SEALED EDC7 ECU PLUG CONNECTORS (16&36 POS.)

APPLICATION SPECIFICATION

16 及 36 位 EDC7 ECU 密封接插件插头应用规范

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LTR	REV. RECORD	DATE	DR	APP				

SCOPE

规范范围

1. GENERAL 概要

1.1. INTRODUCTION 简介

The shown specification contains the guidelines, to handle the 16&36pos connector system. This connector system is used to connect cable harness onto an electronic control unit.

本规范涵盖了 16 及 36 位 ECU 接插件系统的使用要求。此接插件系统可用于连接线束及对应的电子控制单元。

1.2. APPLICABLE TE SPECIFICATION

相关泰科电子规范

Application specification:
应用规范：

114-18021	Application Specification for Micro Quadlock System
114-18021	Micro Quadlok 端子应用规范
114-18144	Application Specification for 2.8mm Sensor Contact System
114-18144	2.8 毫米传感器端子应用规范

Product specification:
产品规范：

108-18030-0	Product Specification for Micro Quadlok System
108-18030-0	Micro Quadlok 端子产品规范
108-18509-1	Product Specification for 2.8mm Sensor Contact System
108-18509-1	2.8 毫米传感器端子产品规范
108-101131	Product Specification for 16&36Pos ECU Plug assembly
108-101131	16, 36 位 ECU 接插件插头产品规范

1.3. OVERVIEW DRAWING MANUALS

相关图面

	TITLING 名称	DRAWING NO. 图号
1	**16P Plug Assembly.** 16 位密封插件组装图	**2050016**
2	**36P Plug Assembly.** 36 位密封插件组装图	**2050017**
3	**Top Cover** 上盖	**2050019**
4	**Wires Clip** 电线夹	**2050020**
5	**MQS Sealing Plug** MQS 密封塞	**2050030**
6	**Contact / Single wire seal** 端子及导线密封件	**See relevant C drawings** **参看对应的客户图纸**

2. STRUCTURE AND ASSEMBLY OF PLUG

插头的结构及组装

2.1. PLUG BODY 插头本体

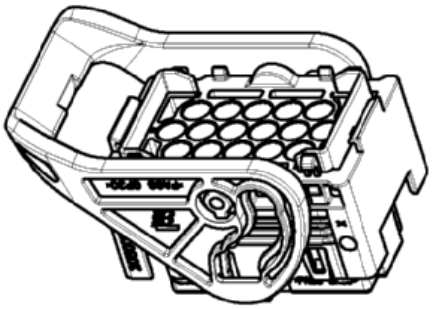


Figure 1

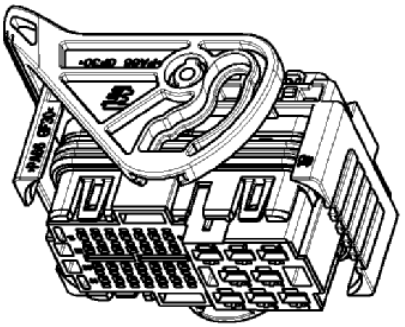
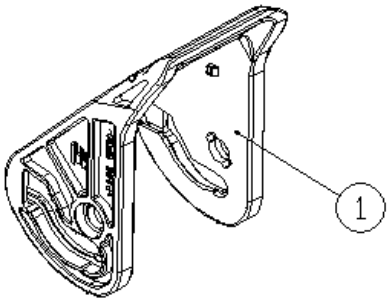
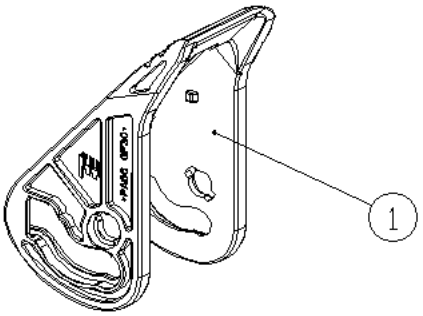


Figure 3





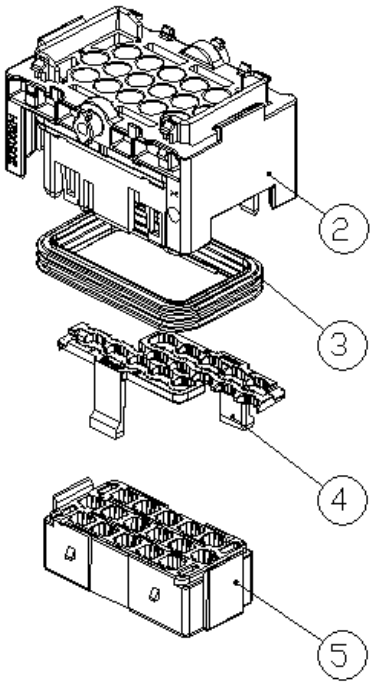


Figure 2

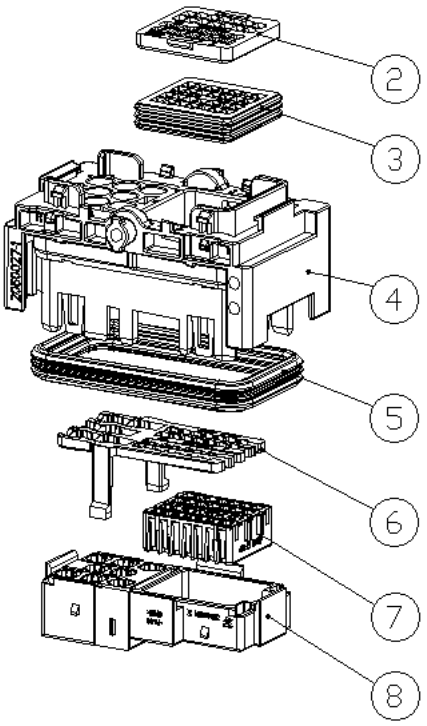


Figure 4

The 16pos plug body includes lever (1), base housing (2), inner seal (3) and secondary locker (4) and front housing (5). See Figure 1, Figure 2.

16 位插头由安装手把，本体，内部密封圈，二次锁扣件及前端端子本体组成。

参看图 1，图 2。

The 36pos plug body includes lever (1), MQS contact seal locker (2), MQS contact seal (3), base housing (4), inner seal (5) and secondary locker (6) and MQS contact housing (7), and front housing (8). See Figure 3, Figure 4.

36 位插头由安装手把，MQS 端子密封垫压盖，密封垫，本体，内部密封圈，二次锁扣件，MQS 端子本体及前端端子本体组成。

参看图 3，图 4。

2.2. INSERTION CONTACTS AND SEALING PLUGS

端子及密封塞的插入

16Pos:

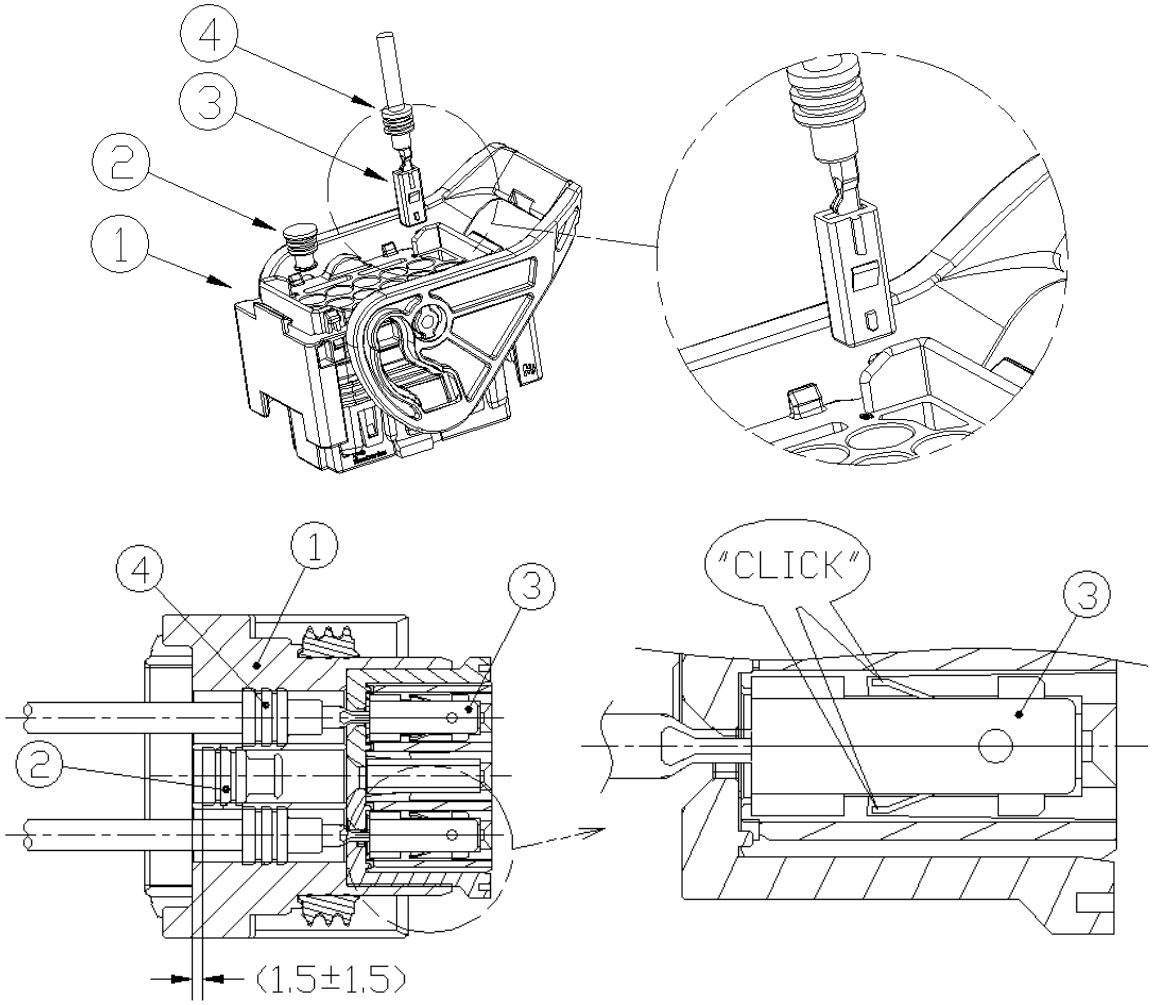


Figure 5

This 16Pos sealed plug (1) shall use TE standard 2.8mm receptacle sensor flat contact (3) or equivalents, at same time, single wire seals (4) have to be used for waterproof. For unused pin position, using sealing plug (2) is mandatory.

此 16 位插头(1) 应使用泰科电子对应的标准 2.8 毫米传感器母端子或类似兼容端子（3），并使用对应导线密封塞（4）密封导线与线孔间的空间。对于没有使用的端子孔位置，一定需要专用密封盲塞（2）来封住。

Before to insert contacts (3) into housing, be sure to confirm their correct placing in housing cavities. Seeing the cross-sectional view of Plug (1) as shown above, make sure longer side of contact aligns with longer side of plug housing, the contacts should be inserted into housing and slight lance locking click sound could be heard if against more silent environment. Keeping correct direction for placing
contacts is very important to avoid damaging sealing surface of cavity
After insertion of a contact, pull back the crimped wire lightly to see if the contact is securely locked in position.

插入母端子（3）前，确保插入到正确的孔位，参看上图的插头（1）剖视图，并确保端子插入时较长的面平行插头本体长端的方向，持续向前插到底，如周围较安静，此时应可以听到端子卡钩卡入端子固定腔的咔嗒声。端子对齐方向插入对于端子插到位及保护插头本体密封孔表面很重要。

端子如插好到位后，需向回轻拉压接的导线确认端子卡钩卡到位。

Sealing plug (2) is used for filling unloaded contact cavities to prevent water from entering the cavity holes.
When inserting sealing plugs, be sure to insert with the small end first as shown above. After insertion of sealing plug, confirm right inserting direction and all the lips entered and are sinking fully in the hole. Refer to the Figure 5 above.

密封盲塞（2）用于封填不用的孔位，以防工作中水的进入。插入时注意小头端先插入，并确认所有的密封裙边进入到端子孔并完全沉入孔面，参看上图 5。

36Pos:

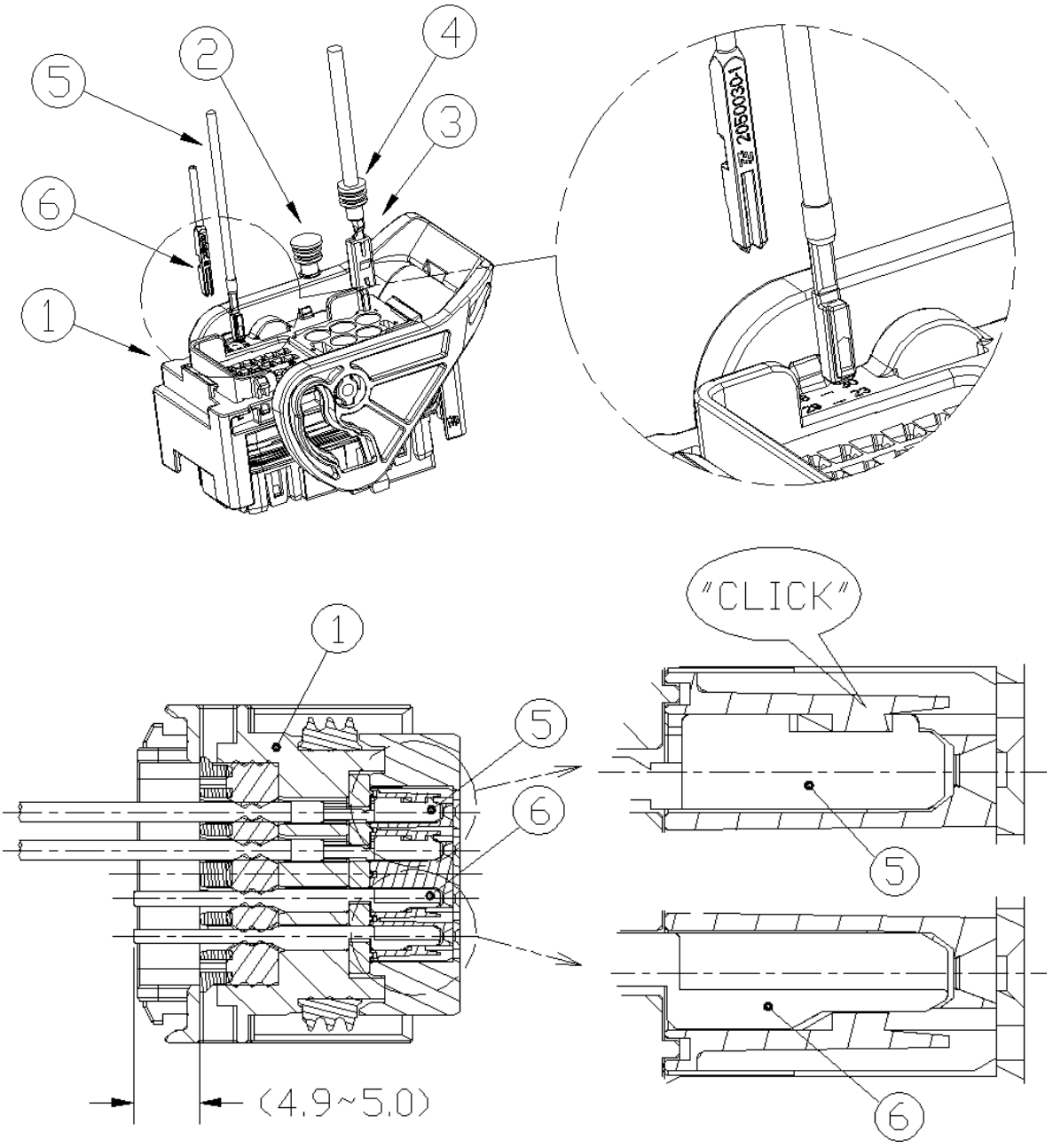


Figure 6

This 36Pos sealed plug (1) 1~8Pos cavities shall use TE standard 2.8mm receptacle sensor flat contact (3) or equivalents, at same time, single wire seals (4) have to be used for waterproof. For unused pin position, using sealing plug (2) is mandatory.

For 9~36Pos cavities shall use TE MQS clean body receptacle contact (5) or equivalents. For unused pin position, using sealing plug (6) is mandatory.

此 36 位插头(1) 1~8 孔位应使用泰科电子对应的标准 2.8 毫米传感器母端子或类似兼容端子（3），并使用对应导线密封塞（4）密封导线与线孔间的空间。对于没有使用的端子孔位置，一定需要专用密封盲塞（2）来封住。

其中 9~36 孔位应使用泰科电子对应的标准 MQS 光洁母端子或类似兼容端子（5），对于没有使用的端子孔位置，一定需要专用密封盲塞（6）来封住。

The applicable wire size，crimping and other specific requirements please see related drawings and specifications.

使用的导线线径，压接要求及规格请参看对应的客户图或规范。

Before to insert contacts (3) into housing 1~8Pos cavities, be sure to confirm their correct placing in housing cavities. Seeing the cross-sectional view of Plug (1) as shown above, make sure longer side of contact aligns with longer side of plug housing, the contacts should be inserted into housing and slight lance locking click sound could be heard if against more silent environment . Keeping correct direction for placing contacts is very important to avoid damaging sealing surface of cavity.
After insertion of a contact, pull back the crimped wire lightly to see if the contact is securely locked in position.

插入母端子（3）到插头本体 1~8 孔位前，确保插入到正确的孔位，参看上图的插头（1）剖视图，并确保端子插入时较长的面平行插头本体长端的方向，持续向前插到底，如周围较安静，此时应可以听到端子卡钩卡入端子固定腔的咔嗒声。端子对齐方向插入对于端子插到位及保护插头本体密封孔表面很重要。

端子如插好到位后，需向回轻拉压接的导线确认端子卡钩片卡到位。

Sealing plug (2) is used for filling unloaded 1~8Pos contact cavities to prevent water from entering the cavity holes.
When inserting sealing plugs, be sure to insert with the small end first as shown above. After insertion of sealing plug, confirm tight inserting direction and all the lips entered and are sinking fully in the hole. Refer to the Figure 5 above.

密封盲塞（2）用于封填不用的 1~8 孔位，以防工作中水的进入。插入时注意小头端先插入，并确认所有的密封裙边进入到端子孔并完全沉入孔面，参看上图 5。

For insertion MQS contacts (5) into housing 9~36Pos cavities, be sure to confirm their correct placing in housing cavities. Seeing the cross-sectional view of Plug (1) as shown left, make sure right side of contact align with opening of housing cavity hole, the contacts should be inserted into housing and slight lance locking click sound could be heard if against more silent environment. Keeping correct direction for placing contacts is very important to avoid family seal lips.
After insertion of a contact, pull back the crimped wire lightly to see if the contact is securely locked in position.

插入 MQS 母端子（5）到插头本体 9~36 孔位前，确保插入到正确的孔位，参看上图的插头（1）剖视图（右侧），并确保端子头插入时对准对应的密封垫压块开口的方向，持续向前插到底，如周围较安静，此时应可以听到端子卡钩卡入端子固定腔的咔嗒声。端子对齐方向插入对于端子插到位及保护插头本体密封孔表面很重要。

端子如插好到位后，需向回轻拉压接的导线确认端子卡钩片卡到位。

MQS contact sealing plug (6) is used for filling unloaded 9 ~36Pos contact cavities to prevent water from entering the cavity holes.
When inserting sealing plugs, be sure to insert with the small end first as shown above. After insertion of sealing plug, confirm right inserting direction and the butt of sealing plug entered and the end of sealing post outside dimension is 4.9~5.0mm. Refer to the Figure 6.

MQS 端子密封盲塞（6）用于封填不用的 9 ~36 孔位，以防工作中水的进入。，确认大头完全插到底，尾部的密封柱面顶部高于密封垫压块上面 4.9~5 毫米。

具体参看上图（6）。

2.3. EXTRACTION OF CONTACTS 端子的退出

The following procedures should be taken for extracting contacts from the housing due to its erroneous contact insertion etc.

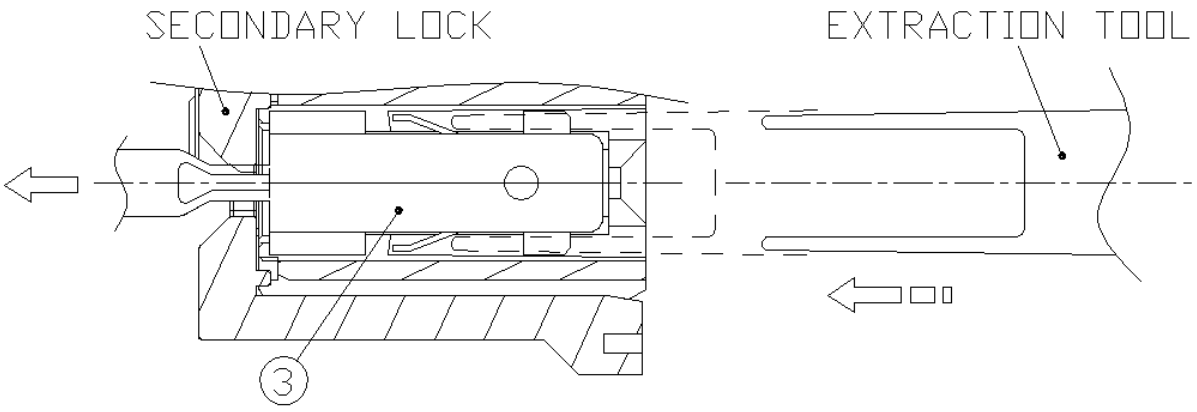


Figure 7

1.) For 2.8mm sensor flat contacts,
Unlock the secondary lock first (refer to 2.4)
Insert a special tool (TE 968928-1 for reference) from housing front to release the lances of both sides of contact, make sure the two sides lance points are flatted with contact side wall, then extract contact from the housing cavity by pulling wire gently. See Figure 7.

1.) 2.8 毫米的端子的退出。

首先要把二次锁退回到原解锁位置。（参看 2.4 节）

如图方向插入特制退端子工具（可参考 TE 料号 968928-1）释放端子两侧的固定卡钩，确保两卡钩头部已压平于端子两侧外壁时，轻拉端子后的导线确认可拉出后退出端子。参看上图 7。

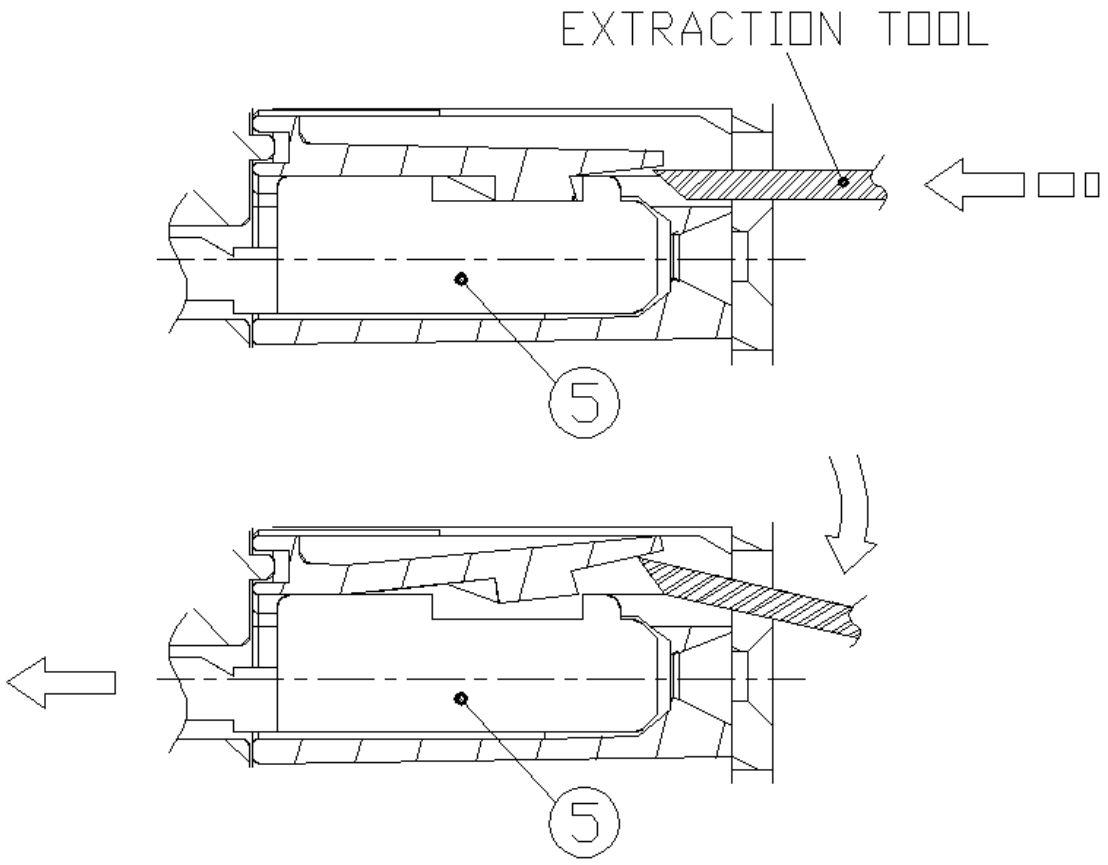


Figure 8

2.) For MQS contacts,

Unlock the secondary lock first (refer to 2.4)

Insert a special tool (TE 3-1579007-6 for reference) from housing front to release the lances of housing cavity (caution, never insert the tool into the contact portion at this time), then rotate the extraction tool to push up the cavity plastic lance gently, until the lance is released, at the same, extract contact from the housing cavity by pulling wire gently. See Figure 8.

2.) MQS 端子的退出。

首先要把二次锁退回到原解锁位置。（参看 2.4 节）

如图方向插入特制退端子工具（可参考 TE 料号 3-1579007-6）释放塑料本体上的端子卡钩（注意此时不要插到端子孔位置），然后轻轻转动退出工具使其头部向上挑起本体端子空的塑料卡钩，使卡钩头部脱离端子的卡槽，轻拉端子后的导线确认可拉出后退出端子。参看上图 8。

2.4. SECONDARY LOCK 二次锁

16Pos:

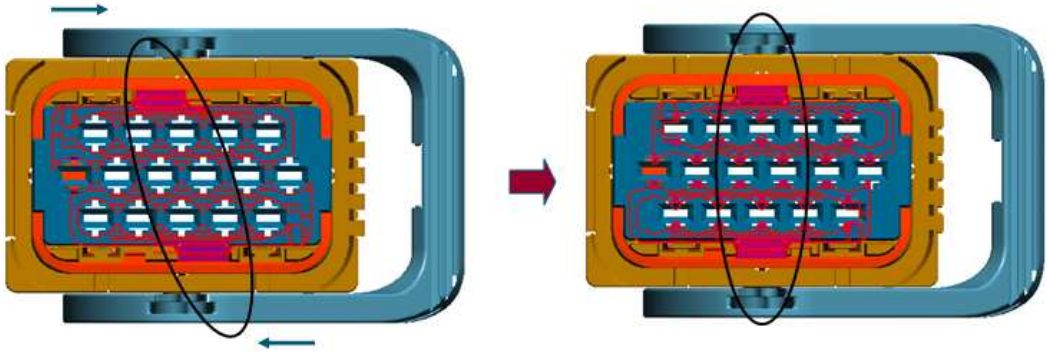


Figure 9

36pos:

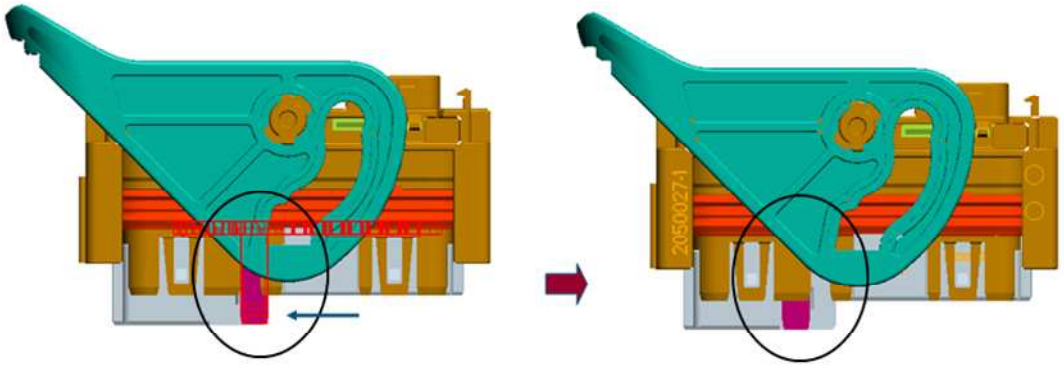


Figure 10

After contacts and sealing plugs are inserted in place, the secondary lock shall be seated from its primary position for bigger retention force against extraction from cavity and poor contact by vibration. For extraction of contacts, just reversely operate as shown above.
The pre-set to lock force 15N Min, 60N Max. （USCAR2-4）
The lock to pre-set force 18N Min, 60N Max. （USCAR2-4）
In addition, if the secondary lock is un-seated as above figures, the plug can not be assembled into the interface.

端子及密封塞插到位后需锁上二次锁扣，以增加端子在本体内的保持力，防止其插入对配头时被顶退及工作中因线束的重量及震动而造成端子接触不良甚至拉出本体。如需要拆装退出端子，需要相反的操作。
预锁到锁定位置力，15N 最小，60N 最大。（USCAR2-4）
锁定到预锁位置力，18N 最小，60N 最大。（USCAR2-4）

另外二次锁扣如没有按上图所示锁到位，安装到ＥＣＵ对配头时也会插不进去。

2.5. WIRES CLIP 电线固定夹

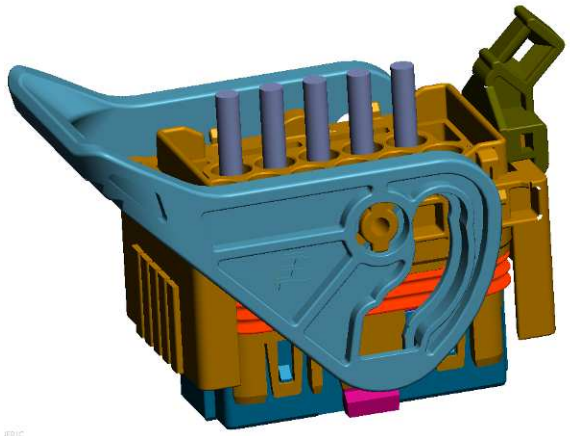


Figure 11

Wires clip or equivalent is required for cable assembly application, which is conjunction with wires tie wrap, providing bonding wires and plug housing together for better cable assembly protection.

电线束固定块联合电线扎带提供电线束的扎紧，固定及保护功能。

2.6. TOP COVER 上盖

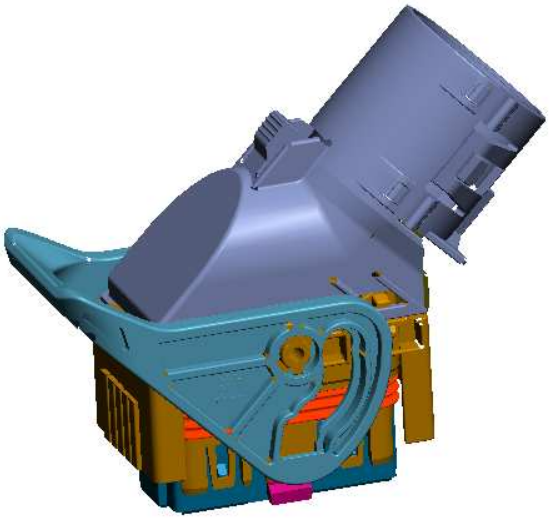


Figure 12

This top cover is required for cable assembly application, which can connect corrugated tube and plug housing together for better cable assembly protection.

需使用上盖来连接波纹套管与插头，其可提供更好的线束保护功能。

3. CONNECTOR MATING AND INTERFACE REQUIREMENTS

插件的安装及对应界面要求

3.1 CONNECTOR MATING 插件的安装

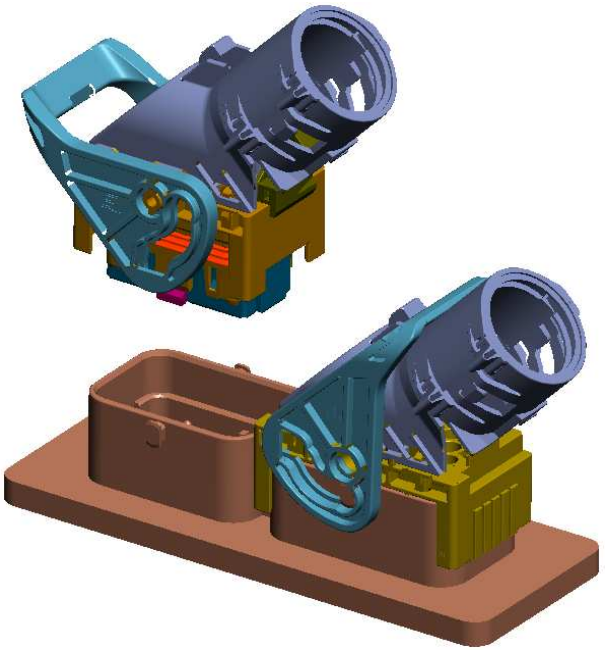


Figure 13

This plug is designed to mate with authorized interface only.
The maximum mating and un-mating force shall be no bigger than 75N with the help of lever. （USCAR2-4）

本插件仅能配接专用的界面，施加到手把手柄处的最大插入力及拔出力应小于 75 牛。（USCAR2-4）

The releasing sound of locking lever and interface clamp feature should be audible when plug is fully seated.

插件插到位时应能听到手把手柄处卡入界面对应卡钩的释放声音。

For needed hand clearance, reference below (Figure 14).

相应手的安装空间需求参考（图 14）

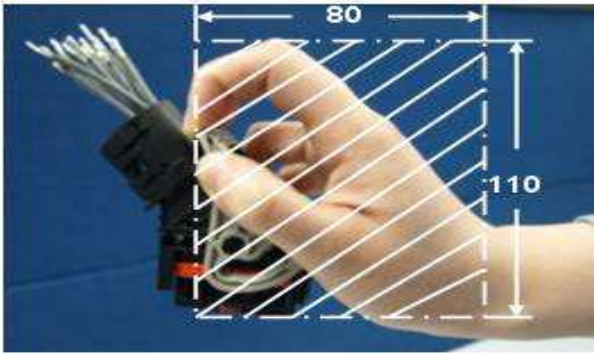


Figure 14

3.2 MATING REQUIREMENTS 安装注意事项

Below figures are mandatory for proper mating and connection.
为了正确及较好的安装及连接，请参看相关图示要求。

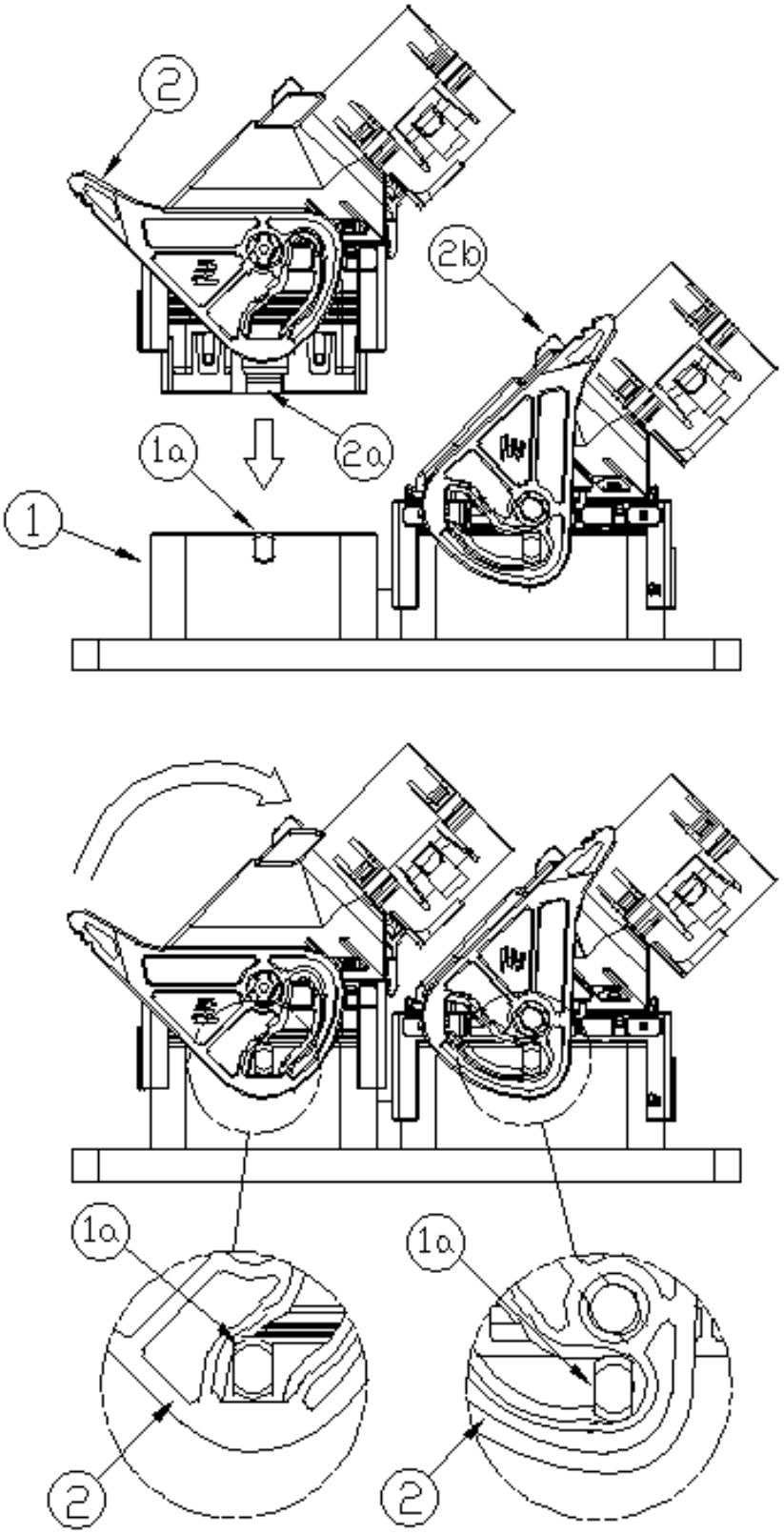


Figure 15

The 16pos and 36pos plug should be assembled into interface (1) sequentially according to the different wires out direction.
Before assembly, lever (2) shall be opened as shown on left side of Figure15, Assure the secondary locker is in its locking position. See Figure 9, Figure 10.

16 位及 36 位插头须分别根据出线口方向需要依次安装进对配界面（1）。

安装前，插头手把（2）须打开如图 15 左边 16 位插头所示，并确保插头上的二次锁扣位于其锁定位置，参看图 9，图 10。

When assembling, the plug shall be pre-insert into interface in place, in this situation, the interface pivot (1a) should contact with the lever cam slot small opening terrace as shown in Fig. 15, 16, 17, 18. Then rotate the lever (2) along its pivot until it is stopped by interface pivot, at the same time, the lever end should under the fixing clip (2b) of top cover. The clear releasing sound of fixing clip could be heard.
The interface pivot (1a) should be concentric with the lever cam slot end half round.

安装时，插头应向下预插入一定位置，此时对配界面的枢轴（1a）应抵住凸轮槽开口小台阶上，具体参看图 15，图 16，图 17，图 18。然后搬动手把继续在手把的凸轮槽引导下完全插到位，此时手把柄应卡入上盖锁扣（2b）并能听到清脆的卡入释放声音。

此时手把凸轮槽尾部半圆圆心应与对配界面的枢轴（1a）同心。

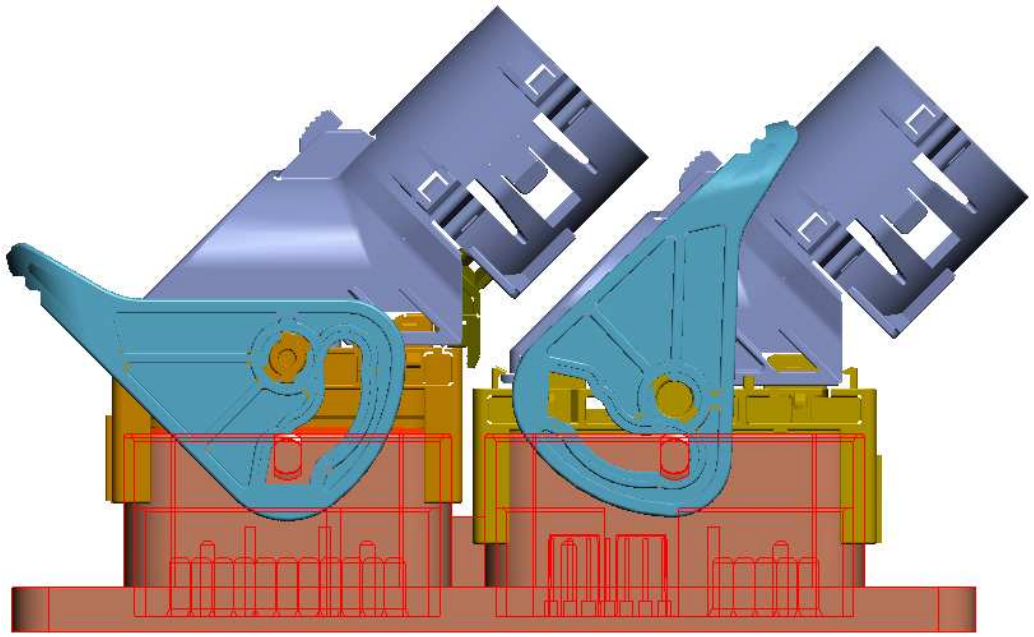


Figure 16

Figure 17（Correct pre-insertion，正确的预插状态）

Figure 18（incorrect pre-insertion，不正确的预插状态）

3.3 UMATING REQUIREMENTS 拆装注意事项

Below figure19, 20 demonstrate proper mating and connection.

为了正确及较好的拆装，请参看下面图 19，图 20 所示要求。

When removing the plug, press the clip on top cover to release lever from its locking position as shown below, then continue to rotate lever making the plug out of interface. Also see Figure 15 and 16.

拆开取下插头时应按下上盖的固定卡扣，同时依下图所示方向转动手把带动整个插头脱离对配插座，注意手把需转动完全打开到其装入状态时的位置，插头才能顺利的完全拿掉。同时参看图 15，图 16。

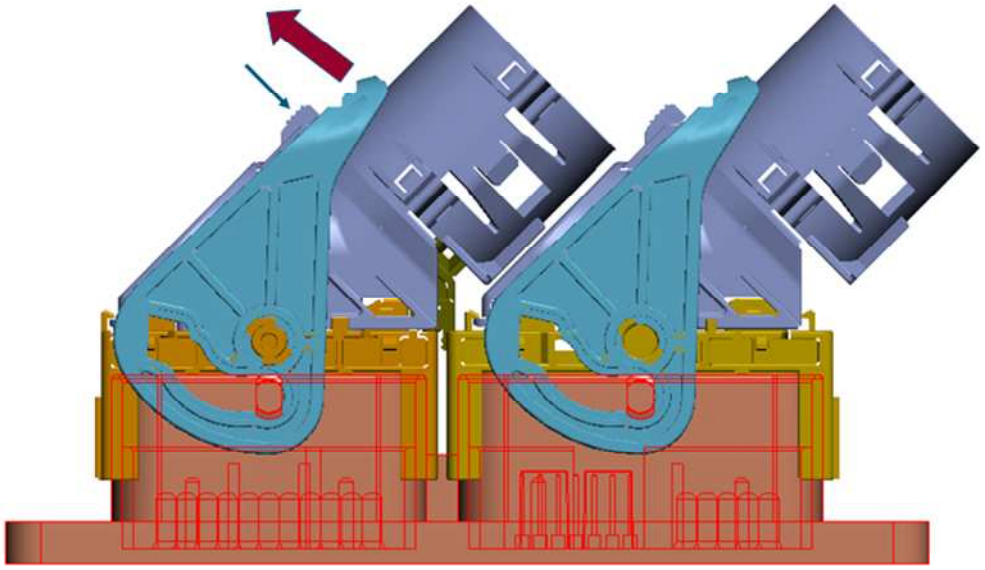


Figure 19

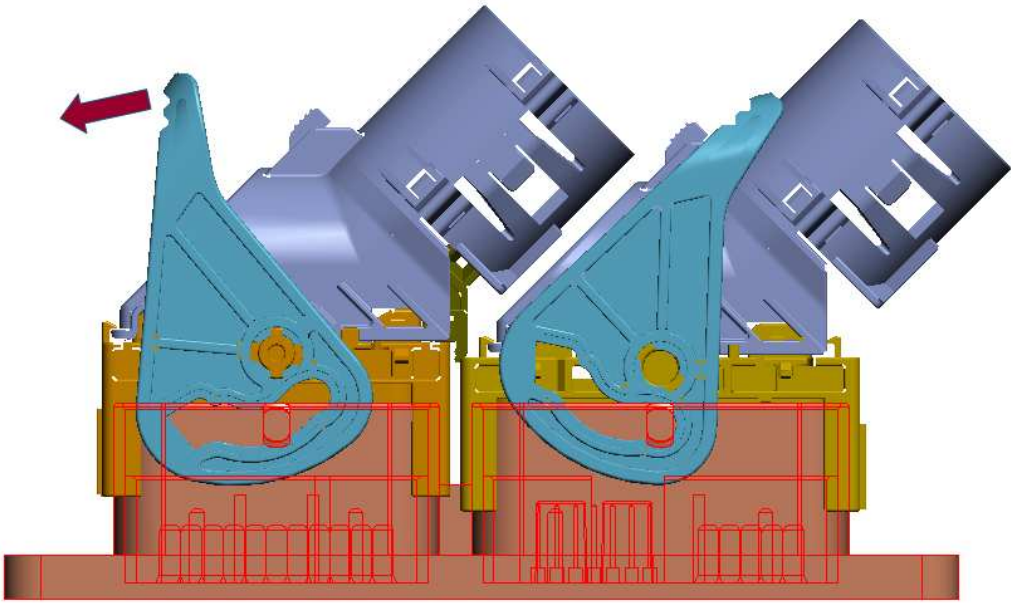


Figure 20