Installation Instructions 655/675DLR and K655/K675DLR Direct Test Elbow Connectors

CONTENTS: Elbow, Cable Adapter, Compression Lug, Insulating Plug, Lubricant, Stud Prepack, Installation Instructions, Crimp chart.

The 655/675DLR and K655/K675DLR connectors are designed to: 1) provide fully shielded, fully submersible deadfront cable connections to high voltage apparatus, 2) provide a means to splice and tap 600 ampere (655/K655DLR) or 900 ampere (675/K675DLR) systems, and 3) provide a port for direct access to the cable/elbow conductor system to allow a direct voltage measurement with appropriate direct voltage test port adapter and meter. The connectors are rated for use on 15kV and 25kV class systems, respectively.

DANGER

All apparatus must be de-energized during installation or removal of part(s). For loadbreak products follow operating instructions. All deadbreak connectors must be de-energized before operating. All 200A deadbreak connectors must be mechanically secured with bails when connected.

All apparatus must be installed and operated in accordance with individual user, local, and national work rules. These instructions do not attempt to provide for every possible contingency.

Do not touch or move energized products.

Excess distortion of the assembled product may result in its failure.

Inspect parts for damage, rating and compatibility with mating parts.

This product should be installed only by competent personnel trained in good safety practices involving high voltage electrical equipment. These instructions are not intended as a substitute for adequate training or experience in such safety practices.

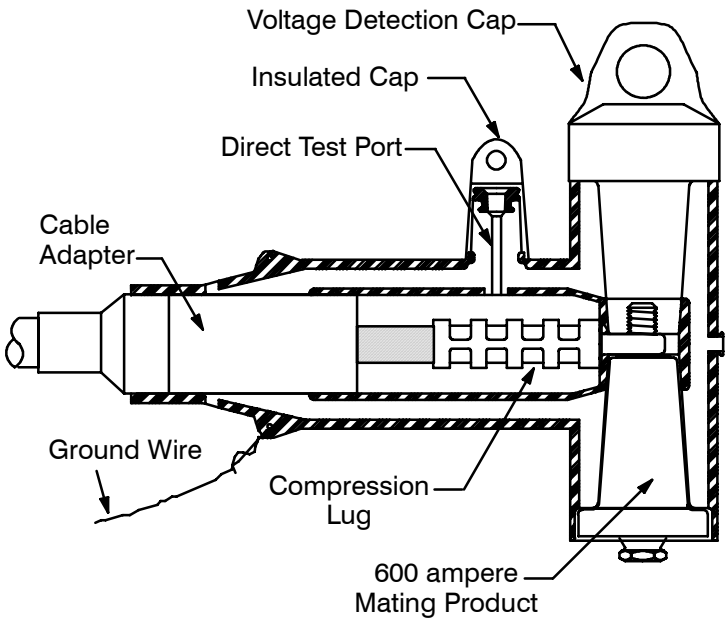
Failure to follow these instructions will result in damage to the product and serious or fatal injury.

If this product is supplied with a protective shipping cover(s), remove this shipping cover(s) and replace with the appropriate HV insulated cap(s) or connector(s) before submerging or energizing the circuit.

FOR MORE INFORMATION ON PARTS, INSTALLATION RATINGS AND COMPATIBILITY, CALL THE NEAREST ELASTIMOLD OFFICE.

IMPORTANT

1. Check contents of package to ensure they are complete and undamaged.
2. Check all components to ensure proper fit with cable and/or mating products.
3. Read entire installation instructions before starting.
4. Have all required tools at hand and maintain cleanliness throughout the procedure.



CAUTION

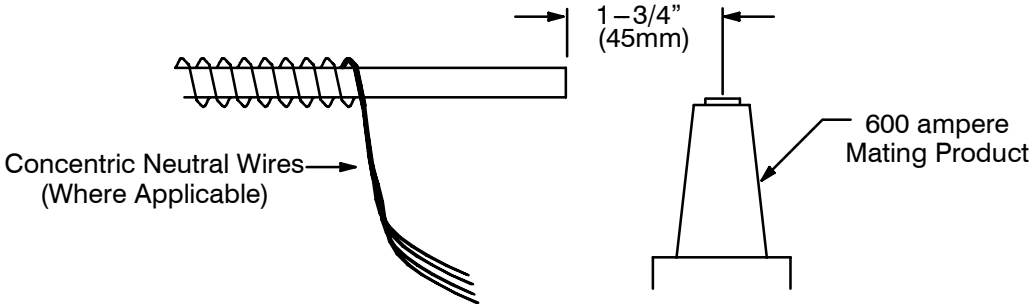
The elbow direct test port provides direct access to the cable conductor. Contact with the uncovered port or insertion of objects other than the insulated cap, fluid injection cap or direct voltage test port adapter can cause serious or fatal injury. Removal of the insulated cap and installation of the fluid injection cap or direct voltage test port adapter must be done with a hotstick tool following instructions packaged with the fluid injection cap and direct voltage test port adapter.

Thomas&Betts
8155 T&B Boulevard, Memphis, Tennessee 38125
(800) 888-0211 Fax: (800) 888-0690

GENERAL INSTRUCTIONS

STEP 1

Position the cable so it is located in the final assembled position with enough slack to provide adequate clearance for removing the elbows. For concentric neutral cable, unwind the concentric neutral wires. Cut the cable 1-3/4" (45mm) from center line of the mating product.



STEP 2

Clean the outer surface of the cable a distance of 24" (610mm) or up to the bent back concentric neutral wires.

STEP 3

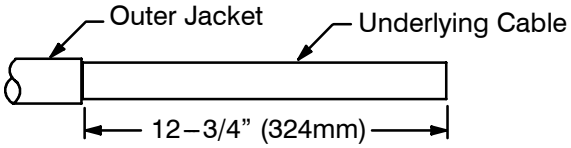
If a 20MA or 21MA grounding device or 600ECS Jacket Cable Seal is being used, refer to the Installation Instructions supplied with those products for removal of cable outer jacket, shield connection and grounding. If these products are not being used, follow these Instructions for the removal of cable outer jacket shield connections and grounding.

STEP 4 CABLE PREPARATION

NOTE: Follow the STEPS listed that apply to the cable being prepared.

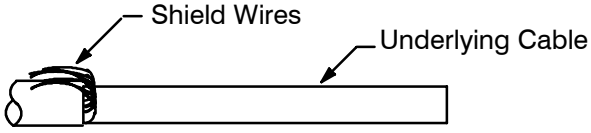
A. OUTER JACKET

Remove outer jacket to dimension shown.



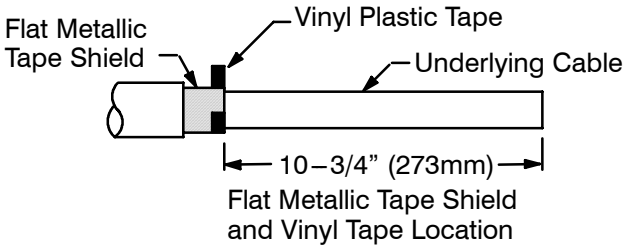
B. SHIELD WIRES

Fold back shield wires.



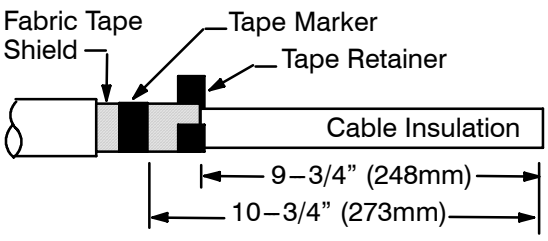
C. FLAT METALLIC TAPE SHIELD

Remove flat metallic tape shield and secure with vinyl plastic tape to dimension shown.



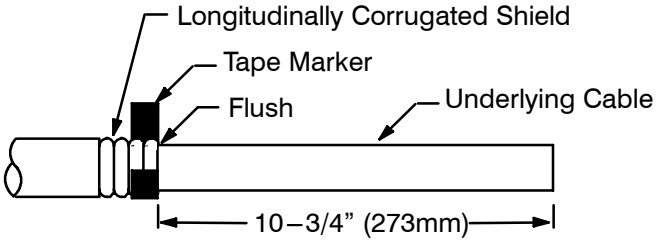
D. FABRIC TAPE SHIELD

Remove fabric tape shield and install tape retainer and tape marker to dimensions shown.



E. LONGITUDINALLY CORRUGATED SHIELD

Remove longitudinally corrugated shield and install tape marker to dimension shown.



F. UNISHIELD* CABLE

If using UNISHIELD CABLE a 10TL cable shield adapter is required. Refer to the Installation Instructions supplied with the 10TL cable shield adapter for cable preparation and grounding.

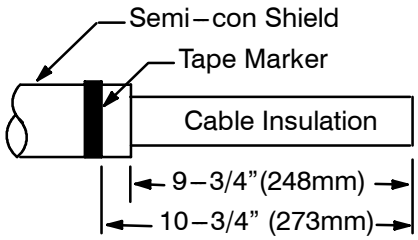
**Unishield is a registered trademark of ANACONDA WIRE and CABLE COMPANY.*

G. LEAD SHEATH CABLE

If using lead sheath cable a 10TL cable shield adapter is required. Refer to the Installation Instructions supplied with the 10TL cable shield adapter for removal of outer jacket, lead sheath and grounding.

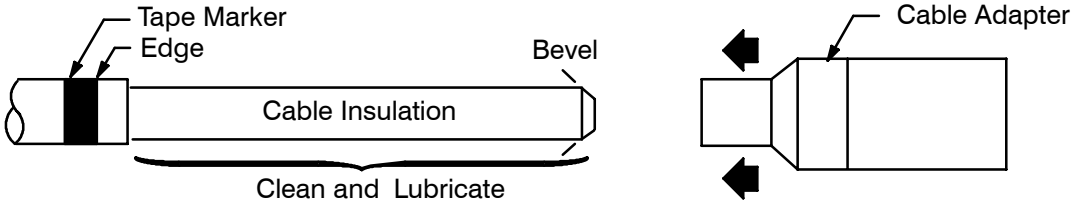
H. SEMI-CON SHIELD

Remove semi-con shield and install tape marker to dimensions shown. Do not cut or nick the cable insulation.



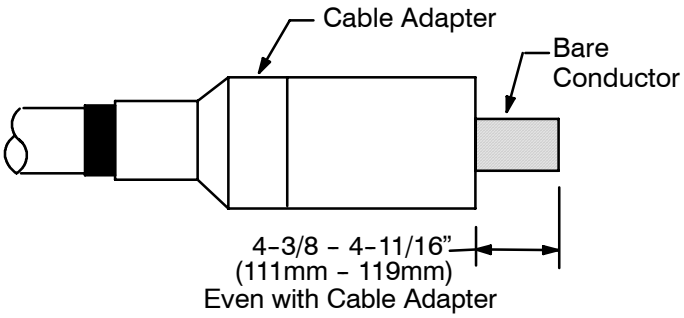
STEP 5 CABLE ADAPTER

Bevel the end of the cable insulation at a 45° angle, approximately 1/4" (6mm) back. Thoroughly clean, then lubricate cable insulation always working toward semi-con shield. Install cable adapter, small end first, until it is flush with the edge of the tape marker.



STEP 6 CONDUCTOR

Remove the protruding cable insulation by cutting it even with the end of the cable adapter. Do not cut or nick the cable adapter or the conductor. The length of exposed conductor should be between 4-3/8" (111mm) to 4-11/16" (119mm). Otherwise redo assembly.

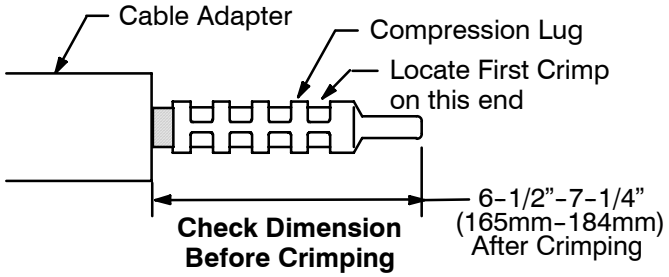


STEP 7 COMPRESSION LUG

Copper Conductor: Fully insert conductor into compression lug.

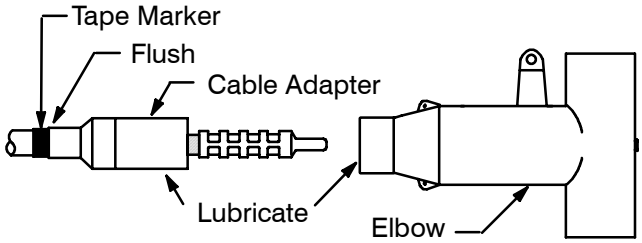
Aluminum Conductor: Wire brush conductor and immediately fully insert conductor into compression lug.

Measure the "Check Dimension" before crimping. This dimension should be less than 6-1/2" (165mm) otherwise redo assembly. Crimp the compression lug following the crimping instructions supplied with the lug. Wipe all excess inhibitor from compression lug and cable adapter surface after crimping. The distance from the end of the compression lug to the cable adapter after crimping should be between 6-1/2" to 7-1/4" (165mm - 184mm). Otherwise redo assembly.



STEP 8 ELBOW

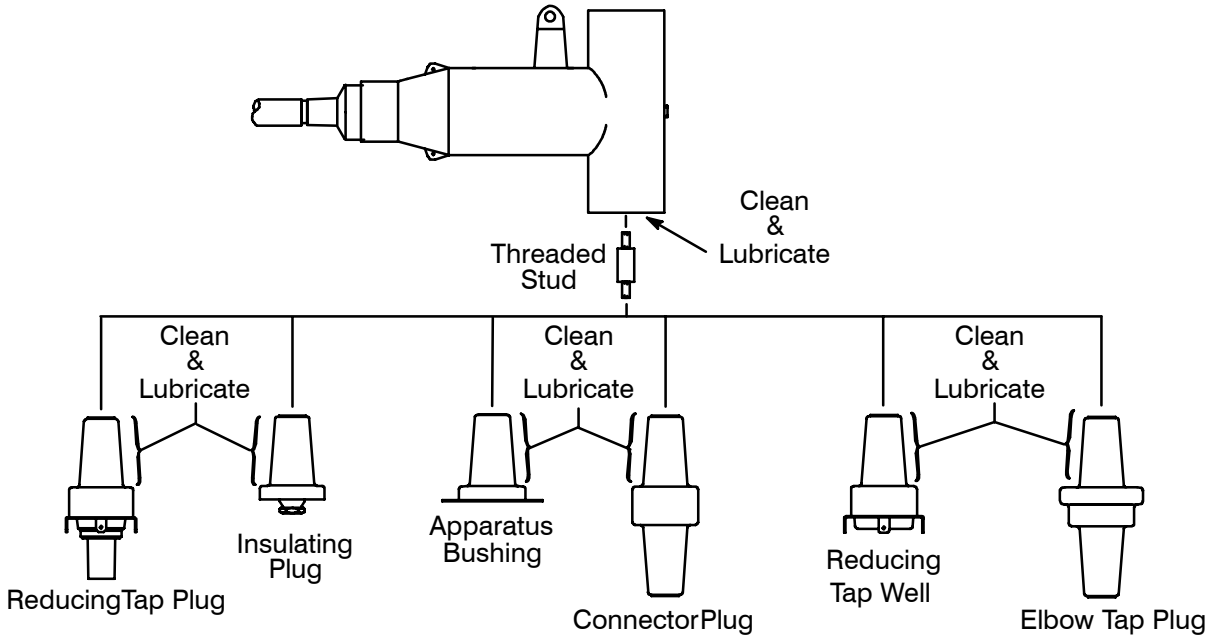
Lubricate cable adapter and inside of elbow cable entrance. Install elbow onto cable adapter until the elbow can not advance further. Make sure cable adapter is still flush with tape marker. If not, reposition cable adapter. Remove tape marker.



STEP 9 MATING PRODUCTS

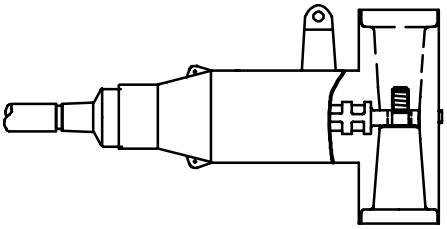
DO NOT CONNECT OR DISCONNECT MATING PRODUCTS WHILE ENERGIZED. DO NOT ENERGIZE WHILE DISCONNECTED.

Remove protective caps from the elbow and the mating part. Hand tighten the threaded stud supplied with the elbow into mating part, if the mating part is not equipped with a stud. Clean and lubricate both the elbow and the mating part with lubricant supplied. (Keep surfaces of elbow and mating part clean.)



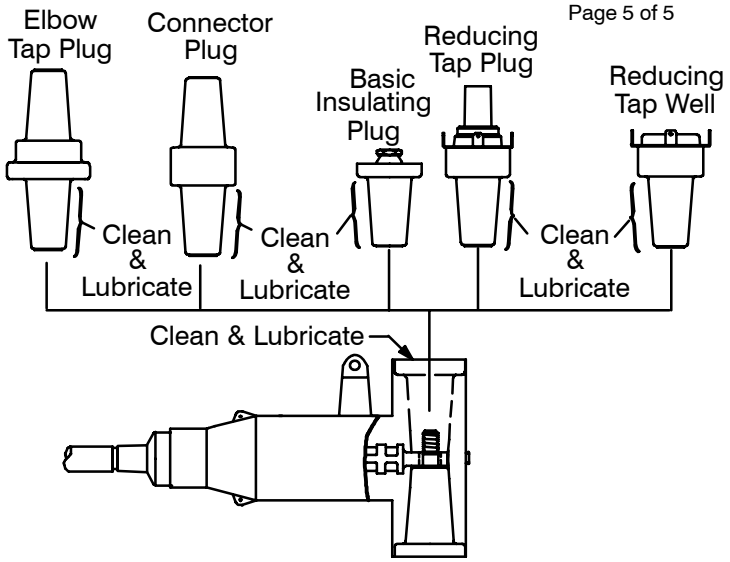
STEP 10

Push elbow onto mating part, lining up the hole in the compression lug with the stud on the mating part.



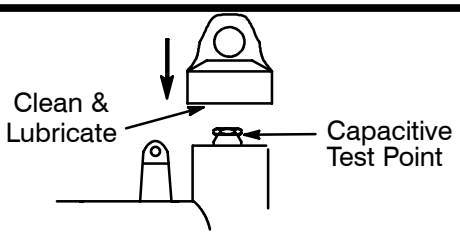
STEP 11

Clean and lubricate the mating part for the opposite end of the elbow. Insert the mating part into the elbow. Engage the threads and hand tighten. Torque mating part according to the instructions supplied with the mating part.



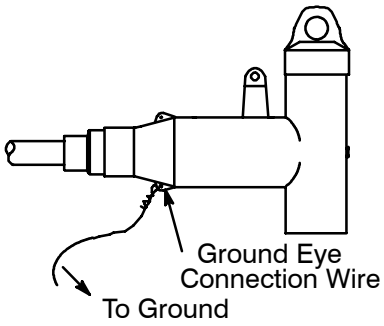
STEP 12

If an insulating plug is used as a mating part, clean and lubricate inner surface of the voltage detection cap and place on elbow. Push down hard until cap snaps into place. Follow voltage test directions below.



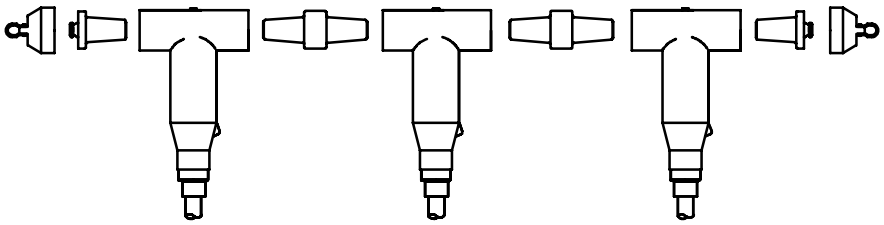
STEP 13

1. Insert one end of a piece of wire with ampacity at least equivalent to No. 14 AWG copper through the grounding eye and twist to make a small loop. Do not damage the eye. Connect wire to ground using a suitable connector. The shield of the cable must be grounded. Ground according to the instructions supplied with the grounding device. If no grounding device is used, the shield must be grounded through an alternate method.
   It is also recommended that the jacket of the cable be waterproofed at this point to prevent moisture from entering the cable.



STEP 14

CAUTION: When constructing 600amp L-Kits be sure to tighten each component to specified torque per instructions provided.



DIRECT VOLTAGE TEST

DANGER: Insertion of any object, other than the appropriate direct voltage test port adapter and meter, into the direct test port or in close proximity to it can result in electric shock which will cause serious or fatal injury.

The direct test port elbow provides access to the cable conductor for the purpose of a direct voltage test with the following direct voltage test port adapter and meters.

Direct Voltage Test Port Adapter	Voltage Meter / Indicator
200TC–1	H/D Electric Co. Mark I Three Mark IX Voltmeter/Phaser
200TC–2	Ross Meter Hi–ZVM™ 25SE–A/VM25B
200TC–4	CHANCE® Auto–Ranging Voltage Indicator, Catalog No. C403–3374

It is important to read and understand the separate operating instructions for the Direct Voltage Test Port Adapter and the Voltage Meter/Indicator