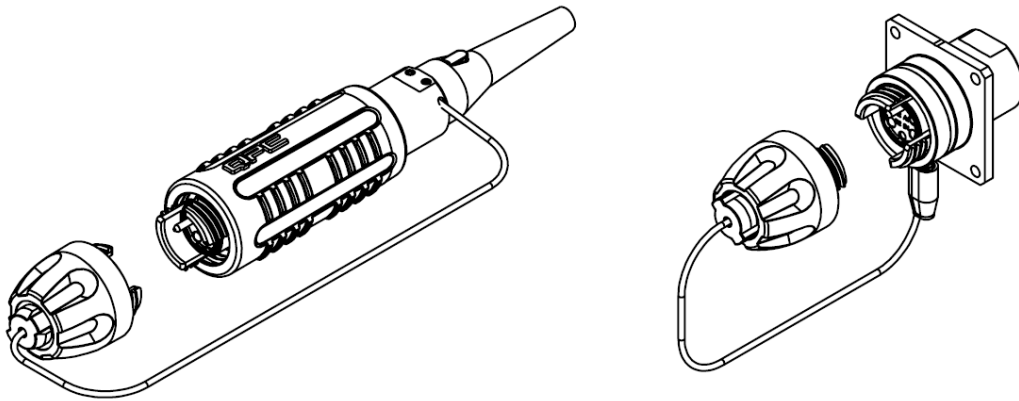


QMini Connectors

Customer Assembly Instructions



Document: CAI-QMINI
Release Date: 12/09/2020

Revision: 1
Revision Date: 8/28/2021

SCOPE

This document describes the Assembly Instructions for the QMini Product Line. Please use the Configuration Table below to locate the applicable section(s) based on the products needing assembly.

CONFIGURATION TABLE

Plugs	Page	Receptacles	Page
Straight Backshell, Boot	3	No Backshell	11
Straight Backshell, Heat Shrink Boot	5	Straight Backshell, Boot	13
Angled Backshell, Boot	8	Straight Backshell, Heat Shrink Boot	15
		Straight Backshell, Low Profile, No Boot	18
		90 Degree Sealed Backshell	21

SAFETY

Please use caution when following these instructions. This is not an exhaustive list of safety guidelines, refer to local regulations and your own company's policies. For more information, please refer to QPC Fiber Optic General Fiber Handling Instructions (CAI-GEN).

- Be careful when handling bare fibers as sharp ends may penetrate skin.
- Wear appropriate personal protective equipment such as gloves and safety glasses.
- Track all fiber scraps and dispose of properly. Tape may be used to remove scraps from the worktable.
- Wash hands after handling fiber and before touching eyes or face.
- Do not look down fiber ends unless certain there is no light source coming through the fiber.
- Keep all combustible materials safely away from curing ovens.

STANDARD & SPECIALTY ASSEMBLY TOOLS

Refer to QPC CAI-TOOLS for a list of Standard & Specialty Assembly Tools used in this instruction.

TORQUE TABLE

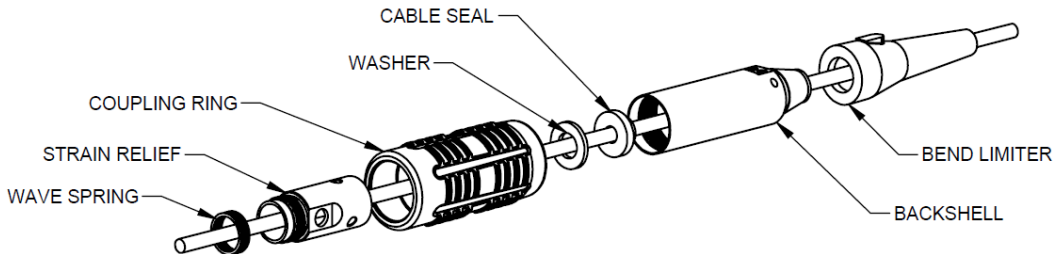
Refer to the Torque Table below for the torque values for various components used in this instruction.

Component		Backshell / Coupling Shell	Strain Relief	Socket Head Cap Screw (Insert)	Set Screws	Socket Head Cap Screw (Angled Backshell)
Torque Values / Units	In-lb	48 – 53	48 – 53	2.5 – 3.0	2.25 – 2.75	6.5 – 7.0
	N • m	5.5 – 6.0	5.5 – 6.0	0.28 – 0.34	0.25 – 0.31	0.73 – 0.79

PLUG, STRAIGHT BACKSHELL, BOOT

CABLE PREPARATION

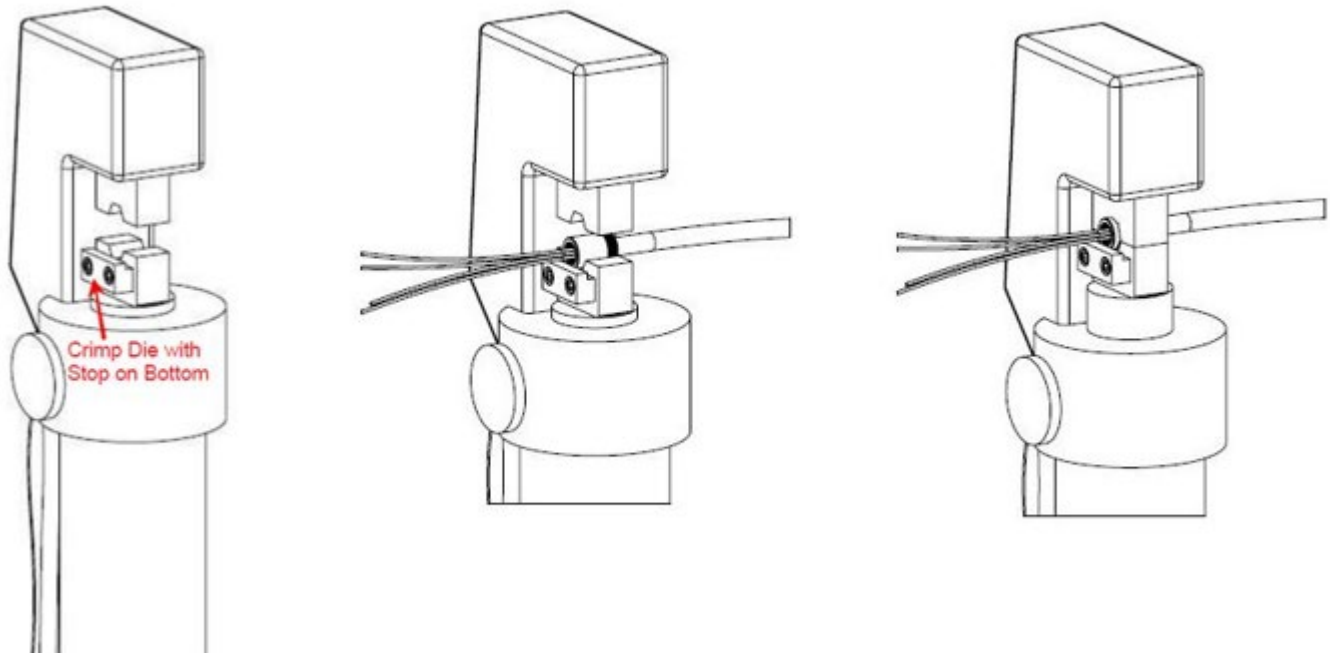
Slide parts onto cable in the order below.



Strip cable jacket approximately 4" (100 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

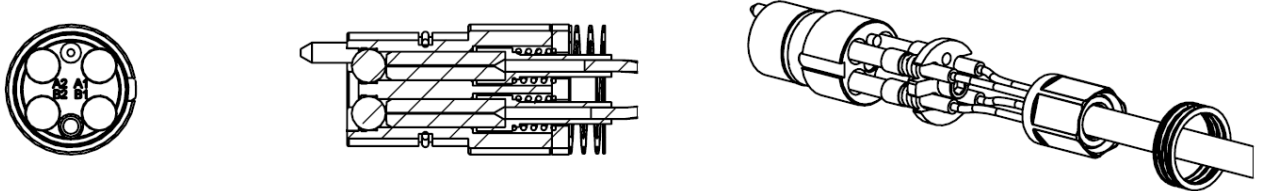


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

POPULATE INSERT

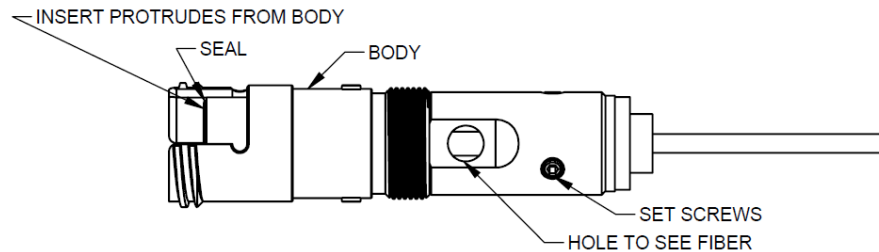
Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900µm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT- 532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the back of the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

Slide the Wave Spring and Strain Relief into place. Place onto the QMini Torque Fixture Stand PT-388 with QMini Torque Fixture PT-618. Hand tighten the Strain Relief while on the Torque Fixture so that the fibers do not get twisted or kinked. Torque the Strain Relief using the Adjustable Crowfoot Wrench PT-536 with the Dial Torque-Measuring Wrench PT-506 to the values in the above Torque Table. Inspect the fibers by looking through the holes in the Strain Relief making sure that the fibers are not twisted or kinked. Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the set screws on the strain relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table.

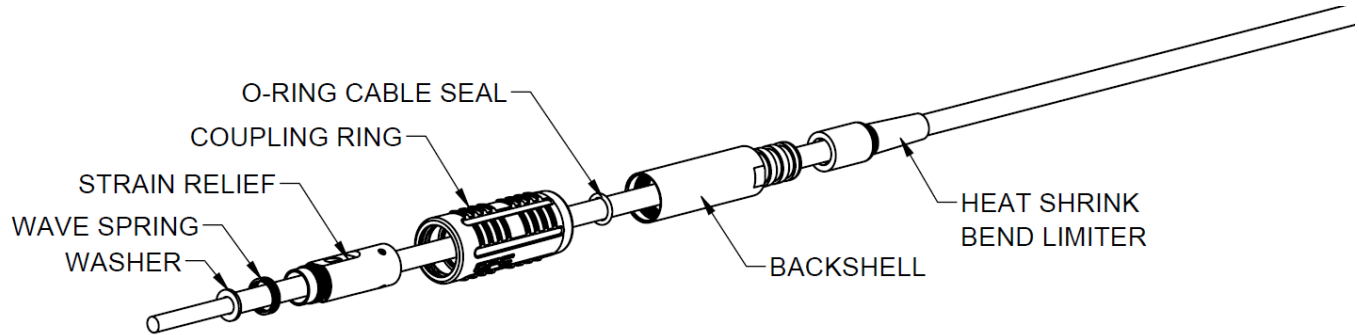


Slide the Washer and Cable Seal to the base of the Strain Relief. Slide the Coupling Ring over the Strain Relief and Connector Body. Place the Plug on the Torque Fixture and hand-tighten the Coupling Ring. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table. Slide the bend limiter into position and snap into place.

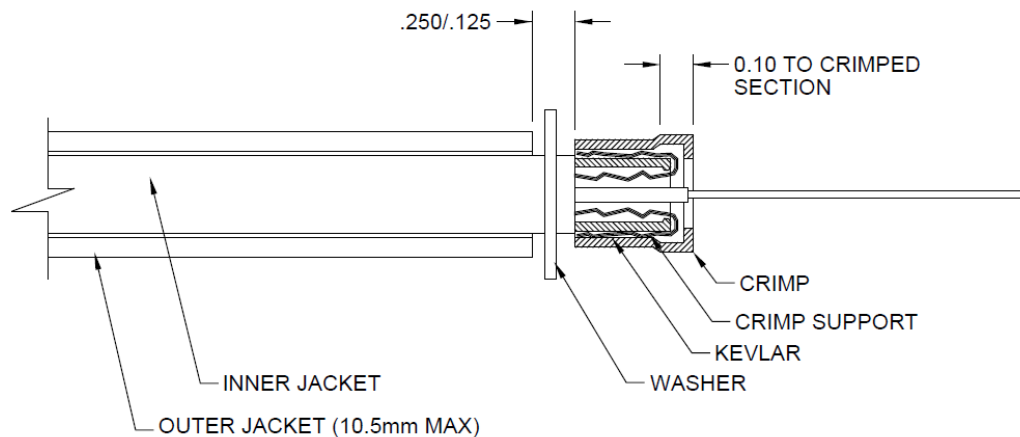
PLUG, STRAIGHT BACKSHELL, HEAT SHRINK BOOT

CABLE PREPARATION

Slide parts onto cable in the order below.



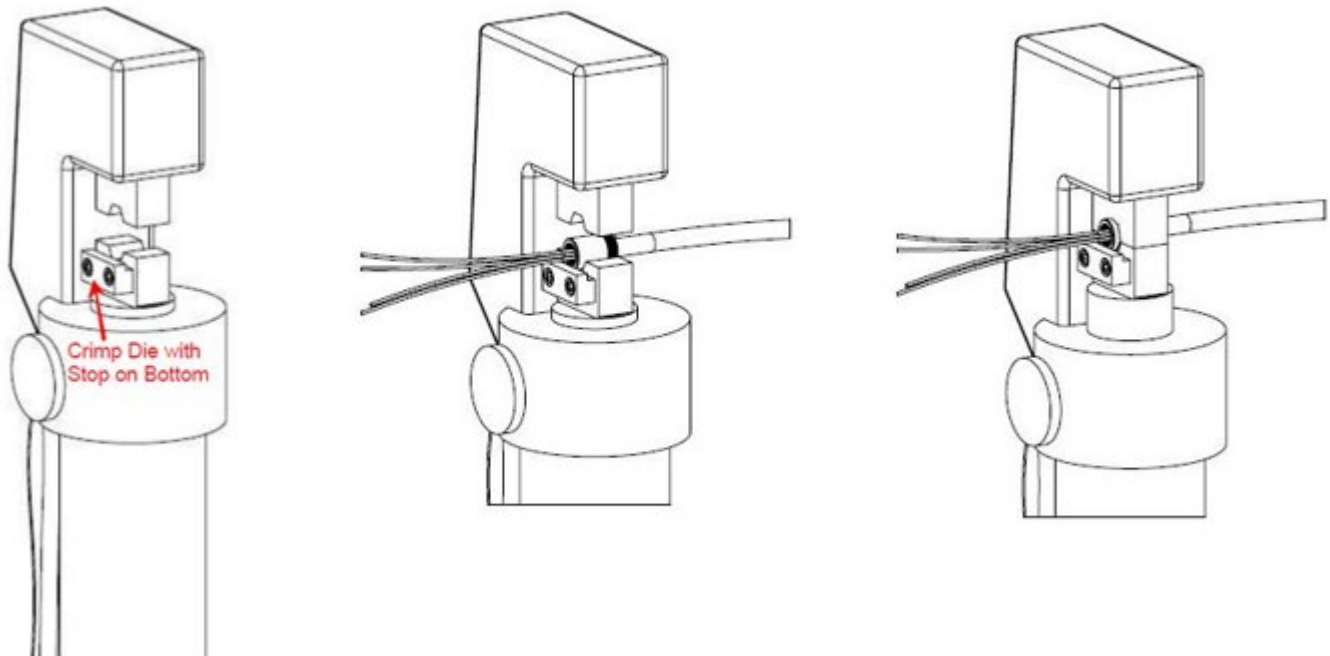
NOTE: When assembled, the washer will be positioned between the end of the cable jacket and the Crimp. Crimping instructions to follow.



Strip cable jacket approximately 4" (100 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

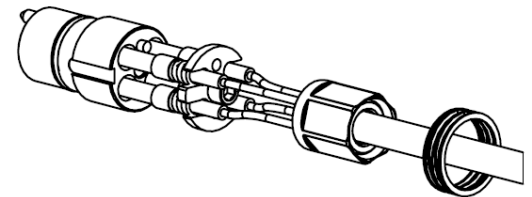
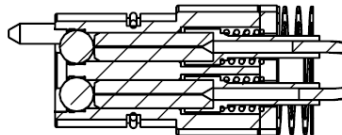


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

POPULATE INSERT

Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900µm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT- 532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

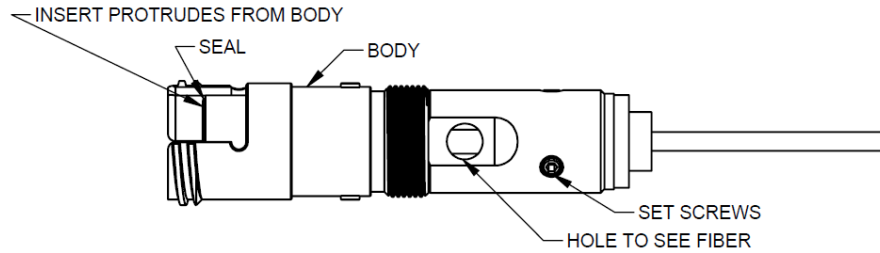
Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the back of the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

Slide the Wave Spring and Strain Relief into place. Place onto the QMini Torque Fixture Stand PT-388 with QMini Torque Fixture PT-618. Hand tighten the Strain Relief while on the Torque Fixture so that the fibers do not get twisted or kinked. Torque the Strain Relief using the Adjustable Crowfoot Wrench PT-536 with the Dial Torque-Measuring Wrench PT-506 to the values in the above Torque Table. Inspect the fibers by looking through the holes in the Strain Relief making sure that the fibers are not twisted or kinked.

CAI-QMINI: QMini Customer Assembly Instructions

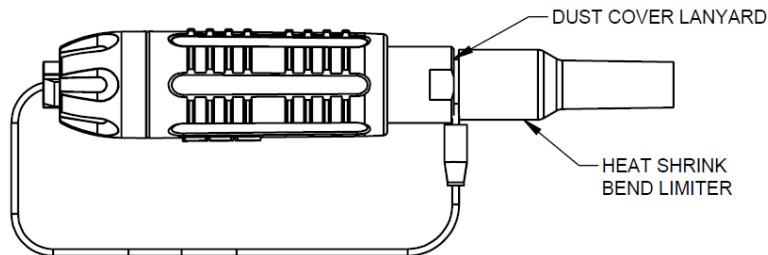
Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the set screws on the strain relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table.

Perform a final visual check by looking through the holes of the Strain Relief to make sure that the fiber is not twisted or kinked.



Slide the O-Ring Cable Seal to the base of the Strain Relief. Slide the Coupling Ring over the Strain Relief and Connector Body. Place the Plug on the Torque Fixture and hand-tighten the Coupling Ring. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table.

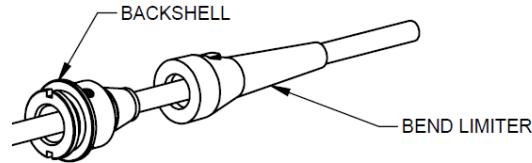
Apply an adhesive (Loctite Stik'N Seal Outdoor Adhesive or similar for rubber applications) on the inside of the Heat Shrink Bend Limiter. Slide it up towards the Backshell below the Lanyard groove and heat shrink.



PLUG, ANGLED BACKSHELL, BOOT

CABLE PREPARATION

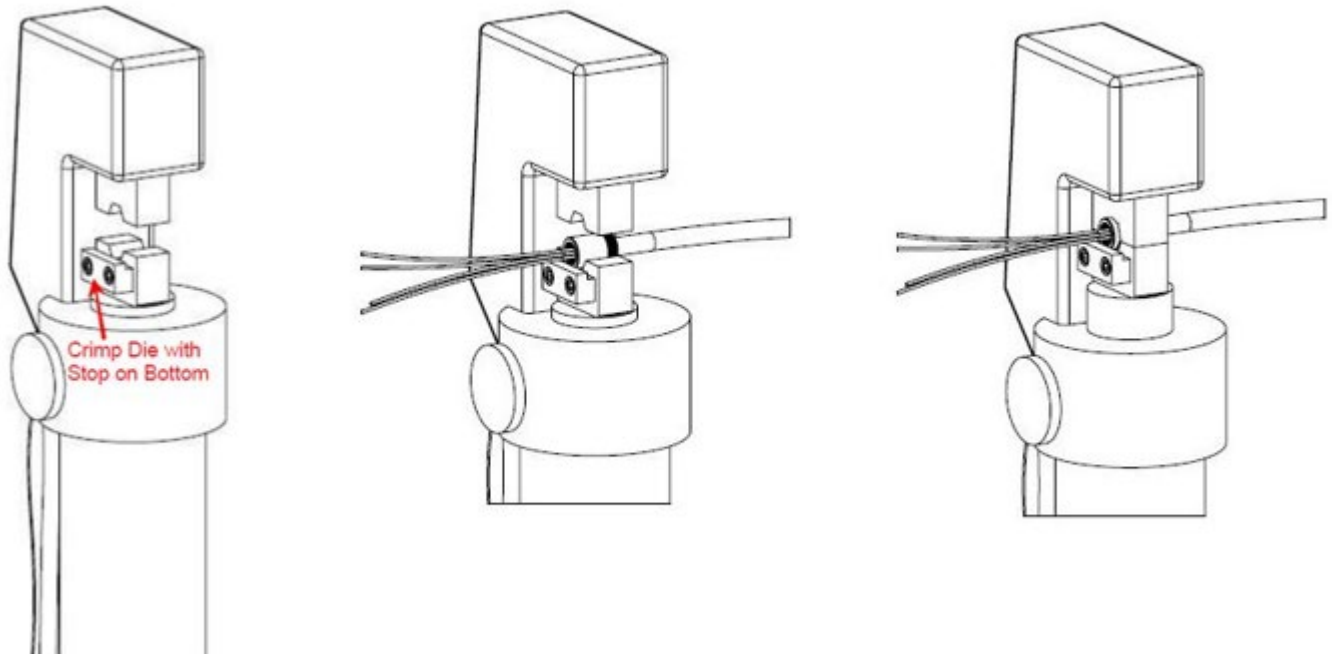
Slide parts onto cable in the order below.



Strip cable jacket approximately 5" (127 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

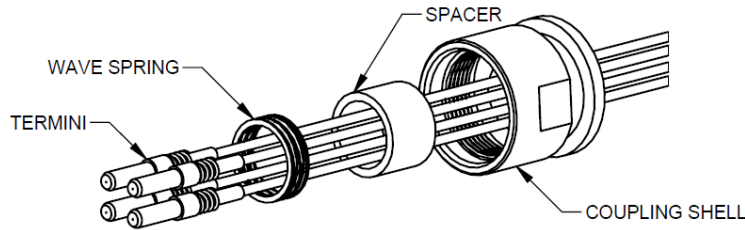


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

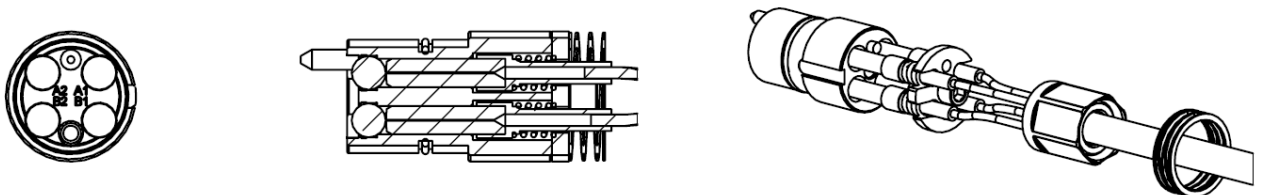
FRONT ASSEMBLY

Slide the parts onto cable in the order below.



POPULATE INSERT

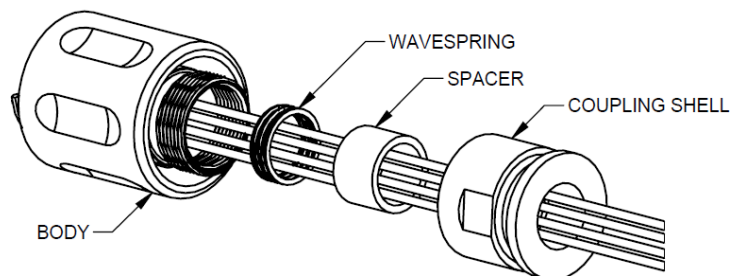
Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900µm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT- 532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the back of the Coupling Ring Plug Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

Slide the Wave Spring and Spacer into place. Place onto the QMini Torque Fixture Stand PT-388 with QMini Torque Fixture PT-618. Slide the Coupling Ring up and hand tighten while on the Torque Fixture so that the fibers do not get twisted or kinked. Torque the Coupling Ring using the Adjustable Crowfoot Wrench PT-536 with the Dial Torque-Measuring Wrench PT-506 to the values in the above Torque Table.

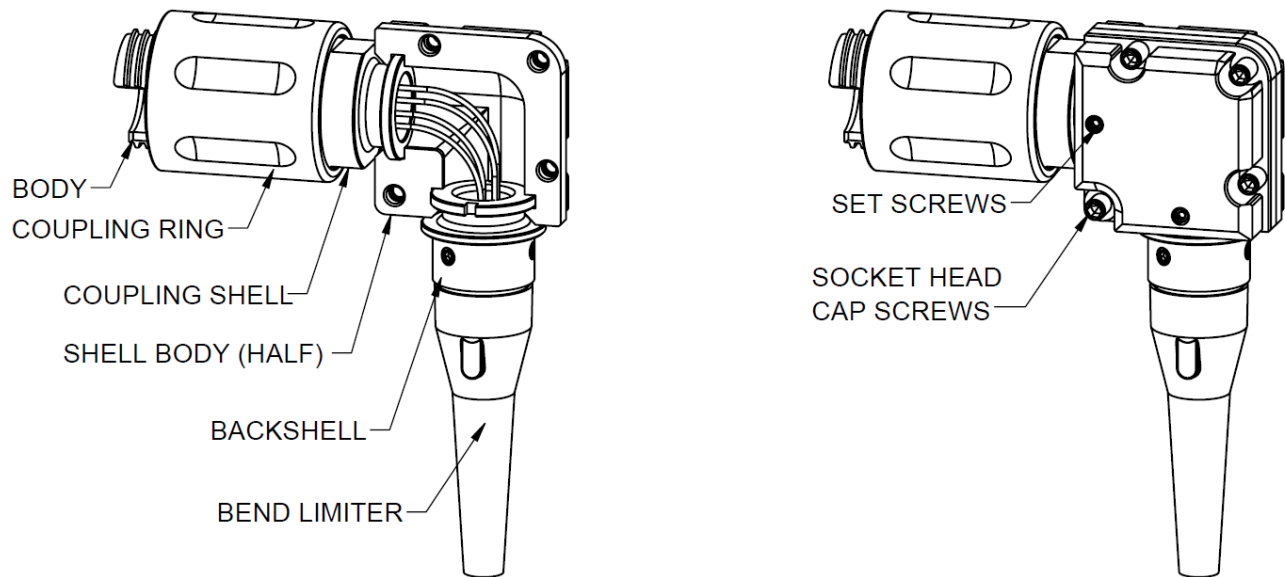


CAI-QMINI: QMini Customer Assembly Instructions

Use Cable to pull Crimp to bottom of Backshell. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the set screws on the Backshell to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table. Slide the bend limiter into position and snap into place.

Position the Coupling Ring Plug Body assembly and the Backshell into the bottom half of the Shell Body groove. Perform a visual check to make sure that the fiber is not twisted or kinked.

Attach the top half of the shell body to the connector and tighten the Socket Head Cap Screws using Screwdriver, 3/32" Hex Tool PT-502 and torque using Torque-Measuring Hex Drive PT-590 and Hex Bit 3/32" PT-599 to the values in the above Torque Table. Finally, tighten the Set Screws using Screwdriver, .050" Hex Tool PT-500 and torque using Torque-Measuring Hex Drive PT-590 and Hex Bit .050" PT-599 to the values in the above Torque Table.



RECEPTACLE, NO BACKSHELL

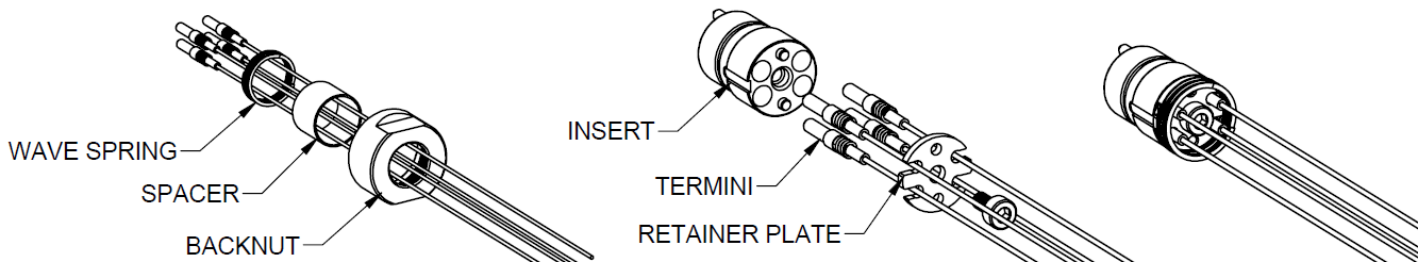
TERMINATION

Before terminating the fiber, slide a Spring onto the jacket of the fiber unless the Spring is already captive on the Terminus body (e.g., SE2 Epoxy Cup Termini). For the S02 2mm simplex cable or SE2 Epoxy Cup Termini options, use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

(NOTE: Per CAI-TERM, for the S02 2mm simplex cable with crimp Termini option, ensure Termini are crimped before proceeding.)

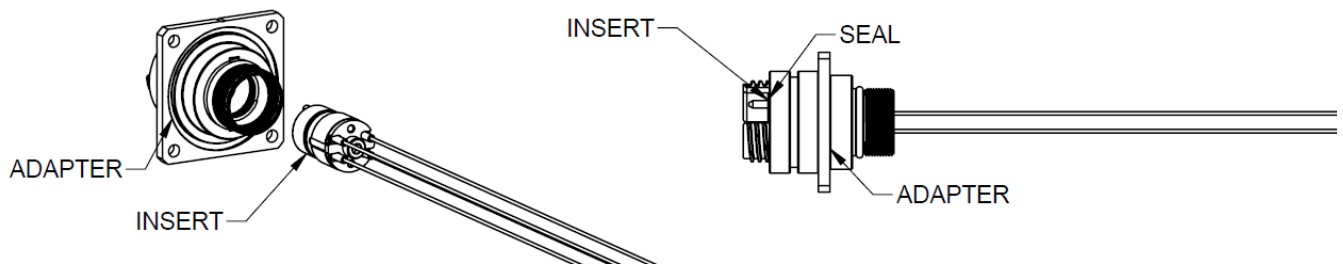
POPULATE INSERT

Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900µm or 2mm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT-532 to ensure the termini are fully seated against the ball lenses.

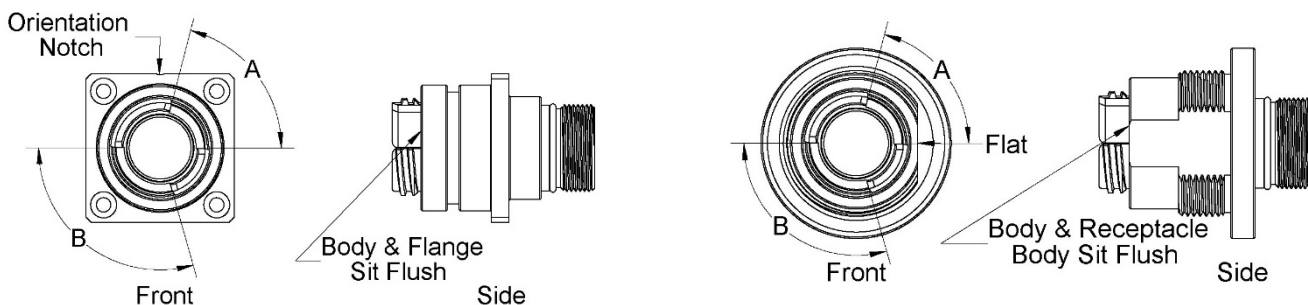


CONNECTOR ASSEMBLY

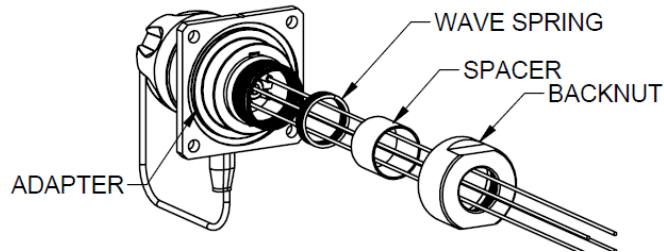
Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.



NOTE: Orientation of the Connectors.



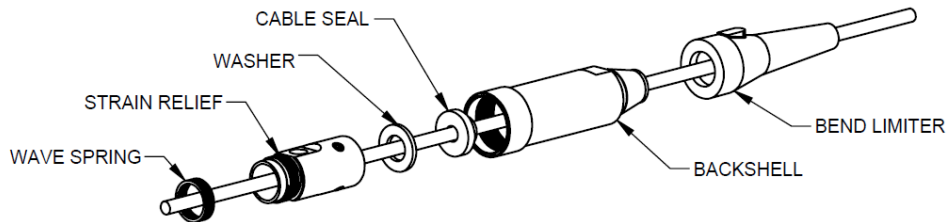
Slide the Wave Spring and Spacer forward and secure flush against the back of the Body. Place assembly in the 4" Drill Press Vise with 2 x Machined Plastic Jaws with Groove PT-591 and use the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to torque the Back Nut to the values in the above Torque Table.



RECEPTACLE, STRAIGHT BACKSHELL, BOOT

CABLE PREPARATION

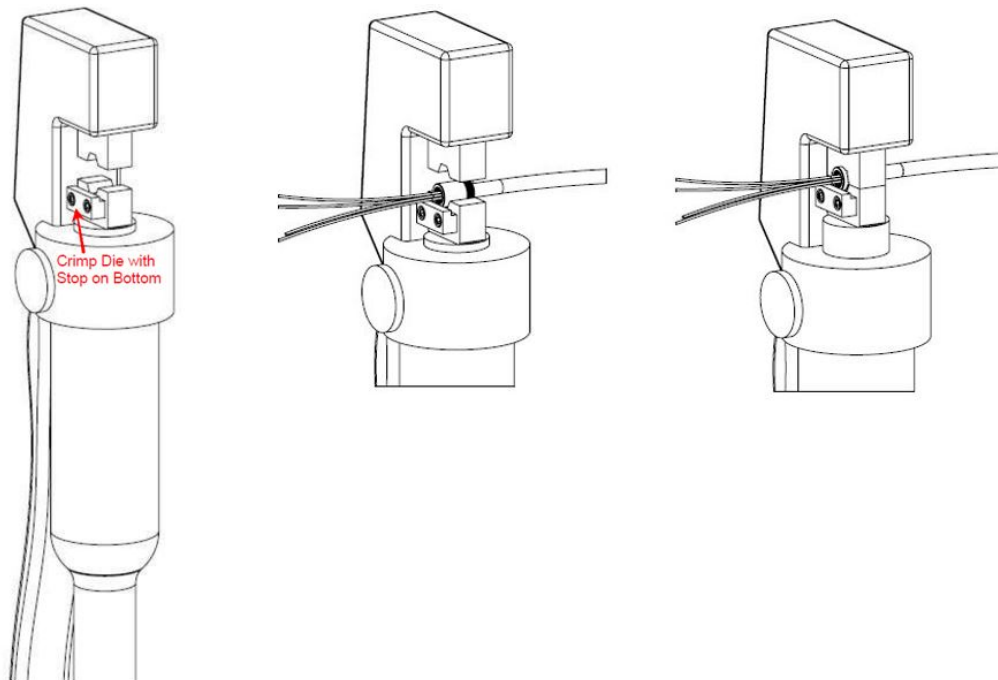
Slide parts onto cable in the order below.



Strip cable jacket approximately 4" (100 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

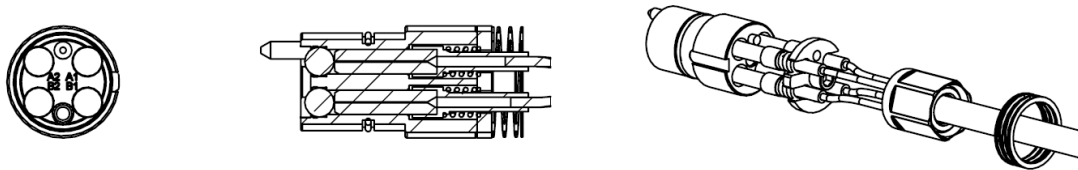


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

POPULATE INSERT

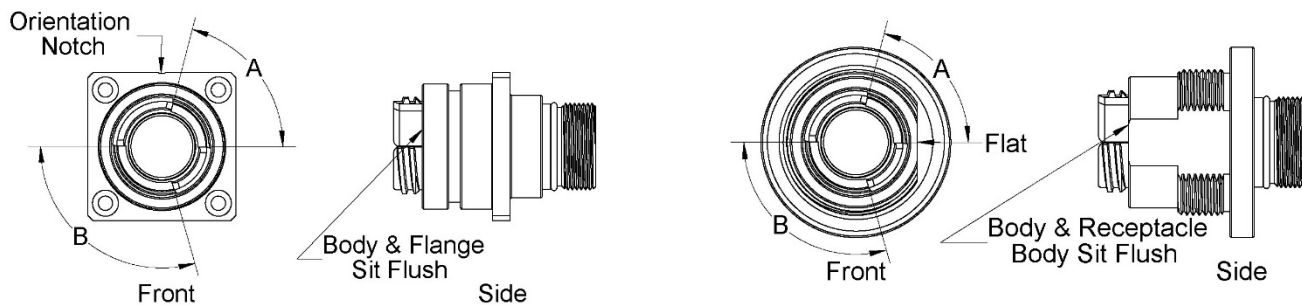
Insert the Fiber Optic Termini into the back of the Insert according to the desired pinout. Place the Termini Retainer Plate between the 900µm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT- 532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

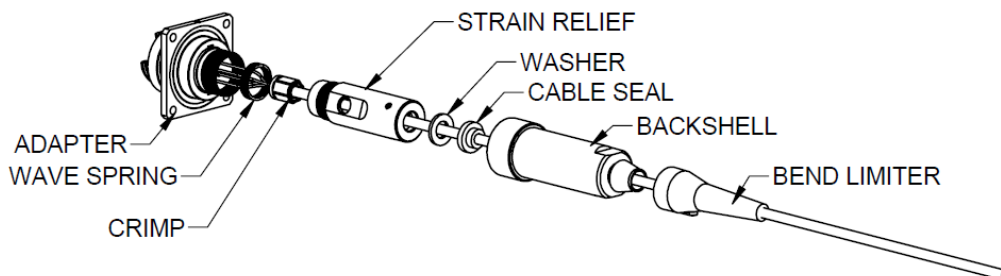
NOTE: Orientation of the Connectors.



Slide the Wave Spring and Strain Relief into place. Hand tighten the Strain Relief. Check the fiber through the holes in the Strain Relief to make sure they are not twisted or kinked.

Place assembly in the 4" Drill Press Vise with Plastic Jaws with Groove PT-591 and use the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to torque the Strain Relief to the values in the above Torque Table. Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the Set Screws on the strain relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table.

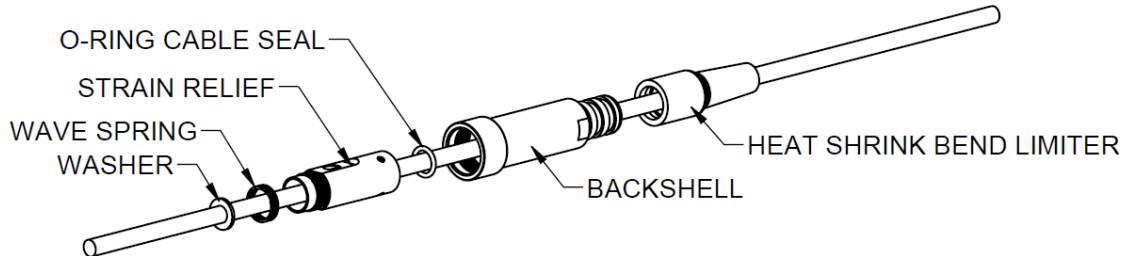
Perform a final visual check by looking through the holes of the Strain Relief to make sure that the fiber is not twisted or kinked. Slide the Washer and the Cable Seal to the base of the Strain Relief. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table. Slide the bend limiter into position and snap into place.



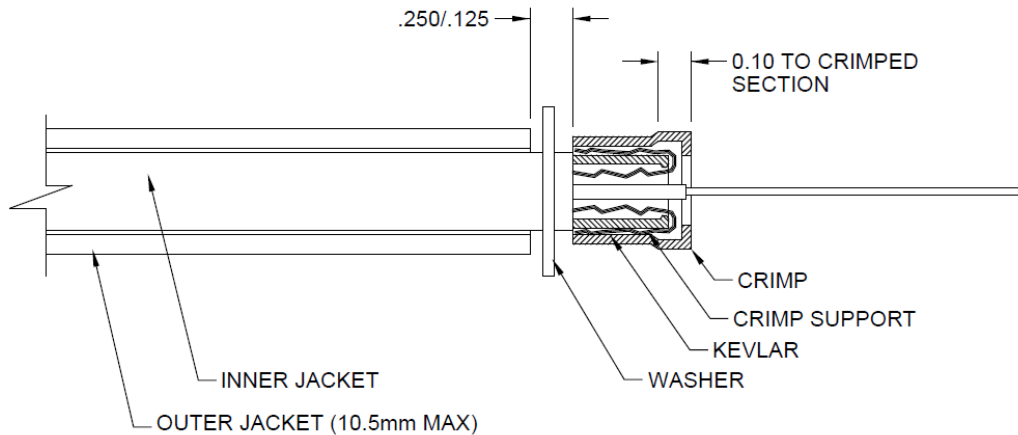
RECEPTACLE, STRAIGHT BACKSHELL, HEAT SHRINK BOOT

CABLE PREPARATION

Slide parts onto cable in the order below.



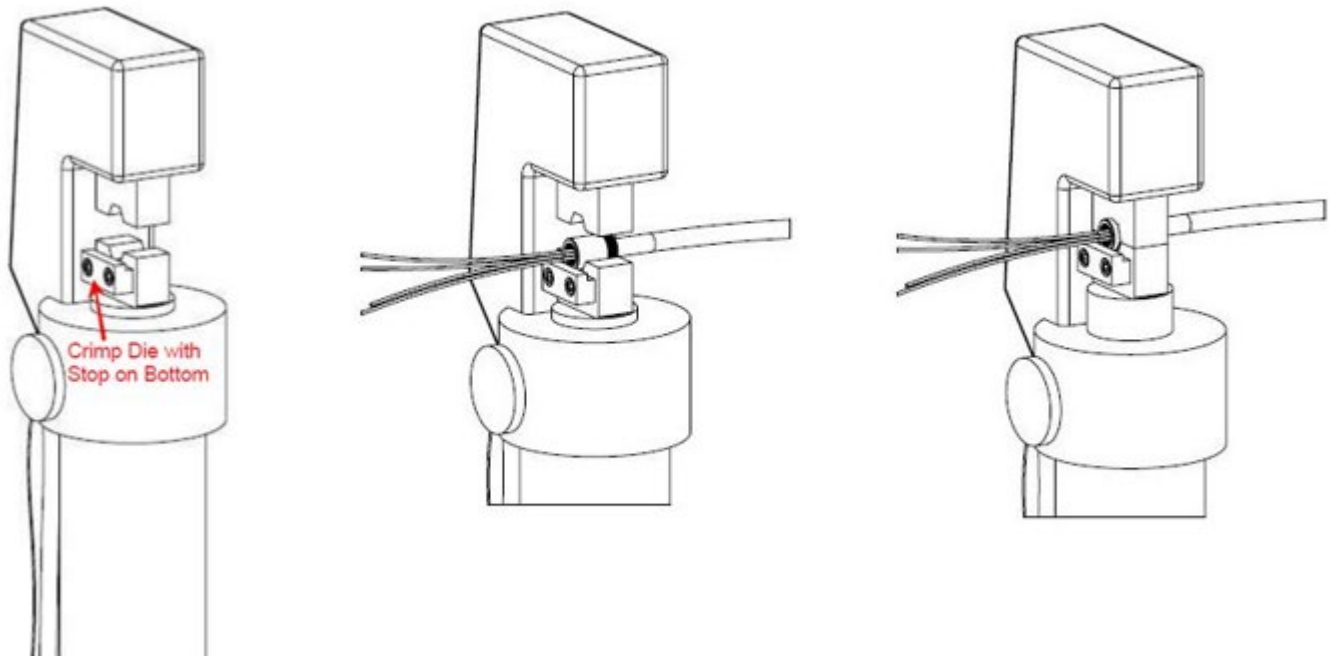
NOTE: When assembled, the washer will be positioned between the end of the cable jacket and the Crimp. Crimping instructions to follow.



Strip cable jacket approximately 4" (100 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

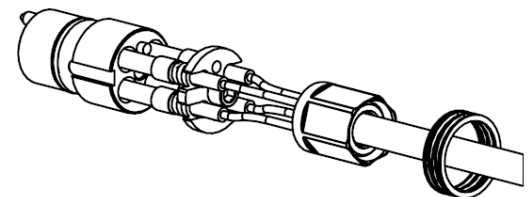
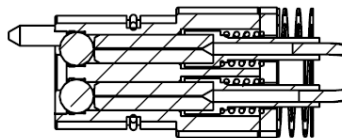


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

POPULATE INSERT

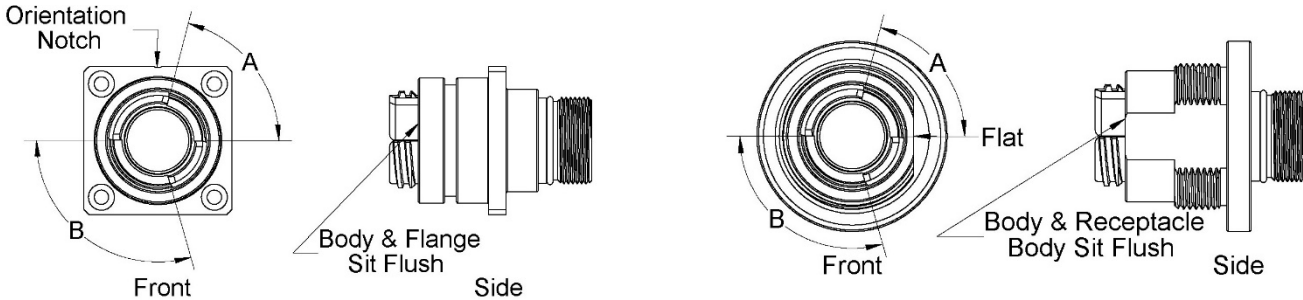
Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900 μ m fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT-532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

NOTE: Orientation of the Connectors.

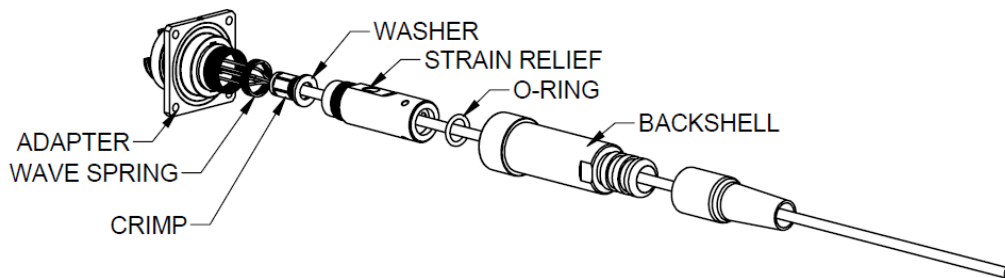


Slide the Wave Spring and Strain Relief into place. Hand tighten the Strain Relief. Check the fiber through the holes in the Strain Relief to make sure they are not twisted or kinked.

Place assembly in the 4" Drill Press Vise with 2 x Machined Plastic Jaws with Groove PT-591 and use the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to torque the Strain Relief to the values in the above Torque Table. Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the Set Screws on the strain relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table.

Perform a final visual check by looking through the holes of the Strain Relief to make sure that the fiber is not twisted or kinked. Slide the O-Ring Cable Seal to the base of the Strain Relief. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table.

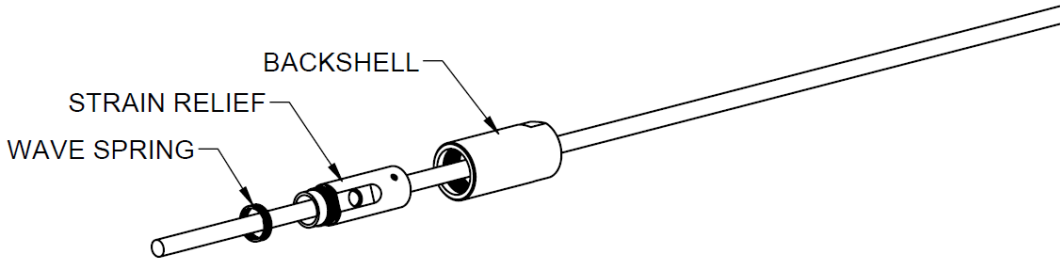
Apply an adhesive (Loctite Stik'N Seal Outdoor Adhesive or similar for rubber applications) on the inside of the Heat Shrink Bend Limiter. Slide it up towards the Backshell and heat shrink.



RECEPTACLE, STRAIGHT BACKSHELL, LOW PROFILE, NO BOOT

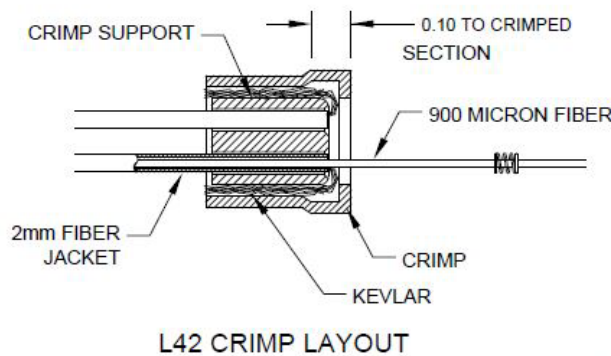
CABLE PREPARATION

Slide parts onto cable in the order below.



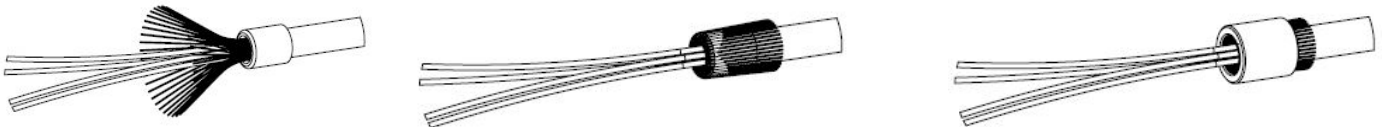
For a 4x2mm (L42) Cable Option

Strip the fiber jacket leaving extra Kevlar. Slide the 900µm fiber and Kevlar thru the hole in the 4-Channel Crimp Support. Slide the fiber jacket into the hole up to the front face of the support. Repeat for each channel. Wrap the Kevlar around the 4-Channel Crimp Support. Install the Crimp over the 900µm fibers.

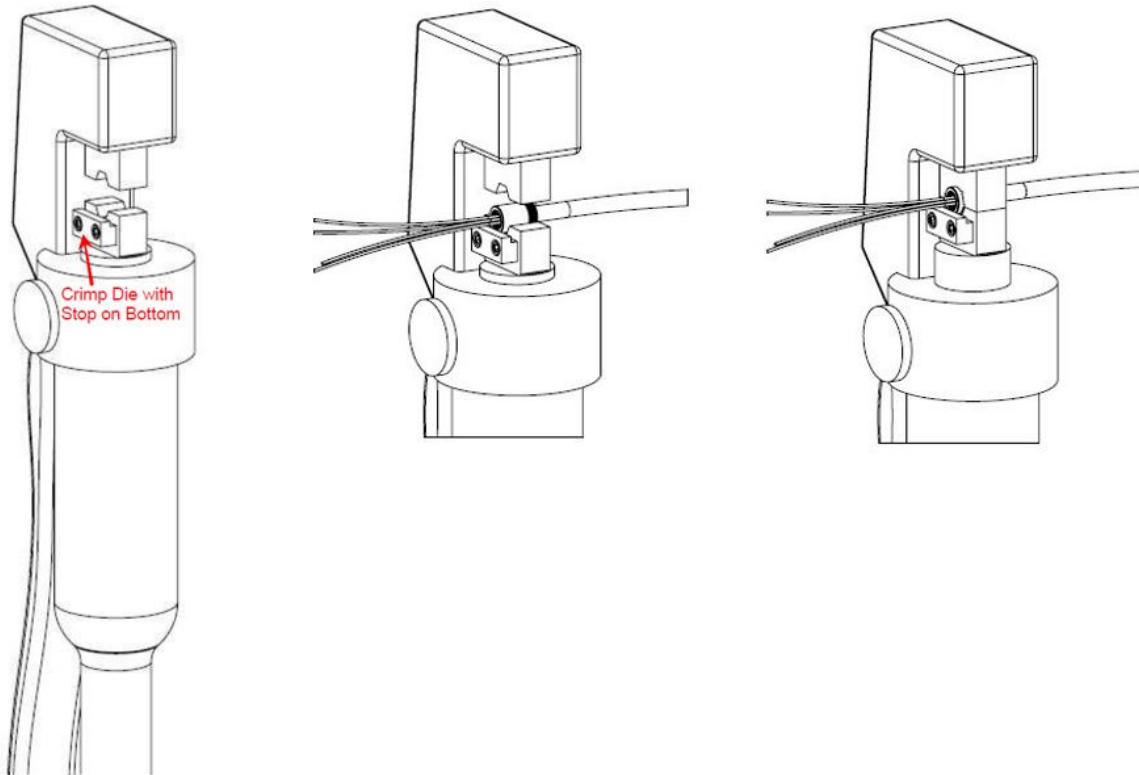


For a 4.5mm to 7.5mm Cable Option

Strip cable jacket approximately 4" (100 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

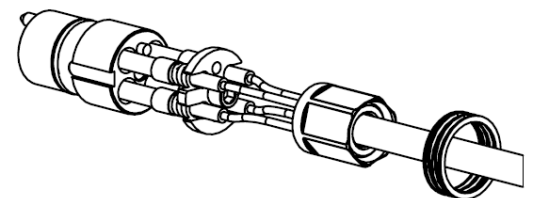
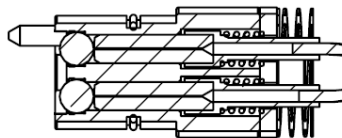


TERMINATION

Use the Stripping Length Diagrams located in the Appendix with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

POPULATE INSERT

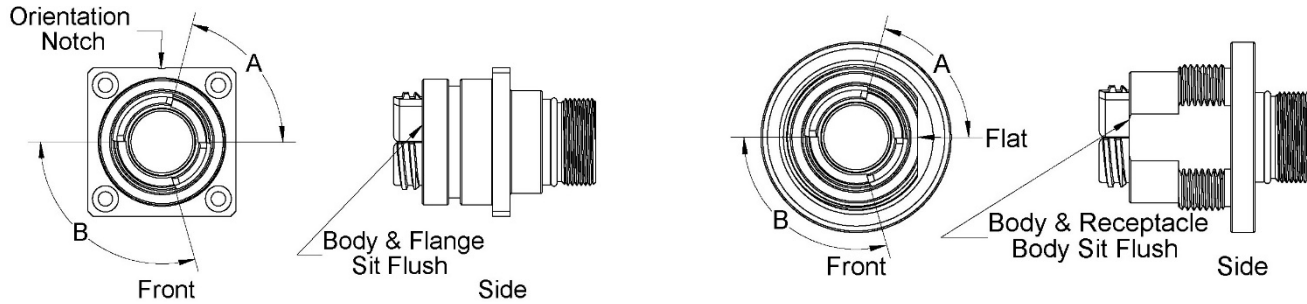
Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900 μ m fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT-532 to ensure the termini are fully seated against the ball lenses.



CONNECTOR ASSEMBLY

Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

NOTE: Orientation of the Connectors

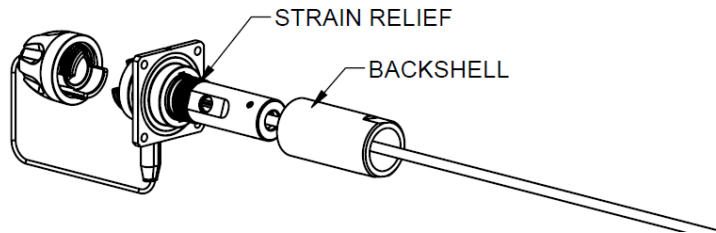


Slide the Wave Spring and Strain Relief into place. Hand tighten the Strain Relief. Check the fiber through the holes in the Strain Relief to make sure they are not twisted or kinked.

Place assembly in the 4" Drill Press Vise with 2 x Machined Plastic Jaws with Groove PT-591 and use the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to torque the Strain Relief to the values in the above Torque Table. Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the Set Screws on the strain relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table.

Perform a final visual check by looking through the holes of the Strain Relief to make sure that the fiber is not twisted or kinked. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table.

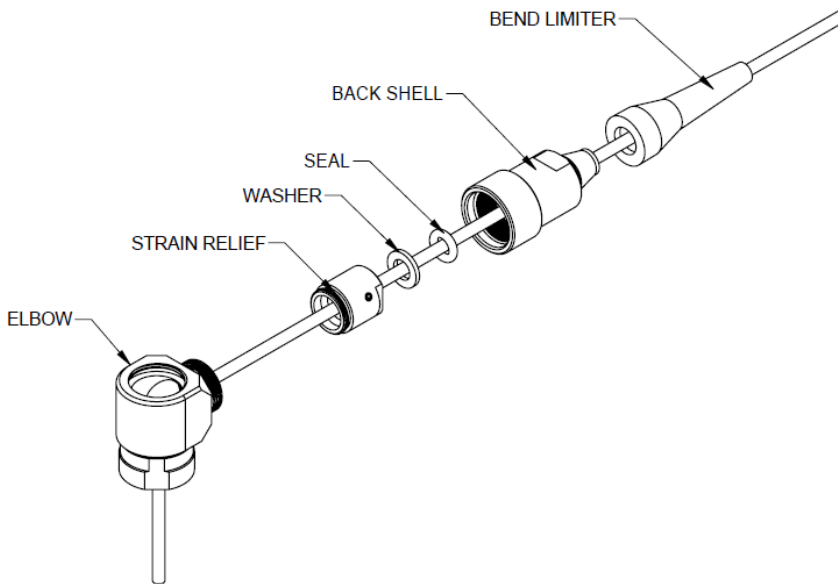
Perform a final visual check by looking through the holes of the Strain Relief to make sure that the fiber is not twisted or kinked. Hand tighten the Backshell and then Torque it using the same torque tools to the values in the above Torque Table.



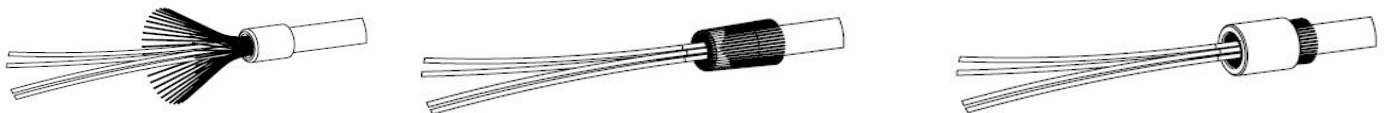
RECEPTACLE, 90 DEGREE SEALED BACKSHELL, BOOT

CABLE PREPARATION

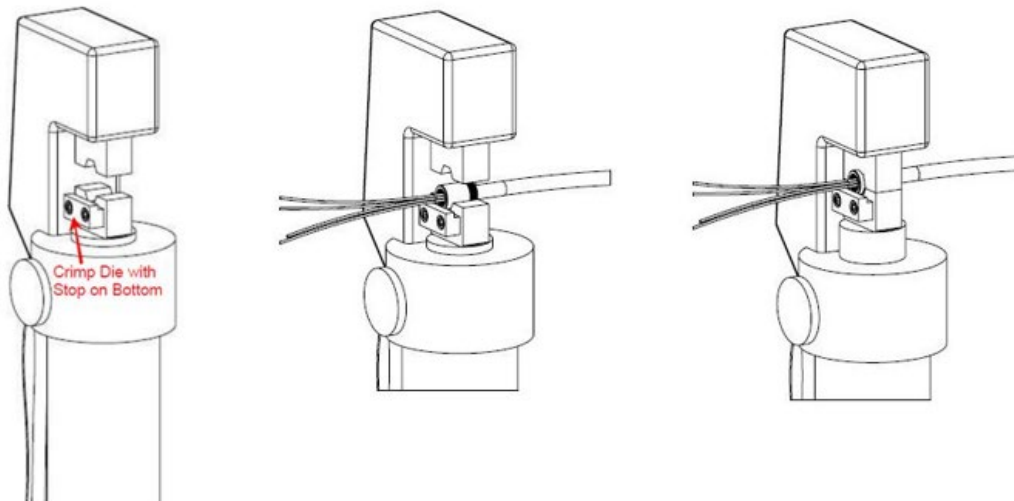
Slide parts onto cable in the order below.



Strip cable jacket approximately 5" (127 mm) from end and place Crimp Support over fiber and Kevlar as illustrated in the Appendix. Bend Kevlar back over the Crimp Support. Slide Crimp over Kevlar and Crimp Support to prepare for crimping.



Setup the Hydraulic Crimping tool PT-540 with the Die Set, 0.314 Hex, Hydraulic Hand Crimper PT-541. The Crimp Die with Stop needs to be placed on the bottom facing out and with the Crimp against the stop as seen in the image below. Turn the knob clockwise on the Hydraulic Crimper, so that the handles can be pumped to crimp. Place the cable in the lower Crimp Die with the fiber facing out. Pump the handles until the Crimp Dies are touching. Release crimp by turning knob counterclockwise.

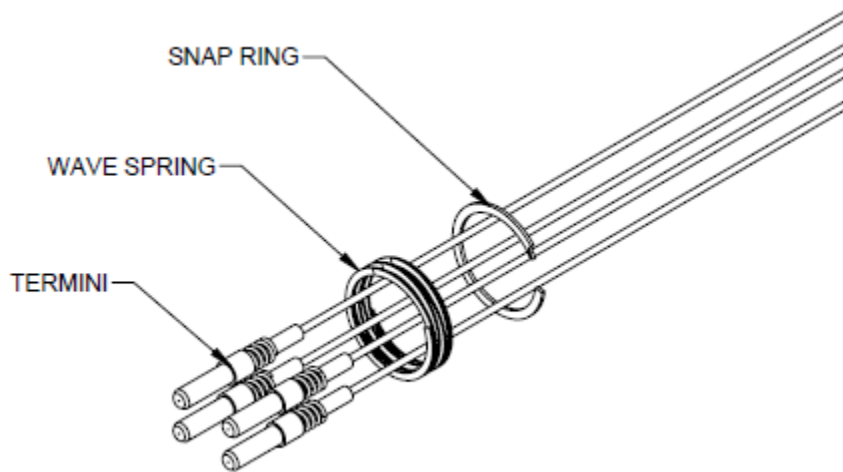


TERMINATION

Use the Stripping Length Diagrams located in the Appendix for QMICRO / QMINI CONNECTOR – ANGLED BACKSHELL (WI 851-62 – Figure 1.4) with the Fiber Optic Termination and Polishing Assembly Instructions (reference CAI-TERM) to terminate each fiber.

FRONT ASSEMBLY

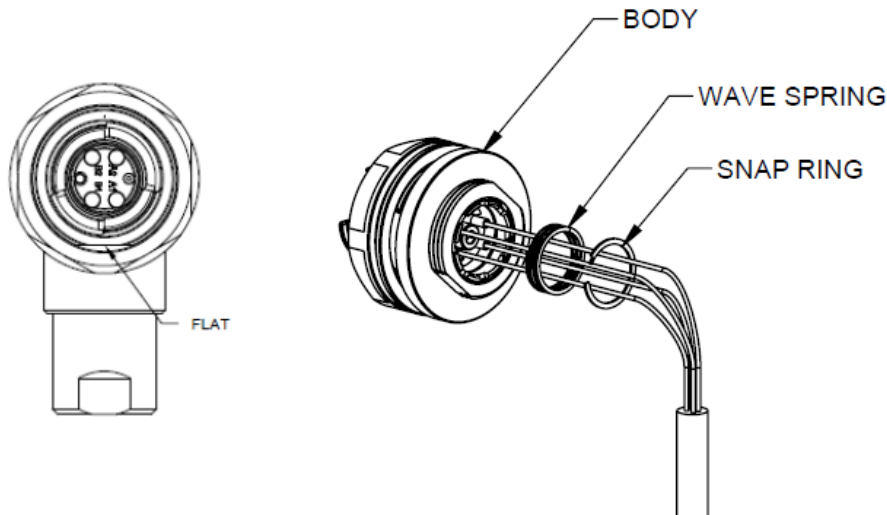
Slide the parts onto cable in the order below.



POPULATE INSERT

Insert the Fiber Optic Termini into the back of the Insert Cavities according to the desired pinout. Place the Termini Retainer Plate between the 900µm fibers making sure that the springs are between the Fiber Optic Termini and Termini Retainer Plate. Apply a drop of Loctite 222 to the Socket Head Cap Screw and use Screwdriver, 2.5mm Hex Tool PT-504 to fasten the Termini Retainer Plate to the Insert. Torque the Socket Head Cap Screw to the values in the above Torque Table using Torque-Measuring Head Drive PT-590 and Bit Size 2.5mm PT-599. Use a pair of Long Nose Pliers PT- 532 to ensure the termini are fully seated against the ball lenses. Use Screwdriver, 2.5mm Hex Tool PT-504 to align the key and install the insert into the back of the Jam Nut Body. The Insert should protrude slightly from the seal and the Body. The seal should be visible around the Insert.

Slide the Wave Spring up into the Body and install the Snap Ring in the Snap Ring groove located behind the Wave Spring. This will hold the Insert in place.



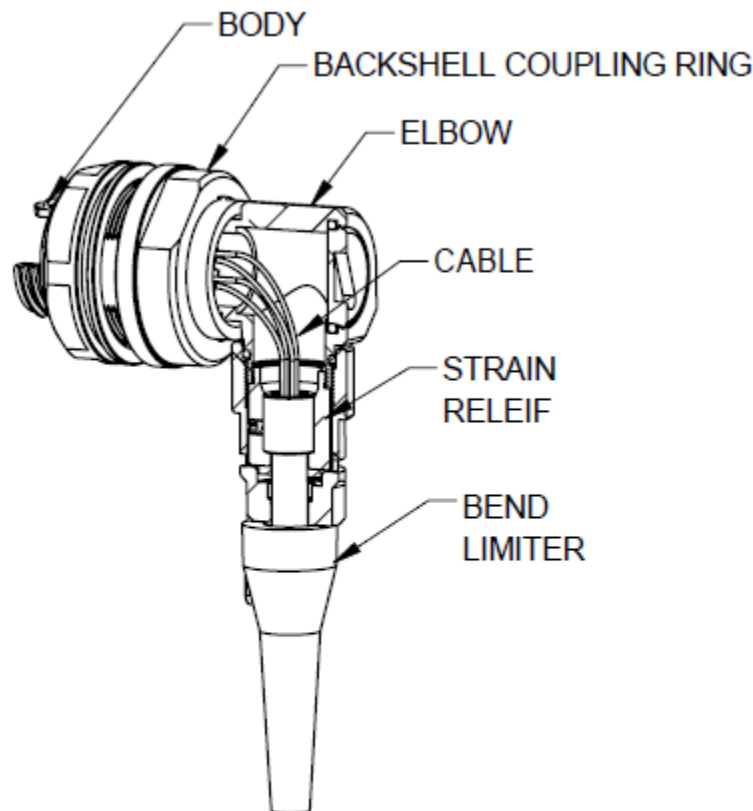
CONNECTOR ASSEMBLY

Slide the Backshell Coupling Ring with Elbow up and high tighten. Torque Backshell Coupling Ring to the values in the above Torque Table.

Use Cable to pull Crimp to bottom of Strain Relief. Use Screwdriver, 1/16" Hex Tool PT-501 to tighten the set screws on the Strain Relief to lock the crimp into place. Torque the Set Screws using Torque-Measuring Hex Drive PT-590 and Hex Bit 1/16" PT-599 to the values in the above Torque Table. Perform a visual check to make sure that the fiber is not twisted or kinked.

Slide the Washer and Cable Seal behind Strain Relief. Slide the Backshell into position and hand-tighten it. Torque the Backshell using the Crow's Foot Wrench PT-536 with the Dial Torque Measuring Wrench PT-506 to the values in the above Torque Table. Slide the Boot up and snap into place.

Finally, screw on the Threaded Elbow Plug to seal the connector and torque to approximately 4.5 – 5 N • m



SECTION A-A

Appendix

STRIPPING LENGTHS – QMINI CONNECTORS

WI 851-62 - FIGURE 1.1 – QMINI PLUG AND RECEPTACLE WITH BACKSHELL

WI 851-62 - FIGURE 1.2 – QMINI PLUG AND RECEPTACLE WITH BACKSHELL CRIMP PLACEMENT

WI 851-62 - FIGURE 1.4 – QMICRO / QMINI ANGLED BACKSHELL

WI 851-62 - FIGURE 1.5 – QMINI RECEPTACLE WITH LOW PROFILE BACKSHELL

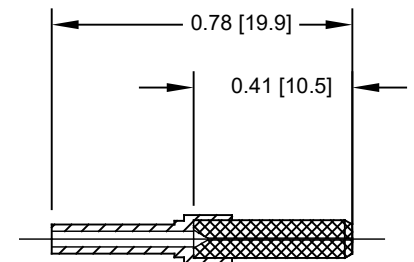
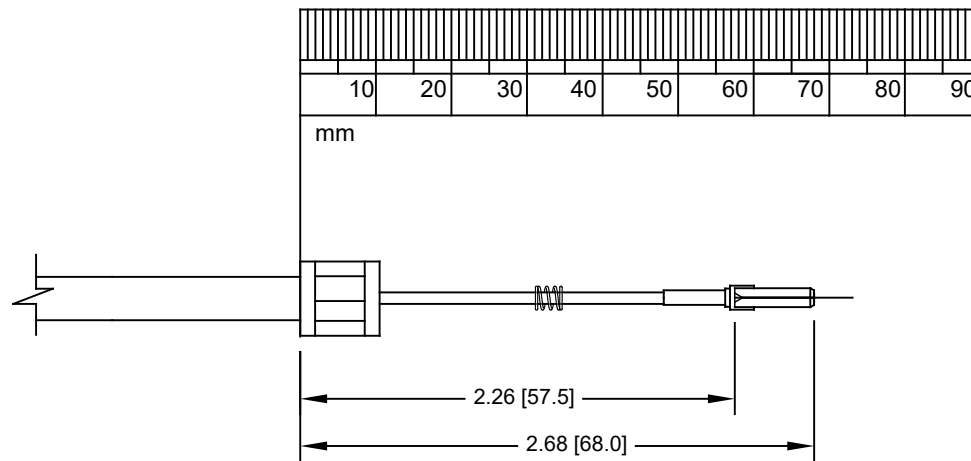
WI 851-62 - FIGURE 1.6 – QMINI RECEPTACLE SIMPLEX CABLE

Revision Change Record

Revision	Date	Section	Description	Approval
0	12/09/2020	New Release	Newly Released Document combining all QMini Connector Configurations.	SJW
1	8/28/2021	Receptacle, 90 Degree Sealed Backshell, Boot	New Instruction	RNZ

QMINI CONNECTOR

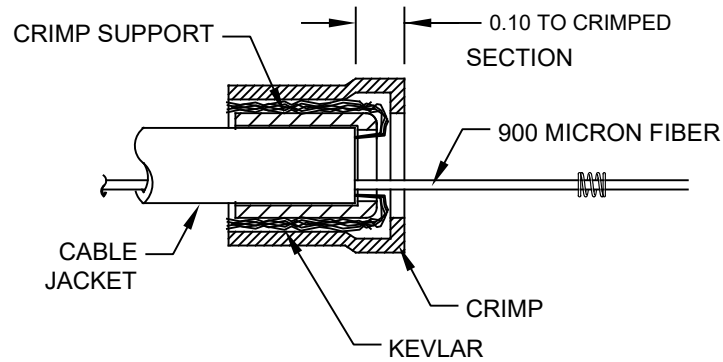
PLUG and RECEPTACLE with BACKSHELL



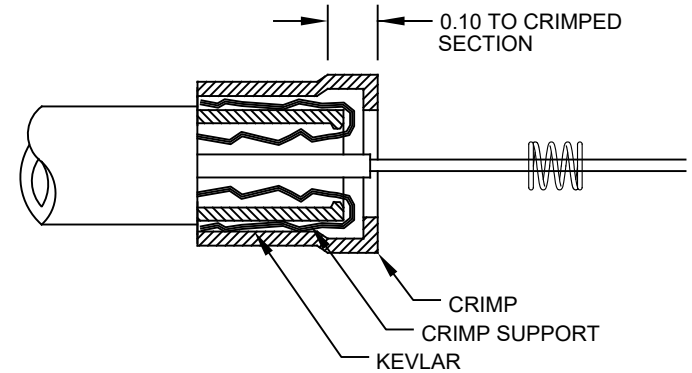
NOT TO SCALE

QMINI CONNECTOR

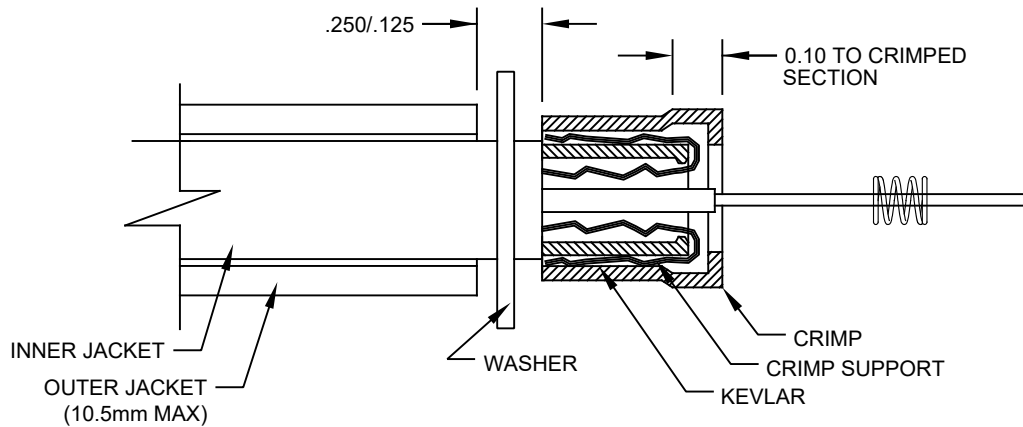
PLUG and RECEPTACLE with BACKSHELL



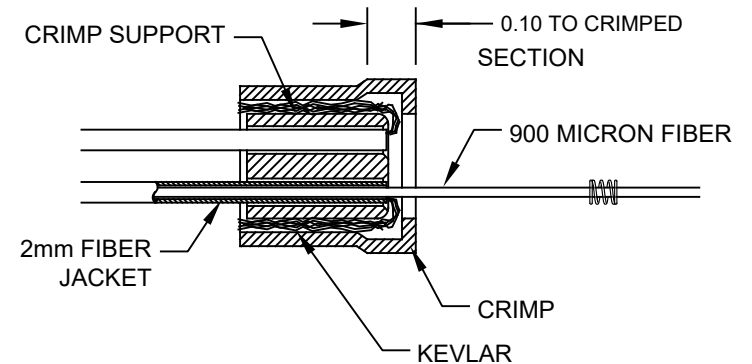
**3.6mm - 6.5mm
Cable Option**



**6.6mm - 7.5mm
Cable Option**



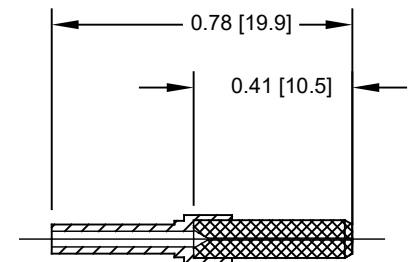
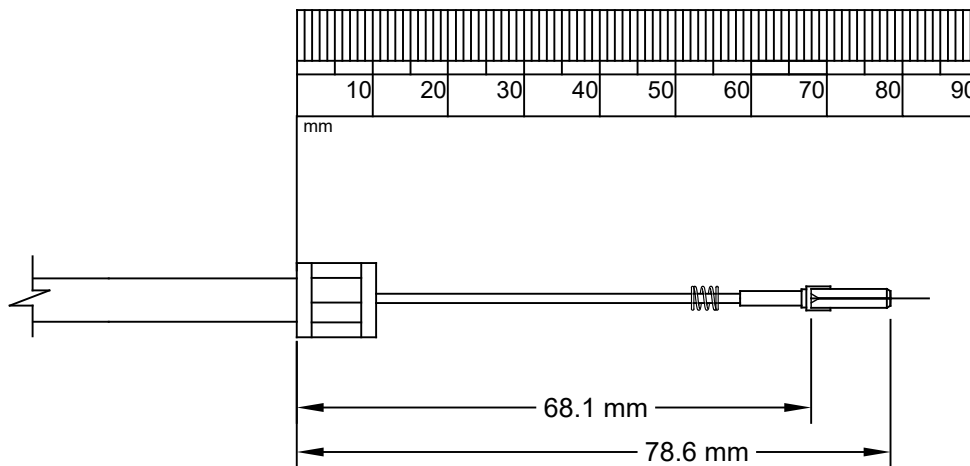
**7.5mm - 10.5mm
Cable Option**



**4x2mm L42
Cable Option**

QMICRO / QMINI CONNECTOR

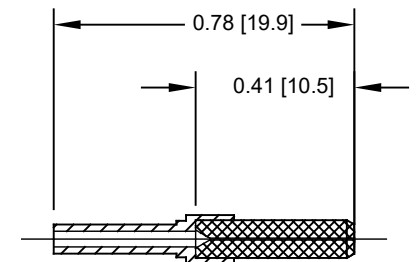
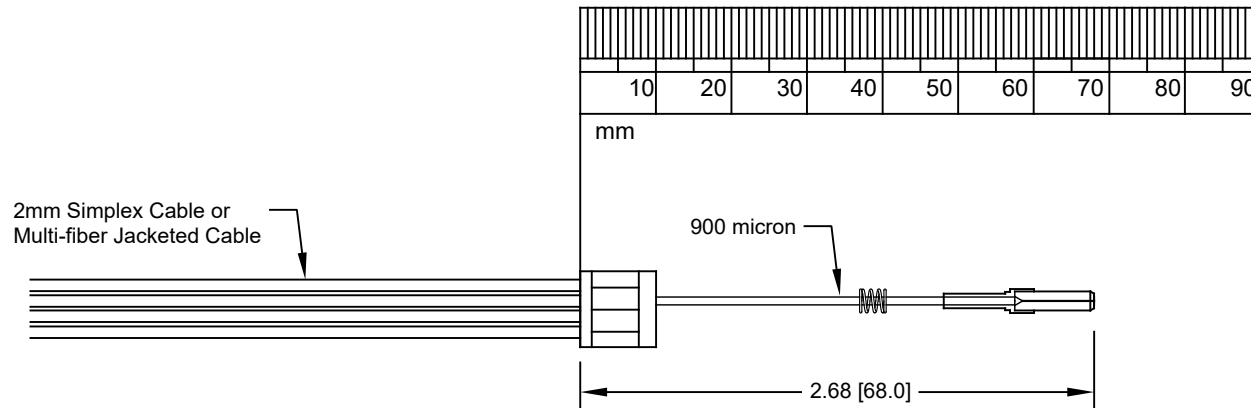
ANGLED BACKSHELL



NOT TO SCALE

QMINI CONNECTOR

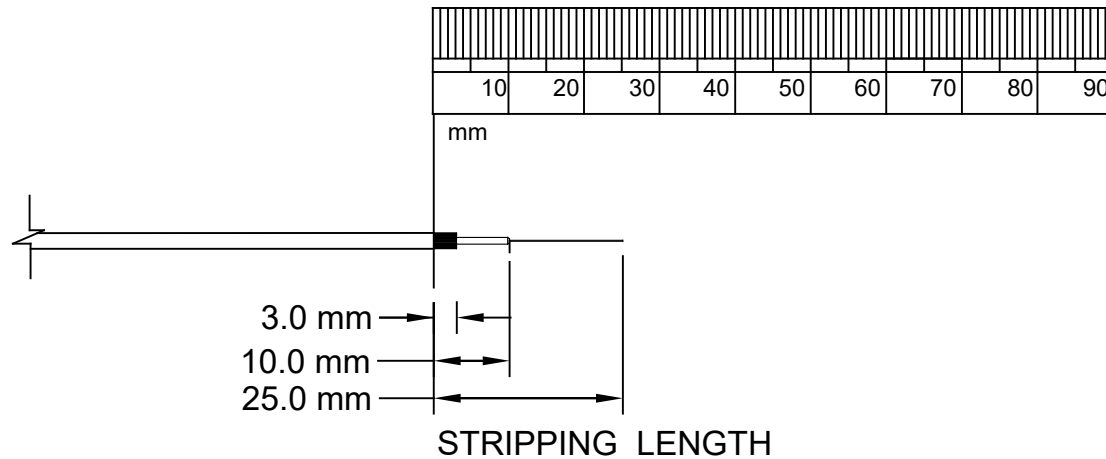
PLUG and RECEPTACLE with LOW PROFILE BACKSHELL



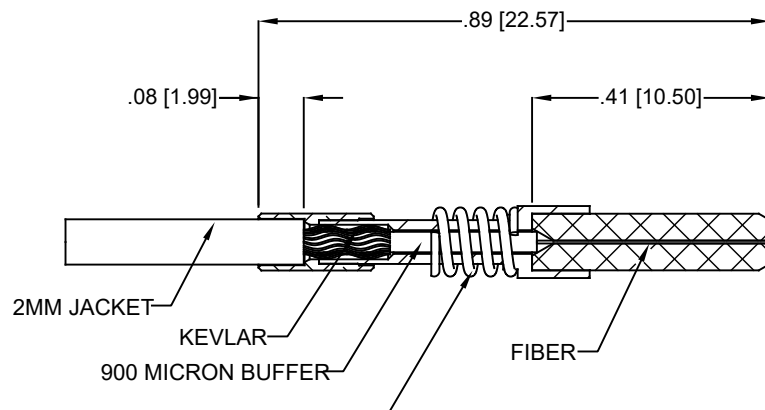
NOT TO SCALE

QMINI CONNECTOR

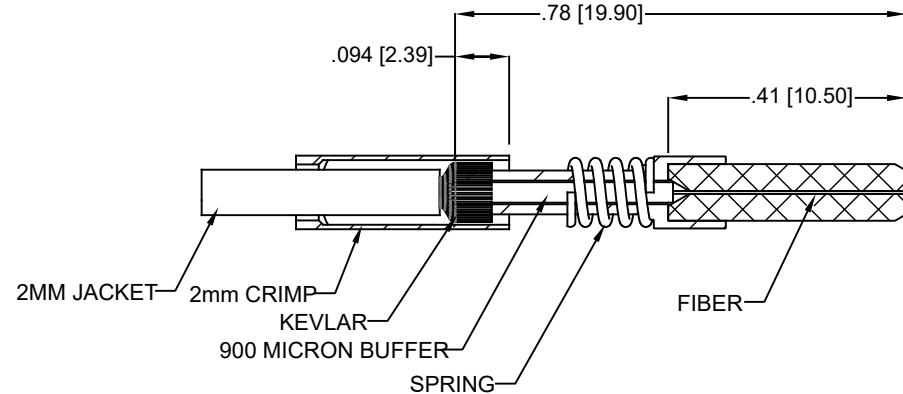
RECEPTACLE 2MM SIMPLEX CABLE



EPOXY CUP OPTION (SE2)



CRIMP OPTION (S02)



CABLE PREPARATION