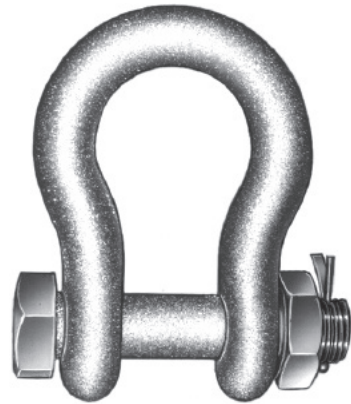


Line and Tower Hardware



strength



Line & Tower Hardware Index

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Line And Tower Hardware

Anderson™ manufactures a complete line of quality line and tower end hardware to meet all transmission line construction needs. A variety of devices are available to bundle conductors, attach conductors to insulator strings and attach insulator strings to support arms.

Most of our line and tower end hardware is manufactured from ductile iron. Ductile iron castings offer great design flexibility and freedom to utilize design improvements without expensive tooling changes. We also provide a line of forged steel tower end fittings. Steel forgings are often required to provide the necessary ultimate strength when dimensional restrictions are imposed such as with most ball fittings, shackles and links.

Ball and socket fittings are specified under an ANSI class with respect to insulators. We offer two types of ball and socket fittings: Standard fittings (rated 30,000 pounds) for ANSI 52-3 and 52-5 class insulators, and high strength fittings (rated 50,000 pounds) for ANSI 52-8 and 52-11 class insulators.

The ultimate strength rating of our line and tower end hardware indicates the load where rupture can occur. It is a fairly common industry practice to match the ultimate strength of line and tower end hardware to that of the associated insulators. It is expected that the customer will apply suitable safety factors.

Hubbell/Anderson hardware fittings are designed for electric utility power line static-load applications. They are not recommended for hoisting (up and down) load-handling applications.

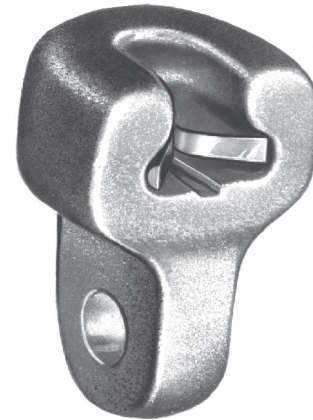
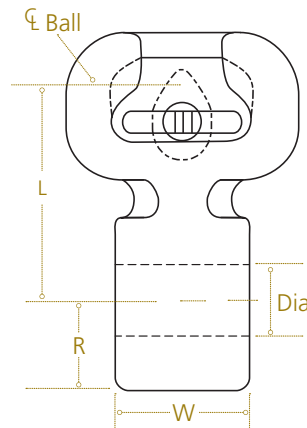
For IEC and CSA forged steel hardware offerings, see Hubbell Power System's "Transmission Hardware Canadian Product Offering" Catalog.

Hardware Fittings — Ductile Iron

Socket Eye

Socket eyes can be used for connecting conductor clamping devices to ball and socket type insulators.

Material: Body – galvanized ductile iron
Cotter Pin – stainless steel


DUCTILE IRON
SA

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		W	R	L	Diameter	
SA04	18,000 (80)	½ (12.7)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.25 (.57)
SA049	20,000 (89)	½ (12.7)	⅜ (20.6)	3¼ (82.6)	⅞ (14.3)	1.28 (.58)
SA05	20,000 (89)	⅝ (15.9)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.25 (.57)
SA06	25,000 (111)	¾ (19.1)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.30 (.59)
936032000	27,000 (120)	¾ (19.1)	1 (25.4)	3 (76.2)	⅜ (20.6)	2.2 (1.00)
SA07	30,000 (133)	⅞ (22.2)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.35 (.61)
SA10	30,000 (133)	1 (25.4)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.40 (.64)
SA10054	30,000 (133)	1 (25.4)	⅜ (20.6)	5½ (139.7)	⅞ (17.5)	1.90 (0.86)
SA11	30,000 (133)	1½ (28.6)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.50 (.68)
936062000	30,000 (133)	1¼ (31.8)	1 (25.4)	3 (76.2)	1½ (27)	2.3 (1.04)
936063002	30,000 (133)	1¼ (31.8)	1 (25.4)	3 (76.2)	⅜ (30.2)	2.3 (1.04)
SA13	30,000 (133)	1¾ (34.9)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.70 (.77)
SA13054	30,000 (133)	1¾ (34.9)	⅜ (20.6)	5½ (139.7)	⅞ (17.5)	2.00 (0.91)
SA1550 ⁽¹⁾	50,000 (222)	1¾ (41.3)	1 (25.4)	3¾ (83.3)	1½ (27)	3.00 (1.36)
SA15501 ⁽¹⁾	30,000 (133)	1¾ (41.3)	1 (25.4)	3¾ (83.3)	⅞ (17.5)	3.00 (1.36)
SA15502 ⁽¹⁾	30,000 (133)	¾ (19.1)	1 (25.4)	3¾ (83.3)	⅞ (17.5)	2.75 (1.25)
SA15503 ⁽¹⁾	36,000 (160)	1¾ (33.3)	1 (25.4)	3¾ (83.3)	⅜ (20.6)	2.90 (1.32)
SA16	30,000 (133)	1¾ (44.5)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.80 (.82)
SA20	30,000 (133)	2 (50.8)	⅜ (20.6)	2½ (52.4)	⅞ (17.5)	1.85 (.84)

Hardware Fittings — Ductile Iron

Socket Eye

Product Data (continued)

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		W	R	L	Diameter	
SA22	30,000 (133)	2¼ (57.2)	1¾ (20.6)	2½ (52.4)	1½ (17.5)	1.85 (.84)
SA1013	30,000 (133)	1 (25.4)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	1.50 (.68)
SA10.513	30,000 (133)	1½ (27)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	1.30 (.50)
SA1113	30,000 (133)	1½ (28.6)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	1.50 (.68)
SA1313	30,000 (133)	1¾ (34.9)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	1.75 (.79)
SA1417	30,000 (133)	1½ (38.1)	1 (25.4)	2½ (63.5)	1½ (27)	1.75 (.79)
SA1613	30,000 (133)	1¾ (44.5)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	1.85 (.84)
SA16054	30,000 (133)	1¾ (44.5)	1¾ (20.6)	5½ (139.7)	1½ (17.5)	2.10 (0.95)
SA2113	30,000 (133)	2½ (54)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	2.00 (.91)
SA2213	30,000 (133)	2¼ (57.2)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	2.00 (.91)
SA24	30,000 (133)	2½ (63.5)	1¾ (20.6)	2½ (52.4)	1½ (17.5)	2.34 (1.09)
SA2413	30,000 (133)	2½ (63.5)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	2.25 (1.02)
SA2613	30,000 (133)	2¾ (69.9)	1¾ (20.6)	2½ (52.4)	1¾ (20.6)	2.85 (1.29)
909662000 ⁽¹⁾	50,000 (222)	1½ (27)	1½ (28.6)	5½ (139.7)	1½ (27)	5.8 (2.63)
909642000 ⁽¹⁾	50,000 (222)	1¾ (30.2)	1½ (28.6)	5½ (139.7)	1¾ (20.6)	5.3 (2.40)
909672000 ⁽¹⁾	50,000 (222)	1¾ (31)	1½ (28.6)	5½ (139.7)	1¾ (30.2)	5.6 (2.54)
909622000 ⁽¹⁾	50,000 (222)	1¾ (36.5)	1½ (28.6)	5½ (139.7)	1¾ (30.2)	5.8 (2.63)
909612000 ⁽¹⁾	50,000 (222)	1½ (38.1)	1½ (28.6)	5½ (139.7)	1¾ (20.6)	6.0 (2.72)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Ductile Iron

Socket - Socket

Socket-sockets are used to connect ball and socket insulators to associated hardware within an insulator string.

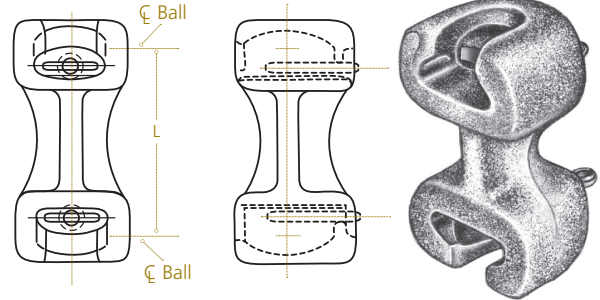
Material: Body – galvanized ductile iron
Cotter Pin – stainless steel

DUCTILE IRON

SS

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)	Approx Wt Each lb (kg)
		L	
SS30	30,000 (133)	3 (76.2)	2.00



NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

Ductile Iron Socket Y-Clevis

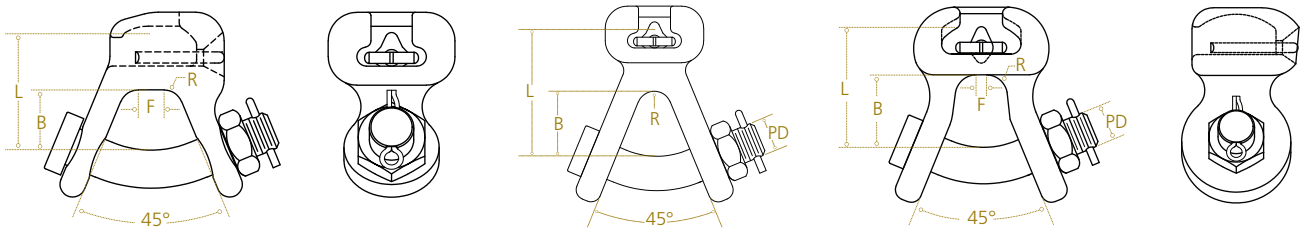
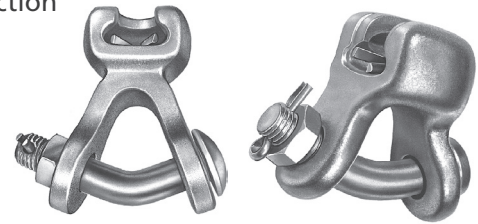
Socket Y-clevises are used to connect yoke plates or associated hardware to ball and socket insulators. The bent bolt in the Y-section provides an additional point of articulation within an assembly.

Type SYCS is a short coupling version of Type SYC that offers the same articulation advantages.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel

DUCTILE IRON

SYC



SYC3090

SYC30

SYC50 & 942773001

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)					Approx Wt Each lb (kg)
		L	B	R	F	PD	
SYC30	30,000 (133)	2 ³ / ₄ (69.9)	1 ¹ / ₁₆ (39.7)	7 ¹ / ₁₆ (11.1)	—	3 ⁴ / ₄ (19.2)	3.0 (1.36)
SYC3090	30,000 (133)	2 ⁹ / ₃₂ (57.9)	1 ³ / ₁₆ (30.2)	3 ⁸ / ₈ (9.5)	1 ¹ / ₂ (12.7)	3 ⁴ / ₄ (19.2)	2.5 (1.13)
SYC50 ⁽¹⁾	50,000 (222)	2 ⁷ / ₈ (73)	1 ⁵ / ₈ (41.3)	1 ¹ / ₂ (12.7)	1 ⁴ / ₄ (6.4)	7 ⁸ / ₈ (22.2)	5.0 (2.27)
942773001 ⁽¹⁾	50,000 (222)	2 ¹⁵ / ₁₆ (74.6)	1 ⁵ / ₈ (41.3)	3 ⁸ / ₈ (9.5)	9 ¹ / ₁₆ (14.3)	7 ⁸ / ₈ (22.2)	5.0 (2.27)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C 29.2-71.

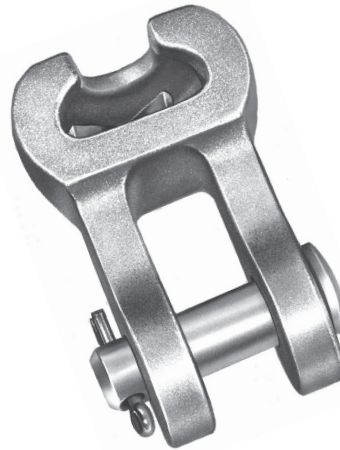
(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C 29.2-71. Shield nut can be supplied by adding suffix "SN" to catalog number. Example: SYC30SN.

Hardware Fittings — Ductile Iron

Socket Clevis

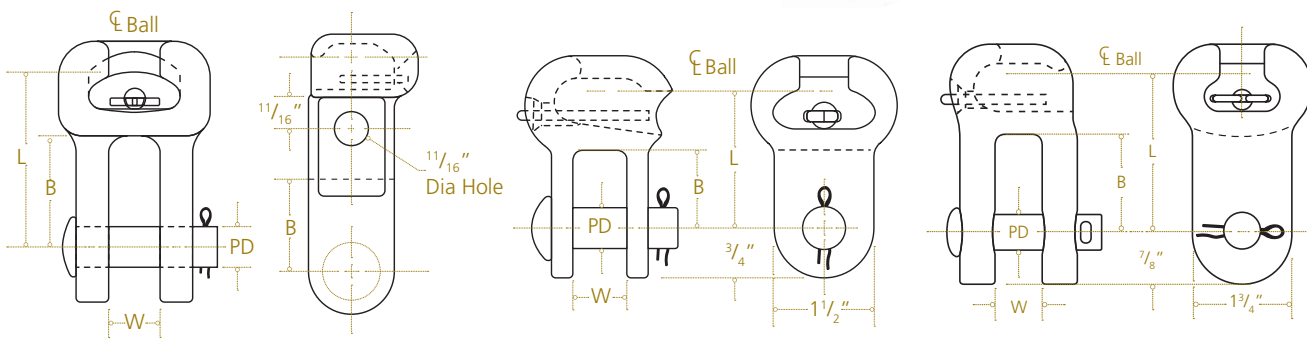
Socket clevises are used primarily for connecting associated hardware to ball and socket type insulators.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON

SC



Type SC

Type SC30AHM

Type 115452000

Type 876032000

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		W	L	B	PD	
876032000	30,000 (133)	13/16 (20.6)	25/8 (66.7)	15/8 (41.3)	5/8 (15.9)	2.7 (1.22)
SC30	30,000 (133)	7/8 (22.2)	25/8 (66.7)	11/16 (42.9)	5/8 (15.9)	2.0 (.91)
SC30AHM	30,000 (133)	7/8 (22.2)	4 1/2 (114.3)	1 5/16 (49.2)	5/8 (15.9)	3.5 (1.58)
SC301	30,000 (133)	1 1/8 (28.6)	3 7/8 (98.4)	2 7/8 (72)	5/8 (15.9)	3.0 (1.36)
115452000 ⁽¹⁾	18,000 (80)	13/16 (20.6)	2 1/8 (54)	1 3/16 (30.2)	5/8 (15.9)	1.35 (.61)
SC501 ⁽²⁾	50,000 (222)	1 1/8 (28.6)	3 3/32 (85.3)	2 1/16 (52.4)	7/8 (22.2)	4.6 (2.09)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71. Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

(1) For use with class 52-3 insulators only per ANSI Spec. C-29.2-71.

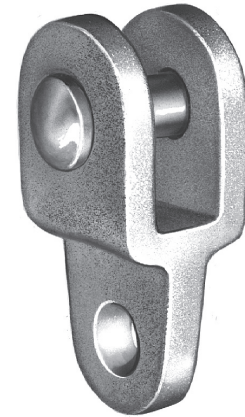
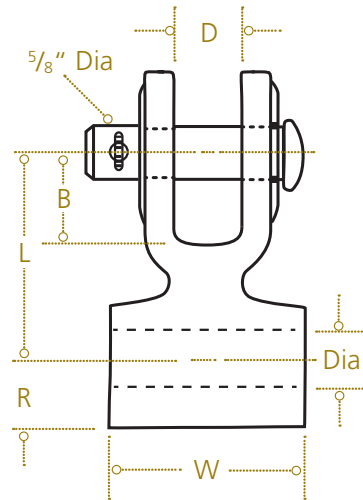
(2) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71

Hardware Fittings — Ductile Iron

Clevis Eye

Clevis eyes are used to connect conductor clamping devices to clevis tongue insulators.

Material: Body – *galvanized ductile iron*
Clevis Pin – *galvanized steel*
Cotter Pin – *stainless steel*



DUCTILE IRON

CA

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		R	W	B	D	L	Diameter	
CA04	18,000 (80)	$\frac{13}{16}$ (20.6)	$\frac{1}{2}$ (12.7)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.6 (.73)
CA05	20,000 (89)	$\frac{13}{16}$ (20.6)	$\frac{5}{8}$ (15.9)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.6 (.73)
CA05033	30,000 (133)	$\frac{15}{16}$ (23.8)	$\frac{5}{8}$ (15.9)	$1\frac{3}{4}$ (44.5)	$\frac{7}{8}$ (22.2)	$3\frac{3}{8}$ (85.7)	$\frac{11}{16}$ (17.5)	2.6 (1.18)
CA06	25,000 (111)	$\frac{13}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.7 (.77)
CA101	25,000 (111)	$\frac{13}{16}$ (20.6)	1 (25.4)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.7 (.77)
CA11	25,000 (111)	$\frac{13}{16}$ (20.6)	$1\frac{1}{8}$ (28.6)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.7 (.77)
CA13	25,000 (111)	$\frac{13}{16}$ (20.6)	$1\frac{3}{8}$ (34.9)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	1.8 (.82)
CA16	25,000 (111)	$\frac{13}{16}$ (20.6)	$1\frac{3}{4}$ (44.5)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	2.0 (.91)
CA22	25,000 (111)	$\frac{13}{16}$ (20.6)	$2\frac{1}{4}$ (57.2)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{11}{16}$ (17.5)	2.3 (1.04)
CA1013	25,000 (111)	$\frac{13}{16}$ (20.6)	1 (25.4)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{13}{16}$ (20.6)	2.0 (.91)
CA1313	25,000 (111)	$\frac{13}{16}$ (20.6)	$1\frac{3}{8}$ (34.9)	$\frac{11}{16}$ (27.1)	$\frac{7}{8}$ (22.2)	$2\frac{1}{2}$ (63.5)	$\frac{13}{16}$ (20.6)	2.0 (.91)
CA1517033 ⁽¹⁾	30,000 (133)	$1\frac{1}{32}$ (26.2)	$1\frac{5}{8}$ (41.3)	$1\frac{3}{4}$ (44.5)	$\frac{13}{16}$ (20.6)	$3\frac{3}{8}$ (85.7)	$\frac{11}{16}$ (27.1)	2.3 (1.04)

NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

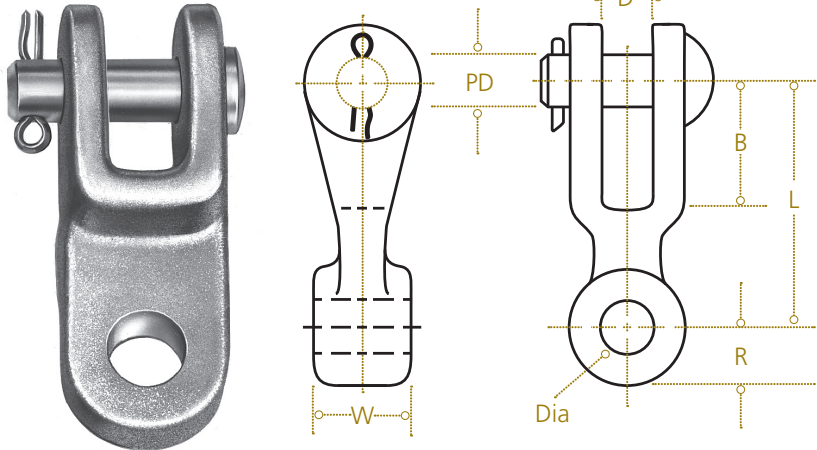
(1) Furnished with $\frac{3}{4}$ " diameter clevis pin.

Hardware Fittings — Ductile Iron

Clevis Eye

Type CE clevis eyes are used to connect quadrant type deadends to clevis tongue insulators or yoke plates. The eye of type CE is 90° from type CA.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON

CE

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Weight Each lb (kg)
		D	W	L	B	R	PD	Diameter	
CE02504	20,000 (89)	7/8 (22.2)	1/2 (12.7)	2 5/8 (66.7)	1 1/4 (31.8)	1 3/16 (20.6)	5/8 (15.9)	1 1/16 (17.5)	1.7 (.77)
CE02506	25,000 (111)	7/8 (22.2)	3/4 (19.1)	2 5/8 (66.7)	1 1/4 (31.8)	1 3/16 (20.6)	5/8 (15.9)	1 1/16 (17.5)	1.7 (.77)
CE02513	25,000 (111)	7/8 (22.2)	1 3/8 (34.9)	2 5/8 (66.7)	1 1/4 (31.8)	1 3/16 (20.6)	5/8 (15.9)	1 1/16 (17.5)	2.2 (1.00)
CE025504	18,000 (80)	1 3/16 (20.6)	1/2 (12.7)	2 1 1/16 (68.3)	1 1/16 (27)	7/8 (22.2)	5/8 (15.9)	1 1/16 (17.5)	1.7 (.77)
CE03305	30,000 (133)	7/8 (22.2)	5/8 (15.9)	3 3/8 (85.7)	1 9/16 (39.7)	7/8 (22.2)	5/8 (15.9)	1 1/16 (17.5)	1.8 (.82)
CE03404	20,000 (89)	7/8 (22.2)	1/2 (12.7)	3 1/2 (88.9)	2 1/2 (63.5)	1 (25.4)	5/8 (15.9)	1 3/16 (20.6)	1.8 (.82)
CE0340611	36,000 (160)	1 (25.4)	3/4 (19.1)	3 1/2 (88.9)	1 1/2 (38.1)	1 (25.4)	3/4 (19.1)	1 1/16 (17.5)	2.2 (1.00)
CE0340615	36,000 (160)	1 (25.4)	3/4 (19.1)	3 1/2 (88.9)	1 1/2 (38.1)	1 (25.4)	3/4 (19.1)	1 5/16 (23.8)	2.1 (.95)
CE03410	30,000 (133)	7/8 (22.2)	1 (25.4)	3 1/2 (88.9)	2 1/2 (63.5)	1 (25.4)	5/8 (15.9)	1 3/16 (20.6)	2.0 (.91)

Hardware Fittings — Ductile Iron

Clevis Eye

Product Data (continued)

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)
		D	W	L	B	R	PD	Diameter	
CE03413	30,000 (133)	$\frac{7}{8}$ (22.2)	$\frac{13}{8}$ (34.9)	$3\frac{1}{2}$ (88.9)	$2\frac{1}{2}$ (63.5)	1 (25.4)	$\frac{5}{8}$ (15.9)	$\frac{13}{16}$ (20.6)	2.5 (1.13)
CE03415	50,000 (222)	$\frac{7}{8}$ (22.2)	$\frac{15}{8}$ (41.3)	$3\frac{1}{2}$ (88.9)	$2\frac{1}{2}$ (63.5)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{11}{16}$ (27)	2.9 (1.32)
CE03616	25,000 (111)	$\frac{7}{8}$ (22.2)	$\frac{13}{4}$ (44.5)	$3\frac{3}{4}$ (95.3)	$2\frac{3}{4}$ (69.9)	1 (25.4)	$\frac{5}{8}$ (15.9)	$\frac{11}{16}$ (17.5)	2.7 (1.23)
879002000	36,000 (160)	$\frac{7}{8}$ (22.2)	$\frac{3}{4}$ (19.1)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	$1\frac{1}{4}$ (31.8)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (20.6)	3.9 (1.77)
CE054106	50,000 (222)	$\frac{7}{8}$ (22.2)	$1\frac{1}{16}$ (27)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (20.6)	3.0 (1.36)
CE05410	40,000 (178)	1 (25.4)	1 (25.4)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{2}$ (63.5)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (20.6)	3.2 (1.45)
CE0541160	60,000 (267)	$\frac{7}{8}$ (22.2)	$\frac{11}{8}$ (28.6)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	$1\frac{1}{8}$ (28.6)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (20.6)	3.7 (1.68)
CE054125	30,000 (133)	$\frac{7}{8}$ (22.2)	$1\frac{5}{16}$ (33.3)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{5}{8}$ (15.9)	$\frac{13}{16}$ (20.6)	3.5 (1.59)
CE05414	50,000 (222)	$\frac{7}{8}$ (22.2)	$1\frac{1}{2}$ (38.1)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (30.2)	3.5 (1.59)
CE05415	50,000 (222)	$\frac{7}{8}$ (22.2)	$\frac{15}{8}$ (41.3)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{11}{16}$ (27)	3.5 (1.59)
CE0541660	60,000 (267)	$\frac{7}{8}$ (22.2)	$\frac{13}{4}$ (44.5)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{7}{8}$ (22.2)	$\frac{13}{16}$ (20.6)	3.7 (1.68)
CE05420	50,000 (222)	$\frac{7}{8}$ (22.2)	2 (50.8)	$5\frac{1}{2}$ (139.7)	$2\frac{1}{8}$ (54)	1 (25.4)	$\frac{3}{4}$ (19.1)	$\frac{13}{16}$ (20.6)	3.7 (1.68)

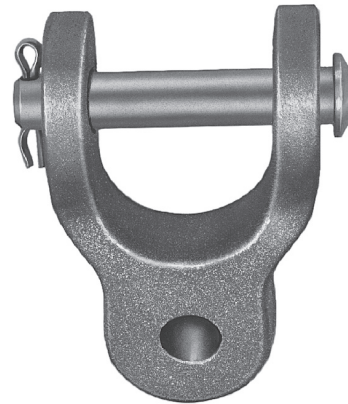
NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

Hardware Fittings — Ductile Iron

Clevis Eye

Wide clevis eyes are used to attach suspension clamps to associated hardware in a single conductor VEE string assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel



DUCTILE IRON

CEW

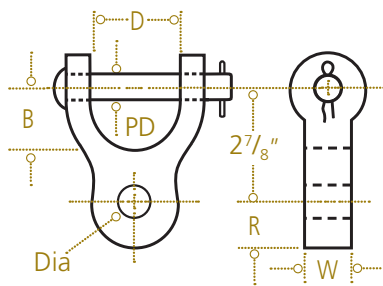


Figure 1

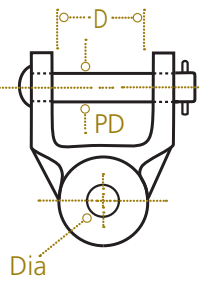


Figure 2

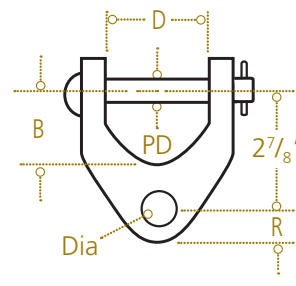


Figure 3

Product Data

Catalog Number	Figure Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
			W	D	B	PD	R	Diameter	
CEW1030	1	30,000 (133)	1 (25.4)	2¼ (57.2)	1½/₁₆ (49.2)	⅝ (15.9)	1 (25.4)	1¼/₁₆ (17.5)	2.6 (1.18)
CEW13530	1	30,000 (133)	1⅞ (36.5)	2 (50.8)	1⅓/₁₆ (46)	⅝ (15.9)	1 (25.4)	1¼/₁₆ (17.5)	2.6 (1.18)
CEW1630	1	30,000 (133)	1¾ (44.5)	2 (50.8)	1⅓/₁₆ (46)	⅝ (15.9)	1 (25.4)	1¼/₁₆ (17.5)	2.8 (1.27)
CEW2230	1	30,000 (133)	2¼ (57.2)	2 (50.8)	1⅓/₁₆ (46)	⅝ (15.9)	1 (25.4)	1¼/₁₆ (17.5)	3.2 (1.45)
CEW223013	1	30,000 (133)	2¼ (57.2)	2 (50.8)	1⅓/₁₆ (46)	⅝ (15.9)	1 (25.4)	1⅓/₁₆ (20.6)	3.2 (1.45)
CEW2330	2	30,000 (133)	2⅜ (60.3)	2¼ (57.2)	1⅞ (36.5)	⅝ (15.9)	1⅓/₁₆ (20.6)	1¼/₁₆ (17.5)	3.5 (1.59)

NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

Hardware Fittings — Ductile Iron

Y-Clevis Eye

Y-clevis eyes are primarily used to attach clamping devices to yoke plates or other associated hardware in a bundle conductor assembly. The bent bolt in the Y-section provides an additional point of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel

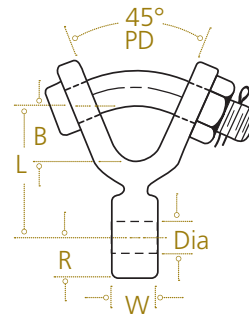
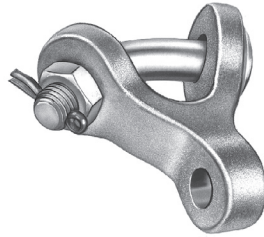


Figure 1 YCS

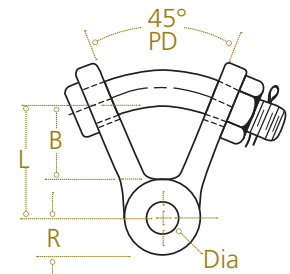


Figure 2 YCS90

DUCTILE IRON

YCS

Product Data

Catalog Number	Figure Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
			B	L	W	R	PD	Diameter	
YCS04	1	19,000 (85)	1 $\frac{3}{8}$ (34.9)	2 $\frac{1}{16}$ (71.4)	$\frac{1}{2}$ (12.7)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.75 (.79)
YCS0490	2	19,000 (85)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	$\frac{1}{2}$ (12.7)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.75 (.79)
YCS04034	1	19,000 (85)	1 $\frac{3}{4}$ (44.5)	3 $\frac{1}{2}$ (88.9)	$\frac{1}{2}$ (12.7)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	2.7 (1.22)
854502000 ⁽¹⁾	1	30,000 (133)	1 $\frac{1}{2}$ (38.1)	3 $\frac{3}{4}$ (95.3)	$\frac{5}{8}$ (15.9)	2 $\frac{5}{32}$ (19.8)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	2.0 (.91)
854512000 ⁽¹⁾	2	30,000 (133)	1 $\frac{1}{2}$ (38.1)	3 $\frac{3}{4}$ (95.3)	$\frac{5}{8}$ (15.9)	2 $\frac{5}{32}$ (19.8)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	2.0 (.91)
YCS05	1	20,000 (89)	1 $\frac{3}{8}$ (34.9)	2 $\frac{1}{16}$ (71.4)	$\frac{5}{8}$ (15.9)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.85 (.84)
YCS0590	2	20,000 (89)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	$\frac{5}{8}$ (15.9)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.85 (.84)
YCS059030	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	$\frac{5}{8}$ (15.9)	$\frac{7}{8}$ (22.2)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.85 (.84)
YCS06	1	25,000 (111)	1 $\frac{3}{8}$ (34.9)	2 $\frac{1}{16}$ (71.4)	$\frac{3}{4}$ (19.1)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.90 (.86)
YCS0690	2	25,000 (111)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	$\frac{3}{4}$ (19.1)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.90 (.86)
YCS069040	2	40,000 (178)	2 (50.8)	3 $\frac{5}{16}$ (84.1)	$\frac{3}{4}$ (19.1)	1 (25.4)	$\frac{7}{8}$ (22.2)	1 $\frac{1}{16}$ (17.5)	3.4 (1.54)
YCS07	1	30,000 (133)	1 $\frac{3}{8}$ (34.9)	2 $\frac{1}{16}$ (71.4)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.90 (.86)
YCS10	1	30,000 (133)	1 $\frac{3}{8}$ (34.9)	2 $\frac{1}{16}$ (71.4)	1 (25.4)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.95 (.88)
YCS1090	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 (25.4)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	1.95 (.88)
YCS10590	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 $\frac{1}{16}$ (27.1)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{16}$ (17.5)	2.00 (.91)

(1) Forged Steel Body

Hardware Fittings — Ductile Iron

Y-Clevis Eye

Product Data (continued)									
Catalog Number	Figure Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
			B	L	W	R	PD	Diameter	
YCS1059013	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 $\frac{1}{16}$ (27.1)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{3}{16}$ (20.6)	2.00 (.91)
YCS11	1	30,000 (133)	1 $\frac{3}{8}$ (34.9)	2 $1\frac{3}{16}$ (71.4)	1 $\frac{1}{8}$ (28.6)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.00 (.91)
YCS119045	2	45,000 (200)	1 $\frac{1}{16}$ (27)	2 $\frac{9}{16}$ (65.1)	1 $\frac{1}{8}$ (28.6)	2 $\frac{9}{32}$ (23)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	2.50 (1.13)
YCS1290	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 $\frac{1}{4}$ (31.8)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.50 (1.13)
YCS129040	2	40,000 (178)	1 $\frac{1}{16}$ (39.7)	2 $\frac{3}{8}$ (60.3)	1 $\frac{1}{4}$ (31.8)	1 $\frac{3}{16}$ (20.6)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	2.50 (1.13)
YCS1390	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 $\frac{3}{8}$ (34.9)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.25 (1.02)
YCS1690	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	1 $\frac{3}{4}$ (44.5)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.30 (1.04)
YCS169040	2	40,000 (178)	1 $\frac{1}{16}$ (39.7)	2 $\frac{3}{8}$ (60.3)	1 $\frac{3}{4}$ (44.5)	1 $\frac{3}{16}$ (20.6)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	2.50 (1.13)
YCS2090	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	2 (50.8)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.75 (1.25)
YCS209040	2	40,000 (178)	1 $\frac{1}{16}$ (39.7)	2 $\frac{3}{8}$ (60.3)	2 (50.8)	1 $\frac{3}{16}$ (20.6)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	3.00 (1.36)
YCS219013	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	2 $\frac{1}{8}$ (54)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{3}{16}$ (20.6)	3.00 (1.36)
YCS2290	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	2 $\frac{1}{4}$ (57.2)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	2.75 (1.25)
YCS2490	2	30,000 (133)	1 $\frac{5}{8}$ (41.3)	2 $\frac{7}{16}$ (62)	2 $\frac{1}{2}$ (63.5)	1 $\frac{3}{16}$ (20.6)	$\frac{3}{4}$ (19.1)	1 $\frac{1}{4}$ (17.5)	3.00 (1.36)
YCS269040	2	40,000 (178)	1 $\frac{1}{16}$ (39.7)	2 $\frac{3}{8}$ (60.3)	2 $\frac{3}{4}$ (69.9)	1 $\frac{3}{16}$ (20.6)	$\frac{7}{8}$ (22.2)	1 $\frac{3}{16}$ (20.6)	3.45 (1.47)
YCS269050	2	50,000 (222)	1 $\frac{5}{8}$ (41.3)	2 $\frac{9}{16}$ (65)	2 $\frac{3}{4}$ (69.9)	1 (25.4)	$\frac{7}{8}$ (22.2)	1 $\frac{1}{16}$ (27.0)	4.10 (1.79)

Hardware Fittings — Ductile Iron

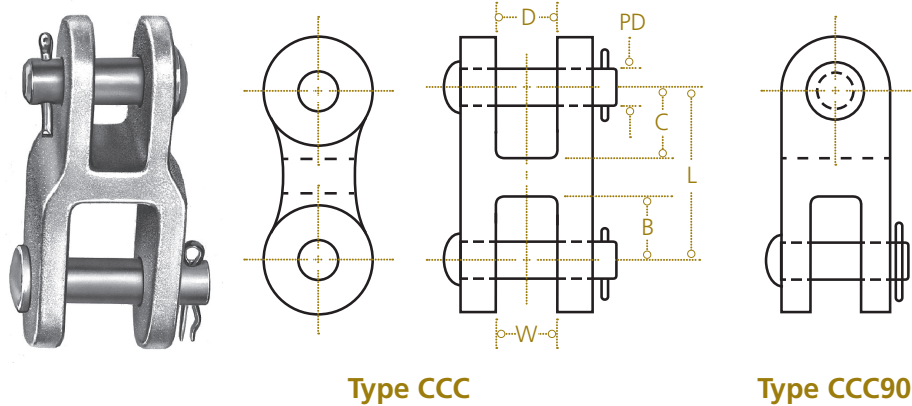
Clevis Clevis

DUCTILE IRON

CCC

Clevis clevises are used to attach clevis tongue insulators to various associated hardware within an insulator string.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Weight Each lb (kg)
		L	B	C	W	D	PD	
CCC25	25,000 (111)	3 (76.2)	1 ¹ / ₁₆ (27)	1 ¹ / ₂ (38.1)	1 ¹ / ₁₆ (17.5)	1 ³ / ₁₆ (30.2)	5/8 (15.9)	2.5 (1.13)
CCC30	30,000 (133)	4 (101.6)	1 ³ / ₄ (44.5)	1 ³ / ₄ (44.5)	7/8 (22.2)	7/8 (22.2)	5/8 (15.9)	2.5 (1.13)
CCC30115	30,000 (133)	4 (101.6)	2 (50.8)	1 ¹ / ₂ (38.1)	1 ³ / ₁₆ (30.2)	7/8 (22.2)	5/8 (15.9)	3.0 (1.36)
CCC3090	30,000 (133)	3 (76.2)	1 ³ / ₈ (34.9)	1 ³ / ₈ (34.9)	7/8 (22.2)	7/8 (22.2)	5/8 (15.9)	2.5 (1.13)
CCC309055	30,000 (133)	5 ¹ / ₂ (139.7)	1 ³ / ₄ (44.5)	1 ³ / ₄ (44.5)	1 ⁵ / ₁₆ (23.8)	1 ⁵ / ₁₆ (23.8)	5/8 (15.9)	5.7 (2.59)
CCC40	40,000 (178)	4 (101.6)	1 ³ / ₄ (44.5)	1 ³ / ₄ (44.5)	7/8 (22.2)	7/8 (22.2)	3/4 (19.1)	3.2 (1.45)
CCC4090	40,000 (178)	3 ¹ / ₂ (88.9)	1 ¹ / ₂ (38.1)	1 ¹ / ₂ (38.1)	7/8 (22.2)	7/8 (22.2)	3/4 (19.1)	3.2 (1.45)
CCC50	50,000 (222)	4 ¹ / ₂ (114.3)	2 (50.8)	2 (50.8)	1 (25.4)	1 (25.4)	3/4 (19.1)	4.0 (1.81)
CCC5090	50,000 (222)	4 ¹ / ₂ (114.3)	2 (50.8)	2 (50.8)	1 (25.4)	1 (25.4)	3/4 (19.1)	4.0 (1.81)
CCC80BNK	80,000 (356)	5 ¹ / ₈ (130.2)	2 ¹ / ₄ (57.2)	2 ¹ / ₄ (57.2)	1 ⁵ / ₈ (41.3)	1 ¹ / ₄ (31.8)	(1)	6.0 (2.72)

NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

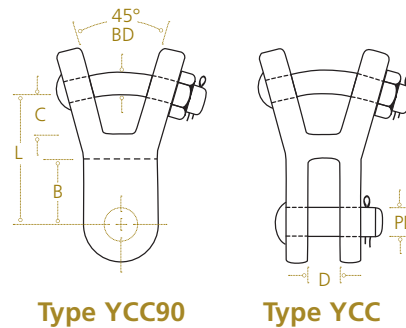
(1) Furnished with bolt, nut and cotter pin; 1.0 in diameter bolt at "D" opening, 1¹/₈ in diameter bolt at "W" opening.

Hardware Fittings — Ductile Iron

Y-Clevis Clevis

Y-clevis clevises are used to attach clevis tongue insulators to various associated hardware within an insulator string. The bent bolt in the Y-clevis section provides an additional point of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel



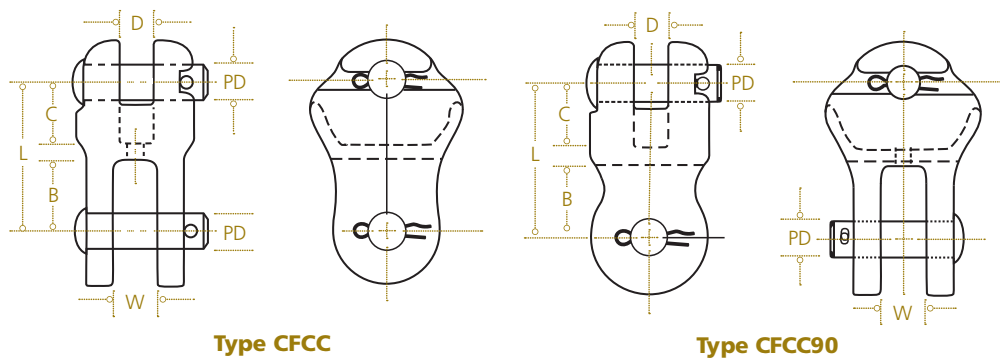
Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		D	L	B	C	PD	BD	
YCC30	30,000 (133)	7/8 (22.2)	3/4 (82.6)	13/8 (34.9)	13/8 (34.9)	5/8 (15.9)	3/4 (19.1)	2.5 (1.13)
YCC3090	30,000 (133)	7/8 (22.2)	3/4 (82.6)	13/8 (34.9)	1 1/2 (38.1)	5/8 (15.9)	3/4 (19.1)	2.5 (1.13)

Corona Free Clevis

Corona free clevis clevises are used at EHV levels to attach clevis tongue insulators to various associated hardware within an insulator string.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		L	B	C	W	D	PD	
CFCC30	30,000 (133)	3/8 (79.4)	1 1/32 (40.5)	1 7/32 (31)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	3.00 (1.36)
CFCC3090	30,000 (133)	3/8 (79.4)	1 1/32 (40.5)	1 7/32 (31)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	3.00 (1.36)
CFCC40	40,000 (178)	3/4 (82.6)	1 3/4 (44.5)	1 3/16 (30.2)	7/8 (22.2)	1 5/16 (23.8)	3/4 (19.1)	4.75 (2.15)
CFCC4090	40,000 (178)	3/4 (82.6)	1 3/4 (44.5)	1 3/16 (30.2)	7/8 (22.2)	1 5/16 (23.8)	3/4 (19.1)	4.75 (2.15)

Hardware Fittings — Forged Steel

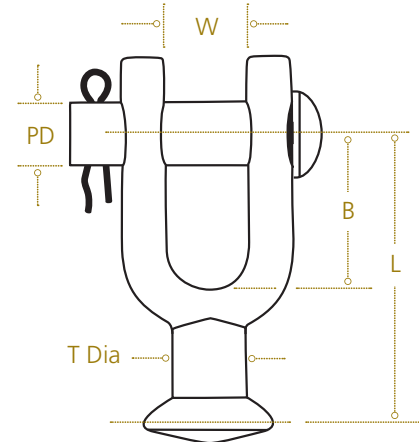
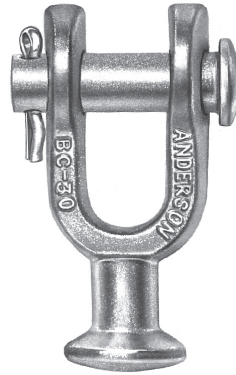
Ball Clevis

FORGED STEEL

BC

Ball clevises are used to attach ball and socket insulators to other associated tower hardware.

Material: Body – galvanized steel
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)					Approx Wt Each lb (kg)
		L	B	W	PD	T Diameter	
BC30	30,000 (133)	$2\frac{7}{8}$ (73)	$1\frac{9}{16}$ (39.7)	$1\frac{5}{16}$ (23.8)	$\frac{5}{8}$ (15.9)	$\frac{23}{32}$ (18.3)	.95 (.43)
BC50 ⁽¹⁾	50,000 (222)	$4\frac{5}{16}$ (109.5)	$1\frac{15}{16}$ (49.2)	$1\frac{5}{16}$ (23.8)	$\frac{7}{8}$ (22.2)	$\frac{57}{64}$ (22.6)	2.3 (1.04)
704882000	30,000 (133)	$3\frac{15}{16}$ (100)	$2\frac{1}{2}$ (63.5)	$1\frac{3}{16}$ (20.6)	$\frac{5}{8}$ (15.9)	$\frac{23}{32}$ (18.3)	1.24 (.56)
704883003 ⁽²⁾	30,000 (133)	$3\frac{15}{16}$ (100)	$2\frac{1}{2}$ (63.5)	$1\frac{3}{16}$ (20.6)	$\frac{5}{8}$ (15.9)	$\frac{23}{32}$ (18.3)	1.34 (.61)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71. Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

(2) This item furnished with bolt, nut and cotter key.

Hardware Fittings — Forged Steel

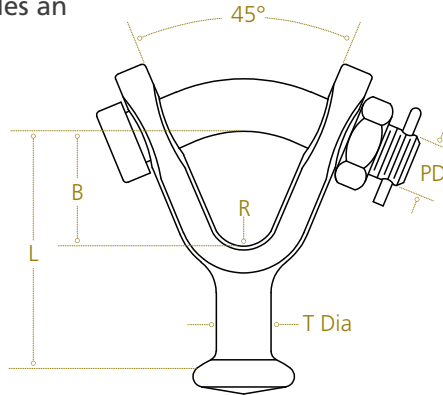
Ball Y-Clevis

FORGED STEEL

YBC

Ball Y-clevises are used to attach ball and socket insulators to other associated hardware. The bent bolt in the Y-clevis section provides an additional point of articulation.

Material: Body – galvanized steel
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)					Approx Wt Each lb (kg)
		L	B	R	PD	T Diameter	
YBC30	30,000 (133)	3 ³ / ₂ (78.5)	1 ¹ / ₂ (35.1)	0.406 (13.5)	3/4 (19.1)	2 ³ / ₃₂ (18.3)	1.90 (.86)
YBC50 ⁽¹⁾	50,000 (222)	3 ¹⁵ / ₁₆ (100.2)	1 ¹³ / ₁₆ (46)	0.531 (10.3)	7/8 (22.2)	5 ⁷ / ₆₄ (22.6)	2.80 (1.27)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

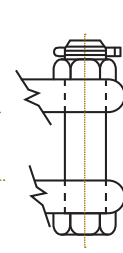
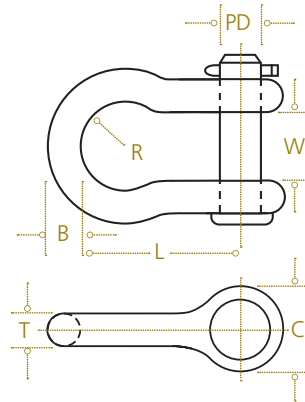
(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Forged Steel

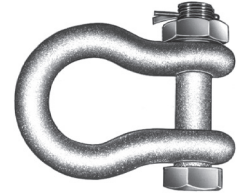
Anchor Shackle

Anchor shackles are used to attach hardware to the tower pad. Back to back anchor shackles are commonly used at the tower attachment point to orient the plane of the tower plate and the balance of the insulator hardware.

Material: Body – galvanized steel
Hardware – galvanized steel
Cotter Pin – stainless steel



* Type BNK



FORGED STEEL

AS

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)
		L	B	W	C	T	R	PD	
AS25	30,000 (133)	2 ³ / ₈ (60.3)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	1 ³ / ₈ (34.9)	1 ² / ₂ (12.7)	1 ¹ / ₁₆ (17.56)	5 ⁸ / ₈ (15.9)	.74 (.34)
AS25BNK	30,000 (133)	2 ³ / ₈ (60.3)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	1 ³ / ₈ (34.9)	1 ² / ₂ (12.7)	1 ¹ / ₁₆ (17.5)	5 ⁸ / ₈ (15.9)	.86 (.39)
AS25L	30,000 (133)	2 ²⁵ / ₃₂ (70.6)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	1 ³ / ₈ (34.9)	1 ² / ₂ (12.7)	2 ¹ / ₃₂ (16.7)	5 ⁸ / ₈ (15.9)	1.00 (.45)
AS25LBNK	30,000 (133)	2 ²⁵ / ₃₂ (70.6)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	1 ³ / ₈ (34.9)	1 ² / ₂ (12.7)	2 ¹ / ₃₂ (16.7)	5 ⁸ / ₈ (15.9)	1.12 (.51)
AS25WBNK	30,000 (133)	3 (76.2)	5 ⁸ / ₈ (15.9)	1 ³ / ₄ (44.5)	1 ¹¹ / ₁₆ (42.9)	5 ⁸ / ₈ (15.9)	1 (25.4)	5 ⁸ / ₈ (15.9)	1.65 (.75)
AS35	35,000 (156)	2 ²⁵ / ₃₂ (70.6)	1 ¹ / ₁₆ (17.5)	1 ¹ / ₁₆ (27)	1 ¹¹ / ₁₆ (42.9)	5 ⁸ / ₈ (15.9)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	1.47 (.67)
AS35BNK	40,000 (178)	2 ²⁵ / ₃₂ (70.6)	1 ¹ / ₁₆ (17.5)	1 ¹ / ₁₆ (27)	1 ¹¹ / ₁₆ (42.9)	5 ⁸ / ₈ (15.9)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	1.66 (.75)
AS50	50,000 (222)	3 ¹ / ₂ (88.9)	7 ⁸ / ₈ (22.2)	7 ⁸ / ₈ (22.2)	1 ⁷ / ₈ (47.6)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	2.25 (1.02)
AS50BNK	60,000 (267)	3 ¹ / ₂ (88.9)	7 ⁸ / ₈ (22.2)	7 ⁸ / ₈ (22.2)	1 ⁷ / ₈ (47.6)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	3 ⁴ / ₄ (19.1)	2.44 (1.11)
970303001	60,000 (267)	5 (127)	5 ⁸ / ₈ (15.9)	1 ¹ / ₈ (28.6)	1 ⁷ / ₈ (47.6)	3 ⁴ / ₄ (19.1)	9 ¹ / ₁₆ (14.3)	3 ⁴ / ₄ (19.1)	2.4 (1.10)
970303002 ⁽¹⁾	60,000 (267)	5 (127)	5 ⁸ / ₈ (15.9)	1 ¹ / ₈ (28.6)	1 ⁷ / ₈ (47.6)	3 ⁴ / ₄ (19.1)	9 ¹ / ₁₆ (14.3)	3 ⁴ / ₄ (19.1)	2.5 (1.13)
AS50W	50,000 (222)	3 ¹ / ₂ (88.9)	7 ⁸ / ₈ (22.2)	1 ¹ / ₄ (31.8)	1 ¹⁵ / ₁₆ (49.2)	3 ⁴ / ₄ (19.1)	1 (25.4)	7 ⁸ / ₈ (22.2)	2.25 (1.02)
AS50WBNK	60,000 (267)	3 ¹ / ₂ (88.9)	7 ⁸ / ₈ (22.2)	1 ¹ / ₄ (31.8)	1 ¹⁵ / ₁₆ (49.2)	3 ⁴ / ₄ (19.1)	1 (25.4)	7 ⁸ / ₈ (22.2)	2.75 (1.25)
AS50WLBNK	60,000 (267)	5 (127)	3 ⁴ / ₄ (19.1)	1.31 (33.3)	1.87 (47.5)	3 ⁴ / ₄ (19.1)	1 (25.4)	7 ⁸ / ₈ (22.2)	3.0 (1.36)
AS60BNK	80,000 (356)	3 ³ / ₄ (95.3)	7 ⁸ / ₈ (22.2)	1 ⁷ / ₁₆ (36.5)	2 ¹ / ₈ (54)	7 ⁸ / ₈ (22.2)	1 ¹ / ₈ (28.6)	1 (25.4)	4.31 (1.96)
AS60875BNK	72,000 (320)	3 ³ / ₄ (95.3)	7 ⁸ / ₈ (22.2)	1 ⁷ / ₁₆ (36.5)	2 ¹ / ₈ (54)	7 ⁸ / ₈ (22.2)	1 ¹ / ₈ (28.6)	7 ⁸ / ₈ (22.2)	4.10 (1.86)
974153001 ⁽¹⁾	120,000 (534)	6 (152.4)	1 (25.4)	1 ¹ / ₂ (38.1)	2 ³ / ₈ (60.3)	1 (25.4)	1 ¹ / ₁₆ (27)	1 ¹ / ₈ (28.6)	6.20 (2.81)

Product Data (continued)

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)
		L	B	W	C	T	R	PD	
976743001 ⁽¹⁾	100,000 (445)	4 ⁵ / ₁₆ (109.5)	1 (25.4)	1 ¹¹ / ₁₆ (42.9)	2 ³ / ₈ (60.3)	1 (25.4)	1 ¹¹ / ₃₂ (34.1)	1 ¹ / ₈ (28.6)	5.90 (2.69)
946693001 ⁽¹⁾	100,000 (445)	4 ⁵ / ₁₆ (109.5)	1 (25.4)	1 ³ / ₁₆ (30.2)	2 ³ / ₈ (60.3)	1 (25.4)	1 ¹¹ / ₃₂ (34.1)	1 ¹ / ₈ (28.6)	5.70 (2.59)
AS135BNK	150,000 (667)	6 (152.4)	1 ¹ / ₂ (38.1)	2 ¹ / ₄ (57.2)	3 ³ / ₈ (85.7)	1 ³ / ₈ (34.9)	1 ¹³ / ₁₆ (46)	1 ¹ / ₂ (38.1)	15.75 (7.14)

(1) These shackles are type BNK (furnished with Bolt, Nut and Cotter Key).

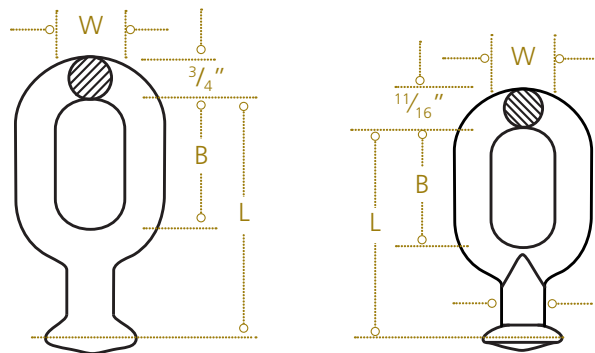
Ball Eyes

Ball eyes are used to attach ball and socket insulators to other associated hardware. The use of the ball oval-eye and an anchor shackle is one of the most common distribution tower attachment combinations.

Material: Body – galvanized steel

FORGED STEEL

BE



Product Data

Catalog Number	Ultimate Strength lb (Kn)	Dimensions Inches (mm)			Approx Wt Each lb (kg)
		L	B	W	
BE30 ⁽¹⁾	30,000 (133)	3 ²³ / ₃₂ (94.5)	2 (50.8)	1 (25.4)	1.00 (.45)
909462000 ⁽²⁾	50,000 (222)	4 ¹ / ₂ (114.3)	2 ¹ / ₂ (63.5)	1 ¹ / ₄ (31.8)	1.55 (.70)

(1) For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

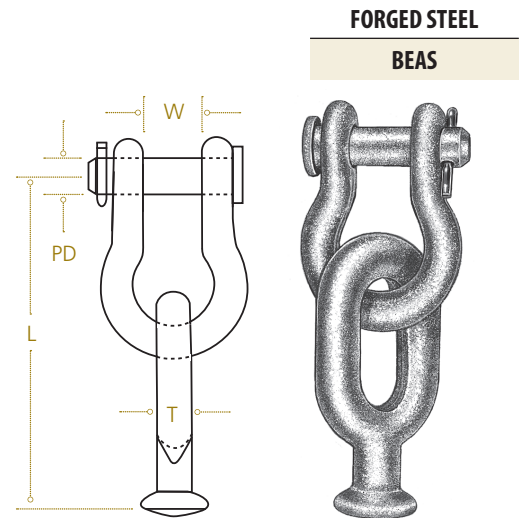
(2) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Forged Steel

Ball Oval-Eye Anchor Shackle Combination

Ball oval-eye anchor shackle combinations are popular combinations which are sold as assemblies to save field assembly time. Contact factory for other pre-assembled combinations.

Material: Body – *galvanized steel*



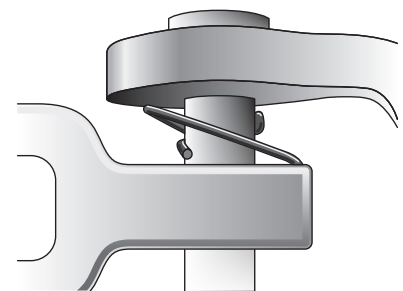
Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		W	L	T	PD	
BE30AS25	30,000 (133)	$\frac{7}{8}$ (22.2)	$5\frac{29}{32}$ (150)	$\frac{11}{16}$ (17.5)	$\frac{5}{8}$ (15.9)	1.74 (.79)
BE30AS35	30,000 (133)	$1\frac{1}{16}$ (27)	$6\frac{1}{2}$ (165.1)	$\frac{11}{16}$ (17.5)	$\frac{3}{4}$ (19.1)	2.47 (1.12)
BE30AS50	30,000 (133)	$\frac{7}{8}$ (22.2)	$7\frac{7}{32}$ (183.4)	$\frac{11}{16}$ (17.5)	$\frac{3}{4}$ (19.1)	3.25 (1.47)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71. Other combinations may be used, contact factory for additional information. Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

Steel

Clevis connections, especially if working under light mechanical load, can develop oxide films on their bearing surfaces. If these films are not fractured by weight and movement, they are subject to puncture by line voltages whose small discharges can create RIV. By establishing a shunt around the clevis joint, by means of RIV clips, the condition is easily remedied. Clips are made of spring stainless steel wire with ends cut flat and sharp to give good point contact. They are held securely by snapping around the Clevis Pin. Clip weight is 0.845 pounds per hundred.



RIV Clip
Catalog Number 941104001

Hardware Fittings — Forged Steel

Chain Links

FORGED STEEL

LK



Type LK8



Type LK8T

Links are used to maintain proper tower clearance and connect associated hardware within an insulator string.

Material: Body – galvanized steel

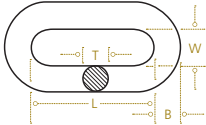


Figure 1

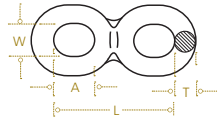


Figure 2

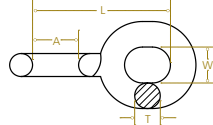


Figure 3

Product Data

Catalog Number	Figure Number	Ultimate Strength lb (kN)	Dimensions Inches mm)					Approx Wt Each lb (kg)
			L	A	B	W	T	
LK30	1	30,000 (133)	2¼ (57.2)	—	½ (12.7)	1 (25.4)	½ (12.7)	.44 (.20)
LK60	1	60,000 (267)	3½ (88.9)	—	¾ (19.1)	1 (25.4)	¾ (19.1)	1.5 (.68)
LK80	1	80,000 (356)	4 (101.6)	—	7/8 (22.2)	1¼ (31.8)	7/8 (22.2)	2.15 (.96)
LK120CVN	1	120,000 (533)	4 (102)	—	1 (25.4)	1¼ (31.8)	1 (25.4)	3.1 (1.41)
LK150	1	150,000 (667)	5½ (139.7)	—	1¾ (34.9)	1¾ (44.5)	1¾ (34.9)	6.90 (3.13)
LK830	2	30,000 (133)	3¾ (85.7)	1½ (28.6)	—	7/8 (22.2)	9/16 (14.3)	.75 (.34)
LK830T	3	30,000 (133)	3¾ (85.7)	1½ (28.6)	—	7/8 (22.2)	9/16 (14.3)	.75 (.34)
792722000	1	45,000 (200)	3¼ (82.6)	—	11/16 (17.5)	1 (25.4)	11/16 (17.5)	.95 (.43)

Hardware Fittings — Forged Steel

Hooks

FORGED STEEL

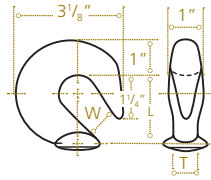
HB



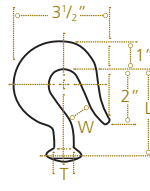
HBL



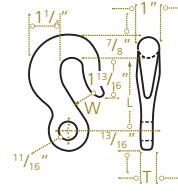
HB



HB30



HB30L



Number 792702000
ANSI Class 52-4 & 52-6

Hooks are used to attach ball and socket or clevis insulators directly to the tower attachment pad. All hooks are of the self-locking design.

Product Data

Catalog Number	Ultimate Strength lb (Kn)	Dimensions Inches (mm)			Approx Wt Each lb (kg)
		L	W	T	
HB30	30,000 (133)	2 (50.8)	$\frac{13}{16}$ (20.6)	$\frac{23}{32}$ (18.3)	1.05 (.48)
HB30L	30,000 (133)	$3\frac{1}{8}$ (79.4)	$\frac{7}{8}$ (22.2)	$\frac{23}{32}$ (18.3)	1.33 (.60)
792702000	30,000 (133)	3 (76.2)	$\frac{13}{16}$ (20.6)	$\frac{1}{2}$ (12.7)	1.30 (.59)

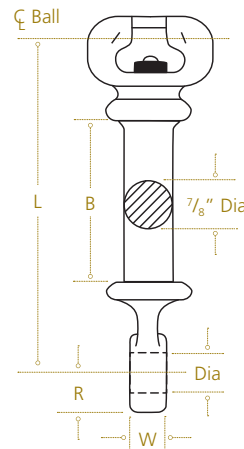
NOTE: Hooks for use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71. 792702000 for use with class 52-4 and 52-6 clevis type insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Ductile Iron

Hot Line Socket Eye

Hot line socket eyes are used to connect ball and socket insulators to other associated hardware. Shoulders are provided to accommodate hot line tools.

Material: Body – galvanized ductile iron
Cotter Pin – stainless steel



DUCTILE IRON

HSE

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)					Approx Wt Each lb (kg)
		L	B	W	R	Diameter	
HSE07712	30,000 (133)	7/8 (200)	4/8 (105)	1 1/4 (31.8)	1 (25.4)	1 1/16 (17.5)	3.23 (1.47)
HSE10004	19,000 (85)	10 (254)	6 1/4 (159)	1/2 (12.7)	1 3/16 (20.6)	1 1/16 (17.5)	2.78 (1.26)
HSE10005	30,000 (133)	10 (254)	6 1/4 (159)	5/8 (15.9)	7/8 (22.2)	1 1/16 (17.5)	2.87 (1.30)
HSE100055	30,000 (133)	10 (254)	6 1/4 (159)	1 1/16 (17.5)	7/8 (22.2)	1 1/16 (17.5)	2.9 (1.32)
HSE10006	30,000 (133)	10 (254)	6 1/4 (159)	3/4 (19.1)	7/8 (22.2)	1 1/16 (17.5)	2.97 (1.35)
HSE100065	30,000 (133)	10 (254)	6 1/4 (159)	1 3/16 (20.6)	1 5/16 (23.8)	1 3/16 (20.6)	3.00 (1.36)
HSE1000613	30,000 (133)	10 (254)	6 1/4 (159)	3/4 (19.1)	7/8 (22.2)	1 3/16 (20.6)	2.97 (1.35)
HSE10010	30,000 (133)	10 (254)	6 1/4 (159)	1 (25.4)	1 (25.4)	1 1/16 (27.1)	3.00 (1.36)
HSE100105	30,000 (133)	10 (254)	6 1/4 (159)	1 1/16 (27.1)	1 1/4 (31.8)	1 1/16 (27.1)	3.10 (1.41)
HSE10012	30,000 (133)	10 (254)	6 1/4 (159)	1 1/4 (31.8)	1 (25.4)	1 3/16 (30.2)	3.10 (1.41)
HSE100121116	30,000 (133)	10 (254)	6 1/4 (159)	1 1/4 (31.8)	1 (25.4)	1 1/16 (17.5)	3.20 (1.45)
HSE10016	30,000 (133)	10 (254)	6 1/4 (159)	1 3/4 (44.5)	1 3/16 (20.6)	1 1/16 (17.5)	3.90 (1.77)
HSE12560613	30,000 (133)	12 9/16 (319.1)	8 13/16 (224)	3/4 (19.1)	1 (25.4)	1 3/16 (20.6)	3.36 (1.52)
HSE1001550 ⁽¹⁾	50,000 (222)	10 (254)	6 1/2 (165)	1 5/8 (41.3)	2 (50.8)	1 1/16 (27.1)	5.15 (2.34)
HSE10015501 ⁽¹⁾	50,000 (222)	10 (254)	6 1/2 (165)	1 11/32 (34.1)	2 (50.8)	1 1/16 (27.1)	4.90 (2.22)

NOTE: Others for use with ANSI class 52-3 and 52-5 insulators.

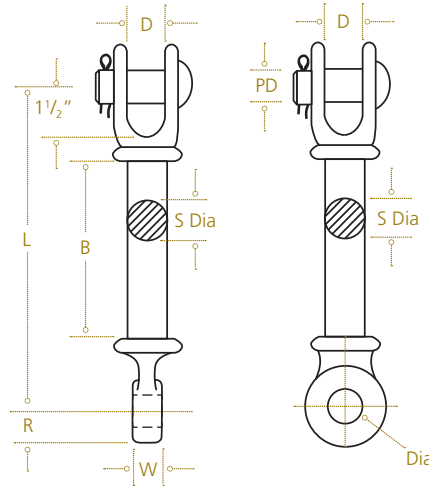
(1) These items for use with ANSI class 52-8 and 52-11 insulators.

Hardware Fittings — Ductile Iron

Hot Line Extension Clevis Eye

Hot line clevis eyes are used to connect clevis tongue insulators to various associated hardware. Shoulders are provided to accommodate hotline tools.

Material: Body – galvanized ductile iron
 Clevis Pin – galvanized steel
 Cotter Pin – stainless steel



DUCTILE IRON
HCE

TYPE HCE90

TYPE HCE

Product Data

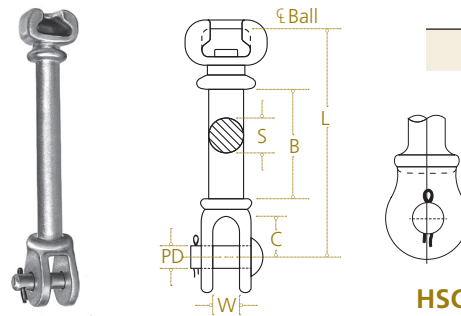
Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)								Approx Wt Each lb (kg)
		L	B	D	W	R	Diameter	PD	S	
HCE0705	30,000 (133)	7 (177.8)	3 (76.2)	13/16 (20.6)	5/8 (15.9)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	7/8 (22.2)	2.5 (1.13)
HCE10005	30,000 (133)	10 (254)	6 (152.4)	13/16 (20.6)	5/8 (15.9)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	7/8 (22.2)	2.7 (1.22)
HCE1000590	30,000 (133)	10 (254)	6 (152.40)	1 (25.4)	5/8 (15.9)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	7/8 (22.2)	2.8 (1.27)
HCE10006	30,000 (133)	10 (254)	6 (152.4)	13/16 (20.6)	3/4 (19.1)	7/8 (22.2)	1 1/16 (17.5)	5/8 (15.9)	7/8 (22.2)	3.1 (1.41)
HCE1000613	30,000 (133)	10 (254)	6 (152.4)	13/16 (20.6)	3/4 (19.1)	7/8 (22.2)	1 3/16 (20.6)	5/8 (15.9)	7/8 (22.2)	3.1 (1.41)
HCE1101240	40,000 (178)	11 (279.4)	6 (152.4)	7/8 (22.2)	1 1/4 (31.8)	1 1/4 (31.8)	1 3/16 (30.2)	3/4 (19.1)	1 1/8 (28.6)	3.52 (1.60)

Hardware Fittings — Ductile Iron

Hot Line Extension Socket Clevis

Hot line socket clevis are used to connect ball and socket insulators to other associated hardware. Shoulders are provided to accommodate hot line tools.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON

HSC

HSC110501

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		L	B	C	W	PD	S	
HSC083	30,000 (133)	8 ³ / ₈ (212.7)	4 ⁵ / ₈ (117.5)	1 ¹ / ₂ (38.1)	1 (25.4)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	3.0 (1.36)
HSC100	30,000 (133)	10 (254)	6 ¹ / ₄ (158.8)	1 ¹ / ₂ (38.1)	1 (25.4)	5 ⁸ / ₈ (15.9)	7 ⁸ / ₈ (22.2)	3.5 (1.59)
HSC10035	35,000 (156)	10 (254)	6 ³ / ₃₂ (154.8)	1 ⁵ / ₈ (41.3)	1 (25.4)	3 ⁴ / ₈ (19.1)	1 ¹ / ₃₂ (26.2)	4.5 (2.04)
HSC110501 ⁽¹⁾	50,000 (222)	11 (279.4)	6 ¹³ / ₁₆ (173)	2 (50.8)	1 ¹⁵ / ₁₆ (33.3)	7 ⁸ / ₈ (22.2)	1 ³ / ₁₆ (30.2)	7.0 (3.18)
HSC110503 ⁽¹⁾	50,000 (222)	11 (279.4)	6 ¹³ / ₁₆ (173)	2 (50.8)	1 ⁵ / ₁₆ (23.8)	7 ⁸ / ₈ (22.2)	1 ³ / ₁₆ (30.2)	6.6 (3.0)

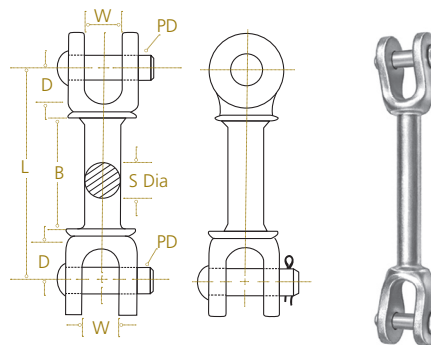
NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71. Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hot Line Clevis Clevis Type HCC

A hot line clevis clevis is used to connect associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON

HCC

Product Data

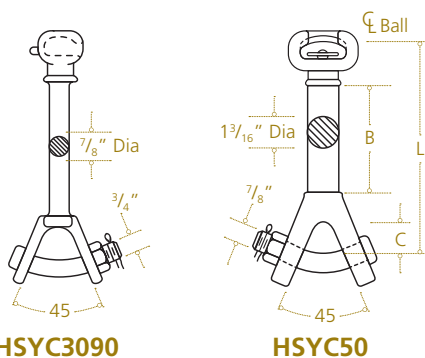
Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		L	B	W	D	S Diameter	PD	
HCC30	30,000 (133)	10 (254)	5 ⁷ / ₈ (149.2)	1 (25.4)	1 ⁵ / ₈ (41.3)	7 ⁸ / ₈ (22.2)	5 ⁸ / ₈ (15.9)	3.4 (1.54)
HCC3090	30,000 (133)	10 (254)	6 (152.4)	1 (25.4)	1 ⁵ / ₈ (41.3)	7 ⁸ / ₈ (22.2)	5 ⁸ / ₈ (15.9)	3.4 (1.54)
HCC4015	40,000 (178)	15 (381)	9 ³ / ₄ (247.6)	1 ¹ / ₁₆ (27)	2 (50.8)	1 ¹ / ₈ (28.6)	3 ⁴ / ₈ (19.1)	4.5 (2.04)

Hardware Fittings — Ductile Iron

Hot Line Socket Y-Clevis Type HSYC

Hot line socket Y-clevises are used to attach ball and socket insulators to other associated hardware. Shoulders are provided to accommodate hot line tools and the bent bolt in the Y-section provides an additional point of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON
HSYC



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimension Inches (mm)			Approx Wt Each lb (kg)
		L	B	C	
HSYC30	30,000 (133)	9 ¹ / ₁₆ (246.1)	6 (152.4)	1 ¹ / ₁₆ (39.7)	3.6 (1.63)
HSYC3090	30,000 (133)	9 ¹ / ₁₆ (246.1)	6 (152.4)	1 ¹ / ₁₆ (39.7)	3.6 (1.63)
HSYC50 ⁽¹⁾	50,000 (222)	10 ³ / ₁₆ (261.9)	5 ²⁹ / ₃₂ (150)	1 ⁵ / ₈ (41.3)	7.5 (3.40)

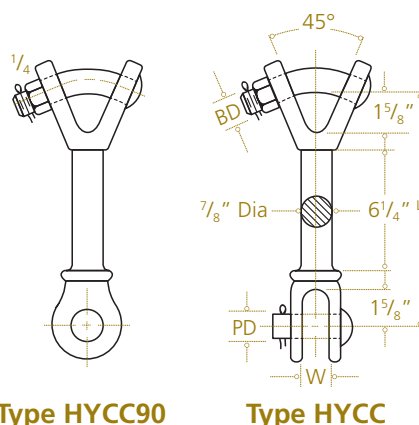
NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hot Line Y-Clevis Clevis Type HYCC

Hot line Y-clevis clevises are used to connect associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools and the bent bolts in the Y-clevises provide additional points of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel



DUCTILE IRON
HYCC



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		L	W	PD	BD	
HYCC30	30,000 (133)	10 ³ / ₁₆ (263.5)	1 (25.4)	5/8 (15.9)	3/4 (19.1)	3.5 (1.59)
HYCC3090	30,000 (133)	10 ³ / ₁₆ (263.5)	1 (25.4)	5/8 (15.9)	3/4 (19.1)	3.5 (1.59)

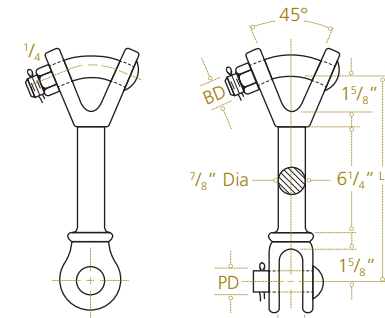
NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

Hardware Fittings — Ductile Iron

Hot Line Y-Y-Clevis

Hot line Y-Y-clevis is used to connect associated hardware within an insulator string or connecting deadend clamps to yoke plates providing clearances for jumper ends. Shoulders are provided to accommodate hot line tools and the bent bolts in the Y-clevis provide additional points of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel



Type HYCC90

Type HYCC

DUCTILE IRON

HYCC



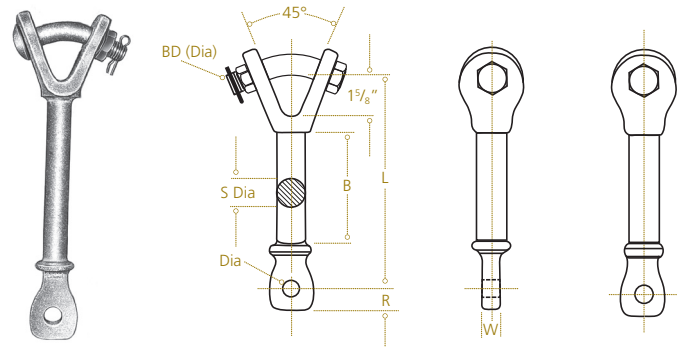
Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		L	B	BD Diameter	S Diameter	
HYCC3015	30,000 (133)	15 (381)	10 ³ / ₈ (263.7)	³ / ₄ (19.1)	⁷ / ₈ (22.2)	4.3 (1.98)
HYCC50157	50,000 (222)	15 (381)	10 ¹ / ₈ (257.2)	⁷ / ₈ (22.2)	1 ¹ / ₈ (28.6)	9.0 (4.08)

Hot Line Y-Clevis Eye

Hot line Y-clevis eyes are used to connect associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools. The bent bolt in the Y-section provides an additional point of articulation within an assembly.

Material: Body – galvanized ductile iron
Hardware – galvanized steel
Cotter Pin – stainless steel



Type HYCE

Type HYCE90

DUCTILE IRON

HYCE

Product Data

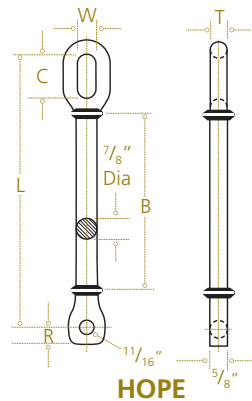
Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)
		L	R	S Diameter	B	Diameter	W	BD	
HYCE1512	15,000 (67)	12 (304.8)	¹⁵ / ₁₆ (23.8)	⁵ / ₈ (15.9)	⁷ / ₈ (187.3)	¹¹ / ₁₆ (17.5)	¹ / ₂ (12.7)	³ / ₄ (19.1)	3.4 (1.54)
HYCE3011	30,000 (133)	11 (279.4)	¹⁵ / ₁₆ (23.8)	⁷ / ₈ (22.2)	⁶ / ₈ (161.9)	¹¹ / ₁₆ (17.5)	⁵ / ₈ (15.9)	³ / ₄ (19.1)	4.2 (1.91)
HYCE301190	30,000 (133)	11 (279.4)	¹⁵ / ₁₆ (23.8)	¹⁵ / ₁₆ (23.8)	⁶ / ₈ (161.9)	¹¹ / ₁₆ (17.5)	⁵ / ₈ (15.9)	³ / ₄ (19.1)	4.57 (2.07)
HYCE301590	30,000 (133)	15 (381)	¹⁵ / ₁₆ (23.8)	¹⁵ / ₁₆ (23.8)	10 ³ / ₈ (263.5)	¹¹ / ₁₆ (17.5)	⁵ / ₈ (15.9)	³ / ₄ (19.1)	5.09 (2.31)
HYCE401190	40,000 (178)	11 (279.4)	1 ¹ / ₂ (26.2)	1 ¹ / ₈ (28.6)	⁶ / ₈ (168.3)	¹³ / ₁₆ (20.6)	²⁵ / ₃₂ (19.8)	⁷ / ₈ (22.2)	4.87 (2.20)

Hardware Fittings — Ductile Iron, Forged Steel

Ductile Iron Hot Line Oval-Eye Pad Eye

Hot line oval-eye, pad-eye extension link is used to maintain proper tower clearance and can be used to connect clevis tongue insulators to various associated hardware.

Material: Body – galvanized ductile iron



DUCTILE IRON
HOPE

HOPE90°

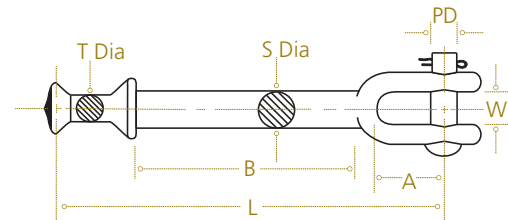
Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		L	B	C	R	W	T	
HOPE3012	30,000 (133)	12 (304.8)	7 (177.8)	2 1/8 (54)	1 5/16 (23.8)	1 5/16 (23.8)	2 3/32 (18.3)	2.8 (1.27)
HOPE301290	30,000 (133)	12 (304.8)	7 (177.8)	2 1/8 (54)	1 5/16 (23.8)	1 5/16 (23.8)	1 3/16 (20.6)	2.8 (1.27)

Forged Steel Hot Line Ball Clevis

Hot line ball clevises are used to attach ball and socket insulators to other associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools.

Material: Body – galvanized steel
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



FORGED STEEL
HBC

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)
		A	L	B	W	PD	S Diameter	T Diameter	
HBC30	30,000 (133)	1 3/4 (44.5)	9 9/16 (242.9)	5 7/8 (149.2)	1 3/16 (20.6)	5/8 (15.9)	7/8 (22.2)	2 3/32 (18.3)	2.45 (1.11)
HBC50 (1)	50,000 (222)	1 7/8 (47.6)	10 1/16 (255.6)	5 3/8 (136.5)	1 5/16 (23.8)	7/8 (22.2)	7/8 (22.2)	5 7/64 (22.6)	3.50 (1.59)

NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number. Add "BNK" suffix to specify link with bolt, nut and cotter key.

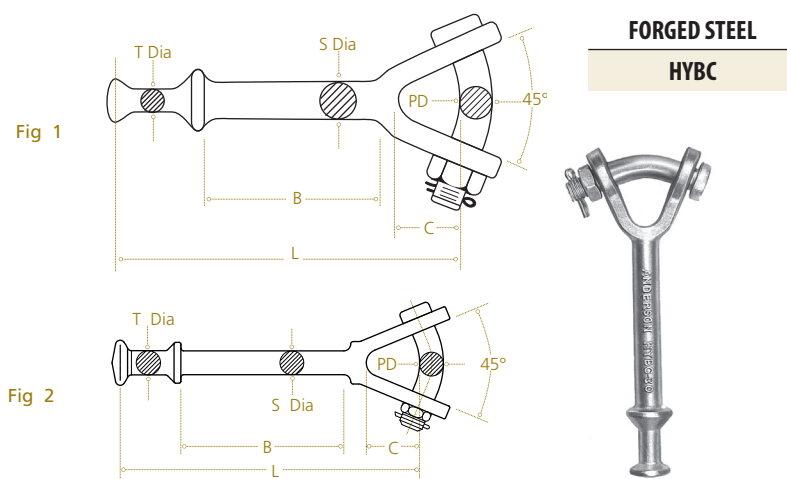
(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Forged Steel

Hot Line Y-Clevis Ball

Hot line Y-clevis balls are used to attach ball and socket insulators to other associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools and the bent bolt in the Y-section provides an additional point of articulation within an assembly.

Material: Body – galvanized steel
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



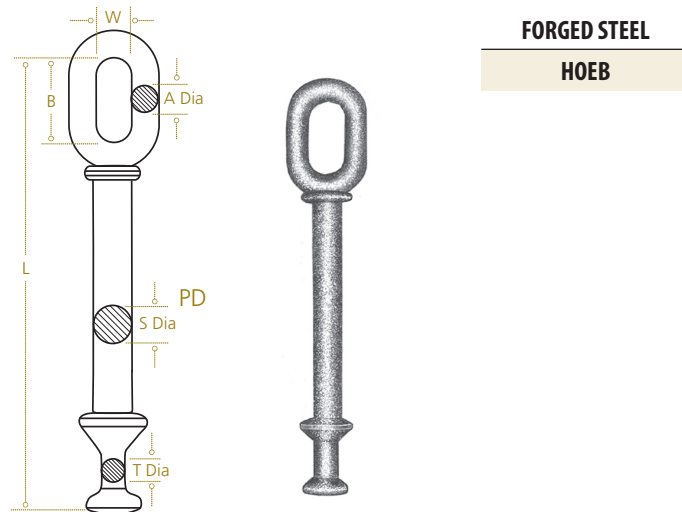
Product Data

Catalog Number	Ultimate Strength lb (kN)	Figure Number	Dimensions Inches (mm)						Approx Wt Each lb (kg)
			L	B	C	PD	S Diameter	T Diameter	
HYBC30	30,000 (133)	1	9 ⁵ / ₁₆ (236.5)	5 ³ / ₈ (136.5)	1 ¹ / ₂ (38.1)	3/4 (19.1)	7/8 (22.2)	2 ³ / ₃₂ (18.3)	2.8 (1.27)
HYBC5011 ⁽¹⁾	50,000 (222)	2	11 (279.4)	6 ¹³ / ₁₆ (173)	1 ¹¹ / ₁₆ (42.9)	7/8 (22.2)	7/8 (22.2)	5 ⁷ / ₆₄ (22.6)	4.42 (2.00)

Hot Line Oval-Eye Ball

Hot line oval-eye ball is used to attach ball and socket insulators to other associated hardware within an insulator string. Shoulders are provided to accommodate hot line tools.

Material: Body – galvanized steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
		A	B	L	W	S Diameter	T Diameter	
HOEB30	30,000 (133)	1 ¹ / ₁₆ (17.5)	2 (50.8)	11 (279.4)	1 (25.4)	7/8 (22.2)	2 ³ / ₃₂ (18.3)	2.31 (1.05)

NOTE: For use with class 52-3 and 52-5 insulators per ANSI Spec. C-29.2-71.

(1) For use with class 52-8 and 52-11 insulators per ANSI Spec. C-29.2-71.

Hardware Fittings — Forged Steel

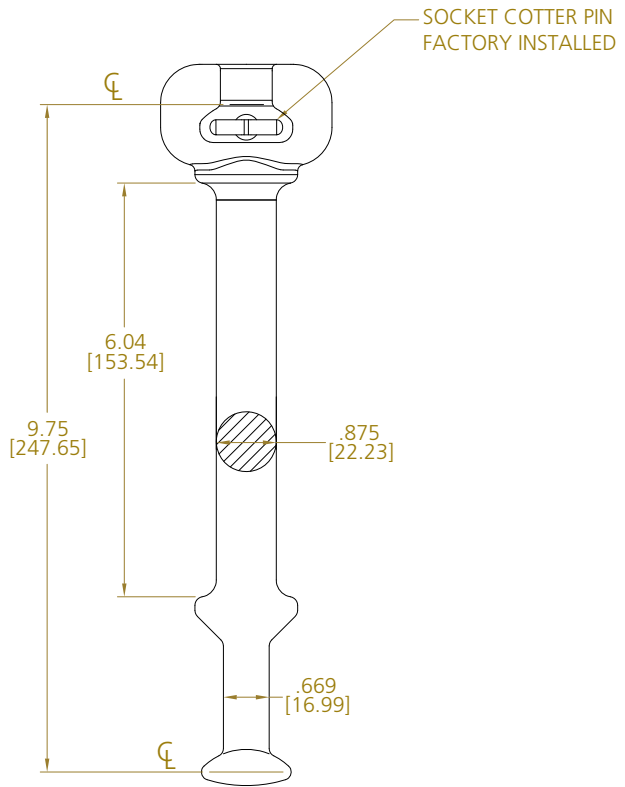
Hot Line Socket Ball

FORGED STEEL

HSB133

Hot line socket ball links are used to attach socket & ball insulators to associated hardware. Typical application is the insulator-to-deadend clamp connection on single conductor deadend assemblies. HSB133 approved for application on IEC 16 or ANSI 52-5 socket & ball connections.

Material: Link Body – *galvanized steel*
Cotter Pin – *stainless steel*



Product Data

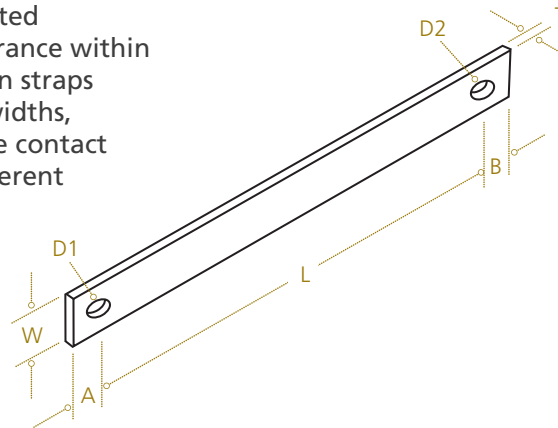
Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Socket & Ball Dimension Standard	Approx Wt Each lb (kg)
		L	B	S	T		
HSB133	30,000 (133)	9.75 (248)	6.04 (154)	0.875 (22.2)	0.669 (17.0)	IEC 16	2.81 (1.27)

Hardware Fittings — Steel

Extension Strap

Extension straps are used to attach associated hardware and maintain proper tower clearance within a transmission assembly. Because extension straps may be furnished in a variety of lengths, widths, thicknesses, as well as hole spacings, please contact factory for dimensional variations and different ultimate strengths.

Material: Body – galvanized steel



STEEL
ES

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)							Approx Wt Each lb (kg)	
		A	B	D1	D2	W	T	L	Min L	Add Per Inch
ES307819L	30,000 (133)	1/8 (28.6)	1/8 (28.6)	15/16 (23.8)	15/16 (23.8)	2 (50.8)	3/4 (19.1)	MIN "L"	2.62 (1.19)	.44 (.60)
ES407819L	40,000 (178)	1/2 (38.1)	1/2 (38.1)	15/16 (23.8)	15/16 (23.8)	2 1/2 (63.5)	3/4 (19.1)		3.67 (1.66)	.55 (.25)
ES607819L	60,000 (267)	2 (50.8)	2 (50.8)	1 1/8 (28.6)	1 1/8 (28.6)	2 1/2 (63.5)	1 (25.4)	4" PLEASE SPECIFY	5.60 (2.54)	.73 (.33)
ES807819L	80,000 (356)	2 (50.8)	2 (50.8)	1 1/4 (31.8)	1 1/4 (31.8)	3 (76.2)	1 (25.4)		6.72 (3.05)	.87 (.39)

NOTE: To specify catalog number, replace "L" with required length in inches. Example: ES40781936 for 40K strap 36" between hole centers.

Hardware Fittings — Forged Steel

Hot Line Extension Links































FORGED STEEL

H/F

Extension links are forged from high-strength steel and contain no welded joints. Because of the variety of fittings and lengths, links are made only to order. Please specify by catalog number and length required.

Material: Body – galvanized steel

Product Data

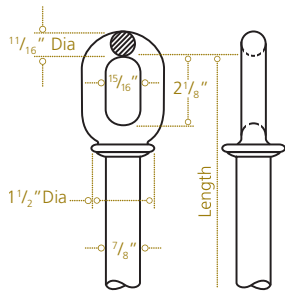
Identification	Ultimate Strength lb (kN)	Shape And Orientation Of Ends	Catalog Number	Figure Number	Available Range of Lengths		Approx Packed Weight ⁽¹⁾ Per 100 Minimum Length lb (kg)
					Minimum Inches (mm)	Maximum Inches (mm)	
Chain Eye/Chain Eye	30,000 (133)		H0030L	1	12 (305)	144 (3,658)	383 (174)
			H00T30L				
	40,000 (178)		H0040L	2	12 (305)	144 (3,658)	383 (174)
			H00T40L				
	60,000 (267)		H0050L	3	13 (330.)	144 (3,658)	536 (243)
			H00T50L				
80,000 (356)		H0080L	4	14 (356)	144 (3,658)	616 (279)	
		H00T80L					
Clevis Eye	30,000 (133)		FHCE30L	5 & 9	11 (279)	144 (3,658)	366 (166)
			FHCE30L90				
Y-Clevis Eye	30,000 (133)		FHYCE30L	7 & 9	11 (279)	144 (3,658)	369 (167)
			FHYCE30L90				
Chain Eye/Eye	30,000 (133)		FOPE30L	2 & 9	11 (279)	144 (3,658)	294 (133)
			FOPE30L90				
Clevis/Clevis	30,000 (133)		FHCC30L	5	12 (305)	144 (3,658)	372 (169)
			FHCC30L90				
Chain Eye/Clevis	30,000 (133)		FHOEC30L	2 & 5	11 (279)	144 (3,658)	357 (162)
			FHOEC30L90				
	50,000 (222)		FHOEC50L	3 & 6	12 (305)	144 (3,658)	527 (239)
			FHOEC50L90				
Chain Eye/Y-Clevis	30,000 (133)		HYCOE30L	2 & 7	11 (279)	144 (3,658)	451 (205)
			HYCOE30L90				
	50,000 (222)		HYCOE50L	3 & 8	14 (356)	144 (3,658)	451 (205)
			HYCOE50L90				
Clevis/Ball	30,000 (133)		HBC30L	5 & 10	11 (279)	24 (610)	272 (123)
	50,000 (222)		HBC50L	6 & 11	11 (279)	24 (610)	420 (291)
Y-Clevis/Ball	30,000 (133)		HYBC30L	7 & 10	11 (279)	24 (610)	342 (155)
	50,000 (222)		HYBC50L	8 & 11	11 (279)	24 (610)	442 (200)
Chain Eye/Ball	30,000 (133)		HOEB30L	1 & 10	11 (279)	24 (610)	323 (147)
	50,000 (222)		HOEB50L	3 & 11	11 (279)	24 (610)	430 (195)

NOTE: Link length available ½" increments. Use letter "D" to represent decimal point in catalog number when applicable. Example: H003020D5 for 20½" length. Normal manufacturing tolerances: Up to 50" – ±0.5 inch. Above 50" – ±1%.

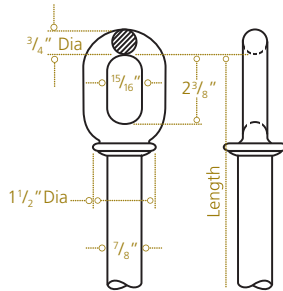
(1) For links longer than minimum length, add to packed weight per 100 pieces, 28 pounds per inch for number H0080L and H00T80L. All others, add 17 pounds per inch. Refer to next page for dimensions.

Hardware Fittings — Forged Steel

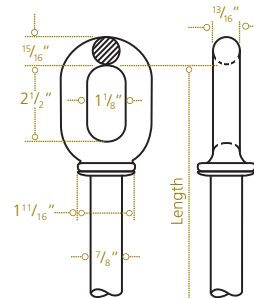
Hot Line Extension Links



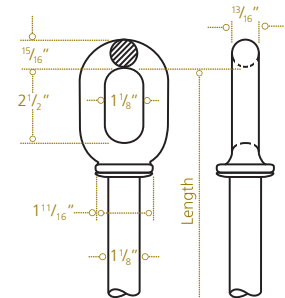
Chain Eye
Ultimate Strength –
30,000 lb
FIGURE 1



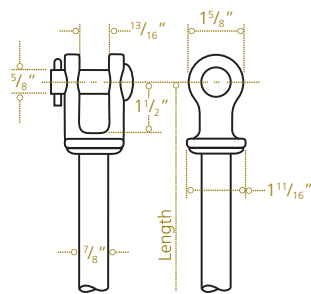
Chain Eye
Ultimate Strength –
40,000 lb
FIGURE 2



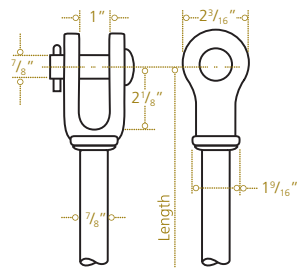
Chain Eye
Ultimate Strength –
60,000 lb
FIGURE 3



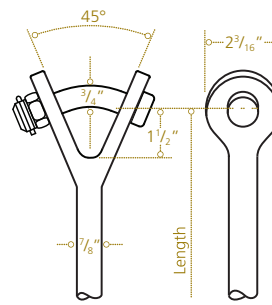
Chain Eye
Ultimate Strength –
80,000 lb
FIGURE 4



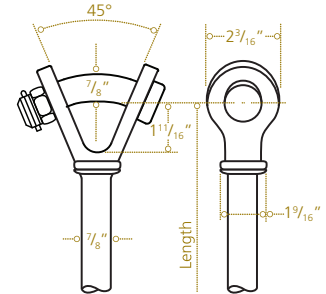
Clevis
Ultimate Strength – 30,000 lb
Connects with ANSI Class
52-4 and Class 52-6 insulators
FIGURE 5



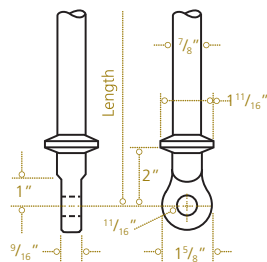
Clevis
Ultimate Strength – 50,000 lb
Connects with ANSI Class
52-12 insulators
FIGURE 6



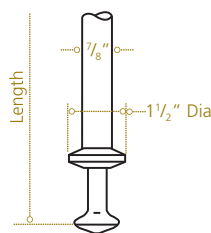
Y-Clevis
Ultimate Strength – 30,000 lb
FIGURE 7



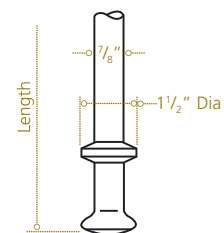
Y-Clevis
Ultimate Strength – 50,000 lb
FIGURE 8



Eye
Ultimate Strength – 30,000 lb
Connects with ANSI Class
52-4 and Class 52-6 insulators
FIGURE 9



Ball
Ultimate Strength – 30,000 lb
ANSI Class 52-3 and Class 52-5
FIGURE 10



Ball
Ultimate Strength – 50,000 lb
ANSI Class 52-8 and Class 52-11
FIGURE 11

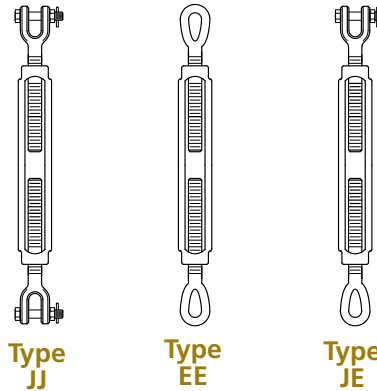
Hardware Fittings — Forged Steel

Turnbuckles

Turnbuckles are used as adjustable extension links to maintain proper tower clearance on assemblies at tower end.

Jaw ends are supplied with bolt, nut, and humpback cotter pin. Remove BNK suffix for Type EE turnbuckles.

Material: Body – galvanized forged steel
Cotter Pin – stainless steel



FORGED STEEL
TB

Product Data

Catalog Number	Diameter and Take Up Inches (mm)	Closed Coupling Length Inches (mm)			Wt Each lb (kg)		
		Type JJ	Type EE	Type JE	Type JJ	Type EE	Type JE
TB34XX6BNK	3/4 X 6 (19.1) (152.4)	15.1 (384)	17.2 (437)	16.2 (411)	4.6 (2.09)	3.89 (1.76)	4.3 (1.95)
TB34XX12BNK	12 (304.8)	21.5 (546)	23.6 (599)	22.6 (574)	6.0 (2.72)	5.43 (2.46)	5.7 (2.59)
TB34XX18BNK	18 (457.2)	27.5 (699)	29.6 (752)	28.6 (726)	7.7 (3.49)	7.0 (3.18)	7.3 (3.31)
TB78XX12BNK	7/8 X 12 (22.2) (304.8)	22.7 (577)	24.7 (627)	23.7 (602)	8.4 (3.81)	7.4 (3.36)	7.9 (3.58)
TB78XX18BNK	18 (457.2)	29.1 (739)	31.2 (792)	30.2 (767)	10.7 (4.85)	9.6 (4.35)	10.2 (4.63)
TB1XX6BNK	1 X 6 (25.4) (152.4)	17.8 (452)	20.2 (513)	19.0 (483)	9.7 (4.40)	9.0 (4.08)	9.4 (4.26)
TB1XX12BNK	12 (304.8)	23.8 (605)	26.2 (665)	25.0 (635)	11.0 (4.99)	11.2 (5.08)	11.6 (5.26)
TB1XX18BNK	18 (457.2)	29.8 (757)	32.2 (818)	31.0 (787)	14.8 (6.71)	13.8 (6.26)	14.3 (6.49)
TB1XX24BNK	24 (609.6)	36.4 (925)	38.8 (986)	37.6 (955)	18.2 (8.26)	17.1 (7.76)	17.6 (7.98)
TB114XX12BNK	1 1/4 X 12 (31.8) (304.8)	27.4 (696)	30.1 (765)	28.8 (732)	23.8 (10.8)	20.9 (9.48)	22.4 (10.2)
TB114XX18BNK	18 (457.2)	33.4 (848)	36.1 (917)	34.8 (884)	27.5 (12.5)	25.7 (11.7)	26.6 (12.1)
TB114XX24BNK	24 (609.6)	39.9 (1013)	42.7 (1085)	41.3 (1049)	33.7 (15.3)	29.7 (13.5)	31.7 (14.4)
TB112XX12BNK	1 1/2 X 12 (38.1) (304.8)	28.8 (732)	32.2 (818)	30.5 (775)	38.1 (17.3)	29.0 (13.2)	33.5 (15.2)
TB112XX18BNK	18 (457.2)	34.8 (884)	38.2 (970)	36.5 (927)	44.2 (20.0)	35.2 (16.0)	39.7 (18.0)
TB112XX24BNK	24 (609.6)	41.4 (1052)	44.9 (1140)	43.1 (1095)	48.4 (22.0)	40.7 (18.5)	44.5 (20.2)

NOTE: When ordering, replace XX with Type in Catalog Number. Example: TB34JJ6BNK for jaw-jaw end fittings with 6" take up. BNK suffix not valid for Type EE turnbuckles. Add "LN" suffix if jam nuts are required. The torque required to rotate the boss of a turnbuckle under tension can be calculated by the formula:

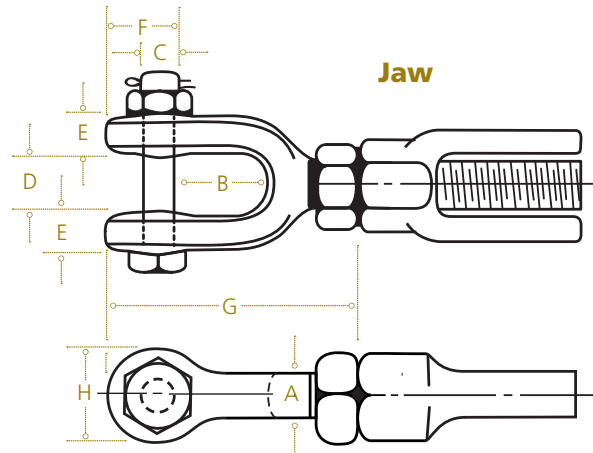
$$T = 2 (kdW/d) \text{ ft-lb}$$

Where: k = Friction factor (0.16)
d = Nominal thread diameter (inches)
W = Applied tension load (lb)

Example: 3/4 turnbuckle under 4,000 lb tension
T = 2(0.16 x 0.75 x 4000 / 12) = 80 ft-lb

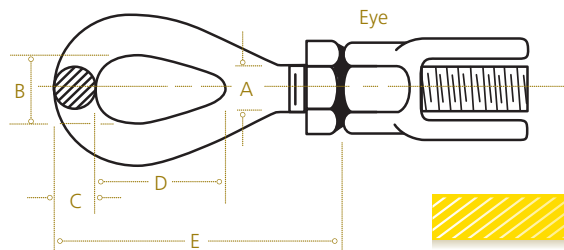
Hardware Fittings — Forged Steel

Turnbuckles



Jaw End Product Data

Dimensions Inches (mm)								Ultimate Strength Rating lb (kN)
A	B	C	D	E	F	G	H	
3/4 (19.1)	1 1/2 (38.1)	5/8 (15.9)	15/16 (23.8)	9/16 (14.3)	1 1/32 (32.5)	4 1/8 (104.8)	1 5/8 (41.3)	26,000 (116)
7/8 (22.2)	1 3/4 (44.5)	3/4 (19.1)	1 1/8 (28.6)	1 1/16 (17.5)	1 15/32 (37.3)	4 27/32 (123)	1 7/8 (47.6)	36,000 (160)
1 (25.4)	2 1/16 (52.8)	7/8 (22.2)	1 3/16 (30.2)	25/32 (19.8)	1 21/32 (42.1)	5 17/32 (140.5)	2 1/8 (54)	50,000 (222)
1 1/4 (31.8)	2 13/16 (71.4)	1 1/8 (28.6)	1 3/4 (44.5)	1 (25.4)	2 3/32 (53.2)	7 3/16 (182.6)	2 5/8 (66.7)	76,000 (338)
1 1/2 (38.1)	2 13/16 (71.4)	1 3/8 (34.9)	2 1/16 (52.8)	1 1/16 (27)	2 15/32 (64.3)	7 7/8 (200)	3 3/8 (79.4)	107,000 (476)



Eye End Product Data

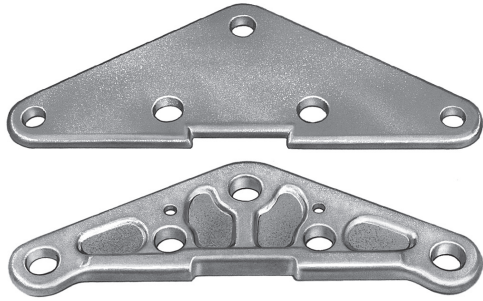
Dimensions Inches (mm)					Ultimate Strength Rating lb (kN)
A	B	C	D	E	
3/4 (19.1)	1 (25.4)	5/8 (15.9)	2 1/8 (54)	4 1/16 (119.1)	26,000 (116)
7/8 (22.2)	1 1/4 (31.8)	3/4 (19.1)	2 3/8 (60.3)	5 1/4 (133.4)	36,000 (160)
1 (25.4)	1 7/16 (36.5)	7/8 (22.2)	3 (76.2)	6 3/8 (161.9)	50,000 (222)
1 1/4 (31.8)	1 13/16 (46)	1 1/8 (28.6)	3 9/16 (90.5)	7 3/4 (196.9)	76,000 (338)
1 1/2 (38.1)	2 1/8 (54)	1 1/4 (31.8)	4 1/8 (104.8)	8 5/8 (219.1)	107,000 (476)

Hardware Fittings — Ductile/Steel

Yoke Plates Delta Configuration

DUCTILE/STEEL

YPD

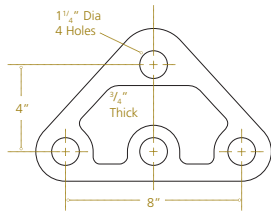


Delta Configuration

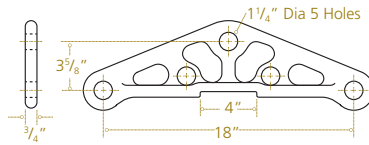
These yoke plates may be used to bundle two conductors in suspension application with a single string of insulators. They also may be used in deadend applications with two strings of insulators and one deadend clamp.

Type YPD may be furnished in a variety of sizes, hole spacings and ultimate strengths. For yokes with corona ring mounting provision, consult factory.

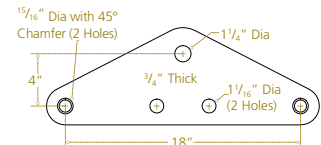
Material: Body – galvanized ductile iron or galvanized steel



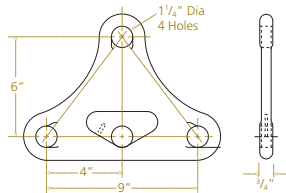
Catalog Number YPD5024685
Ultimate Strength — 50,000 lb
(Apex Hole). Ductile



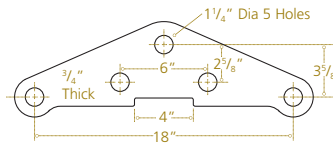
Catalog Number YPD3018437-3
Ultimate Strength — 30,000 lb
(Apex Hole). Ductile



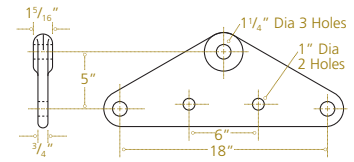
Catalog Number YPD7211574
Ultimate Strength — 72,000 lb
(Apex Hole). Steel



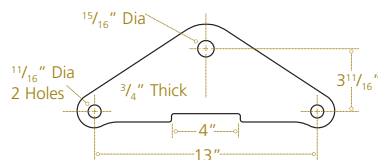
Catalog Number YPD3015238-2
Ultimate Strength — 30,000 lb
(Apex Hole). Ductile



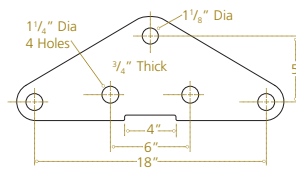
Catalog Number YPD4018342-4
Ultimate Strength — 40,000 lb
(Apex Hole). Ductile



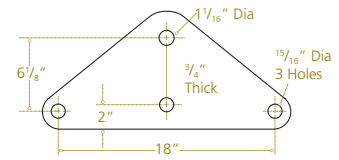
Catalog Number YPD8018475
Ultimate Strength — 80,000 lb
(Apex Hole). Ductile



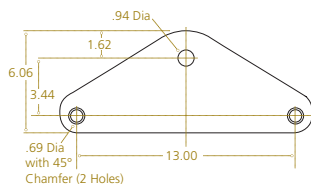
Catalog Number YPD4024465
Ultimate Strength — 40,000 lb
(Apex Hole). Ductile



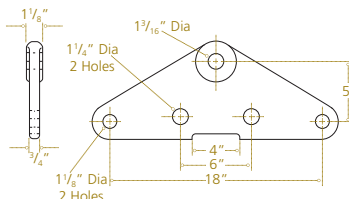
Catalog Number YPD5018549-1
Ultimate Strength — 50,000 lb
(Apex Hole). Ductile



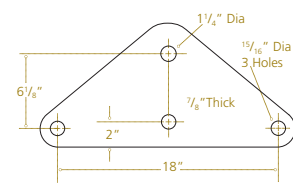
Catalog Number 947604001
Ultimate Strength — 90,000 lb
(Apex Hole). Steel



Catalog Number 796034001
Ultimate Strength — 60,000 lb
(Apex Hole). Steel



Catalog Number YPD60183771
Ultimate Strength — 60,000 lb
(Apex Hole). Ductile



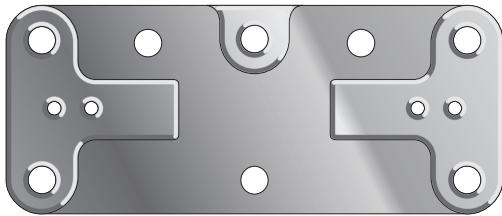
Catalog Number 951544001
Ultimate Strength — 100,000 lb
(Apex Hole). Steel

Hardware Fittings — Ductile/Steel

Yoke Plates Rectangular Configuration

DUCTILE/STEEL

YPR

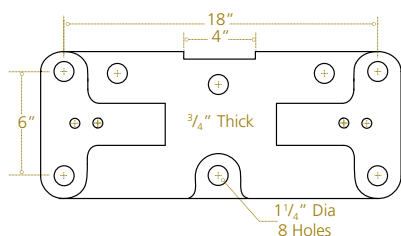


Rectangular Configuration

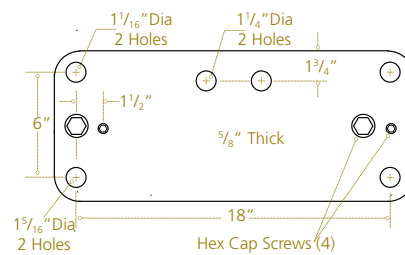
These yoke plates are used with a double string of insulators to deadend a two conductor bundle.

Type YPR yoke plates may be furnished in a variety of sizes, hole spacings, ultimate strengths and provisions for mounting corona rings.

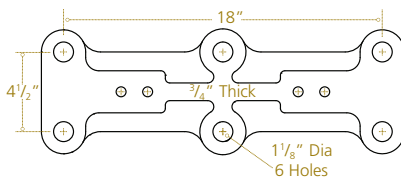
Material: *Body* – galvanized ductile iron or galvanized steel



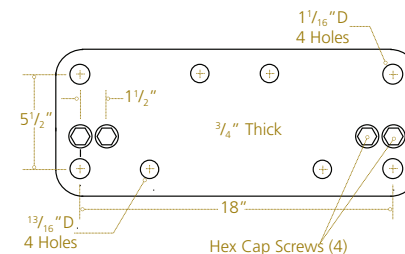
Ductile
Catalog Number YPR30187221
 Ultimate Strength Per Insulator
 Attachment Hole – 30,000 lb
 Contact Factory for Lifting Hole Rating



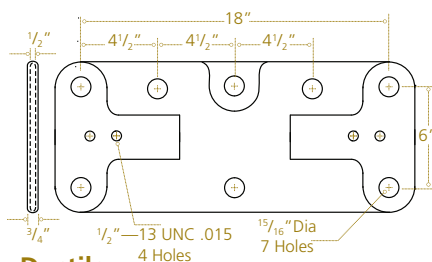
Steel
Catalog Number 976113002
 Ultimate Strength Per Insulator
 Attachment Hole – 30,000 lb



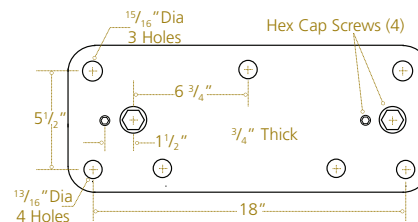
Ductile
Catalog Number YPR30173512
 Ultimate Strength Per
 Attachment Hole – 30,000 lb
 Lifting Hole Rating – 30,000 lb



Steel
Catalog Number 950213002
 Ultimate Strength Per Insulator
 Attachment Hole – 50,000 lb



Ductile
Catalog Number YPR6019401
 Ultimate Strength Per Insulator
 Attachment Hole – 60,000 lb
 Contact Factory for Lifting Hole Rating



Steel
Catalog Number 929333002
 Ultimate Strength Per Insulator
 Attachment Hole – 40,000 lb

Hardware Fittings — Aluminum, Ductile/Steel

Transmission Corona Rings

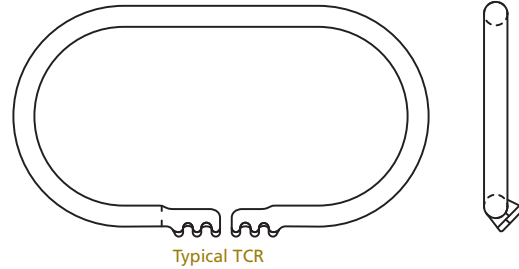
Type TCR corona rings are primarily used on deadend assemblies to grade the lower insulators on a string and shield the associated hot line hardware from corona and RIV. Type TCR corona rings are fabricated in a variety of sizes, shapes and mounting angles, depending on the system voltage and deadend assembly type.

Contact factory with deadend assembly details for assistance in specifying a specific TCR ring catalog number.

Material: Body – galvanized ductile iron or galvanized steel

ALUMINUM

TCR



Yoke Plates Vee Configuration



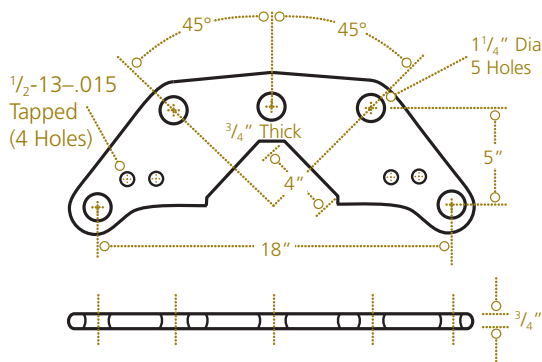
DUCTILE/STEEL

YPV

These yoke plates are used with a VEE string of insulators to attach a two conductor bundle.

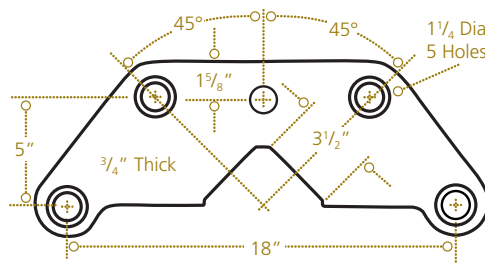
Type YPV yoke plates may be furnished in a variety of sizes, hole spacing, ultimate strengths, insulator attachment angles and provisions for mounting corona rings.

Material: Body – galvanized ductile iron or galvanized steel



Ductile Catalog Number YPV30172591

(With (4) 1/2" - 13 Holes)
Catalog Number YPV30172592
(Without (4) 1/2" - 13 Holes)
Ultimate Strength – 30,000 lb Per Insulator Attachment Hole at Indicated Angle
Contact Factory for Lifting Hole Rating



Steel Catalog Number 930064004

Ultimate Strength – 40,000 lb
Per Insulator Attachment Hole
at Indicated Angle

Hardware Fittings — Ductile/Steel

Yoke Plates Crescent Configuration

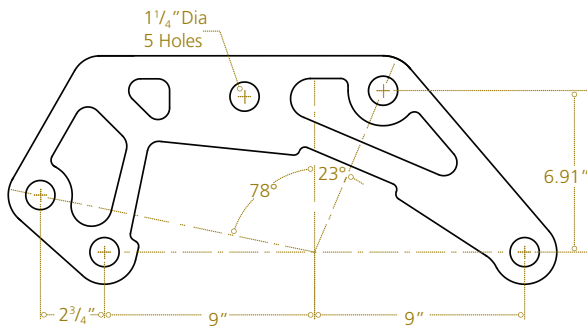
These yoke plates are used to bundle two conductors with a single and v-string, or single string, of insulators and maintain the proper running angle of the line.

Type YPC yoke plates may be furnished in a variety of sizes, hole spacing, ultimate strengths and insulator attachment angles.

Material: Body – galvanized ductile iron or galvanized steel

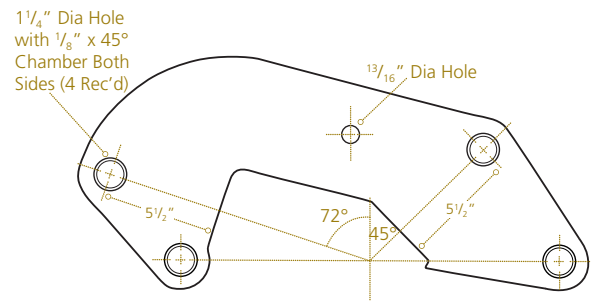
DUCTILE/STEEL

YPC



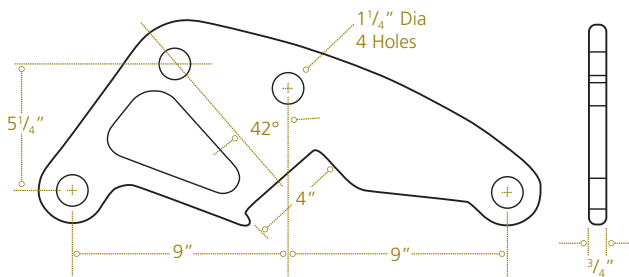
Ductile
Catalog Number – YPC30174241

Ultimate Strength – 30,000 lb Per Insulator
Attachment Hole at Indicated Angle
Contact Factory for Lifting Hole Rating



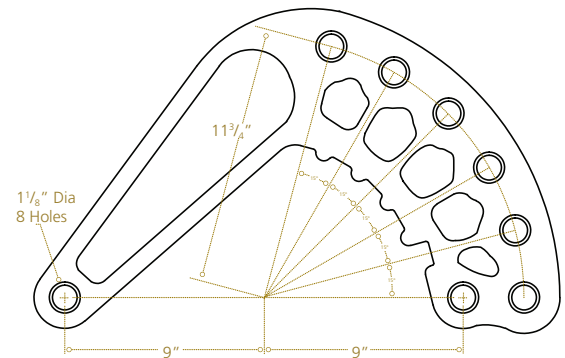
Steel
Catalog Number – 945834005

Ultimate Strength – 50,000 lb Per Insulator
Attachment Holes at Indicated Angle
Contact Factory for Lifting Hole Rating



Ductile
Catalog Number – YPC4024534

Ultimate Strength – 40,000 lb Per Insulator
Attachment Holes at Indicated Angle
Contact Factory for Lifting Hole Rating



Ductile
Catalog Number – YPC5026001

Ultimate Strength – 50,000 lb Per Insulator
Attachment Holes at Indicated Angle
Contact Factory for Lifting Hole Rating

Hardware Fittings — Ductile Iron, Steel

Yoke Plates Tee Configuration

DUCTILE IRON

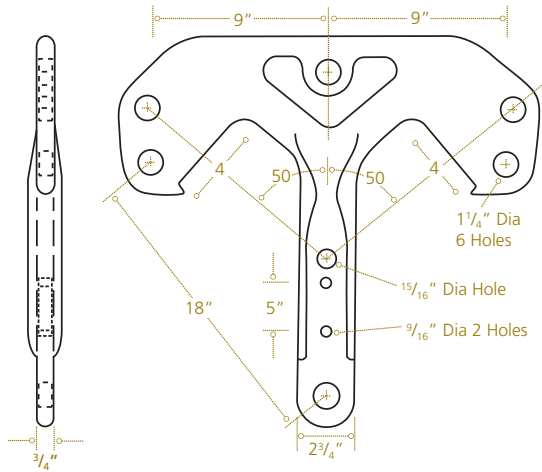
YPT



These yoke plates are used to bundle three conductors with a VEE string of insulators.

Type YPT yoke plates may be furnished in a variety of sizes, hole spacing, ultimate strengths, and insulator attachment angles.

Material: Body – galvanized ductile iron



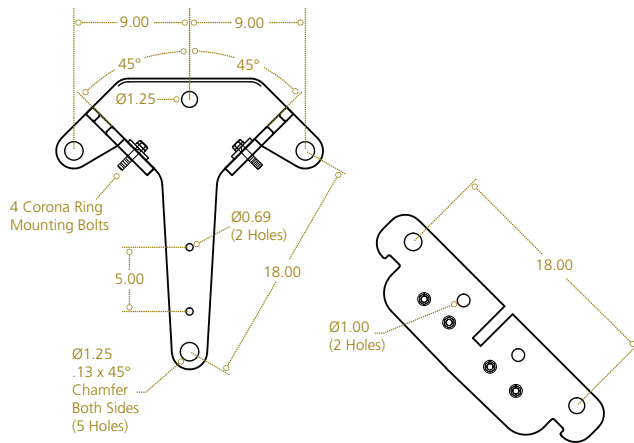
Catalog Number — YPT40236673

Ultimate Strength — 40,000 lb Per Insulator Attachment Hole at Indicated Angle
Contact Factory for Lifting Hole Rating

Yoke Plate Tee-Batwing Configuration

STEEL

YPTB



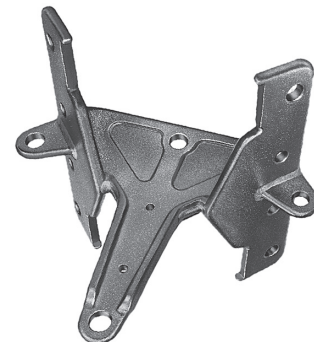
These yoke plates are used to bundle three conductors with a double VEE string of insulators.

Type YPTB yoke plates may be furnished in a variety of sizes, hole spacing, ultimate strengths, and insulator attachment angles.

Material: Body – galvanized steel

Catalog Number — YPTB40114894

Ultimate Strength — 40,000 lb Per Insulator Attachment Hole at Indicated Angle
Contact Factory for Lifting Hole Rating

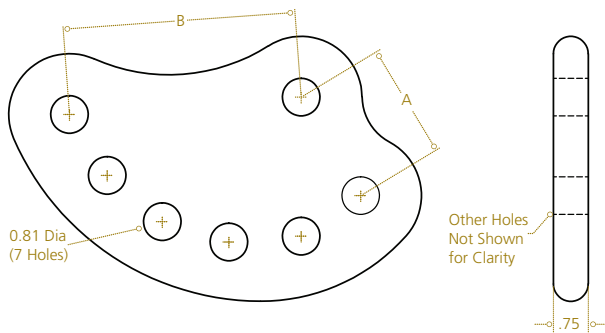


Hardware Fittings — Ductile Iron, Steel

Yoke Plate Tension-Adjustment Configuration

DUCTILE IRON

YPTA



Type YPTA tension-adjusting yoke plates are used to attach associated deadend hardware and maintain desired line tension. Adjustments are made by varying the assembly attachment point with the use of a CEEL093065 or similar part.

Material: Body – galvanized ductile iron

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)				Approx Wt Each lb (kg)
		A	B	Total Adjustment	Step	
YPTA4025052	40,000 (178)	2½ (63.5)	5 (127)	2½ (63.5)	½ (12.7)	6.9 (3.13)

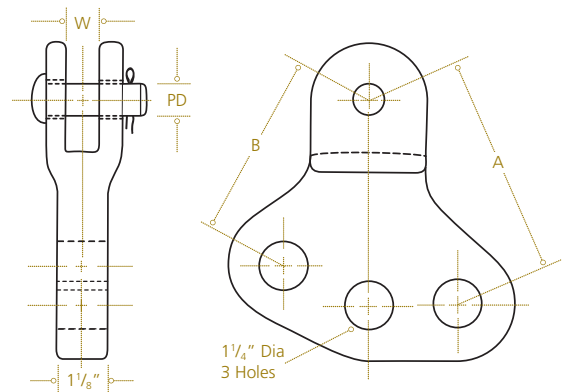
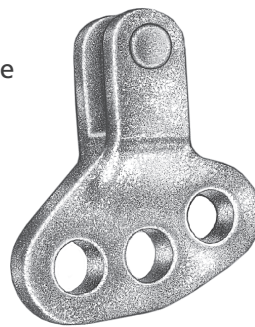
Yoke Plate (Tension-Adjustment Clevis)

DUCTILE IRON

YPTAC

Type YPTAC tension adjusting yoke plates are used to attach associated deadend hardware and maintain desired line tension. Clevis type deadend clamps attach directly to yoke and can then be attached to associated hardware.

Material: Body – galvanized ductile iron
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimensions Inches (mm)						Total Adjustment	Step	Approx Wt Each lb (kg)
		A	B	C	W	PD Diameter				
YPTAC5024658	50,000 (222)	5½ (139.7)	4½ (114.3)	2 (50.8)	1 (25.4)	¾ (19.1)	1 (25.4)	½ (12.7)	7.5 (3.40)	
YPTAC5012927 ⁽¹⁾	50,000 (222)	10¼ (260.4)	7¾ (196.9)	3¼ (87.3)	7/8 (22.2)	¾ (19.1)	2½ (63.5)	½ (12.7)	12.5 (5.68)	

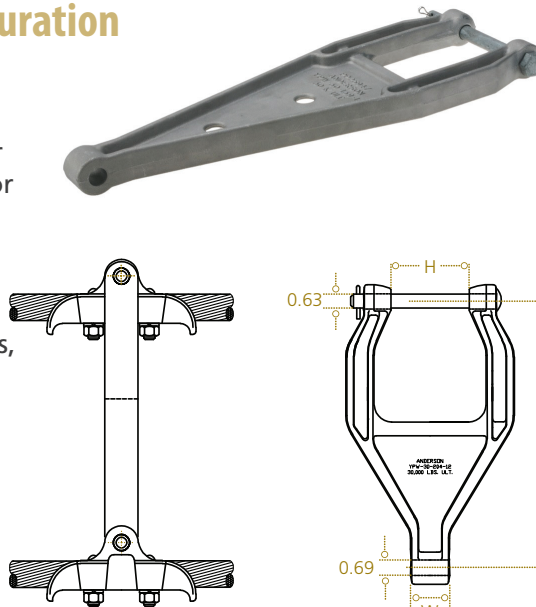
(1) Yoke has 6 adjustment holes.

Hardware Fittings — Aluminum

Bundling Yoke Wishbone Configuration

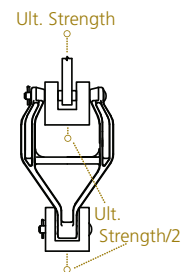
Type YPW yokes are used to vertically bundle conductors on new or rebuilt lines. Consequently, information as to conductor sizes, types of armor rod, if used, conductor spacing, ultimate strengths and existing clamp details must be given at time of ordering. YPW yokes are designed for use with Anderson™ clamps. Because YPW yokes may be furnished in a variety of sizes, conductor spacing, and ultimate strengths for both low voltage and EHV application, please contact factory for more details.

Material: Yoke Plate – aluminum alloy
Clevis Pin – galvanized steel
Cotter Pin – stainless steel



ALUMINUM

YPW



Product Data

Catalog Number	Suspension Clamp ⁽¹⁾ Catalog Number Series/Size			Ultimate Strength lb (kN)	Dimensions Inches (mm)			Approx Wt Each lb (kg)
	HAS	CFS	CFSHT		E	H	W	
YPW121189	118	—	—	12,000 (53)	9 (229)	2.56 (65.1)	1.00 (25.4)	1.9 (.86)
YPW1513912	139	139	—	15,000 (67)	12 (305)	2.63 (69.9)	1.19 (30.2)	1.8 (.82)
YPW1514712	147	—	—	15,000 (67)	12 (305)	2.63 (69.9)	1.18 (30.0)	2.5 (1.1)
YPW1516212	162	—	—	15,000 (67)	12 (305)	2.84 (72.2)	1.63 (41.3)	2.5 (1.1)
YPW1520412	204	204	—	15,000 (67)	12 (305)	3.31 (84.1)	1.75 (44.5)	2.9 (1.3)
YPW3020412	182 & 204	182 & 204	182	30,000 (133)	12 (305)	3.50 (88.9)	1.75 (44.5)	3.2 (1.4)
YPW3021312	213	213 & 227	213	30,000 (133)	12 (305)	4.06 (103)	1.75 (44.5)	3.7 (1.7)
YPW3011818	118	118	—	30,000 (133)	18 (457)	2.63 (66.8)	1.06 (27.0)	4.5 (2.0)
YPW3013912	139 & 147	139	—	30,000 (133)	12 (305)	2.87 (72.9)	1.38 (35.1)	3.5 (1.6)
YPW3013918	139 & 147	139	—	30,000 (133)	18 (457)	2.87 (72.9)	1.38 (35.1)	4.5 (2.0)
YPW3018218	182 & 204	182 & 204	182	30,000 (133)	18 (457)	3.63 (92.1)	1.75 (44.5)	4.2 (1.9)
YPW3021318	213	213 & 227	213	30,000 (133)	18 (457)	4.13 (105)	1.75 (44.5)	4.7 (2.1)
YPW3025218	252	—	—	30,000 (133)	18 (457)	4.24 (108)	2.25 (57.2)	5.0 (2.3)

NOTE: For vertical bundling yoke designs not covered above, consult factory. Add “BNK” suffix to catalog number for bolt, nut and cotter key option.

(1) Refer to Suspension Clamp section for details.

Hardware Fittings — Aluminum

Jumper Yoke Plate

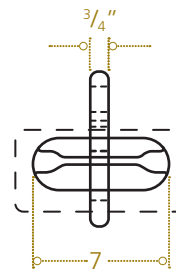
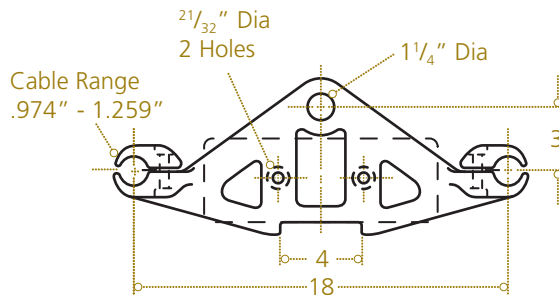
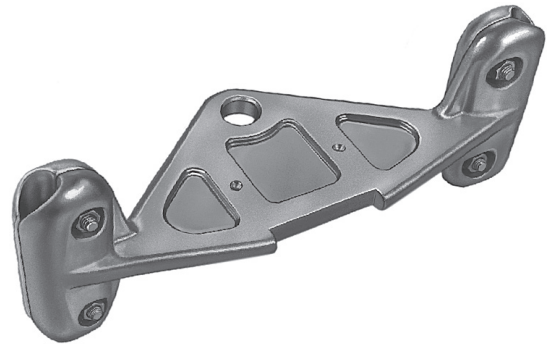
ALUMINUM

YPJ

These jumper yokes are used to bundle two, three or four conductors with a single string of insulators on a deadend tower. All jumper yokes have the provision for adding hold down weights.

Type YPJ Yoke plates may be furnished in a variety of conductor sizes and configurations.

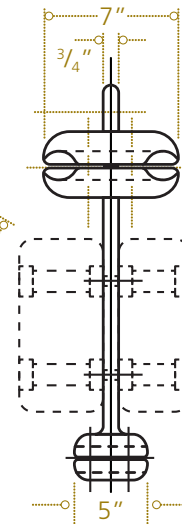
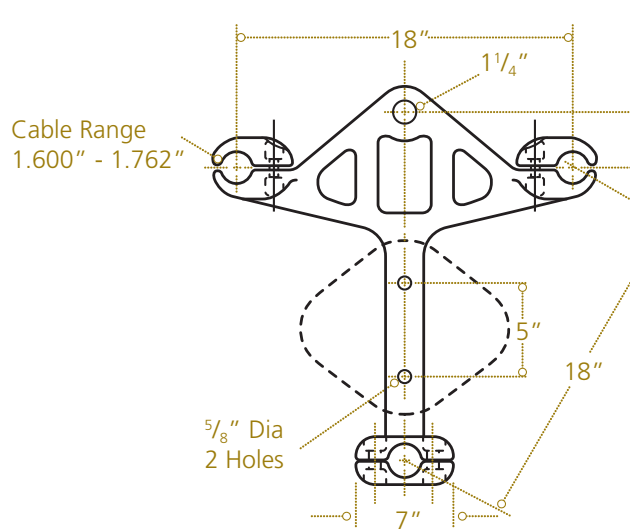
Material: Body – aluminum alloy



For Hold Down Weights, see next page.

Catalog Number - YPJ21018215

Ultimate Strength - 10,000 lbs. Per Insulator Attachment Hole



For Hold Down Weights, see next page.

Catalog Number - YPJ31024414

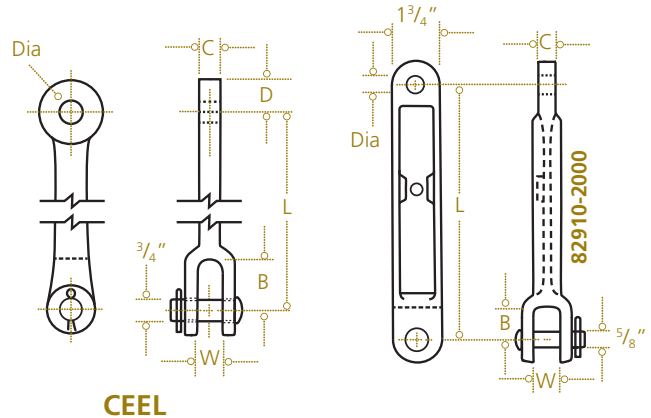
Ultimate Strength - 10,000 lb Per Insulator Attachment Hole

Hardware Fittings — Ductile Iron

Clevis Eye Extension Link

Clevis eyes are used to connect clevis tongue insulators to various associated hardware and maintain conductor spacing in deadend assemblies.

Material: Body – *galvanized ductile iron*
Hardware – *galvanized steel*
Cotter Pin – *stainless steel*



DUCTILE IRON

CEEL

Product Data

Catalog Number	Ultimate Strength lb (kN)	Dimension Inches (mm)						Approx Wt Each lb (kg)
		L	B	W	C	D	Diameter	
829102000	20,000 (89)	10 (254)	1 1/8 (28.6)	1 3/16 (20.6)	5/8 (15.9)	7/8 (22.2)	1 1/16 (17.5)	3.9 (1.77)
CEEL093065	50,000 (222)	9 3/8 (238.1)	6 (152.4)	1 (25.4)	1 3/16 (20.6)	1 3/8 (34.9)	1 3/16 (20.6)	6.0 (2.72)
CEEL15506	50,000 (222)	15 5/8 (396.9)	2 1/8 (54)	1 (25.4)	3/4 (19.1)	1 3/8 (34.9)	1 3/16 (20.6)	7.0 (3.18)

NOTE: Bolt and nut may be substituted for clevis pin by adding suffix "BNK" to catalog number.

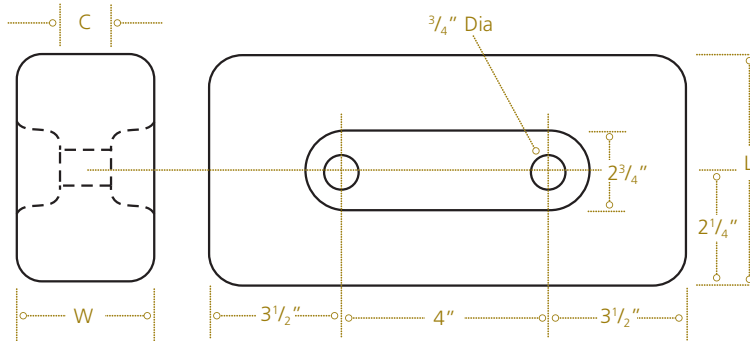
precision

Hardware Fittings — Cast Iron

Hold Down Weight Rectangular Configuration

CAST IRON

HDWR



Rectangular hold down weights may be attached to jumper yokes to add weight to the jumper assembly in various increments.

Material: Body – galvanized cast iron

Product Data

Catalog Number	Dimensions Inches (mm)			Approx Wt Each lb (kg)
	W	L	C	
HDWR50182041	2½ (63.5)	8⅝ (219.1)	⅝ (15.9)	50 (22.68)
HDWR75182045	4¾ (120.7)	6⅞ (174.6)	1 (25.4)	75 (34.02)

Hold Down Weight Square Configuration

Square hold down weights may be attached to jumper yokes or three conductor T yokes to add weight to the assembly. Square hold down weights can be used in increments of 50 lb.

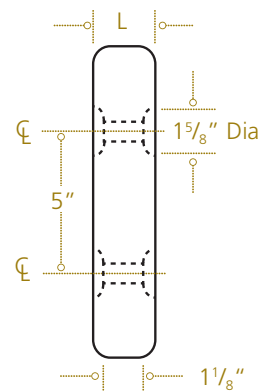
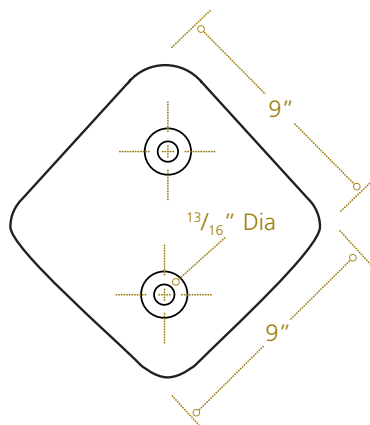
Material: Body – galvanized cast iron

CAST IRON

HDWS

Product Data

Catalog Number	Dimension Inches	Wt Each lb (kg)
	L	
HDWS5023648	2⅝ (66.7)	50 (22.68)

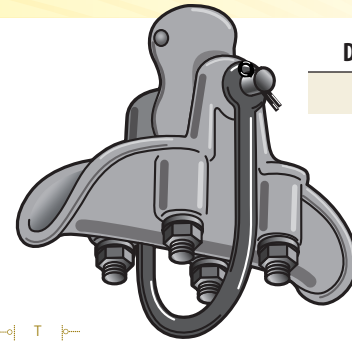


Hardware Fittings — Ductile/Steel

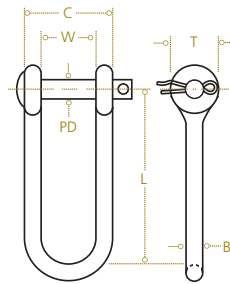
Hold Down Shackle

Hold down shackles are attached to suspension clamps to provide an attachment point to hook bolt or eye bolt. The HDWC type circular hold down weights can be attached in the desired increments to provide a means of controlling conductor position by preventing excessive uplift and sway.

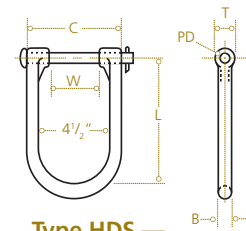
Material: Body – ductile iron or forged steel
Clevis pin – galvanized steel
Cotter pin – stainless steel



DUCTILE /STEEL
HDS/880/900



**Type 8000 —
Forged Steel**



**Type HDS —
Ductile Iron**

Product Data

Catalog Number		Ultimate Strength lb (kN)	Dimensions Inches (mm)						Approx Wt Each lb (kg)
With Clevis Pin and Cotter Key	With Bolt, Nut and Cotter Key		B	C	L	T	W	PD	
880152000	900112000	10,000 (44)	1/2 (12.7)	3/8 (98.4)	5 1/16 (128)	1 1/4 (31.8)	2 7/8 (73)	5/8 (15.9)	1.3 (.59)
HDS1024675	HDS1024675BNK	10,000 (44)	1 1/16 (17.5)	5 5/16 (134)	7 7/8 (181)	1 3/8 (34.9)	3 1/8 (79.5)	5/8 (15.9)	3.10 (1.41)
880162000	900122000	10,000 (44)	1/2 (12.7)	4 1/4 (108)	6 (152)	1 1/4 (31.8)	3 1/4 (82.6)	5/8 (15.9)	1.4 (0.64)
880172000	900132000	10,000 (44)	1/2 (12.7)	4 5/8 (117)	5 7/8 (149)	1 1/4 (31.8)	3 3/8 (92.1)	5/8 (15.9)	1.4 (0.64)
880182000	900142000	10,000 (44)	1/2 (12.7)	5 1/8 (130)	5 3/4 (146)	1 1/4 (31.8)	4 1/8 (105)	5/8 (15.9)	1.4 (0.64)
880192000	900152000	10,000 (44)	1/2 (12.7)	5 1/2 (140)	6 (152)	1 1/4 (31.8)	4 1/2 (114)	5/8 (15.9)	1.5 (0.68)

Product Data

Suspension Clamp ⁽¹⁾ Catalog Number Series/Size			Recommended Hold Down Shackle	
HAS	CFS	CFSHT	With Clevis Pin and Cotter Key	With Bolt, Nut and Cotter Key
85 TO 162	118 to 147	—	880152000	900112000
104 TO 182	118 to 162	120	HDS1024675	HDS1024675BNK
118 TO 204	139 to 204	120 TO 139	880162000	900122000
139 TO 227	147 to 182	139 TO 182	880172000	900132000
204 TO 252	182 to 227	182 TO 213	880182000	900142000
—	—	252	880192000	900152000

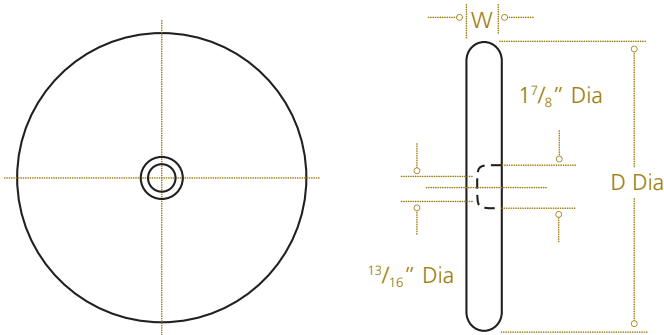
(1) See Suspension Clamp section, pages B2-B5.

Hardware Fittings — Cast Iron, Steel

Hold Down Weight Circular Configuration

CAST IRON

HDWC



Circular hold down weights are suspended below a clamp and used to add weight to a jumper or suspension assembly in 50 lb increments.

Material: Body – galvanized cast iron

Product Data

Catalog Number	Dimensions Inches (mm)		Approx Wt Each lb (kg)
	W	D	
HDWC5023868	1 3/4 (44.5)	12 (304)	50 (22.68)

Hook Bolt

STEEL

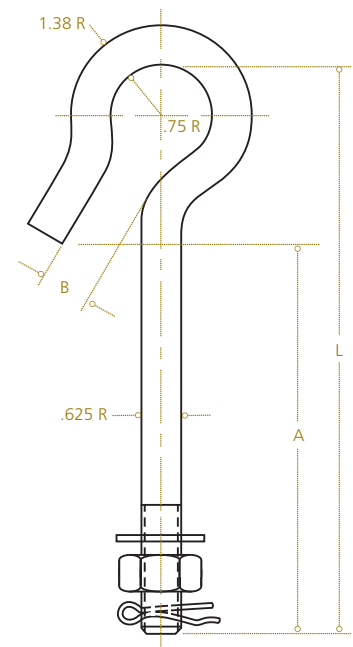
HDWH

Material: Body – galvanized steel

Product Data

Catalog Number	Dimensions Inches (mm)			Maximum Number of Catalog Number HDWC-5023868 Weights
	A	B	L	
HDWH502	6 (152)	0.75 (19.1)	9.00 (229)	2
HDWH503	7.5 (191)	0.75 (19.1)	10.50 (267)	3
HDWH504	9 (229)	1 (25.4)	12.00 (305)	4
HDWH505	11 (279)	0.75 (19.1)	14.00 (356)	5
HDWH506	12 (305)	1 (25.4)	15.00 (381)	6
HDWH507	14 (356)	0.75 (19.1)	17.00 (432)	7
HDWH508	15.75 (400)	1 (25.4)	18.75 (476)	8

NOTE: Contact factory for equivalent length eye bolts.



Hardware Fittings — Steel

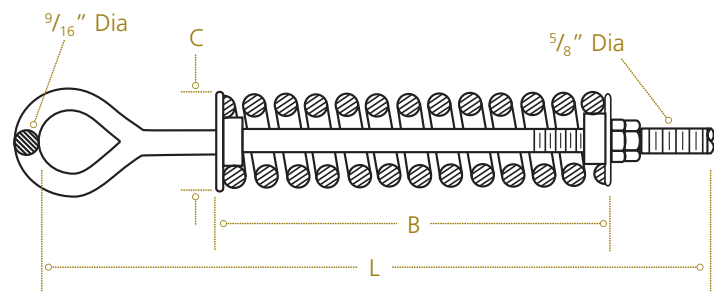
Spring Bolt

STEEL

SBA

Spring bolts are typically used to maintain controlled tension within spans of substation strain bus. Associated hardware can be used to connect the assembly to the insulation string. Spring bolt pressure is maintained between bearing plate near eye-end of bolt and structural steel at insulated end of strain bus.

Material: Spring – *galvanized steel*
 Eyebolt – *galvanized steel*
 Bearing Plate – *galvanized ductile iron*
 Nuts – *galvanized steel*
 Cotter Pin – *stainless steel*



Product Data

Catalog Number	Dimensions Inches (mm)			Tension Range lb	Deflection Rate lb per in
	L	B	C		
SBA5831725	17 $\frac{1}{4}$ (438.2)	9 (228.6)	2 $\frac{1}{2}$ (63.5)	0-3000	1500
SBA5861725	17 $\frac{1}{4}$ (438.2)	11 $\frac{1}{4}$ (285.8)	3 $\frac{3}{4}$ (95.3)	0-6000	3000
SBA5862475	24 $\frac{3}{4}$ (628.7)	11 $\frac{1}{4}$ (285.8)	3 $\frac{3}{4}$ (95.3)	0-6000	3000

NOTE: Contact factory for other lengths and variations.