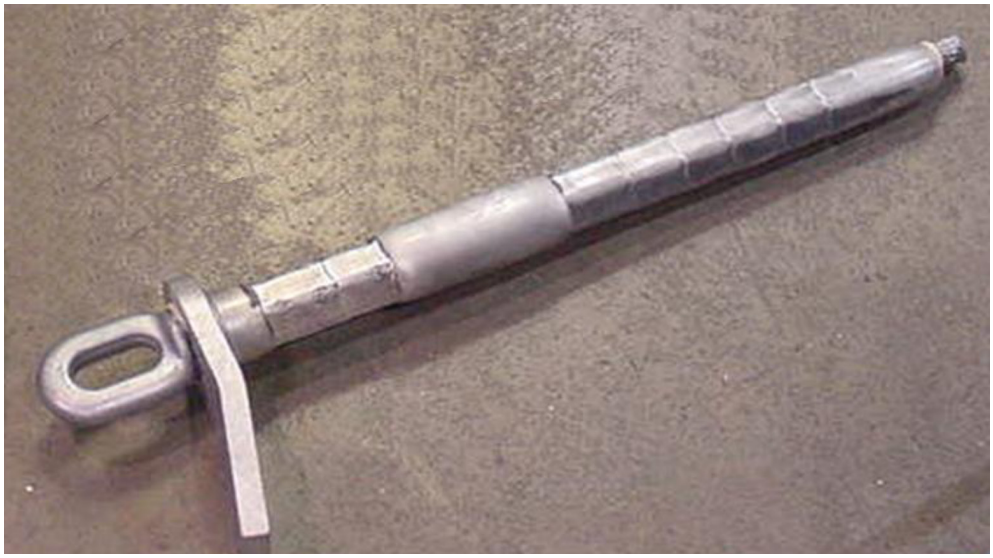
Installation Instructions

for AFL Collet Compression Dead Ends

Installed on CTC Composite Core Conductor



NOTE:

Preparation

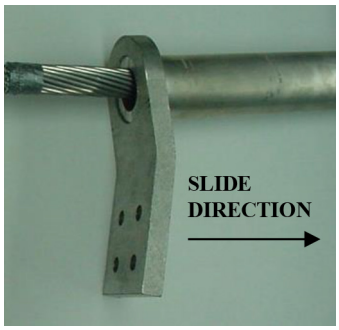
Prior to making connections, the conductor and accessory bore must be clean. Clean conductor strands thoroughly with wire brush or abrasive cloth. **(Wire brush "new" conductor also.)** Check accessory bore for foreign particles, removing if present.

Serve the conductor, prior to cutting, with tape to help maintain the round contour making it easier to slide the end through the aluminum dead end.

Straighten several feet of the conductor removing the set caused by the reel.

Assembly

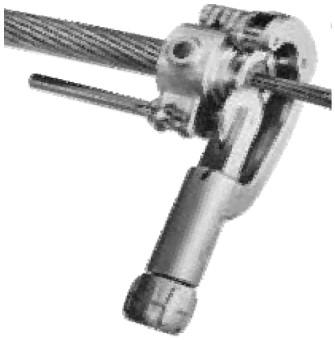
Dead End Assemblies consist of an Aluminum Body, Steel Eye Forging, tapered collet and collet housing.



Slide aluminum dead end body (barrel first) over the conductor until sufficient working length protrudes from tongue end.

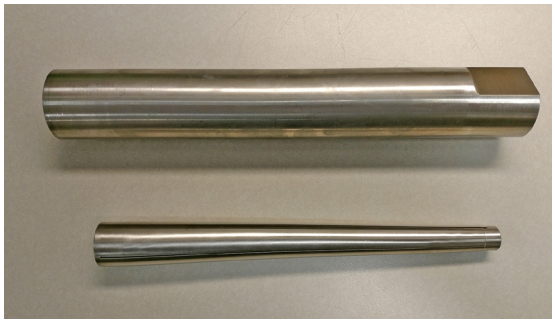
Suggested method of cutting back aluminum strands

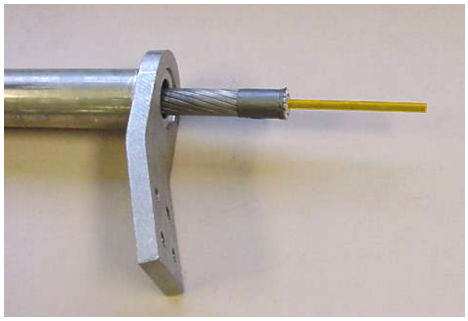
1. Tape location where "cutting back" is needed.
2. Position RIDGID cable trimmer around conductor at the tape location.
3. Cut outer aluminum strands by rotating tool until layer becomes loose.
4. Remove cut outer aluminum layer strand.
5. Bend inner layer wires back and forth until they fracture.
6. Remove the broken wires.



Collet assembly installation onto core

1. Remove prescribed amount of aluminum stranding from core. See Table 1 on the following page for amount of core to expose. Ensure the core is not damaged when cutting the inner strands. This can be achieved by lightly scoring the strands then bending the inner strands back and forth to remove.
2. Wipe the core clean to remove any oils and/or debris. Lightly remove shine from the core with sanding medium.
3. Clean and remove any dirt or particles from the exposed core with a clean cloth.
4. Clean inside sleeve of any dirt or oil.
5. Slide the collet housing, wrench flats toward the aluminum strands onto the core, and butt it against the aluminum strands.
6. Install the collet, narrow end toward the housing, onto the core leaving ¼ inch (6 millimeters) of the core exposed from the wide end of the collet.
7. Install the eyebolt or clevis and hand tighten before fully tightening with a wrench to 85 ft lbs (115 Newton meters) of torque.





Collet Housing (top) and Collet (bottom)

Suggested arrangement of compressor and accessory during field Installation of Dead End

The photo to the left illustrates a setup, which works well to ensure a straight compression and easy maneuverability of the compressor. The conductor has been "tied off" to the tower with a sling and chain wench. The compressor is then attached to the sling by a large shackle (the compressor is suspended upside down). The accessory and cable are tied to the sling ensuring all parts are straight and inline. The compressor can easily be slid along to each successive compression.

Remove tape from ends of aluminum strands and slide aluminum dead end body over steel forging until tongue butts solidly against felt washer and shoulder of steel forging. Align eye with tongue of dead end to ensure proper positioning when dead end is fastened to insulator hardware.

Table 1—Length of Exposed Core for Dead Ends and Splices

ACCC® CONDUCTOR CODE NAME	KCMIL	MM²	EXPOSED CORE LENGTH (INCH)	EXPOSED CORE LENGTH (MM)
Helsinki	303	153.7	7.0	180
Linnet	431	218.4	7.0	180
Copenhagen	440	223.0	7.0	180
Oriole	438	221.9	7.0	180
Reykjavik	447	226.3	7.0	180
Glasgow	473	239.8	7.0	180
Casablanca	546	276.8	7.0	180
Hawk	611	309.6	7.0	180
Lisbon	629	318.7	7.0	180
Amsterdam	733	317.4	7.0	180
Dove	713	361.3	7.0	180
Brussels	839	425.3	7.0	180
Grosbeak	816	413.5	7.0	180
Oslo	627	317.7	10.5	267
Stockholm	913	462.7	10.5	267
Warsaw	1016	514.8	10.5	267
Drake	1020	516.8	10.5	267
Dublin	1043	528.5	10.5	267
Hamburg	1092	553.3	10.5	267
Milan	1134	574.6	10.5	267
Rome	1183	599.4	10.5	267
Cardinal	1222	619.2	10.5	267
Vienna	1255	635.9	10.5	267
Budapest	1332	674.9	10.5	267
Prague	1377	697.7	10.5	267
Munich	1461	740.3	10.5	267
London	1512	766.1	10.5	267
Bittern	1572	796.5	10.5	267
Paris	1620	820.9	10.5	267
Antwerp	1879	952.1	10.5	267
Lapwing	1965	995.7	10.5	267
Berlin	2004	1015.4	10.5	267
Madrid	2020	1023.5	10.5	267
Chukar	2242	1136.0	10.5	267
Bluebird	2726	1381.5	10.5	267

Filler Compound Information

Filler Compound does four things:

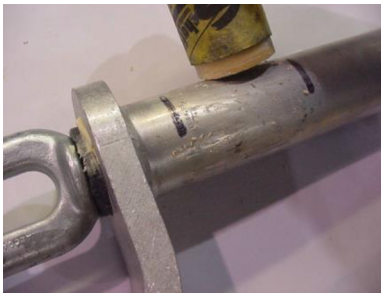
1. Protects the compressed barrels from corrosion. The filler compound acts as a barrier to moisture.
2. Contains aluminum particles, which clean the strands (removing oxides) while compressing. Compressing forces the compounds within the strands.
3. Blocks moisture, which can wick up through the strands. Compressing forces the compound throughout the conductor strands.
4. Aids in the holding strength of the accessory.

Note: Main reason for accessory failure is inadequate amount of filler compound in the accessory.

Inject AFL Filler Compound into filler hole until compound emerges at the felt washer. Insert and drive filler plug into hole and peen edge of hole over top surface of plug.

Select AFL/Alcoa die size to compress aluminum dead end body. Die size for aluminum dead end body and die size marked on the die must be the same. AFL/Alcoa dies are to be used in compressing AFL accessories.

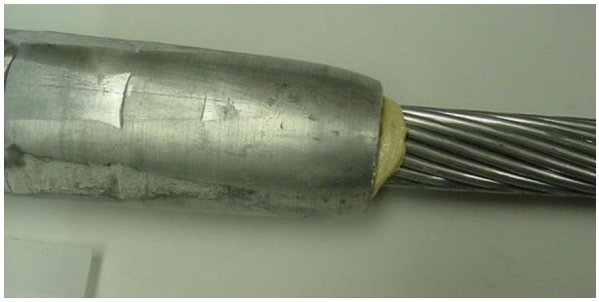
The dead end will bow during compression unless reasonable care is taken to have about 15 ft.(4.5 m) of the conductor supported straight out from the end of the dead end.



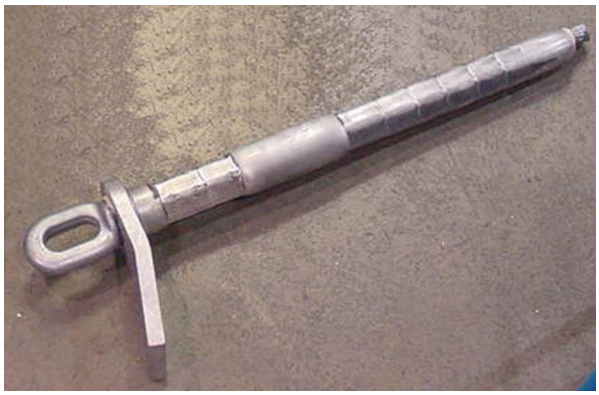
Lubricate area to be compressed from "Start" knurl to "Stop" knurl as illustrated.

Make initial compression on the dead end body over the steel shank beginning at the start knurl nearest the dead end tongue. Continue making compressions to the stop knurl, **overlapping the previous compression by approximately .50 inch (1.27 cm). Complete die closure is required for each compression.**

Press the dead end body over the conductor. Lubricate area to be compressed from "Start" knurl to end of barrel. Make the initial compression at the start knurl. Continue making compressions to the end of the dead end body, **overlapping the previous compression by approximately .50 inches (1.27 cm). Complete die closure is required for each compression.**



Filler Compound should be visible at end of the barrel during the final compressions (if adequate amount has been pumped in).



Compressed portion of the dead end should have a smooth uniform appearance. Remove flash, if present, with file or emery cloth.

Installation of Terminal Connector

Terminal assemblies consist of Terminal Connector and attachment hardware.

See "Preparation" on page 2 for notes on preparation of conductor.

Insert conductor full depth into terminal bore and mark the conductor at end of barrel. Remove conductor after marking.

Inject sufficient filler compound in the end of the terminal bore and on the conductor to ensure that excess compound will be visible at terminal end when barrel is completely compressed.

Insert conductor end into terminal barrel to the mark on the conductor.

Select die size to compress Terminal Connector. Die size for Terminal Connector and die size marked on the die must be the same.

Press the Terminal Connector over the conductor. Make the initial compression at the start knurl. Continue making compressions to the end of the Terminal Connector barrel, **overlapping the previous compression by approximately 0.50 inches (1.27 cm). Complete die closure is required for each compression.**

Filler Compound should be visible at end of the barrel during the final compressions (if adequate amount has been pumped in). Compressed portion of the Terminal Connector should have a smooth uniform appearance. Remove flash, if present, with file or emery cloth.
Clean contact surface of Terminal Connector and Dead End pad.

Coat surfaces with Electrical Joint Compound (EJC#2) or HiTUC Compound. Then wire brush through compound. Do not remove coating.

Bolt Terminal Connector to Dead End pad. Partially tighten all bolts and then re-tighten each bolt to recommended torque.
Aluminum Bolts: (1/2"bolts – 25 lbf-ft (34 N.m); 5/8" bolts – 40 lbf-ft (54 N.m).

CAUTION: Follow Installation Instructions carefully. Improper installation can result in mechanical failure of the cable system and possible injury to persons handling or in the vicinity of the cable system.

Contact AFL if back-pressing of accessories is required.