

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)	
			Ø A		Ø 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

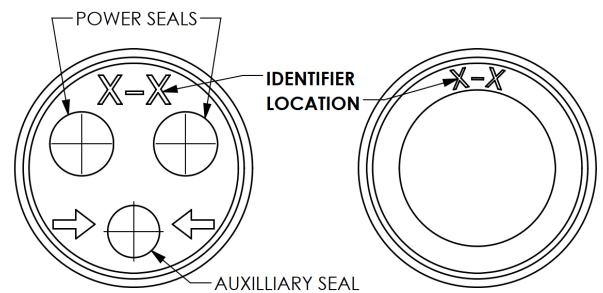


Figure 1: Grommet layout

Assembly Instructions Document Reference

Plug Assembly: Document Number 1S6922

Panel Mount Receptacle Assembly: Document Number 1S6923

Inline Receptacle Assembly: Document Number 1S6924

Inline Receptacle Assembly Kit P/N: SK6-034M06

Single Jacket Seal Instructions

Step 1

Fit flexible cover over compression nut (Figure 2).

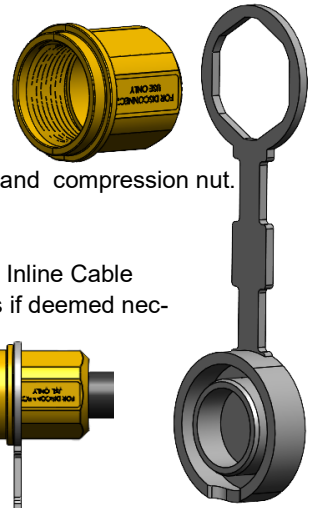


Figure 2:
Flexible cover and compression nut.

Step 2

Carefully feed jacketed cable through (1st) Compression Nut, (2nd) Single jacketed seal grommet, & (3rd) Inline Cable Gland (Figure 3). Silicone based lubricant may be applied by customer to O-rings and or grommet cavities if deemed necessary.

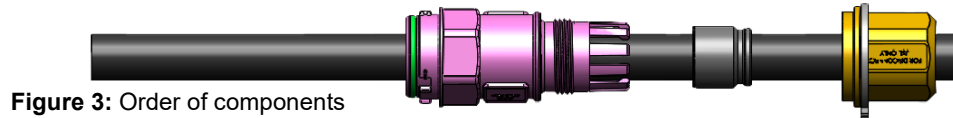


Figure 3: Order of components

Step 3

Strip the outer jacket of the multiconductor cord (Table B, Figure 4).

Table B: Cable Stripping Dimensions

Connector Series	Wire Size AWG	Wire Size mm ²	Cable Type	"X"	
				MM	IN
6P MINI SPEC PAK INLINE RECEPTACLE SINGLE JACKETED CABLE	20 - 24	.50 - .25	Auxiliary	5.5-6.5	.220-.260
	8	10	Power	7.5-9.0	.300-.350

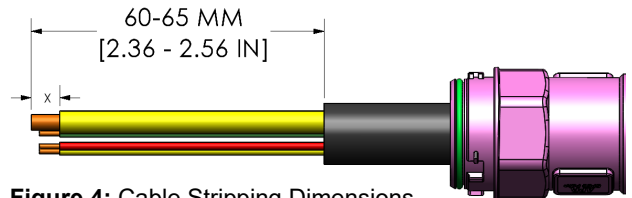


Figure 4: Cable Stripping Dimensions

Step 4

Twist the tips of exposed strands and feed Power and Auxiliary wires through respective cavities in Inline Main Housing (Figures 5 and 6).

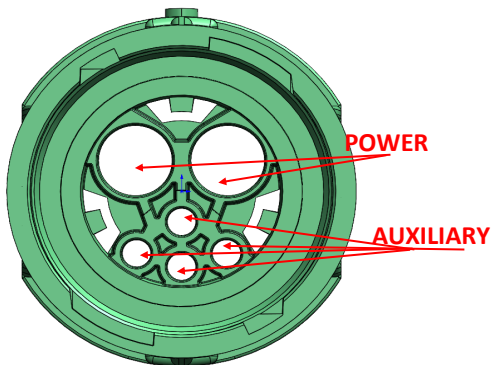
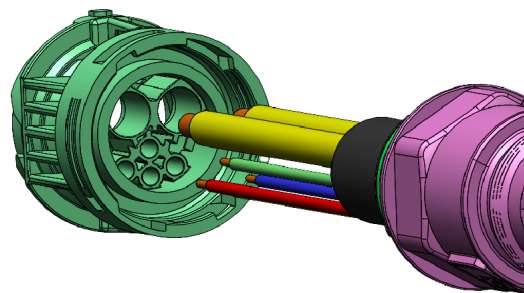


Figure 5: Wire Cavity Diagram & Insertion Direction



Wires properly fed through housing

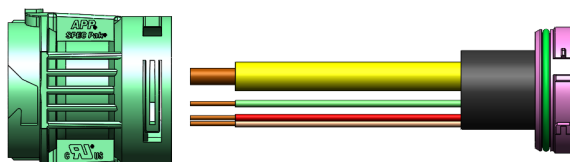


Figure 6: Wires Through Housing



Step 5

Crimp the power wires and auxiliary wires using the suggested crimp tools (Table C) and following crimp specifications (1S6910). See properly crimped connector (Figure 7).

Table C: Recommended Crimp Tool

Contact Part Number	Wire Size AWG	Wire Size mm ²	Crimp Tool
116130P1 (socket)	20 - 24	.50 - .25	1309G12, TM0001, TP0001
116133P1 (socket)	8	10	1309G13, 1387G1

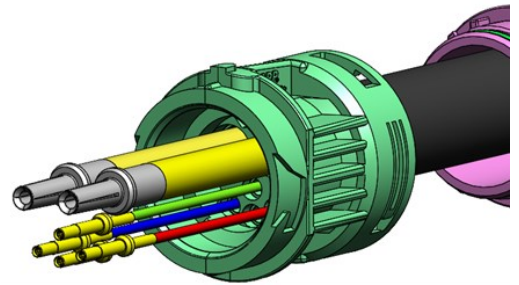


Figure 7: Crimped wires

Step 6

Carefully push receptacle main housing forward until contacts are seated (Figure 8).



Figure 8: seated contacts

Step 7 ⚠️ Prior to installing contact retainer inspect power socket tines. Tines should not be bent after contacts are seated. (Figure 9)

Install contact retainer [2-8880P1] to secure the contacts in the main housing. There will be an audible click when correctly installed (Figures 10 and 11)

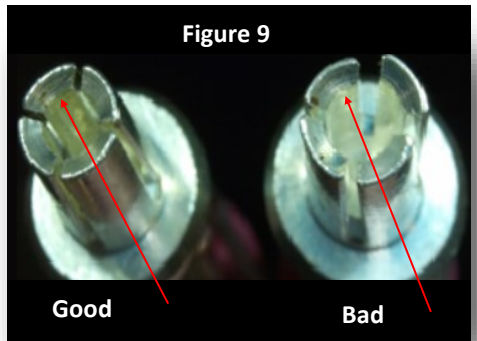


Figure 9

Good

Bad



Figure 10: Cutaway view prior to installation

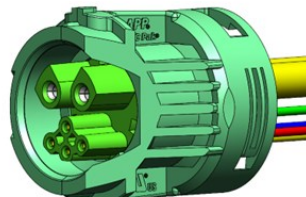


Figure 11: Cutaway view after installation

Step 8

Begin pushing Inline Cable Gland forward ensuring the keying features are lined up with the main housing (Figures 12 and 13).

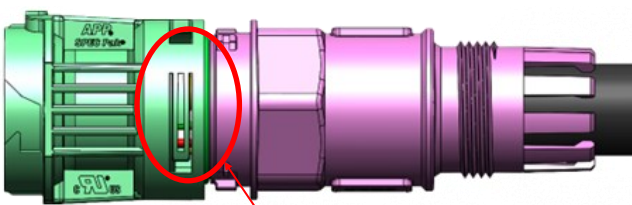


Figure 12: Cable gland and main housing

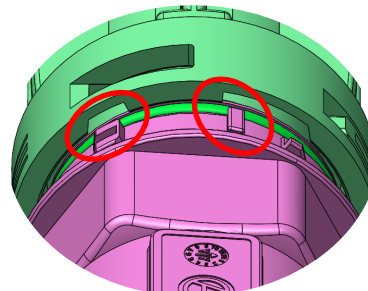
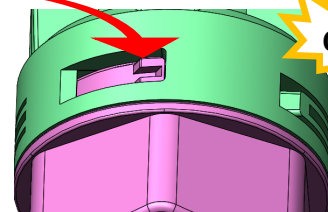
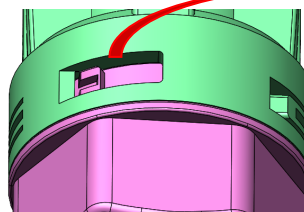


Figure 13: Properly lined up keying

Step 9

After insertion rotate the Cable Gland clockwise until there is an audible click (Figure 14).

Figure 14: Inline cable gland rotational snap lock



CLICK!

Step 10

Push grommet forward until it seats and Cable Gland fingers are sitting in the groove of the grommet (Figure 15). Ensure the wires internal to the connector are not twisted and the wires are coming out straight from the contacts (Figure 16).

*Please note that grommet may need to be worked in by slightly bending fingers out of the way.

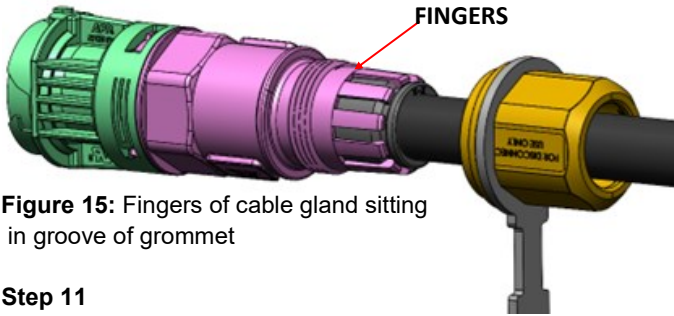


Figure 15: Fingers of cable gland sitting in groove of grommet

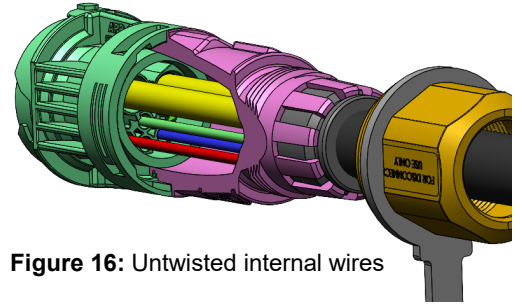


Figure 16: Untwisted internal wires

Step 11

Perform a final check that the grommet is 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 17)

⚠ Nut must be fully threaded on to maintain seal.

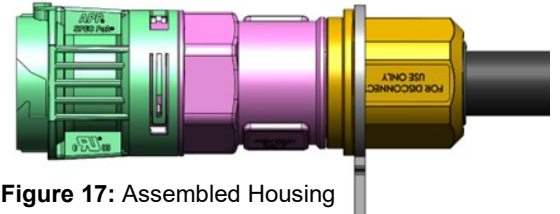


Figure 17: Assembled Housing

Inline Receptacle Assembly Kit P/N: SK6-034M06

Discrete Power and Jacketed Auxiliary Instructions

Step 1

Fit flexible cover [116151P1] over compression nut [B02803P1] (Figure 18).

Step 2

Feed jacketed auxiliary cable through (1st) compression nut [B02803P1] , (2nd) Grommet, & (3rd) Inline Cable Gland [116203G1] (Figure 19). Feed auxiliary wire through the jacketed auxiliary cavity (Figure 20) in the grooved side of grommet (Figure 21).Silicone based lubricant may be applied by customer to O-rings and or grommet cavities if deemed necessary. Feed through far enough so that remaining cable can be handled and stripped.

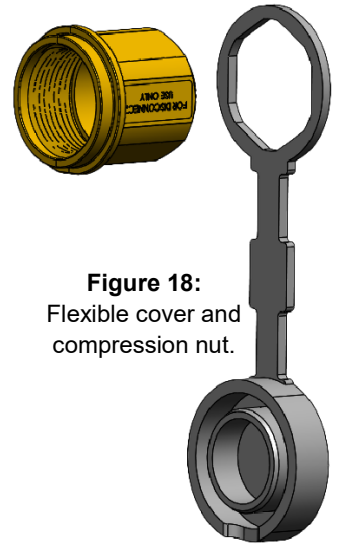


Figure 18: Flexible cover and compression nut.

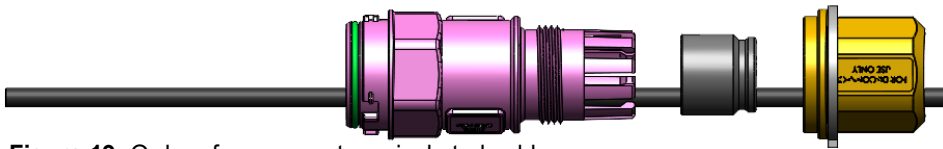


Figure 19: Order of components on jacketed cable

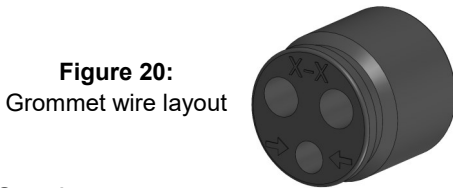


Figure 20: Grommet wire layout



Figure 21: Direction of grommet

Step 3

Strip jacketed auxiliary cable and auxiliary wires (Table D, Figure 22). For alternative longer auxiliary jacket strip length, see instructions in Appendix Step I.

Table D: Auxiliary Cable Stripping Dimensions

Connector Series	Wire Size AWG	Wire Size mm2	Cable Type	"X"		"Y"	
				MM	IN	MM	IN
6P MINI SPEC PAK® INLINE RECEPTACLE DISCRETE JACKETS	20 - 24	.50 -.25	Auxiliary	5.5-6.5	.220-.260	60-65	2.360-2.560

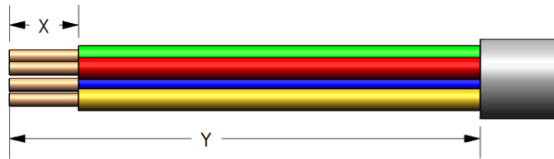


Figure 22:
Jacketed Auxiliary Cable Stripping Dimensions Cable

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 receptacle housing [3-8744P1]. Bend the 3 wires in the bottom positions out of the way for easier crimping (Figure 23).

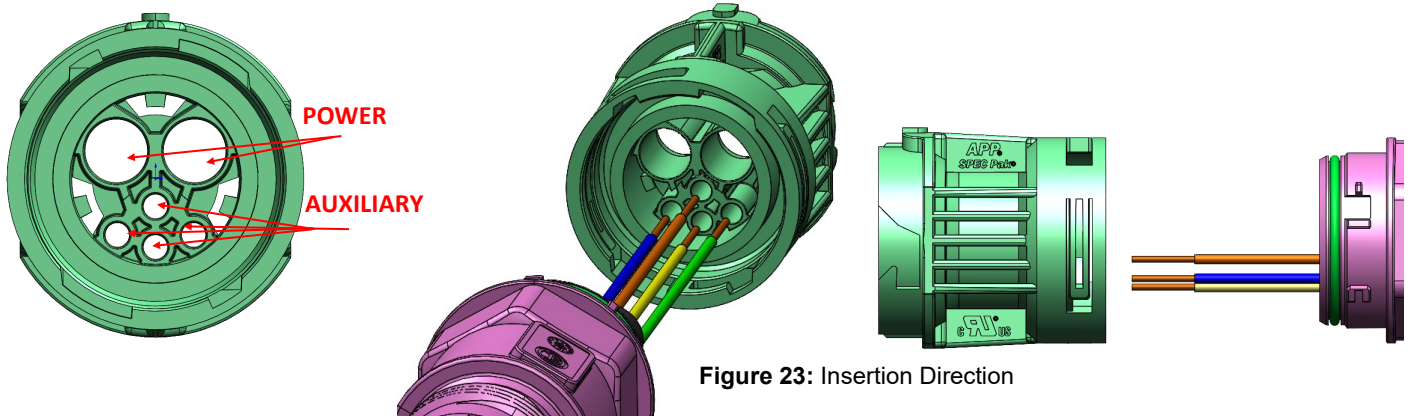


Figure 23: Insertion Direction

Step 5

Crimp auxiliary contacts onto wires following crimp specifications per (1S6910) with recommended crimp tools (Table E, Figure 24).

Table E: Recommended Crimp Tools

Contact Part Number	Wire Size AWG	Wire Size mm ²	Crimp Tool
116130P1 (socket)	20 - 24	.50 - .25	1309G12, TM0001, TP0001

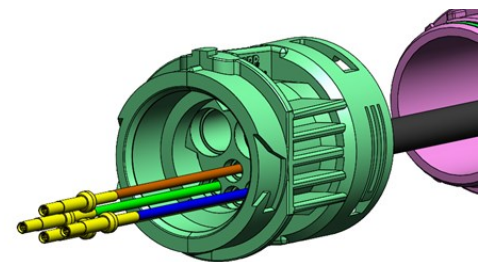


Figure 24: Crimped Auxiliary Wires

Step 6

Feed jacketed power cable through (1st) compression nut, (2nd) Grommet, (3rd) Inline Cable Gland, (4th) Main receptacle housing (Figure 25).



Figure 25: Order of components on jacketed cable

Step 7

Strip jacketed power cables (Table F, Figure 26). Note: Crimped auxiliary wires may need to be gently pulled back into housing to seat them and allow for crimping of power wires.

Table F: 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	-	-

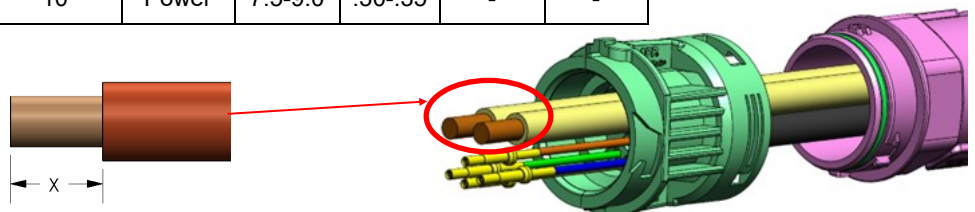


Figure 26: Power Cable Stripping Dimensions

Step 8

Crimp power contacts onto wires following crimp specifications per (1S6910) with recommended crimp tools (Table G, Figure 27).

Table G: Recommended Crimp Tools

Contact Part Number	Wire Size AWG	Wire Size mm2	Crimp Tool
116133P1 (socket)	8	10	1309G13, 1387G1

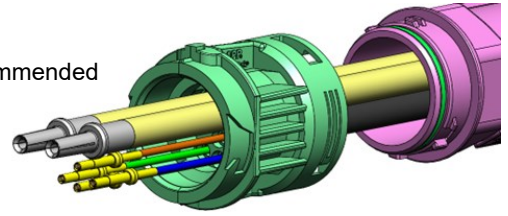


Figure 27: Crimped Wires

Step 9

Carefully push receptacle main housing forward until contacts are seated (Figure 28).

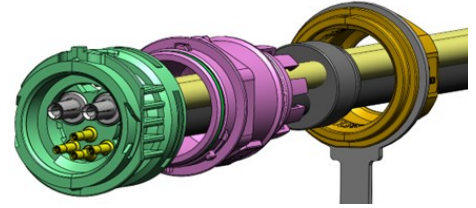


Figure 28: Seated contacts

Step 10 ⚠️ Prior to installing contact retainer inspect power socket tines. Tines should not be bent after contacts are seated. (Figure 29)

Step 10 cont. Install contact retainer to secure the contacts in the housing (Figure 30 and 31). There will be an audible click when correctly installed.

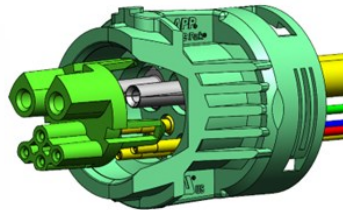
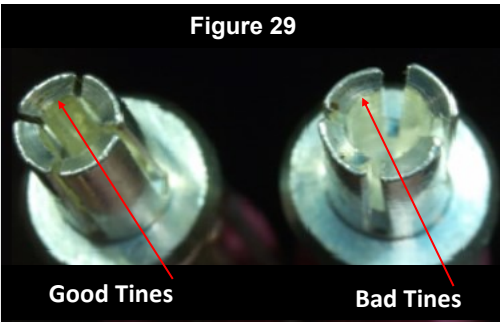


Figure 30: Cutaway view prior to installation

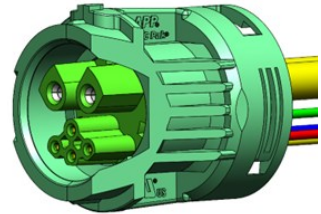


Figure 31: Cutaway view after installation

Step 11

Begin pushing Inline Cable Gland forward ensuring the keying features are lined up with the main housing (Figures 32 and 33).

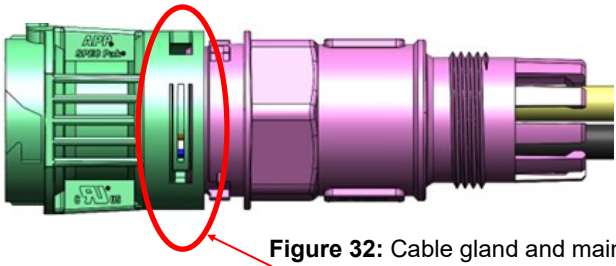
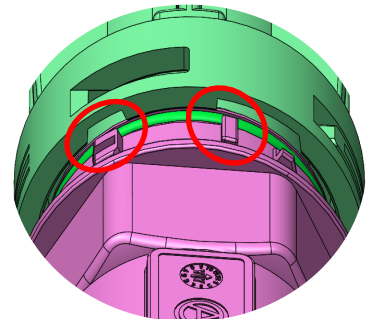


Figure 32: Cable gland and main housing

Figure 33: Properly lined up keying features



Step 12

Rotate the Cable Gland clockwise until there is an audible click (Figure 34).

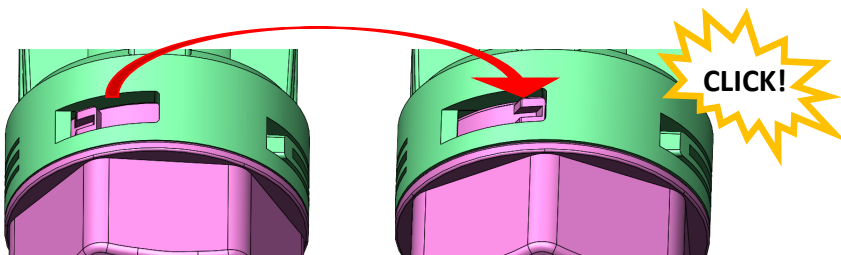


Figure 34: Inline cable gland rotational snap lock

Step 13

Push grommet forward until it seats and Cable Gland fingers are sitting in the groove of the grommet (Figure 35). Ensure the wires internal to the connector are not twisted and the wires are coming out straight from the contacts (Figure 36). For alternative longer auxiliary jacket strip length, see instructions in Appendix Step II.

*Please note that grommet may need to be worked in by slightly bending fingers out of the way.

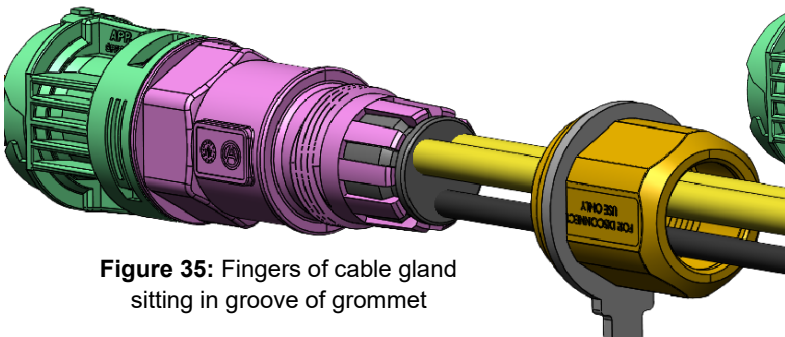


Figure 35: Fingers of cable gland sitting in groove of grommet

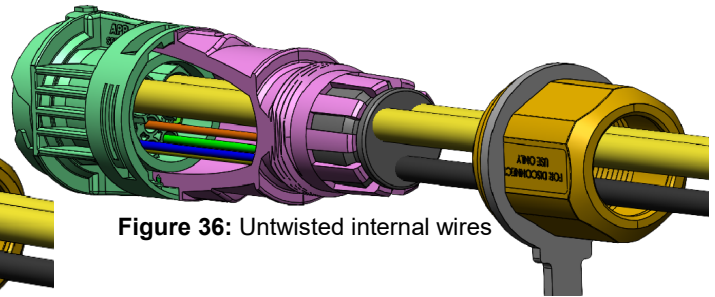


Figure 36: Untwisted internal wires

Step 14 (Return point from Appendix Step IV if using longer auxiliary strip length instructions)

Perform a final check that the grommet is 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 37).

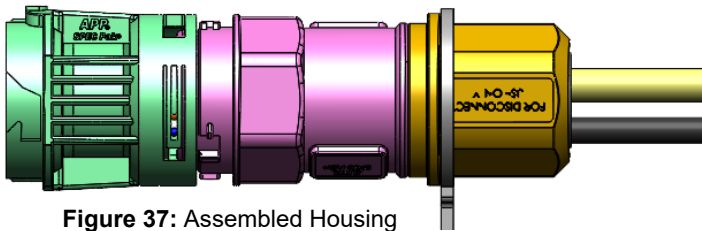


Figure 37: Assembled Housing

Zip Tie

Step 15

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 38). Cut excess length after zip tie is secured.

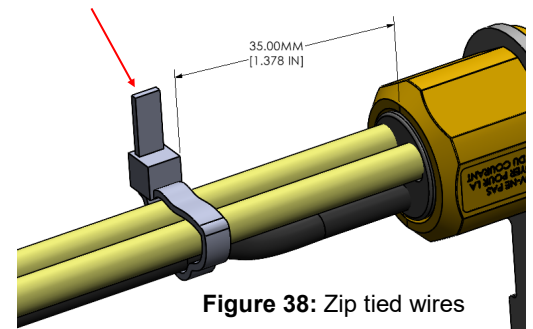


Figure 38: Zip tied wires

All Data Subject to Change Without Notice

1S6924 Rev 0 Your Best Connection™

Anderson Power™ will use reasonable efforts to include accurate and up-to-date content in the assembly instruction. All product information contained in the instruction sheet including ordering information, illustrations, specifications, and dimensions, are believed to be reliable as of the date of publishing, but is subject to change without notice. Anderson Power™ makes no warranty or representation as to its accuracy. Content in the instruction sheet may contain technical inaccuracies, typographical errors and may be changed or updated without notice. Anderson Power™ may also make improvements and/or changes to the products and/or to the programs described in the content at any time without notice. Current sales drawings and specifications are available upon request.

©2024 Anderson Power Products, Inc. All rights reserved. A®, Anderson Power Products®, SPEC Pak® and the Anderson Power Products logo are registered trademarks of Anderson Power Products, Inc. Anderson Power™, Anderson Power Logo, and Your Best Connection™ are trademarks of Anderson Power Products, Inc.



HEADQUARTERS: Anderson Power Products®, 13 Pratts Junction Road, Sterling, MA 01564-2305 USA T: +1 978-422-3800 F: +1 978-422-0128 • **EUROPE:** Anderson Power Products® Ltd., Unit 3, Europa Court, Europa Boulevard, Westbrook, Warrington, Cheshire, WA5 7TN United Kingdom T: +44 (0) 1925 428390 F: +44 (0) 1925 520203 • **GERMANY:** IDEAL® Industries Germany GmbH, Esslinger Strasse 7, D – 70771 Leinfelden-Echterdingen, T: +49 (0) 711 – 997606666 • **ASIA / PACIFIC:** IDEAL® Anderson Asia Pacific Ltd., Unit 922-928 Topsail Plaza, 11 On Sum Street, Shatin N.T., Hong Kong T: +(852) 2636 0836 F: +(852) 2635 9036 • **INDIA:** IDEAL® INDUSTRIES India Private Limited, 229-230, SPAZEDGE, Tower B, Sector 47, Sohna Road, Gurgaon – 122018, Haryana, India T: +(91) 956 007 5905 • **CHINA:** IDEAL® Anderson Technologies (Shenzhen) Ltd., Block A8 Tantou Western Industrial Park, Songgang Baoan District, Shenzhen, PR. China 518105 T: +(86) 755 2768 2118 F: +(86) 755 2768 2218 • www.ideal-industries.in • www.andersonpower.com

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).

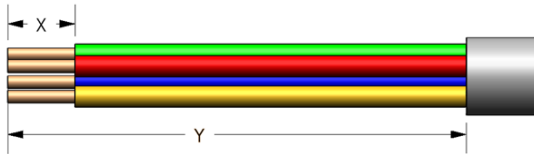
Return to respective Steps:

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 mm ²	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 resealed in the housing by pulling on the power wires individually until properly seated. The individual 20-24AWG [.50—.25mm²] wires should now be 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).

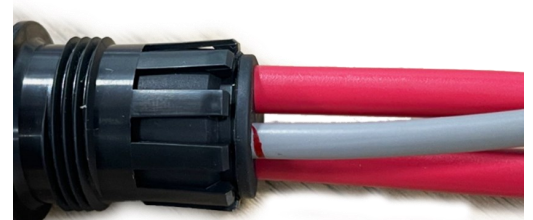
Return to respective step:

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]