6 Pole Mini SPEC Pak® Assembly Instructions

Review Prior to Assembly

NOTE: It is recommended to insert wires through housing before stripping wires or crimping contacts.

⚠ Check for dust & debris on the grommet, grommet cavities, O-rings, and gaskets prior to installing. Debris left on wire and external tears or cracks on the grommet are clear indicators of damage. Damaged grommets should be discarded and replaced since a water-tight seal cannot be ensured. Wire must be circular, smooth, and retain shape when compressed. Anderson Power will not guarantee a water tight seal can be achieved with wire that does not meet this criteria.

Grommet Sizing:

The size of the grommet is indicated by the two letter identifier "X-X". Refer to the grommet size matrix in Table A. **NOTE:** Plug does not support a single jacketed multiconductor cable.

Wire Cavities:

There is a 3-hole grommet that supports discrete wire seal on 2 power wires and a 4 conductor auxiliary cable. Refer to Figure 1 for locations of power and auxiliary sealing cavities in grommet. The auxiliary location is indicated by arrows. The location of each wire is important to maintaining a proper seal. All wires must be coming out straight with no twisting from electrical contact locations.

Table A: Grommet sizing matrix

P/N	IDENTIFIER MARK	NO. OF HOLES	DISCRETE POWER JACKET (DIAMETER RANGE)		JACKETED SIGNAL (DIAMETER RANGE)	
			∅A		∅B	
			INCH	MM	INCH	MM
D-220-180-SP	D-A	3	.220-.240	5.59-6.10	.180-.200	4.57-5.08
D-220-220-SP	D-B				.220-.240	5.59-6.10
D-240-180-SP	D-C		.240-.260	6.10-6.60	.180-.200	4.57-5.08
D-240-220-SP	D-D				.220-.240	5.59-6.10
J-530-SP	J-A	1	.530-.550	13.46-14	N/A	N/A

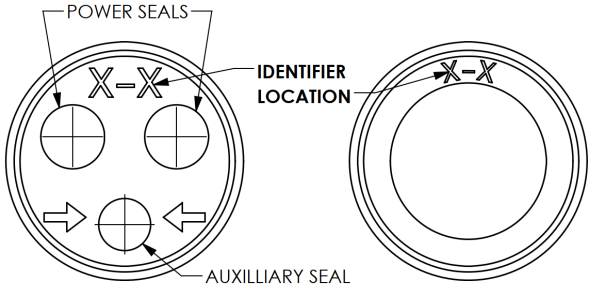


Figure 1: Grommet layout

Assembly Instructions Document Reference

Plug Assembly: Document Number 1S6922

Panel Mount Receptacle Assembly: Document Number 1S6923

Inline Receptacle Assembly: Document Number 1S6924

Plug Assembly Instructions, Kit P/N: SK1-034M06

Step 1

Check to ensure cable gland and main plug housings have O-rings installed. (Figures 2 & 3)

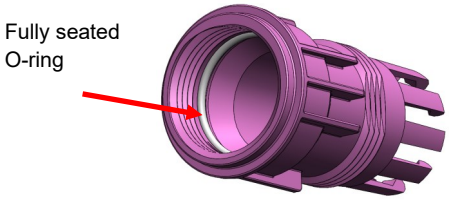


Figure 2: Cable Gland with arrow pointing to O-ring location

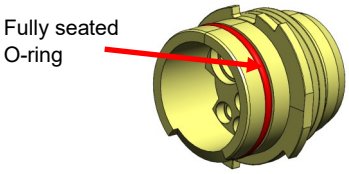


Figure 3: Plug Housing with arrow to O-ring location

Step 2

Feed jacketed auxiliary cable through components in the following order: (1st) Cover, (2nd) Compression Nut, (3rd) Grommet, (4th) Cable Gland, and (5th) Bayonet (Figure 4). Feed auxiliary wire through the grooved side of grommet into the auxiliary seal location (Figures 5 & 6). Silicone based lubricant may be applied by customer to O-rings and or grommet cavities if deemed necessary. Feed through far enough so that cable can be stripped.

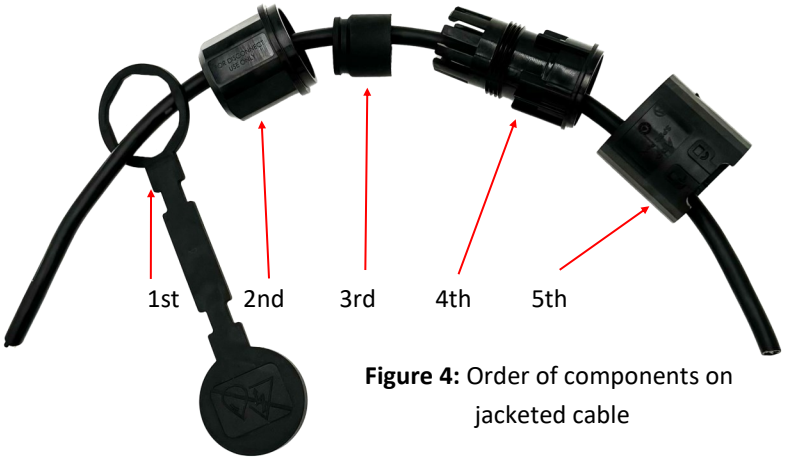


Figure 4: Order of components on jacketed cable

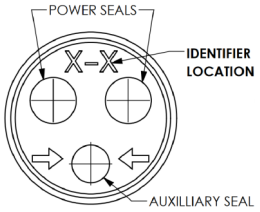


Figure 5: Grommet wire layout

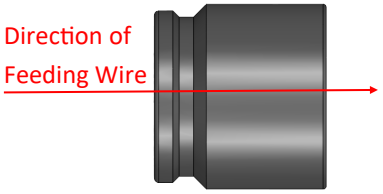


Figure 6: Direction of grommet

Step 3

Strip jacketed auxiliary cable and auxiliary wires (Table B, Figure 7). For alternative longer auxiliary jacket strip length, see instructions in Appendix Step I.

Table B: Auxiliary Cable Stripping Dimensions

Connector Series	Wire Size AWG	Wire Size mm^2	Cable Type	"X"		"Y"	
				MM	IN	MM	IN
6P MINI SPEC PAK® PLUG	20 - 24	.50 - .25	Auxiliary	5.5 - 6.5	.220 -.260	37.5 - 39.5	1.480-1.530

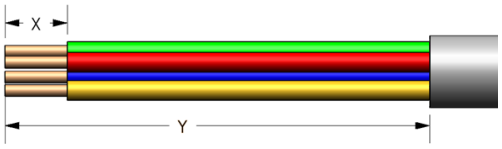


Figure 7: Jacketed Auxiliary Cable Stripping Dimensions

Step 4 (Return point from Appendix Step I if using longer auxiliary strip length instructions)

Twist stripped auxiliary wire tips so all strands are together for easier insertion in housing. Feed auxiliary wires through main plug housing. Bend the 3 wires in the bottom positions out of the way for easier crimping (Figure 8).

Figure 8: Auxiliary wires fed through main plug housing with bottom three wires bent out of way

Step 5

Crimp auxiliary contacts onto wires following crimp specifications per (1S6910) with recommended crimp tools (Table C). See recommended auxiliary wire crimping sequencing (Figure 9).

Table C: Recommended Crimp Tools

Contact Part Number	Wire AWG	Wire mm^2	Crimp Tool
116131P1 (Pin)	20 - 24	.50 - .25	1309G12, TM0001, TP0001

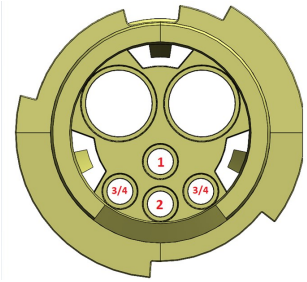


Figure 9: Recommended auxiliary wire crimping sequence

Step 6

Feed jacketed power cables through components in the following order: (1st) Cover , (2nd) Compression Nut , (3rd) Grommet, (4th) Cable Gland, and (5th) Bayonet (Figure 10). Silicone based lubricant may be applied by customer to O-rings and or grommet cavities if deemed necessary.

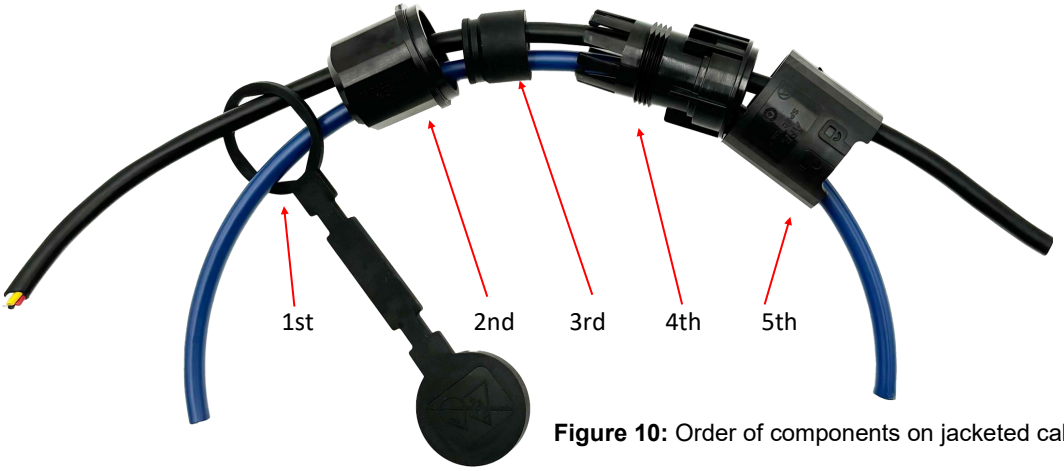


Figure 10: Order of components on jacketed cable

Step 7

Strip jacketed power cables (Table D, Figure 11). Note: Crimped auxiliary wires may need to be gently pulled back into housing to seat them and allow for crimping of power wires.

Table D: Power Cable Stripping Dimensions

Connector Series	Wire Size AWG	Wire Size mm^2	Cable Type	"X"		"Y"	
				MM	IN	MM	IN
6P MINI SPEC PAK® PLUG	8	10	Power	7.5-9.0	.30-.35	-	-

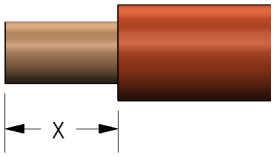


Figure 11: Power Cable Stripping Dimensions

Step 8

Crimp power contacts onto wires following crimp specifications per (1S6910) with recommended crimp tools (Table E).

Table E: Recommended Crimp Tools

Contact Part Number	Wire Size AWG	Wire Size mm^2	Crimp Tool
116132P1 (Pin)	8	10	1309G13, 1387G1

Step 9

Assemble the bayonet onto the plug housing.

Step A—Align axial lock protrusions with cutouts on plug housing flange (Figure 12)

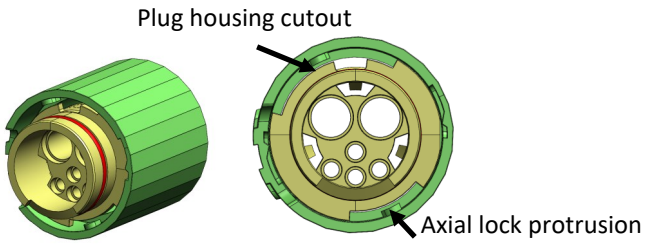


Figure 12

Step B—Rotate bayonet until plug flange cutouts align with rotation restrictions on bayonet (Figure 13)

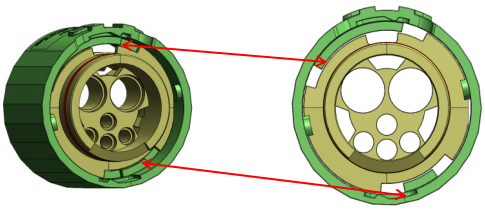


Figure 13

Step C—Thread Cable Gland [116198G1] onto main plug housing and bayonet subassembly until Cable Gland comes to a hard stop . (Figure 14)

⚠ **Cable gland must be fully threaded to maintain seal.**

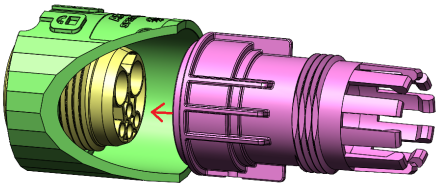


Figure 14

Step 10

Push grommet forward until it seats and Cable Gland fingers are sitting in the groove of the grommet (Figure 15). The grommet may need to be worked in by slightly bending fingers out of the way.

Ensure the wires internal to the connector are not twisted and the wires are coming out straight from the contacts (Figure 16).

With the grommet seated in the Cable Gland, gently pull on the auxiliary jacketed cable until the auxiliary contacts are seated in the housing. Do the same with each individual power wire ensuring the grommet does not get pushed out from Cable Gland.
Note: *for alternative longer auxiliary jacket strip length, see instructions in Appendix Step II*

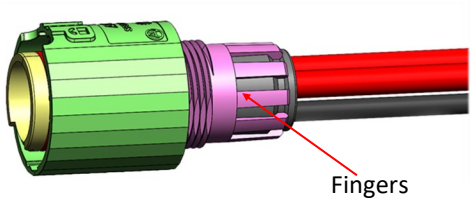


Figure 15: Fingers of cable gland sitting in groove of grommet

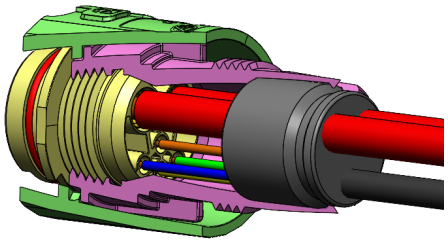
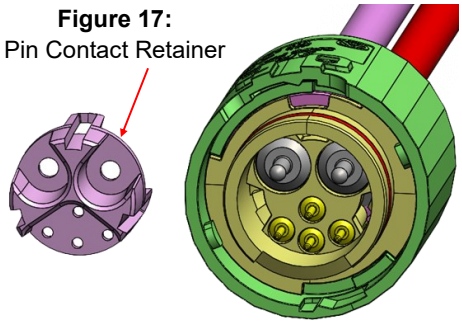


Figure 16: Untwisted internal wires

Step 11

Install the pin contact retainer (Figures 17 and 18). There will be an audible click when correctly installed.

Figure 17:
Pin Contact Retainer



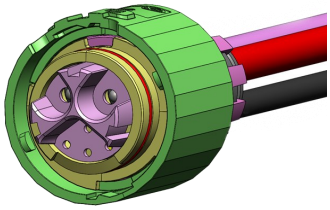


Figure 18:
Installed Pin Contact Retainer

Step 12 (Return point from Appendix Step IV if using longer auxiliary strip length instructions)

Perform a final check that the grommet is fully seated in the housing. Then slide the compression nut over the Cable Gland and thread the nut on until it reaches a hard stop (Figure 19).

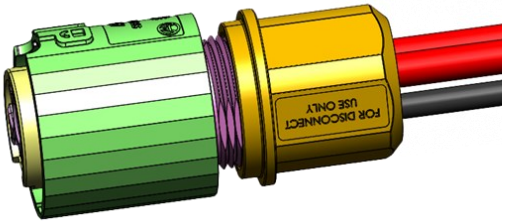


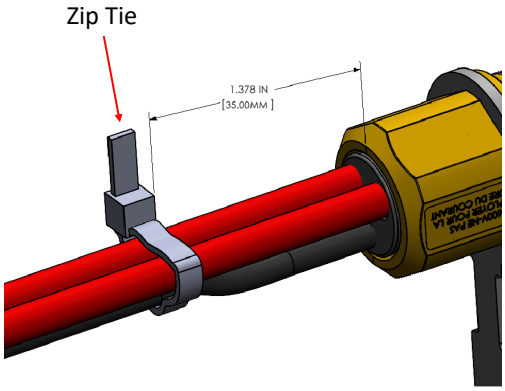
Figure 19: Assembled Plug

⚠ **Nut must be fully threaded on to maintain seal**

Step 13

Secure Auxiliary jacket to power wires using Zip Tie with a zip Tie tensioner tool approximately 1.378in [35mm] from the back end of the connector (Figure 20). Cut excess length after zip tie is secured.

Figure 20: Zip tied wires



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APPENDIX

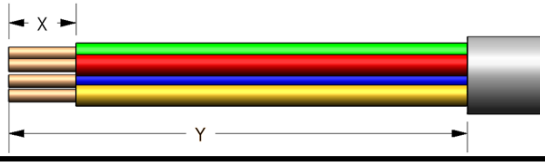
NOTE: Extended strip length of the multiconductor cable or 20-24AWG [.50—.25mm2] is recommended as an alternative for ease of assembly.

Appendix Step I:

Strip jacketed auxiliary cable and auxiliary wires (Appendix Table A, Appendix Figure 1).
Return to respective Steps:
Plug (Pin Side): Document 1S6922, Page 2, Step 3
Inline Receptacle (Socket Side): Document 1S6924, Page 4, Step 3

Appendix Table A: Extended Auxiliary Cable Stripping Dimensions

Connector Series	Wire AWG	Wire mm2	Cable Type	"X"		"Y"	
				MM	IN	MM	IN
Extended Strip length Plug	20 - 24	.50 - .25	Auxiliary	5.5-6.5	.220-.260	39.5-65	1.530-2.660
Extended Strip length Inline Receptacle	20 - 24	.50 - .25	Auxiliary	5.5-6.5	.220-.260	65-115	2.660-4.527



Appendix Figure 1: Jacketed Auxiliary Cable Extended Stripping Dimensions Cable

Appendix Step II:

Push grommet forward down length of power wires until the grommet is seated in the fingers of the cable gland (Appendix Figures 2 & 3). The power contacts may need to be reseated in the housing by pulling on the power wires individually until properly seated. The individual 20-24AWG [.50—.25mm2] wires should now visible outside of the connector. Measure and mark .787 in [20mm] back from stripped auxiliary cable's insulation (Appendix Figure 3).

Appendix Figure 2: Grommet prior to inserting into cable gland

Appendix Figure 3: Installed into cable gland fingers with .787 in [20mm] measured and marked from back of insulation

Appendix Step III:

With the power contacts in position, pull on the 20-24AWG [.50—.25mm2] wires until Auxiliary contacts are also seated. Now Install the respective contact retainer (Appendix Figures 4 & 5).

Appendix Figure 4: Plug (Pin Side)

Appendix Figure 5: Receptacle (Socket Side)

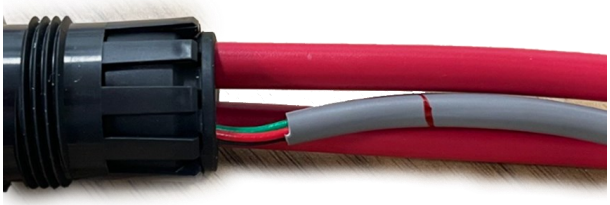
Appendix Step IV:

Push the 20-24AWG [.50—.25mm2] cable through the cavity of the grommet until the .787 in [20mm] mark is no longer visible (Appendix Figures 6 & 7).

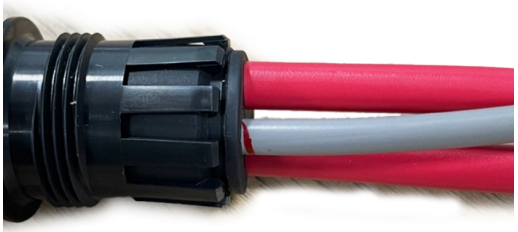
Return to respective step:

Plug (pin side): Document 1S6922, Page 5, Step 12

Inline Receptacle (socket side): Document 1S6924, Page 7, Step 14



Appendix Figure 6: Auxiliary cable prior to inserting into grommet .787 in [20mm]



Appendix Figure 7: Auxiliary cable after being inserted into grommet .787 in [20mm]