

Clamps, Ductile Iron, Deadend, Quadrant Strain



1. Scope

This standard covers the requirements for ductile iron, quadrant strain, deadend clamps. Ductile iron quadrant strain deadend clamps consists of a body, a keeper (a metal piece that sandwiches the conductor to the body of the clamp), a strain socket eye, a cotter pin, and U-bolts with nuts.

This standard applies to Seattle City Light (SCL) Stock No. 693370.

2. Application

Ductile iron quadrant strain deadend clamps are used to terminate static wires. These clamps may be used for transmission line construction with copper conductor or Copperweld® phase conductors; however, magnetic induction heating will occur.

The socket eye fitting on the deadend clamp may be used with Class 52-3 or 52-5 insulators per ANSI C-29.2B.

Recommended torque on U-bolts: 1/2" – 40 ft-lb., 5/8" – 60 ft-lb.

Aluminum strain clamps are used for terminating all-aluminum, ACSR, or aluminum alloy conductors. Ductile iron and aluminum alloy clamps are not interchangeable.

3. Industry Standards

Ductile iron quadrant deadend clamps shall meet the applicable requirements of the following industry standards:

ANSI/NEMA C29.2B; American National Standard for Insulators—Wet Process Porcelain and Toughened Glass—Transmission Suspension Type, November 22, 2013

ASTM A47; Standard Specification for Ferritic Malleable Iron Castings, 2014 Edition

ASTM A153; Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware, 2005 Edition

ASTM A273**ASTM A536**; Standard Specification for Ductile Iron Castings, 2014 Edition

ASTM A711 / A711M; Standard Specification for Steel Forging Stock, 2012 Edition

4. Requirements

4.1 General

Forged steel and ductile iron quadrant strain deadend clamps and keepers shall adhere to the following requirements:

- Be made of ductile iron or forged steel. Ductile iron shall conform to ASTM A536; Forged steel shall conform to ASTM A273.
- Be galvanized in accordance with ASTM A153.
- Be designed to meet the ultimate strengths shown in Table 4 and Figure 4.
- Have smooth surfaces and all edges rounded to prevent formation of corona or damage to the conductor.
- Have a string, or pulling eye, that is an integral part of the clamp body.

Fastening hardware and button-head pin shall be galvanized in accordance with ASTM A153.

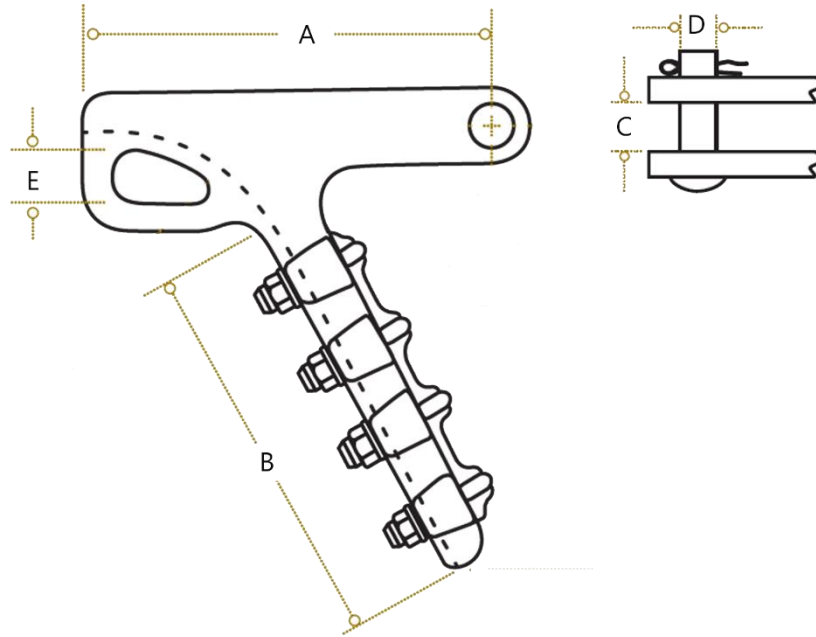
Socket eyes shall adhere to the following requirements:

- Be galvanized in accordance with ASTM A153.
- Meet the requirements of ANSI/NEMA C29.2B as it applies to ball-and-socket gauge for Class 52-3 insulators.
- Be provided with cotter pins meeting the applicable requirements of SCL 5825.90.

Table 4. Ductile Iron Quadrant Strain Deadend Clamp Attributes

Stock No.	Conductor Size Range (kcmil)	Conductor Diameter (in)		Ultimate Strength (lb)	Dimensions, Nominal (in)					U-Bolts	
		(min)	(max)	(min)	A	B	C	D	E	Qty. (min)	Diameter, nominal (in)
693370	1/0 - 300	0.36	0.72	20,000	10	9.5	1	5/8	1-1/4	4	1/2

Figure 4. Aluminum Quadrant Strain Deadend Clamp



5. Marking

Each fitting shall be permanently and legibly marked in raised or stamped letters. Marking shall include but not be limited to the following information:

- Manufacturer name or symbol
- Manufacturer part number
- Fitting ultimate strength

6. Packaging

Product shall be packaged to prevent damage during shipping, handling, and storage.

Standard package quantity shall not exceed 50 per box.

Standard package weight shall not exceed 50 pounds.

Individual packages shall be legibly marked with:

- Manufacturer name
- Manufacturer catalog number
- Product description
- SCL stock number

Shipping containers shall be legibly marked with:

- SCL purchase order number
- SCL stock number

7. Issuance

Stock Unit: EA

8. Approved Manufacturers

Stock No.	Line Hardware Inc.	MacLean Power Systems	Hubbell Power Systems
693370	QSC-724-S	FQD-84-4-S	SWDE84S

9. References

SCL Material Standard 5825.90; "Cotter Pin, Humpback, Stainless Steel"

10. Sources

SCL Material Standard 6933.1 (canceled); "Clamps, Deadend Quadrant Strain, Forged Steel and Malleable Iron"

www.hubbellpowersystems.com

www.maclepower.com

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