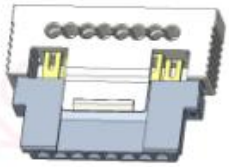
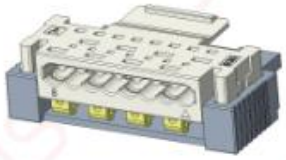
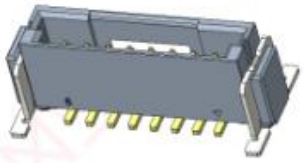
1.27 mm 间距 1278 系列线对板连接器

1.27 mm Pitch 1278 Series Wire-to-Board Connectors

单排线端90°	单排线端180°
1278HI-XXXX-LPGWXXBTR	1278HI-XXXX-LPGWXXBTV
	
单排板端卧贴90°	单排板端立贴180°
1278WRS-XXX-LPGWXXBRS	1278WVS-XXX-LPGWXXBCS
	

变更履历 Change History

版本 REV.	内容 DESCRIPTION	日期 DATE	编制 WRITTEN By	批准 APPROVAL
A	初次发行 / Initial Release	2023/08/26	YUAN	YANG

目录

1.压接准备 Crimp Preparation

压接操作前，务必检查所用导线和压接刀具的组合是否正确。

Before crimping operations, it is important to check that the contacts, wires used and crimping tools fit correctly.

1.1 端子/线缆压接 Terminal/Wire Crimp

导体和绝缘层压接（见图一），相关压接参数（见表一）；

Conductors and insulation crimping (see Figure 2), relevant crimping parameters (see Table 1);

其他要求应符合 IDC 相关压接规范。

Other requirements should comply with IDC relevant crimping specifications.

※ 端子电镀层无损伤，无基材暴露；

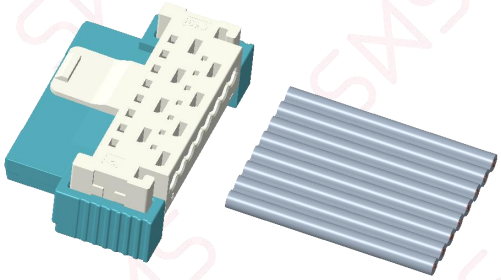
The terminal plating layer is not damaged, and there is no substrate exposure;

※ 线缆切口需平齐，无断丝，绝缘层无破皮；

The cross-section of the wire should be flat, no broken wire, no broken skin in the insulation layer;

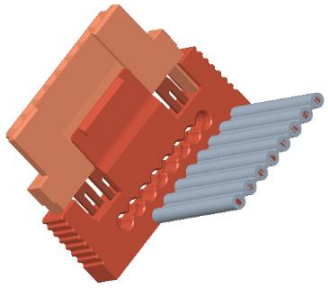
※ 压接方式可参考图一/图二和表一。

The crimping method can refer to Figure 1/Figure 2 and Table 1



(180° / type A)

图一 Figure 1



(90°/ type P)

图二 Figure 2

压接参考值/ crimping reference value 单位：mm				
成品料号 Finished product part number	线规 Wire Gauge (ISO)	电线标准 Wire Standard	绝缘直径 Insulation Diameter O.D.	拉脱力 Pull-off Force N
1278HI-XXF-LPGW05BTR 1278HI-XXF-LPGW05BTV	0.35mm²	22AWG/7	1.32 Max.	35(50)
	0.22mm²	24AWG/7	1.20 Max.	35(50)
1278HI-XX-LPGW05BTR 1278HI-XX-LPGW05BTV	0.13mm²	26AWG/7	1.05Max.	35(50)

表一 Table 1

注：括号中的值适用于绝缘层压接测量导线和端子的压接拉脱力；

Note: The values in parentheses apply to the crimp pull-off force of the insulation lamination measuring conductors and terminals;

2.2 包装 Pack

注意：Note:

捆扎好的线束在包装箱内加工后包装时，为了使插接件长时间不受力，放入装配箱中，避免长时间放置而变形；

✧When the bundled wire harness is processed and packaged in the packaging box, it is placed in the assembly box to ensure that the connector is not subjected to force for a long time and to avoid deformation of the terminal due to long-term placement

✧在包装箱的底部和顶部放置缓冲材料，为避免导线堆积对连接器长时间施加作用力，

Place cushioning material on the bottom and top of the box to avoid wire accumulation and exert force on the connector for a long time,

3.线束装配插头 Wiring Harnesses Assembly Plugs

※ 确定插头线路起始位和孔位数，导体从后塞孔口部插入（见图三/图四）；

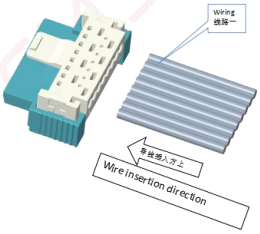
Determine the starting position and number of holes of the plug circuit, and insert the conductor from the rear plug hole (see Figure 3，4)

※ 护套装后塞的面向上，用治具向下压合（见图五/图六）；

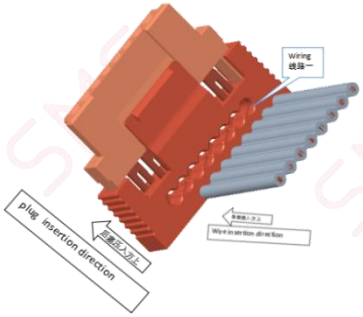
Use a fixture to press down on the back of the protective cover with the plug facing upwards (see Figure 5，6)

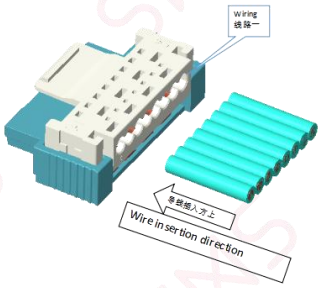
※ 检查后塞是否与护套边缘平齐，后塞无翘曲，确认后塞组装到位（见图七/八）。

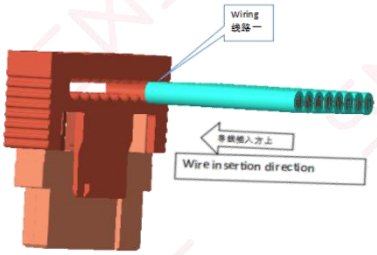
Check whether the rear plug is flush with the edge of the sheath, and there is no warping of the rear plug. Confirm that the rear plug is assembled in place (see Figure 7, 8)



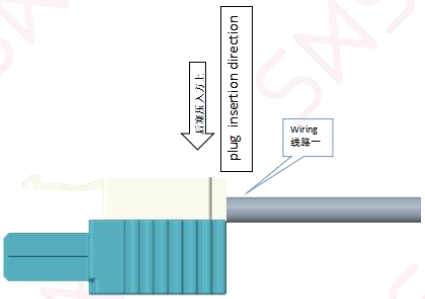
图三 Figure 3



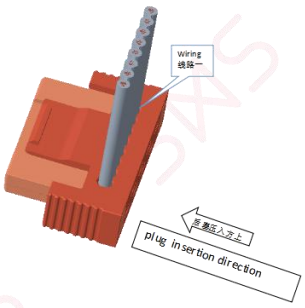




图四 Figure 4



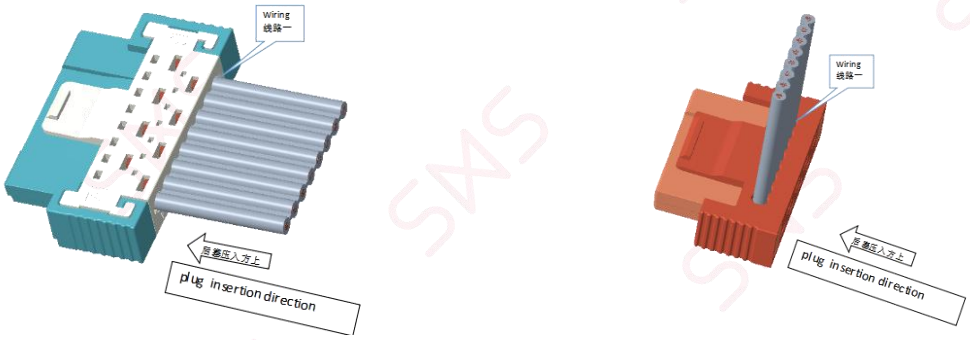
图五 Figure 5



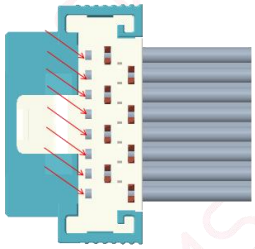
图六 Figure 6

3.2 护套与 后塞装配好后（二次锁）不做拆卸

3.2 Do not disassemble the protective cover and rear plug after assembly (secondary lock)



七图 Figure7



图八 Figure 8

3.3.1.SESO 提供的工具

3.3.1. Tools Available from SESO

3.3.2.手动杠杆压力机的工具

3.3.2. Tools for hand lever presses

SESO 零件的基本刀具组包括用于装配手动杠杆压力机的上部刀具和下部刀具夹，上部刀具夹为 10H7，下部刀具夹为 T 形槽 10H9。

3.3.3.MiniBridge 直插座连接器的下部工具（A 型 P 型）

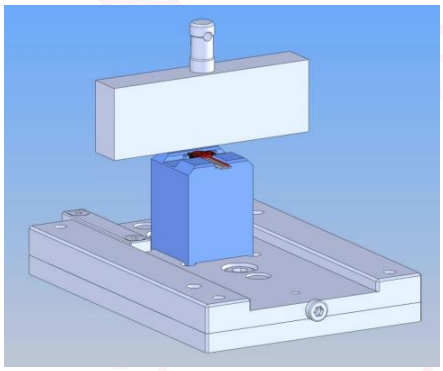


图 9 成角度插座的工具示例
Figure 4 Tooling example for angled receptacles

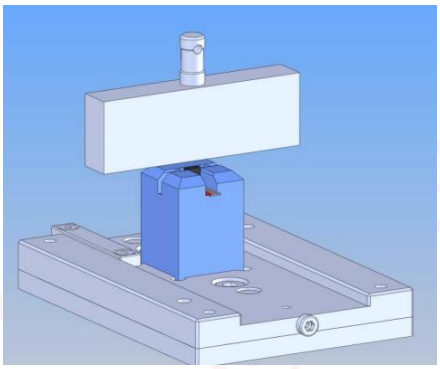
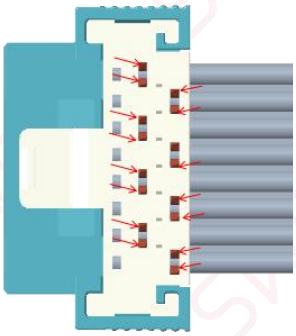


图 10 成角度插座的工具示例
Figure 5 Tooling example for angled

3.4 电路检测 Circuit Detection

※ 电路检测探针正确位置（见图十一）；

The circuit detects the correct position of the probe (see Figure 11);



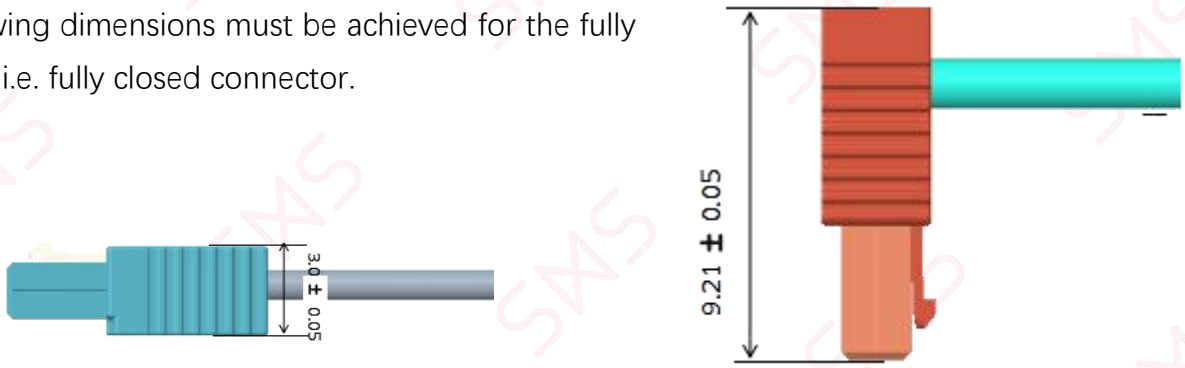
图十一 正确检测位置 Figure 11

3.5.尺寸

对于完全接合的连接器，即完全闭合的连接器，必须达到以下尺寸 （见图十二）

3.5. Dimensions

The following dimensions must be achieved for the fully engaged, i.e. fully closed connector.



图十二 Figure 12

建议尺寸说明（见表二）Description of recommended dimensions (see Table 2)

PIN 数 / 尺寸 Dim.	2~5 PIN	6~9 PIN	10~16 PIN
D	≥35mm	≥45mm	≥55mm

表二 Table 2

3.6.不维修政策 3.6. NON-Repair Policy

无论出于何种原因，产品都不会被再次打开

The Product is not designed to be opened again for whatever reason

不得尝试修理有缺陷的产品。电缆在特定位置只能连接一次。

Attempts to repair defective Products must not be undertaken.A cable can only be connected once at a certain location.

3.7 检查 3.7. Inspection

3.7.1.加工零件特性检查

3.7.1. Inspection of Processed Parts' Characteristics

应通过适当的变量和属性测试/检查来确保这些要求。

The requirements are to be ensured by suitable variable and attributive tests/inspections.

.电缆在外壳中的位置

.Cable position in the housing

.扁平带状电缆对齐

.Flat ribbon cable alignment

IDC 终端的位置（检查窗口中接触梁的尖端）

.Position of the IDC terminations (tips of the contact beams in inspection windows)

外壳构件完全接合

Complete engagement of the members of the housing

完全闭合连接器的尺寸

Dimensions of the fully closed connector

.闩锁的方向（仍然与预装配零件相同，即闩锁不会因工具而变形）。闩锁的方向（仍然与预装配零件相同，即闩锁不会因工具而变形）。

.Orientation of the latch (still as in pre-assembled parts, i.e. latch not deformed by the tools).

3.7.2.电气检查（电气试验）3.7.2. Electrical Inspection (Electrical Test)

电气试验应使用合适的带探针头的接触式探针。这种方法在弹簧触点的“尖端”（在连接器的配合面上）提供连接，而不会损坏接触表面。建议使用直径为 0.35 mm、弹簧载荷为 0.6 N 的弹簧加载接触式探针。

A suitable contact probe with a probe tip shall be used for electrical test. This method provides a connection on the "tip" of the spring contact (at the connector's mating face) without damaging the surface where contact is made. A spring-loaded contact probe with a diameter of 0.35 mm and a spring load of 0.6 N is recommended.

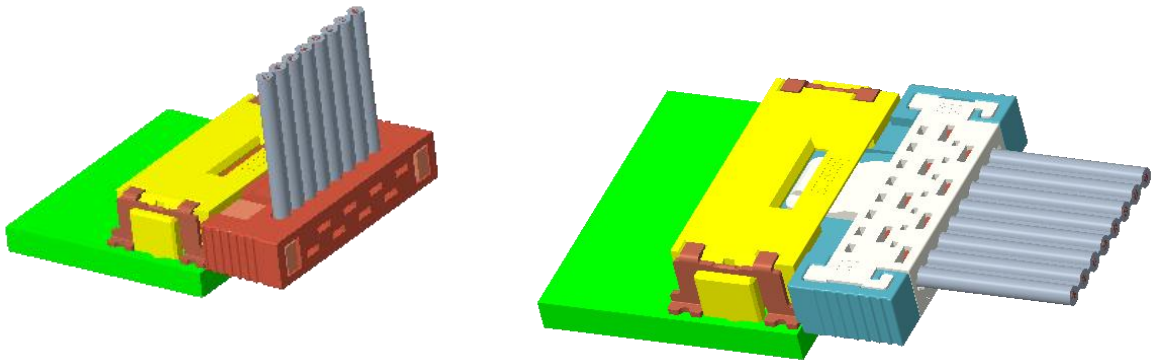


图 15 用于适配的 PCB 接头

注意：NOTE:

在电气测试过程中使用 MicroBridge 接头会导致插座的第一触点配合。

Using a MicroBridge header during electrical testing leads to a first contact mating for a receptacle.

或者，焊接在 PCB 上的公连接器也可以用于电气测试（图 15）。

Alternatively, a male connector soldered onto a PCB can be used for the electrical test as well (Figure 15).

4. 申请须知

4. APPLICATION NOTE

4.1.1.电缆敷设建议

4.1.1. Recommendation for Cable-Laying

电缆敷设在接触端正后方时，弯曲半径不得小于电缆直径的三倍。这避免了 IDC 区域附近绝缘支架的损坏，并避免了对外壳内导体线束和接触系统之间接触点可靠性的不利影响（图 16）。

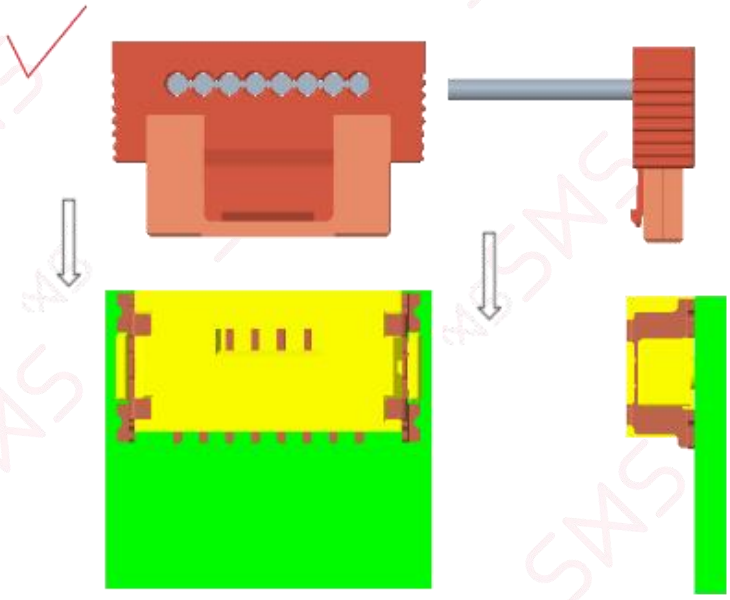
The bending radius shall not be less than triple' cable diameter-size for cable-laying directly behind the contact end. This avoids the impairment of the insulation support next to the IDC area and detrimental influence on the reliability of the contact points between the strands of the conductor and the contact system within the housing (Figure 16).

图十六 Figure 16

5 与底座装配 Assembled With The Wafer

5.1 正确装配方式（见图十七 ）

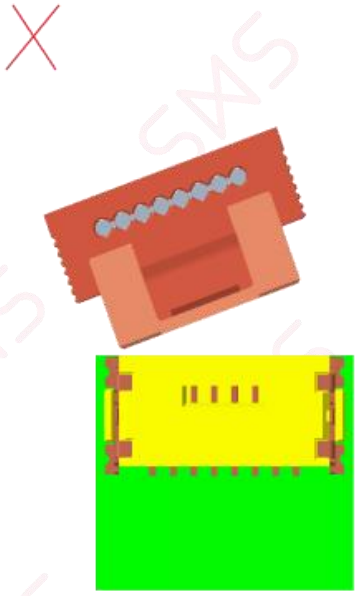
Correct Way Of Assembly1 (see Figure 17)



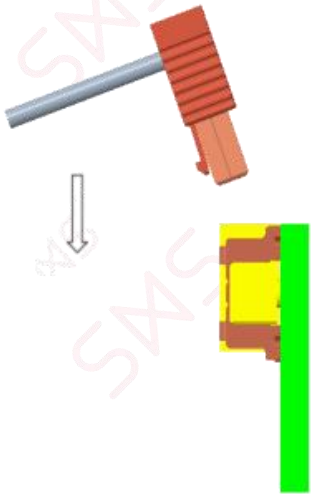
图十七 Figure 17

5.2 错误装配方式（见图十八、十九、二十）

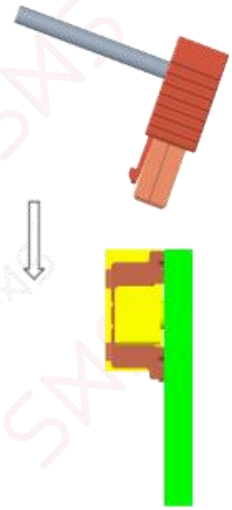
5.2 Wrong Way Of Assembling (see Figure 18, 19, 20)



图十八 Figure 18



图十九 Figure 19



图十二 Figure 20

说明：Explain:

✧插头与底座装配时若倾斜插入，插头可能会触及底座 PIN 针，致 PIN 针弯曲；

If the plug is inserted obliquely when assembling with the wafer, the plug may touch the pin of the wafer, causing the pin to bend;

✧导致插头与底座装配插入力过大或互配不上，或使板端连接器出现其它不良问题；

Cause the insertion force of the plug and the wafer to be too large or not compatible with each other, or make the board end connector have other undesirable problems;

✧端子接触弹片与 PIN 针未完全接触（弹片一侧正压力偏大）；

The terminal contact shrapnel is not in full contact with the pin(the positive pressure on the side of the shrapnel is large);

✧如使用，接触电阻会出现逐渐变大、端子发热、接触等不良问题。

If used, the contact resistance will gradually become larger, the terminal will be hot, contact and other defective problems.

5.3 线端与针座互配后拔出方式

5.3 How to pull out the wire end after matching with the pin base

※ 先把线端往针座里面推至底部（见图二十一）；

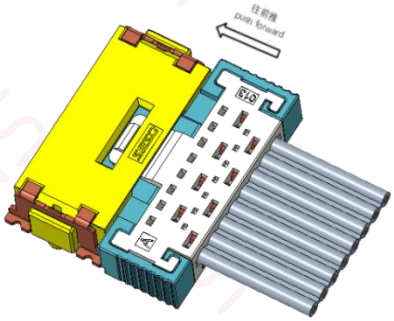
First push the wire end into the needle holder to the bottom (see Figure 21);

※ 按压住线端卡扣（见图二十二）；

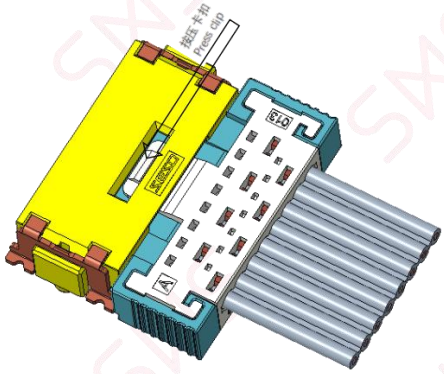
Press the wire end buckle (see Figure 22);

※ 把线端往后拔出（见图二十三）

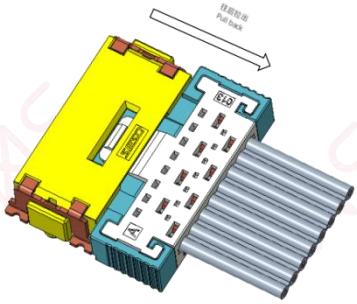
Pull the end of the wire back (see Figure 23).



图二十一 Figure21



图二十二 Figure 22



图二十三 Figure 23

6.布线 Wiring

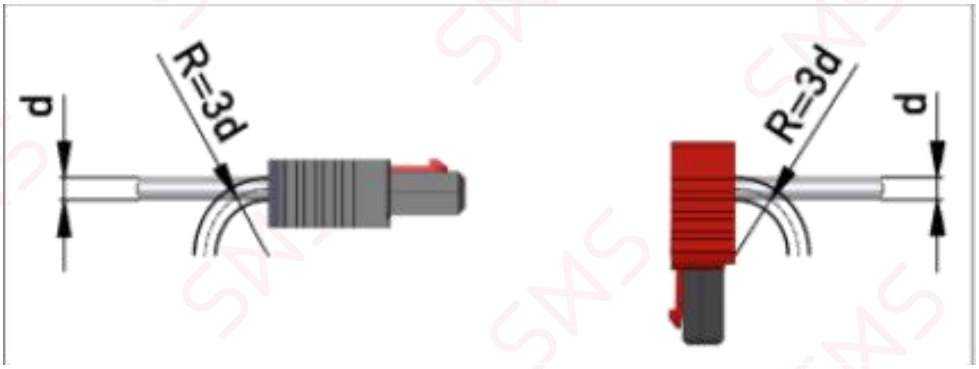
※ 考虑到布线和固定电线的足够长度，布线时不要对连接器施加外力，除非外力使电线略微弯曲；

Considering the sufficient length of the wiring and fixing wire, do not apply external force

to the connector when routing, unless the external force makes the wire slightly bent;

※ 在相对狭小空间布线时，请采取措施防止力直接作用在连接器上，使电线有足够的灵活性，保持插头末端到弯曲处有>10mm 的过渡区，线缆弯曲半径大于 3*O.D.具体参考实际使用线缆特性，此类折弯需要固定装置固定（见图二十六、二十七）；

When wiring in a relatively small space, please take measures to prevent the force from acting directly on the connector, so that the wire has enough flexibility, keep the transition zone of >10mm from the end of the plug to the bend, and the cable bending radius is greater than 3 * O.D. For specific reference to the actual cable characteristics, such bending requires a fixed device (see Figure 26, 27);

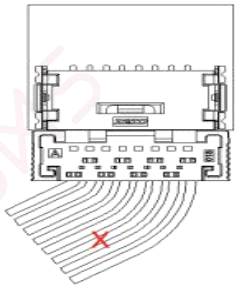


图二十六 Figure 26　　图二十七 Figure 27

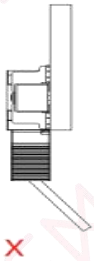
※ 避免电线在过度弯曲的情况下使用，这可能会导致电线被拔出（因通过导线张力，力被加到插座的端子夹紧区或端子插入部分）（见图二十八、二十九）。

Avoid using wires in situations of excessive bending, which may cause the wires to be pulled out (due to the force exerted by wire tension on the terminal clamping area or terminal insertion part of the socket) (see Figure 28, 29).

二十六 Figure 26



二十七 Figure 27

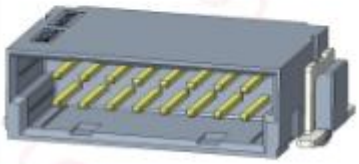
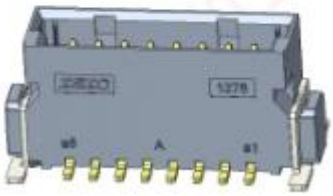


二十八 Figure 28

二十九 Figure 29

1.27 mm 间距 1278 系列双排线对板连接器

1.27 mm Pitch 1278 Series DoubleRowWTB Wire-to-Board Connectors

<table>
<tr><td colspan="2">双排线端90°</td></tr>
<tr><td colspan="2">1278HI-2xXXX-LPGWXXBT</td></tr>
<tr><td colspan="2">  </td></tr>
<tr><td>双排板端卧贴90°</td><td>双排板端立贴180°</td></tr>
<tr><td>1278WRS-2xXXX-LPGWXXBRS</td><td>1278WVS-2xXXX-LPGWXXBCS</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

变更履历 Change History

版本 REV.	内容 DESCRIPTION	日期 DATE	编制 WRITTEN By	批准 APPROVAL
A	初次发行 / Initial Release	2024/03/06	YUAN	YANG

目录

1.压接准备 Crimp Preparation

压接操作前，务必检查所用导线和压接刀具的组合是否正确。

Before crimping operations, it is important to check that the contacts, wires used and crimping tools fit correctly.

1.1 端子/线缆压接 Terminal/Wire Crimp

导体和绝缘层压接（见图一），相关压接参数（见表一）；

Conductors and insulation crimping (see Figure 2), relevant crimping parameters (see Table 1);

其他要求应符合 IDC 相关压接规范。

Other requirements should comply with IDC relevant crimping specifications.

※ 端子电镀层无损伤，无基材暴露；

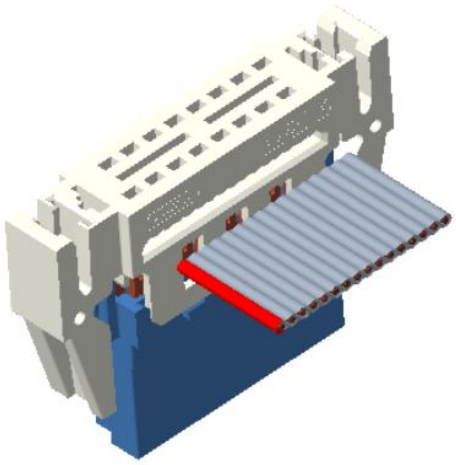
The terminal plating layer is not damaged, and there is no substrate exposure;

※ 线缆切口需平齐，无断丝，绝缘层无破皮；

The cross-section of the wire should be flat, no broken wire, no broken skin in the insulation layer;

※ 压接方式可参考图一/表一。

The crimping method can refer to Figure 1/Figure 2 and Table 1



(90°/ type P)

图一 Figure 1

压接参考值/ crimping reference value				单位：mm
成品料号 Finished product part number	线规 Wire Gauge (ISO)	电线标准 Wire Standard	绝缘直径 Insulation Diameter O.D.	拉脱力 Pull-off Force N
1278HI-2xXX-LPGW05BT	0.06mm²	30AWG/7	0.69 Max.	35~55

表一 Table 1

注：括号中的值适用于绝缘层压接测量导线和端子的压接拉脱力；

Note: The values in parentheses apply to the crimp pull-off force of the insulation lamination measuring conductors and terminals;

2.2 包装 Pack

注意：Note:

捆扎好的线束在包装箱内加工后包装时，为了使插接件长时间不受力，放入装配箱中，避免长时间放置而变形；

✧When the bundled wire harness is processed and packaged in the packaging box, it is placed in the assembly box to ensure that the connector is not subjected to force

for a long time and to avoid deformation of the terminal due to long-term placement

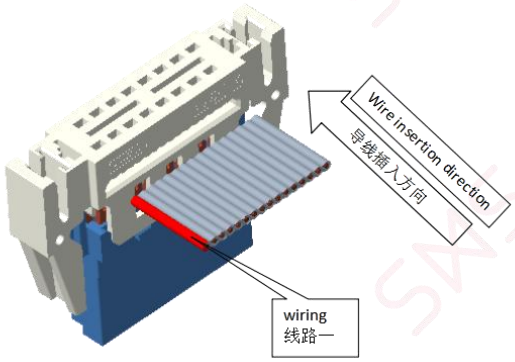
✧在包装箱的底部和顶部放置缓冲材料，为避免导线堆积对连接器长时间施加作用力，Place cushioning material on the bottom and top of the box to avoid wire accumulation and exert force on the connector for a long time,

3.线束装配插头 Wiring Harnesses Assembly Plugs

※ 确定插头线路起始位和孔位数，导体从后塞孔口部插入（见图三/图四）；Determine the starting position and number of holes of the plug circuit, and insert the conductor from the rear plug hole (see Figure 3，4)

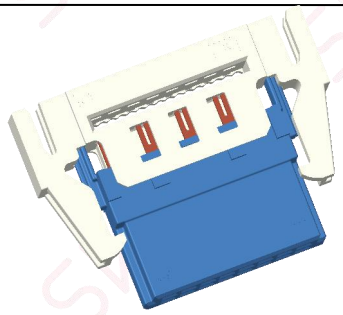
※ 护套装后塞的面向上，向下压合至一次锁（见图五/图六）；Use a fixture to press down on the back of the protective cover with the plug facing upwards (see Figure 5，6)

※ 检查后塞是否与护套边缘平齐，后塞无翘曲，确认后塞组装到位（见图七/八）。Check whether the rear plug is flush with the edge of the sheath, and there is no warping of the rear plug. Confirm that the rear plug is assembled in place (see Figure 7，8)

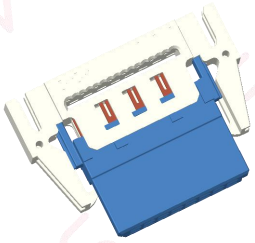


图三 Figure 3

图四 Figure4



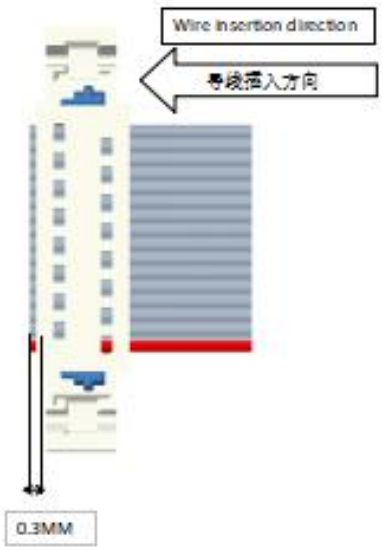
图五 Figure 5



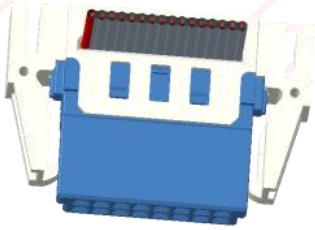
图六 Figure 6

3.2 护套与 后塞装配好后（二次锁）不做拆卸

3.2 Do not disassemble the protective cover and rear plug after assembly (secondary lock)



七图 Figure7



图八 Figure 8

3.3.1.SESO 提供的工具

3.3.1. Tools Available from SESO

3.3.2.手动杠杆压力机的工具

3.3.2. Tools for hand lever presses

SESO 零件的基本刀具组包括用于装配手动杠杆压力机的上部刀具和下部刀具夹，上部刀具夹为 10H7，下部刀具夹为 T 形槽。

3.3.3.MiniBridge 直插座连接器的下部工具

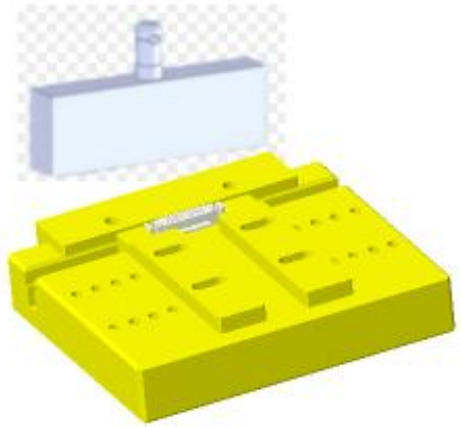
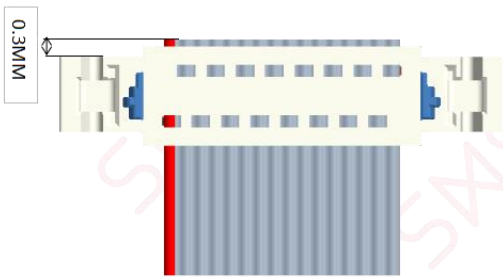


图 9 成角度插座的工具示例
Figure 4 Tooling example for angled

3.4 电路检测 Circuit Detection

※ 电路检测探针正确位置（见图十一）；
The circuit detects the correct position of the probe (see Figure 11);



图十一 正确检测位置 Figure 11

3.5.尺寸

对于完全接合的连接器，即完全闭合的连接器，必须达到以下尺寸 （见图十二）

3.5. Dimensions

The following dimensions must be achieved for the fully engaged, i.e. fully closed connector.

图十二 Figure 12 建议尺寸说明（见表二）Description of recommended dimensions (see Table 2)

PIN 数 尺寸 Dim.	12~32 PIN	40~80 PIN	10~16 PIN
D	≥35mm	≥45mm	≥55mm

表二 Table 2

3.6.不维修政策 3.6. NON-Repair Policy

无论出于何种原因，产品都不会被再次打开

The Product is not designed to be opened again for whatever reason

不得尝试修理有缺陷的产品。电缆在特定位置只能连接一次。

Attempts to repair defective Products must not be undertaken.A cable can only be connected once at a certain location.

3.7 检查 3.7. Inspection

3.7.1.加工零件特性检查

3.7.1. Inspection of Processed Parts' Characteristics

应通过适当的变量和属性测试/检查来确保这些要求。

The requirements are to be ensured by suitable variable and attributive tests/inspections.

.电缆在外壳中的位置

.Cable position in the housing

.扁平带状电缆对齐

.Flat ribbon cable alignment

IDC 终端的位置（检查窗口中接触梁的尖端）

.Position of the IDC terminations (tips of the contact beams in inspection windows)

外壳构件完全接合

Complete engagement of the members of the housing

完全闭合连接器的尺寸

Dimensions of the fully closed connector

.闩锁的方向（仍然与预装配零件相同，即闩锁不会因工具而变形）。闩锁的方向（仍然与预装配零件相同，即闩锁不会因工具而变形）。

.Orientation of the latch (still as in pre-assembled parts, i.e. latch not deformed by the tools).

3.7.2.电气检查（电气试验）3.7.2. Electrical Inspection (Electrical Test)

电气试验应使用合适的带探针头的接触式探针。这种方法在弹簧触点的“尖端”（在连接器的配合面上）提供连接，而不会损坏接触表面。建议使用直径为 0.35 mm、弹簧载荷为 0.6 N 的弹簧加载接触式探针。

A suitable contact probe with a probe tip shall be used for electrical test. This method provides a connection on the "tip" of the spring contact (at the connector's mating face) without damaging the surface where contact is made. A spring-loaded contact probe with a diameter of 0.35 mm and a spring load of 0.6 N is recommended.

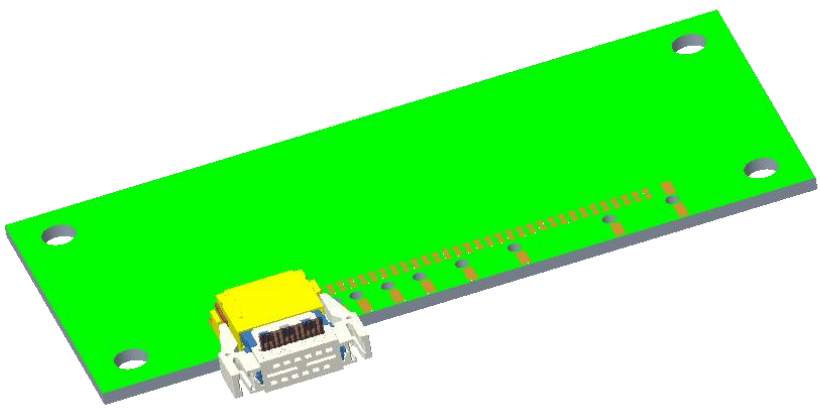


图 15 用于适配的 PCB 接头

注意：NOTE:

在电气测试过程中使用 SMC 接头会导致插座的第一触点配合。

Using a SMC header during electrical testing leads to a first contact mating for a receptacle.

或者，焊接在 PCB 上的公连接器也可以用于电气测试（图 15）。

Alternatively, a male connector soldered onto a PCB can be used for the electrical test as well (Figure 15).

4. 申请须知

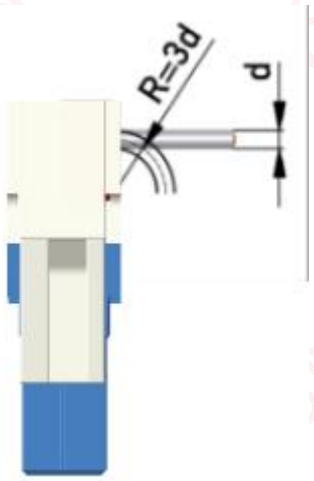
4. APPLICATION NOTE

4.1.1.电缆敷设建议

4.1.1. Recommendation for Cable-Laying

电缆敷设在接触端正后方时，弯曲半径不得小于电缆直径的三倍。这避免了 IDC 区域附近绝缘支架的损坏，并避免了对外壳内导体线束和接触系统之间接触点可靠性的不利影响（图 16）。

The bending radius shall not be less than triple' cable diameter-size for cable-laying directly behind the contact end. This avoids the impairment of the insulation support next to the IDC area and detrimental influence on the reliability of the contact points between the strands of the conductor and the contact system within the housing (Figure 16).

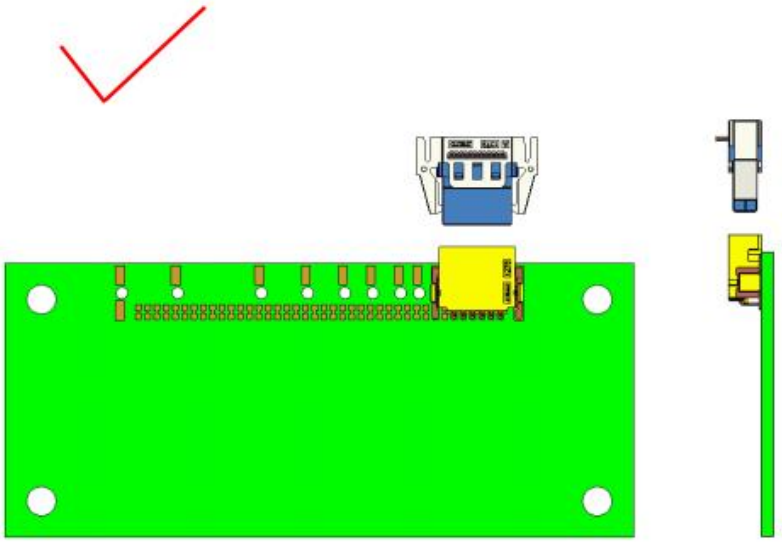


图十六 Figure 16

5 与底座装配 Assembled With The Wafer

5.1 正确装配方式（见图十七 ）

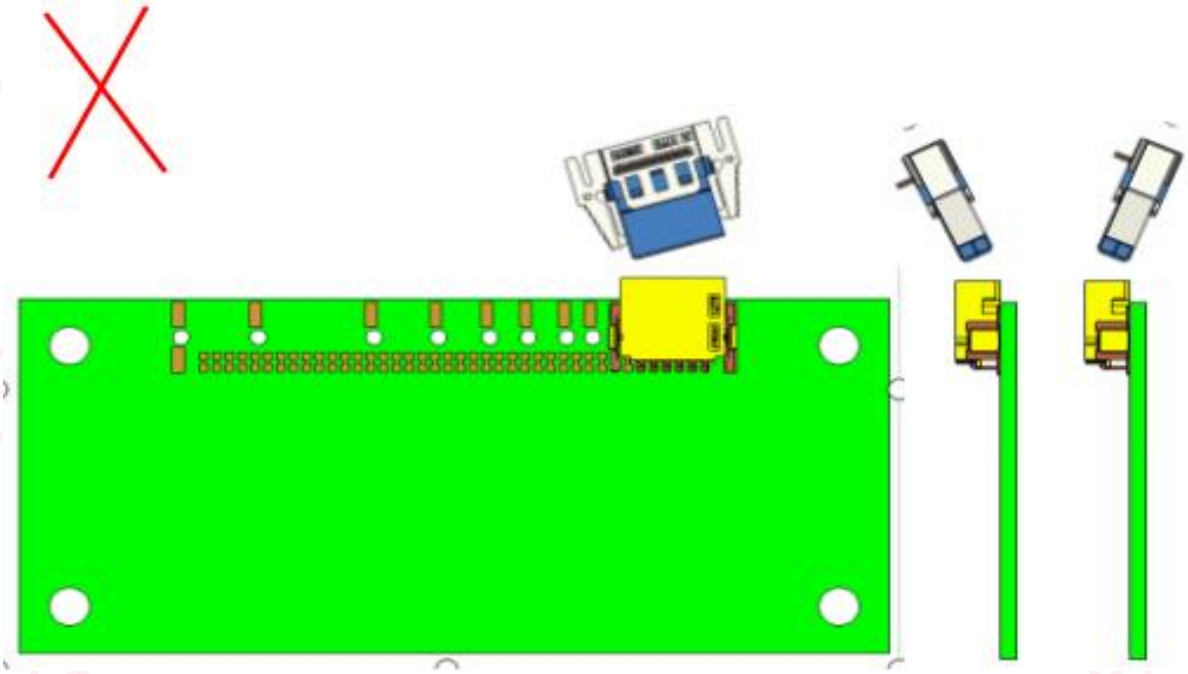
Correct Way Of Assembly1 (see Figure 17)



图十七 Figure 17

5.2 错误装配方式（见图十八）

5.2 Wrong Way Of Assembling (see Figure 18,)



图十八 Figure 18

说明：Explain:

✧插头与底座装配时若倾斜插入，插头可能会触及底座 PIN 针，致 PIN 针弯曲；

If the plug is inserted obliquely when assembling with the wafer, the plug may touch the pin of the wafer, causing the pin to bend;

✧导致插头与底座装配插入力过大或互配不上，或使板端连接器出现其它不良问题；

Cause the insertion force of the plug and the wafer to be too large or not compatible with each other, or make the board end connector have other undesirable problems;

✧端子接触弹片与 PIN 针未完全接触（弹片一侧正压力偏大）；

The terminal contact shrapnel is not in full contact with the pin(the positive pressure on the side of the shrapnel is large);

✧如使用，接触电阻会出现逐渐变大、端子发热、接触等不良问题。

If used, the contact resistance will gradually become larger, the terminal will be hot, contact and other defective problems.

5.3 线端与针座互配后拔出方式

5.3 How to pull out the wire end after matching with the pin base

※ 先把线端往针座里面推至底部（见图十九）；

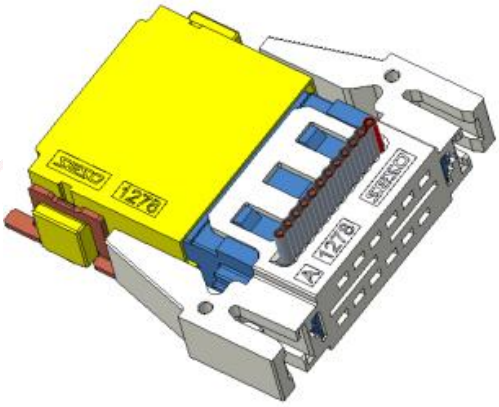
First push the wire end into the needle holder to the bottom (see Figure 19);

※ 按压住线端卡扣（见图二十）；

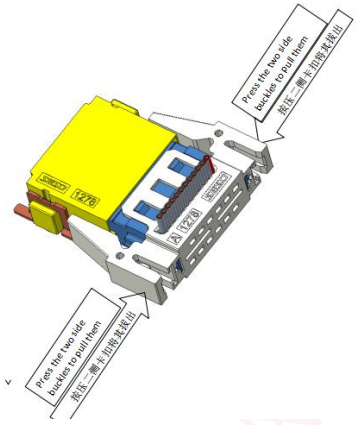
Press the wire end buckle (see Figure 20);

※ 把线端往后拔出（见图二十一）

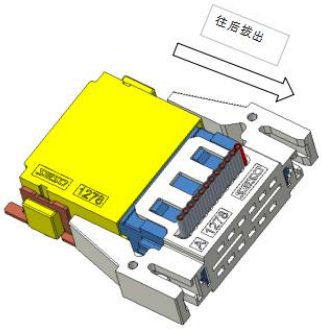
Pull the end of the wire back (see Figure 21).



图十九 Figure19



图二十 Figure 20



图二十一 Figure 21

6.布线 Wiring

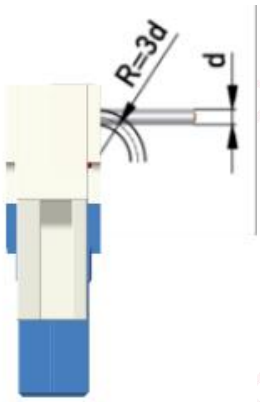
※ 考虑到布线和固定电线的足够长度，布线时不要对连接器施加外力，除非外力使电线略微弯曲；

Considering the sufficient length of the wiring and fixing wire, do not apply external force to the connector when routing, unless the external force makes the wire slightly bent;

※ 在相对狭小空间布线时，请采取措施防止力直接作用在连接器上，使电线有足够的灵活性，保持插头末端到弯曲处有>10mm 的过渡区，线缆弯曲半径大于 3*O.D.具体参考实际使用线缆特性，此类折弯需要固定装置固定（见图二十二）；

When wiring in a relatively small space, please take measures to prevent the force from acting directly on the connector, so that the wire has enough flexibility, keep the transition zone of >10mm from the end of the plug to the bend, and the cable bending radius is

greater than 3 * O.D. For specific reference to the actual cable characteristics, such bending requires a fixed device (see Figure 22,);



图二十二 Figure 22