
35 kV CLASS ELBOW (LARGE INTERFACE) INSTALLATION & OPERATING INSTRUCTIONS

DESCRIPTION

The CHARDON Loadbreak Elbow Connector is a fully-shielded and insulated plug-in termination for connecting underground cable to transformers, switching cabinets and junctions equipped with loadbreak bushings. The elbow connector and bushing insert comprise the essential components of all loadbreak connections. The elbow interface of the bushing insert meets the requirements of ANSI/IEEE 386.



ELBOW KIT CONTENT:

- 1 - Standard Elbow Body
- 1 - Compression Connector
- 1 - Loadbreak Probe
- 1 - Wrench (Probe Installation Tool)
- 1 - Lubricant
- 1 - Paper towel
- 1 - Installation Instructions



CAUTION: All associated apparatus must be de-energized during installation and/or maintenance.



DANGER: Do not touch or move energized product by hand. Failure to follow this instruction may result in serious or fatal injury, as well as damage to the product.

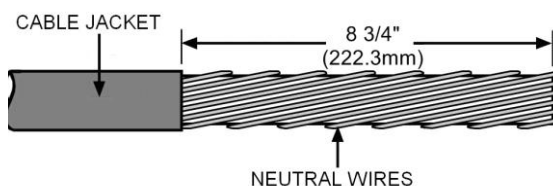
SAFETY INFORMATION

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians, who are familiar with this equipment should install, operate and service it.

INSTALLATION PROCEDURE

STEP 1

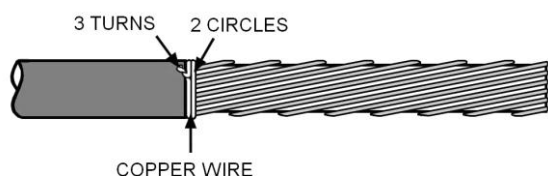
Measure 8 3/4" from the top of the cable and remove the outer jacket (if jacketed) to expose the neutral wires. Ensure there is enough length of neutral wires left for grounding after installation.



NOTE :

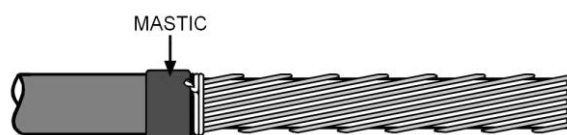
If using the CHARDON SADP grounding device, refer to steps 2 to 4 of the corresponding instruction sheet.

STEP 2



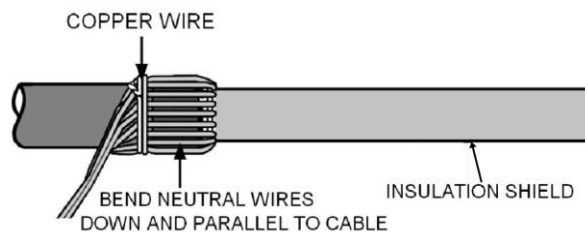
Secure the exposed neutral wires to the cable's insulation shield using copper wire, as illustrated.

STEP 3



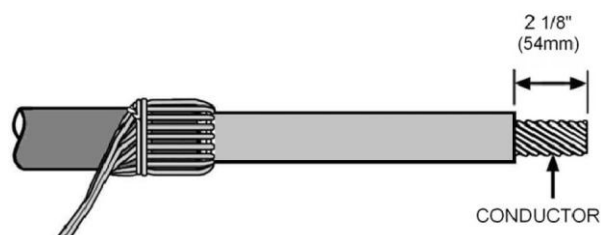
Apply mastic around the end of the remaining cable jacket to seal the edge.

STEP 4



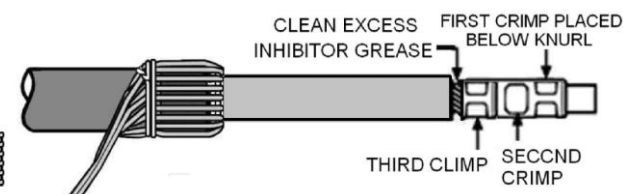
- Unwind the neutral wires, then bend them down so they run parallel to the cable.
- Use copper wire to firmly secure them against the outer jacket, ensuring a stable and clean arrangement.

STEP 5



Measure 2 1/8" from the top of the cable and carefully remove the insulation and conductor shield to expose the bare conductor. Avoid nicking the conductor during this step.

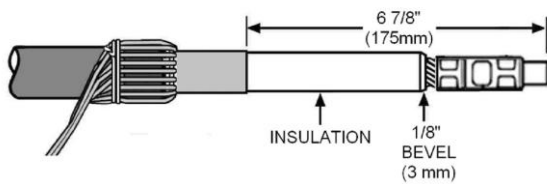
STEP 6



- Clean the bare conductor thoroughly with a wire brush.
- Slide the bi-metal connector onto the conductor, making sure the threaded hole is facing the bushing.
- Refer to the crimp table for the correct tools and dies.
- Apply multiple crimps, rotating the tool slightly between each one to prevent deformation.

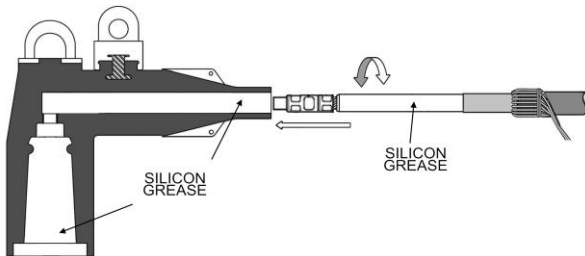
- After crimping, re-align the connector with the cable and wipe away any excess grease toward the threaded end.

STEP 7



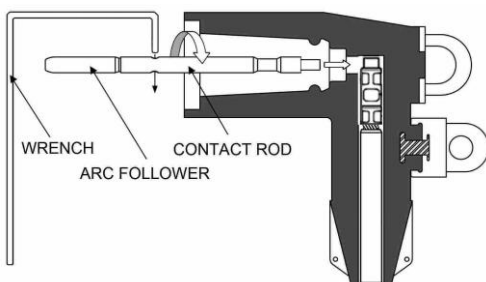
From the top of the connector, measure **6 7/8"** and remove the insulation shield. Be careful not to damage the underlying insulation. Add a **maximum 1/8"** bevel at the edge to ease insertion of the elbow.

STEP 8



Apply a thin, even layer of silicone grease over the prepared insulation. Slide the elbow onto the cable using a steady twisting motion. Once seated, the elbow should align properly with the connector.

STEP 9



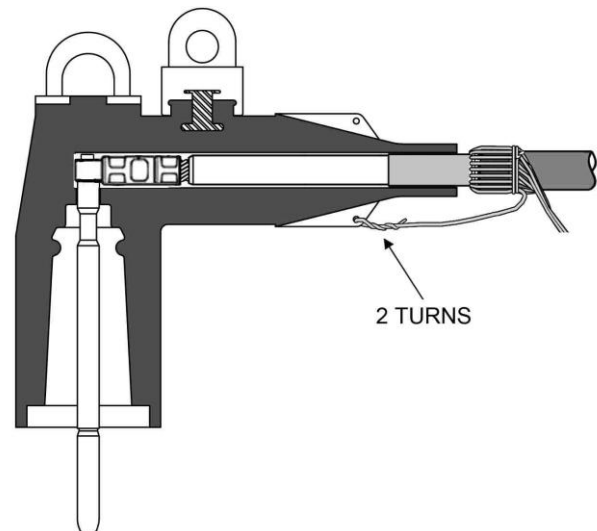
Rotate the elbow until the contact rod and arc follower align with the threaded hole of the connector. Thread the contact rod by hand to avoid cross-threading. Then, using the supplied wrench, tighten the rod until the wrench permanently deforms — this ensures proper torque.

Discard the wrench after use. If using alternate tools, apply at least **110 inch-pounds** of torque. Keep the contact rod and arc follower clean at

Part No:011104P010

all times.

STEP 10



Use one or more neutral wires to connect the concentric neutral to the elbow's grounding tab near the cable entry. Ensure a tight, secure connection to guarantee effective grounding of the elbow shield.

OPERATING INSTRUCTIONS

Never connect two different phases of a multi-phase system. Before completing a loop, confirm both ends are on the **same phase** to prevent fault conditions.

Loadmake Operation

- Ensure the work area is free of any obstructions or contaminants that could hinder proper operation.
- Attach a suitable live-line tool securely to the elbow's pulling eye.
- Align the elbow with the bushing and insert the white arc follower of the probe approximately **2½ inches** into the bushing, until slight resistance is felt.
- Immediately thrust the elbow straight onto the bushing with a quick, firm motion. This action must be forceful enough to engage and latch the elbow securely.
- Push once more on the live-line tool to confirm full seating, then apply a gentle pull to verify the elbow is properly latched.

Fault Close :

- Do **not** attempt to operate on a known faulted circuit.
- If a fault occurs during operation, **both the elbow connector and the bushing must be replaced** before the circuit is returned to service.

Loadbreak Operation

- Attach a suitable live-line tool securely to the elbow's pulling eye.
- Without pulling, rotate the elbow slightly clockwise to break the surface friction between the connector and bushing.
- With a swift, straight motion, withdraw the elbow from the bushing. Avoid moving the elbow near any grounded surfaces.
- Immediately place the elbow on a compatible accessory (such as a parking stand or portable feed-thru), following the accessory's instructions.
- On any exposed energized bushing, use a live-line tool to install an insulated protective cap with a drain wire connected to system ground.

Inasmuch as CHARDON GROUP, Inc. has no control over the use which others may put the material, it does not guarantee that the same results as those described herein will be obtained. Each user of the material should make his own tests to determine the material's suitability for his own particular use. Statements concerning possible uses of the materials described herein are not to be construed as constituting a license under any CHARDON GROUP, inc. patent covering such use or as recommendations for use of such materials in the infringement of any patent.

FOR FURTHER INFORMATION WRITE TO

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TABLE
Crimp Chart

CONNECTOR	CONDUCTOR SIZE	BURNDY			Thomas and Betts		KEARNEY		ACA Conductor Accessories		Anderson Tool	Edison Electric Institute REDERENCE
		TOOL	DIE		TOOL	DIE	TOOL	DIE	TOOL	DIE		
5/8" DIAMETER	NO. 4 THRU 2/0 STRANDED	Y34	A243 (2)	A25AR (2)	UT-3	5/8" (4)	O	5/8"NOSE (4)	12 A	B24 EA (2)	VC-5 VC-6	8A
		Y35 OR Y39	U243 (2)	U25ART (2)	UT-5	TV (4)		9/16" (3)				
			UBG (2)	U687 (2)			WH2,WH3,BH4, WH4,PH2,PH13	9/16" (2)				
		MD6	W243 (2)	BG(3) NOSE	UT-15	54H (2)		572 (2)				
			WBG (2)	W687 (2)								
3/4" DIAMETER	3/0 – 4/0 STRANDED	Y34	U247 (2)	A27AR (2)	UT-5	TV (4)	O	737 (3)	12A	B39 EA (2)	VC-5 VC-6	10A
		Y35 OR Y39	U247 (2)	U27ART (1)				747 (2)				
			U467 (2)		UT-15	66 (2)	WH2,WH3,BH4, WH4,PH2,PH13	737 (3)				
		MD6	W247 (2)					747 (2)				

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency, to be met in connection with installation, operation or maintenance. Should further information be desired, or should particular problems arise which are not covered sufficiently, please contact the Chardon Group.