

# 3M™ Shearbolt Connectors QCI Series

## Instructions

### ⚠ CAUTION

Working around energized systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling electrical equipment. De-energize and ground all electrical systems before installing product.

| Connector     | Outside Diameter | Typical Length w/Centering Rings |
|---------------|------------------|----------------------------------|
| QCI 2-250     | 1.10" (28 mm)    | 4.41" (112 mm)                   |
| QCI 1/0-350   | 1.30" (33 mm)    | 5.12" (130 mm)                   |
| QCI 4/0-600   | 1.50" (38 mm)    | 5.75" (146 mm)                   |
| QCI 350-750   | 1.65" (42 mm)    | 6.93" (176 mm)                   |
| QCI 500-1000  | 2.05" (52 mm)    | 7.83" (199 mm)                   |
| QCI 1000-1250 | 2.10" (53 mm)    | 8.25" (210 mm)*                  |

\* No centering rings used with this connector.

August 2012  
78-8127-9877-1-D



### Kit Contents

- 1 3M™ Shearbolt Connectors QCI (includes centering rings as appropriate)
- 1 3M™ Foil Tape Connector Wrap 1115B
- 1 Instruction Sheet

### 1.0 Notes

- 1.1 Unless the 3M™ Shearbolt Connector is supplied with a cable accessory kit, always check with the cable accessory manufacturer to make certain that the shearbolt connector will work properly with the accessory before installing the connector.
- 1.2 Do not remove bolts from the connector.
- 1.3 These shearbolt connectors can be used with both copper and aluminum conductors.
- 1.4 These shearbolt connectors can be used to join conductors of equal size or different sizes, provided that both conductors are within the range of the connector.
- 1.5 The connector is pre-greased. Do not remove the connector grease.
- 1.6 These connectors are designed to be used in 3M™ Cold Shrink QS-III Splices. Check with other manufacturers before using with their splice kits.

### 2.0 Insulation Cutback Dimensions

- 2.1 Prepare the cable cutbacks per the accessory manufacturers instructions. The ends of the conductors must be square cut. Using your QCI connector number, remove the cable insulation length shown in the following table.

| Connector     | Insulation Cutback |
|---------------|--------------------|
| QCI 2-250     | 2.00" (51 mm)      |
| QCI 1/0-350   | 2.75" (70 mm)      |
| QCI 4/0-600   | 3.0" (76 mm)       |
| QCI 350-750   | 3.50" (89 mm)      |
| QCI 500-1000  | 3.75" (95 mm)      |
| QCI 1000-1250 | 4.125" (105 mm)    |

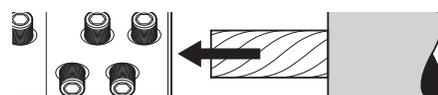
- 2.2 Use the following table and your conductor size to determine the appropriate connector centering ring. Install the centering ring, unless conductor size indicates "No ring," by screwing the ring clockwise into the connector end. For size transitions, use the ring appropriate to each conductor size.

| Connector     | Conductor Size (AWG, kcmil) | Connector Centering Ring Color |
|---------------|-----------------------------|--------------------------------|
| QCI 2-250     | 2-1/0                       | Grey                           |
|               | 2/0-3/0                     | Black                          |
|               | 4/0-250                     | No ring                        |
| QCI 1/0-350   | 1/0-2/0                     | Blue                           |
|               | 3/0-4/0                     | Black                          |
|               | 250                         | White                          |
|               | 350                         | No ring                        |
| QCI 4/0-600   | 4/0                         | Blue                           |
|               | 250                         | Black                          |
|               | 350                         | White                          |
|               | 500-600                     | No ring                        |
| QCI 350-750   | 350                         | White                          |
|               | 500-750                     | No ring                        |
| QCI 500-1000  | 500                         | White                          |
|               | 750-1000                    | No ring                        |
| QCI 1000-1250 | 1000-1250                   | No ring                        |

\* If conductor does not fit in the centering ring, use the next larger size ring or no ring if there's no larger ring.

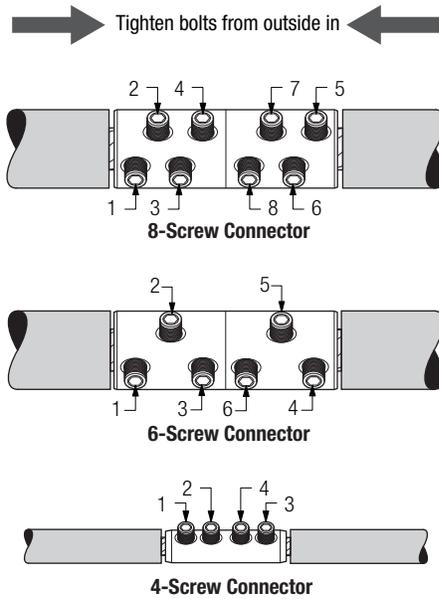
### 3.0 Installation Steps

- 3.1 Aluminum conductors must be wire brushed shortly before installing the connector. The conductor must be clean and dry before installing the connector.
- 3.2 Check that screws are not protruding into the connector bore. Unscrew the bolts, as needed, to clear the bore. Do not remove the bolts from the connector. Feed the stripped cable ends into the connector until conductor contacts the connector center stop. Hand tighten all of the bolts to the conductor.

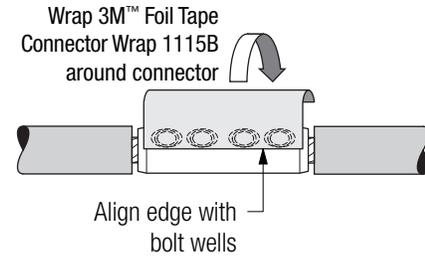


3.3 Shear the bolts, by using the correct hex key/socket and following the sequence appropriate for the number of connector bolts (see illustration below). The installer can use a ratchet with the correct hex key/socket and/or an electric impact wrench to tighten and shear the bolts. If using an electric impact wrench, the wrench must be 18 volts or greater and have a torque of 160 ft.-lbs. (217 N•m) or greater.

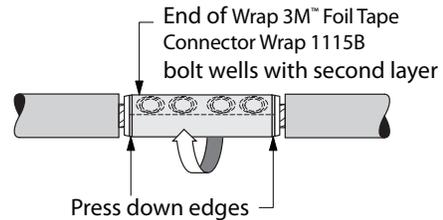
| 3M™ Shearbolt Connector | Hex Key/Socket Size |
|-------------------------|---------------------|
| QCI 2-250               | 5 mm                |
| QCI 1/0-350             | 6 mm                |
| QCI 4/0-600             | 8 mm                |
| QCI 350-750             | 8 mm                |
| QCI 500-1000            | 8 mm                |
| QCI 1000-1250           | 8 mm                |



- 3.4 Discard the sheared bolt tops. They can be recycled.
- 3.5 Clean the surface of the connector to remove any debris or grease.
- 3.6 Apply the included 3M™ Foil Tape Connector Wrap 1115B. Start by checking the foil tape width, before removing the liner. The tape must extend from connector taper to connector taper (it may extend down the tapers a small amount). The longer length will wrap around the connector.
- 3.7 Remove the liner from the foil tape. Align the foil edge with the recessed bolt wells in a direction that covers the sheared bolts.



- 3.8 Once foil tape is properly aligned, continue wrapping the foil tape around the connector until it covers the bolt wells with a second layer. Press down the ends of the tape at the final edge and near the connector tapers.



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78-8127-9877-1-D