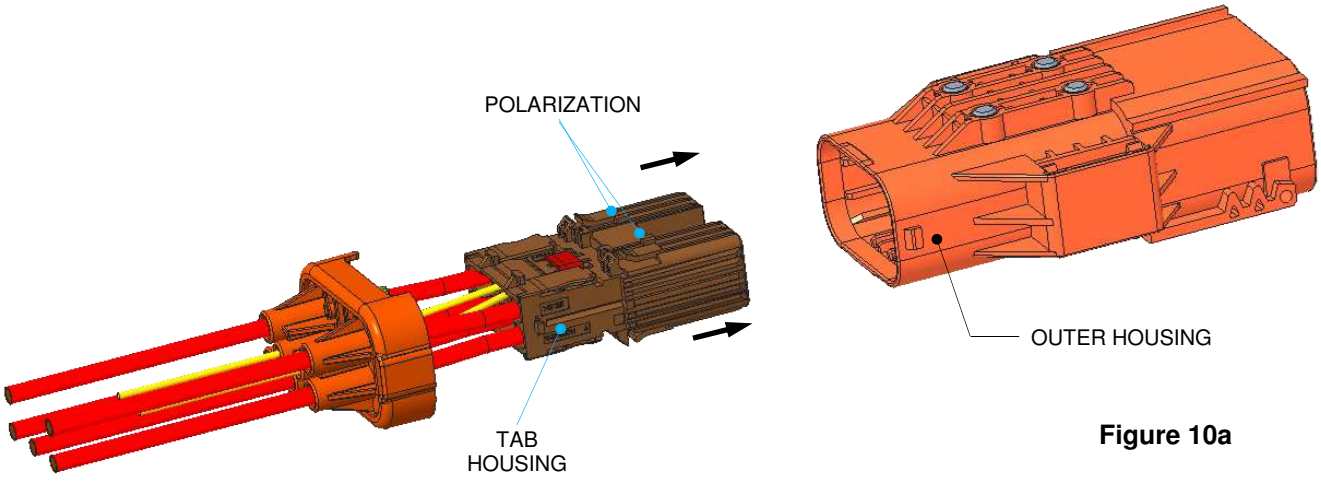


Figure 10a

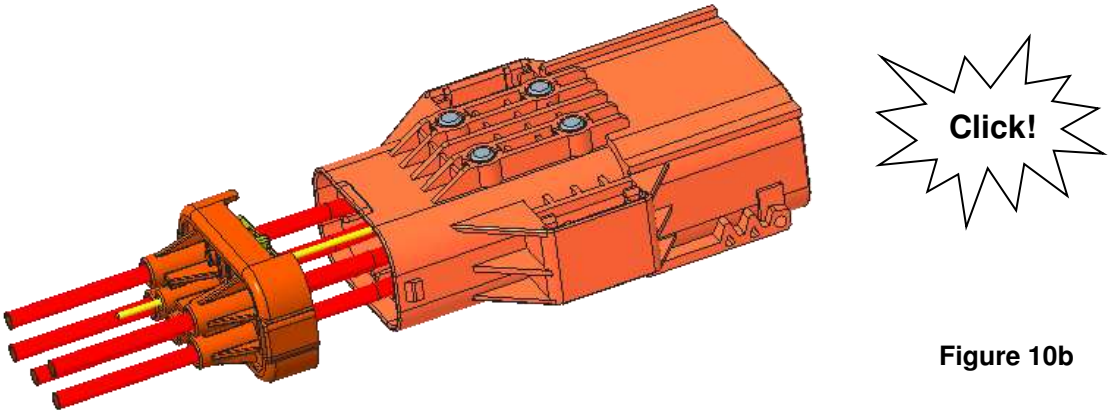


Figure 10b

Step 9

Press then the COVER over the OUTER HOUSING. Ensure that both catch-mechanisms are snapped-in (Figure 11).

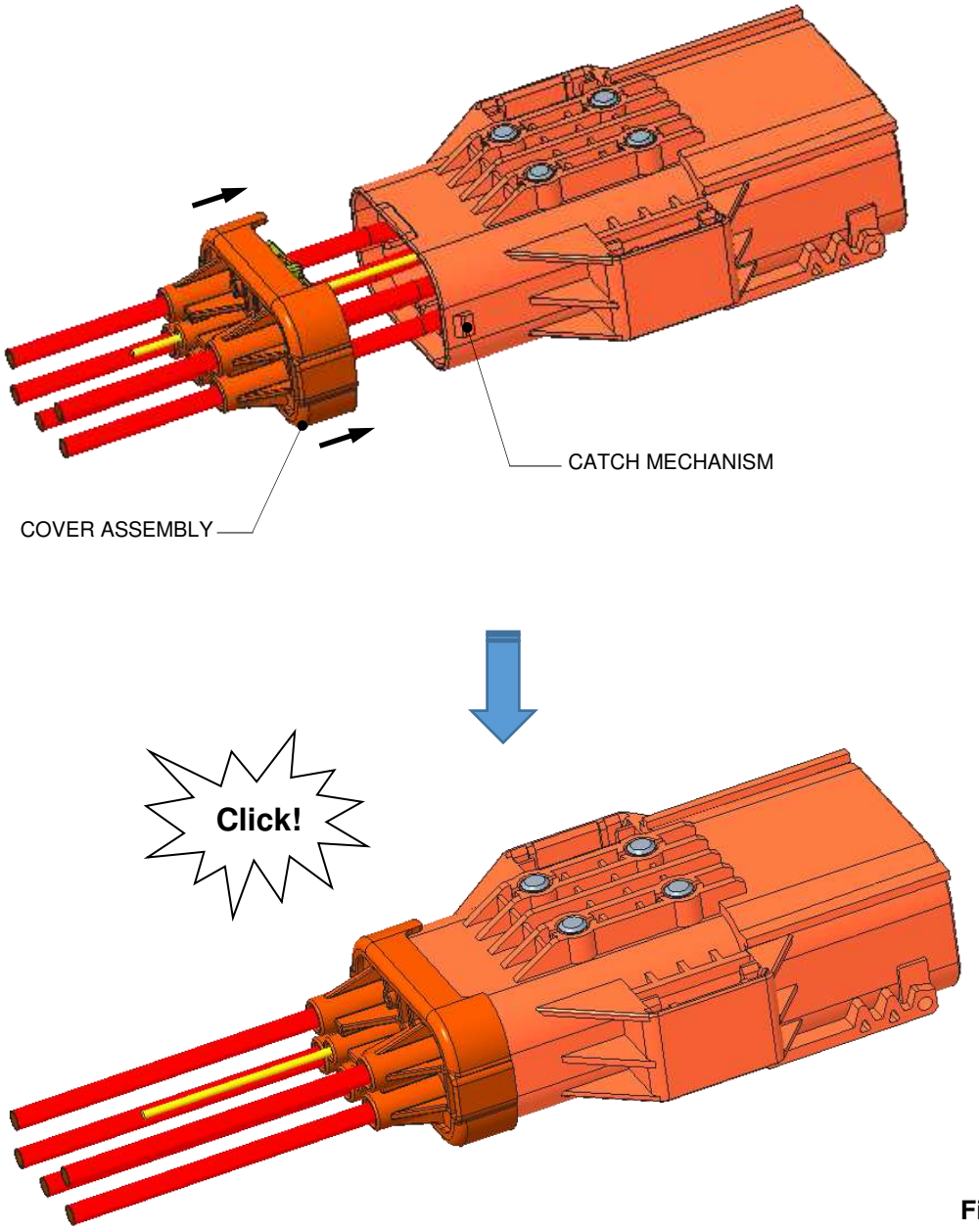


Figure 11

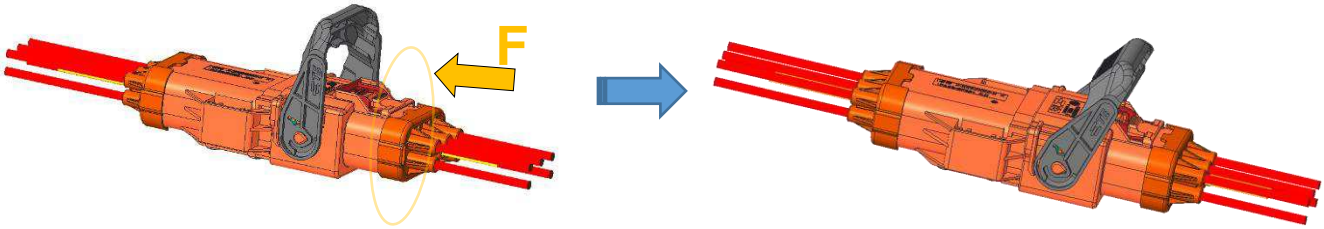
4.5 **End of Line Test**

Assembled HV Connectors have to be tested electrically and mechanically to applicable requirements.

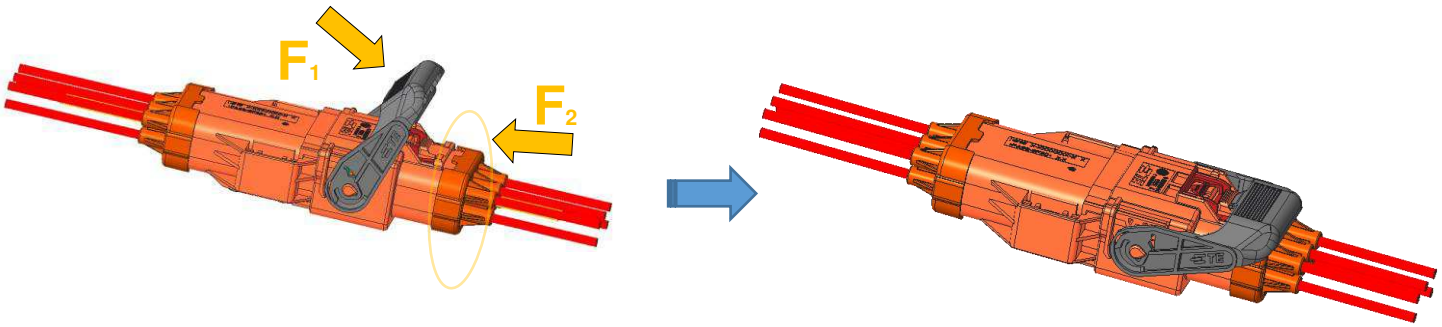
5. CONNECTOR HANDLING

5.1 Plugging Connector

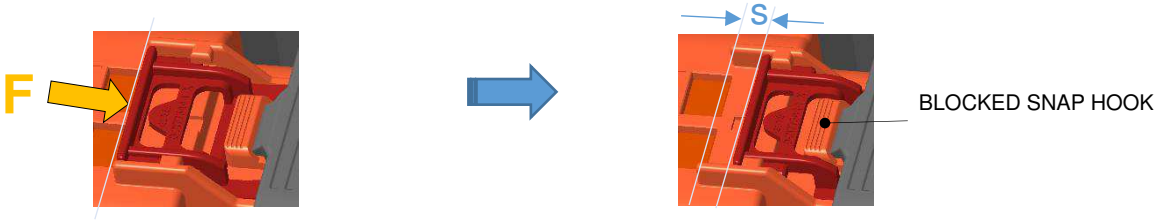
- **Push plug connector with opened lever into tab housing until lever snaps into engaged-position. Snapping point is haptical, visual and acoustical detectable. In case of oversight pull out, the lever moves automatically back into open position → bring it again into engaged-position.**

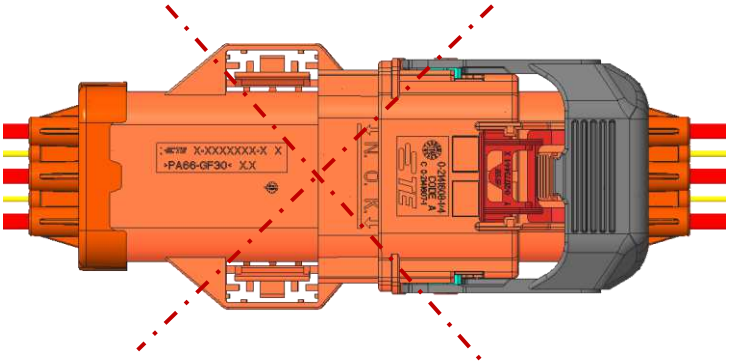


- **Close lever (*F_1*) during pushing plug against to the tab housing (*F_2*) until lever snaps hearable into plug housing**

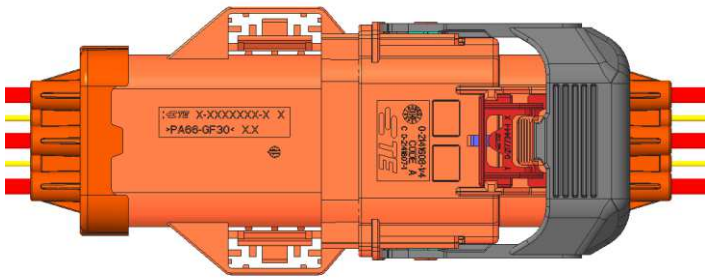


- **Slide CPA until stop into end position (distance "s"). The snap hook is in this position blocked and it will not be possible to push down the snap hook to open the connection**





ASSEMBLY POSITION NOT CORRECT



ASSEMBLY POSITION CORRECT

5.2 **Unplugging Connector**

- **To unplug connection, use inversed sequence**
    - **Open CPA**
    - **Press snap hook to unlock lever**
    - **Open lever**
    - **Pull out plug from tab housing**

5.3 **Fastening the Tab housing assembly**

The interface to assemble the connector to the car body has to be done according to TE specification 208-18075-1. The process of the installation (see fig. 12) must be done vertically downwards over the two latches until the connector is on both sides audibly locked in place.

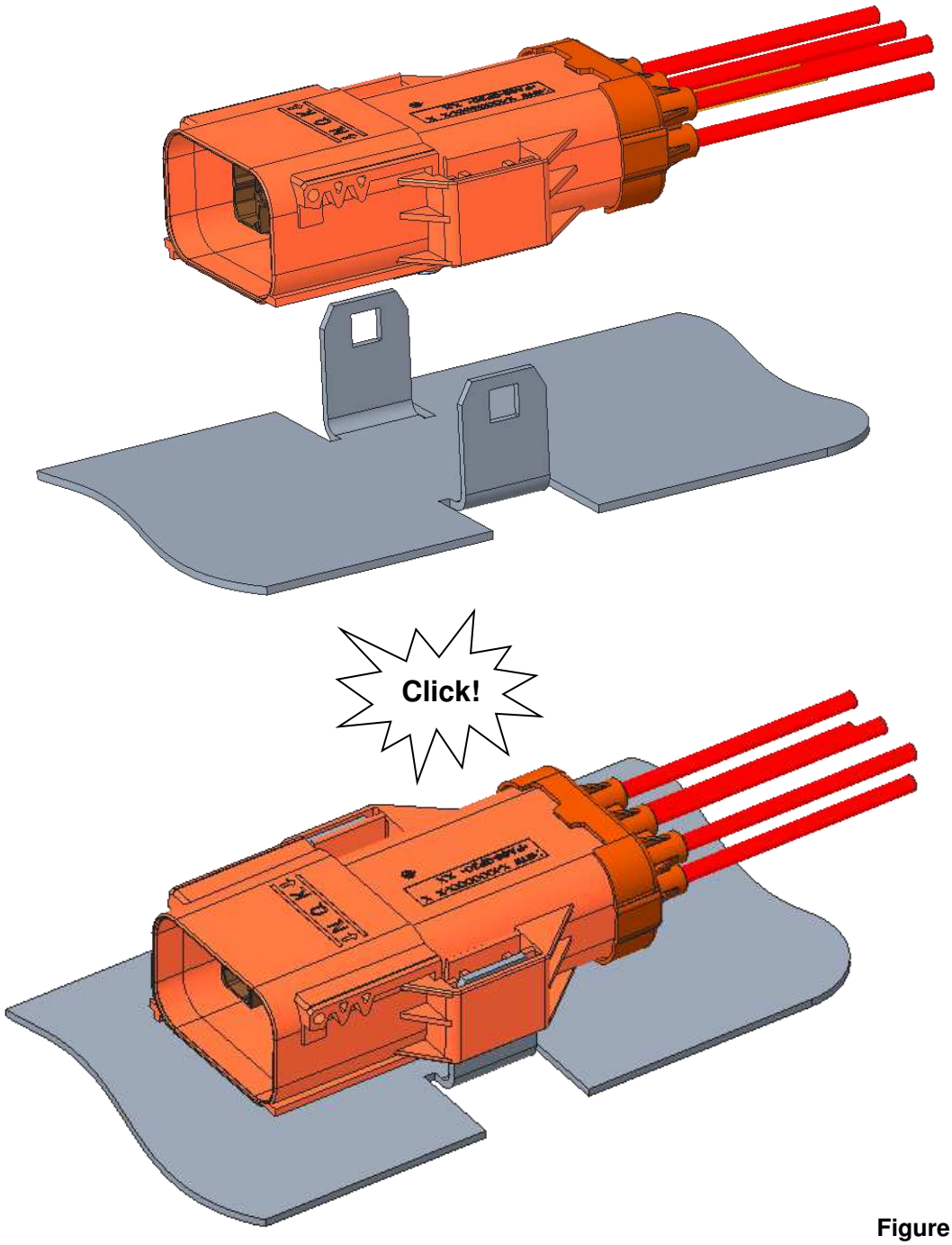


Figure 12

LTR	REVISION RECORD	DWN	APP	DATE
01	NEW DOCUMENT	M. POLIZZI	A. GENTA	25MAY2019
02	UPDATED PAGE 6	SDM	A. GENTA	10OCT2019
03	UPDATED PAGE 6	SDM	A. GENTA	16OCT2019
04	UPDATED PAGE 13	M. POLIZZI	A. GENTA	05FEB2020
05	ADDED PRODUCT SPECIFICATION	M. POLIZZI	A. GENTA	04MAY2020
A	FROM PRELIMINARY TO ACTIVE	M. POLIZZI	A. GENTA	27NOV2020

DR M. POLIZZI 25MAY2019			
CHK A. GENTA 25MAY2019	TYCO ELECTRONICS AMP ITALIA A TE CONNECTIVITY LTD. COMPANY CORSO FRATELLI CERVI, 15 COLLEGNO TORINO – ITALIA		
APP A. GENTA 25MAY2019	NO 114-20232	REV A	LOC I
TITLE	APPLICATION SPECIFICATION for HVA 630 – 5 phi CONNECTOR		