Installation Instructions for AFL Joint for Use on Overhead Conductor Types ACSR, ACSS, ACSS/TW

NOTE:

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Recommended Installation Equipment

While installations have been successfully completed with equipment from various manufacturers, AFL recommends the components listed in the following table for installing SoloHD compression accessories. These recommendations are based on the equipment and products with which AFL hardware was tested and qualified during development.

COMPONENT	SPECIFICATIONS

Pump	• PE-NUTC AFL Electric Pump
	  • Only recommended for 60-ton presses
	• 15GBM AFL Gas Pump
	  • Only recommended for 60-ton presses
	• 30GBM AFL Gas Pump
	  • Compatible with 60 & 100-ton presses
	• 30GHR AFL Gas Pump
	  • Compatible with 60 & 100-ton presses

Press	• 60 Ton Press Heads
	  • 60AGSC AFL Press
	  • 60S/DC AFL Press
	• 100 Ton Press Heads
	  • 100A AFL Press

Dies	• AFL Manufactured AH Series Hex Dies • Die size must match press tonnage, either 60 or 100 ton
Cleaning System	• ConductaClean® • Wire Brushing • Wire brushing must be suffient to remove all oxidation from the outer stranding of the conductor
Lubrication	• Accu-Lube • Ivory Soap • SoloHD Plastic Shipping Wrapper

NOTE: The compression performance of SoloHD compression accessories was validated using AFL manufactured hex dies. Certification of performance applies only under these conditions.

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Preparation

Prior to making connections, the conductor and accessory bore must be clean.

NOTE: Improper cleaning of conductor strands can result in higher resistance joints; this causes the fittings to operate at higher temperatures leading to premature failure.

Clean conductor strands thoroughly by using one of the methods below:

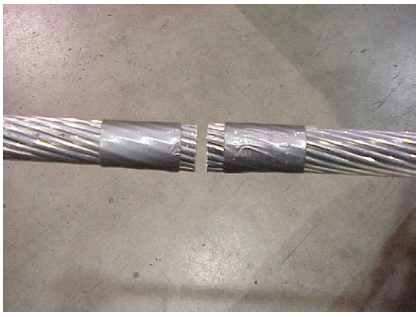
Method 1 – ConductaClean® System (Recommended)
ConductaClean solution cleans ends of overhead conductor prior to assembly and removes oxidation and contaminants from strands.

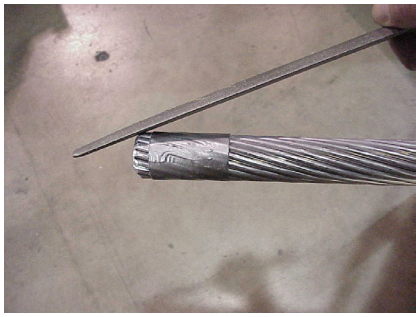
See information on ConductaClean at AFLglobal.com or call: 800-866-7385 Ref: Transmission tool CCP-SYS_T.

Method 2 – Wire Brush
Clean conductor strands thoroughly with wire brush. Wire brush "New" conductor also.

Check accessory bore for foreign particles, removing if present.

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.



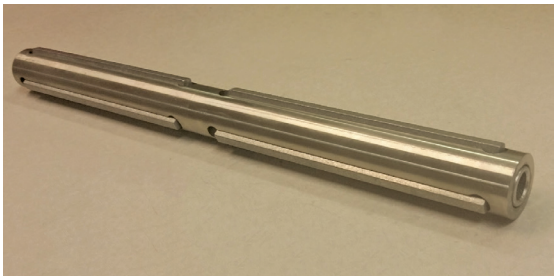


Prior to cutting, wrap tape around the conductor to help maintain the round contour, making it easier to slide the end through the aluminum joint. File approximately 0.09 inch chamfer on the end of the conductor. (The larger the chamfer, the easier the conductor will slide through).

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

Assembly

Joint consists of an aluminum body and steel sleeve/"core grip" as shown above.



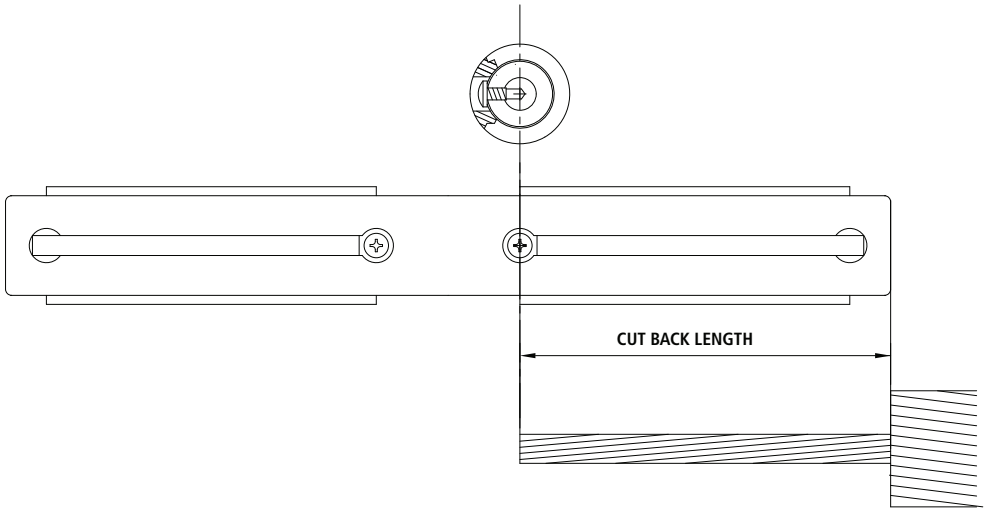
STEEL SLEEVE/"CORE GRIP"

ALUMINUM BODY

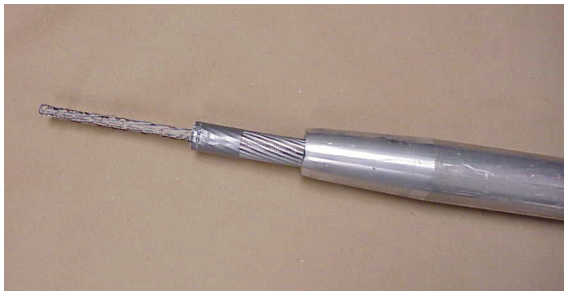
Measure back from each conductor and mark at a distance equal to 1/2 the length of the aluminum body.

Slide aluminum body over the conductor and beyond mark until sufficient working length protrudes from barrel end.

Cutting Back Aluminum Strands for Installation of Steel Sleeve/"Core Grip"



NOTE: It is extremely important not to nick the core strands during cutting back of the aluminum strands. If this is done, the ultimate strength of the Joint will be reduced. The cable manufacturer suggests the following method of cutting back the strands.



Suggested Method of Cutting Back Aluminum Strands

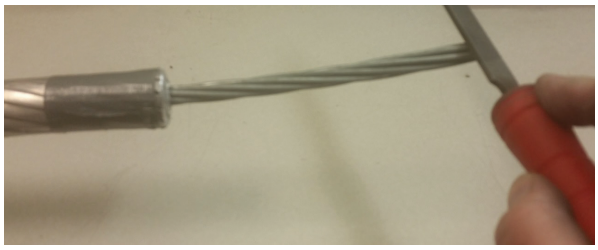
1. Tape location where "cutting back" is needed
2. Position RIGID cable trimmer around conductor at the tape location
3. Cut outer aluminum strands by rotating tool until layer becomes loose.
4. Remove cut outer aluminum layer strand
5. Bend inner layer wires back and forth until they fracture
6. Remove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

Suggested Arrangement of Compressor and Accessory During Field Installation of Joint

The photos below illustrate setup, which works well to ensure a straight compression and easy maneuverability of the compressor. The photos below show the conductor has been "tied off" (tensioned with slings and chain hoist) to slacken the conductor at point of installation.

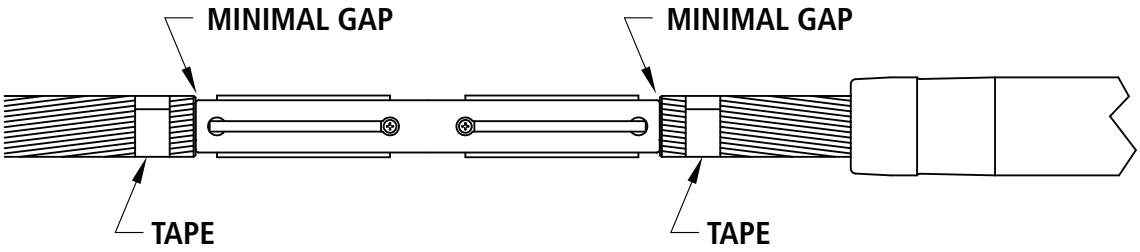
Setup 1: The compressor is attached to the sling by a large shackle (the compressor is suspended upside down). The accessory and cable are tied to the sling ensuring all parts are straight and in-line. The compressor can easily be slid along to each successive compression.

Setup 2: The compressor sits on a board, which sits on the rails of the high lift. The board and compressor can be slid along to each successive compression. The accessory and cable must be supported and all parts must be straight and in-line or bowing will occur.

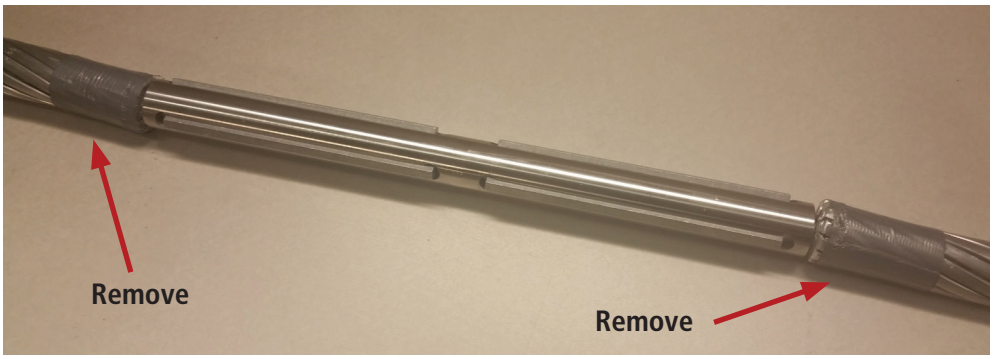


File chamfer on end of core to remove burrs and sharp edge. Chamfer will reduce the expanded diameter of the core (due to cutting) and ease the installation of the Steel Sleeve/"Core Grip".

Assembly

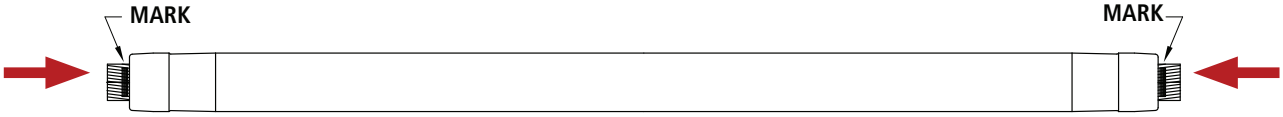


Insert ends of conductor into "Core Grip" ends of steel sleeve. Rotate sleeve "back and forth" while pushing sleeve onto conductor core.



Remove tape from ends of aluminum strands.

Slide aluminum joint body over steel core grip and center within marks.



Push to verify internal parts have remained tight during positioning of aluminum joint body (see above).

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Assembly (cont.)

Select die size to compress aluminum joint body. Die size for aluminum joint body and die size marked on the die must be the same.

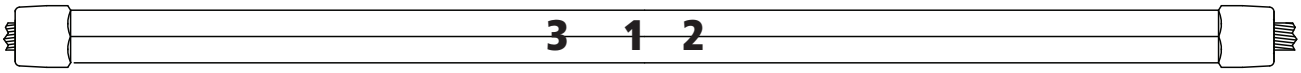
The joint will bow during compression unless reasonable care is taken to have about 15 ft. (4.5 m) of the conductor supported straight out from the end of the joint.

NOTE: Filler compound is not required in the joint due to its void-free internals (see supporting test data available from AFL).

Compressing

Lubricate outside surface of joint with "Accu-Lube" or similar lubricant, or cover barrel with accessory plastic wrapper.

Verify marks placed at end of barrel has remained where originally placed. If not, push internals together prior to making first compression (see illustration on previous page).



Make initial compression over the center portion of the joint (**at 1**).

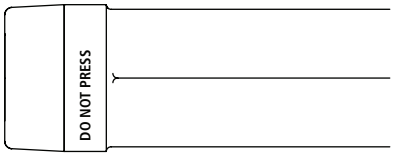
Make the second compression on one end overlapping the initial compression by approximately 0.50 inches (**at 2**) (do not skip bite).

Make the third compression on the opposite end, overlapping the initial compression by 0.50 inches (**at 3**).

Continue making compressions to the end of the joint overlapping the previous compression by approximately 0.50 inch.

NOTE: Do not compress "End Taper." Complete die closure is required for each compression. Go back and complete the compression on the opposite end.

The "End Tapers" are not compressed (note stamped markings on illustration).



Compressing (cont.)

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

Sheave Wheel Travel

AFL SoloHD joints are approved for travel over sheave wheels at 15% of the rated breaking strength of the conductor and a total deflection angle of 30° (15° per side). For installations above the recommend tension or angle, please contact AFL for recommendations.

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.