

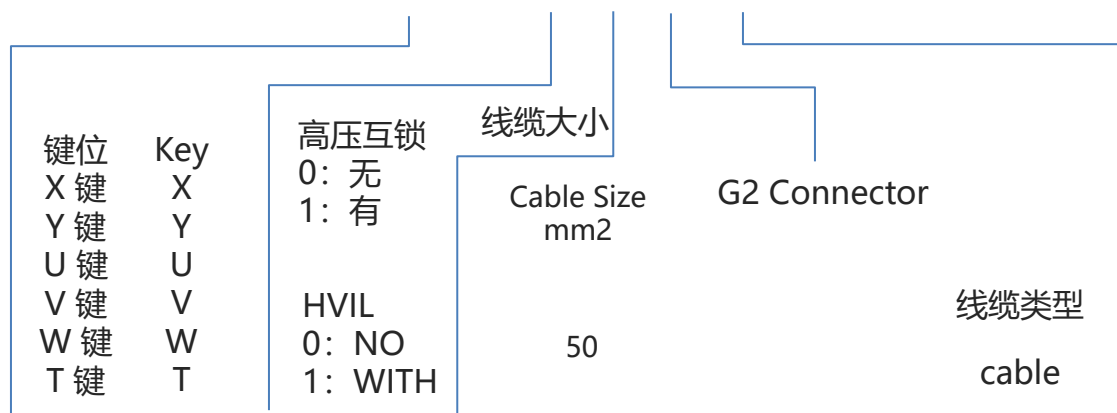
## G70-单芯2代10mm直头组装式连接器安装说明

### The Assembly manual

### For G70-1POS PowerLok 10mm G2 180D Plug Connector

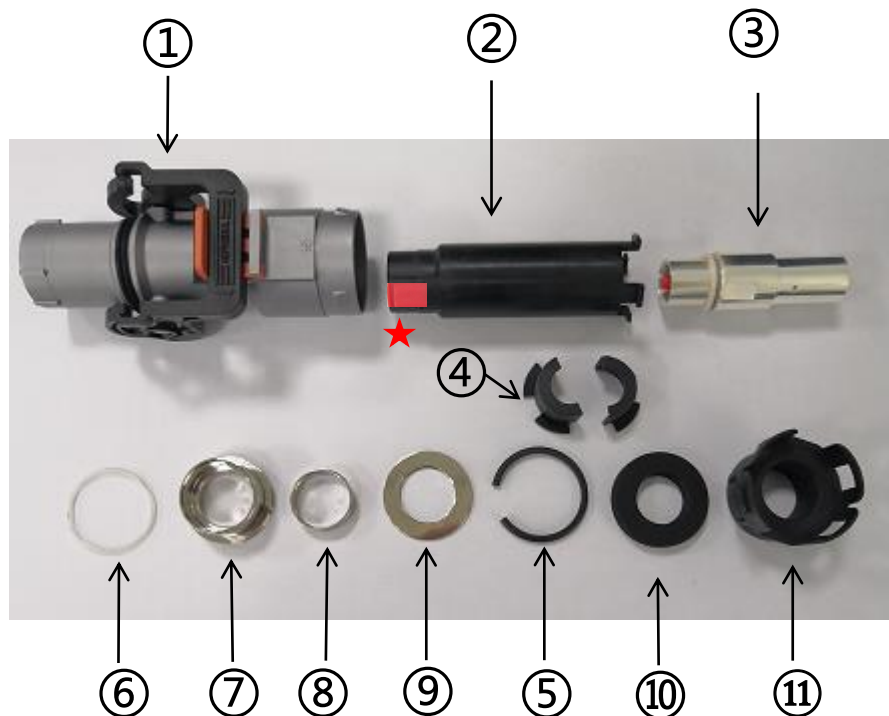


### PL18(X)-30(X)-50-2-G70



## 第一部分：包装清单

### Part 1 : Package contents



- ① 屏蔽壳组件Shield shell assembly ×1
- ② 带高压互锁端子的绝缘筒 Insulation sleeve with HVIL contact ×1  
( 非HVIL版本无高压互锁端子 No HVIL contact for non-HVIL version )
- ③ 带密封圈的R4端子组件 R4 terminal Assy with O-ring ×1
- ④ 锁块 ( 两个 ) Lock housing ( 2PCS ) ×1
- ⑤ 塑料卡簧Plastic Clamp spring ×1
- ⑥ 螺旋弹簧Coil spring ×1
- ⑦ 外铜环Outer Copper ring ×1
- ⑧ 内铜环Inside Copper ring ×1
- ⑨ 金属垫圈 Metal gasket ×1
- ⑩ 密封圈Sealing ×1
- ⑪ 尾盖End cap ×1

#### ★ 备注 Note :

安装过程请保留HVIL防护盖在此位置，等线束组装完毕再取出。

HVIL cap should be left in place during assembly, removed after final assembly is complete before use.

## 第二部分：插头组装

### Part 2: Plug Assembly

#### 步骤1：穿配件

Step1 : Assemble the accessories

#### 1-1 线缆准备

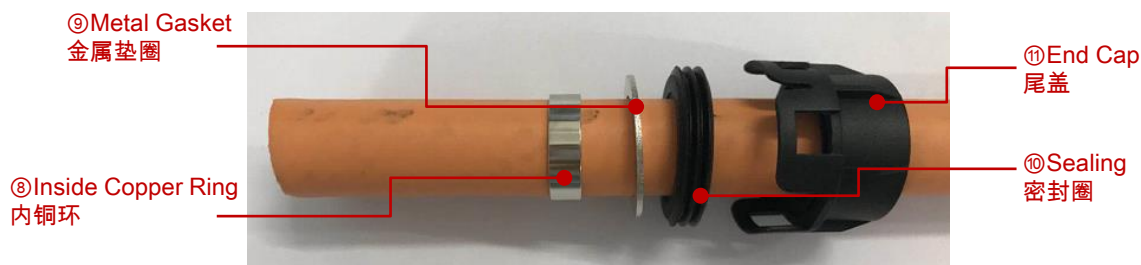
#### 1-1 Cable preparation

表1：G70 线材规格  
Table 1 : G70 Cable size

连接器 Connector	导线截面积 conductor area(mm <sup>2</sup> )	线缆外径 Accepted cable OD (mm)
300/301 系列 300/301 Series	50mm <sup>2</sup>	17.0±0.3

1-2 取各1pcs的⑪尾盖, ⑩密封圈, ⑨金属垫圈和⑧内铜环, 从右边依次穿过线缆

1-2 Take each 1pcs of ⑪ end cap, ⑩ Sealing, ⑨ Metal gasket and ⑧ Inside Copper ring, and make them pass through the cable from right in sequence



#### 步骤2：剥线皮，按表2尺寸剥离线缆绝缘皮和外被

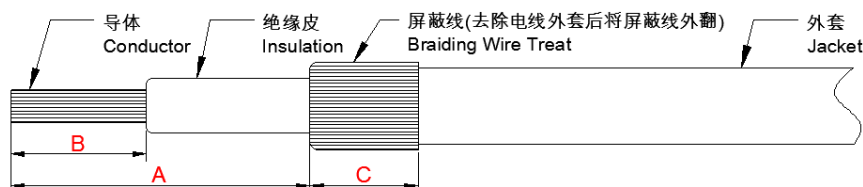
Step 2 : Stripping, Strip off cable insulation and jacket as following size from the table 2

表2：剥线长度  
Table 2 : Strip length

连接器 Connector	外套剥线长度 A Stripping jacket (mm)	绝缘皮剥线长 B Stripping insulation (mm)	保留屏蔽长度 C Leave over shielding(mm)
300/301系列 300/301 Series	36±0.5	19 +1/-0.5	7±1

注意：剥皮完成之后，裁剪屏蔽保留C mm(看上方表2)，并将屏蔽线向后翻180°

Note : After wire stripping, cutting shielded leave over Cmm(see table 2) and fold back the shielding braid

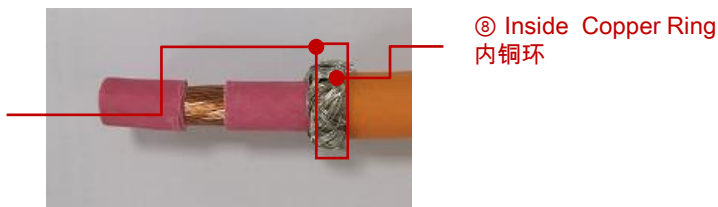


**步骤3：压接铜环****Step 3: Crimping Copper Ring**

**3-1** 将 ⑧内铜环从右端移动到屏蔽线下方，屏蔽线覆盖在铜环表面

**3-1** Move the ⑧ inside copper ring from the right side to the side below the shield. The shield line is covered on the surface of the copper ring

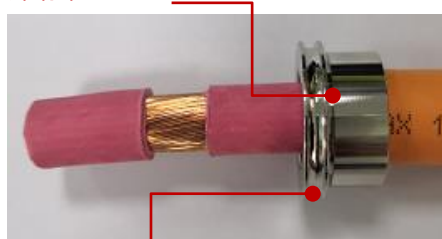
确保此处铜环前端和外被前端贴紧，  
压紧后间隙最佳为0mm  
Be sure to be closely in here, the best  
clearance is 0mm after crimping



**3-2** 取1pcs ⑦外铜环，铜环从左端安装到屏蔽线上，铜环从屏蔽线的左端开始完全覆盖,并压接在其上(规格参照表3)

**3-2** Take 1pcs ⑦ Outer Copper ring, load it to the cable end on the left, copper ring cover the shielded fully from the shielded left end, then crimp(refer to table 3)

⑦ Outer Copper Ring  
外铜环



紧靠外被口 Close to the outer Jacket



外铜环紧靠外被口

Outer Copper Ring Close to the outer Jacket

压接之前，确保  
此处外铜环后端  
和内铜环后端平  
齐

Make sure the  
ends are level  
with each other  
before crimping

表3：铜环与线缆屏蔽编织层压接规格&拉拔力要求

Table3 : Copper Ring and Cable braids Crimping spec & retention force requirement

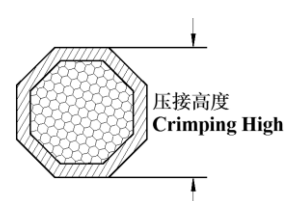
连接器 Connector	线缆外径 (1) Accepted cable OD (mm)	压接高度(2) Crimping height (mm)	参考抗拉拔力 (2) Retention Force
300/301 系列 300/301 Series	17.0±0.3	20.3±0.25	150N

压接工具：油压机

Crimping tool : Hydraulic press

Die: 220220150D70

压模：220220150D70



(1) 建议使用安费诺H+S线材 ( H+S线材型号详见步骤1-1 )，如果客户选用其它电缆，请联系安费诺业务，协商订制零配件

Recommend to use H+S cable.(See section 1-1 for details of H+S cable part numbers.) If you need to use customized cable, Please contact local sales for product extentions

(2) 压接高度和拉拔力需要配合压接截面的金相分析，客户才能判断压接质量合格

Customers need to reconfirm cross section on crimping area and pull out force test to confirm the quality of crimp process

步骤4：取1pcs的 ③ R4 holder 自左端穿上线缆，并压接在其上(规格参照表4)

Step 4: Take a ③ R4 holder, load it to the cable end on the left, then crimp(refer to table 4)

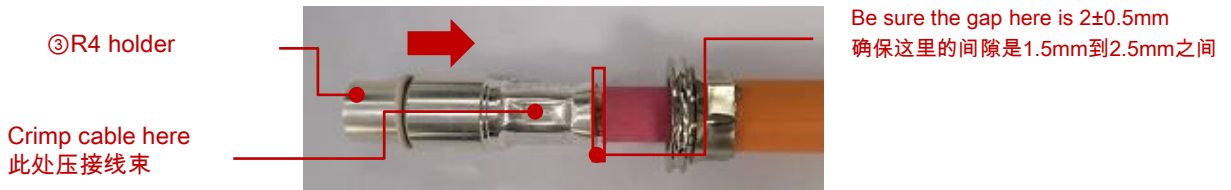


表4：端子与线缆压接规格&拉拔力要求

Table 4 : Contact and Conductor Crimping spec & retention force requirement

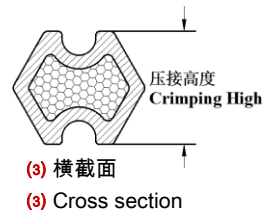
连接器 Connector	导线截面积 conductor area(mm <sup>2</sup> )	线缆外径 (1) Accepted cable OD (mm)	压接高度(2) Crimping height (mm)	参考抗拉拔力 (3) Retention Force
300/301 系列 300/301 Series	50mm <sup>2</sup>	17.0±0.3	11.34 ±0.25	2800N

压接工具：油压机

Crimping tool : Hydraulic press

压模：L113130150D50

Die : L113130150D50



(1) 建议使用安费诺H+S线材 ( H+S线材型号详见步骤1-1 ) , 如果客户选用其它电缆, 请联系安费诺业务, 协商订制零配件

Recommend to use H+S cable. ( See section 1-1 for details of H+S cable part numbers. ) If you need to use customized cable, Please contact local sales for product extentions

(2) 压接高度和拉拔力需要配合压接截面的金相分析, 客户才能判断压接质量合格

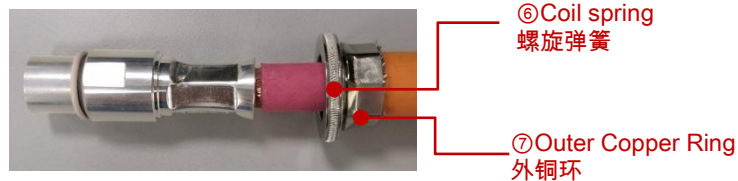
Customers need to reconfirm cross section on crimping area and pull out force test to confirm the quality of crimp process

(3) 横截面仅供参考 ( 其他举例：等边六变形的横截形状 ) , 客户负责采购压接工具或刀模

Cross section only reference tooling geometry (ex. hex and indent dimensions ),customer will take liability for sourcing tools or dies

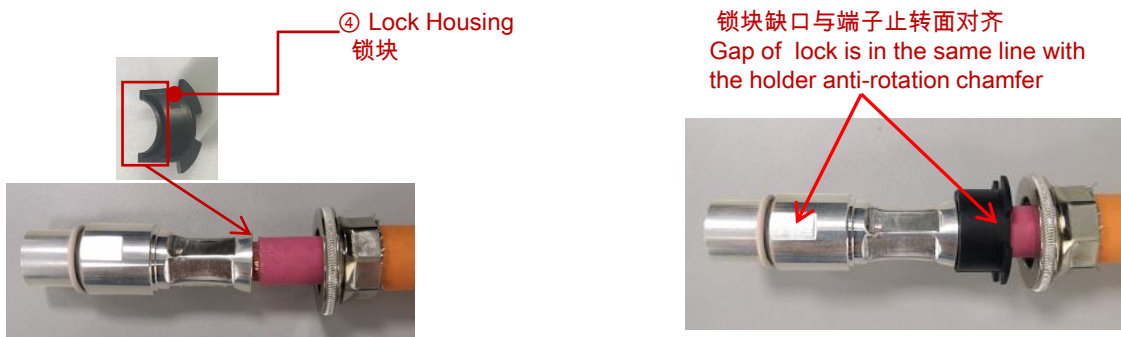
步骤5：取1pcs的⑥螺旋弹簧安装在⑦外铜环上

Step 5: Take 1pcs ⑥Coil spring is installed on ⑦ Outer Copper Ring



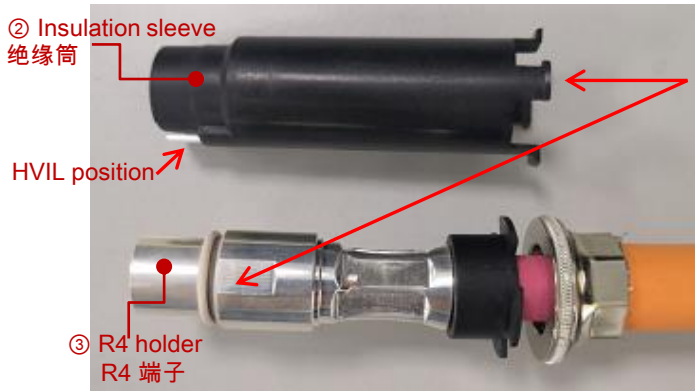
步骤6：取2pcs的④锁块，将2pcs④锁块前端的台阶放置入端子和内皮之间的间隙

Step 6: Take 2pcs ④ lock housing, Place the front step of the 2pcs ④ lock housing into the space between the terminal and the Insulation



步骤7：取出②绝缘筒，按图示方向插入③ R4 holder中，并使其触底

Step 7: Take a ② Insulation sleeve ,plug it to ③ R4 holder in direction as show in photo , and make it contact the bottom



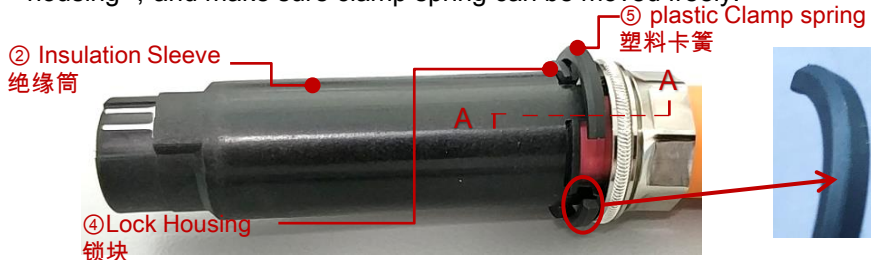
同一方向  
keep in the same  
direction



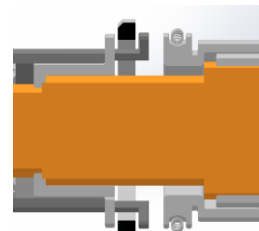
Make sure R4  
end visible &  
reach the  
insulation cap  
edge open.  
确保R4尾端可见  
& 尾端位置与绝缘  
筒前端边缘平齐

步骤8：取出⑤塑料卡簧安装到②绝缘筒和④锁块之间的间隙，并确认卡簧活动顺畅

Step 8: Take a ⑤ plastic Clamp spring, install into the space between the ② Insulation sleeve and the ④ lock housing , and make sure clamp spring can be moved freely.



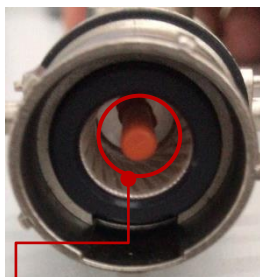
有倒角的面朝左侧方向  
The chamfer faces left



A-A

步骤9：取出①屏蔽壳组件（样品参照下面的图片）

Step 9: Take each 1pcs of ① Shield shell assembly (sample refer to picture below)



防触摸Pin  
Inner Pin



连接器标示  
Key Mark On Connector

① Shield Shell Assembly  
屏蔽壳组件

Key mark on connector 连接器标示	X	Y	U	V	W	T
Inner Pin color 防触摸Pin颜色	Orange 橙色	Black 黑色	Yellow 黄色	Green 绿色	Red 红色	Blue 蓝色

步骤10：②绝缘筒按图示方向插入到①屏蔽壳组件，并使其触底，注意确认HVIL位置以及卡簧是否到位。

Step 10: Plug the ② Insulation sleeve into ① Shield shell assembly as shown in photo, and make it reach the bottom, take care to ensure HVIL in right place and pull back wire to ensure clamp spring in position.



步骤11:将⑨金属垫圈和⑩密封圈推入屏蔽壳组件内部的底部，接着将⑪尾盖扣住屏蔽壳组件，完成此端线束的组装

Step 11: push the ⑨ metal gasket and ⑩ sealing to the bottom of Shield shell assembly. The ⑪ end cap is then fastened to the Shield shell assembly, one end assembly done

操作到位的效果图

The effect of operation in place

⑩ Sealing  
密封圈



⑪ End Cap  
尾盖

步骤12：在线缆组装好后需要做绝缘电阻和耐压测试，建议客户参考下面的测试参数

Step 12: Need to do the Insulation Resistance and DWV test after cable assembly. It is recommended that the customer refer to the following test parameters

### 12-1 绝缘电阻测试

#### 12-1 Insulation Resistance

Positions 位置	Test voltage/time 测试电压/时间	测试时间 (推荐) Test Time (recommended)	Insulation resistance 绝缘电阻
Cable(power) to shell 电缆芯线到壳体	1000 VDC	5S	> 500 MΩ
Cable(power) to HVIL 电缆芯线到高压互锁	1000 VDC	5S	> 500 MΩ
HVIL to shell 高压互锁到壳体	1000 VDC	1S	> 100 MΩ

### 12-2 Dielectric Withstand Voltage

#### 12-2 耐压测试

Positions 位置	Test voltage 测试电压	测试时间 (推荐) Test Time (recommended)	Leakage Current 漏电流
Cable(power) to shell 电缆芯线到壳体	5000 VDC	10S	< 5mA
Cable(power) to HVIL 电缆芯线到高压互锁	5000 VDC	10S	< 5mA
HVIL to shell 高压互锁到壳体	500 VDC	1S	< 5mA

**12-3 测试说明:**

警告:建议的电气测试及其参数应根据终端应用要求进行审查,以确保安全性并防止损坏其他部件。提供的参数是基于PowerLok连接器和其峰值1000VDC额定。提供的测试参数可能超出电缆组件或设备上使用的其他部件/材料的限制。

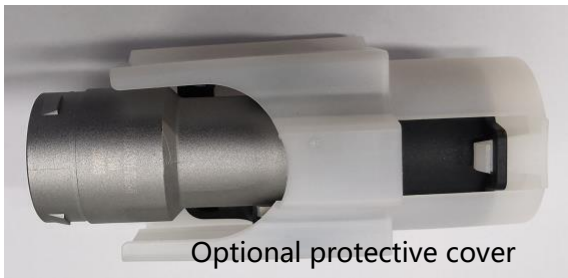
**12-3 Test note:**

caution: Recommended electrical tests and their parameters should be reviewed against end application requirements to ensure safety and to prevent damage to other components. Parameters provided are based on the PowerLok connectors and their peak 1000VDC rating. Test parameters provided may exceed the limit of other components/materials used on the cable assembly or device.

**步骤13: 补充说明****Step 13: Other notes**

13-1: 在连接器搬运,和高压线束搬运过程中,推荐使用插头防尘盖,和插头防护盖。避免搬运过程中碰伤损坏。要求详见 安装指引 8P1129。.

13-1: In the process of connector handling and high-voltage harness handling, it is recommended to use plug dust cover and plug protective cover. Avoid bumping and damage during handling. See installation guideline 8p1129 for detail requirements.







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