

**ClampStar®**  
**Recommended Installation Procedure – See “Safety Precautions” on Reverse Side**

ClampStar® is a Connector Corrector that is intended to correct and reinforce the deteriorated electrical and mechanical performance of hot-running, aged or degraded splices and other connectors, clamps and fittings on overhead transmission and distribution conductors or, to increase the performance rating of existing splices and other connectors, clamps and fittings for the purpose of increasing line ampacity that may be presently limited by such devices.

ClampStar® units come individually packaged in sealed plastic bags with their conductor grooves factory-loaded with proprietary CC<sup>2</sup> inhibitor compound. DO NOT use other inhibitor compounds.

Ensure that the correct ClampStar® has been chosen, and is appropriate for the application. The package label includes the part number and conductor range. That, along with additional information, is also cast into the ClampStar® bodies.

Inspect the conductor over the ClampStar® clamping areas for strand damage and, if present, assure the ClampStar® is of sufficient length to be installed beyond the damaged area. Clearance length is determined by the last three digits of the ClampStar® part number.

Thoroughly clean the conductor over the ClampStar® contact areas by wire brushing to remove oxides and other foreign material. If the conductor is severely oxidized or contaminated, apply a light coating of CC<sup>2</sup> to the conductor and wire brush through the compound. Remove excess compound from the conductor contact areas with a clean cloth or wiper.

Inspect the ClampStar® keepers to ensure they are open sufficiently to fit over the conductor. The keepers are spring-loaded to hold them open during installation. Approximately center the ClampStar® over the splice or other connector and place the clamps on the conductor. Make sure the conductor is properly seated in the conductor grooves at both ends and tighten the ClampStar® nuts per the following sequence:

- A. Partially tighten all nuts, assuring all keepers are fully seated, and unit is positioned as desired.
- B. Beginning with the inner most nut on one end, tighten each nut in order toward the open end, to a torque value of approximately 50% of shear-nut values as listed below. (On longer units, to avoid moving the bucket, the tightening sequence may be completed on one end prior to moving to the other end of the ClampStar® unit).
- C. For larger conductors with three or more layers of stranding, it is recommended that this sequence be repeated a number of times equal to the number of layers, advancing the nuts to approximately 75% of shear-nut values as listed below before final shear.
- D. On the final pass, again beginning from the inner most nut, increase torque until the outer nut of the shear-nut breaks off, then work outward until all nuts are sheared. Additional tightening of (or tampering with) the permanent nuts after shear is not recommended.

Shear-nut Torque Values		
3/8" – 16	240 in-lbs ( 20 ft-lbs )	27.1 newton-meters ( N-m )
1/2" – 13	480 in-lbs ( 40 ft-lbs )	54.2 newton-meters ( N-m )
Note: Larger ClampStar units may utilize 1/2" – 13 hardware with: 660 in-lbs (55ft-lbs) 74.6 Newton-meters ( N-m ) torque-limiting nuts.		

**Shear nuts utilize the following wrench sizes**

Description	Hardware	Deep Well Socket (Imperial)		Deep Well Socket (Metric)	
		Installation	Removal	Installation	Removal
CSR-0325	3/8"	9/16"	3/4"	15 mm	19 mm
All other ClampStar® units	1/2"	3/4"	15/16"	19 mm	24 mm

For ClampStar® units requiring auxiliary electrical shielding for corona-free performance on transmission lines operating at EHV and UHV system voltages, corona shielding kits are available and include separate installation instructions.

For ClampStar® installations on dead-ends or suspension clamps where additional mechanical strength may be desired, Safe-T-Link tether kits are available and are supplied with appropriate installation instructions.

Installation kits are available for use with larger ClampStar® units for transmission applications to facilitate installation and balance with standard hot-line tools. These kits include eyebolts that are to be removed after installation and can be retained for additional ClampStar® installations.

**NOTE: These instructions do not claim to cover all details or variations in equipment or installation, nor to provide for all possible conditions concerning installation, operation or maintenance of this equipment. If further information is desired or if particular problems are encountered which are not sufficiently covered in this guide, contact Classic Connectors, Inc. at the above address or telephone numbers.**



## **Safety Precautions**

**Adherence to proper safety procedures for live line maintenance must be followed to the letter. Because some ClampStar installations will be performed on connectors approaching the end of their life, precautions should be taken to assure that the splice will not fail during the installation procedure if performed on an energized line. Connectors observed operating above 165°C (329°F) or a Delta temperature exceeding 50°C (122°F) above the temperature of the conductor, should be worked during a low load cycle when the temperature is much less, or during a scheduled outage.**

**A grounding set, or mechanical jumper, commonly known as a “MACK Cable” should be used to prevent arc flash from occurring in the event of a mechanical failure during ClampStar installation. Attach each end of the cable a sufficient distance from the splice such that it will not interfere with the ClampStar installation. Use a cable of sufficient length such that if the connector should part, the ends will fall away from the linemen without subjecting them to an arc flash.**

**While these are general guidelines, no standards exist today to provide more concise recommendations, and the individual utility safety standards and recommended practices always take precedence.**