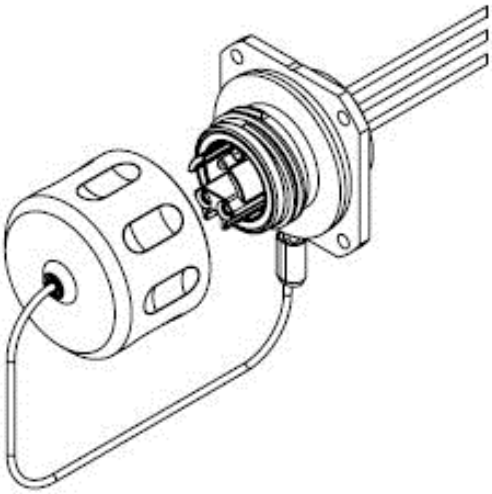
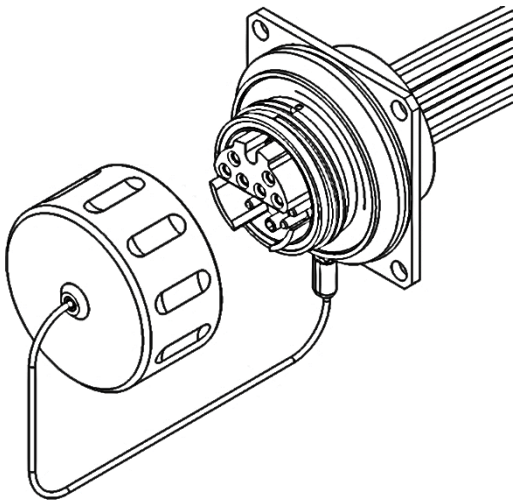
# QFOCA RECEPTACLE CUSTOMER ASSEMBLY INSTRUCTIONS





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|---|---|
| DOCUMENT: | CAI-QFR-01 |
| REVISION: | 0 |
| REVISION DATE: | 12/13/2019 |





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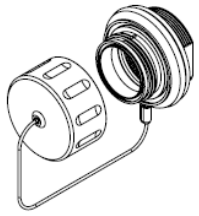
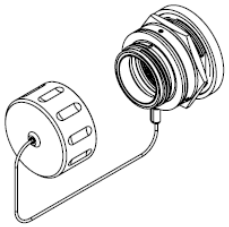
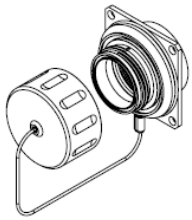
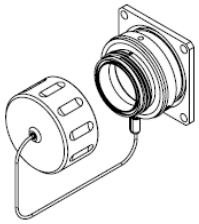
**Ph: (949) 361-8855**

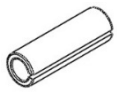
## SCOPE

This document describes the Assembly Instructions for the QFoca Receptacle Jam Nut and Flange Mount Connector, 4-Channel & 12-Channel with and without a Backshell.

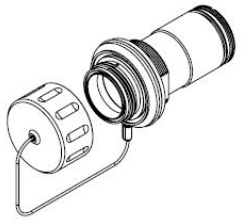
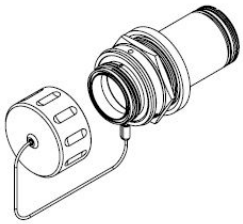
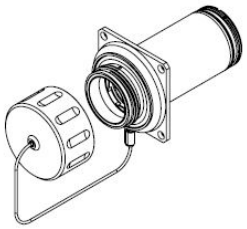
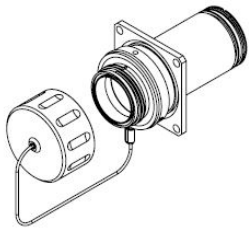
## MAIN COMPONENTS

**QFOCA ASSEMBLIES WITHOUT BACKSHELL**

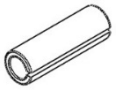
| JAM NUT EXTERNAL MOUNT | JAM NUT INTERNAL MOUNT | FLANGE EXTERNAL MOUNT | FLANGE INTERNAL MOUNT |
|---|---|---|---|
|  |  |  |  |
| BODY & DUST COVER | BODY & DUST COVER | BODY & DUST COVER | BODY & DUST COVER |

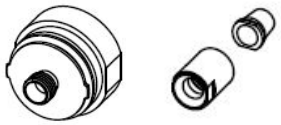
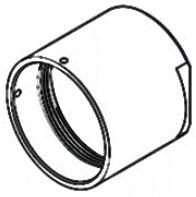
| COMMON PARTS | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| INSERT (4CH or 12CH) | TERMINI RETAINER PLATE (4CH OR 12CH) | FIBER OPTIC TERMINI (4CH x4, 12CH x12) | ALIGNMENT SLEEVES (4CH x2, 12CH x6) | CRIMP SLEEVE (4CH x4, 12CH x12) | LOCKNUT |

**QFOCA ASSEMBLIES WITH BACKSHELL**

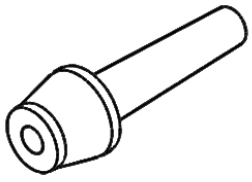
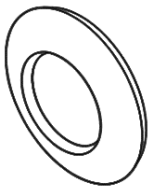
| JAM NUT EXTERNAL MOUNT | JAM NUT INTERNAL MOUNT | FLANGE EXTERNAL MOUNT | FLANGE INTERNAL MOUNT |
|---|---|---|---|
|  |  |  |  |
| BODY & DUST COVER | BODY & DUST COVER | BODY & DUST COVER | BODY & DUST COVER |

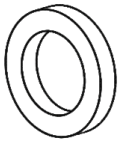
**COMMON PARTS**

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| INSERT (4CH or 12CH) | TERMINI RETAINER PLATE (4CH OR 12CH) | FIBER OPTIC TERMINI (4CH x4, 12CH x12) | ALIGNMENT SLEEVES (4CH x2, 12CH x6) | CRIMP SLEEVE (4CH x4, 12CH x12) | LOCKNUT |

| | | |
|---|---|---|
|  |  |  |
| SPACER w/ O-RINGS | STRAIN RELIEF w/ CAP & INSERT CABLE ANCHOR | BACK NUT w/ SET SCREWS x2 |

## STRAIN RELIEF COMPONENTS

| BEND LIMITER OPTION | |
|---|---|
|  |  |
| BEND LIMITER | WASHER |

| WIRE MESH GRIP OPTION | |
|---|---|
|  |  |
| WIRE MESH GRIP | SQUARE O-RINGS x2 |
| | **OR** |
| |  |
| | CABLE SEAL x1 |

# TOOL LIST

| **TK-060 QPC Cable and Connector Prep Tool Kit –** (Equivalent tools may be used) | |
|---|---|
| PT-062 | Miller Kevlar Scissors (Carbon Molybdenum & Vanadium Steel Blade) |
| PT-500 | Precise-Control .050” Screwdriver (1.27mm) Hex |
| PT-501 | Precise-Control Screwdriver, 1/16" Hex |
| PT-503 | Precise-Control Screwdriver, 5/64" (2mm) Hex |
| PT-502 | Precise-Control Screwdriver, 3/32" Hex |
| PT-504 | Precise-Control Screwdriver, 2.5mm Hex |
| PT-505 | Screwdriver, Number 1 Phillips, 6-3/4" Overall Length |
| PT-506 | Dial Torque-Measuring Wrench, 3/8" Square Drive, 0 to 150in.-lbs. and 0 to 18NM Torque |
| PT-536 | Crow's Foot Wrench Adjustable 3/8" Square Drive 0.0-1.125"(0-28.57mm)<br>(For Shell Sizes 13 – 19) |
| PT-545 | Crow's Foot Wrench Adjustable 1/2" Square Drive .236-1.771" (6-45mm)<br>(For Shell Sizes 21 – 31) |
| PT-546 | 3/8" Female x 1/2" Male Square Drive Adapter, Chrome |
| PT-532 | Long-Nose Pliers with Flat Jaws, Cushion Grip, 6-3/4" Overall, Manual Jaws with Wire Cutter |
| PT-599 | Hex Bit Set, 5 pcs (.050", 1/16", 5/64", 3/32", 2.5mm) 1/4" Shank, Overall Length 2” |
| PT-590 | Torque-Measuring Screwdriver, Hex Drive, 2.5 to 11.5 in.-lbs. Adjustable Torque |
| PT-591 | 4" Drill Press Vise with 2 x Machined Plastic Jaws with Groove |

| **TK-047 4CH QFoca Tool Kit –** (Equivalent tools may be used) | |
|---|---|
| PT-451 | Fiber Optic Termini Spring Compression Tool (ELink, QFoca, QDrive) |
| PT-145 | QFoca 1.06 Inch Locknut Tightening Tool (Receptacle) |
| PT-465 | QFoca Backnut Tightening C-Jaw Tool |
| PT-466 | QFoca 4Channel Torque Fixture |
| PT-005 | Fiber Optic Termini Crimp Tool, 2mm & 3mm (Hex Sizes .100 / .147) |

| **TK-048 12CH QFoca Tool Kit –** (Equivalent tools may be used) | |
|---|---|
| PT-451 | Fiber Optic Termini Spring Compression Tool (ELink, QFoca, QDrive) |
| PT-146 | QFoca 1.62 Inch Locknut Tightening Tool (Receptacle) |
| PT-465 | QFoca Backnut Tightening C-Jaw Tool |
| PT-467 | QFoca 12Channel Torque Fixture |
| PT-005 | Fiber Optic Termini Crimp Tool, 2mm & 3mm (Hex Sizes .100 / .147) |

## TORQUE TABLE

| Component | Backnut | | Strain Relief Cap | Set Screws | Locknut |
|---|---|---|---|---|---|
| Channel | 4 | 12 | All | All | All |
| Torque Values | 80 – 97 in-lb | 97 – 115 in-lb | 80 – 97 in-lb | 2 – 3 in-lb | 44 – 53 in-lb |
| | 9 – 11 N • m | 11 – 13 N • m | 9 – 11 N • m | .23 – .34 N • m | 5 – 6 N • m |

### QFOCA ASSEMBLIES WITHOUT BACKSHELL

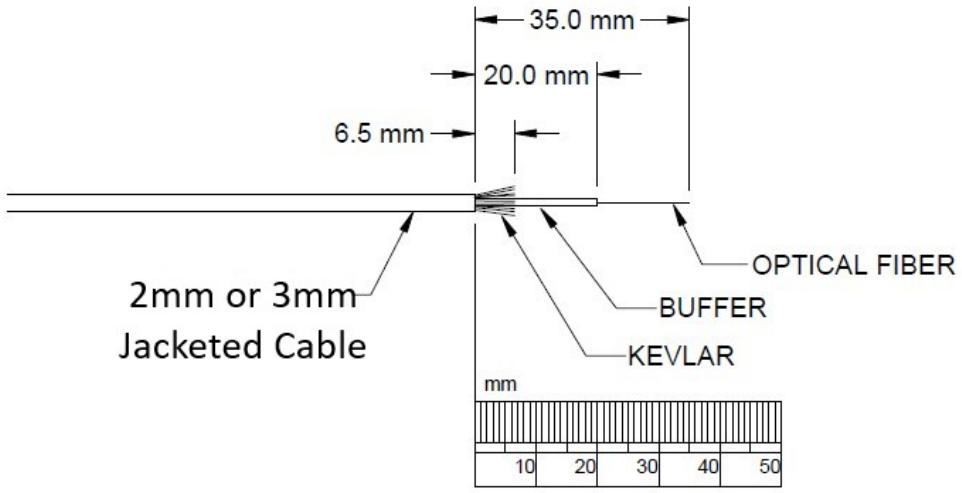
## TERMINATE

**For 900µm Cable Options**

Use the Stripping Length Diagram seen below to Terminate the Fiber. For Fiber Optic Termination and Polishing details, reference CAI-TERM-03.

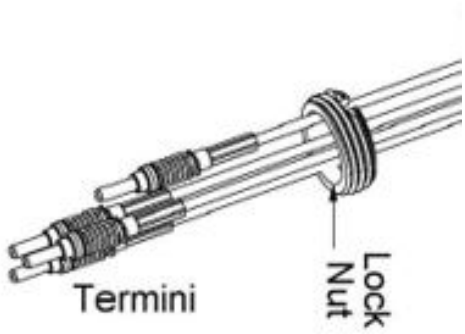
**For 2mm or 3mm Cable Options**

Slide the Crimp Sleeve onto the cable and strip the cable according to the lengths in the diagram seen below. Leave approximately 5/16-Inches (8mm) of Kevlar on the cable for crimping. Thread the bare fiber through the back of the Fiber Optic Termini making sure that the fiber slides through the other end of the Ferrule. Slide the Crimp Sleeve over the Kevlar. Use Fiber Optic Termini Crimp Tool PT-005 (Hex Size .147) to crimp the Crimp Sleeve into place. For Fiber Optic Termination and Polishing details, reference CAI-TERM-03.

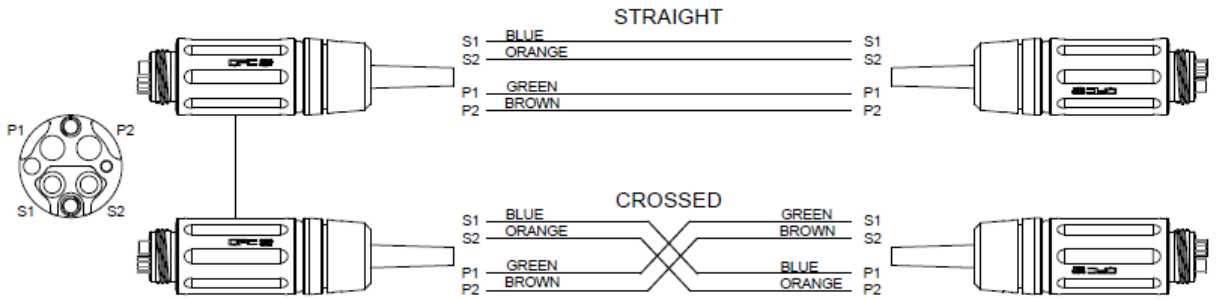


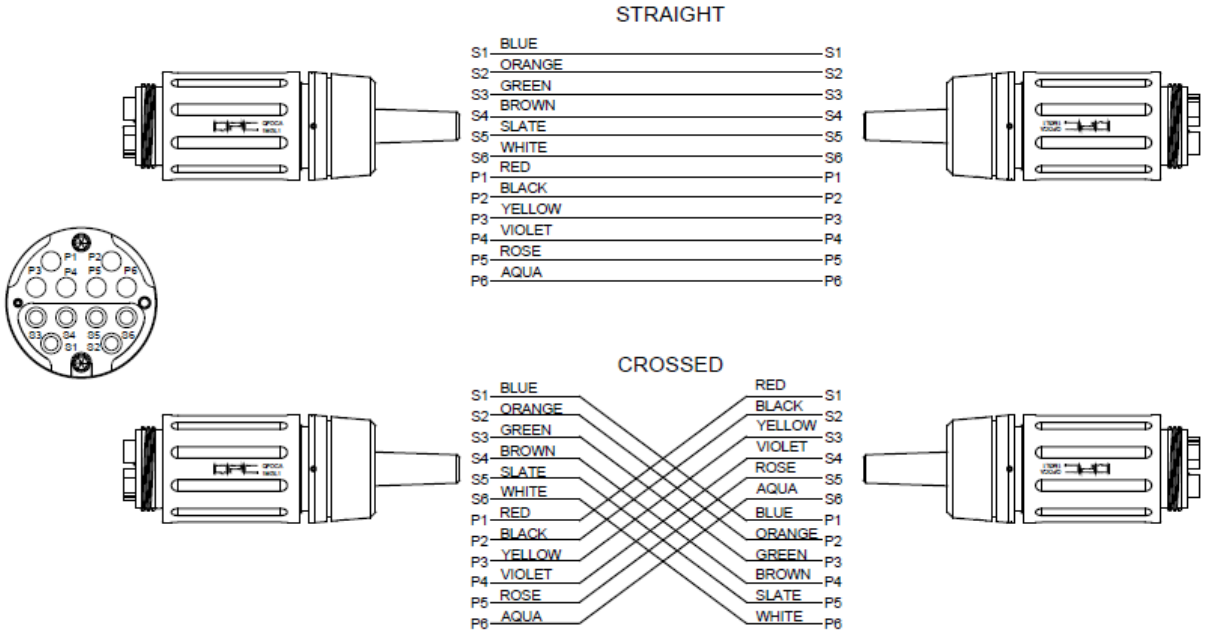
## POPULATE TERMINI RETAINER PLATE

Slide the Locknut over the fiber.



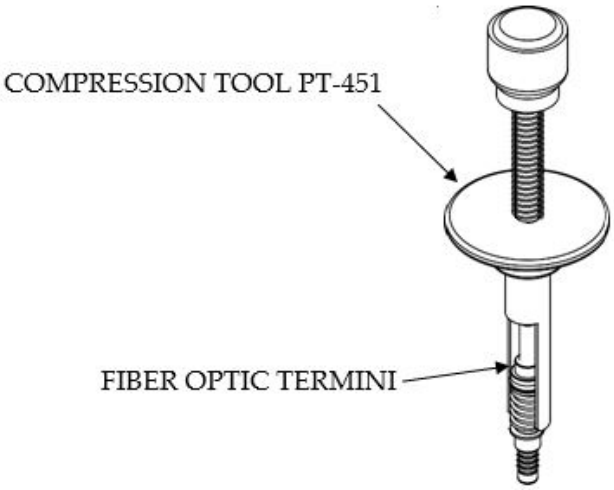

Refer to the channel layout below to orient the Fiber Optic Termini into the designated channels according to the jacket color and the desired configurations, Straight or Cross. *(Plug images are for Illustrative purposes only).*

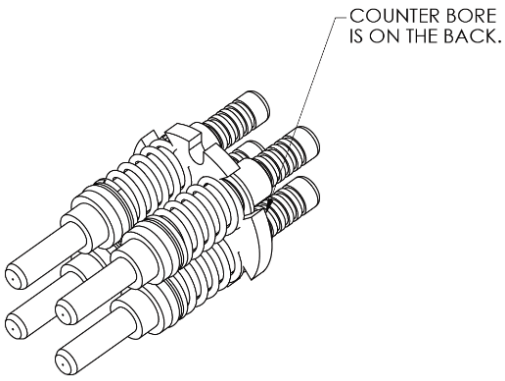


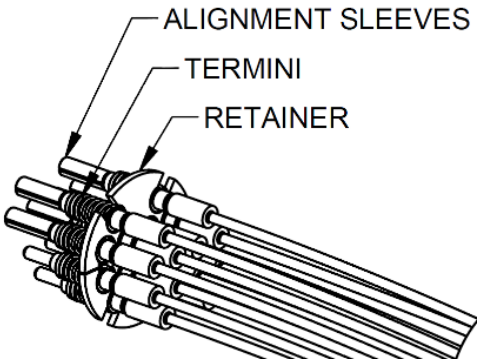
Use the Fiber Optic Termini Spring Compression Tool, PT-451, to mount the Fiber Optic Termini on the Termini Retainer Plate for the four channel QFOCA or the retainer plate halves for the 12-channel. The Terminus clip should be resting in the Termini Retainer Plate pockets.

Note that the counter bores on the retainer plate go to the cable side of the Fiber Optic Termini.



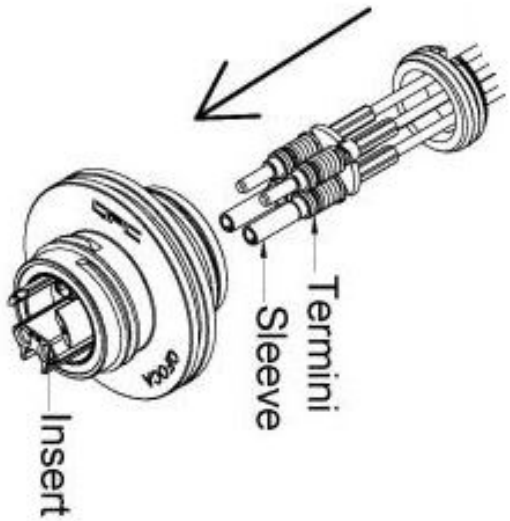




After all Fiber Optic Termini have been mounted on the Termini Retainer Plate, slide the Alignment Sleeves on the socket Termini (S1-S2 for the 4-Channel and S1-S6 for the 12-Channel).

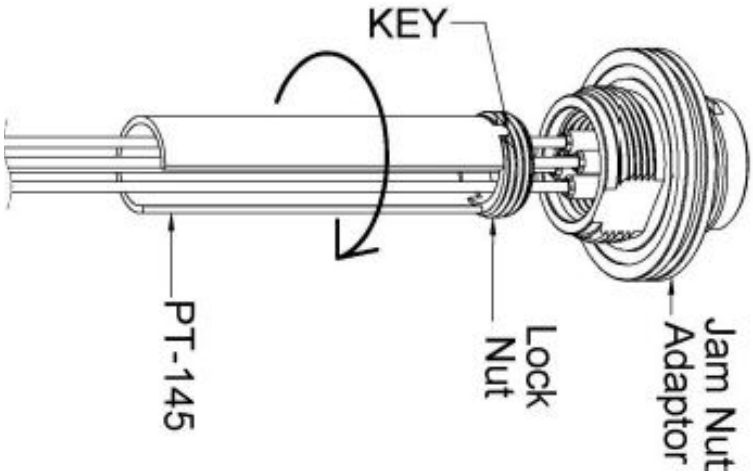


## FINAL ASSEMBLY

Install Insert into the Receptacle Body. There is a slot on the Insert back that must align with the key on the inside of the Receptacle Body. Slide the Fiber Optic Termini mounted in the Termini Retainer Plate(s) into the Insert cavities ensuring that the Sockets with Alignment Sleeves are in the “S” labeled cavities. When properly positioned, the Insert cap will protrude ¼ inch from the front of the Insert body.




To tighten the Locknut, use the QFoca Locknut Tightening Tool, PT-145 for 4-Channel or PT-146 for 12-Channel, by passing the cables through the tool slot and engaging the keys on the Tool with the keyways on the Locknut. Turn clockwise to tighten the Locknut. Torque the Locknut to the values in the above Torque Table using Dial Torque-Measuring Wrench PT-506 with the Crow’s Foot Wrench Adjustable PT-536.



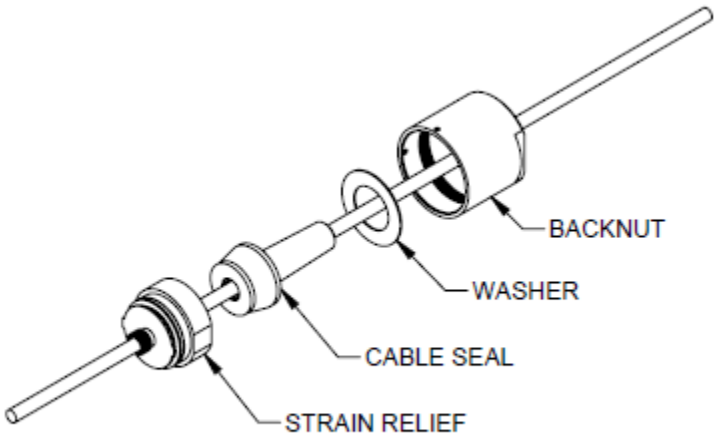
## QFOCA ASSEMBLIES WITH BACKSHELL

# CABLE PREPARATION

### QFoca (Cable Seal Option):

Slide parts over cable in the following order:

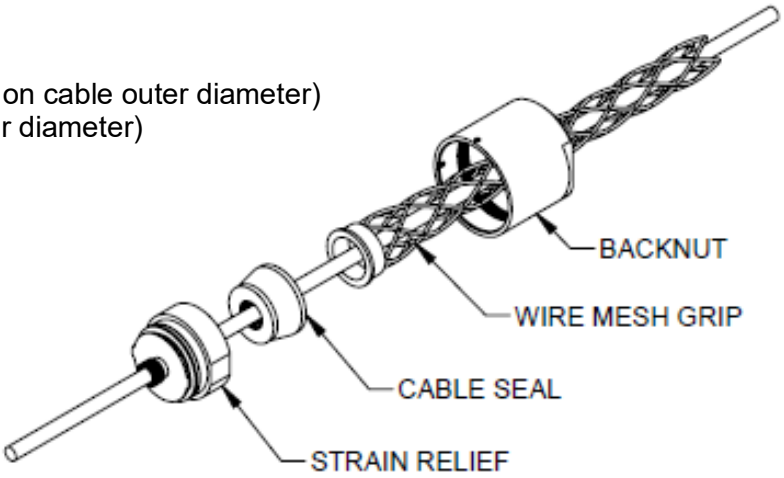
1. Label (if applicable)
2. Backnut
3. Washer
4. Cable Seal
5. Strain Relief




### QFoca-G1 (Wire Mesh Grip Option):

Slide parts over cable in the following order:

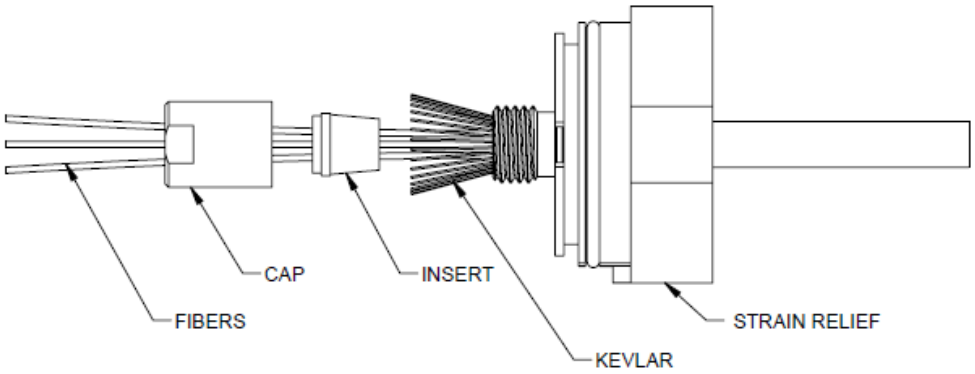
1. Label (if applicable)
2. Backnut
3. Wire Mesh Grip
4. Cable Seal or 2 Washers (depending on cable outer diameter)
5. Strain Relief (if cable fits through inner diameter)



## STRAIN RELIEF

Strip the outer jacket of the cable back approximately 6 inches, exposing the buffered fiber and the Kevlar. If the Strain Relief is already on the cable, slide it forward so that the jacketed portion of the cable is as far forward as possible. If the OD of the cable is larger than the ID of the Strain Relief, position the Strain Relief over the exposed fiber and Kevlar so that the cable jacket touches the base of the Strain Relief.

Slide the wedge-shaped Insert Cable Anchor over the buffered fibers and position it in the Strain Relief with the fibers on the inside and the Kevlar evenly distributed around the outside. Push the Insert Cable Anchor into the Strain Relief to trap the Kevlar and trim the Kevlar to length – flush with the threads on the Strain Relief. Slide the Strain Relief Cap over the buffered fibers and hand tighten on the Strain Relief. Use Dial Torque-Measuring Wrench PT-506 with the Crow's Foot Wrench Adjustable PT-536 to torque to the values in the above Torque Table.

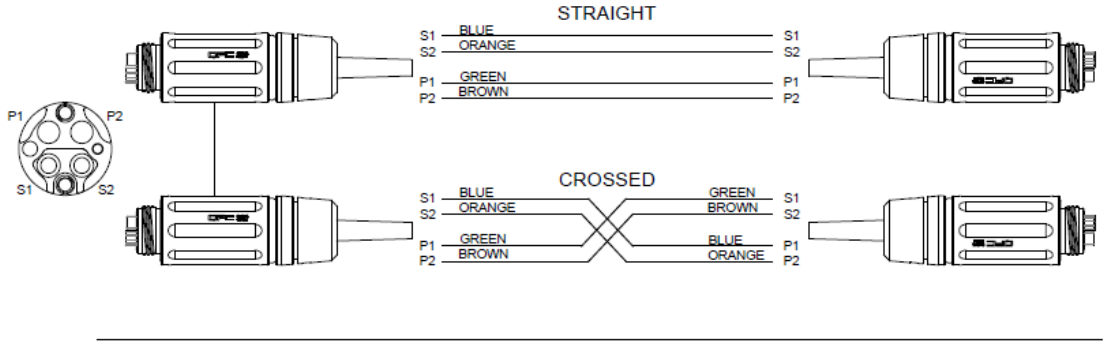


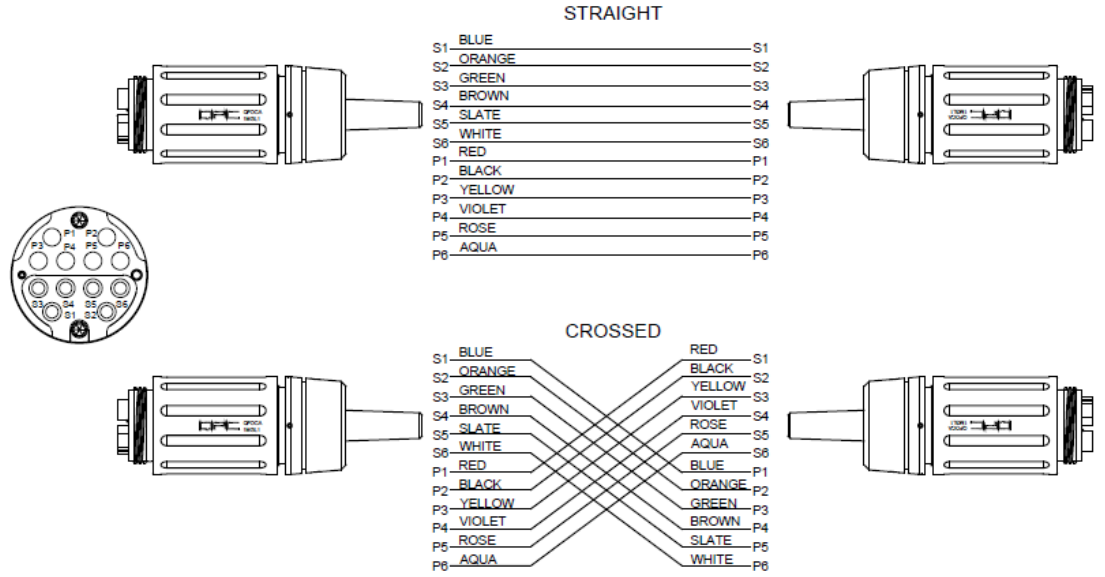

## TERMINATE

Strip the cable for the desired channel according to the lengths in the diagrams seen at the end of this Assembly Instruction. Terminate and Polish the fiber using the provided Fiber Optic Termini. For Fiber Optic Termination and Polishing details, reference CAI-TERM-03.

## POPULATE TERMINI RETAINER PLATE

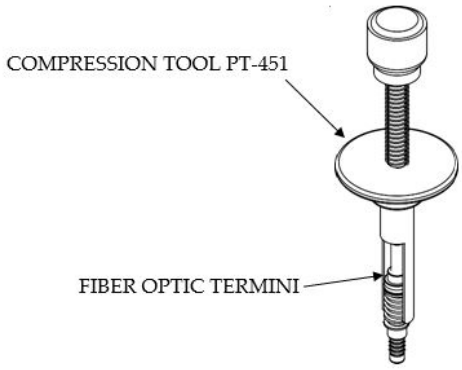
Refer to the channel layout below to orient the Fiber Optic Termini into the designated channels according to the jacket color and the desired configurations, Straight or Cross. *(Plug images are for Illustrative purposes only).*

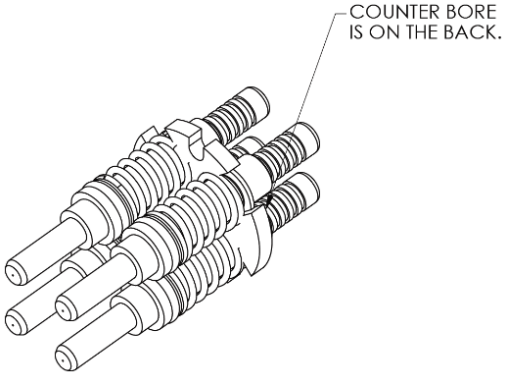


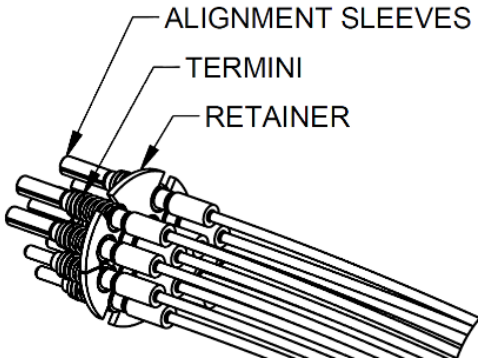

Use the Fiber Optic Termini Spring Compression Tool, PT-451, to mount the Fiber Optic Termini on the Termini Retainer Plate for the four channel QFOCA or the retainer plate halves for the 12-channel.
The Terminus clip should be resting in the Termini Retainer Plate pockets.

Note that the counter bores on the retainer plate go to the cable side of the Fiber Optic Termini.



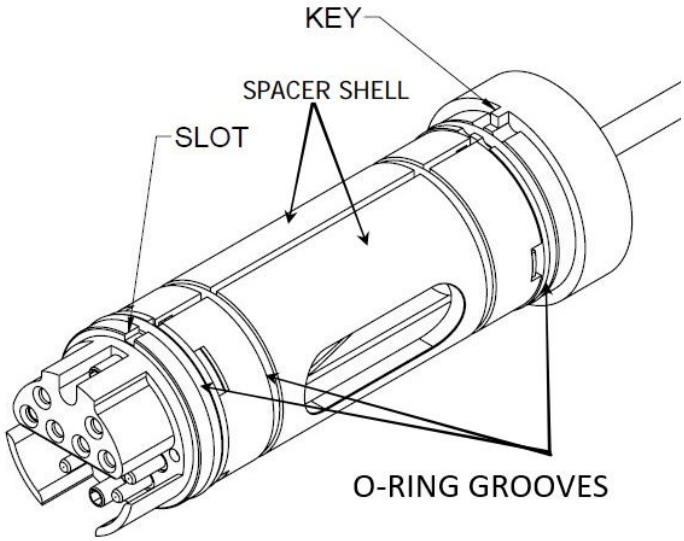
After all Fiber Optic Termini have been mounted on the Termini Retainer Plate, slide the Alignment Sleeves on the socket Termini (S1-S2 for the 4-Channel and S1-S6 for the 12-Channel).




## FINAL ASSEMBLY

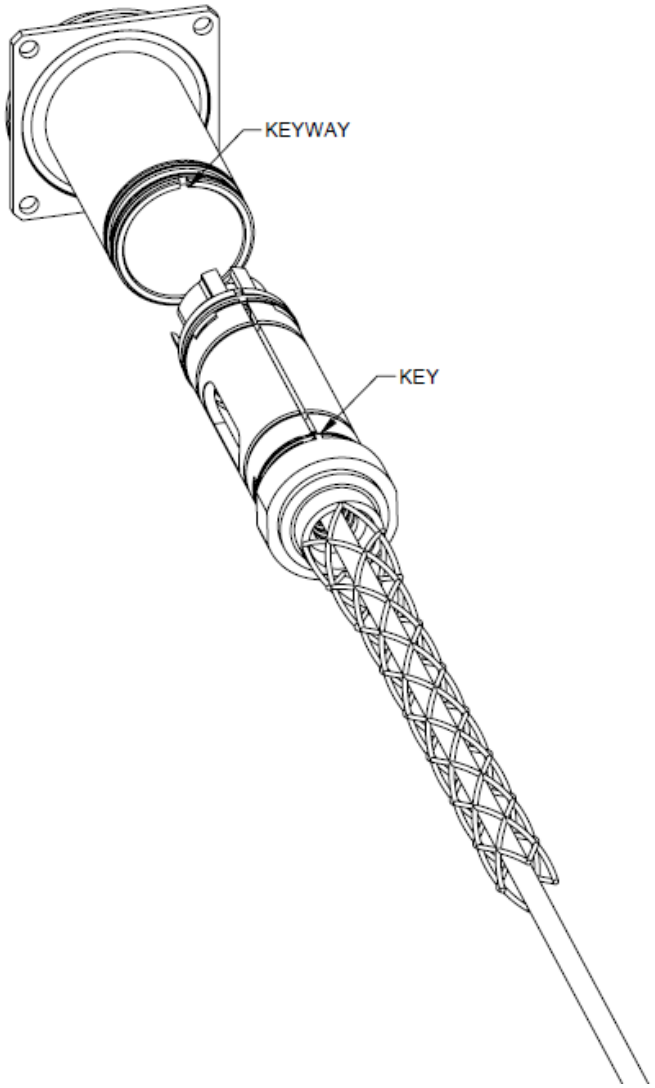
Slide Alignment Sleeves onto the socket Fiber Optic Termini. Slide the Fiber Optic Termini mounted in the Termini Retainer Plate(s) into the Insert cavities ensuring that the Sockets with Alignment Sleeves are in the “S” labeled cavities.

Attach the two Spacer Shells together ensuring that the slots on the Spacer are aligned with the Keys on the Strain Relief and Insert as shown. Roll the O-Rings over the Insert Cap and insert into the grooves on the Spacer Shells. This will hold the assembly together. Perform a final visual check by looking through the holes of the Spacer to ensure that the fiber is not twisted or kinked.



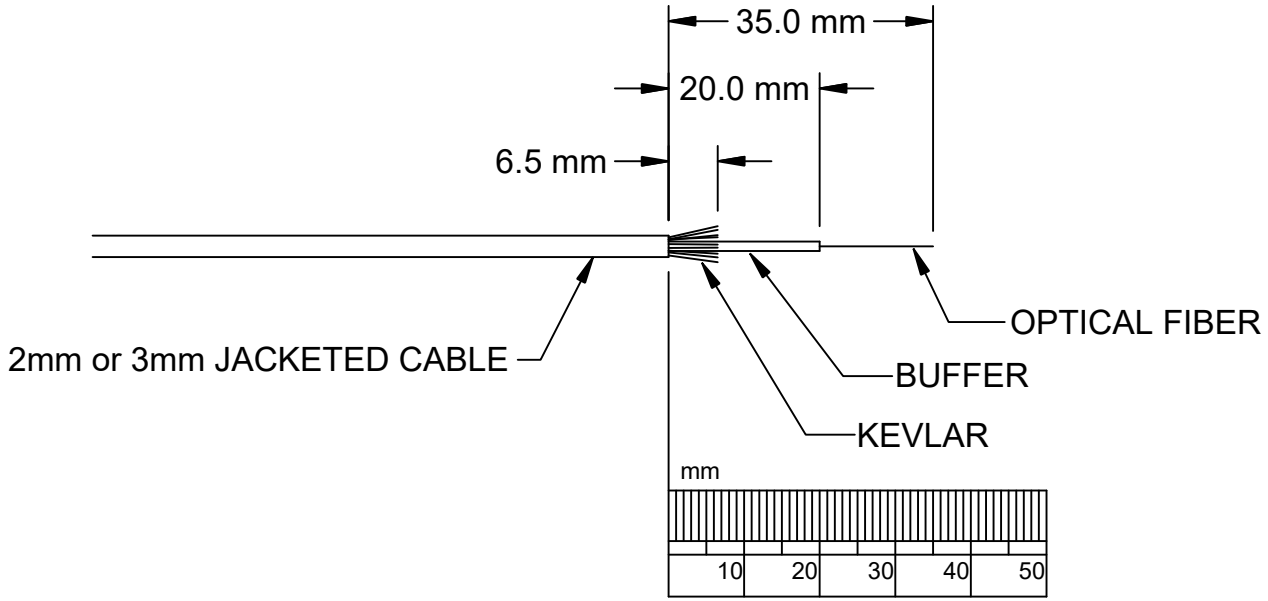
Insert the QFoca Subassembly into the Receptacle Body ensuring that the key inside of the Receptacle Body is aligned with the slot in the Insert. When properly assembled, the Insert cap should protrude ¼ inch past the front of the Receptacle Body and the key on the Strain Relief should be fully seated in the slot on the Backshell.

Slide the Bend Limiter & Washer or Cable Seal / 2x O-Rings & Wire Mesh Grip forward. Slide the Back Nut forward to the back of the Strain Relief & QFoca Subassembly and use Dial Torque-Measuring Wrench PT-506 with the Crow's Foot Wrench Adjustable PT-536 or PT-545 to torque to the values in the above Torque Table.
.
Tighten the Set Screws in the Back Nut using 0.05" Hex Driver PT-500 and use Torque-Measuring Screwdriver PT-590 with Hex Bit 0.05" PT-599 to torque to the values in the above Torque Table.



# QFOCA RECEPTACLE CONNECTOR

## WITH OUT BACKSHELL




## CABLE PREPARATION

QPC Fiber Optic, LLC

ENGINEERED FIBER OPTIC SOLUTIONS



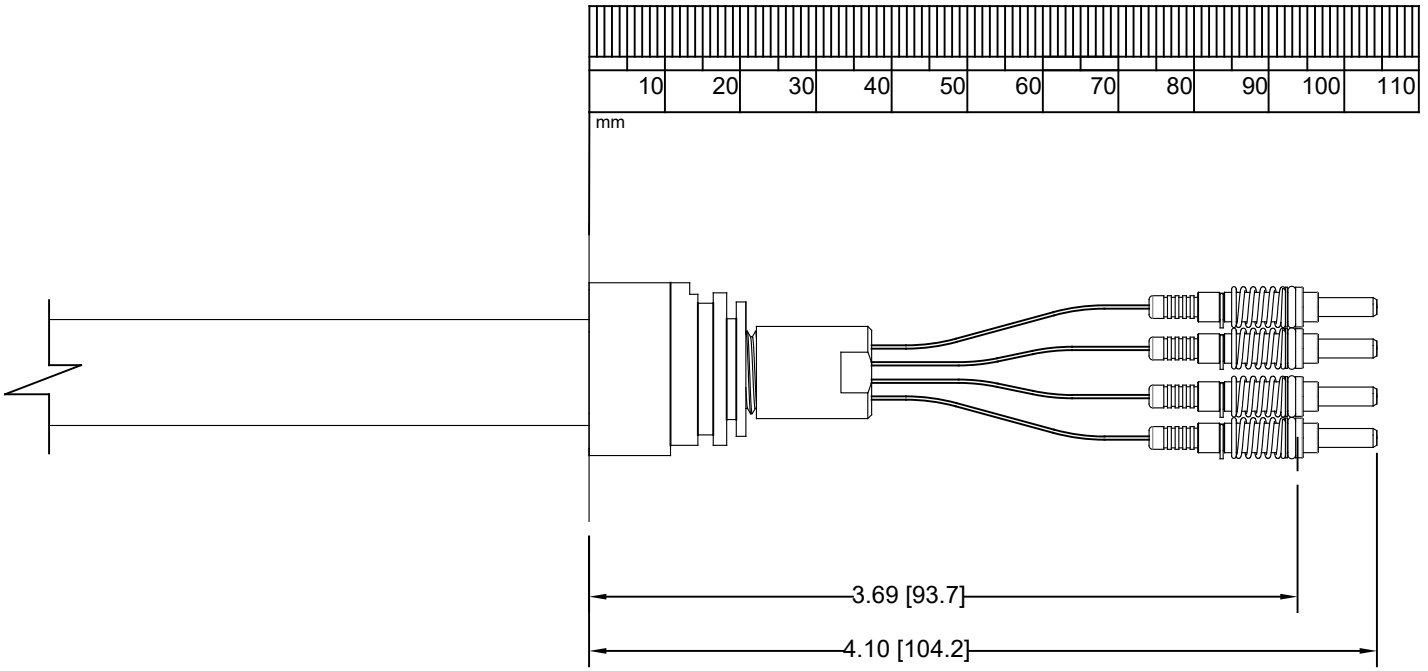
| DOC. NUMBER | REV. |
|---|---|
| D50028 | 1 |

| DRAWN | CHECKED | |
|---|---|---|
| CWN | TS | DIMENSIONS ARE IN MM. |
| DATE 5/15/08 | DATE 5/16/08 | SHEET 1 OF 1 |

| REV. | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| REVISIONS | | | |

# QFOCA 4 CHANNEL

## PLUG and RECEPTACLE




## CABLE PREPARATION

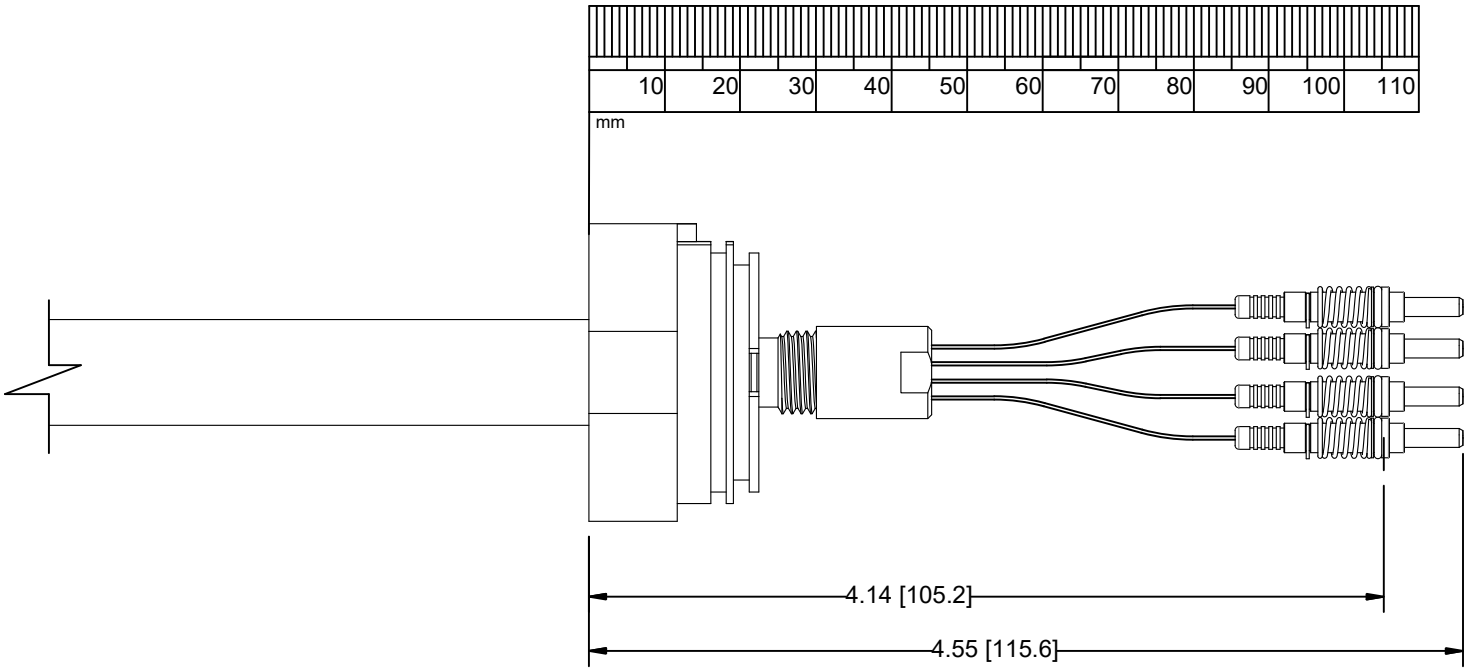


| DOC. NUMBER | | REV. |
|---|---|---|
| D50020 | | 6 |
| DRAWN: JC | CHECKED: | DIMENSIONS ARE IN MM. |
| DATE: 7/25/2014 | DATE: | SHEET 1 OF 1 |

| REV. | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| REVISIONS | | | |

# QFOCA 12 CHANNEL

## PLUG and RECEPTACLE




## CABLE PREPARATION

QPC Fiber Optic, LLC
ENGINEERED FIBER OPTIC SOLUTIONS



| DOC. NUMBER | REV. |
|---|---|
| D50070 | 2 |

| DRAWN | CHECKED | |
|---|---|---|
| CWN | | DIMENSIONS ARE IN MM. |
| DATE 1/20/17 | DATE | SHEET 1 OF 1 |

| REV. | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| REVISIONS | | | |