HDC Elevator Maintenance Box Series

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1. INTRODUCTION

This specification contains the regulations for assembly of various HDC elevator maintenance box series.

The following components are available in this system:

HDC elevator maintenance box series: HA series (H3A);

HB series (H6B/ H10B/ H16B);

2. SUPPORTING DOCUMENTS

2.1. Customer drawings

For dimensions and materials of the individual parts, please refer to the relative customer drawings of HA series (H3A)/HB series (H6B/ H10B/ H16B).

2.2. Product specification

The product specifications of the used articles are to be taken into account. The product specification describes the technical data as regulations, temperature range and degree of protection. For further reference, please refer to product spec: 108-137476.

2.3. Application Specification

Connectors shall be assembled as below mentioned application specifications to ensure correct connector assembly.

2.4. Standards

- EN 61984: Connectors - Safety requirements and tests
- IEC 60068: Environmental testing
- IEC 60512: Connectors for electronic equipment -Test and measurements
- IEC 60529: Degrees of Protection Provided by Enclosures (IP Code)
- IEC 60664-1: Insulation coordination for equipment within low-voltage systems (Part 1)

3. DESCRPTION

3.1. Assembly product

The following pictures (Figure 1/ Figure 2/ Figure 3) shows an example of complete assembly product.

3.1.1. H3A elevator maintenance box with insert.

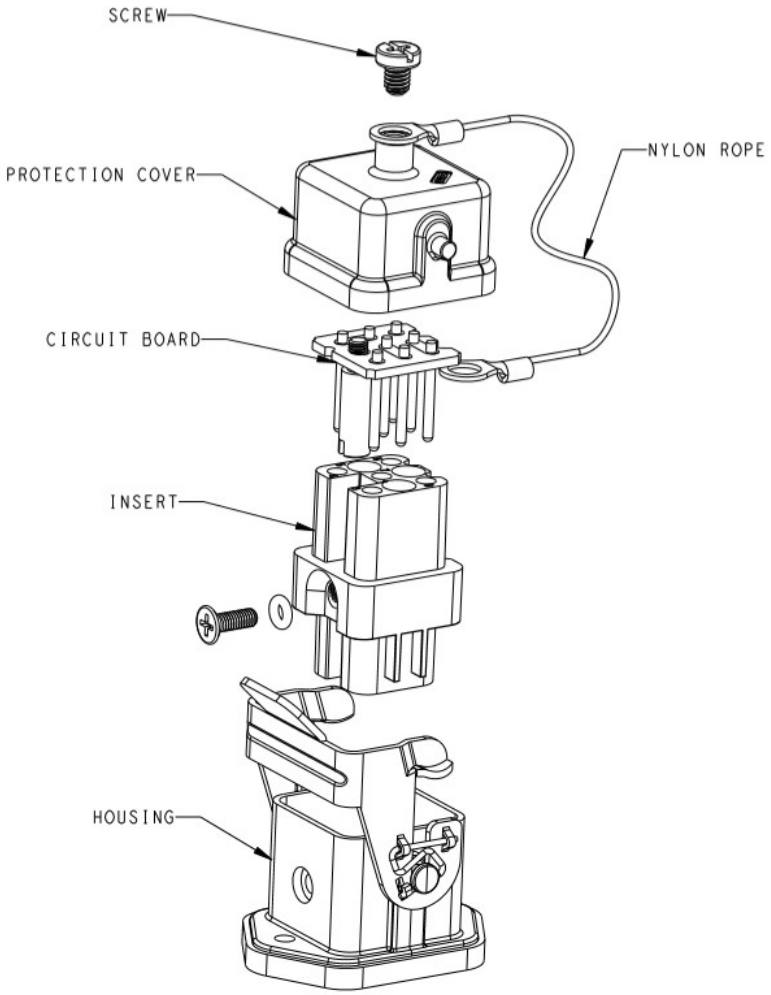


Figure: 1

The complete product consists of the following components (see figure 1):

- Screw
- Protection cover
- Nylon rope
- Circuit board
- Insert
- Housing

3.1.2. HXXB elevator maintenance box with insert.

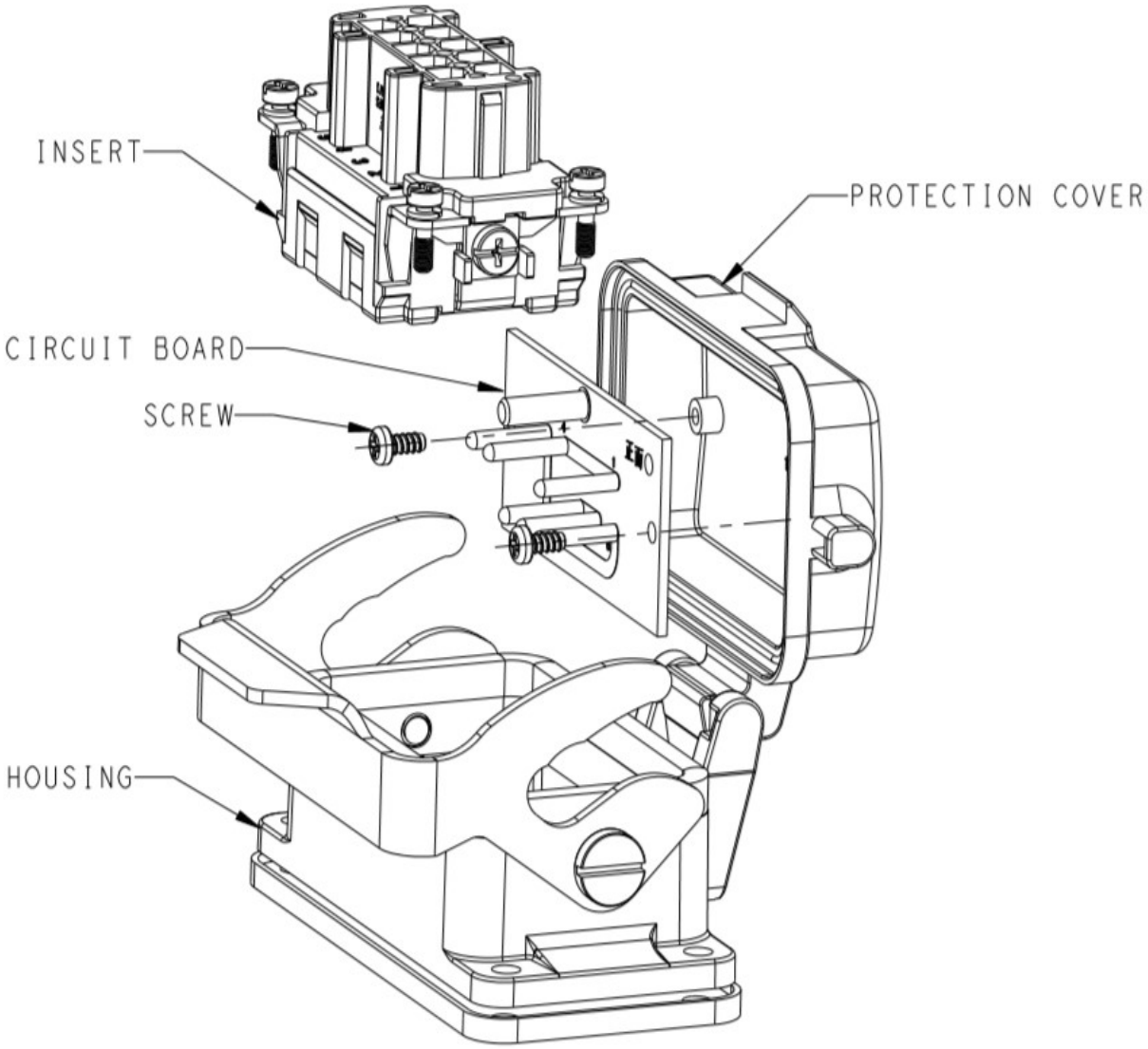


Figure: 2

The complete product consists of the following components (see figure 3):

- Protection cover
- Insert
- Circuit board
- Screw
- Housing

3.1.3. HXXB elevator maintenance box without insert.

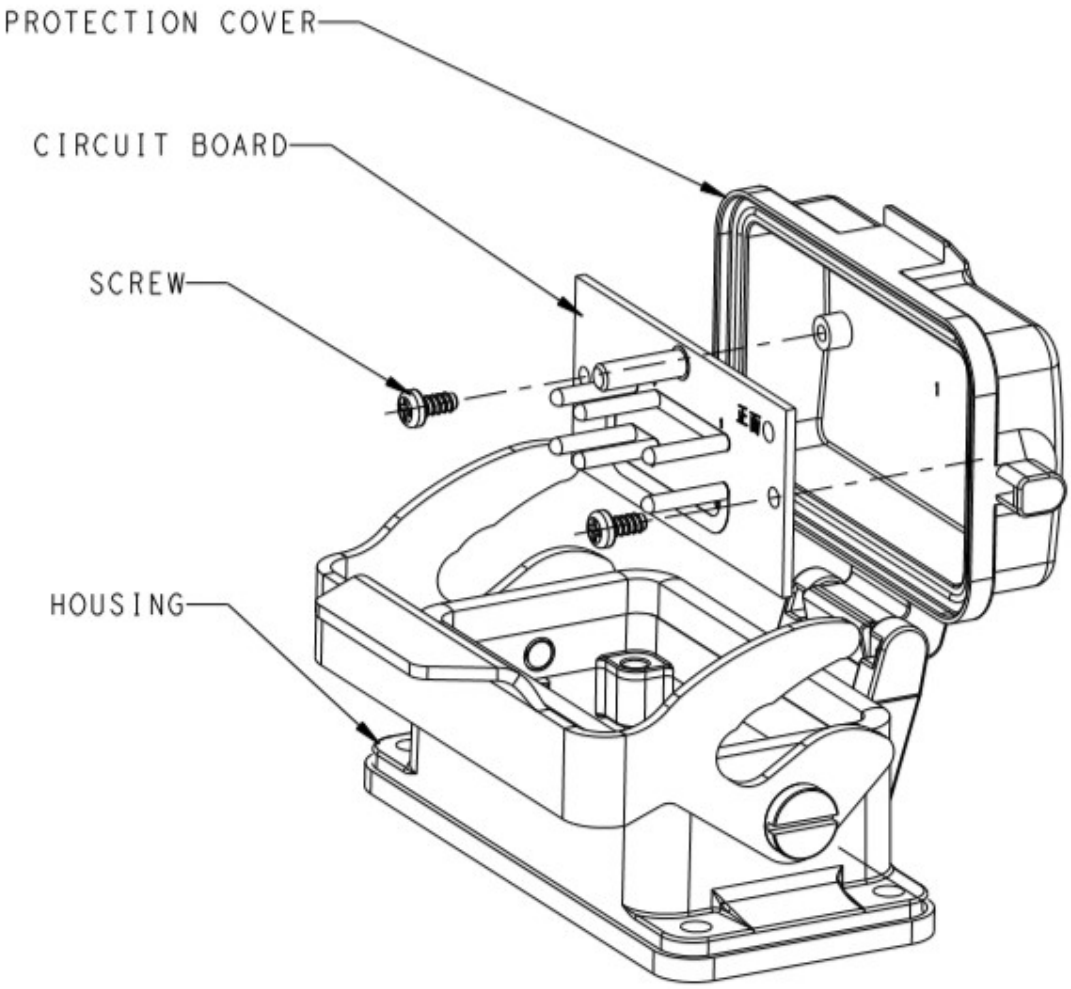
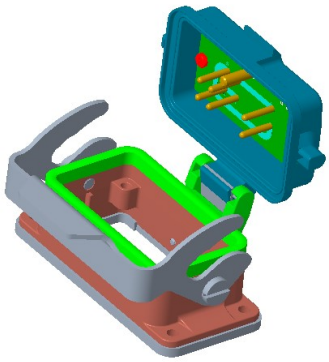
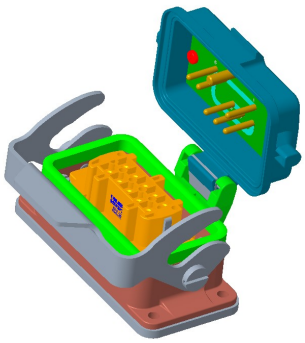


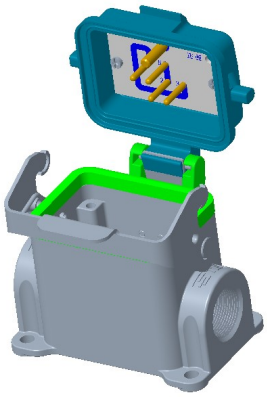
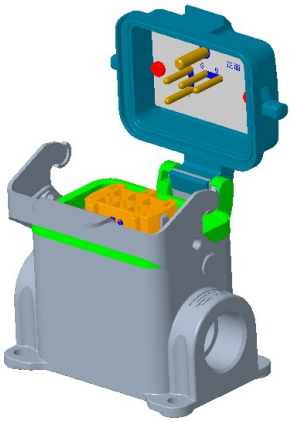
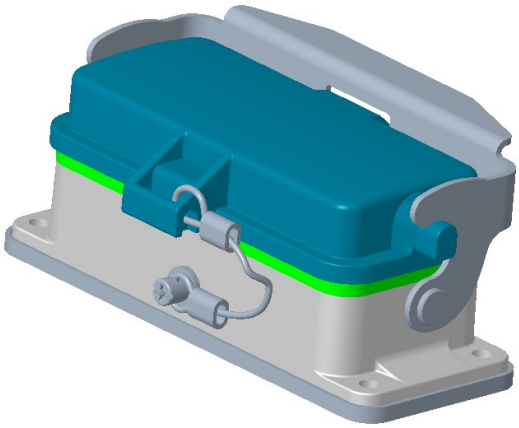
Figure: 3

The complete product consists of the following components (see figure 4):

- **Protection cover**
- **Circuit board**
- **Screw**
- **Housing**

3.2. Elevator maintenance box types

	H3A elevator maintenance box with insert
	HXXB elevator maintenance box without insert, bulkhead mounted
	HXXB elevator maintenance box with insert, bulkhead mounted

	HXXB elevator maintenance box without insert, surface mounted
	HXXB elevator maintenance box with insert, surface mounted
	HXXB elevator maintenance box, separated plastic cover

Note:

Above are the elevator maintenance box for the typical applications.
For the special applications, also can be provided. The below are the examples for reference.

- The elevator maintenance box color for Grey, Black and Silver white.
- The elevator maintenance box without painting are available per the request.
- Different the elevator maintenance box size has different optional entry threads. Refer to drawings for the detailed information.

4. REQUIREMENTS

4.1. Panel cut-out

For information concerning the panel cut-out for the use of bulkhead mounted housing or surface mounted housings on panels please refer to the customer drawings.

H3A elevator maintenance box:

For example as shown in Figure 4 and related dimension refer to the customer drawings.

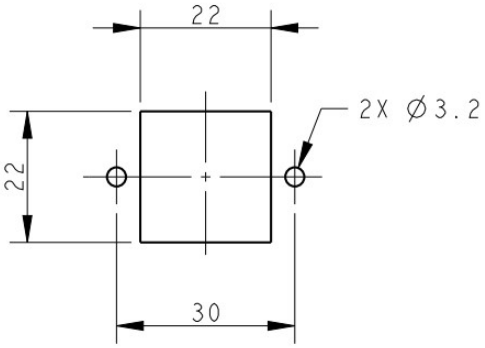


Figure 4

Note: Fixing screws for the assembly housings on panel are not part of the scope of delivery. It can be chosen suitable type according to size of hole on panel. Initial and test-torque values can be chosen from the following table:

M3	0.5 Nm

HXXB elevator maintenance box:

For bulkhead mounted housings, for example as shown in Figure 5.
Panel cut-out looks as shown in Figure 5.

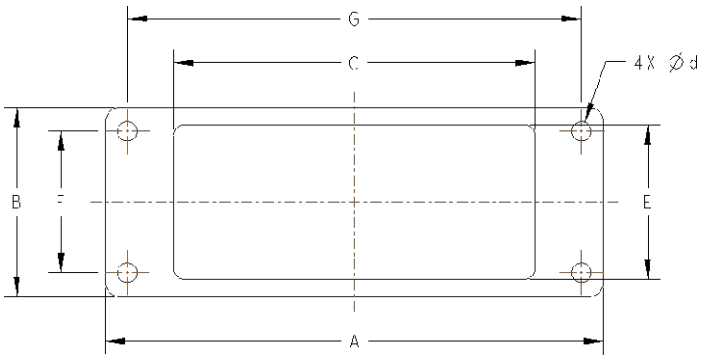


Figure: 5

Housing Size	Mounted type.	Dimension (mm)						
		A	B	C	E	F	G	Ød
H6B	Bulkhead	82	43	48	35	32	70	4.4
H10B	Bulkhead	93	43	60	35	32	83	4.4
H16B	Bulkhead	113	43	82	35	32	103	4.4

Note: Fixing screws for the assembly housings are not part of the scope of delivery.

Initial and test-torque values can be chosen from the following table:

Recommended tightening torque for housings, bulkhead mounting			
Series	Numbers of screws	Size of screws	Recommended Tightening torque(Nm)
H6B/10B/16B	4	M4	2.0 Min

For surface mounted housings, for example as shown in Figure 6.

More detailed information also can be found from related customer drawings.

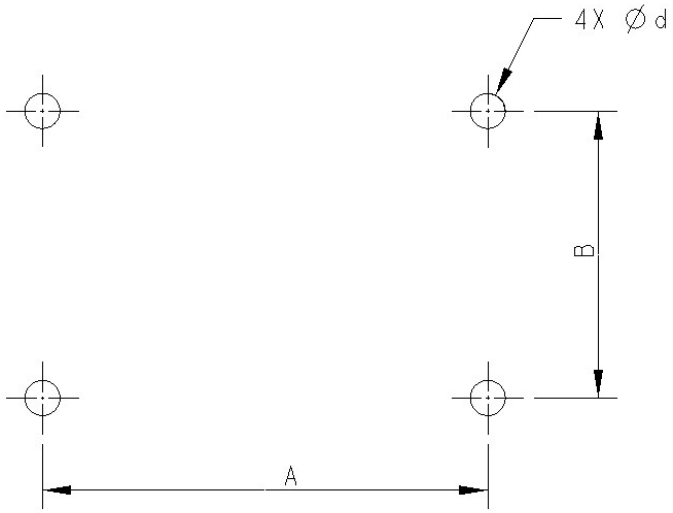


Figure: 6

Housing Size	Mounted type.	Dimension (mm)		
		A	B	Ød
H6B	Surface Mounted	70	40	5.5

Note: Fixing screws for the assembly housings are not part of the scope of delivery.

Initial and test-torque values can be chosen from the following table:

Recommended tightening torque for housings, surface mounting			
Series	Numbers of screws	Size of screws	Recommended Tightening torque(Nm)
H6B	4	M5	2.5 Min.

4.2. Wire selection and preparation

4.2.1. Stripping length L

Use proper tooling to strip the wire.

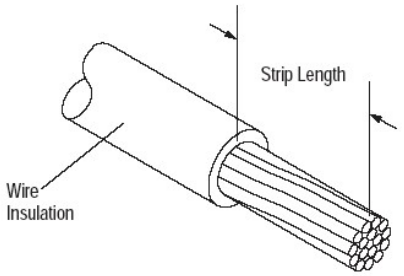


Figure 7

NOTE

When stripping the wire, care must be taken to avoid scraping, nicking, or cutting the conductor. Care must also be used when handling the wire during stripping to prevent cracking or breaking the conductor and insulation.

Depending upon the cross section of the wire or cable, the stripping length has to be selected from the table below. See Table 1.

Table 1

Contact Insert	Max. Wire cross section		Strip Length For Reference	Current
	[mm²]	AWG	L [mm]	
HD	2.5 mm²	14	6	10A
HD	≤1.5 mm²	16	8	10A
HE-XXX-MS/FS	≤2.5 mm²	14	11.0	16A

4.2.2. Insulation diameter

Any wire that is used for the Electrical purpose is covered with insulating polymer. This insulation on the wires depends upon the wire size and type of application where it is being used. The insulation diameter for various wire sizes is as shown in table 2 only for reference.

Table 2

Contact Insert	Max. Wire cross section		Insulation Diameter in (mm)
	[mm^2]	AWG	
HD	≤2.5 mm^2	14	3.8 MAX.
HE-XXX-MS/FS	≤2.5 mm^2	14	5.1 MAX.

NOTE

The Insulation diameter over the wire specified in the table 2 is for the insulation concentric, with equal thickness layer over the conducting wire.

4.3. Assembly

4.3.1. Inserts of crimp termination and housing

a. Assemble stripped wires to contacts (Crimp)

➢ Crimping tool

Crimping tool is available as below Figure 8 &9:

- Wire range: 26AWG ~ 12AWG (0.14 mm^2 ~ 4.0 mm^2)
- Type: RPC-M23-T-B
- Order number: T3100000022-000

Figure 8

- Wire range: 26AWG ~ 12AWG (0.14 mm^2 ~ 4.0 mm^2)
- Type: CRIMPBOX-0.5/4
- Order number: T3100000001-000

Figure 9

➢ Crimp

Insert the cable - stripped according to Table 1 - into the wire barrel of the contact. The wire strands must be visible in the reference hole of the contact. Afterwards, crimp the contact in the crimp area, using the correct tool for this type of contact. During the termination process make sure that the contact in the contact zone is not damaged or deformed.

When using manual crimp tools the following points must be followed:

1). Equip manual crimp tool with the correct locator or positioning ferrule.
2). When using different manual crimping tools the pliers have to be adjusted by plug gauge to fit the crimp area.
3). Fully insert contacts into the locator.
4). Clamp the wire with help of crimp tool. Note that to press the crimp tool till the stopper is reached a positive crimp.

Crimp DD contact as below :

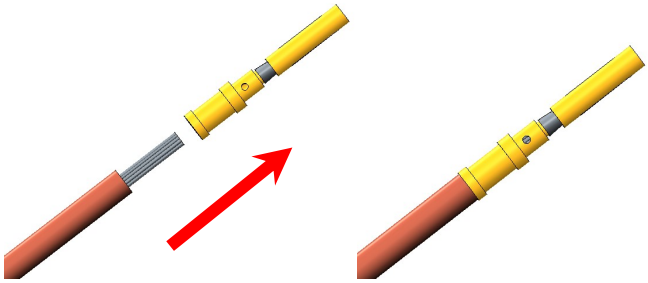


Figure 10

NOTE For more detailed information, please refer to related contacts application specifications.

b. Insert crimped terminals into inserts

The crimped terminals are plugged into the insert by gently pushing it into the required position until the contact is locked by the inserts, a click should be heard normally.

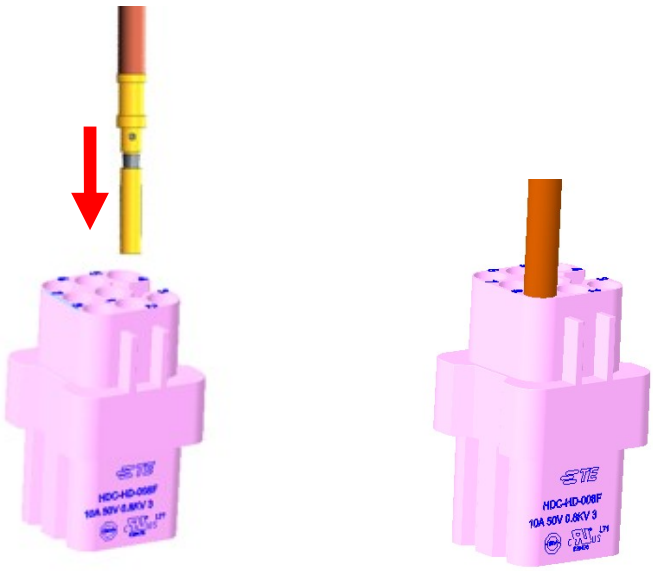


Figure 11

c. Repeat till wires are fully assembled.

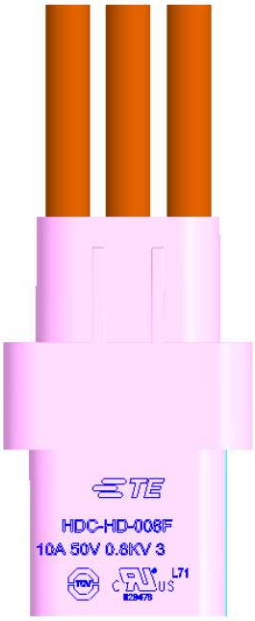


Figure 12

d. Inserts assembly

The inserts are fixed into the housing with M3 fixing screw and O-ring. And these M3 fixing screw and O-Ring are components on inserts. For example as shown in Figure 13.

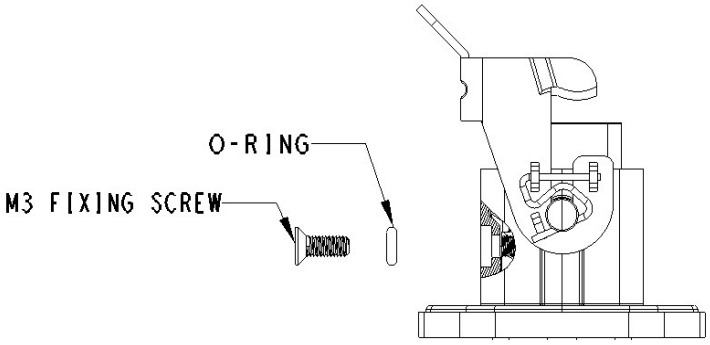


Figure: 13

Initial and test-torque values can be chosen from the following table:

M3	0.5 Nm

e. Locking

A complete locking system with locking consists of the following components, as shown in Figure 14.
The locking is used for the locking of the housing and protect cover. The locking is fixed on the housing and have to be pushed up to lock the protect cover.

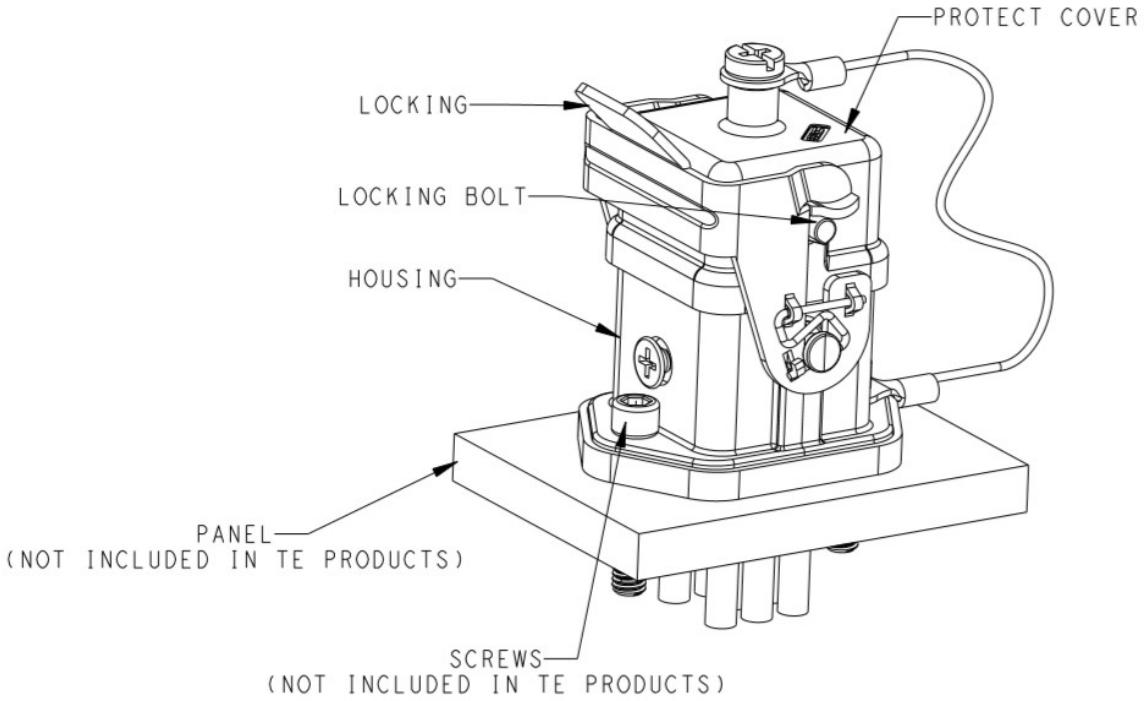


Figure: 14

4.3.2. Inserts of spring termination (HE-XXX- FS) and housing

a. Insert a proper screw driver into the inserts, till open the spring of the contacts.

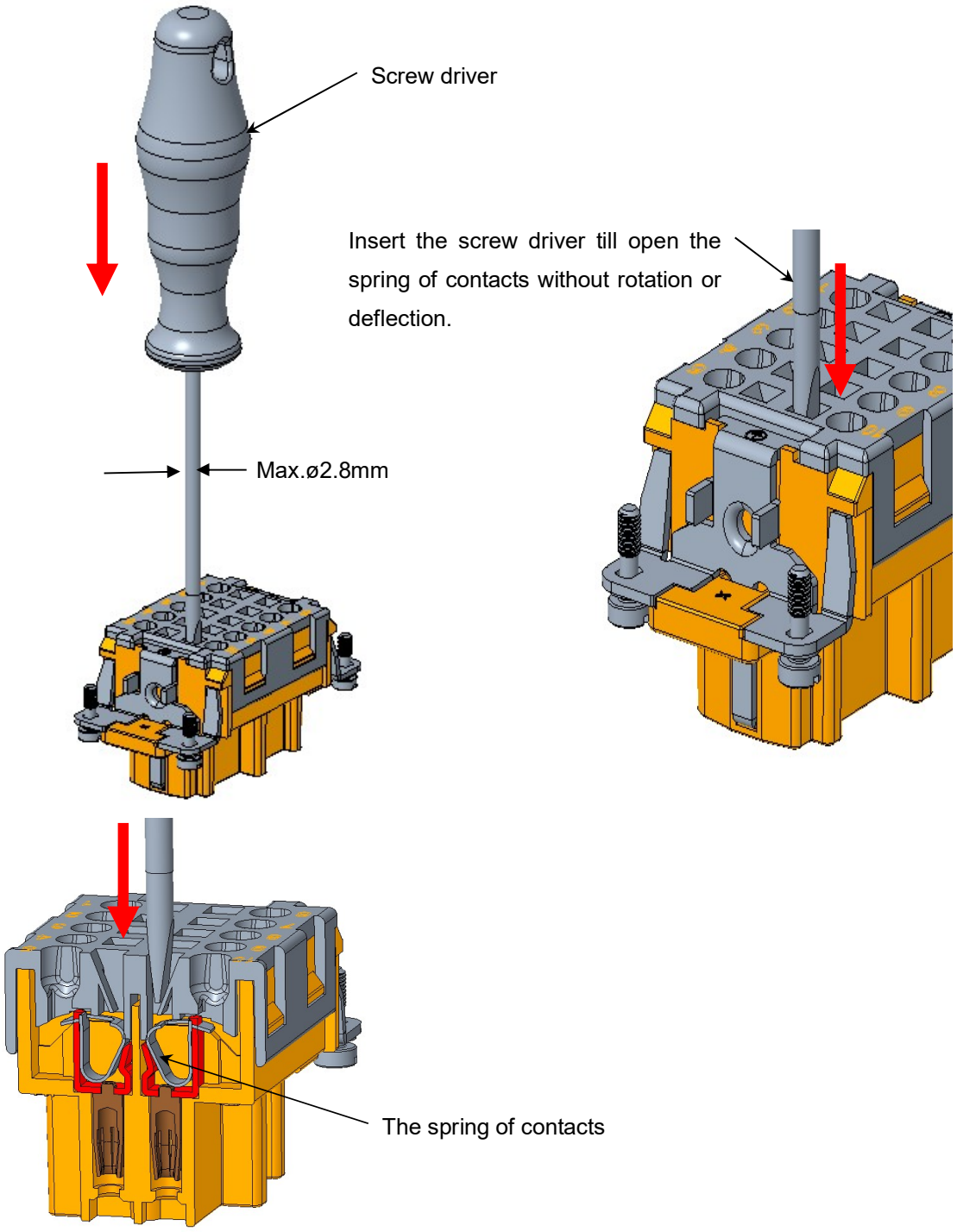


Figure: 13

b. Insert stripped wires into contacts completely.

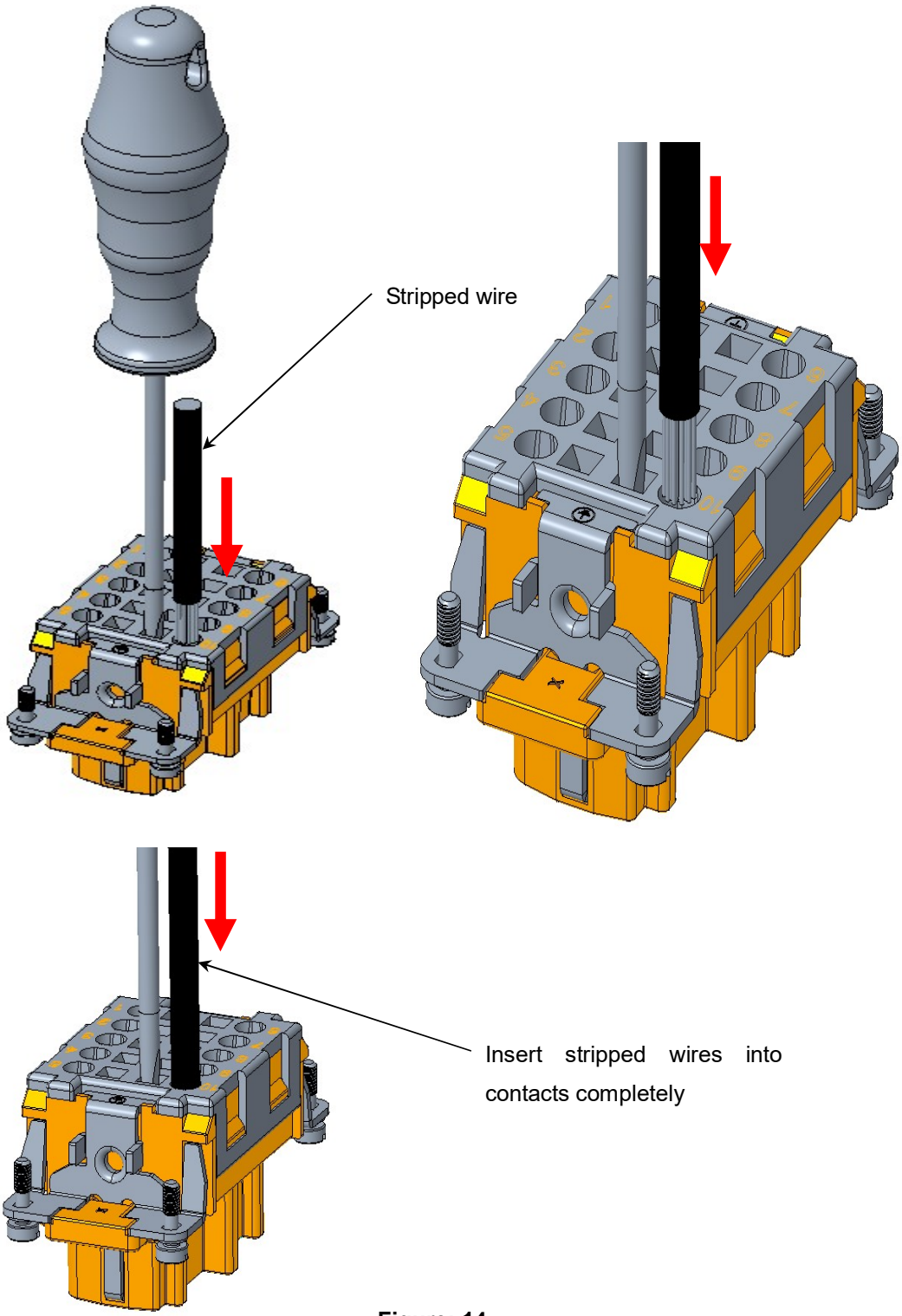


Figure: 14

c. Pull out the screw driver

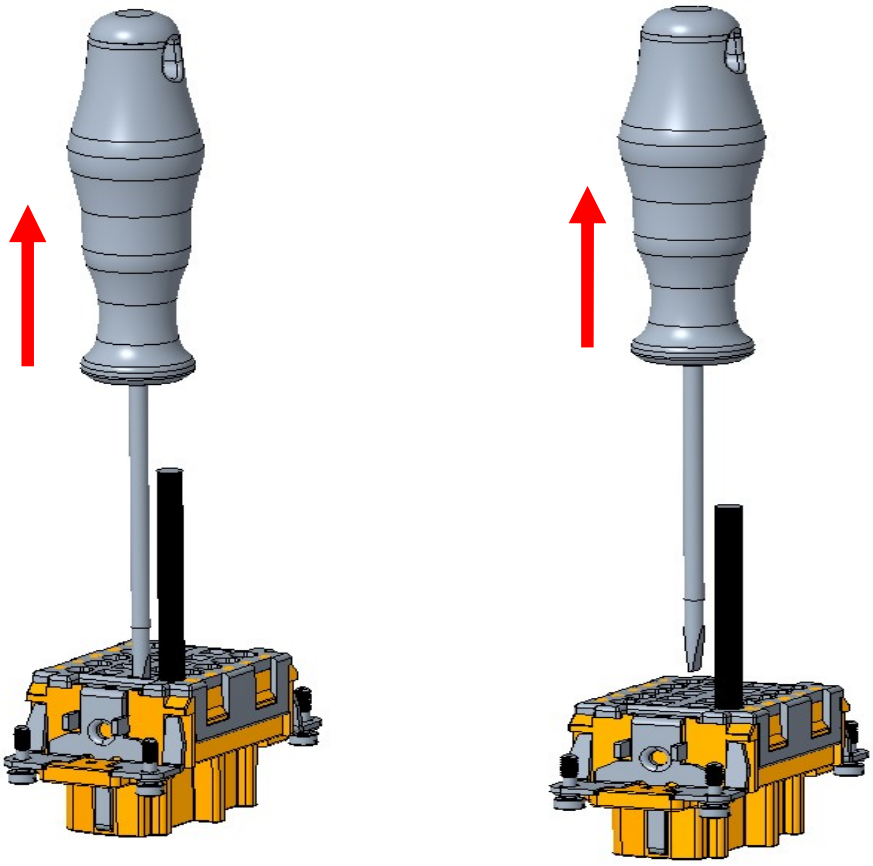


Figure: 15

d. Repeat till wires are fully assembled.

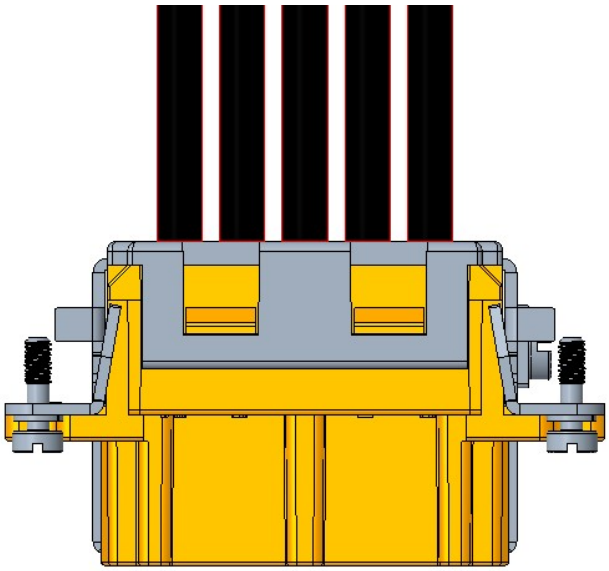


Figure: 16

e. Assembly housing

For bulkhead mounting housing

Fix housing with 4 x M4 screws. Tightening torque refer to spec of screws, but no less than 2Nm.

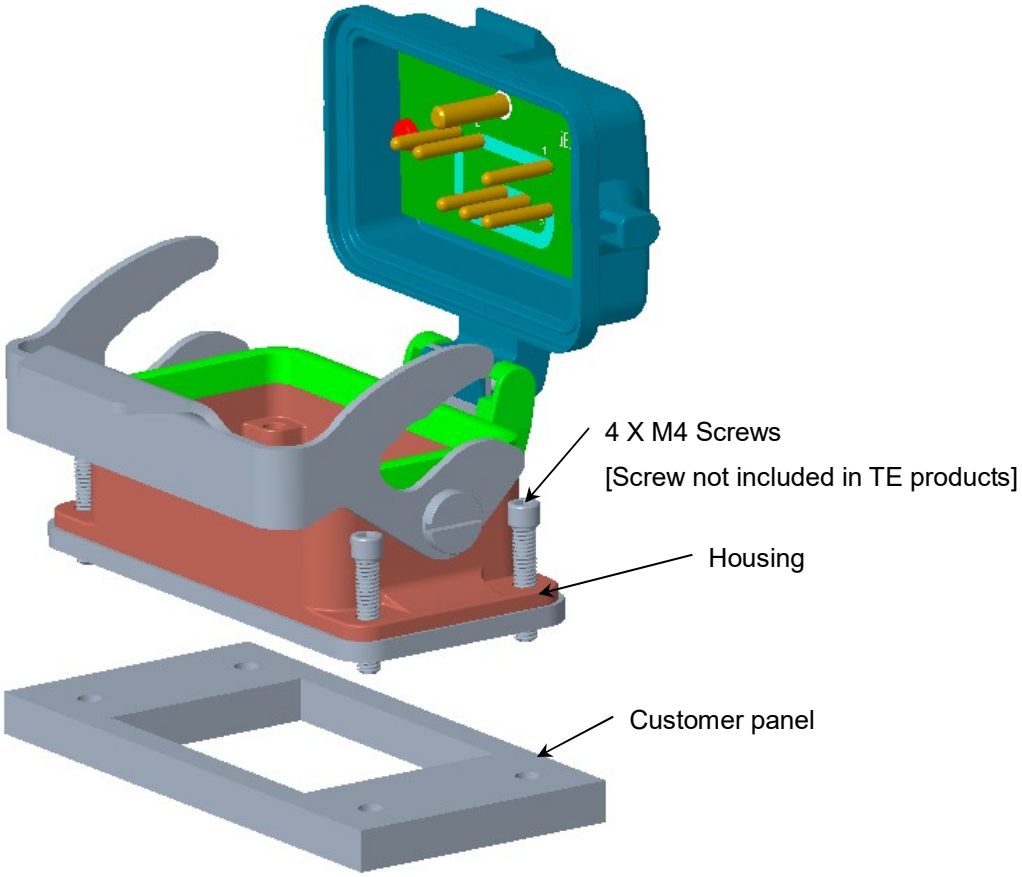


Figure: 17

For surface mounting housing

Fix housing with 4 x M5 screws. Tightening torque refer to spec of screws, but no less than 2.5Nm

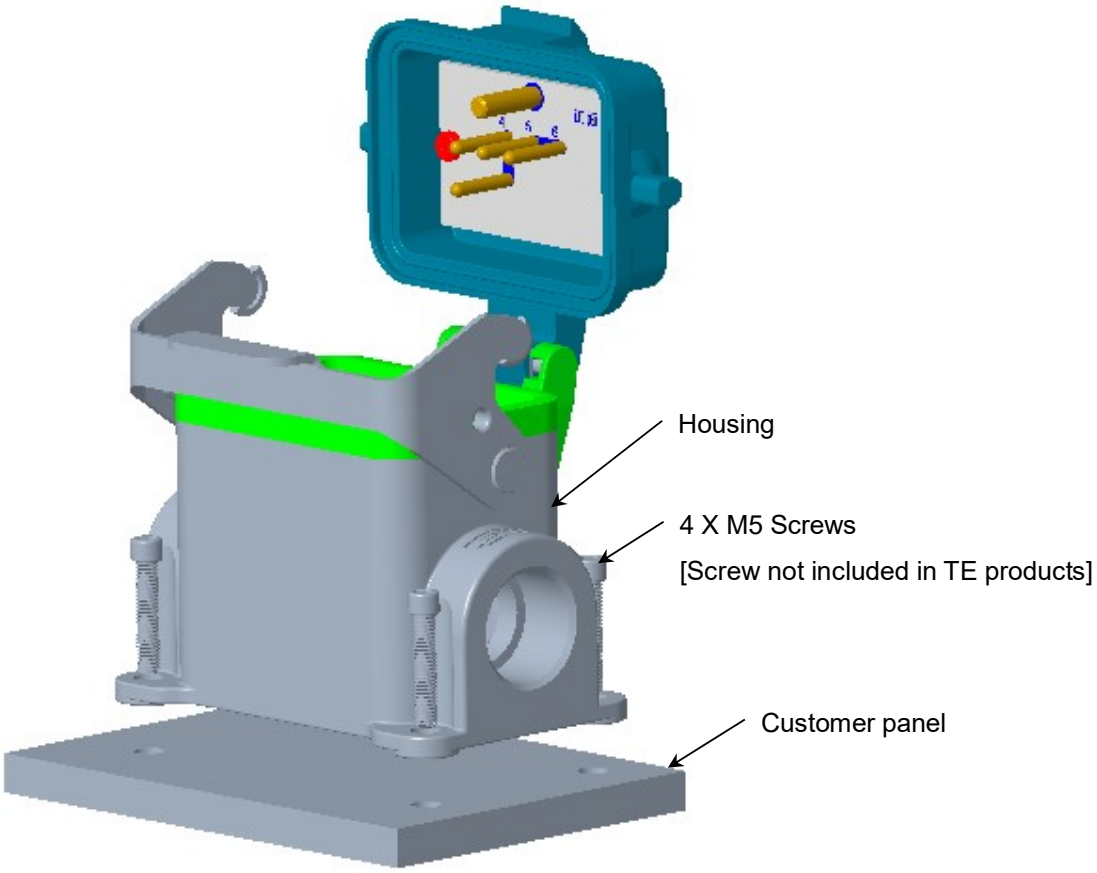


Figure: 18

f. Assembly female insert into housing

Fix female insert with 4 x M3 screws. Tightening torque refer to spec of female insert.

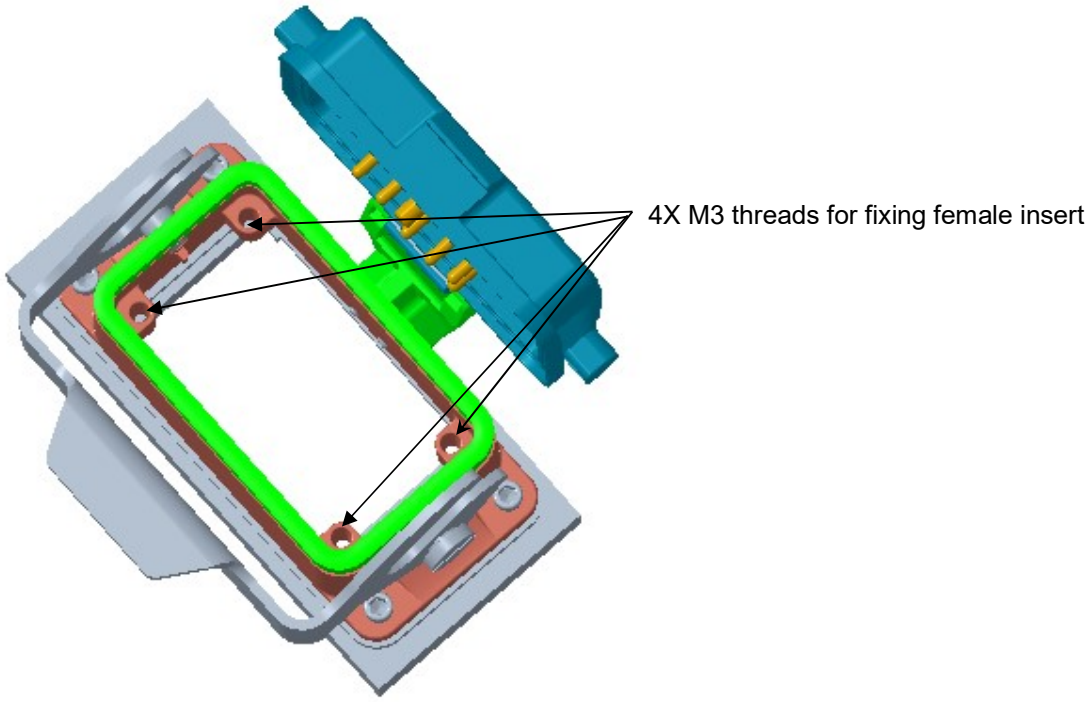


Figure: 19

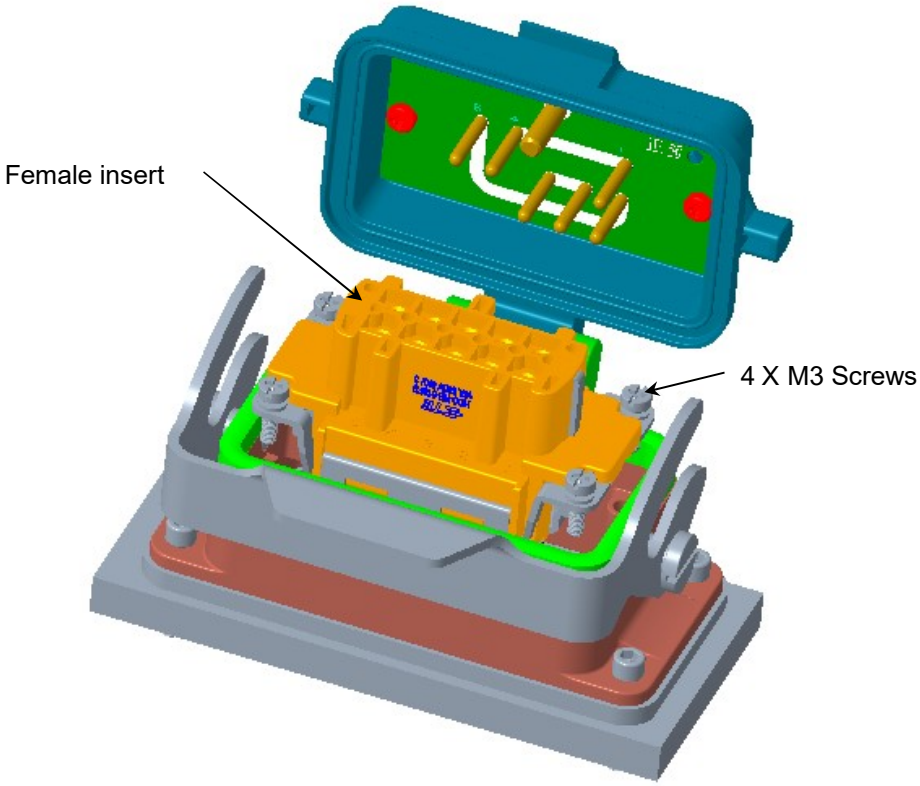


Figure: 20

Note:

- Refer application spec of female insert separately and before fixing to housing, it should be well prepared.
- Whatever the type of housing or the type of female insert, they have same assembly process here.

5. STORAGE

5.1. Chemical exposure

Do not store the connectors near any chemical listed below as they may cause corrosion stress the connector contacts:
Alkalies, Ammonia, Citrates, Phosphates, Citrates, Sulfur, Amines, Carbonates, Nitrites, Sulfides, Nitrites, Tart rates.

5.2. Storage condition

The connectors should be stored in the air ventilation, no corrosive gas, no rain and no snow in the warehouse. Relative humidity: less than 85% RH. The connectors should remain in the shipping containers until ready for use to prevent deformation to the contacts. The connectors should be used on a first in, first out basis to avoid storage contamination that could adversely affect electrical functions.

----------END----------