

## Clamps, Ductile Iron, Deadend Strain, Straight Line



### 1. Scope

This standard covers the requirements for ductile iron, deadend strain, straight-line clamps.

Clamps consist of a body and keepers, compression springs, a button head clevis pin, cotter pin, and U-bolts with nuts.

This standard applies to Seattle City Light (SCL) Stock No. 693901.

### 2. Application

The clamps specified in this standard are:

- For constructing pole switch terminations.
- Used to attach aluminum, ACSR, or copper conductors ranging in size from 2/0 to 500 kcmil to suspension insulators.

The recommended torque on the 1/2-in U-bolts is 40 ft-lb.

Replacement clevis pin: Stock No. 013167.

Replacement cotter pin: Stock No. 582528.

### 3. Industry Standards

Clamps shall be manufactured according to the following industry standards:

**ANSI/ASME B18.8.1-1994(R2005)** - Clevis Pins and Cotter Pins

**ASTM A47/A47M-99(2009)** - Standard Specification for Ferritic Malleable Iron Castings

**ASTM A153-2005** - Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware

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**ASTM A439 – 83 (2009)** - Standard Specification for Austenitic Ductile Iron Castings

**ASTM A571/A571M-01(2011)** - Standard Specification for Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service

#### 4. Requirements

Clamps and keepers shall:

- Be made of hot-dipped galvanized ductile iron conforming to ASTM A439 and A571.
- Have smooth surfaces and all edges rounded to prevent damage to the conductor.
- Meet the dimensions and ultimate strength requirements as described in Table 4.
- Include a stringing or pulling eye as an integral part of the clamp body.
- Have a lifting eye, 3/4-inches in diameter on the keeper for hot-line work.

Hardware (U-bolts, split-lock washer, nut and clevis pin) shall be made of steel and hot-dipped galvanized according to ASTM A153.

Compression springs shall be made of stainless steel.

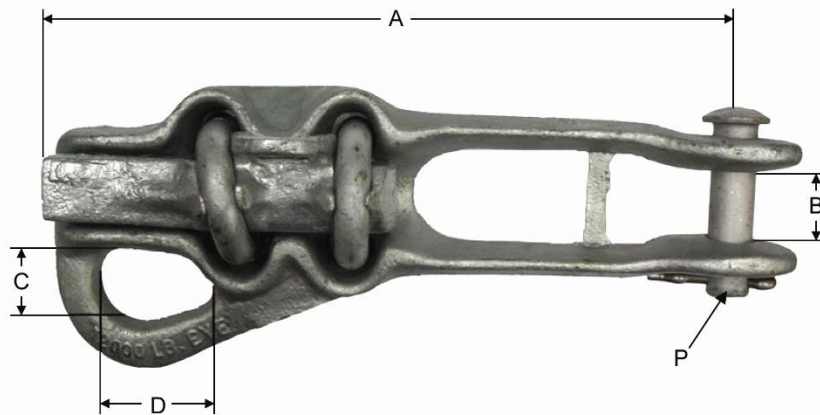
Split lock washers shall be included under each nut on the U-bolt.

Clamps shall be provided with clevis and cotter pins installed.

Cotter pins shall meet the applicable requirements of SCL 5825.90.

Clevis pins shall meet the applicable requirements of SCL 6945.20.

**Figure 4. Clamp Dimensions**



**Table 4. Clamp Attributes**

Conductor Diameter Range (in)		Body Length to Center of Pin Hole nominal (in)	Pin Width nominal (in)	Sag Eye Dimension nominal (in)		Pin Diameter nominal (in)	U - Bolts		Ultimate Strength minimum (lb)	
Min	Max			C	D		Qty.	Diam. nom (in)	Clamp	Sag Eye
		A	B	C	D	P				
0.36	0.93	9-3/8	15/16	1-1/8	1-5/8	5/8	2	1/2	15,000	12,000

## 5. Marking

Each clamp body 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 or part number
- Eye ultimate strength
- Clamp ultimate strength
- U-bolt torque value

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## 6. Packaging

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

Standard package quantity shall not exceed 20 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

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## 7. Issuance

Stock Unit: EA

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## 8. Approved Manufacturer

<u>Manufacturer</u>	<u>Catalog No.</u>
MacLean Power Systems	SDE-93F

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## 9. References

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

**SCL Material Standard 6945.20**; "Clevis Pins"

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## 10. Sources

**SCL Material Standard 6939.1** (canceled); "Clamps – Deadend, Straight Line, Malleable or Ductile Iron"

**SCL Material Standard 6966.15**, "Anchor Shackles, Round Pin"

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