

Fittings, Forged Steel Ball-Style Insulator



1. Scope

This standard covers the requirements for forged steel ball-style insulator fittings.

This standard applies to the following Seattle City Light (SCL) stock numbers:

Stock No.	Description
695505	Ball clevis
695515	Ball clevis, long
695525	Ball Y-clevis
695860	Ball eye
696135	Ball oval-eye with anchor shackle, tower assembly

2. Application

Ball-style insulator fittings are used to attach ball and socket insulators to other associated distribution tower hardware. The bent bolt in the ball Y-clevis section provides an additional point of articulation. The ball oval-eye and an anchor shackle is one of the most common distribution tower attachment combinations and is available as an assembly.

Ball-style insulator fittings are compatible with the class 52-3 and 52-5 insulators defined in ANSI C-29.2.

3. Industry Standards

Ball-style insulator fittings 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 A153; Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware, 2005 Edition

4. Requirements

Ball-style insulator fittings shall:

- Be made of heat-treated, drop-forged steel.
- Have a minimum ultimate strength of 30,000 lb.
- Meet the requirements of ANSI/NEMA C29.2B as it applies to the ball-and-socket gauge for Class 52-3 insulators.
- Be galvanized in accordance with ASTM specification A153.
- Meet the applicable dimensional requirements of Table 1 and Figures 1 through 4 of this standard.
- Where applicable, be provided with cotter pins meeting the requirements of SCL 5825.90.

Stock No. 696135 (Ball oval-eye and shackle), shall be shipped assembled.

Table 4. Ball Fitting Dimensions

Stock No.	Description	Figure	Dimensions, Nominal (in)							
			W	B	T Dia	L	PD	R	D	A
695505	Ball clevis	1	13/16	1-1/2	5/8	2-13/16	5/8	—	—	1-1/2
695515	Ball clevis, long	1	13/16	2-1/2	5/8	3-7/8	5/8	—	—	1-1/2
695525	Ball Y-clevis	2	13/16	1-1/2	5/8	3-1/16	3/4	.0406	—	1-3/4
695860	Ball eye	3	1	2	5/8	3-9/16	—	—	11/16	—
695135	Ball oval-eye with anchor shackle, tower assembly	4	7/8	3-1/2	11/16	7	5/8	—	—	1-3/4

Figure 4a. Ball Clevis Fitting

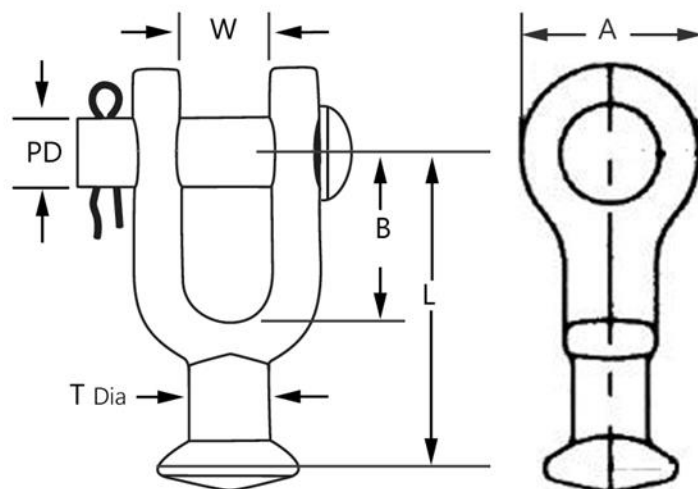


Figure 4b. Ball Y-Clevis Fitting

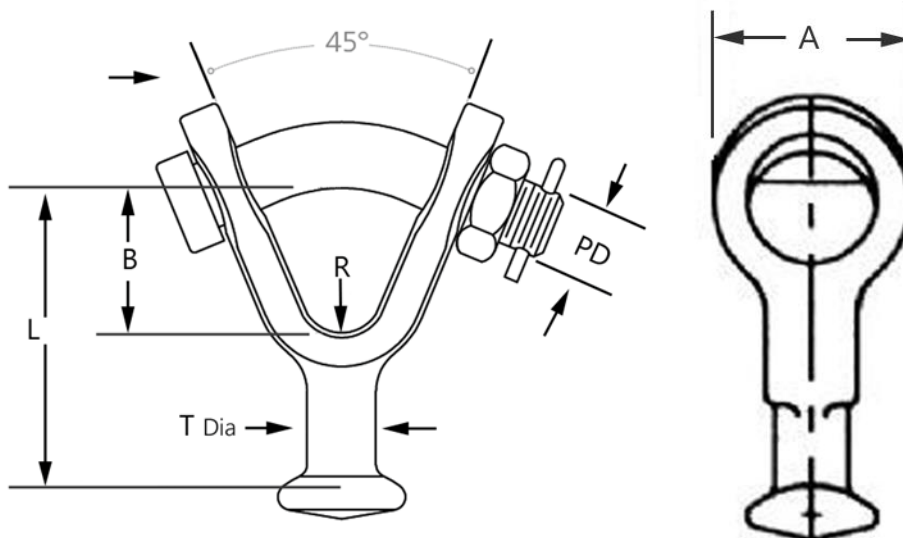


Figure 4c. Ball Eye Fitting

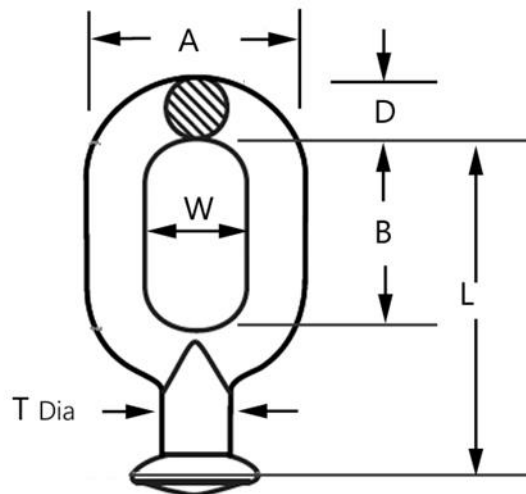
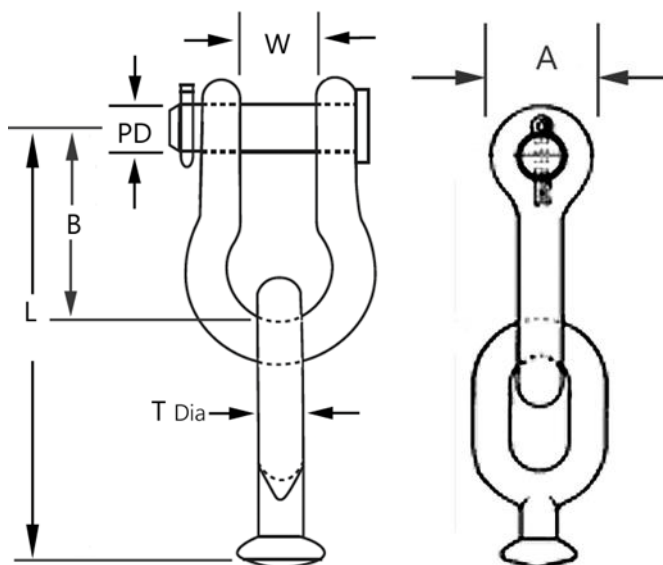


Figure 4d. Ball Eye Fitting with Anchor Shackle



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.	Description	Approved Manufacturers	
		Anderson/Hubbell	Reliable/MacLean
695505	Ball clevis	BC-30	CB-55
695515	Ball clevis, long	70488-2000	CB-55L
695525	Ball Y-clevis	YBC-30	YCB-65A
695860	Ball eye	BE-30	OEB-55
696135	Ball oval-eye with anchor shackle, tower assembly	BE-30-AS-50	ASBE-65A

9. References

SCL Material Standard 5825.90; “Cotter Pin, Humpback, Stainless Steel”

10. Sources

Wang, Quan; SCL Standards Engineer, subject matter expert and originator of 6945.05 (quan.wang@seattle.gov)

SCL Material Standard 6955.1 (canceled); “Fittings, Forged Steel Insulator”

SCL Material Standard 6966.15; “Anchor Shackles, Round Pin”