

Class 1

2 to 8 pos NextGen MCON 1.2 LL Sealed

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1. SCOPE

1.1. CONTENTS

This application specification describes the product features, the mating parts, and the assembly sequence for the 2 to 8 position NextGen MCON 1.2 LL sealed connector family.

(4-8 pos to be added on the near future).



1.2. PRODUCT TABLE

Pos. Nr.	PN	Description	Restricted to -	Recommended mating part
2	1-2378602-1	2POS, NEXTGEN, MCON 1.2,SLD,COD A	Catalogue part	1-1703498-x
	1-2378602-2	2POS, NEXTGEN, MCON 1.2,SLD,COD A	VW	1-1703498-x
	2-2378602-1	2POS, NEXTGEN, MCON 1.2,SLD,COD B	Catalogue part	2-1703498-x
	2-2378602-2	2POS, NEXTGEN, MCON 1.2,SLD,COD B	VW	2-1703498-x
	3-2378602-1	2POS, NEXTGEN, MCON 1.2,SLD,COD C	Catalogue part	3-1703498-x
	3-2378602-2	2POS, NEXTGEN, MCON 1.2,SLD,COD C	VW	3-1703498-x
3	1-2378603-1	3POS, NEXTGEN, MCON 1.2,SLD,COD A	Catalogue part	1-1703494-x
	1-2378603-2	3POS, NEXTGEN, MCON 1.2,SLD,COD A	VW	1-1703494-x
	2-2378603-1	3POS, NEXTGEN, MCON 1.2,SLD,COD B	Catalogue part	1-1703494-x
	2-2378603-2	3POS, NEXTGEN, MCON 1.2,SLD,COD B	VW	1-1703494-x
	3-2378603-1	3POS, NEXTGEN, MCON 1.2,SLD,COD C	Catalogue part	see 114-18679-3
	3-2378603-2	3POS, NEXTGEN, MCON 1.2,SLD,COD C	VW	see 114-18679-3
	4-2378603-1	3POS, NEXTGEN, MCON 1.2,SLD,COD D	Catalogue part	see 114-18679-3
	4-2378603-2	3POS, NEXTGEN, MCON 1.2,SLD,COD D	VW	see 114-18679-3

2. APPLICABLE DOCUMENTS

2.1. TE CUSTOMER DRAWINGS

A customer drawing is available for each part number on [te.com](https://www.te.com) online catalog. It shows the dimensions and the materials of the parts.

2.2. PRODUCT SPECIFICATIONS

The product specification 108-97874 describes the electrical and mechanical performances of the 2 to 8 position NextGen MCON 1.2 LL sealed connector family.

2.3. MATING PARTS

The geometric definition of the mating part for 2 to 8 position NextGen MCON 1.2 LL sealed connector family, is defined by the drawing 114-18679-3.

2.4. COMPATIBLE TERMINALS

The parts have been validated and tested with TE female terminals. Please see customer drawing nr. 1452674 for compatible terminal. Here you can find the appropriate size and plating variants.

2.5. DEFINITION OF THE APPLICATION TOOLS

A. CONTACT INSERTION TOOL

Especially if contacts with small wire sizes are inserted, the suitable tool 519609-1 should be used.

B. CONTACT EXTRACTION TOOL

For the 2 to 8 position NextGen MCON 1.2 LL sealed connector family, the contact extraction tool with the order number **5-1579007-3** is suitable

The TPA opening tool can be a conventional flathead screwdriver, **width- 1.5 mm, and thickness-max. 0.5 mm**, or a plastic prying tool with same size.

3. DEFINITIONS AND ABBREVIATIONS

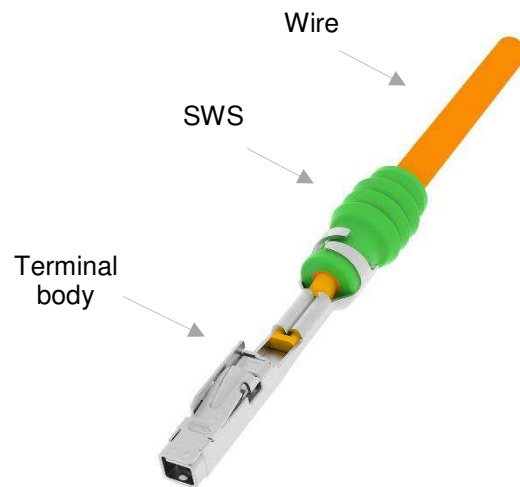
CPA = Connector Position Assurance

TPA = Terminal Position Assurance

SWS = Single Wire Seal

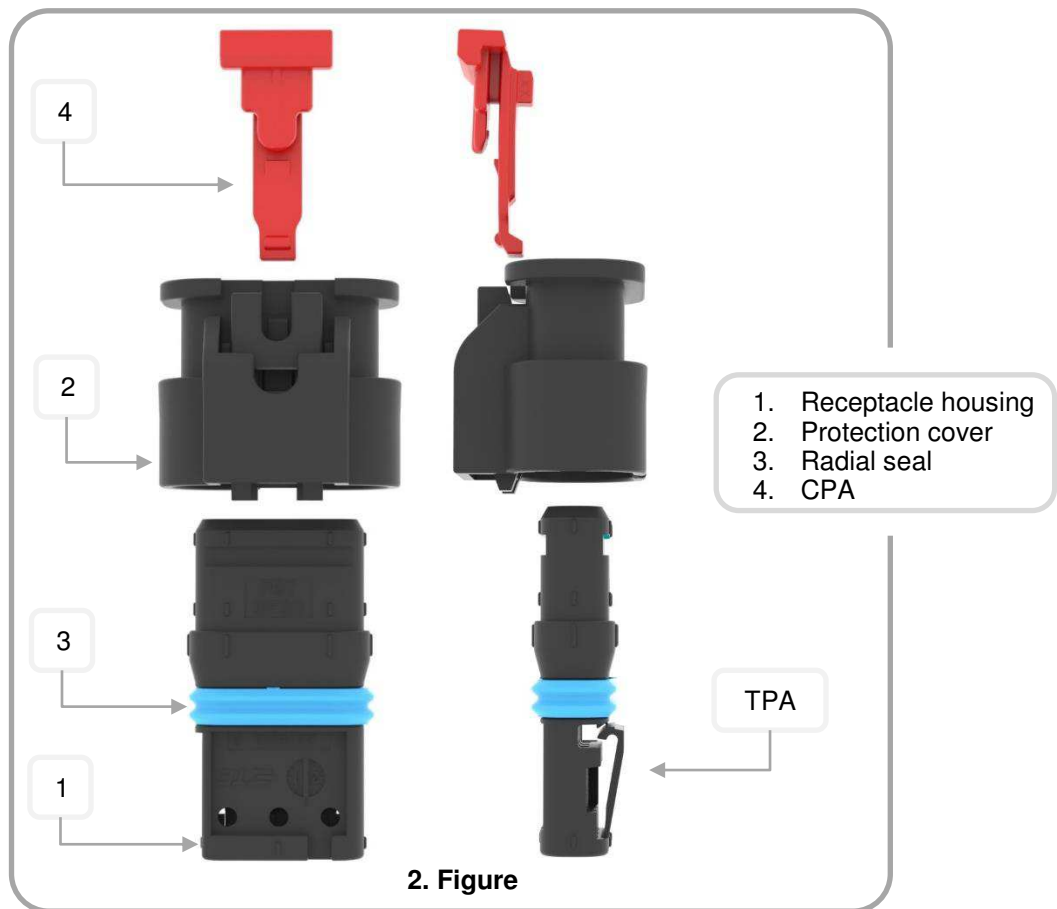
PN = Part Number

A. Terminal main components



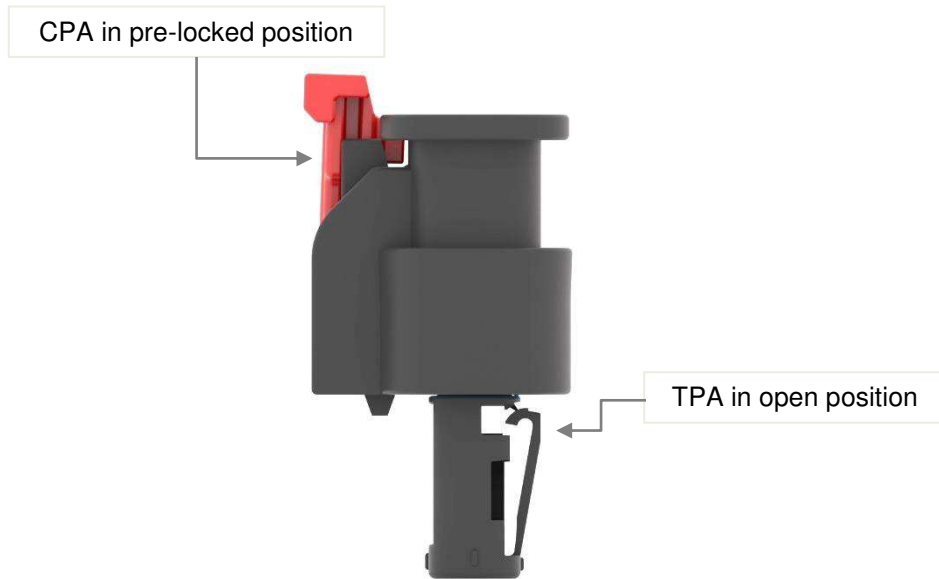
1. Figure

B. Connector main components



4. APPLICATION SEQUENCE

4.1. DELIVERY CONDITION



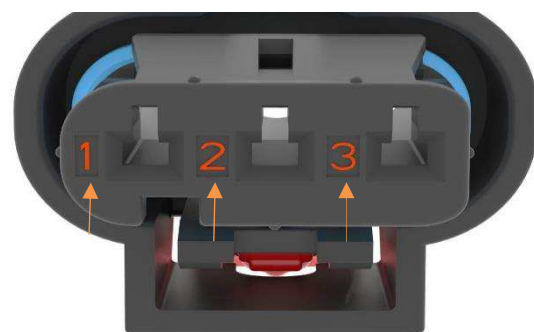
3. Figure

4.2. CONTACT INSERTION

- Populate the connectors with terminals. While inserting please orient the terminals in the correct position.
- You can check the cavity numbering on the top of the connector.

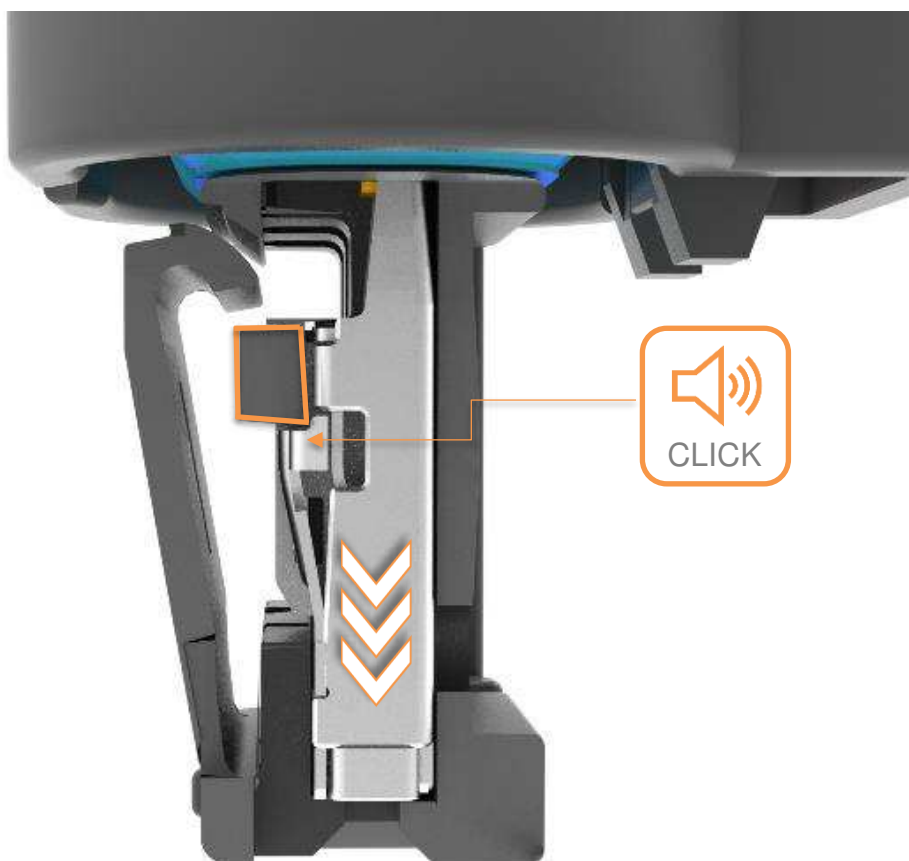


5. Figure
ORIENTATION OF THE TERMINAL



4. Figure
TERMINAL CAVITY NUMBERING

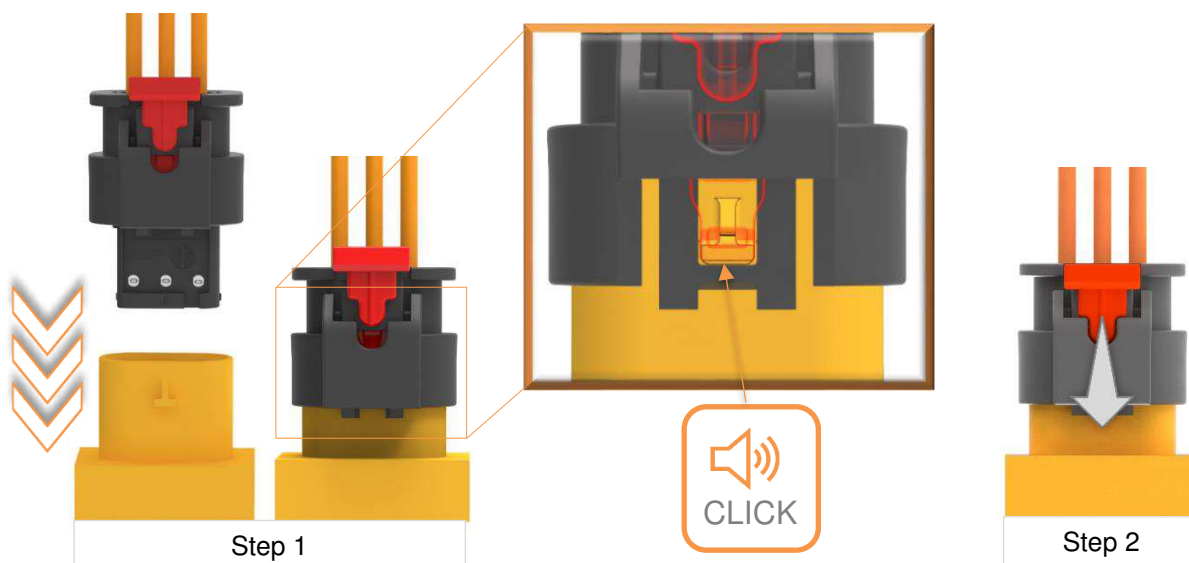
- Insert the terminal until an audible click is heard or lock is felt.



6. Figure

4.3. MATING

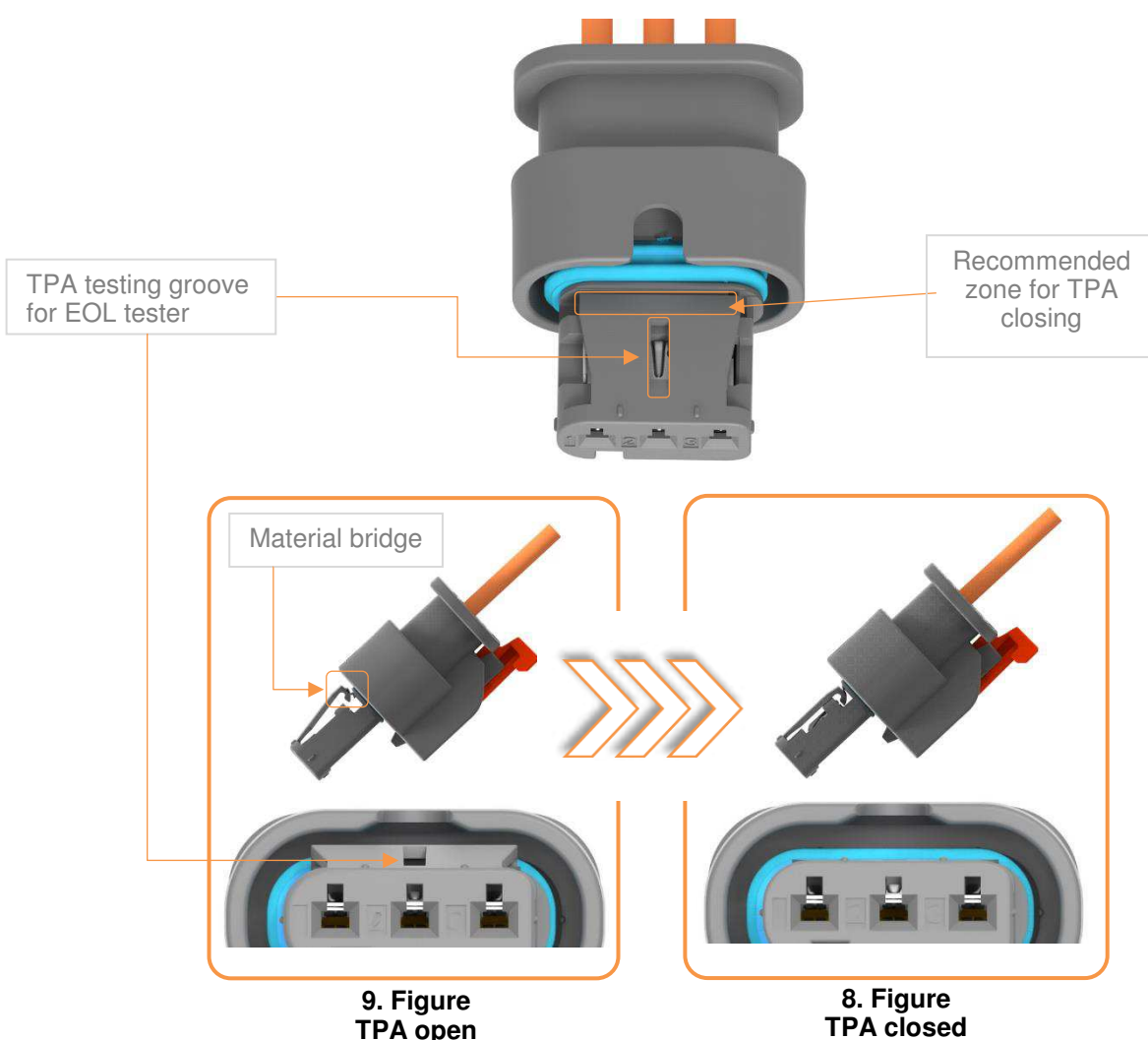
- mate the two connector halves until a click sound is heard and the connector reached its end position
- pay attention for the right orientation and coding!
- if the connector is equipped with CPA, then close it until it reaches its end point
- the CPA can be closed only when the connector is fully mated
- do not push the connector from the CPA



7. Figure

4.4. CLOSING OF THE TPA

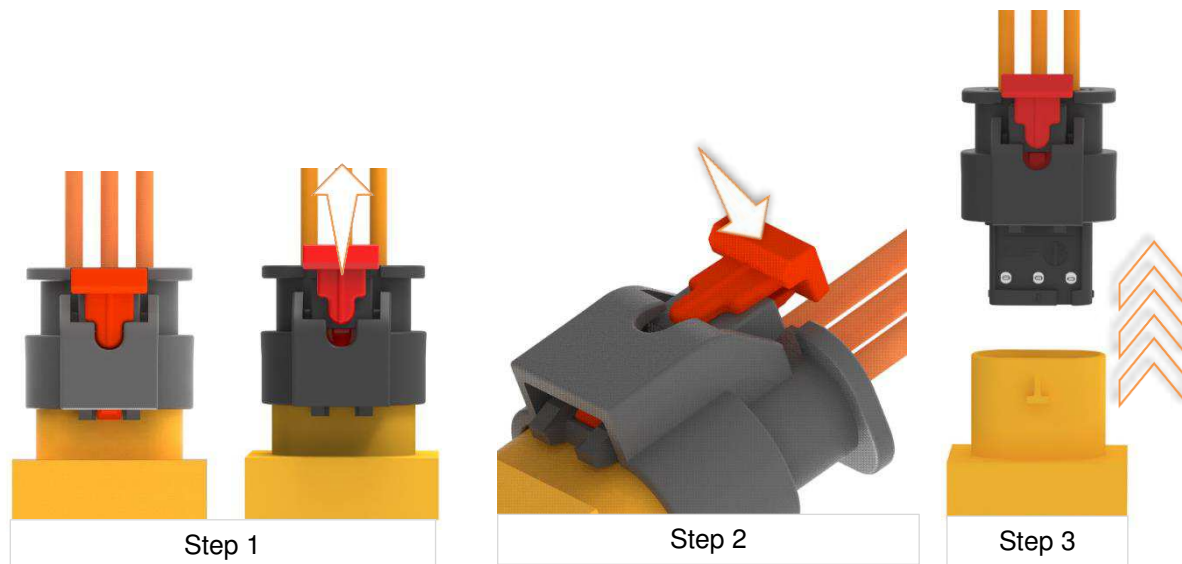
- close the TPA as much as possible from the surface marked as recommended zone
- you will hear a snapping noise when the material bridge will break from the TPA, and another click noise once the TPA is closed in its end position
- the closing force is increasing as you further you press the TPA from the **recommended zone**
- while the TPA can be closed from the middle section, please make sure that both ends are properly snapped into closed state
- with enough force applied, the part can be mated with open TPA, this can be detected by higher mating force
- if the TPA is closed and you insert the wire, you should be able to detect it with a higher insertion force, the TPA will reopen to its delivery condition if enough force is applied
- we recommend closing the TPA only after the connector it is fully populated with terminals



- The groove on the TPA serves the function of EOL testing interface.
- We offer the possibility to check the state of the TPA with a pin on the EOL tester.

4.5. UNMATING

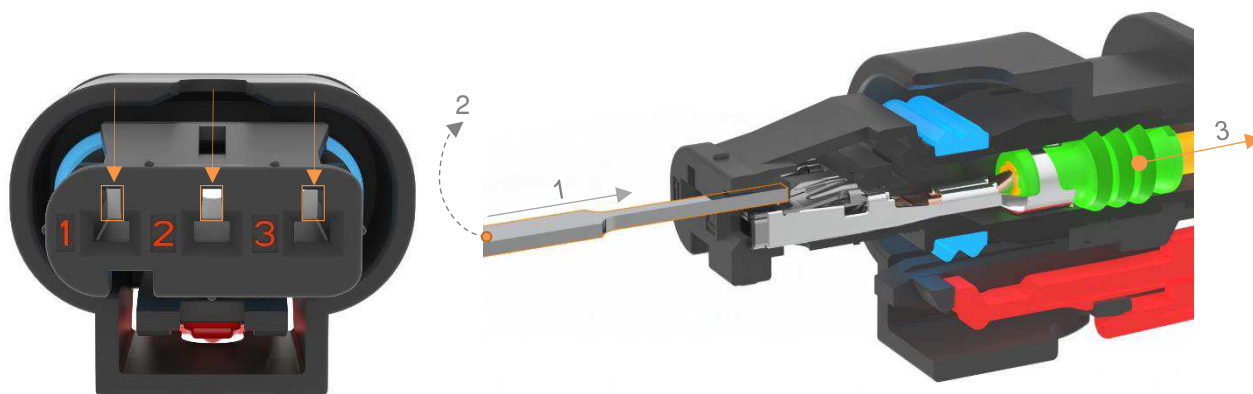
- to unmate the connector from the counterpart first you need to open the CPA (Step 1)
- once the CPA is open press the latch together with the CPA as illustrated at Step 2.
- the latch must lift so the connector is released from the counterpart
- once the latch is free pull the connectors apart (Step 3)



10. Figure

4.6. CONTACT EXTRACTION

- place the extraction tool (e.g., screwdriver) in the extraction holes show on 11. figure.
- insert the extraction tool until it is blocked (Step 1).
- the terminals can be removed by bending the locking lance by tilting the tool (Step 2)
- then pull the cable simultaneously (Step 3) as show on **12. figure** and keep the extraction tool tilted.
- if a reworked terminal is reused the retention force performance may decrease

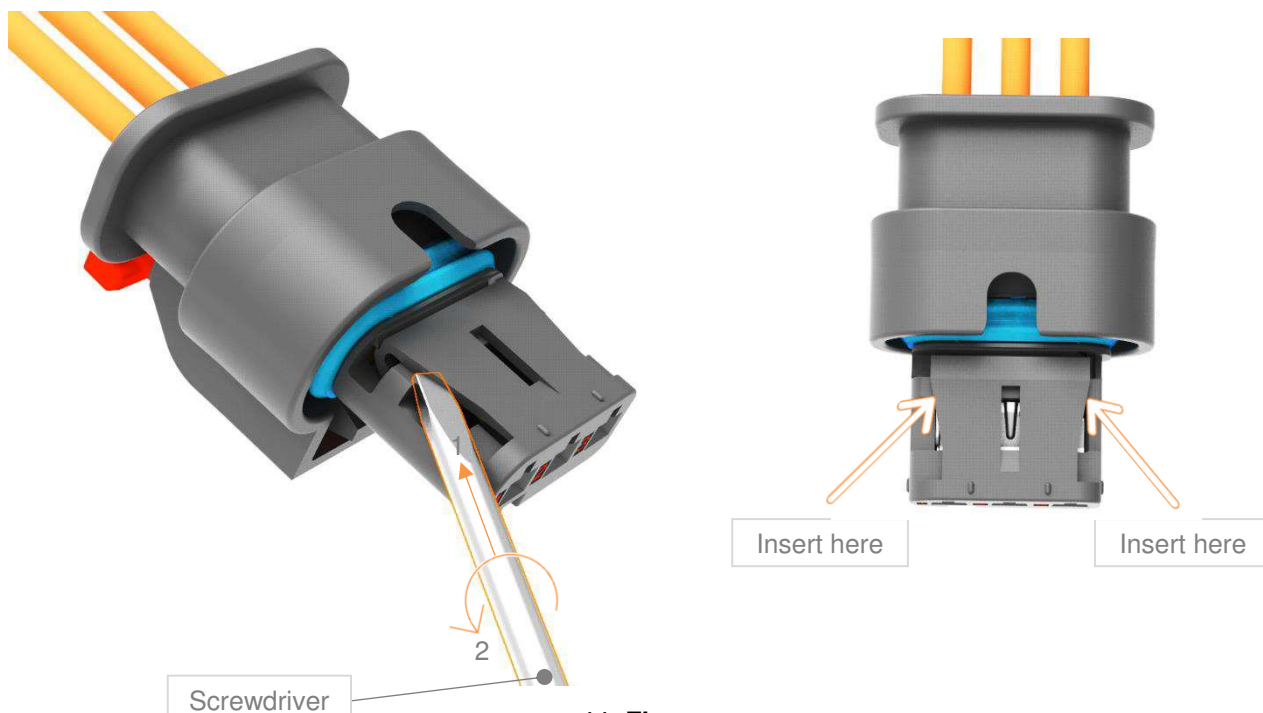


11. Figure

12. Figure

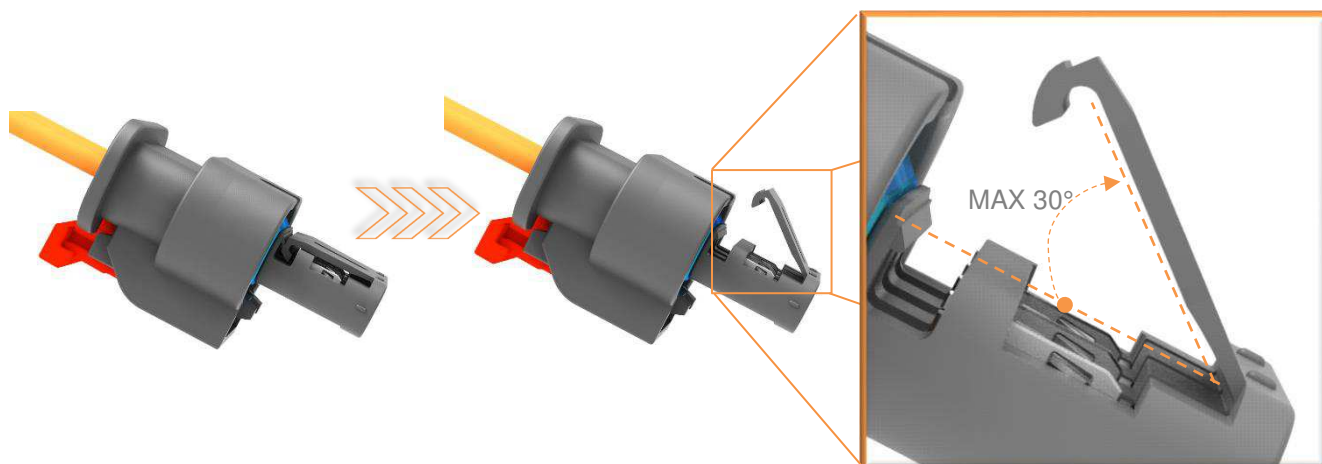
4.7. REWORK AND REOPENING THE TPA

- to extract the terminals, you need to open the TPA first
- to open the TPA use a flathead screwdriver with 1.4 width and max 0.5 thickness or a plastic prying tool with same size
- insert the screwdriver under the TPA (1) from the side and rotate the tool until the TPA opens (2), repeat this on the opposite side if the TPA is not fully open after first try.



11. Figure

- the TPA can only be closed and opened max 3 times
- when opening the TPA, do not stress the hinge more than 30° compared to the closed state
- rework is allowed only on new parts, that have not been exposed to climatic and temperature loads.
- do not force the connector, the latch should open relatively easy.
- if the latch does not open, try to open first from the opposite side



12. Figure

4.8. BLIND PLUGS

For instructions related to blind plugs please refer to application spec. nr. 114-18025.

Recommended blind plug PN is 967056-1.

<u>LTR</u>	<u>REVISION RECORD</u>	<u>DWN</u>	<u>APP</u>	<u>DATE</u>
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