

Dependable Anchoring Solutions

Hubbell Power Systems is the proud manufacturer of CHANCE® Anchors and Anchor Installing Tools. Employing lean manufacturing principles, continuous improvements, and unmatched customer service, HPS delivers these internationally renowned products to electric utility and communications providers around the globe.

Engineered for dependability and long-term stability, our anchoring systems feature exclusive anchoring techniques, tools, designs, and sizes. Our precision production and meticulous quality assurance produce reliable products that adhere to the strictest industry standards and perform in even the most challenging soil conditions, landslides, floods and time.

Anchor Selection and Application (continued)



Torque Ratings

CHANCE® Screw Anchors are designed and manufactured for maximum torsional strength. During installation, some of the torque applied by the digger and measured by installation torque indicators is dissipated by friction along the wrench and not applied to the anchor itself, so it is possible to apply more torque than the anchor alone can withstand. CHANCE anchors are rated by maximum working torque or, for the more recent designs, by the 5 percent exclusion limit which is a more explicitly defined criterion based on statistical analysis of on-line quality control testing. Both ratings take into consideration the variation to be expected in anchor torsional strength due to normal variations in materials and manufacturing processes. Customers should consider this variation along with the wide variation that can be seen in the frictional loss along the wrench in deciding how much torque can be applied safely during installation. The fact that CHANCE ratings are set near the minimum credible torsional strength also should be considered in comparing CHANCE ratings to those of manufacturers who rate their anchors based on average strength.

Application Information

Where applicable, anchors manufactured by Hubbell Power Systems, Inc. are made from steel produced in accordance with ASTM A575 and/or ASTM A576. Where galvanized, items are galvanized in accordance with ASTM A153. Call your Hubbell representative for conformance of particular items to the above specifications.

Soil Classification Data

Class	Common Soil Type Description	Geological Soil Classification	Probe Values ft-lb (nm)	Typical Blow Count "N" per ASTM-D1586
0	Sound hard rock, unweathered (bedrock)	Granite, Basalt, Massive Limestone	—	—
1	Very dense and/or cemented sands; coarse gravel and cobbles	Caliche, (Nitrate-bearing gravel/rock)	Over 60 (85 - 181)	60-100+
2	Dense fine sands; very hard silts and clays (may be preloaded)	Basal till; boulder clay; caliche; weathered laminated rock	Over 50 (68 - 85)	45-60
3	Dense sands and gravel; hard silts and clays	Glacial till; weathered shales, schist, gneiss and siltstone	42 - 50 (56 - 68)	35-50
4	Medium dense sand and gravel; very stiff to hard silts and clays	Glacial till; hardpan; marls	33 - 42 (45 - 56)	24-40
5	Medium dense coarse sands and sandy gravels; stiff to very stiff silts and clays	Saprolites, residual soils	25 - 33 (34 - 45)	14-25
6	Loose to medium dense fine to coarse sands to stiff clays and silts	Dense hydraulic fill; compacted fill; residual soils	17 - 25 (23 - 34)	7-14
7 ⁽¹⁾	Loose fine sands; Alluvium; loess; medium - stiff and varied clays; fill	Flood plain soils; lake clays; adobe; gumbo, fill	8 - 17 (11 - 23)	4-8
8 ⁽¹⁾	Peat, organic silts; inundated silts, fly ash very loose sands, very soft to soft clays	Miscellaneous fill, swamp marsh	Under 8 (0 - 11)	0-5

NOTE: Class 1 soils are difficult to probe consistently and the ASTM blow count may be of questionable value.

(1) It is advisable to install anchors deep enough, by the use of extensions, to penetrate a Class 5 or 6, underlying the Class 7 or 8 soils.

Anchor Selection

Soil Mechanics and Holding Capacity

During the early stages of the screw anchor, the load resistance of an installed anchor could not be predicted with reasonable accuracy. Specific information on soil conditions was lacking, making anchor selection more or less a guess. With little consideration for soil variations and the effects of seasonal weather changes or drainage, soils were classified as “sand, clay, hardpan or swamp.” There wasn’t any definitive explanation for such soil conditions.

CHANCE® soil classification data opened new horizons in predicting anchor holding capacity. Initially, it was necessary to obtain soil samples from the projected anchor depth in order to classify the soil and to make anchor recommendations. However, this method was inconvenient, costly and time-consuming.

Soil Probe, A Logical Development

CHANCE engineers developed the “Soil Test Probe,” a mechanical tool that makes it possible to infer subsoil conditions from the surface of the earth. The Soil Test Probe is screwed into the soil. As it displaces the soil, probe installation torque is measured in inch-pounds on a torque gauge, which is an integral part of the installing tool. Probe torque readings are then compared with the information on the CHANCE Soil Classification Data Chart and translated into the appropriate soil classification.



PISA®: Power-Installed Screw Anchors

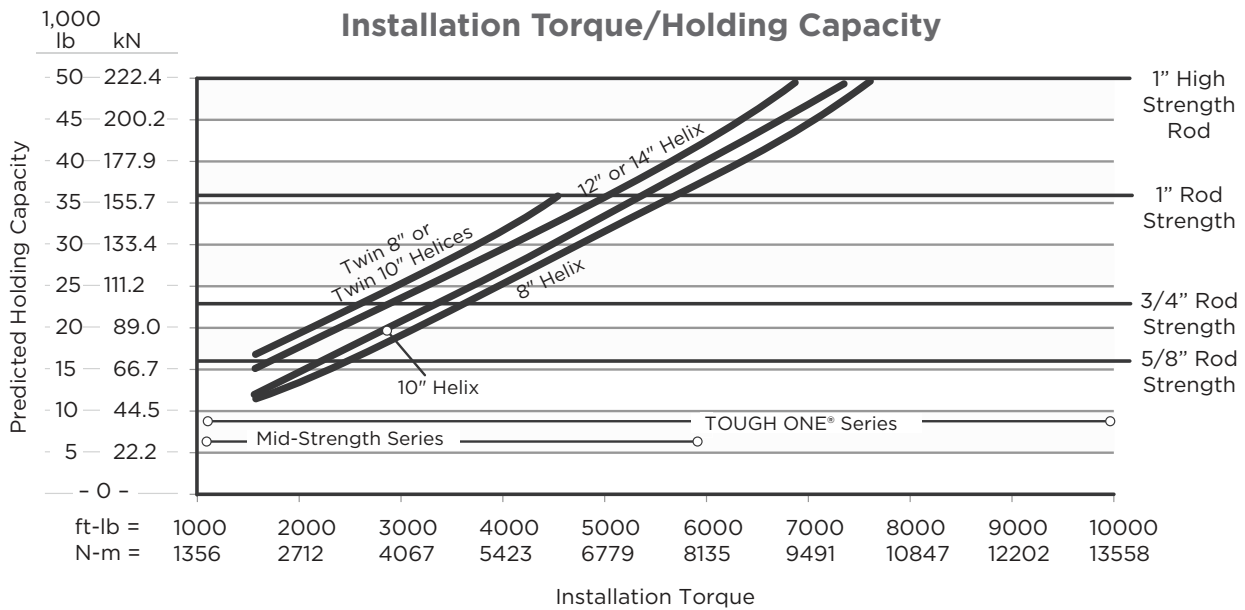
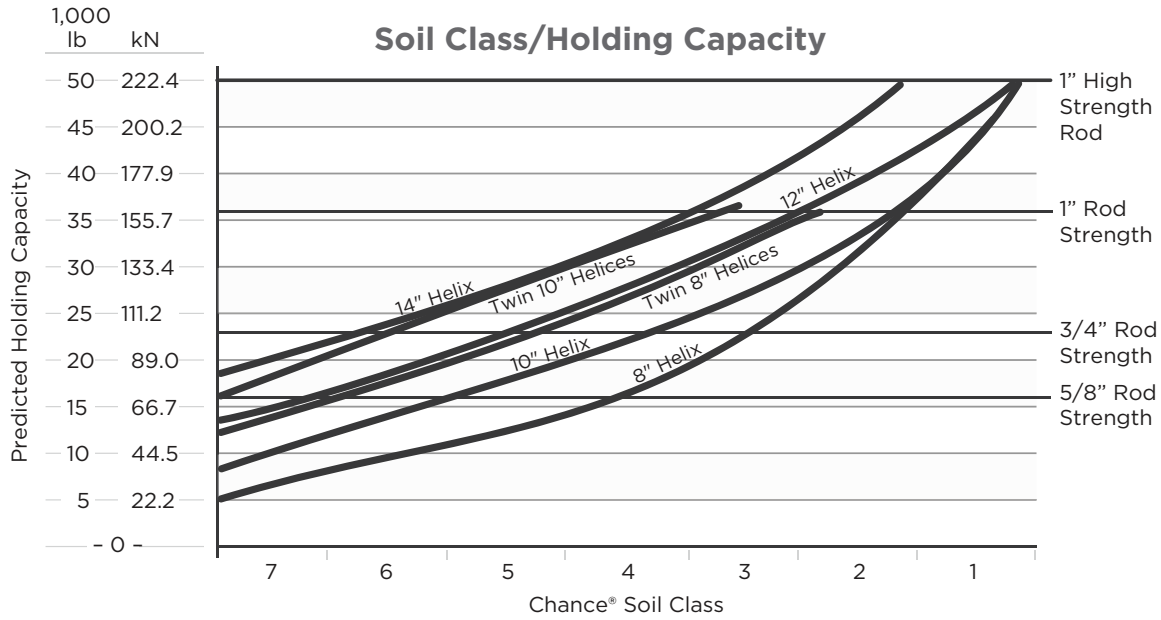
More than 50 years ago, A.B. Chance Company introduced this system of utilizing the power of digging equipment to install screw anchors. The system consists of a screw anchor, anchor rod and a special installing wrench. Each anchor has a galvanized steel threaded anchor rod with an upset hex, single or twin helices, and a galvanized guy wire nut that is screwed to the anchor rod end. PISA Anchors can be installed in a matter of minutes.



Torque and Performance

Later this method was improved with the development of CHANCE Torque Indicators and sets of holding capacity values for given anchor types. This did not obviate the soil classification data, but strengthened and simplified it so the utility employee could install a PISA Anchor or other CHANCE anchor to a given torque value and predict with relative accuracy the holding capacity of the installed anchor. Actually, the correlation between installing torque and anchor performance required thousands of tests throughout the United States and in every conceivable soil condition. It is much labor, engineering research and investment that have made possible the development of this reliable and predictable anchoring philosophy.

Power-Installed Screw Anchors (PISA®)



Helix Diameter	Rod Diameter	Rod Strength
8" = 203.2 mm	5/8" (0.625") = 15.9 mm	16,000 lb / 71.2 kN
10" = 254.0 mm	3/4" (0.756") = 19.1 mm	23,000 lb / 102.3 kN
12" = 304.8 mm	1" = 25.4 mm	36,000 lb / 160.1 kN
14" = 355.6 mm	1" High Strength = 25.4 mm	50,000 lb / 222.4 kN

NOTE: Predicted ultimate holding capacities are based on results of extensive CHANCE® tests and interpretation and are offered as an application guide only. They do not represent a guarantee of holding capacity in a particular soil class. A user must factor in his individual, appropriate safety factor. Torque values shown are steady values in homogenous soils, not peak values that might occur in non-homogenous soil. Torque values shown were obtained by averaging readings from the last 2 feet of anchor penetration. The anchor shaft must be aligned with the guy load to prevent premature failure of the rod. Under no circumstance should the rod and guy strand join at an angle of departure exceeding ± 5° on PISA anchors.

Tough One® Anchor Helix Assemblies

Torque Ratings: 10,000 ft-lb

Small Hub (2-1/4" Square Inside)

- The C10252xx series of Tough One anchors have a smaller inside hub diameter than our C10250xx series. The smaller hub is designed to be installed with the CHANCE® Anchor Wrench C1021583.
- Tough One anchors give users high-strength anchor capability in all soils. You get a better anchor at an economical price.
- The anchor's sloped lead point improves penetration and helps soil flow from below the hub to above the anchor.
- Tough One anchors use standard PISA® rods (see pages 8-9).
- Tough One anchors are painted with black paint.



Use High-Strength 10,000 ft-lb Tough One Anchor in soft and medium-hard soils.

10,000 ft-lb Tough One Anchor 2-1/4" Square Inside Hub

Install with the CHANCE Standard (10,000 ft-lb) Wrench (see page 31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025208 C1025200	4/144 4/192	C1025209 C1025201	4/144 4/144
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025210* C1025202	2/72 2/72	- C1025203**	- 2/48

**RUS Pending

*RUS Listed

Tough One® Anchor Helix Assemblies

Torque Ratings: 10,000 ft- lb and 15,000 ft- lb

Large Hub (2-1/2" Square Inside)

- Tough One anchors give users high-strength anchor capability in all soils. You get a better anchor at an economical price. With Tough One anchors, there's little concern about anchor breakage when encountering hard soils.
- The anchor's sloped lead point improves penetration and helps soil flow from below the hub to above the anchor.
- Tough One anchors use standard PISA® rods (see pages A9-A10).
- It's easy to upgrade your entire program with Tough One anchors.
- If soil conditions require installations above 10,000 ft-lb, you will need our Tough One wrench system consisting of Drive-End Assembly, Kelly Bar Adapter and Locking Dog Assembly. The high-strength system will also install PISA 6 and 7 anchors. See pages A33-A34 for high-strength anchor installing wrench information.
- Tough One Anchors are painted with black paint.

10,000 ft-lb Tough One Anchor 2-1/2" Square Inside Hub

Install with the CHANCE® Hybrid or Tough One Wrench
(see pages A30-A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025008	4/144	C1025009	4/144
	C1025004	4/144	C1025005	4/144
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025010	2/72	-	-
	C1025006	2/72	C1025007	2/48



Use 10,000 ft-lb Tough One anchor in soft and medium-hard soils.

15,000 ft-lb Tough One Anchor 2-1/2" Square Inside Hub

Install with the CHANCE® Tough One Wrench System
(see pages A30-A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	C1025000	4/144	C1025001	3/108
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
	C1025002	2/72	C1025003	2/48



Use high-strength 15,000 ft-lb Tough One in very hard soils short of solid rock.

PISA® Anchor Helix Assemblies

Mid Strength



CHANCE® Mid-Strength 6,000 ft-lb anchors have curvilinear leading edges to help penetrate rocky soils and to reduce damage during installation. These anchors are available in single and twin-helix designs. The same installing wrench installs Mid-Strength anchors as well as Tough One® C10252xx series anchors. See pages A30-A31 for installing wrench information. Anchors are painted with black paint.



PISA anchor installation takes about five minutes with two workers.

Mid-Strength Anchor Series

1-3/8" Core - 6000 ft-lb Typical Working Torque - Squared Helix - 3" Helix Pitch

Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods	E1021629	8/240	E1021630	4/144	E1021631	4/96	—	—
For 3/4" & 1" Diameter Rods	E1021632	8/240	E1021633	4/144	E1021634	4/96	E1021801	2/32

Twin Helix	Catalog Number					
	4" Diameter	Standard Pkg/Pallet	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	E1021635	1/30	E1021636	1/30	E1021637	1/30

NOTE: See pages A9-A10 for PISA anchor rods and eye nuts.

PISA® 6 and PISA 7 Anchor Helix Assemblies

- CHANCE® PISA-6 6000 ft-lb anchors and PISA -7 7000 ft-lb anchors have curvilinear leading edges to help penetrate rocky soils and to reduce damage during installation. These anchors are available in single and twin-helix designs.
- PISA-6 and PISA-7 anchors have a 1-1/2" square solid core
See pages A29-A34 for installing wrench information for the 1-1/2" PISA 6 and 7.
- Anchors are painted with black paint.



PISA 6 Anchor

1-1/2" Core - 6000 ft-lb Typical Working Torque - Squared Helix - 3" Helix Pitch

Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods	E1020816	8/240	E1020817	4/144	—	—	—	—
For 3/4" & 1" Diameter Rods	E1020819	8/240	E1020820	4/144	E1020821	4/80	T1022142	2/32

Twin Helix	Catalog Number			
	Two 8" Diameter	Standard Pkg/Pallet	Two 10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	E1020822	1/30	E1020823	1/30

PISA 7 Anchor

1-1/2" Core - 7000 ft-lb Typical Working Torque - Squared Helix - 3" Helix Pitch

Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	E1021223	8/240	E1020250	4/96	T1022143	4/80	T1022319	2/32

Twin Helix	Catalog Number					
	Two 8" Diameter	Standard Pkg/Pallet	Two 10" Diameter	Standard Pkg/Pallet	Two 4" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	E1021219	1/30	E1021220	1/30	V1021428	1/30

NOTE: See pages A9-A10 for PISA anchor rods and eye nuts.

PISA® Anchor Rods, Eyenuts and Couplings

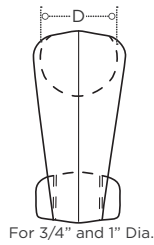
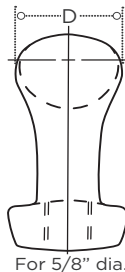
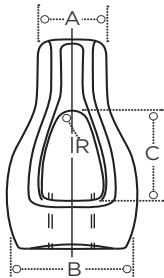
Eye Nut

	Catalog Number					
	Thimbleye®	Standard Pkg/Pallet	Twineye®	Standard Pkg/Pallet	Tripleye®	Standard Pkg/Pallet
For 5/8" Diameter Rods	12587	25/2250	12589	25/1200	12593	25/750
For 3/4" & 1" Diameter Rods	6512	25/1200	6562	25/1200	12585	25/1200
For 1" Diameter HS ⁽¹⁾	—	—	6562H	25/1200	12585H	25/1250
For 5/8" Diameter Rod - Communication Market Stamp	—	—	12589BS	25/1200	—	—
For 1" Diameter Rod - Communication Market Stamp	—	—	6562BS	25/1200	—	—

(1) HS Eye nuts are galvanized and painted orange.

Thimbleye Nuts

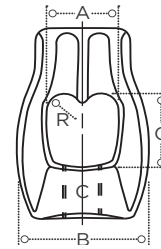
	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8" Diameter Rods	7/8	1-7/8	1-3/8	1-11/64	1/4
For 3/4" & 1" Diameter Rods	1-1/8	2-25/64	1-19/32	1-5/8	13/32



For 3/4" and 1" Dia.

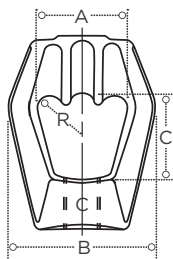
Twineye Nuts

	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8", 3/4" & 1" Diameter Rods	1-13/32	2-25/64	1-27/64	1-1/2	5/16



Tripleye Nuts

	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8", 3/4" & 1" Diameter Rods	1-3/4	2-13/16	1-5/8	1-1/2	1/4



Rod

	3-1/2-ft Rod		7-ft Rod		Ultimate Strength lb ⁽¹⁾
	Catalog Number	Standard Pkg/Pallet	Catalog Number	Standard Pkg/Pallet	
For 5/8" Diameter	12336P	5/50	12332P	5/50	16,000
For 3/4" Diameter	12634P	5/50	12632P	5/50	23,000
For 1" Diameter	12338P	5/50	12334P	1/50	36,000
For 1" Diameter HS	C1021987	5/50	C1021986	2/50	50,000

(1) Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

NOTE: All components shown on this page are hot-dip galvanized per ASTM A153.

PISA® Anchor Rods, Eyenuts and Couplings (continued)

Coupling

Coupling	Catalog Number	Standard Pkg/Pallet	Ultimate Strength
For 5/8" Diameter Rods	12245P	50/1950	16,000 lbs
For 3/4" & 1" Diameter Rods	12247P	50/2400	50,000 lbs

NOTE: Couplings are required only when it is necessary to add additional rods of 3-1/2 ft or 7 ft to form an extension.

Extension Rod & Coupling Combinations

Extension Rod & Coupling Combinations	3-1/2- ft Rod		7- ft Rod	
	Catalog Number	Standard Pkg/Pallet	Catalog Number	Standard Pkg/Pallet
5/8" Diameter	12249A	5/50	—	—
3/4" Diameter	12250A	5/50	C1022328	5/50
1" Diameter	12251A	5/50	12255A	2/50

PISA Rod & Eye Nut Combinations

Catalog Number	Rod & Eye Nut
E1020031	5/8" x 3-1/2' Rod & Thimbleye Nut
E1020047	5/8" x 3-1/2' Rod & Tripleye Nut
E1020035	5/8" x 7' Rod & Thimbleye Nut
E1020043	5/8" x 7' Rod & Twineye Nut
E1020051	5/8" x 7' Rod & Tripleye Nut
E1020032	3/4" x 3-1/2' Rod & Thimbleye Nut
E1020040	3/4" x 3-1/2' Rod & Twineye Nut
E1020036	3/4" x 7' Rod & Thimbleye Nut
E1020044	3/4" x 7' Rod & Twineye Nut
E1020052	3/4" x 7' Rod & Tripleye Nut
E1020041	1" x 3-1/2' Rod & Twineye Nut
E1020049	1" x 3-1/2' Rod & Tripleye Nut
E1020037	1" x 7' Rod & Thimbleye Nut
E1020045	1" x 7' Rod & Twineye Nut
E1020053	1" x 7' Rod & Tripleye Nut

Corrosion-Protected PISA Rod & Coupling

Rod Catalog Number	Fits Rod Size	Standard Pkg/Pallet
C1021996	1" x 7'	2/50
C1022061	1" x 3-1/2'	5/50

Coupling Catalog Number	Fits Rod Size	Standard Pkg/Pallet
C1025240	1"	50/2400



NOTE: Rod is galvanized and then covered with protective paint. A plastic tube and heat shrink sleeve is then added to rod.

NOTE: All components shown on this page are hot-dip galvanized per ASTM A153.



AERIAL INSTALLATION

RR (Round Rod) Screw Anchors

The Round-Rod (RR) multi-helix anchors are used in areas where weak soil conditions exist and moderate holding capacities are required. All helix lead sections are 7-ft long. Extension shafts may be required for installation to proper depth. RR Screw Anchors consist of three galvanized components: Lead Section, Extension Shaft (which includes an integral coupling), and the Guy Adapter. Each extension and guy adapter includes a high-strength bolt and nut. Type RR anchors torque rating is 2,300 ft-lb. Ultimate tension rating for RR mechanical strength is 70,000 lb. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Lead Sections

Catalog Number	Length ft	Helix Combinations Inches	Standard Pkg/Pallet	Holding Capacity vs Soil Class lb		
				Class 7	Class 6	Class 5
012690AE	7	8 - 10	1/20	19,000	23,000	27,000
012690AEJ	7	8 - 10 - 12	1/20	26,000	32,000	39,000
V1090007	7	10 - 10 - 10	1/15	25,000	31,000	—
V1090006	7	10	1/20	17,000	21,000	24,000

Extensions

Catalog Number	Nominal Length ft	Standard Pkg/Pallet
12696	3-1/2	1/50
12697	5	1/50
12698	7	1/30
12699	10	1/50

Guy Adapters

Catalog Number	Nominal Length Inches	Description	Standard Pkg/Pallet
C1020023	18	Thimbleye [*]	5/175
C1020024	18	Twineye [*]	5/250
C1020025	18	Tripleye [*]	5/250
C1100026	20	Threaded Stud	5/130
C1100041	18	Ovaleye	5/200

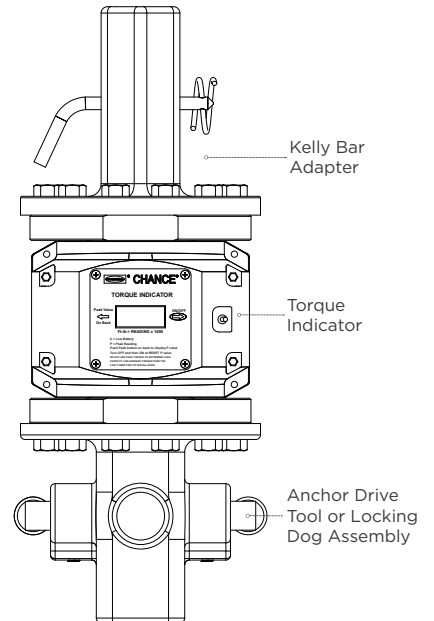
Load Capacity⁽¹⁾ Based on Installation Torque⁽²⁾ Load Capacity of RR Anchors in Soil (Pounds Tension)

Helix Combinations Inches	Installation Torque		
	1,500	2,000	2,300
10	16,000	22,000	28,000
8 - 10	17,000	23,000	29,000
10 - 10 - 10	19,000	25,000	31,000
8 - 10 - 12	19,000	25,000	31,000

(1) Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc.

(2) The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration.

Typical "RR" Drive String



SS5 (Square Shaft) Screw Anchors

Square-Shaft (SS) multi-helix screw anchors are designed for heavy-guy loading. They have 1-1/2" square steel shafts. Extension shafts must be coupled to the helix section for installation to the proper depth. For installation tool options, see page A36. SS Screw Anchors consist of three galvanized components: Lead Section, Extension Shaft (which includes an integral coupling) and Guy Adapter. Extensions and Guy Adapters include a high-strength bolt and nut. Typical working torque is 5,500 ft-lb and minimum ultimate tension strength is 70,000 lb. Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Lead Sections⁽¹⁾

Catalog Number	Length ft	Helix Combinations Inches	Standard Pkg/Pallet	Holding Capacity - lb vs Soil Class					
				Class 7	Class 6	Class 5	Class 4	Class 3	Class 2
012642AE	3	8 - 10	1/20	19,000	23,000	27,000	32,000	36,000	41,000
012642EJ	3-1/2	10 - 12	1/20	21,000	26,000	31,000	36,000	41,000	46,000
012642AEJ	5-1/2	8 - 10 - 12	1/20	26,000	32,000	39,000	46,000	51,000	58,000
012642EJN	7	10 - 12 - 14	1/20	29,000	37,000	45,000	53,000	61,000	69,000
012642AEJN	10-1/2	8 - 10 - 12 - 14	1/20	31,000	40,000	49,000	58,000	67,000	—
012642EJNS	10-1/2	10 - 12 - 14 - 14	1/20	40,000	51,000	62,000	70,000	—	—

(1) Lead sections are banded to wood blocks to facilitate forklift handling.

NOTE: Other lengths available upon request. Holding capacity based on Helix Combination, not Lead Length

Extensions

Catalog Number	Nominal Length ft	Helix Dia Inches	Standard Pkg/Pallet
12655	3-1/2	—	1/50
12656	5	—	1/50
12657	7	—	1/40
12658	10	—	1/30
12656N	5	14	1/20
12655J	3-1/2	12	1/20

NOTE: Extension shafts are banded to wood blocks to facilitate forklift handling.

NOTE: Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc. The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration. Minimum depth is five x diameter of largest helix.

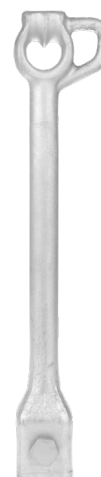
Extra Bolt & Nut for Extensions & Guy Adapters Standard Package: 10 each

Catalog Number	Description
P0010041P	Extra SS5 Bolt
055449P	Extra SS5 Nut

Guy Adapters

Catalog Number	Nominal Length Inches	Description	Standard Pkg/Pallet
C1020023	18	Thimbleye*	5/200
C1020024	18	Twineye*	5/200
C1020025	18	Tripleye*	5/200
C1100026	20	Threaded Stud	5/200
C1100041	18	Ovaleye	5/200

NOTE: Guy adapters are shipped in corrugated cartons.



Guy Adapter



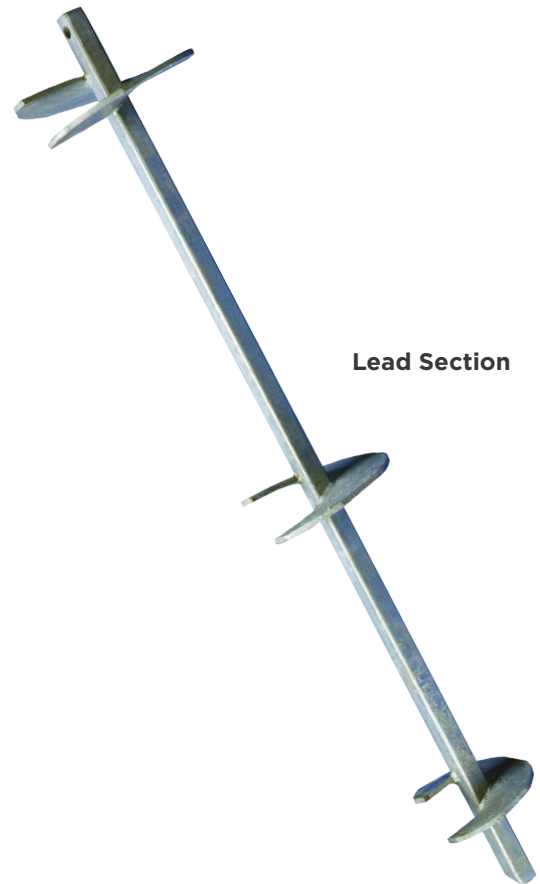
Extension

SS5 (Square Shaft) Screw Anchors (continued)

Lead Section & Guy Adapter Combinations⁽¹⁾

Catalog Number	Guy Adapter	Helix Combinations Inches
126541AE	Thimbleye®	8 - 10
126541EJ	Thimbleye®	10 - 12
126541AEJ	Thimbleye®	8 - 10 - 12
126541EJN	Thimbleye®	10 - 12 - 14
126541EJNS	Thimbleye®	10 - 12 - 14 - 14
126542AE	Twineye®	8 - 10
126542EJ	Twineye®	10 - 12
126542AEJ	Twineye®	8 - 10 - 12
126542EJN	Twineye®	10 - 12 - 14
126542EJNS	Twineye®	10 - 12 - 14 - 14
126543AE	Tripleye®	8 - 10
126543EJ	Tripleye®	10 - 12
126543AEJ	Tripleye®	8 - 10 - 12
126543EJN	Tripleye®	10 - 12 - 14
126543EJNS	Tripleye®	10 - 12 - 14 - 14

⁽¹⁾ Lead sections are banded to wood blocks to facilitate forklift handling. Guy adapters are shipped in separate corrugated cartons.



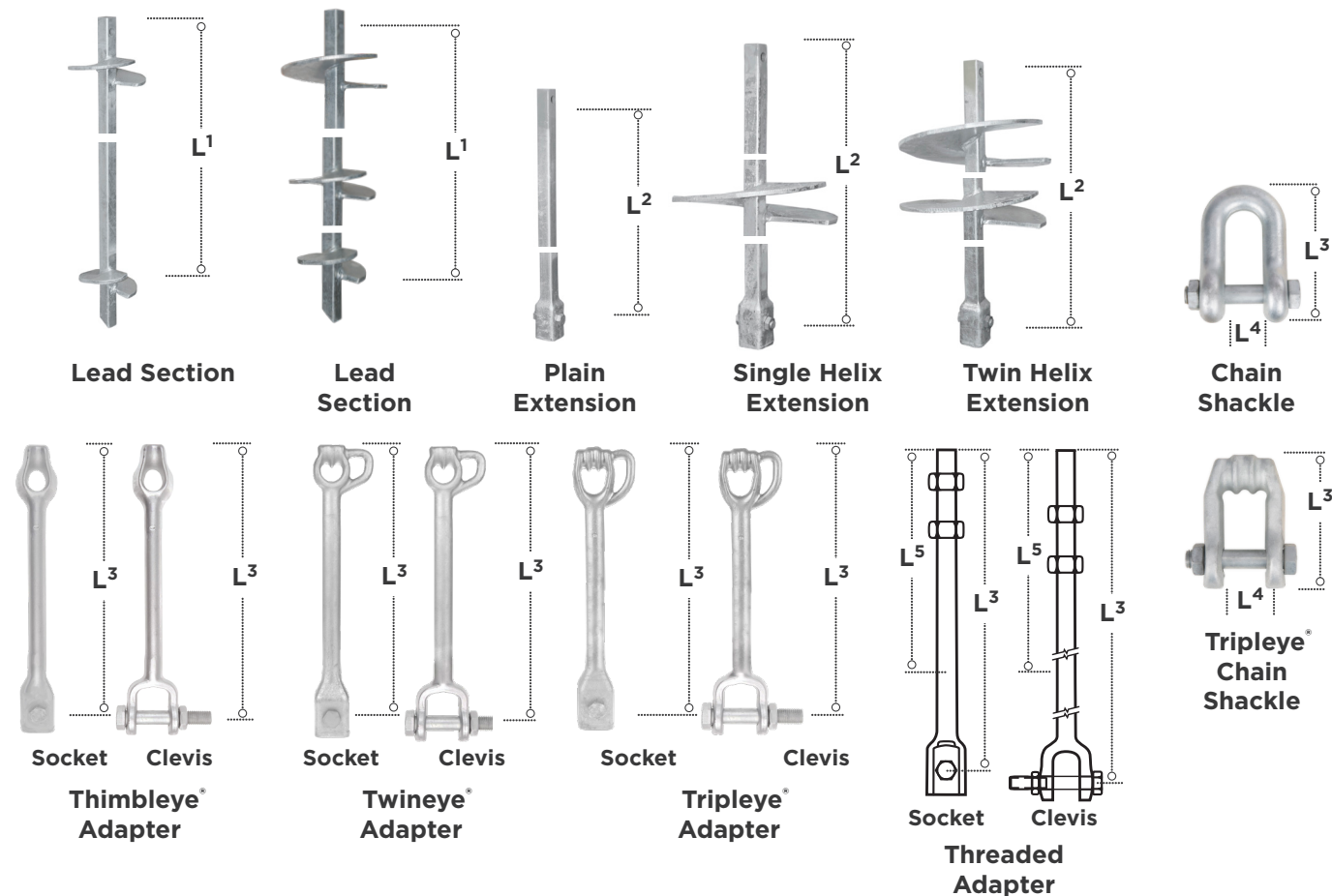
Load Capacity⁽¹⁾ Based on Installation Torque⁽²⁾ Load Capacity of SS Anchors in Soil (Pounds Tension)

Helix Combinations Inches	Installation Torque								
	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500
8 - 10	17,000	23,000	29,000	34,000	40,000	46,000	52,000	58,000	63,000
10 - 12	18,000	24,000	30,000	36,000	42,000	48,000	54,000	60,000	66,000
8 - 10 - 12	19,000	25,000	31,000	38,000	44,000	50,000	56,000	62,000	68,000
10 - 12 - 14	20,000	26,000	32,000	39,000	46,000	52,000	58,000	65,000	70,000
8 - 10 - 12 - 14	20,000	27,000	34,000	40,000	47,000	54,000	61,000	68,000	70,000
10 - 12 - 14 - 14	21,000	28,000	35,000	42,000	49,000	56,000	63,000	70,000	70,000

⁽¹⁾ Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc.

⁽²⁾ The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration. Minimum depth is five x diameter of largest helix.

High-Strength SS Anchors for Heavy Tension Loading



Ratings

Mechanical Properties	SS 150 1-1/2" Square Shaft	SS 175 1-3/4" Square Shaft	SS 200 2" Square Shaft	SS 225 2-1/4" Square Shaft
Max Installation Torque	7,000 ft-lb	10,500 ft-lb	16,000 ft-lb	21,000 ft-lb
Min Ultimate Tension Strength	70,000 lb	100,000 lb	150,000 lb	200,000 lb

Lead Sections - Hot-Dip Galvanized

Helix Configuration Inches	SS 150		SS 175		SS 200		SS 225	
	Catalog Number	L' Inches	Catalog Number	L' Inches	Catalog Number	L' Inches	Catalog Number	L' Inches
8 & 10	C1100385	30	C1100227	30	—	—	—	—
10 & 12	C1100871	42	C1100884	58	—	—	—	—
6, 8 & 10	—	—	—	—	C1100569	60	C1100543	54
8, 10 & 12	C1100386	57	C1100235	60	C1100570	60	C1100544	75
10, 12 & 14	C1100838	84	C1100923	84	C1100791	84	—	—
14, 14 & 14	C1100504	120	C1100505	124	C1100572	122	C1100545	114
8, 10, 12 & 14	T1100521	120	C1100247	124	C1100573	122	C1100591	115

High-Strength SS Anchors for Heavy Tension Loading (cont'd)

Extensions - Hot-Dip Galvanized

Helix Configuration	SS 150		SS 175		SS 200		SS 225	
	Catalog Number	L ² Inches	Catalog Number	L ² Inches	Catalog Number	L ² Inches	Catalog Number	L ² Inches
None	C1100388	37	C1100136	37	C1100563	37	C1100645	33
None	C1100470	59	C1100137	59	C1100564	58	C1100646	60
None	C1100389	80	C1100138	80	C1100565	80	C1100647	80
None	C1100440	122	C1100140	124	C1100566	123	—	120
Single 14" Helix	C1100471	48	C1100472	48	C1100577	45	C1100650	39
Twin 14" Helices	C1100454	80	C1100450	80	C1100581	80	C1100652	78
Triple 14" Helices			C1100476	124	C1100586	123	—	120

Termination Adapters - Hot-Dip Galvanized

Description	SS 150			SS 175		
	Catalog Number	Notes	L3 Inches	Catalog Number	Notes	L3 Inches
Thimbleye Adapter	C1020023	—	17	T1100311 ⁽¹⁾	—	17
Twineye Adapter	C1020024	—	17	T1100964 ⁽¹⁾	—	—
Tripleye Adapter	C1020025	—	17	T1100465 ⁽¹⁾	—	17
Ovaleye Adapter	C1100041	—	17	—	—	—
Threaded Adapter	C1100026	L5=13-1/2	20	T1100352 ⁽¹⁾⁽³⁾	L5=36"	48
Chain Shackle	C1100574 ⁽⁴⁾	L4=1-1/2	5-1/8	T1100134	L4=1-13/16	6-5/8

Description	SS 200			SS 225		
	Catalog Number	Notes	L3 Inches	Catalog Number	Notes	L3 Inches
Thimbleye Adapter	T1100312 ⁽²⁾	—	17	—	—	—
Twineye Adapter	—	—	—	—	—	—
Tripleye Adapter	T1100629 ⁽²⁾	—	—	—	—	—
Ovaleye Adapter	—	—	—	—	—	—
Threaded Adapter	—	—	—	—	—	—
Chain Shackle	C1100557	L4=2-1/4"	8-1/4	C1100558	L4=2-3/8"	9

(1) Clevis fitting. Others have Socket fitting.

(2) Rated at 70,000 lb.

(3) T1100352 includes two nuts.

(4) Tripleye shackle.

Extra Bolt & Nut- Hot-Dip Galvanized

for Extensions & Guy Adapters (socket and clevis types) Standard Package: 10 each

Description	SS5/SS 150	SS 175	SS 200	SS 225
Extra Bolt-Extension	PSZ0012415P	PSZ0012405P	PSZ0012407P	P0011771P
Extra Bolt-Adapter	PSZ0012415P ⁽⁵⁾	PSZ0012406P ⁽⁶⁾	PSZ0012404P ⁽⁷⁾	P0011448P
Extra Nut-Both	PSZ0012416P	PSZ0012408P	PSZ0012410P (Ext) / PSZ0012409P (Adpt) ⁽⁷⁾	056292P

5) Extra bolt for Tripleye Chain Shackle C1100574 is P0010031P

6) Extra bolt for SS175 threaded adapter T1100352 is P0011444P.

(7) Extra bolt and nut for SS200 chain shackle adapter C1100557 are P0011446P and PSZ0012410P.

No-Wrench Screw Anchor

For Hand or Machine Installation

CHANCE® No-Wrench Screw Anchors may be installed by hand or machine. The Thimbleye® Eye or Tripleye® Eye on the rod has a large opening to admit a turning bar for screwing the anchor down. The eye will also fit into an adapter available from most hole-boring machine manufacturers so the anchor may be power-installed. The No-Wrench Screw Anchor consists of a drop-forged steel Thimbleye Eye or Tripleye Eye rod welded to a steel helix. The entire anchor is hot-dip galvanized for long resistance to rust. No-Wrench Screw Anchors can be installed to a greater depth to reach a firmer soil by using an extension rod. Maximum installing torque is 2,300 ft-lb for 1-1/4" diameter rod. Catalog numbers 4345, 6346 and PS816 may be ordered with a forged Thimbleye rod rather than the standard Tripleye rod. To order a Thimbleye rod simply add "1" to the suffix of the catalog number. Example: Catalog Number 63461.



Typical working torque:
 3/4" Rod 400 ft-lb
 1" Rod 1000 ft-lb
 1-1/4" Rod 2300 ft-lb

Extension Rod 402
 forged coupling
 engages forged Tripleye
 fitting on Anchor Rod.

Application and Ordering Information

Catalog Number	Description	Anchor Size Dia Inches	Rod Dia & Length Inches	Standard Pkg/Pallet	No-Wrench Screw Anchor Holding Capacity lb vs Soil Class		
					Class 5	Class 6	Class 7
4345	Tripleye	4	3/4 x 54	1/100	4,500	3,000	1,500
6346 ⁽¹⁾	Tripleye	6	3/4 x 66	1/100	6,500	5,000	2,500
PS816	Tripleye	8	1 x 66	1/60	11,000	9,000	6,000
10146	Tripleye	10	1-1/4 x 66	1/20	13,000	10,000	7,000
10148	Tripleye	10	1-1/4 x 96	1/20	13,000	10,000	7,000
12537	Tripleye	14	1-1/4 x 96	1/20	16,000	15,000	12,000
15148	Tripleye	15	1-1/4 x 96	1/20	19,000	17,000	14,000
43451	Thimbleye	4	3/4 x 54	1/100	4,500	3,000	1,500
63461	Thimbleye	6	3/4 x 66	1/100	6,500	5,000	2,500
8161	Thimbleye	8	1 x 66	1/60	11,000	9,000	6,000
Extension Rod							
402	Tripleye	—	1-1/4 x 72	1/50	—	—	—

(1) RUS accepted.

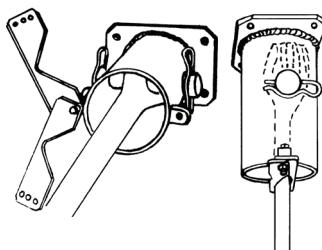
NOTE: If hand installed, holding capacity may be reduced by as much as 10% to 20%. Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

No-Wrench Power Installation Tool

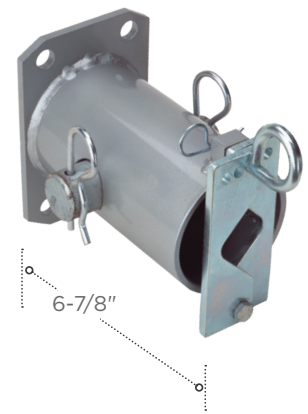
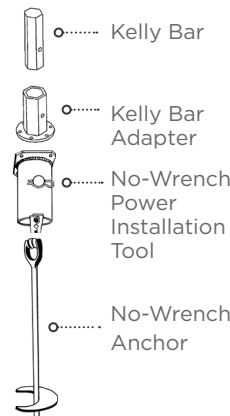
This tool bolts directly to the installer's output flange or appropriate Kelly Bar Adapter. Adjustable pivot plates accept rods from 3/4" to 1-1/4" diameter. Through-pin with retainer clip passes through the eyenut.

It has 4 holes on a 5-1/4" bolt circle for attachment and includes four 1/2" x 1-1/2" bolts, nuts, and lockwashers.

Tool can be attached to any CHANCE Torque Indicator.



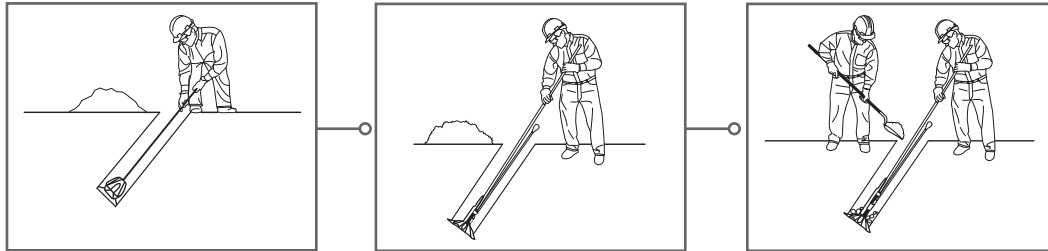
No-Wrench Typical Drive String



Catalog Number	Weight lb
E3030255	9

More Holding Capacity for Less

- Four different sizes are available with holding capacity as high as 40,000 pounds.
- CHANCE® Bust Expanding Anchors expand to take full advantage of the available area. All eight blades wedge into undisturbed earth and there is no wasted space between blades.
- This anchor should be installed in relatively dry and solid soils. The effectiveness of the anchor is dependent upon the thoroughness of backfill tamping.



Application and Ordering Information

Catalog Number	Anchor Hole Size Inches	Area Square Inches	Rod Size ⁽¹⁾ Inches	Standard Pkg/Pallet	8-Way Anchor Holding Capacity - lb vs Soil Class				
					Class 3	Class 4	Class 5	Class 6	Class 7
6870	6	70	5/8	12/288	16,000	14,000	11,000	8,500	5,000
88135	8	135	5/8 or 3/4	6/150	26,500 ⁽²⁾	22,000 ⁽²⁾	18,000 ⁽²⁾	15,000	10,000
1082	10	200	1	2/48	31,000	26,500	21,000	16,500	12,000
108234	10	200	3/4	2/48	31,000 ⁽²⁾	26,500 ⁽²⁾	21,000	16,500	12,000
1283	12	300	1-1/4	2/36	40,000	34,000	26,500	21,500	16,000
12831	12	300	1	2/36	40,000 ⁽²⁾	34,000	26,500	21,500	16,000

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

(1) Order separately.

(2) Ultimate strength of rod may limit holding capacity. See pages 19-20 for rod ratings and selection. Add suffix "G" for galvanized. Example: 88135G.

Expanding and Tamping Bar

The improved CHANCE fiberglass handle Expanding and Tamping Bar simplifies the job of expanding anchors. The curved tamper and expander head distributes the weight of the bar evenly around the anchor rod to reduce handle vibration. The hook of the Expanding and Tamping Bar wraps around the anchor rod to keep the expanding head from slipping off the anchor top plate. This tool is also effectively used for tamping in soil above the installed anchor. The base casting is attached directly to the Epoxiglas® handle. To order fiberglass replacement handles or expander head, see page A40.



Catalog Number	Description	Length ft	Weight lb
C3020003	Expanding & Tamping Bar	10	22
C3020004	Expanding & Tamping Bar	12	24

Cross-Plate Anchor

The Cross-Plate Anchor is made for installation in holes drilled by power diggers. Because the size of the hole does not affect holding capacity, the hole can be dug by the same auger that is used to dig the pole holes on transmission projects. Cross-Plate Anchors are installed in a diagonal bored hole which is undercut so the anchor is at right angles to the guy. A rod trench is either cut with a trenching tool or drilled with a small power auger. Both anchor and rod trench should be refilled and tamped.

Application and Ordering Information

Catalog Number	Hole Size Inches	Standard Pkg/Pallet	Approx Wt per Carton ⁽¹⁾ lb	Area Sq In	Rod Size ⁽²⁾ Inches	Holding Capacity ⁽³⁾ lb (No Safety Factors Included) vs Soil Class				
						Class 3	Class 4	Class 5	Class 6	Class 7
X16	16	3/162	62	150	5/8 & 3/4	26,500 ⁽³⁾	22,500 ⁽³⁾	18,500 ⁽³⁾	14,500	9,500
X20	20	2/64	64	250	5/8 & 3/4	34,000	29,000 ⁽³⁾	24,000 ⁽³⁾	19,000 ⁽³⁾	14,000
X201	20	2/64	64	250	1	34,000	29,000	24,000	19,000	14,000
X2434	24	1/48	34	400	5/8 & 3/4	45,000 ⁽³⁾	37,000 ⁽³⁾	30,000 ⁽³⁾	23,500 ⁽³⁾	18,000 ⁽³⁾
X24 ⁽¹⁾	24	1/48	34	400	1	45,000 ⁽³⁾	37,000 ⁽³⁾	30,000	23,500	18,000
X241 ⁽¹⁾	24	1/48	34	400	1-1/4	45,000	37,000	30,000	23,500	18,000

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

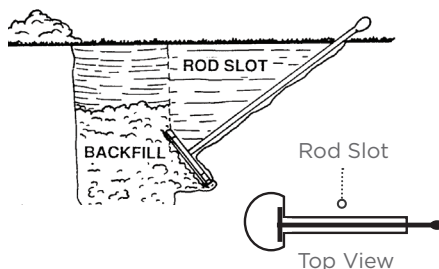
(3) Ultimate strength of rod may limit holding capacity. Add suffix "G" for galvanized. Example: X20G.

(1) X24 Series are not available in cartons and are shipped as individual pieces.

(2) Order separately.

Holding capacities are ultimate values. An appropriate factor of safety should be used to determine the allowable or service load. Hubbell Power Systems, Inc. recommends a factor of safety of at least 2 for permanent structures

For Class 3, 4, 5, and 6 soils, the depth required to achieve the holding capacities listed in the table is 5 vertical feet to the center of the plate. For Class 7 soils, the depth required is 7 vertical feet to the center of the plate.



***Order Anchor Rod Separately**

Anchor Rod Extensions

These Anchor Rod Extensions are primarily for making above-grade connections between installed anchors and guy wires. Each extension's forged eye is designed to distribute pulling stresses uniformly over individual strands of guy wire and keep the guy wire from spreading, kinking or bending. The drop-forged eye of each extension rod is stronger than the rod itself. Rod length and diameter are stamped below each rod eye. Each extension rod is hot-dip galvanized and includes a high-strength bolt and nut.



Welded Clevis Style



Forged Clevis Style

Catalog Number	Description	Rod Dia & Length Inches	Clevis Bolt Dia Inches	Standard Pkg/Pallet	Strength lb
PSC1022176	Tripleye*	3/4 x 24	3/4	5/50	23,000
PSC1022177	Tripleye*	3/4 x 36	3/4	1/50	23,000
PSC1022178	Tripleye*	3/4 x 72	3/4	1/50	23,000
PSC1022183	Twineye*	1 x 24	7/8	5/50	36,000
PSC1022305	Tripleye*	1 x 24	7/8	1/50	36,000
PSC1022184	Twineye*	1 x 36	7/8	1/50	36,000
PSC1022306	Tripleye*	1 x 36	7/8	1/50	36,000

Catalog Number	Description	Rod Dia & Length Inches	Clevis Bolt Dia Inches	Standard Pkg/Pallet	Strength lb
4022	Tripleye*	1-1/4 x 24	1	1/50	40,000
PS4023	Tripleye*	1-1/4 x 36	1	1/50	40,000
402	Tripleye*	1-1/4 x 72	1	1/50	40,000

- Available for one, two or three guys for use with Expanding or Cross Plate Anchors.
- Thimbleye®, Twineye® and Tripleye® rods distribute pulling stresses uniformly over individual strands of guy wire and keep the guy wire from spreading, kinking or bending.
- The drop-forged eye of each anchor rod is stronger than the rod itself.
- Rod length and diameter are stamped below each rod eye.
- Each rod is threaded 3-1/2" minimum length.
- Nuts are included.

Catalog Number				Size	Communication Market Product		
Thimbleye® Adapter	Twineye® Adapter	Tripleye® Adapter	Ovaleye Adapter		Thimbleye® Adapter	Twineye® Adapter	Tripleye® Adapter
5305	—	—	—	1/2" x 5'	—	—	—
5306	—	—	—	1/2" x 6'	—	—	—
5315	—	—	—	5/8" x 5'	—	—	—
5316 ⁽¹⁾	5346	—	—	5/8" x 6'	—	—	—
5317 ⁽¹⁾	5347 ⁽¹⁾	—	PS6417	5/8" x 7'	—	—	—
5318 ⁽¹⁾	5348 ⁽¹⁾	—	—	5/8" x 8'	—	400260980	—
5326 ⁽¹⁾	5356 ⁽¹⁾	—	—	3/4" x 6'	—	—	—
5327 ⁽¹⁾	5357 ⁽¹⁾	7557 ⁽¹⁾	—	3/4" x 7'	—	—	—
5328 ⁽¹⁾	5358 ⁽¹⁾	7558	—	3/4" x 8'	—	—	—
—	5359 ⁽¹⁾	7559	—	3/4" x 9'	—	—	400261038
—	5360	—	—	3/4" x 10'	—	—	—
5338 ⁽¹⁾	5368 ⁽¹⁾	7568	—	1" x 8'	—	—	—
—	5369	—	—	1" x 9'	—	—	—
5340 ⁽¹⁾	5370 ⁽¹⁾	7570	—	1" x 10'	—	400261004	400261046
—	—	C2000028	—	1-1/4" x 8'	—	—	—
—	15129	7574	—	1-1/4" x 10'	—	400261012	—

(1) IEEE standard.

Tensile Strength ⁽¹⁾

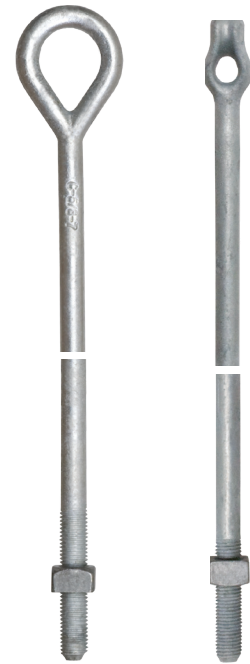
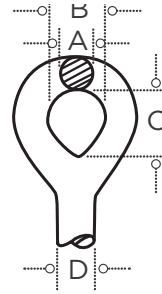
Rod Size inches	Strength lb	Nut Part Number
1/2	10,000	55058P
5/8	16,000	55006P
3/4	23,000	55312P
1	36,000	55320P
1-1/4	58,000	56001P

(1) Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Galvanized Anchor Rods (continued)

Ovaleye Adapter

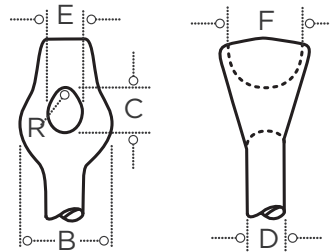
D Inches	A Inches	B Inches	C Inches
5/8	9/16	1-1/2	2
1	7/8	1-1/2	2



Ovaleyeye Thimbleye

Thimbleye Adapter

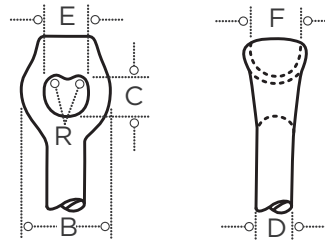
D Inches	R ⁽¹⁾ Inches	B Inches	C Inches	E Inches	F Inches
1/2	3/16	1-1/4	9/16	1/2	1-1/4
5/8	1/4	1-1/2	11/16	9/16	1-3/8
3/4	9/32	1-5/8	13/16	11/16	1-1/2
1	13/32	2-1/16	1-1/8	15/16	1-5/8



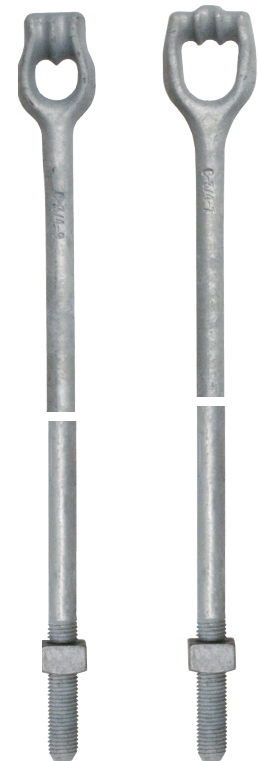
(1) 2 x R or 2 x R1 = maximum-diameter guy strand.

Twineye Adapter

D Inches	R ⁽¹⁾ Inches	B Inches	C Inches	E Inches	F Inches
5/8	7/32	1-3/4	7/8	1-5/16	1-1/4
3/4	1/4	2	1	1-1/16	1-3/8
1	5/16	2-5/8	1-3/16	1-5/16	1-1/2
1-1/4	3/8	2-15/16	1-1/4	1-9/16	1-5/8



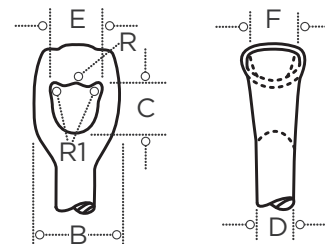
(1) 2 x R or 2 x R1 = maximum-diameter guy strand.



Twineye Tripleye

Tripleye Adapter

D Inches	R ⁽¹⁾ Inches	R1 ⁽²⁾ Inches	B Inches	C Inches	E Inches	F Inches
3/4	1/4	7/32	2-1/2	1-11/16	1-1/2	1-1/4
1	1/4	1/4	2-9/16	1-11/16	1-5/8	1-1/2
1-1/4	9/32	1/4	2-7/8	1-11/16	1-11/16	1-5/8



(1) 2 x R or 2 x R1 = maximum-diameter guy strand.

Saves Time, Labor and Money.

The CHANCE® Expanding Rock Anchor saves time, labor, and money, because in most cases, there is no need to mix concrete, melt lead or carry extra bulky equipment to the job. Generally, the cost of installing the Expanding Rock Anchor is about 35% less than the old-fashioned grouting method.

Expands and Wedges.

This anchor expands and wedges against solid walls of rock. And once it is expanded, the harder the pull on the rod, the tighter it wedges. Wedges are made of malleable or ductile iron with a rust-resistant coating. Rod should be in line with the guy.

1, 2 or 3 Guy Strands.

The large drop-forged Tripleye® rod of high-test steel holds up to three guy strands. The contour of the eye grooves keeps the guy strands from spreading, kinking and bending. And it allows slack to be pulled up without binding, damaging or weakening the guy.

Catalog Number	Rod Dia Inches	Rod Length Inches	Anchor Size Inches	Anchor Fully Expanded	Hole Size Inches	Approx Wt Per 100	Number in Bundle
R315	3/4	15	1-3/4	2-3/8	2	500	5
R330	3/4	30	1-3/4	2-3/8	2	700	5
R353	3/4	53	1-3/4	2-3/8	2	960	5
R360	3/4	60	1-3/4	2-3/8	2	1,040	5
R372	3/4	72	1-3/4	2-3/8	2	1,200	4
R384	3/4	84	1-3/4	2-3/8	2	1,300	4
R396	3/4	96	1-3/4	2-3/8	2	1,460	3
R130L	1	30	2-1/4	3-1/8	2-1/2	1,166	3
R153L	1	53	2-1/4	3-1/8	2-1/2	1,833	3
R172L	1	72	2-1/4	3-1/8	2-1/2	2,133	2
R196L	1	96	2-1/4	3-1/8	2-1/2	2,666	2

NOTE: 3/4" rod minimum ultimate strength of 23,000 pounds.

1" rod minimum ultimate strength of 36,000 pounds. Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength. Recommended minimum installation depth is 12" in solid rock. Rods and wedges are hot-dip galvanized.



Extendable Rock Anchor

The CHANCE® Extendable Rock Anchor uses standard PISA® couplings and rods to install the rock anchor at depths greater than standard Expandable Rock Anchors (96"). For rods, couplings and eyenuts, see pages A9-A10. Hot-dip galvanized.

Catalog Number	Rod Diameter Inches	Rod Length Inches	Standard Pkg/Pallet
R84LE	1	84	2/50



Expanding Rock Anchors (continued)

Socket Style Rock Anchor

New Style Rock Anchor For Guying Applications

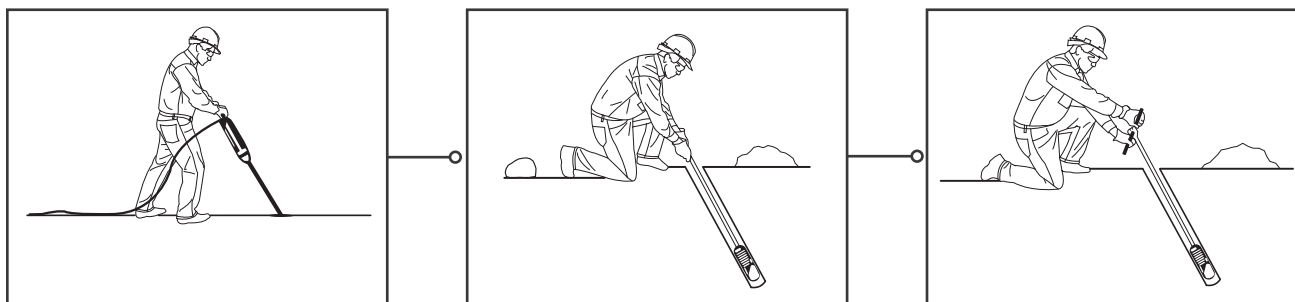
- Socket makes 360 degrees of contact with rock
- Socket will tighten as load increases
- Spin socket by hand to adjust to hole size before installation
- After anchor is installed, finish tightening by applying torque through rod
- Max tension rating
- 3/4 rod = 23,000 lbs
- 1" rod = 36,000 lbs
- Steel rod and ductile iron socket
- Galvanized per ASTM A-153

Hubbell SKU	Rod Diameter	Rod Length	Hole Size Required
R315H	3/4"	15"	2"
R330H	3/4"	30"	2"
R353H	3/4"	53"	2"
R360H	3/4"	60"	2"
R372H	3/4"	72"	2"
R384H	3/4"	84"	2"
R396H	3/4"	96"	2"
R130LH	1"	30"	2.5"
R153LH	1"	53"	2.5"
R172LH	1"	72"	2.5"
R196LH	1"	96"	2.5"



Installation is quick and simple.

- Bore the hole with hand or power drill, making sure that the diameter of the hole is 1/4-inch larger than the diameter of the unexpanded anchor.
- Drop the anchor in the hole. Put a bar through the large eye of the anchor rod.
- Turn the rod until the anchor is firmly expanded against the sides of the hole. Grouting should be done if protection of the rock against weathering is a concern.
- This wedging force holds the anchor securely in place to stay.



AERIAL INSTALLATION

Grouted Rock Anchors

The CHANCE® Grouted Rock Anchor is designed to be used in situations where the soil is too rocky to use screw anchors, but the rock is fractured preventing the use of wedge style rock anchors. The forged knob on the end of the anchor along with any extension couplings provides the interference fit with the grout. The holding capacity of the anchor is dependent on the bond stress between the rock and the grout. The Grouted Rock Anchor is designed to be used inline with the guy. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Installing a Grouted Rock Anchor requires first drilling a 6" diameter hole. Then insert the anchor, assembled with any Round Rod Extensions and Guy Adapter needed. Portland Cement grout pumped in to completely fill the hole around the anchor takes approximately 5 days to cure.

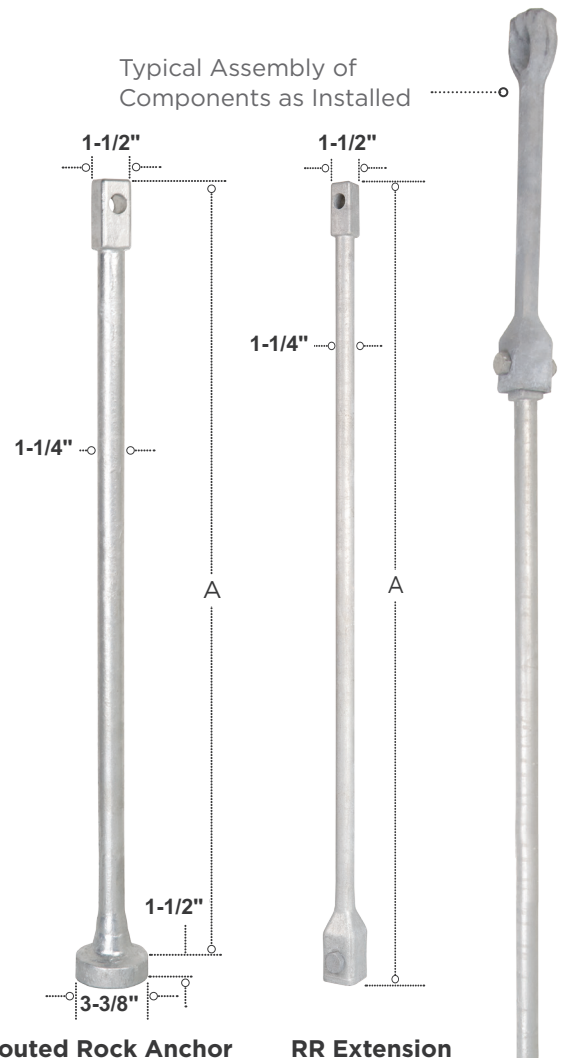
Grouted Rock Anchor - 1-1/4" Diameter Rod

Catalog Number	Length A Inches	Approx Ship Wt Each lb	Standard Pkg/Pallet
W1040004	36	17.6	1/40
W1040055	84	38.0	1/30

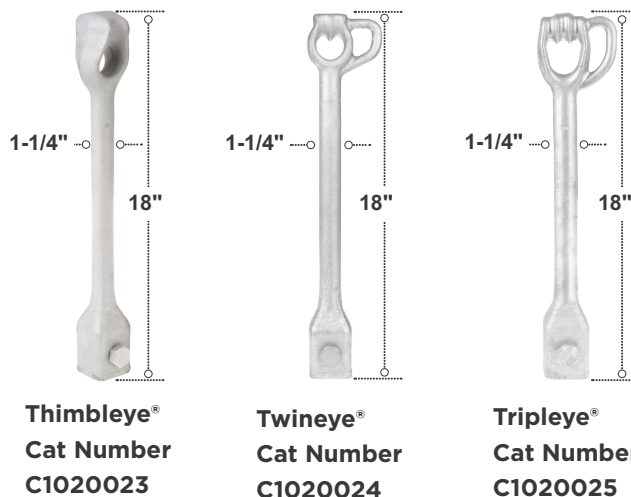
Round Rod Extension - 1-1/4" Diameter Rod

Catalog Number	Length A Inches	Approx Ship Wt Each lb	Standard Pkg/Pallet
12696	42	17.6	1/50
12697	60	38.0	1/50
12698	84	24.0	1/30
12699	120	46.8	1/50

NOTE: Galvanized per ASTM A-153. SS5 and SS150 extensions can be used in place of the RR extensions listed above.



Guy Adapters



Grouted Rock Anchors (continued)

Application Table for Catalog Numbers W1040004 and W1040055

Rock	Ultimate Bond Stress Between Rock & Grout psi ^{(1) (2) (3)}	Allowable Load Capacity for 6" Dia x 1' Long Grout Column lb/ft of Length ⁽⁴⁾
Granite Basalt Dolomitic Limestone	200	15,000
Soft Limestone Slates & Hard Shales Sandstones	100	7,500
Soft Shales	30	1,800
Soil ⁽⁵⁾ Class 5	8	600

1. Ultimate bond stress values from the PTI (Post Tensioning Institute) and the grout to ground bond values from the FHWA (Federal Highway Administration) were used to arrive at the indicated ultimate bond stress between rock and grout used in the above chart.
2. Identification of the rock and application of the chart values is the responsibility of those designing the rock anchor.
3. The values in the chart are intended to provide conservative results.
4. Higher bond stress values may be obtainable, but the associated investigation to determine appropriate values and the use of those values is left to those designing the rock anchor.
5. The given ultimate stresses were applied over the surface of a 6" diameter x 1' long grout column, then divided by 3 to obtain the recommended allowed load per foot of length in the indicated rock or soil.
6. Actual capacities will depend on the strength of the rock, the grout strength and the quality of the installation.
7. A rough surface in the drilled hole is preferred as well as a clean hole free of loose material, soil, dust, etc.
8. A 6" diameter hole is recommended for the use of the W1040004 and W1040055 rock anchors.
9. The minimum bond length of the rock anchor to be engaging the rock is 5 feet.
10. It is recommended that field testing be accomplished to confirm capacities.
11. Anchor grout is to be made using Type I, II, III, or V Portland Cement conforming to ASTM C-150 specifications. Pre-packaged blended mixes per ASTM C-595 are also acceptable.
12. The compressive strength of the grout shall be a minimum 3000 psi at the time of stressing.
13. The grout should be flowable to reach the bottom of the drilled hole or pumpable if it is to be placed via a grout pump.
14. The ultimate mechanical strength of the W1040004 and W1040055 rock anchors and associated extensions and terminations is 70,000 lbs when Chance/Hubbell anchor components are used.
15. Water used in the grout mix should be potable (suitable for public consumption), clean and free of substances known to be harmful to portland cement or steel.
16. It is recommended that grout be placed in the hole prior to inserting the rock anchor.
17. When using pre-packaged grout mixes follow directions and use the water cement ratio recommended by manufacturer.
18. For recommendations concerning bonded lengths and unbonded lengths, reference the PTI specifications.
19. The rock anchor is to be installed in line with the guywire. Any misalignment is to be no more than ± 5 degrees

NOTE:

- The given ultimate stresses were applied over the surface of a 6" diameter x 1' long grout column, then divided by 3 to obtain the recommended allowed load per foot of length in the indicated rock or soil.
- Actual capacities will depend on the strength of the rock, grout strength and quality of the installation.
- A rough surface in the drilled hole is preferred as well as a clean hole free of loose material, soil, dust, etc.
- A 6" diameter hole is recommended for the use of the W1040004 and W1040055 rock anchors.
- The minimum bond length of the rock anchor to be engaging the rock is 5 feet.
- It is recommended that field testing be accomplished to confirm capacities. Anchor grout is to be made using Type I, II, III, or V Portland Cement conforming to ASTM C-150 specifications or pre-packaged blended mixes per ASTM C-595.
- The compressive strength of the grout shall be a minimum of 3000 psi at the time of stressing.
- Grout should be flowable to reach the bottom of the drilled hole or pumpable if it is to be placed via a grout pump.
- The ultimate mechanical strength of the W1040004 and W1040055 rock anchors and associated extensions and terminations is 70,000 lb when CHANCE/Hubbell anchor components are used.
- Water used in the grout mix should be potable (suitable for public consumption), clean and free of substances known to be harmful to Portland Cement or Steel.
- It is recommended that grout be placed in the hole prior to inserting the rock anchor.
- When using pre-packaged grout mixes, follow the directions and use the water cement ratio recommended by the manufacturer.
- The rock anchor is to be installed in line with the guy wire. Any misalignment is to be no more than ± 5 degrees.

Expanding Pole Key Anchor



Closed

Quicker Installing, More Efficient Than Wood Key

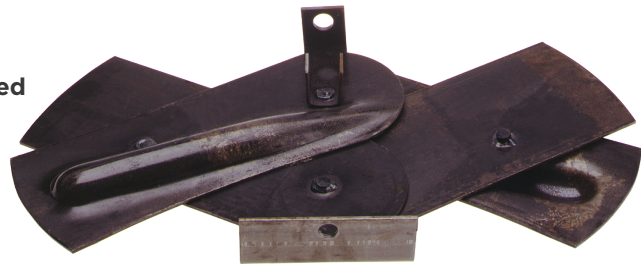
The CHANCE Pole Key can be used to reinforce poles in soft soils where the load is unbalanced and the pole must resist the load. However, it is recommended that Pole Keys only be used where a proper guy wire and guy anchor cannot be used, since a guy and anchor will generally provide more resistance to lateral movement. The Pole Keys will not withstand the same load, or perform as well as a proper guy and anchor.

The CHANCE Pole Key can be installed next to the distribution pole butt to help hold it in place against light overturning loads such as service drops, prevailing winds or small line angles.

The additional lateral load and resulting overturning moment which can be resisted by Pole Keys depends on the height of the load, the locations of the Pole Keys, the allowable lateral deflection of the pole at ground line and the quality of the installation.

The % capacity increase shown in the table is based on analyses that used 2" lateral deflection at the ground line as the upper capacity limit.

Expanded



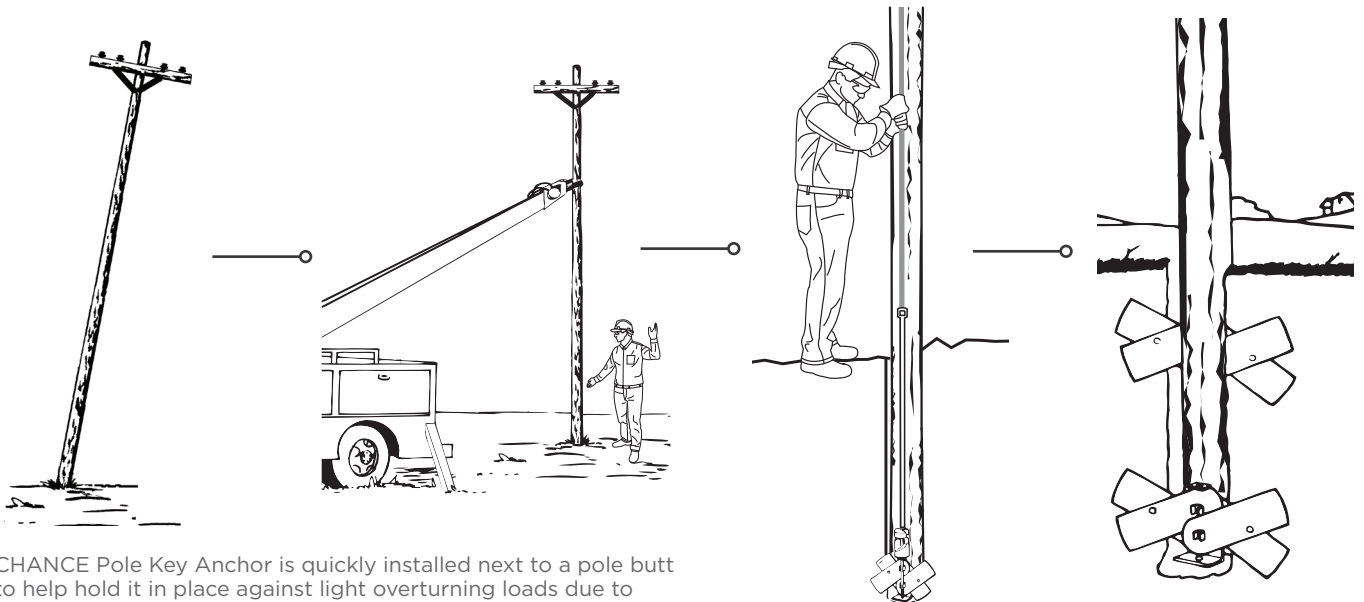
Application and Ordering Information

Catalog Number	Width Expanded Inches	Blade Width Inches	Area Expanded sq in	Approx Weight lb
P4817 ⁽²⁾	27-1/4	7	276	24-1/2

Pole Height and Class	% Capacity Increase by adding two Pole Keys
35' CI 5	30
40' CI 4	24
60' CI 3	13

(1) The lateral load and overturning moment, which can be resisted, depends on the height of the load above ground level, the depths of the two opposing pole keys, and the allowable lateral deflection of the pole at ground line.

(2) RUS accepted. Accommodates any 3/4" diameter rod on page A19.



CHANCE Pole Key Anchor is quickly installed next to a pole butt to help hold it in place against light overturning loads due to service drops, prevailing winds or small changes in line direction.

Corrosion-Resistant Anchor

CHANCE® Design Offers Many Advantages.

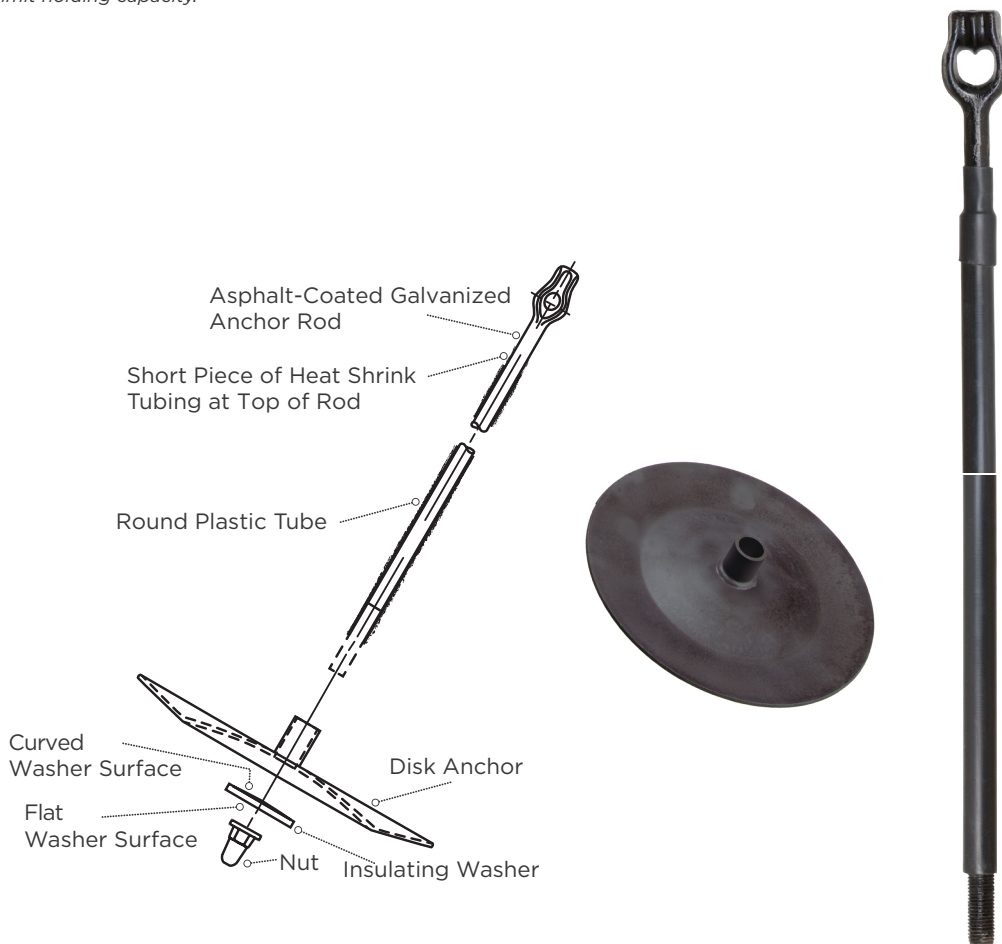
The CHANCE Corrosion-Resistant Disc Anchor is designed for low resistivity, alkaline and acidic soils with electrolyte combinations. The anchor eye is forged directly to the rod, so the eye is an integral part of the anchor. The anchor's flanged cap nut is cast. It's large and heavy for greater protection. The heat-shrink sleeve over the galvanized anchor rod helps prevent moisture from going down the rod. The insulating washer is fiberglass-reinforced thermoset material for better load-bearing properties compared to thermoform materials.

Corrosion-Resistant Anchor

Catalog Number	Description	Hole Size Inches	Fits Protected Rod Size Inches	Holding Capacity ⁽¹⁾ - lb (No Safety Factors Included) vs Soil Class													
				Class 3 500-600 in-lb	Class 4 400-500 in-lb	Class 5 300-400 in-lb	Class 6 200-300 in-lb	Class 7 100-200 in-lb									
C1022008	16" Anchor .187" Thick	16	3/4	31,000 ⁽¹⁾	26,500 ⁽¹⁾	21,000	16,500	12,000									
C1022009	16" Anchor .187" Thick	16	1	31,000 ⁽¹⁾	26,500	21,000	16,500	12,000									
C1022011	20" Anchor .187" Thick	20	1	40,000 ⁽¹⁾	34,000	26,000	21,500	16,000									
C1022012	20" Anchor .250" Thick	20	1	40,000 ⁽¹⁾	34,000	26,000	21,500	16,000									
C1022054	24" Anchor .187" Thick	24	1	50,000 ⁽¹⁾	41,000 ⁽¹⁾	33,500	26,000	20,000									
C1022050	24" Anchor .250" Thick	24	1	50,000 ⁽¹⁾	41,000 ⁽¹⁾	33,500	26,000	20,000 </tr <tr> <td>C1022381</td> <td>30" Anchor .375" Thick</td> <td>30</td> <td>1-1/4</td> <td>78,100</td> <td>64,000</td> <td>52,300</td> <td>40,600</td> <td>31,200</td> </tr>	C1022381	30" Anchor .375" Thick	30	1-1/4	78,100	64,000	52,300	40,600	31,200
C1022381	30" Anchor .375" Thick	30	1-1/4	78,100	64,000	52,300	40,600	31,200									

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

(1) Ultimate strength of rod may limit holding capacity.



Corrosion-Resistant Anchor (continued)

Fiber-Reinforced Washer

Catalog Number	Fits Rod Size Inches	Approx Wt lb Per 100 Pcs
C2100033	3/4	23
C2100034	1	19
C2100050	1-1/4	30



Cap Nut

Catalog Number	Fits Rod Size Inches	Approx Wt lb Per 100 Pcs
C2050407	3/4	242
C2050408	1	242
C2050590	1-1/4	300



These rods include a fiber-reinforced washer and heavy-forged cap nut. Nut and washer are attached to the rod.

Galvanized rod meets NEMA specification PH2 and has a paint coating, polyethylene tube and heat shrink collar. For additional sizes of rods, contact Hubbell Power Systems, Inc.

Protected Rod for Corrosion-Resistant Anchor

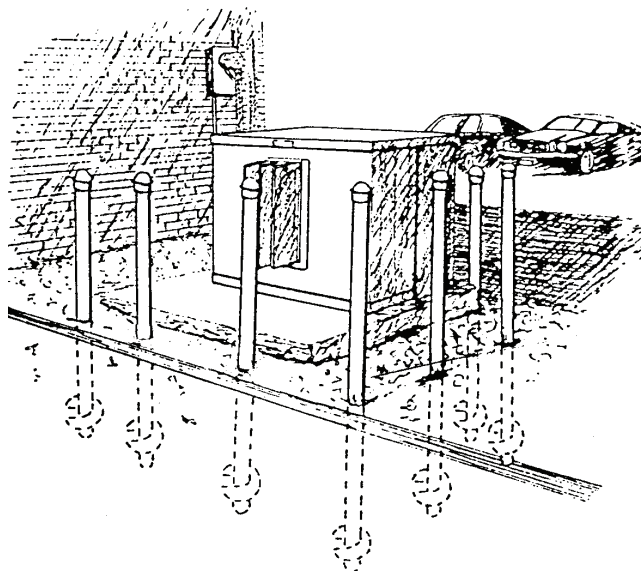
Rod Size	Rod Tensile Strength lb	Thimbleye® Adapter		Twineye® Adapter		Tripleye® Adapter	
		Catalog Number	Lb Per 100 Pcs	Catalog Number	Lb Per 100 Pcs	Catalog Number	Lb Per 100 Pcs
3/4" x 6'	23,000	C2000047AW	1,330	C2000053AWL	1,362	C2000106	1,630
3/4" x 7'	23,000		-	C2000054AW	1,470	-	-
3/4" x 8'	23,000	C2000049AW	1,566	C2000055AW	1,650	C2000061AW	1,783
3/4" x 9'	23,000	-	-	C2000056AW	1,750	C2000062AW	1,883
3/4" x 10'	23,000		-	C2000057AW	1,910	-	-
1" x 7'	36,000	-	-	C2000114AW	2,254	-	-
1" x 8'	36,000	C2000051AW	2,500	C2000108AW	3,087	C2000063AW	2,730
1" x 9'	36,000	-	-	C2000058AW	2,800	-	-
1" x 10'	36,000	C2000052AW	3,005	C2000059AW	3,050	C2000064AW	3,270
1-1/4" x 15'	58,000			C2000141	5,000	C2000140*	7,500

* Two piece rod with coupler.

Bumper Posts

For Instant Equipment Protection

- Protect transformers, switchgear and guys.
- Any equipment needing bumper protection is an ideal candidate.
- Cheaper than concrete.
- Installation in minutes regardless of weather conditions.
- Available power diggers can install through blacktop surfaces.
- Hot-dip galvanized corrosion-resistant finish



Power-Installed Design



Drive-on Metal Cap

Hole for Attaching Drive Tool

C3030739

C3030737

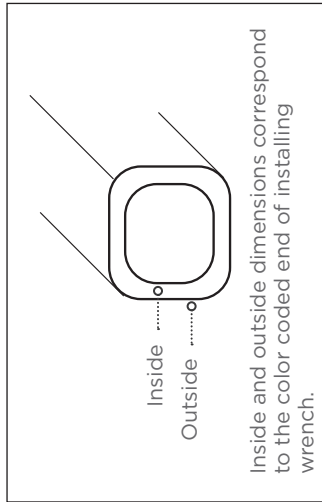
Installing Tools

- Additional tools may not be required for Bumper Post if Kelly Bar can be inserted into the 3.06" inside diameter of the post and pinned by a Bent Arm Pin.
- Tools are available which bolt directly to CHANCE® Kelly Bar Adapters or which can be used with CHANCE Locking Dog Assembly.
- Order catalog number **C3030737** for Kelly Bar attachment or **C3030739** for use with Locking Dog Assembly. Bumper Post is inserted into the drive tool and held by the provided Bent Arm Pin.

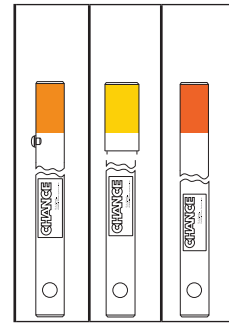
8,000 ft-lb Typical Working Torque

Catalog Number	Standard Pkg/Pallet	Weight Each lb	Description
T1120192	1/12	45	8" Helix, 3-1/2" O.D. x 60" Shaft
T1120224	1/12	53	8" Helix, 3-1/2" O.D. x 75" Shaft
C1120275	1/12	61	8" Helix, 3-1/2" O.D. x 84" Shaft

How to Match Anchors and Installing Wrenches



Installing Wrench Catalog Number	Length ft	Maximum Installing Torque Rating ft-lb	Outside Dimension Inches	Inside Dimension Inches
C1021583 ⁽¹⁾	7	10,000	2.16	1.46
C1021595 ⁽¹⁾	3-1/2	10,000	2.16	1.46
C3031064 ⁽¹⁾	7	10,000	Top Bot. 2.16 2.44	Top Bot. 1.46 1.54
C3031063 ⁽¹⁾	3-1/2	10,000	Top Bot. 2.16 2.44	Top Bot. 1.46 1.54
C3030983 ⁽²⁾	7	15,000	2.44	1.54
C3030982 ⁽²⁾	3-1/2	15,000	2.44	1.54



Anchor Type	6,000	7,000	6,000	10,000	10,000	15,000
PISA® 6 Anchor (formerly PISA® 5 Anchor)						
PISA® 7 Anchor						
Mid-Strength PISA Anchor						
C102-52XX Series Tough One® Anchor - Small Hub						
C102-50XX Series Tough One® Anchor - Large Hub						
C102-50XX Series Tough One® Anchor - Large Hub						
C102-50XX Series Tough One® Anchor - Large Hub						

Maximum Installation Torque Rating ft-lb

(1) Fits Locking Dog Assembly C3030069HD.

(2) Fits Locking Dog Assembly C3030981.

Standard and Hybrid PISA® Anchor Installing Tools

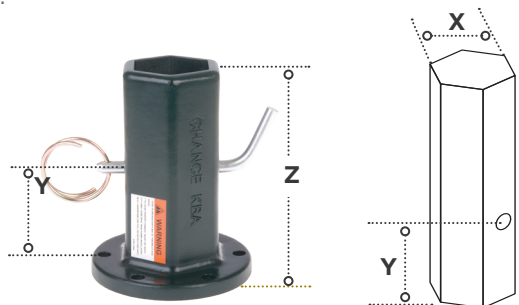
For Installing Torques up to 10,000 ft-lb

A complete tool system consists of: Kelly Bar Adapter, Torque Indicator, Locking Dog Assembly and Drive-End assembly. For instructions for selecting the proper Kelly Bar Adapter, see page A32.

Convertible to Extension Use

Extension assemblies can be added where soil conditions dictate that anchors be set more than one rod length deep or where digger to ground clearances are limited.

Each Standard Kelly Bar Adapter has six holes for 1/2" bolts on a 5-1/4" bolt circle and comes with six 1/2" Grade 5 bolts, nuts, lockwashers and Bent Arm Pin with Coil Lock.



Kelly Bar Adapter

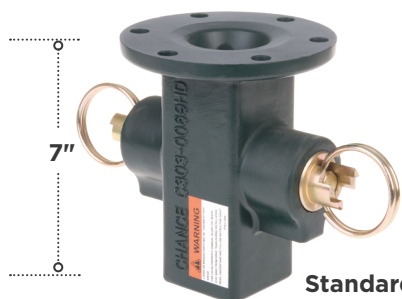
Kelly Bar

Standard Kelly Bar Adaptor with Bent Arm Pin (5" Bolt Circle)

Part Number	Kelly Bar Shape	Kelly Bar Dimension			Wt Each lb
		X	Y	Z	
630013	Hex	2"	5'	6-1/8"	10
630011HD	Hex	2-1/2"	4-1/4"	8-1/8"	18
630012HD	Hex	2-5/8"	4-1/4"	8-1/8"	18

Additional Bolts, Nuts, and Lockwashers

Part Number	Description
P0010259P	Hex Bolt
C3031722	Six 1/2" bolts, nuts, and lockwashers.



Standard Locking Dog Assembly
C3030069HD

Standard Locking Dog Assembly has six holes for 1/2" bolts on a 5-1/4" bolt circle, comes with six 1/2" Grade 5 bolts, nuts and lockwashers.

Standard Locking Dog Assembly

Catalog Number	Description	Wt Each lb
C3030069HD	Complete Standard Locking Dog Assembly	20
C3030070	Locking Dog replacement Kit includes parts needed to replace both Locking Dogs	4
P1300007P	Replacement ring only	0.10

Standard and Hybrid PISA® Anchor Installing Tools (continued)

For Installing Torques up to 10,000 ft-lb

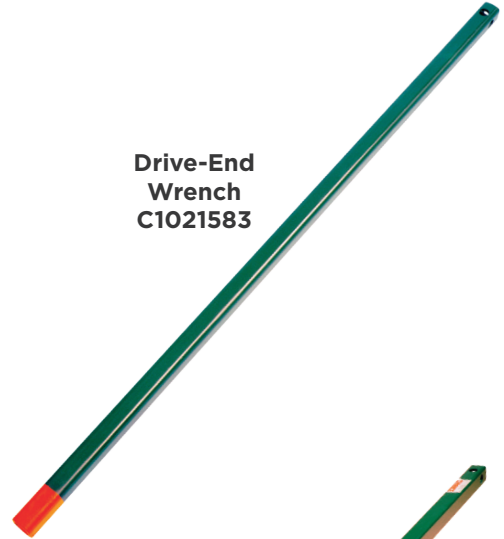
Transmits Torque to Anchor Core

The wrench transmits the torque from the Kelly Bar of the digger to the hub of the Power-Installed Screw Anchor so that the anchor rod need be only large enough in diameter to support the guy load.

7-ft Drive-End Wrench

Catalog Number	Description	Wt Each lb
C1021583	Standard Drive-End Wrench Installs 10,000 ft-lb (small-hub) Tough One Anchors 6,000 ft-lb Mid-Strength PISA Anchors	57
C3031064 ^{(1) (2)}	Hybrid Drive-End Wrench Installs 10,000 ft-lb (large-hub) Tough One Anchors 6,000 ft-lb PISA 6 Anchors 7,000 ft-lb PISA 7 Anchors	64

Drive-End
Wrench
C1021583



Drive-End
Wrench
C3031064



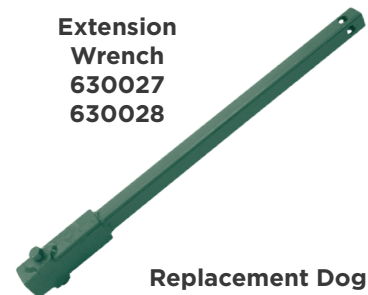
3-1/2-ft Drive-End Wrench

Catalog Number	Description	Wt Each lb
C1021595	Standard Drive-End Wrench Installs 10,000 ft-lb (small-hub) Tough One Anchors 6,000 ft-lb Mid-Strength PISA Anchors	29
C3031063 ^{(1) (2)}	HYBRID Drive-End Wrench Installs 10,000 ft-lb (large-hub) Tough One Anchors 6,000 ft-lb PISA 6 Anchors 7,000 ft-lb PISA 7 Anchors	28

Extension Wrench for Standard and Hybrid Drive-End Wrenches

Catalog Number	Description	Wt Each lb
630027	3-1/2 ft Extension	42
630028	7 ft Extension	70

Extension
Wrench
630027
630028



Replacement Dog Bolt
630002P (2 per wrench)

(1) These wrenches will fit 15,000 ft-lb Tough One Anchors dimensionally, but must not be used for torques in excess of 10,000 ft-lb.

(2) The old-style Hybrid wrenches C3031063 and C3031064, having a collar welded around the drive end, fit only PISA 6 and PISA 7 anchors.

Screw Anchor Drive Tool Strings

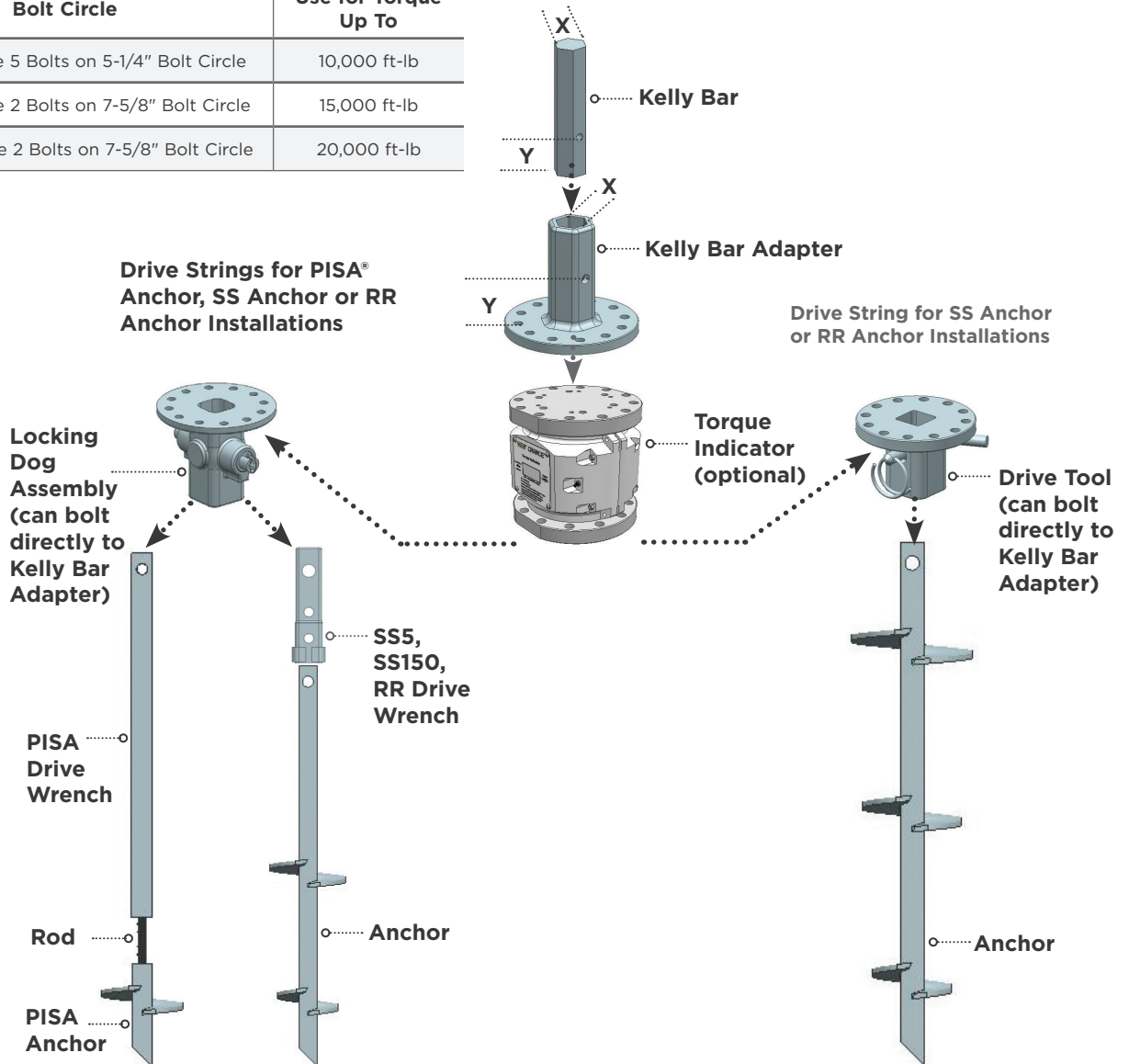
Selecting the correct Kelly Bar Adapter is key to building a successful Drive String. Follow these two easy steps:

1. Remove the auger from the digger and carefully measure the X and Y dimensions of the Kelly Bar.
2. Match the shape of the Kelly Bar and the X and Y dimensions with the Kelly Bar Adapter chart provided on pages A30 and A33. The Y dimension on the Kelly Bar Adapter must be equal to or greater than the Y dimension on the Kelly Bar itself.

Bolt Circles

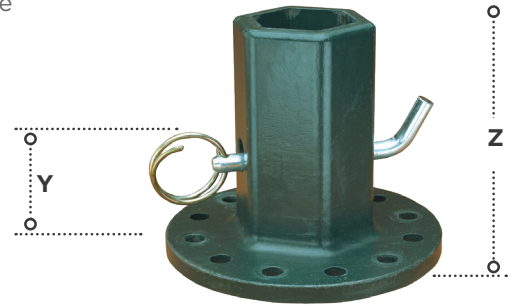
CHANCE® anchor installing tools are provided with appropriate bolt circles for the expected service. The torque limitations for the three standard bolt circles are give below. Never exceed the rated torque of any CHANCE installing tool.

Bolt Circle	Use for Torque Up To
(6) 1/2" Grade 5 Bolts on 5-1/4" Bolt Circle	10,000 ft-lb
(6) 5/8" Grade 2 Bolts on 7-5/8" Bolt Circle	15,000 ft-lb
(12) 5/8" Grade 2 Bolts on 7-5/8" Bolt Circle	20,000 ft-lb



For Installing Torques up to 15,000 ft-lb

A complete tool system consists of: Kelly Bar Adapter, Torque Indicator, Locking Dog Assembly and Drive-End Assembly. For instructions for selecting the proper Kelly Bar Adapter, see page A32.



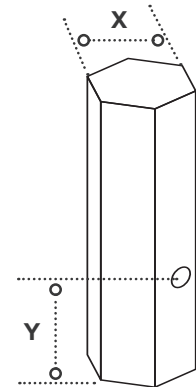
Kelly Bar Adapter

Tough One Kelly Bar Adapter with Bent Arm Pin

(7-5/8" Bolt Circle)

Part Number	Kelly Bar Shape	Torque Ratings (ft-lb)	Kelly Bar Dimensions Inches			Wt lb	5/8" Grade 2 Bolts Included	Bent Arm Pin Included
			X	Y	Z			
C3030936	Hex	12,000	2-1/2	3-7/8	8-1/4	23	12	C3031223
C3030937	Hex	15,000	2-5/8	3-7/8	8-1/4	23	12	C3031223
C3030940	Hex	25,000	3	4-1/2	8	27	12	C3031222
C3030955	Square	17,000	2-1/2	4-3/4	7	22	12	C3031227
C3030958	Square	20,000	3	3-1/2 & 2-1/16	7	23	12	C3031227
C3031571	Square	30,000	3-1/2	2 & 4	6-11/16	33	12	C3031227

NOTE: Each Tough One Kelly Bar Adapter has twelve holes for 5/8" bolts on a 7-5/8" bolt circle, comes with twelve 5/8" Grade 2 bolts, nuts & lockwashers and Bent Arm Pin with Coil Lock.



Kelly Bar

Digital Torque Indicator⁽¹⁾

Catalog Number	Description	Weight lb
C3031836	Torque Indicator adaptable to 5-1/4" BC or 7-5/8" BC	65

(1) See pages A38 for additional information on Torque Indicators.



Torque Indicator

Tough One® Anchor Installing Tools (continued)

For Installing Torques up to 15,000 ft-lb

Tough One Locking Dog Assembly

Catalog Number	Description	Weight lb
C3030981	Complete Tough One Locking Dog Assembly	28
C3031026	Locking Dog Replacement Kit Includes all parts less casting, bolts, nuts, washers	5

NOTE: Tough One Locking Dog Assembly has twelve holes for 5/8" bolts on a 7-5/8" bolt circle and comes with twelve 5/8" Grade 2 bolts, nuts and lockwashers.

Part Number	Description
056653P	Hex Bolt
055827P	Lock Washer
055803P	Hex Nut



Locking Dog Assembly

Tough One Drive-End Wrenches

Catalog Number	Length ft	Description	Weight lb
C3030982	3-1/2	Installs 15,000 ft-lb (large hub) Tough One anchors, 10,000 ft-lb (large hub) Tough One and all 1-1/2" Core Anchors	36
C3030983	7		73

NOTE: Tough One Drive Ends are painted with a red band on the bottom.

Extension Assemblies for Tough One Drive-End Wrenches

Catalog Number	Length ft	Description	Weight lb
C3030987	3-1/2	Extension attaches to drive-end wrench when additional depth is required	53
C3030988	7		89

NOTE: For SS and RR Anchor Tool options when using the Tough One Drive String System, see pages A35-A36.



Drive Wrench

Anchor Installing Tool Bent Arm Pin with Coil Lock

Use with Standard and Tough One® Kelly Bar Adapters, SS, RR and Bumper Post Installing Tools

Each CHANCE® plated-steel Bent Arm Pin is designed to attach a Kelly Bar Adapter to a Kelly Bar, and to secure SS, RR and Bumper Post Anchors to Anchor Drive Tools.

Bent Arm Pins with Coil Locks are included with new tools as required. Order Pins and Coil Locks for existing tools as shown below.

Kelly Bar Adapter	Bent Arm Pin and Coil Lock Assembly
630010 ⁽¹⁾	C3031227
630011 ⁽¹⁾	C3031223
630011HD	C3031223
630012 ⁽¹⁾	C3031223
630012HD	C3031223
630013	C3031223
630013A	C3031223
630014 ⁽¹⁾	C3031222
630015 ⁽¹⁾	C3031222
630016 ⁽¹⁾	C3031227
630017 ⁽¹⁾	C3031227
C3030936	C3031223
C3030937	C3031223
C3030940	C3031222
C3030955	C3031227
C3030958	C3031227
C3031571	C3031227

SS/RR Tools	Bent Arm Pin and Coil Lock Assembly
639001	C3031226
C3030195	C3031225
C3030201	C3031224
C3030202	C3031224
C3030020	C3031226

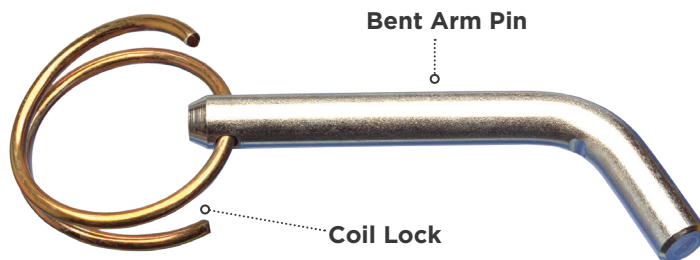
Bumper Post Tools	Bent Arm Pin and Coil Lock Assembly
C3030737	C3031227
C3030739	C3031227

(1) Old-style Kelly Bar Adapters are no longer available.



Bent Arm Pin and Coil Lock Assembly

Catalog Number	Size Inches
C3031226	3 x 5/8
C3031225	3-1/2 x 3/4
C3031224	4-1/2 x 1
C3031227	5 x 3/4
C3031223	4-1/2 x 1/2
C3031222	5 x 5/8



To order Coil Lock only, order Part Number **P3031215P**.

WARNING

Always use the approved combination of Coil Locks and Bent Arm Pins. Never attempt to use any other combinations, such as hair pins, cotter keys, etc., with Bent Arm Pins.

WARNING

CHANCE Bent Arm Pins with Coil Locks are the only tested and approved means for through-pin attachment of drive tools. Do not attempt to use any other means of attachment.

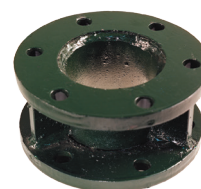
Adapters

For Torques up to 10,000 ft-lb

Bolt Circle Adapters

These adapters are used to connect two tools having incompatible bolt circles. The C3030115 is for use between two tools having tapped 5-1/4" bolt circles. The T3030166 is for use between a tool having a 5-1/4" bolt circle and one having a 7-5/8" bolt circle. Both are limited to 10,000 ft-lb.

Catalog Number	Description	Weight lb
C3030115	Bolt Circle Adapter with two 1/2" x 5-1/4" bolt circles	11
T3030166	Bolt Circle Adapter with one 1/2" x 5-1/4" bolt circle and one 5/8" x 7-5/8" bolt circle	18



C3030115



T3030166

For Installing SS or RR Anchors

These Drive Tools require the appropriate Kelly Bar Adapter. Each comes with bolts, nuts and lockwashers.

Catalog Number	Description	Bolt Circle	Approx Wt lb
639001	SS5/SS150/RR Drive Tool	(6) 1/2" holes on 5-1/4" BC	7
C3030195⁽¹⁾	SS175 Drive Tool	(12) 5/8" holes on 7-5/8" BC	18
C3030201⁽¹⁾	SS200 Drive Tool	(12) 5/8" holes on 7-5/8" BC	30
C3030202⁽¹⁾	SS225 Drive Tool	(12) 5/8" holes on 7-5/8" BC	30

(1) Requires use of T3030166 adapter, and limited to 10,000 ft-lb when used with Standard Kelly Bar Adapter (with a 5-1/4" bolt circle).



639001

Catalog Number	Description	Unit Fits	Approx Wt lb
C3030020	SS5/SS150/RR Drive Tool	Standard Locking Dog Assembly	8
C3031035	SS5/SS150/RR Drive Tool	Tough One® Locking Dog Assembly	11
T3031403	SS175 Drive Tool	Tough One Locking Dog Assembly	26
C3031077	SS200 Drive Tool	Tough One Locking Dog Assembly	23

NOTE: These tools slide into Locking Dog Adapter and are retained by spring loaded dogs.

Catalog Number	Description	Bolt Circle	Approx Wt lb
C3031650	SS5/SS150 Drive Tool with Locking Dogs	(6) 1/2" holes on 5-1/4" BC	10
C3031645	SS175 Drive Tool with Locking Dogs	(12) 5/8" holes on 7-5/8" BC	21



C3030020



C3031650

For Installing No-Wrench Anchor and Manual Foundation Tool

Designed for use with the CHANCE® Portable Anchor Installer. This tool bolts directly to the installer's output flange or Kelly Bar Adapter having six 1/2" diameter holes on a 5-1/4" bolt circle. Adjustable pivoting plates accept rods from 3/4" to 1-1/4" diameter.

For manually-installed foundations, eyenut must be temporarily installed for installation. Has four holes on 5-1/4" bolt circle for attachment. Includes four 1/2" x 1-1/2" bolts, nuts and lockwashers.



E3030255

Catalog Number	Weight lb
E3030255	9

Shear Pin Torque Limiter Catalog Number C3030044 for Installing Torques up to 10,000 ft-lb

- Protection for anchors and installing tools by disconnecting the power when the installing torque reaches a preselected level.
- Useable in very rocky soil.
- Durable - does not require special storage or handling.
- Top and bottom each have six holes tapped 1/2"-13 on a 5-1/4" bolt circle.



C3030044

Catalog Number	Description	Wt lb
C3030044	Shear Pin Torque Indicator	54
C3030045⁽¹⁾	One Carton of Shear Pins (approx 1700 pins)	50
T3031420⁽¹⁾	One Box of Shear Pins (approx 510 pins)	15

(1) Each Shear Pin provides 500 ft-lb of torque.



C3030045

CHANCE® Torque Indicators

Digital Torque Indicator

Catalog Number C3031836

Avoid excessive torsional loading

Using the wireless CHANCE® Torque Indicator, you can install screw anchors to a pre-determined torque value, which gives a positive indication of anchor holding capacity in any soil type.

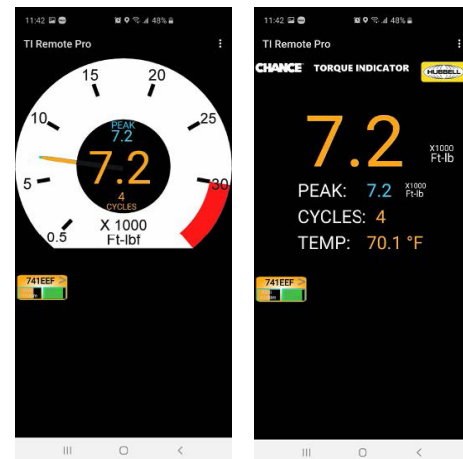
The Indicator mounts between the Kelly bar adapter and drive tool (or locking dog assembly). The LCD display is easy to read in full daylight and gives the operator a direct readout of installation torque at all times.



Base Unit

Features & Benefits

- Measuring torque is the most accurate way to determine the capacity of helical piles and anchors
- Torque is displayed on Base Unit and transmitted via Bluetooth® to Android and iOS phones and smart devices
- Multiple Bluetooth display devices can be linked to Base Unit
- Download free Torque Indicator Remote Pro app from Apple App Store or Google Play Store
- Torque Indicator Remote Pro app allows torque readings to be sent via email to be downloaded
- Certificate of Calibration supplied with each new unit in case
- Operational temperature range: -30° to 70°C (-22° to 158° F)
- Measures torque up to 30,000 ft-lb
- Accuracy: ±500ft-lb at any reading
- Torque is measured using strain gauges mounted inside the Base Unit.
- No shear pins to replace
- Powered by two standard 9V batteries
- Solid one-piece spool design to withstand most bending loads.
- Top and bottom flange, each provides six holes tapped 1/2"- 13 on a 5-1/4" bolt circle and twelve holes tapped 5/8"- 11 on a 7-5/8" bolt circle.
- Supplied with Twelve (12) 1/2 - 13 UNC - 2A bolts, 1-3/4" long, grade 5, with lock washers and Twenty-four (24) 5/8 - 11 UNC - 2A bolts, 2" long, grade 5, with lock washers.



Digital Display

Catalog Number	Description
C3031836	Torque Indicator Base Unit

AERIAL INSTALLATION
Expanding & Tamping Bar

The CHANCE® fiberglass handle Expanding and Tamping Bar simplifies the job of expanding anchors. The curved expander and tamper head distributes the weight of the bar evenly around the anchor rod to reduce handle vibration. The hook of the Expanding and Tamping Bar wraps around the anchor rod to keep the expanding head from slipping off the anchor top plate. This tool is also effectively used for tamping in soil above the installed anchor. The base casting is attached directly to the fiberglass handle.

Catalog Number	Description	Length ft	Weight lb
C3020003	Expanding & Tamping Bar	10	22
C3020004	Expanding & Tamping Bar	12	24
E3020001P ⁽¹⁾	Fiberglass Handle	10	7
E3020006P ⁽¹⁾	Fiberglass Handle	12	8
P3020002P	Expander and Tamper Head	—	14

⁽¹⁾ Includes plug mix to reset handle.

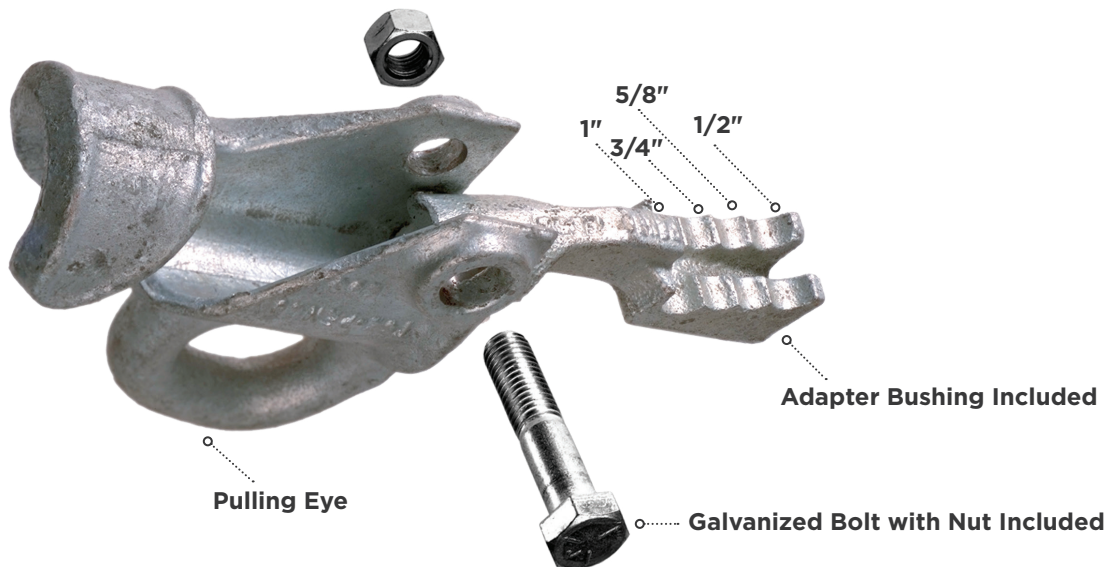


Expanding & Tamping Bar

Standard Pulling Eye

This inexpensive cost-cutter provides a large offset eye to accommodate three-ton chain hoist hooks, and leaves the anchor eye free with plenty of clearances for attaching formed wire grips. By removing the adapter bushing, the E96 Pulling Eye fits 1-1/4" rods. The E96 Pulling Eye is inexpensive and easy to use. One person can assemble and hook up in minutes. For working loads to approximately 6,000 pounds (ultimate strength - 18,000 pounds).

Catalog Number		Weight lb
E96	Pulling eye with adapter bushing, boll & nut	5
C3031661	Adapter bushing, bolt & nut	1



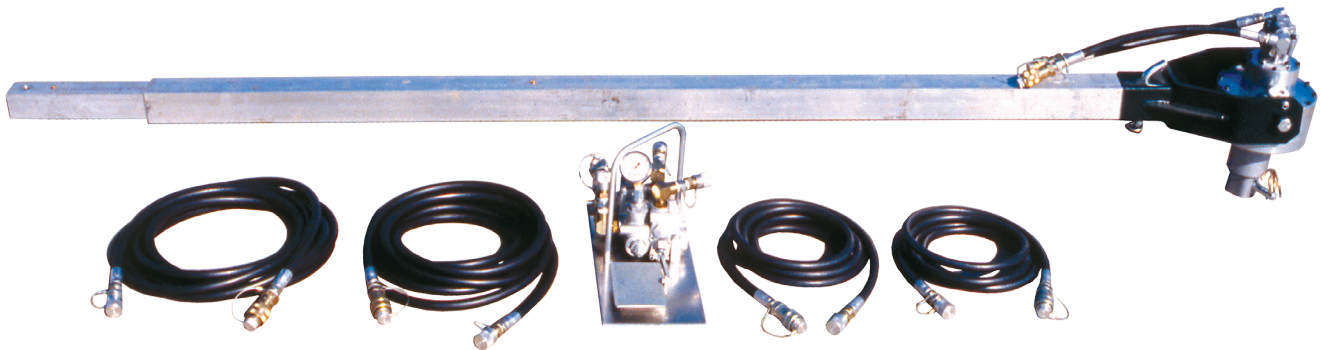
Portable Anchor Installers for Small Foundations

2,500 ft-lb Torque Capacity Hydraulic Power Drive

Economical Manual Operation and Portability for Remote Sites, Common Anchor Installations.

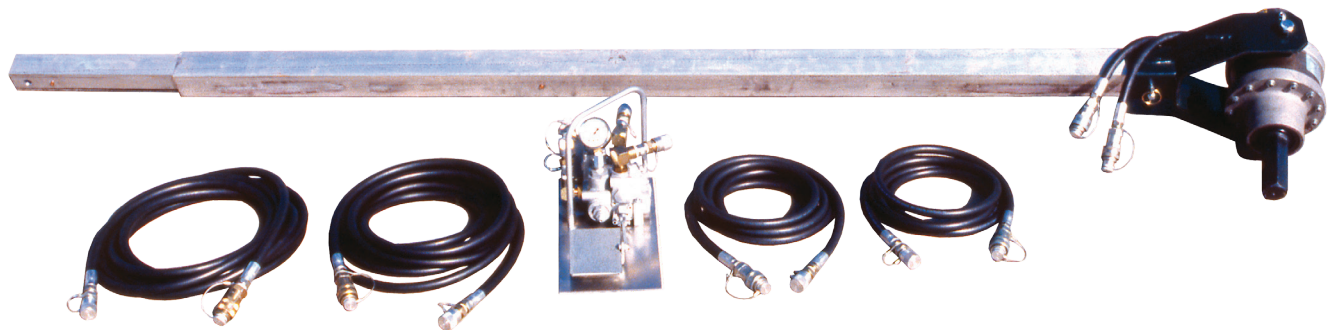
For most shaft-driven guy anchors and smaller screw foundations, these compact drivers get into areas where large equipment cannot go or is impractical. Operator does not need to resist the torque generated by anchor installation. Countertorque transmits through a torque bar from the drive head to the earth or other restraint. This frees the operator for the task of guiding the anchor path.

- Built-in bypass valve limits output to 2,500 ft-lb maximum.
- Two-way foot pedal gives operator direct control over drive and reverse directions.
- Hoses (two 12-ft and two 25-ft) come with quick couplers for all connections from power supply to foot control to drive head.
- Pivoting drive-head yoke connects with Bent Arm Pin to square-tubular torque bar which telescopes from 8 feet to 10 feet as needed.



Catalog Number **C3031032**

Medium-Duty Installer requires 1550 psi at 8 gpm flow rate to deliver 2,500 ft-lb maximum torque.



Catalog Number **C3031244**

Heavy-Duty Installer requires 1,900 psi at 8 gpm flow rate to deliver 2,500 ft-lb maximum torque.

2,500 ft-lb Portable Anchor Installers

Medium-Duty⁽¹⁾ – Catalog Number C3031032

Grease-filled gear case. Single catalog number above includes all items below. Each item also may be ordered by separate number.

Hydraulic Control Valve ⁽¹⁾	C3031031
Two 25-ft. Hydraulic Hoses	C4176121 (each)
Hydraulic Drive Head ⁽¹⁾	C3031180
Yoke Assembly	E3030680
Two 12-ft. Hydraulic Hoses ⁽¹⁾	E3030876 (pair)
Square Torque Bar Assembly	E3031041

NOTE: Output shaft is 1-1/2" square socket and can only be used to install 1-1/2" square and 1-1/4" round shaft anchors..

*(1) Hydraulic components are not interchangeable between **C3031032** and **C3031244**.*

Heavy-Duty – Catalog Number C3031244

Sealed oil-filled gear case. Single catalog number above includes all items below. Each item also may be ordered by separate number.

Hydraulic Control Valve ⁽¹⁾	C3031247
Two 25-ft. Hydraulic Hoses	C4176121 (each)
Hydraulic Drive Head ⁽¹⁾	C3031233
Yoke Assembly	E3030680
Two 12-ft. Hydraulic Hoses ⁽¹⁾	E3031253 (pair)
Square Torque Bar Assembly	E3031041

NOTE: Output shaft is 2" Hex. – Requires Kelly Bar Adapter and flanged drive tool (order separately) to install all anchors.

*(1) Hydraulic components are not interchangeable between **C3031032** and **C3031244**.*

Optional Hydraulic Power Unit Catalog Number c3031201

For easy wheeling to worksite, hydraulic drive head and foot control are secured by a rubber strap. Unit includes two angle braces atop the cart frame. Hoses may ride on the handles.

Cart-mounted on 5/8" diameter axle with two 4.8" x 8" inflatable (30 psi) tires; 27-1/4" wide x 34-1/2" high x 36" long; shipping weight with oil: 275 lb.

Operating instructions are included with anchor installer and hydraulic power unit.

Hydraulic Pump with Fan Cooling System:

- Typical output pressure —○ 2500 psi
- Pump displacement —○ 8 gpm @ 3400 rpm
- Reservoir capacity —○ 5 gallons US
- Shipping cap and vented fill cap provided

Gasoline Engine System:

- 16 hp Briggs & Stratton
- Industrial/Commercial Model 326437, Type 2527
- 12-Volt push-button start, 3600 rpm (maximum)

Drive head and foot control shown in photo are not included with **C3031201**





Pole Line Hardware

When support and timeliness count, Hubbell Power Systems delivers the product breadth and hardware solutions you need to make your complex project more manageable and cost efficient. Constructed to deliver the reliability you depend on from the name you know and trust, our aerial pole product offering utilizes the latest technologies in manufacturing.

From aerial to burial, HPS products provide both innovative and cost-effective solutions for telecommunication and utility providers.

Banding, for Pole Attachments

A no-drill method to attach components to a pole of any size or shape.

- Attaches to steel, concrete, composite or wood poles of any shape and size.
- Easily installs with standard hand tools
- Adjustable for any sized pole
- Can be cut to length at installation or ordered in pre-cut lengths
- Two buckle styles offered: folded or adjustable

Material

- Fittings - Aluminum 6061-T6
- Bands - 201 Stainless steel bands with 95,000 P.S.I. min. tensile and 45,000 P.S.I. min. yield
- Bolt - Galvanized steel per ASTM A-153



Assembled band with adjustable buckle clamp

When determining band length, add 6" to the circumference of the structure.

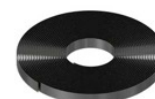
Stainless Steel Bands - 100' Coils

Catalog Number	Band Width (in)	Thickness (in)	Length (ft)	Approx Ship Wt Each (lbs)
C12201SSB100	1/2	.03	100	5.3
C58201SSB100	5/8	.03	100	6.0
C34201SSB100	3/4	.03	100	7.8
C34201SSB100G	3/4	.04	100	8.0
C100201SSB100	1	.04	100	14.5
C114201SSB100	1-1/4	.04	100	21.1

Folded Buckles for Bands

Catalog Number	Band Width (in)	Type	Approx Ship Wt Each (lbs)
PSC2080557	1/2	Standard	0.02
PSC2080558	5/8	Standard	0.03
PSC2080559	3/4	Standard	0.04
PSC2080560	3/4	Heavy Duty	0.04
PSC2080561	1	Heavy Duty	0.10
PSC2080562	1-1/4	Heavy Duty	0.14

SS Band Coil



Folded Buckle

NOTE: Order quantity 1 for 100' coil

Stainless Steel Band Kits

Standard Lengths - includes pre-cut band and adjustable buckle

Catalog Number	Band Width (in)	Length (in)	Approx Ship Wt Each (lbs)	Clamp Catalog No.
CBAB3836	3/4	36	2	CBAB38
CBAB3840	3/4	40	2	CBAB38
CBAB3848	3/4	48	2	CBAB38
CBAB3860	3/4	60	2	CBAB38
CBAB3872	3/4	72	2	CBAB38
CBAB3884	3/4	84	2	CBAB38
CBAB5836	1-1/4	36	3	CBAB58
CBAB5840	1-1/4	40	3	CBAB58
CBAB5848	1-1/4	48	3	CBAB58
CBAB5860	1-1/4	60	3	CBAB58
CBAB5872	1-1/4	72	3	CBAB58
CBAB5884	1-1/4	84	3	CBAB58
CBAB58132	1-1/4	132	3.5	CBAB58
CBAB58180	1-1/4	180	5.4	CBAB58

Adjustable Buckles for Bands

Catalog Number	Band Width (in)	Approx Ship Wt Each (lbs)
CBAB38	3/4	8
CBAB58	1-1/4	20



Adjustable Buckle

Kits contains band, adjustable buckle, and 5/8 x 7-1/2" carriage bolt

General Purpose Mounting Brackets

Catalog Number	Description	Band Width	Approx Ship Wt Each (lbs)
CHDBB1511H	Bracket with standard 5/8" x 2" bolt	3/4"	.65
CHDBB1511H3H	Bracket with Grade 5, 5/8" x 3 bolt	3/4"	.7
CD4080	Heavy duty galvanized steel bracket	1-1/4"	2.3



CHDBB1511H or CHDBB1511H3H

Bands, Universal Pole Type

3/16" x 4" flat steel bands, shipped assembled with one 3/4" x 4" curved bolt and one 3/4" x 2-1/2" cone head bolt (PS6280). Hot dip galvanized.

Catalog Number	Fits pole circumference (in)	Approx Ship Wt Each (lbs)
6276	6 to 10	10.67
6277	8 to 14	11.72



Universal Pole Band



Pole Band Guy Clip, No. 6278

Pole Band Guy Clip

Guy clips, two piece. Top piece is 5/16" x 2-1/2", bottom is 3/16" x 2-1/2". A 3/4" x 2-1/2" machine bolt with cotter pin fastens thimble.

Ordering information:

Hubbell Catalog No. 6278

Stainless Steel Lashing Straps

3/4" wide, 430 stainless steel. Part numbers end in suffix SSLC. Integral loop buckle.

Plastic Lashing Straps

3/4" wide, black acetal homopolymer.

Part numbers end in suffix PLLC.

Buckles are black acetal plastic with stainless steel locking barbs. Additional buckles can be ordered as CBPLLC

Stainless Steel Catalog Number	Length (in)	Buckles Included
C10SSLC	10	Integral Loop
C16SSLC	16	Integral Loop
C22SSLC	22	Integral Loop
C34SSLC	34	Integral Loop
C45SSLC	45	Integral Loop
C50SSLC	50	Integral Loop
C66SSLC	66	Integral Loop
C78SSLC	78	Integral Loop

Plastic Strap Catalog Number	Length (in)	Buckles Included
C50PLLC	600 (50 ft reel)	No
C10PLLC	10	Yes
C13PLLC	13	Yes
C16PLLC	16	Yes
C27PLLC	27	Yes



Plastic Lashing Strap With Buckle SS Lashing Strap Assembly

Plastic Lashing Strap Kit

Kit of (5) 50' reels of plastic lashing strap and (150) plastic buckles to secure messenger strand to communication cables. Loop strength 250 lbs. Buckles are black acetal plastic with stainless steel locking barbs.

Ordering information:

- Kit: Hubbell Catalog No. **C550B150PLLC**
- 50' reel of lashing strap only: Hubbell Catalog No. **C50PLLC**
- Buckle only: Hubbell Catalog No. **CBPLLC**



Use strap tensioning tool for tensioning and cutting excess strap material. Hubbell Catalog No. **PSC2170130**



Lashing Kit, No. C550B150PLLC

Bolts

Bolt, Cable Extension

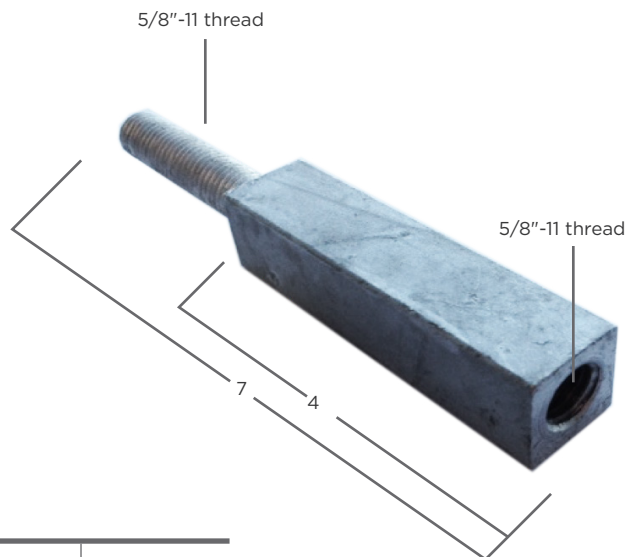
Creates a second cable run at the same level on the same side of the pole as an existing cable run with a 4" extension. Used in conjunction with Reinforcing Strap (PSC2080241) on page A72.

Features

- 5/8" - 11 Thread (Internal and External)
- Stand-off segment 4" x 1" Sq.
- Overall length 7"
- Meets Bellcore 627-0005

Material

- Steel
- Galvanized per ASTM A-153



Hubbell SKU	Internal Thread	External Thread	Overall Length	Extension Length	Approx. Ship Wt. per each
PSC2080292	5/8"-11	5/8"-11	7"	4"	1.1 lbs.

Carriage Bolts

Carriage Bolts have square nuts, finished points and rolled threads. Standard heads have square shoulders. Open-hearth steel. Hot-dip galvanized.

3/8-Inch Diameter

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Bolt Length	Thread Length	
8634 ⁽¹⁾⁽²⁾	4	1-3/4	0.16
863412 ⁽¹⁾⁽²⁾	4-1/2	1-3/4	0.17
8635 ⁽¹⁾⁽²⁾	5	1-3/4	0.18
8636 ⁽¹⁾	6	1-3/4	0.20
8637	7	1-3/4	0.22
400012548 ⁽¹⁾	8	4	0.27
400012555 ⁽¹⁾	10	4	0.30
400012563 ⁽¹⁾	12	4	0.35

NOTE: 4,250 lb rated tensile strength.

- (1) RUS listed.
- (2) ANSI C135.1.

1/2-Inch Diameter

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Bolt Length	Thread Length	
864412 ⁽¹⁾	4-1/2	3	0.32
400012589 ⁽¹⁾	4-3/4	3	0.35
8645 ⁽¹⁾⁽²⁾	5	3	0.33
864512 ⁽¹⁾	5-1/2	3	0.38
8646 ⁽¹⁾⁽²⁾	6	3	0.39
8647	7	4	0.44

NOTE: 7,800 lb rated tensile strength.

- (1) RUS listed.
- (2) ANSI C135.1.



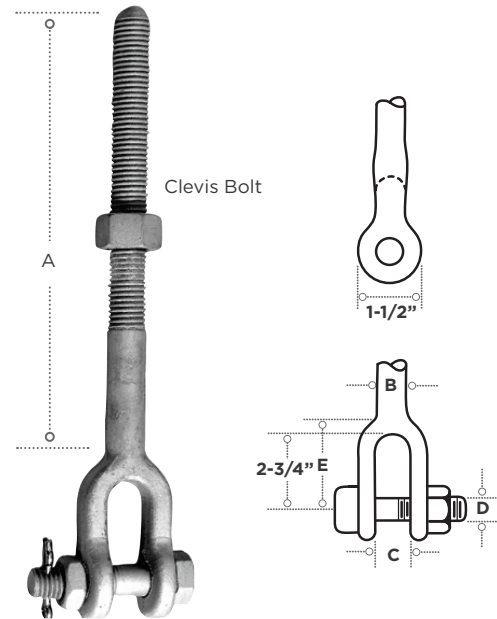
Carriage Bolt

Clevis Bolts

For deadend attachments strings. Cotter bolt is 2-3/4" long and comes with cotter pin and hex nut. Clevis Bolts are drop-forged steel. Hot-dip galvanized.

Catalog Number	Dimensions Inches						Approx Ship Wt Each (lbs)
	A	B	C	D	E	Thread Length	
15808 ⁽¹⁾	8	5/8	13/16	1/2	1-13/16	6	1.50
15810 ⁽¹⁾	10	5/8	13/16	1/2	1-13/16	6	1.99
15812 ⁽¹⁾	12	5/8	13/16	1/2	1-13/16	6	2.17
15814 ⁽¹⁾	14	5/8	13/16	1/2	1-13/16	6	2.20
15828 ⁽¹⁾	8	3/4	13/16	5/8	1-13/16	6	2.00
15830 ⁽¹⁾	10	3/4	13/16	5/8	1-13/16	6	2.57
15832 ⁽¹⁾	12	3/4	13/16	5/8	1-13/16	6	2.80
15834 ⁽¹⁾	14	3/4	13/16	5/8	1-13/16	6	3.04

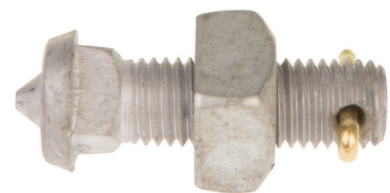
NOTE: 5/8" bolt has 12,400 lb rated tensile strength. 3/4" bolt has 18,350 lb rated tensile strength.
(1) RUS listed.



Cone Head Bolt

For use on universal pole bands 6276 and 6277. Includes one square nut and cotter key. Galvanized per ASTM A-153.

Catalog Number	Diameter	Thread Length	Overall Length Inches	Approx. Ship Wt. per each
PS6280	3/4"	Full	2-1/2	0.50 lbs.



No. PS6280

Bolts

Double-Arming Eye Bolt

Bolts have a cone type point and are threaded to within 2" of the 1-1/2" x 2" eye. Three square nuts. Drop-forged steel. Hot-dip galvanized.

5/8-Inch Diameter

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Inside Dimension A	Outside Dimension B	Length Under Eye C	
19784 ⁽¹⁾	1-1/2	2-5/8	14	1.96
19786 ⁽¹⁾	1-1/2	2-5/8	16	2.20
19788 ⁽¹⁾	1-1/2	2-5/8	18	2.32
19790 ⁽¹⁾	1-1/2	2-5/8	20	2.56
19792 ⁽¹⁾	1-1/2	2-5/8	22	2.60



NOTE: 12,400 lb rated tensile strength.

(1) RUS listed.

Double-Arming Bolts, All-Thread Rods Cable B Suspension Bolts

Referred to as "D.A. bolts," Double-Arming Bolts are used for double-arm applications (one arm on each side of the pole). Hubbell Power Systems D.A. Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1. They are available in a range of thread diameters and lengths. Each bolt includes four assembled square nuts. Threads are formed with the rolled thread process. Bolt length is measured from the last thread, end to end. A semi-cone point is included on bolts 8" and longer. Shorter lengths include a chamfered end

1/2" Thread Diameter (1/2-13 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
8846	16	1.17
8848	18	1.25

NOTE: 7,800 lb rated tensile strength.

5/8" Thread Diameter (5/8-11 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
8860	10	1.17
8862 ^{(1) (2)}	12	1.26
8864 ^{(1) (2)}	14	1.48
8866 ^{(1) (2)}	16	1.70
8868 ^{(1) (2)}	18	1.80
8870 ^{(1) (2)}	20	1.97
8872 ^{(1) (2)}	22	2.13
8874 ^{(1) (2)}	24	2.27
8876	26	2.40
8877	28	2.53
8878	30	2.67
8879	32	2.80
T2060419 ⁽¹⁾	36	3.30
PSDA584000 ⁽¹⁾	40	3.50
PSDA584400	44	3.60



NOTE: 12,400 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C135.1.

Double-Arming Bolts, All-Thread Rods (continued)

Cable B Suspension Bolts

3/4" Thread Diameter (3/4-10 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
C2050140	6	1.28
C2050141	8	1.50
PSC2050606	10	1.70
8882 ⁽²⁾	12	1.82
8884 ⁽²⁾	14	2.24
8886 ⁽²⁾	16	2.48
8888 ⁽²⁾	18	2.72
8890 ^{(1) (2)}	20	2.92
8892 ^{(1) (2)}	22	3.16
8894 ^{(1) (2)}	24	3.35
8896	26	3.56
8897	28	3.65
8898	30	3.81
889832	32	4.13
PS889834	34	4.34
PS889836	36	4.50
PS889838	38	4.82
PS889840	40	5.10
PS889842	42	5.41

NOTE: 18,350 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C-135.1.

7/8" Thread Diameter (7/8-9 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
PSDA781200	12	2.83
PSDA781400	14	3.12
PSDA781600	16	3.41
PSDA781800	18	3.70
PSDA782000	20	3.99
PSDA782200	22	4.27
PSDA782400	24	4.56
PSDA782600	26	4.85
PSDA782800	28	5.14
PSDA783000	30	5.43
PSDA783200	32	5.72
PSDA783400	34	6.01
PSDA783600	36	6.30
PSDA783800	38	6.59
PSDA784000	40	6.88
PSDA784200	42	7.17
PSDA784400 ⁽²⁾	44	7.40
PSDA784600 ⁽²⁾	46	7.63
PSDA784800 ⁽²⁾	48	8.00
PSDA785000 ⁽²⁾	50	8.23

NOTE: 24,500 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C-135.1.

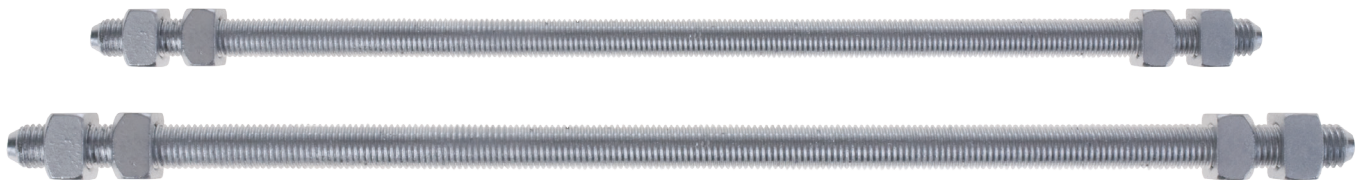
1" Thread Diameter (1-8 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
PSDA101200 ⁽²⁾	12	4.00
PSDA101400 ⁽²⁾	14	4.35
PSDA101600 ⁽²⁾	16	4.72
PSDA101800 ⁽²⁾	18	5.00
PSDA102000 ⁽²⁾	20	5.30
PSDA102200 ⁽²⁾	22	5.70
PSDA102400 ⁽²⁾	24	6.10
PSDA102600 ⁽²⁾	26	6.40
PSDA102800 ⁽²⁾	28	6.75
PSDA103000 ⁽²⁾	30	7.10
PSDA103200 ⁽²⁾	32	7.40
PSDA103400 ⁽²⁾	34	7.55
PSDA103600 ⁽²⁾	36	7.70

NOTE: 33,550 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

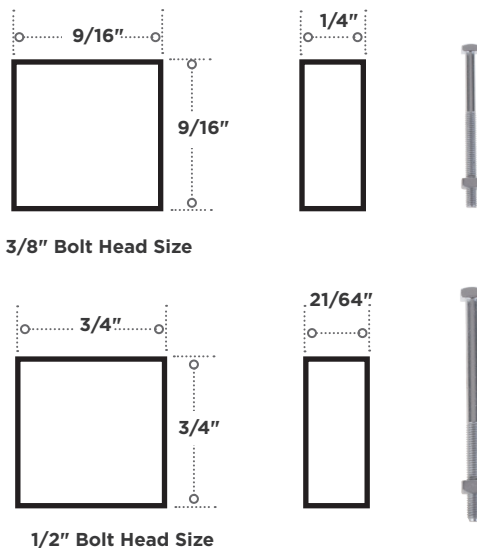
(2) ANSI standard, C-135.1.



Bolts

Machine Bolts, Square Head Cable A Suspension Bolts

Sometimes referred to as "crossarm" bolts or "through" bolts, Hubbell Power Systems Square Head and Hex Head Machine Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1 and are available in a range of thread diameters and lengths. The head is marked with an identifying "C" and the bolt includes an assembled square nut. Threads are formed with the rolled thread process. Bolt length is measured from the underside of the head to the last thread. Semi-cone point comes on bolts 8" and longer in 1/2", 5/8" and 3/4" diameters. All others have chamfered or rounded ends.



3/8" Thread Diameter (3/8-16 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
8603	3	1	0.13
8604	4	3	0.15
860412 ⁽¹⁾	4-1/2	3	0.17
8605 ⁽¹⁾	5	3	0.18
860512	5-1/2	3	0.19
T2060412 ⁽¹⁾	6	3	0.21

NOTE: 4,250 lb rated tensile strength.

(1) ANSI standard, C-135.1.

1/2" Thread Diameter (1/2-13 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
870112	1-1/2	1-1/4	0.17
400013470 ⁽²⁾	1-3/4	1-1/4	0.19
8705 ⁽¹⁾	5	3	0.35
8706 ^{(1) (2)}	6	3	0.40
8707 ⁽¹⁾	7	3	0.48
8708 ^{(1) (2)}	8	4	0.49
8709 ⁽¹⁾	9	4	0.57
8710 ^{(1) (2)}	10	4	0.60
8712 ^{(1) (2)}	12	4	0.71
8714 ⁽¹⁾	14	6	0.73
DF2B16	16	6	0.82

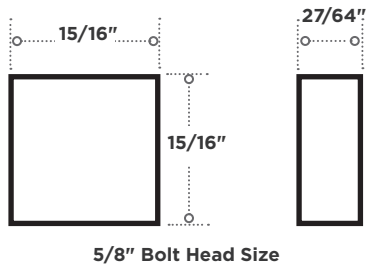
NOTE: 7,800 lb rated tensile strength.

(1) RUS listed, c - machine bolt.

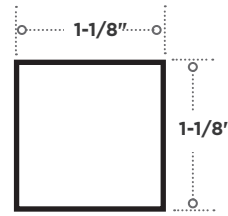
(2) ANSI standard, C-135.1.

Machine Bolts, SQUARE HEAD (continued)

Cable A Suspension Bolts



5/8" Bolt Head Size



3/4" Bolt Head Size



5/8" Thread Diameter (5/8-11 UNC)

Catalog Number	Cable A Suspension Bolt Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
		Length	Minimum Thread Length	
8802		2	1-1/2	0.36
880212		2-1/2	2-1/4	0.39
PS8803		3	1-1/2	0.48
8804		4	3	0.57
8805		5	3	0.60
8806 ^{(1) (2)}		6	3	0.69
8807 ^{(1) (2)}		7	4	0.75
8808 ^{(1) (2)}	400013645*	8	4	0.78
8809 ⁽¹⁾		9	4	0.88
8810 ^{(1) (2)}	400013652*	10	6	0.93
8812 ^{(1) (2)}	400013660*	12	6	1.08
8814 ^{(1) (2)}	400013678*	14	6	1.23
8816 ^{(1) (2)}	400013686*	16	6	1.40
8818 ^{(1) (2)}	400013694*	18	6	1.54
8820 ⁽¹⁾	400013702*	20	6	1.71
8822 ⁽¹⁾	400013710*	22	6	1.76
8824 ⁽¹⁾	400314274*	24	6	1.96
8826		26	6	2.15
8828		28	6	2.31
8830		30	6	2.52
8832		32	6	2.78

3/4-Inch Thread Diameter (3/4- 9 UNC)

Catalog Number	Cable A Suspension Bolt Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
		Length	Minimum Thread Length	
PS8906		6	3	1.09
8910 ^{(1) (2)}	400013728*	10	4	1.54
8912 ^{(1) (2)}	400013736*	12	6	1.62
8914 ^{(1) (2)}	400013744*	14	6	1.88
8916 ^{(1) (2)}	400013751*	16	6	2.25
8918 ^{(1) (2)}	400013769*	18	6	2.32
8920 ⁽¹⁾		20	6	2.52
8922 ⁽¹⁾	400013022*	22	6	2.68
8924 ⁽¹⁾	400013024*	24	6	3.04
8926 ⁽¹⁾		26	6	3.08
8928		28	6	3.23
8930		30	8	3.46
8932		32	8	3.69
PS8934 ⁽²⁾		34	8	3.83
PS8936 ⁽²⁾		36	8	4.60

NOTE: 18,350 lb rated tensile strength.

* Cable A Suspension Bolts include 2 square nuts

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C-135.1.

NOTE: 12,400 lb rated tensile strength.

* Cable A Suspension Bolts include 2 square nuts

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C-135.1.

Bolts

Machine Bolts, Square Head (continued) Cable A Suspension Bolts

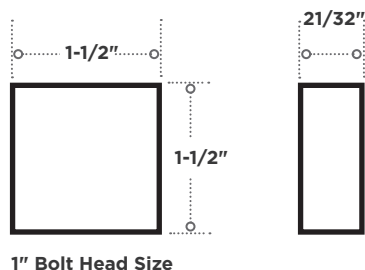
7/8-Inch Thread Diameter (7/8- 9 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSSB780300	3	2	0.94
PSSB780400	4	2	1.15
PSSB780500	5	2-1/2	1.30
PSSB780600 ⁽¹⁾	6	2-1/2	1.44
PSSB780800 ^{(1) (2)}	8	3	1.76
PSSB781000 ^{(1) (2)}	10	6	2.08
DF5B12 ^{(1) (2)}	12	6	2.40
C2050254 ^{(1) (2)}	14	6	2.84
C2050255 ^{(1) (2)}	16	6	3.16
C2050256 ^{(1) (2)}	18	6	3.52
C2050257 ⁽¹⁾	20	6	3.90
C2050258 ⁽¹⁾	22	6	4.25
DF5B24 ⁽¹⁾	24	6	4.30
PSSB782600 ⁽¹⁾	26	8	4.62
PSSB782800 ⁽¹⁾	28	8	4.94
PSSB783000	30	8	5.27
PSSB783200	32	8	5.61
PSSB783400	34	8	5.69
PSSB783600	36	8	6.07
PSSB783800	38	8	6.20
PSSB784000	40	8	6.60
PSSB784200	42	8	6.80

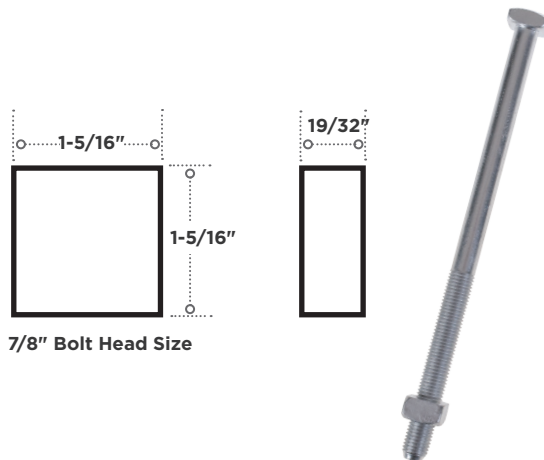
NOTE: 24,500 lb rated tensile strength. For additional square nuts, see page A92.

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C135.1.



1" Bolt Head Size



7/8" Bolt Head Size

1-Inch Thread Diameter (1-8 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSSB101200 ⁽¹⁾	12	6	3.27
PSSB101400 ⁽¹⁾	14	6	3.69
PSSB101600 ⁽¹⁾	16	6	4.12
PSSB101800 ⁽¹⁾	18	6	4.54
PSSB102000	20	6	4.96
PSSB102200	22	6	5.38
PSSB102400	24	6	5.81
PSSB102600	26	6	6.24
PSSB102800	28	8	6.67
PSSB103000	30	8	7.10

NOTE: 33,500 lb rated tensile strength. For additional square nuts, see page A92.

(1) ANSI standard, C-135.1.

Machine Bolts, Hex Head

Hubbell Power Systems Square Head and Hex Head Machine Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1 and are available in a range of thread diameters and lengths. The head is marked with an identifying "C" and the bolt includes an assembled hex nut. Threads are formed with the rolled thread process. Bolt length is measured from the underside of the head to the last thread.

1/2-Inch Thread Diameter (1/2-13 UNC)

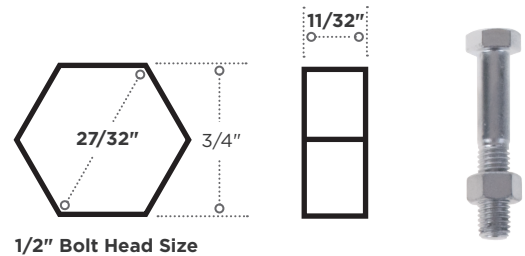
Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSHB120150	1-1/2	1-1/4	0.15
PSHB120175	1-3/4	1-1/4	0.16
PSHB120200	2	1-1/4	0.17
PSHB120250	2-1/2	1-1/4	0.20
PSHB120300	3	1-1/4	0.23
PSHB120400	4	3	0.30

NOTE: 7,800 lb rated tensile strength.

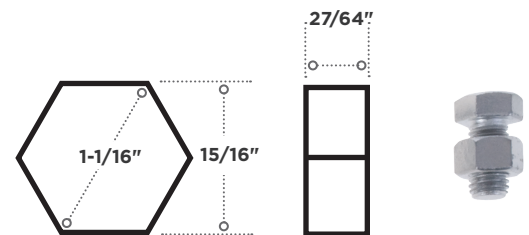
5/8-Inch Thread Diameter (5/8-11 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSHB580150	1-1/2	1-1/4	0.33
PSHB580175	1-3/4	1-1/2	0.35
PSHB580200	2	1-1/2	0.37
PSHB580250	2-1/2	1-1/2	0.43
PSHB580300	3	1-1/2	0.46

NOTE: 12,400 lb rated tensile strength.



1/2" Bolt Head Size



5/8" Bolt Head Size

Bolts

Ovaleye Bolts

Bolts with 5/8" and 3/4" shanks have 1-1/2" x 2" ovaleyes. Drop-forged, galvanized steel bolts have cone type points and rolled threads.

1/2-Inch Shank Diameter (7/16 x 1-1/4" x 1-5/8" Ovaley)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Thread Length	
29937	6	4	0.66
29943	12	6	1.00

NOTE: 7,800 lb rated tensile strength.

3/4-Inch Shank Diameter (5/8 x 1-1/2" x 2" Ovaley)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length Under Eye	Thread Length	
29978 ^{(1) (2)}	8	4	1.80
29980 ^{(1) (2)}	10	4	2.00
29982 ^{(1) (2)}	12	6	2.28
29984 ^{(1) (2)}	14	6	2.48
29986 ^{(1) (2)}	16	6	2.68
29988 ^{(1) (2)}	18	6	3.14
29990 ^{(1) (2)}	20	6	3.26

NOTE: 20,050 lb rated tensile strength.

(1) RUS listed.

(2) ANSI standard, C135.5

5/8-Inch Shank Diameter (9/16 x 1-1/2" x 2" Ovaley)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Thread Length	
29956 ^{(1) (2)}	6	4	1.00
29958 ^{(1) (2)}	8	4	1.04
29959 ^{(1) (2)}	9	4	1.13
29960 ^{(1) (2)}	10	6	1.22
29962 ^{(1) (2)}	12	6	1.44
29964 ^{(1) (2)}	14	6	1.46
29966 ^{(1) (2)}	16	6	1.68
29968 ^{(1) (2)}	18	6	2.08
29970 ^{(1) (2)}	20	6	2.40

NOTE: 13,550 lb rated tensile strength.

(1) RUS listed.

(2) ANSI standard, C135.4, C135.5



Screw Eye Bolts

Gimlet-point lag-screw thread. Drop-forged except Catalog Number 8777. Hot-dip galvanized per ASTM A-153.

Catalog Number	Type	Dimensions Inches			Approx Ship Wt Each (lbs)
		Size of Eye	Diameter	Length Under Eye	
29930	Ovaleye	1-1/4 x 1-5/8	1/2	6	0.65
C2050094	Ovaleye	1-1/4 x 1-5/8	1/2	4	0.54
8777 ⁽¹⁾	Hookeye	3/4	3/8	3-1/2	0.16

(1) 1/4" eye opening.



Ovaleye Screw Eye Bolt

Hookeye Screw Eye Bolt

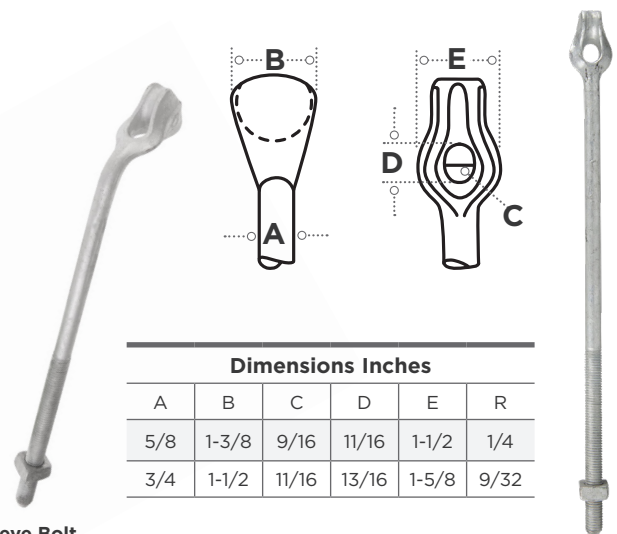
Thimbleye® Bolts

Contoured eye keeps guy strand from kinking, bending or spreading. Drop-forged steel. Hot-dip galvanized. Cone-type points. Eyes of angle bolts are offset 45 degrees.

Catalog Number		Dimensions Inches		Rated Tensile Strength (lbs)	Approx Ship Wt Each (lbs)
Straight Bolt	Angle Bolt	Size	Thread Length		
DG1F8 ⁽¹⁾	DG4F8 ^{(1) (2)}	5/8 x 8	4	12,400	1.12
5510 ^{(1) (2)}	5010 ^{(1) (2)}	5/8 x 10	4	12,400	1.48
5512 ^{(1) (2)}	5012 ^{(1) (2)}	5/8 x 12	6	12,400	1.76
5514 ⁽²⁾	5014 ⁽²⁾	5/8 x 14	6	12,400	1.88
5516	5016	5/8 x 16	6	12,400	1.92
DG1F18	—	5/8 x 18	6	12,400	2.00
PS5520 ⁽¹⁾	—	5/8 x 20	6	12,400	2.05
PS5610 ⁽¹⁾	5110T ⁽¹⁾	3/4 x 10	4	18,350	2.28
5612 ⁽¹⁾	5112T ⁽¹⁾	3/4 x 12	6	18,350	2.44
5614	5114T	3/4 x 14	6	18,350	2.64

(1) RUS listed.

(2) ANSI standard, C- 135.4.



Angle Thimbleye Bolt

Straight Thimbleye Bolt

Dimensions Inches					
A	B	C	D	E	R
5/8	1-3/8	9/16	11/16	1-1/2	1/4
3/4	1-1/2	11/16	13/16	1-5/8	9/32

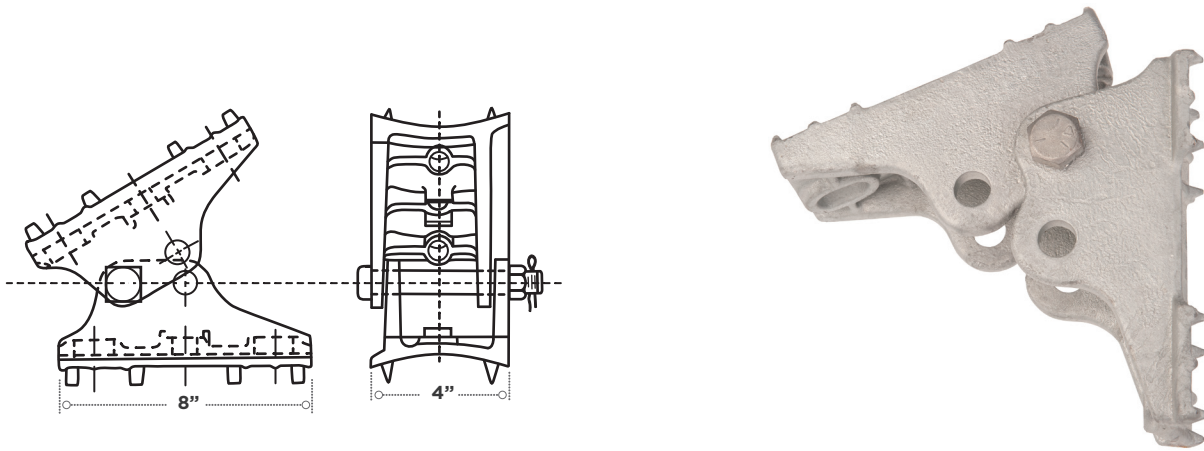
Braces

Push Pole Brace

For use in push pole application where tension guying is not feasible. Brace adjusts for different pole angles.

Catalog Number	Dimensions Inches				Approx Ship Wt Each (lbs)
	Pole Diameter	Base Diameter	Mounting Bolt Diameter	Hinge Bolt Diameter	
SG611	6 - 11	4 x 8	3/4	3/4	7.50

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153



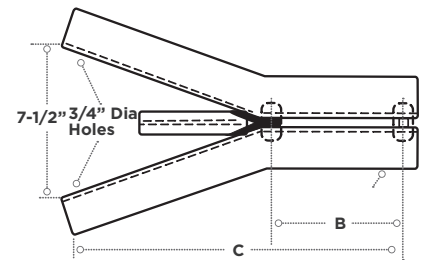
Cable Extension Brackets

For suspending cables at a distance from the pole, catalog number 7903 Cable Suspension Clamp is suspended under the arm and attached through the center slot to a 5/8" machine bolt with a washer under the bolt head. Cable extension from the pole is 23" for catalog number 7920, and 41" for catalog number 7921. Cable clamp with attachment bolt and pole mounting bolts, or lag screws, must be ordered separately. Hot-dip galvanized.



Cable Extension Bracket

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	A - Angle Size	B	C	
7920	3 x 2-1/2 x 1/4	8 1/2	26	29.0
7921	3-1/2 x 2-1/2 x 5/16	18 3/4	44-1/2	62.0



Type L Suspension Bracket

Consists of one support strap and one L-bracket standoff. The bracket secures one messenger clamp adjacent to pole and one clamp below and offset from pole. Through bolt and suspension clamps are purchased separately.



No. 260520846

Catalog Number	Description	Dimensions (In)	Approx Ship Wt Each (lbs)
260520846	Bracket, Type L Suspension	L bracket - 1-1/4 x 1/2 Strap - 1-1/4 x 1/8	3.7
260634910	Strap Only	1-1/4 x 1/8	0.84



No. 260634910

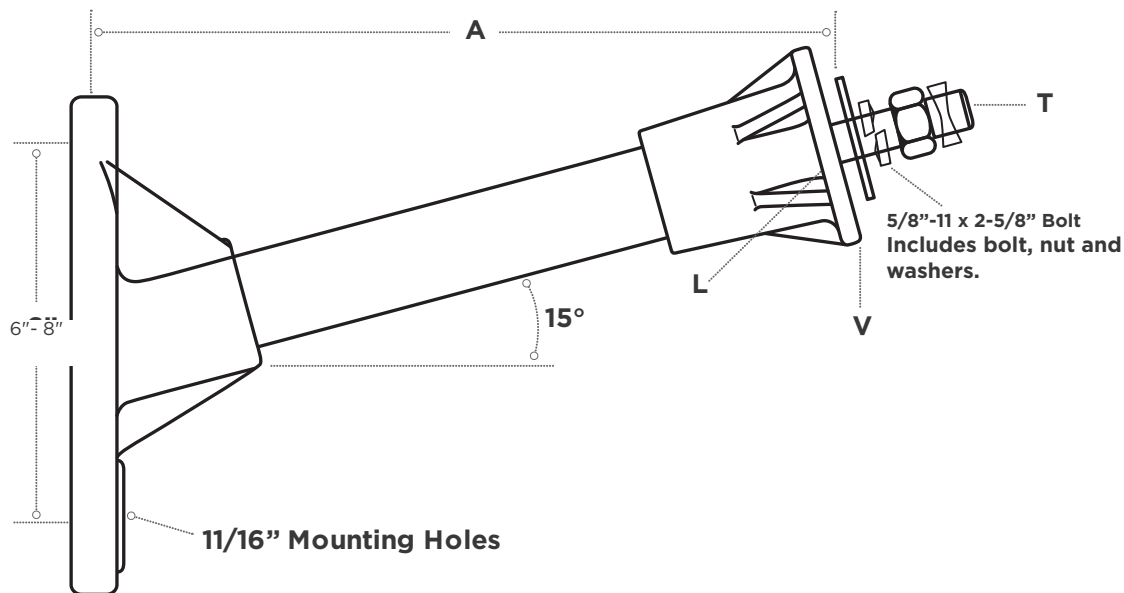
Brackets

Communication Standoff Brackets

With over 60 years of manufacturing experience, you can depend on the quality of our brackets. Standoff brackets are a great way to add distance between the equipment being mounted and the pole when additional clearance or space is needed. Our brackets are available in a variety of lengths, angles, and end fittings to suit your application needs.

Fiberglass is a great option due to the increased lifespan, non-conductive nature, and decreased flammability. The fiberglass rod is either painted with UV resistant paint or coated in silicone to add to the longevity of the bracket.

Communication standoff brackets are designed with an end fitting that is well suited for communication applications. These end fittings are perfect for attaching a suspension clamp to support the messenger wire from pole to pole.

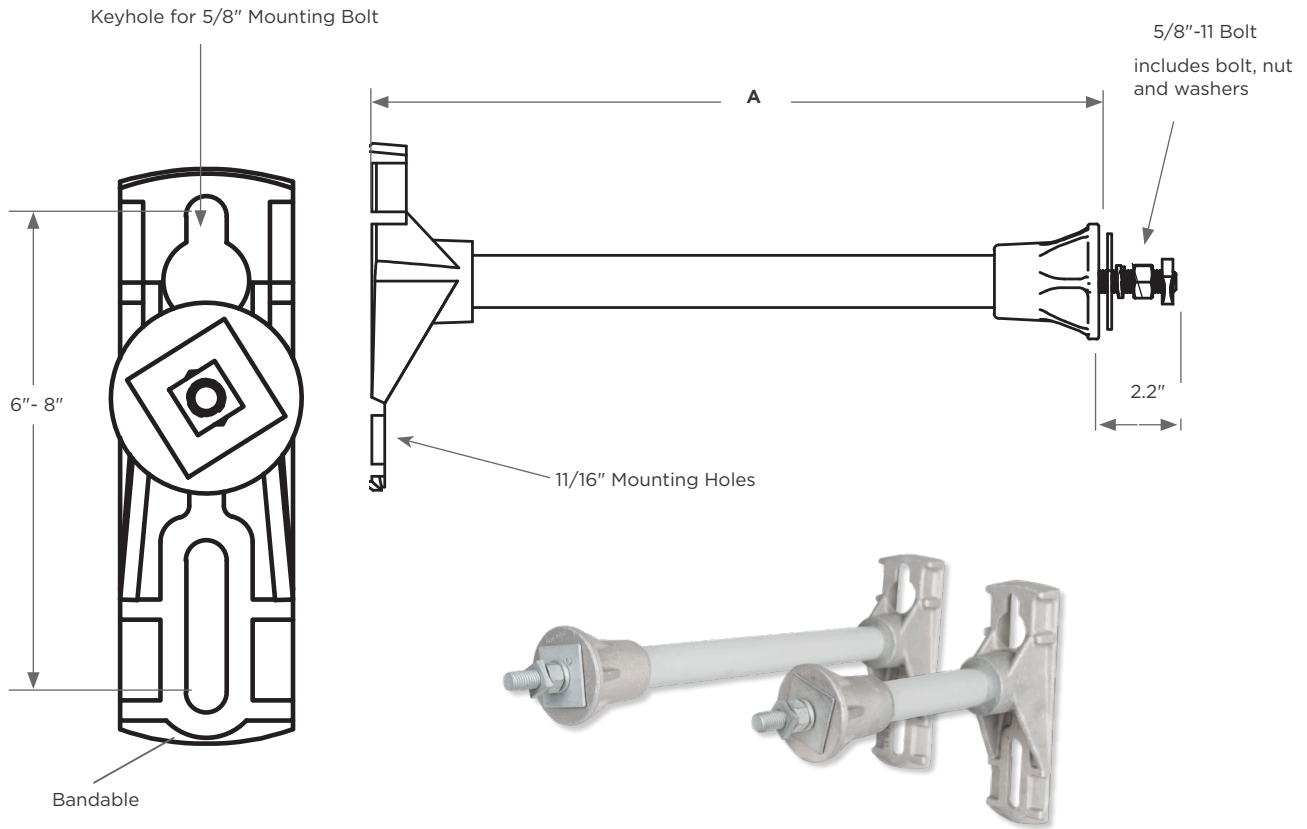


Medium Duty 1-1/2" (38 mm) Diameter Rod

Catalog Number	Length A Inches (cm)	Minimum Ultimate ⁽¹⁾			Weight Each lb
		Vertical V lb (kg)	Longitudinal L lb (kg)	Transverse T lb (kg)	
1CSM12	12 (30.5)	2,100 (945)	1,300 (585)	1,500 (675)	3.8
1CSM15	15 (38.1)	1,800 (810)	1,200 (540)	1,500 (675)	4.2
1CSM18	18 (45.7)	1,500 (675)	1,000 (450)	1,500 (675)	4.6
1CSM21	21 (53.3)	1,300 (585)	850 (383)	1,500 (675)	5.0
1CSM24	24 (61.0)	1,100 (495)	700 (315)	1,500 (675)	5.4
1CSM30	30 (76.2)	900 (405)	600 (270)	1,500 (675)	6.1
1CSM36	36 (91.4)	900 (405)	500 (225)	1,500 (675)	6.8

(1) Recommended maximum working load is 50% of minimum ultimate ratings listed. Consult factory for additional lengths and bases.

Communication Standoff Bracket (0°)



- Base design permits bolting or banding to structure
- Rod is fiberglass with UV-resistant urethane gray paint
- Base and End Fitting are aluminum alloy.

Medium Duty 1-1/2" (38 mm) Dia. Fiberglass Rod

Catalog Number	Length A Inches (cm)	Minimum Ultimate ⁽¹⁾			Weight Each lb (kg)
		Vertical V lb (kg)	Longitudinal L lb (kg)	Transverse T lb (kg)	
1CSM120	12 (30)	2100 (953)	900 (408)	1500 (680)	3.8 (1.7)
1CSM150	15 (38)	1800 (810)	800 (363)	1500 (680)	4.2 (1.9)
1CSM180	18 (46)	1500 (680)	700 (318)	1500 (680)	4.6 (2.1)
1CSM210	21 (53)	1200 (544)	600 (272)	1500 (680)	5.0 (2.3)
1CSM240	24 (61)	900 (408)	500 (227)	1500 (680)	5.4 (2.4)

(1) Recommended maximum working load is 50% of minimum ultimate ratings listed.

Consult factory for additional lengths, bases, and long bolt option.

Add "SC" suffix to the end of the catalog number to denote Silicone Coated rod.

Brackets

Conduit Brackets

A versatile conduit bracket for supporting 1" to 6" dia. conduit in various mounting configurations. Bracket will mount up to four 6" conduits with unlimited adjustability. H-Slot extrusion eliminates field drilling. Unit mounts to the pole on 3-5/8" hole centers using 5/8" thru-bolt and 1/2" lag (not supplied). Conduit strap kits are ordered separately below. Additional T-Slot Shapes are available on the following pages.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	A	B	
C6CSO	6	N/A	2.31
C6CSO6	6	6	3.03
C6CSO8	6	8	3.10
C6CSO12	6	12	3.50
C6CSO18	6	18	4.44
C6CSO24	6	24	4.85
C6CSO36	6	36	5.81
C6CSO48	6	48	6.50
C9CSO	9	N/A	2.97
C9CSO12	9	12	4.81
C9CSO24	9	24	6.02
C9CSO36	9	36	7.88

Note: For brackets with 4-Way T-Slot in place of H-Slot, add the suffix 4WT to the end of the catalog number.

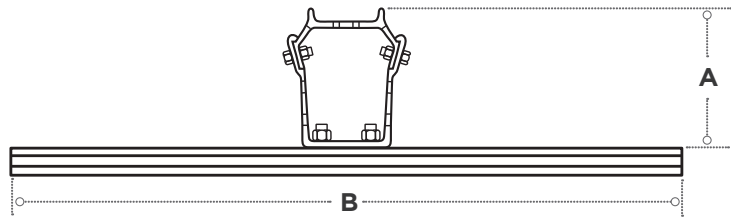
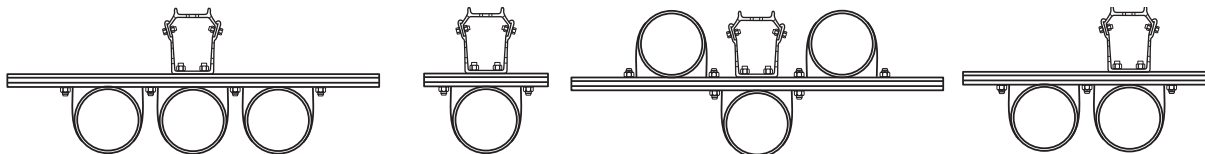
Conduit Strap Kits

Strap Kits with the following variations are available for use with the Conduit Brackets above. The straps have two holes for mounting one conduit section. Each Strap Kit contains a strap, two each 1/2" x 1-1/4" hex head bolts, lockwashers and hex nuts.

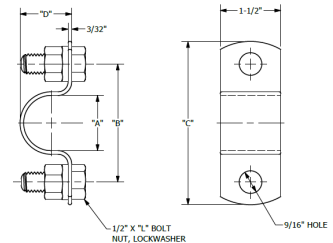
Catalog Number	Conduit Size	Dimensions Inches				Approx Ship Wt Each (lbs)
		A	B	C	D	
CSTK1	1	1-3/8	3	4-1/8	1-1/4	0.30
CSTK15	1-1/2	1-7/8	3-1/2	4-5/8	1-7/8	0.35
CSTK2	2	2-3/8	3-15/16	5-1/16	2-1/4	0.40
CSTK25	2-1/2	2-7/8	4-7/16	5-9/16	2-3/4	0.45
CSTK3	3	3-1/2	5-1/16	6-3/16	3-3/8	0.50
CSTK35	3-1/2	4	5-9/16	6-11/16	3-15/16	0.60
CSTK4	4	4-1/2	6-1/16	7-3/16	5-3/8	0.65
CSTK5	5	5-9/16	7-1/8	8-1/4	5-1/2	0.70
CSTK6	6	6-5/8	8-3/8	9-5/16	6-1/2	0.75

Note: Add suffix 2HMB for 1/2" x 2" bolts instead.

Installation Options



Conduit Strap Kit



No. CSTK2 to Conduit Strap Kit

Conduit Strap Only

Aluminum conduit strap without bolts included. One 9/16" hole on each end.

Catalog Number	Size (in)	Approx Ship Wt Each (lbs)
CST2	2	0.12
CST3	3	0.17
CST4	4	0.30
CST5	5	0.33

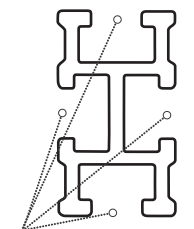
T-Slot Shaped Conduit Brackets

For versatile equipment mounting, these custom T-Slot Shapes are extruded from high-strength, heat-treated 6061-T6 aluminum alloy.

A multi-purpose extrusion for mounting equipment in four directions using 1/2" diameter hardware.

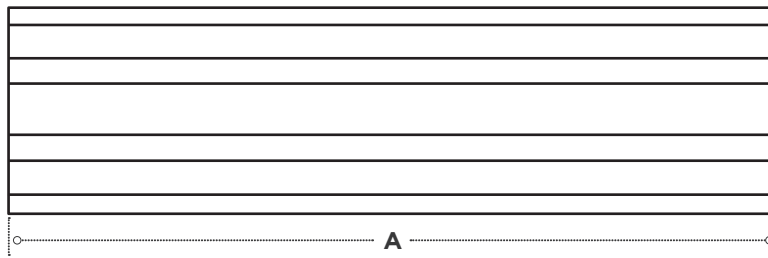
4-Way T-Slot

Catalog Number	Dimension A Inches	Weight Each lb
C4WT12	12	1.25
C4WT24	24	2.25
C4WT36	36	3.25
C4WT48	48	4.50
C4WT60	60	5.50
C4WT120	120	11.00



Captures the Heads of 1/2" Dia Bolts
End View

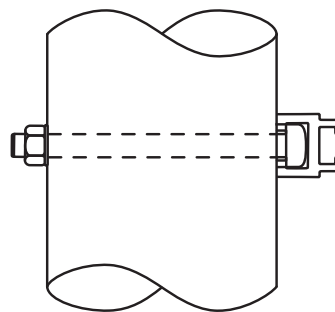
4-Way T-Slot



2-Way T-Slot

Catalog Number	Dimension A Inches	Weight Each lb
C2WT12	12	1
C2WT24	24	2
C2WT36	36	3
C2WT48	48	4
C2WT60	60	5
C2WT120	120	10

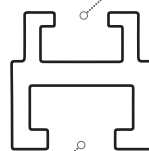
NOTE: Both the extrusions can be used for thru-bolt mounting of equipment to poles, structures, walls, enclosures, machinery, etc. Other lengths are available by special order. Contact Hubbell Power Systems for details.



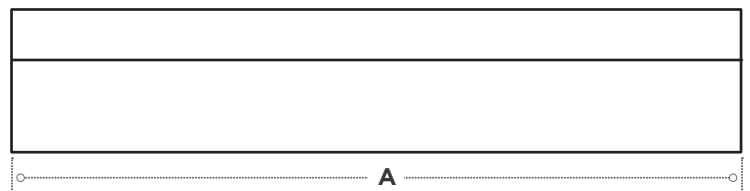
Typical Pole Application

Captures the Heads of 1/2" Dia Bolts

2-Way T-Slot



Captures the Heads of 5/8" Dia Bolts
End View

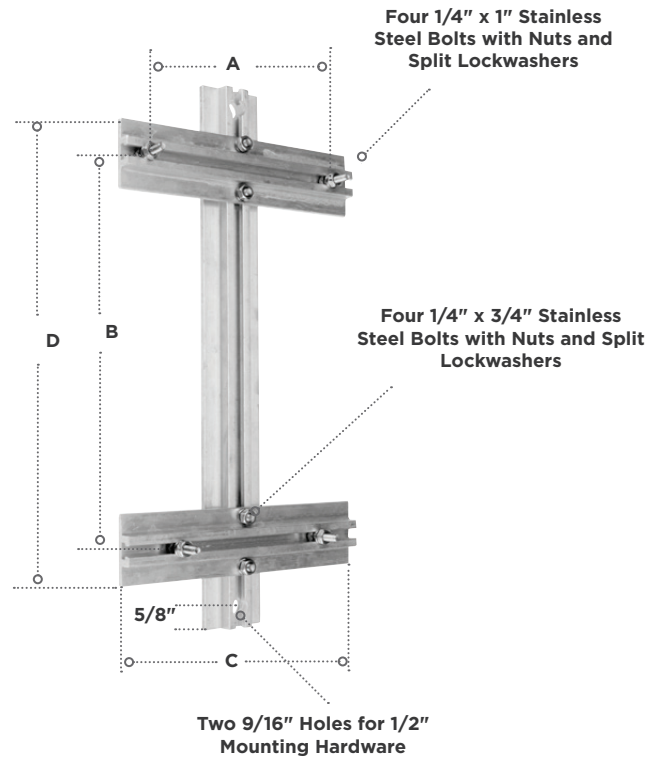


Brackets

Cabinet Mounting Bracket

- For mounting meter cabinets, meter sockets or other light-duty enclosures, with a maximum weight not to exceed 500 pounds.
- Installs to pole or wall with two 1/2" fasteners, not included.
- Adjust for various hole patterns. See ordering information below for ranges.
- Consists of one vertical support, two horizontal supports and stainless steel mounting hardware.
- Shipped unassembled.

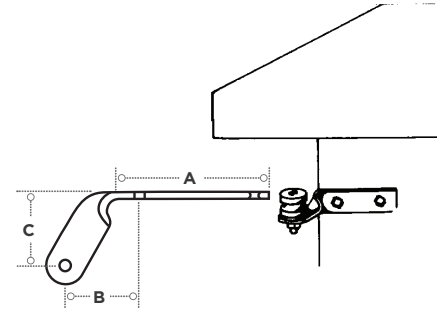
Catalog Number	Mounting Range Inches				Wt Each lb
	A	B	C	D	
CCMB812	1 to 7-1/4	2 to 12	8	16-3/8	2.25
CCMB1218	1 to 11-1/4	2 to 18	12	22-3/8	3.00
CCMB1624	1 to 15-1/4	2 to 24	16	28-3/8	3.75
CCMB1830	1 to 17-1/4	2 to 30	18	34 3/8	4.25



House Bracket

Used where the pole lead attaches to the building at an angle or to carry leads around the corner of a building. Used with porcelain spool insulator and 8604 bolt which are not included. Hot-dip galvanized per ASTM A-153.

Hubbell Catalog Number	Bell Corp Number	Dimensions Inches						Approx Ship Wt Each (lbs)
		Mtg. Holes	Ins. Holes	Steel Size	A	B	C	
8205	400017836	9/32	13/32	1/2 x 3/16	4-3/4	2-7/8	2-5/8	0.82



Wall Strap

Deadend strands to the mounting wall

Catalog Number	Change to Mast Diameter Range (inches)	Approx Ship Wt Each (lbs)
400302402	Thimbleye® Wall Strap, 3/4" x 24", 5/8" offset	3.30
PSC2080291	U Wall Strap deadends strands at right angles to the mounting wall. Attach the U wall strap using 1/2" hardware (not supplied).	1.20
DC168B1	Thimbleye® Wall Strap, 3/4" x 17", 5/8" offset	2.40



No. 400302402



PSC2080291

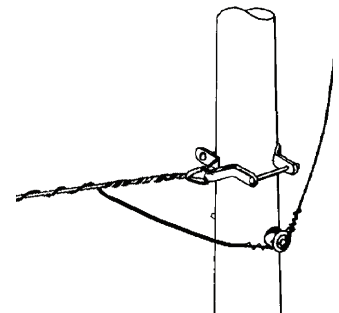
Mast Service Deadend Bracket

Attaches to 1-1/4" through 3" diameter service masts. Front strap is rounded to prevent damage to bail of the service clamp. Square hole at end of the front slot captures the carriage bolt head during installation and prevents slippage after installation. Hot-dip galvanized per ASTM A-153.

Catalog Number	Change to Mast Diameter Range (inches)	Approx Ship Wt Each (lbs)
C2060169	1-1/4 to 3	1.02
DC12M1	1-1/4 to 2	0.78



No. DC12M1



Brackets

Type C Deadend Bracket

Used to deadend communications service drops.

5/16" Clevis Pin Included. Galvanized steel, ASTM A-153.



No. 400017869

Catalog Number	Description	Approx Ship Wt Each (lbs)
400017869	Deadend Attachment	1.60

Attachment, Corner Deadend

Corner Attachment Bracket is an integral thimble eye pole attachment for deadending strand and guy grips at angles of 35° to 60°. Pole mounting surface is curved with integral spurs. Accommodates Maximum 1/2" diameter strand/guy grips.

Catalog Number	Description	Approx Ship Wt Each (lbs)
PSC2080479	Deadend Attachment	1.60

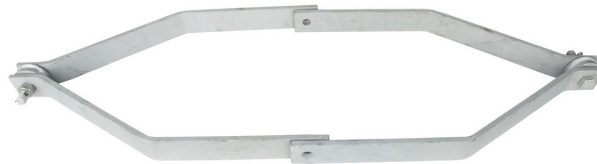


No. PSC2080479

Bracket, Deadend Pole Mount

Pole Mount Deadend Bracket Assembly used to deadend at the pole when an obstruction on the pole prohibits standard deadend hardware. Mounting hole for 5/8" hardware (not included).

Catalog Number	Description	Approx Ship Wt Each (lbs)
PSC2080491	Pole Mount Assembly	27.90



No. PSC2080491

Brackets

Hanger Bracket (Tap)

Aluminum, for strand 6M and 6.6M. Used in CATV drop installations to secure a tap or other electronics to the messenger strand. The bracket can be bent at any point to achieve the desired horizontal location.

Features

- Size range 3" to 9" (distance between strand and tap).
- Bracket and clamping plates are made of aluminum alloy.
- Bolt and nut are made of steel.
- Designed for 1/4" (6.6M) and 5/16" (6M) messenger strand.
- Square hole in bracket prevents bolt rotation when tightening.
- Bend at top edge of bracket prevents rotation when bolts are tightened.
- Interlocking clamping plates assure a positive and secure grip on the messenger strand.
- Elongated slots provide variable positioning of tap or other electronics.

Ordering information: **ATB115050**

Aluminum Extension Bracket (Tap)

Aluminum, for strand 6M and 6.6M. Used in CATV drop installations to secure a tap to the messenger strand when it cannot be attached directly. The unit is offset below the strand, preventing cable abrasion on the equipment housing.

Features

- 2-1/2" size (distance between strand and tap).
- Bracket and clamping plates are made of aluminum alloy.
- Bolt and nut are made of steel.
- Designed for 1/4" (6.6M) and 5/16" (6M) messenger strand.
- Square hole in bracket prevents bolt rotation when tightening.
- Tap mounting hole accepts up to a 5/16" bolt.
- Bend at top edge of bracket prevents rotation when bolts are tightened.
- Interlocking clamping plates assure a positive and secure grip on the messenger strand.

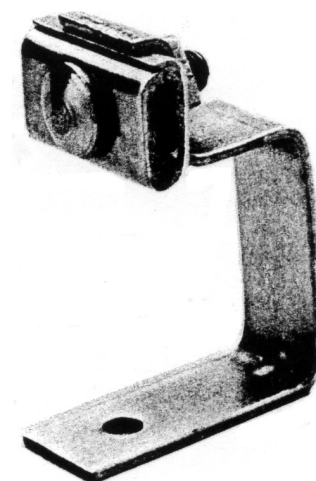
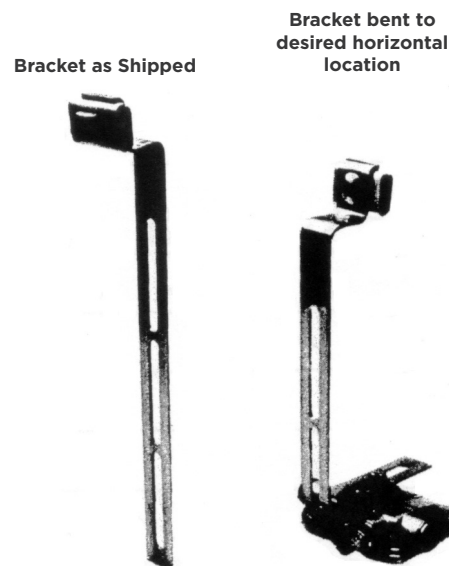
Ordering information: **ATB255050**

Service Deadend Plate

- Plate, Service Deadend, 1-1/2"
- Attaches with two 1/2" dia. fasteners
- Hot dip galvanized per ASTM A-153
- Hubbell Catalog number **DC13E1**



No. DC13E1

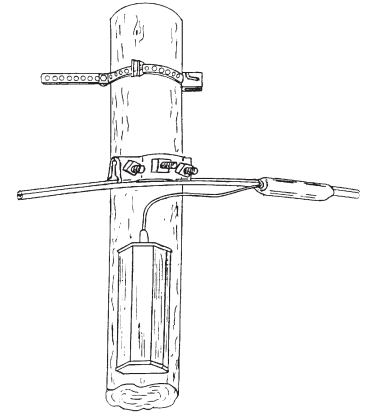
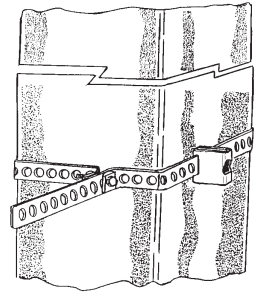
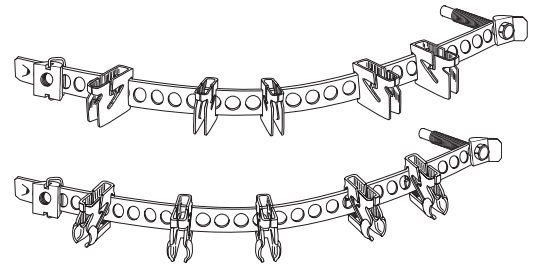


Stainless Steel Mast Clamps

All-stainless-steel strap-type mast clamp, with movable hooks for anchoring aerial drop wire. Designed to secure telephone and CATV aerial drop wire installations to steel masts, wooden poles, concrete poles.

Features

- All-stainless-steel construction for strength and corrosion resistance.
- Installs on round or square poles and masts.
- Each hook can accommodate up to three drop wire clamps at any angle.
- Upon installation, the hooks can be moved to any position along the strap length, for maximum versatility.
- Works with all of the popular drop wire clamps.
- Strap is made of annealed stainless steel, so it is easily formed around various shapes and diameters.



Catalog Number	Length	Hook Type	Number of Hooks per Assembly	Qty.	Approx Ship Wt Each (lbs)
EM-8484TT	32"	Assembled	5	50	32
EM-8484TT-5RH	32"	Removable	5	1	0.7
EM-8484TT-54	54"	Assembled	5	50	39
EM-8484TT-54S2RH	54"	Removable	2	50	27
EM-8484TT-RH	--	Removable	Removable Hooks Only	50	4

Beam Clamp

Used to deadend strands to I-beams. Set screw provides positioning during attachment of 5/8" bolt.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
PSC2080244	2	2.5	2.25	5/8	0.65



No. PSC2080244

Clamps

Crossover Clamp 1/4"

Secures mid-span messenger strands crossing perpendicularly to each other to prevent abrasion.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
C25CC	2	2.4	2.4	1/4	0.7
PSC2080480	2	3.25	1.5	1/4 thru 3/8	1.6



No. C25CC

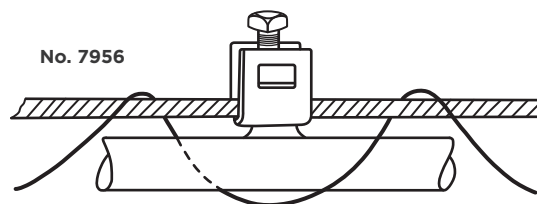


No. PSC2080480

Ground Clamp, B-Strand

Connection is soldered to the cable sheath and mechanically clamped to the messenger wire. The bolt can be removed so that the clamp can be dropped over the messenger. Hot-dip galvanized per ASTM A-153.

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Steel Size	Length	Bolt Size	
7956	3/16 x 1-3/4	1-3/4	1/2 x 1-3/4	0.61



No. 7956

Guy Deadend Clamps

Parallel grooves trap strand tightly without marring. Plate halves align evenly for easy application. Each bolt has a shoulder to prevent turning while tightening. Hot-dip galvanized per ASTM A-153.

5/8" Clamp Bolts

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6460	3	6	2-1/8	3/8 thru 5/8	3.90
6461 ⁽¹⁾⁽²⁾	3	6	1-21/32	5/16 thru 1/2	2.52
6462	2	4	1-21/32	5/16 thru 1/2	1.78

(1) RUS listed. (2) NEMA standard.

1/2" Clamp Bolts

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6448	2	3-3/8	1-9/16	1/4 thru 7/16	1.32
6449	3	4	1-9/16	1/4 thru 7/16	1.62
6450 ⁽¹⁾⁽²⁾	3	6	1-9/16	1/4 thru 7/16	2.28

(1) RUS listed. (2) NEMA standard.

Guy Clamps

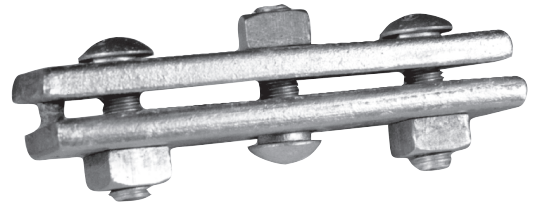
Guy clamp member provides a more positive hold on the guy strand.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6409	2	3.4	1.60	3/16 thru 5/16	1.35
400121315	1	1.56	1.44	3/16 thru 3 / 8	0.58

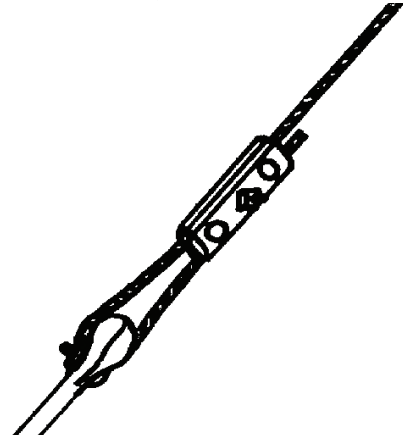
B Guy Rod Clamp

Used for above ground extension of existing anchor rod.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
400121372	3	6.0	2.00	5/8 thru 3 / 4	6.79



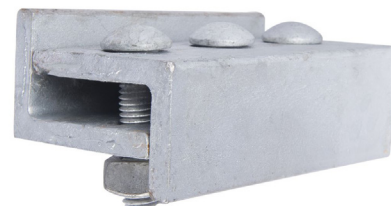
3-Bolt Guy Deadend Clamp



No. 6409



No. 400121315



No. 400121372

Clamps

Messenger Suspension Clamps

Clamps are used with through bolts to support cable at poles. Accommodate strand size 1/4" thru 7/16". Through bolt also serves as clamping member. One or more nuts and/or washers are used between the pole and clamp for required spacing. Catalog Number 7901 is used on very light cables. This one bolt clamp consists of the two clamping members only. Catalog Numbers 7902L and 7902R are used at corners and angles. Catalog Numbers 7903 and 7904 are used on straight runs.



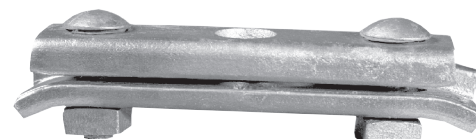
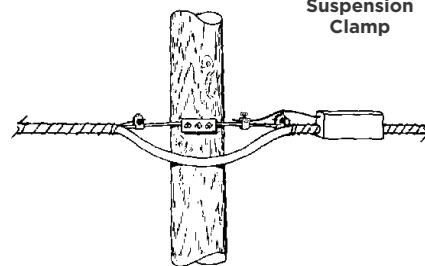
no. 7903L

Catalog Number	Type	Dimensions Inches		Approx Ship Wt Each (lbs)
		Length	Center Hole Dia	
7901	1-Bolt Straight Susp	2-1/2	11/16	0.75
7902L	3-Bolt Angle Susp.	7	11/16	2.04
7902R	3-Bolt Angle Susp	7	13/16	2.04
7903	3-Bolt Straight Susp.	5-3/4	11/16	1.78
7903L ⁽¹⁾	3-Bolt Straight Susp.	5-3/4	11/16	1.77
7904	3-Bolt Straight Susp.	5-3/4	13/16	1.75
PSC2080529	3-Bolt Angle Susp.	7-1/4	13/16	4.20

(1) Flat keeper plate.



3-Bolt Suspension Clamp



3-Bolt Angle Suspension Clamp

Serpentine Cable Suspension Clamp

C-Cable Suspension clamp is used for jacketed integrated messenger cable (Figure 8 style). Serpentine grooves in the mounting plates provide superior holding strength of insulated messenger wire. Includes two 5/8" dia. carriage clamping bolts. Clamp mounts to pole with a 5/8" dia. thru-bolt, that also serves a clamping member.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
PSC2080296	2	6	1.6	5/8	2.5



No. PSC2080296

Aerial Suspension Clamps

Aerial Suspension Clamp, used to secure messenger to pole face. 5/8" hole in clamp base is tapped to remain in position when clamp half is removed. Top hook supports cable during installation.

Catalog Number	No. of Bolts	Minimum Cable Diameter	Maximum Cable Diameter	Approx Ship Wt Each (lbs)
ASC2	1	0.22	0.56	2.16
ASC3	1	0.43	0.75	1.77
ASC5	3	0.56	0.75	7.61



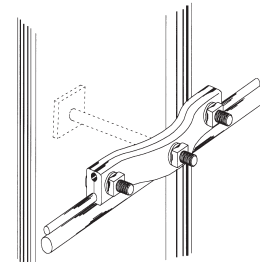
Aerial Suspension Clamp

Support Clamp for All Figure 8 Facilities

Made of high tensile aluminum. Designed to receive 1/2" or 5/8" standard through bolt.

Features

- Designed to fit many sizes of support strand used for Figure 8 duct or Figure 8 cable (strand sizes .109 - .148 and 3/16" - 1/4").
- Serpentine design prevents pull-through and allows cable or messenger-on-duct to be twisted when installed.
- Two marked clamp grooves minimize insulation crushing.
- Can be used on corners up to 30° with solid support members, and 20° with stranded.



Ordering information

EM-0925

Figure 8 Support Clamp

Standard packaging: 25/bx, 30 lb/bx. No minimum order.

EM-0925.750

Version of above clamp with 13/16" middle hole for attaching 3/4" hardware

Clamps and Clips

Reinforcing Strap for Cable Extension Bolt

Used to provide support for the Cable Extension Bolt (PSC2080292) when adding a second cable run at the same level on the same side of the pole as an existing cable run.

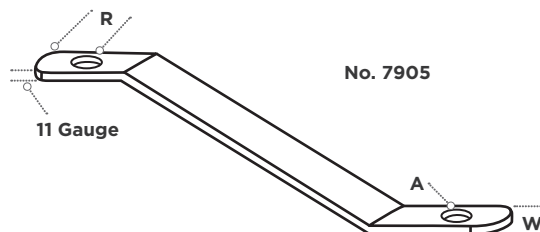
Catalog Number	Mounting Holes Diameter	Distance Between Mounting Holes	Distance of Offset	Overall Length
PSC2080241	11/16"	11"	6-3/8"	12-1/4"
PSC2080242	13/16"	11"	6-1/2"	6 3/4"



Reinforcing Strap for Messenger Suspension Clamps

Used as additional support in attaching Messenger Suspension Clamps to pole for heavy loads.

Catalog Number	Dimensions Inches				Approx Ship Wt Each (lbs)
	A	R	D	W	
7905	11/16	7/8	11/16	1-1/2	0.41
400314803	11/16	7/8	1/8	2	0.60
400314811	5/8	5/8	1/8	1-3/8	0.40
400315016	5/8	5/8	1/8	1-3/8	0.44

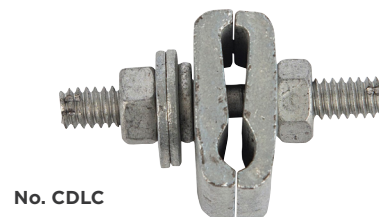
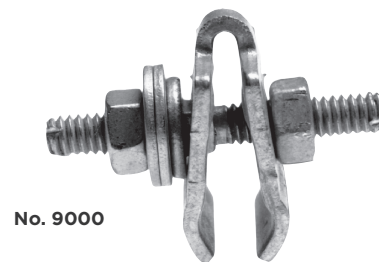


Lashing Wire Clamp

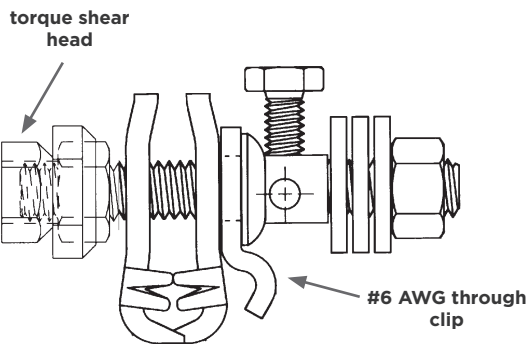
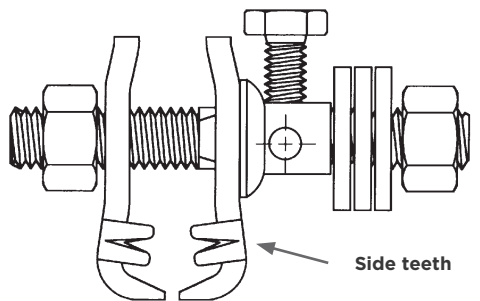
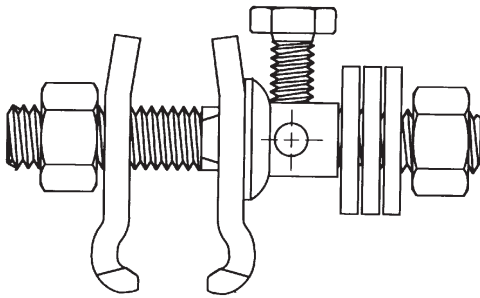
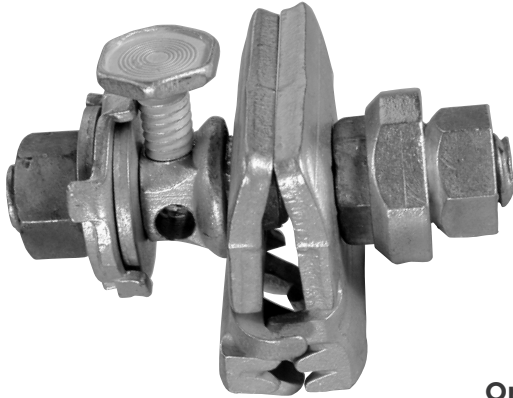
Clamp is fitted with a special clamp bolt formed with a shoulder to prevent turning while tightening. Both ends of the 1/4" bolt are peened to prevent loss of nuts during shipment or handling. Hot-dip galvanized per ASTM A-153.

Catalog Number	Type	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Strand Size	
9000 ⁽¹⁾	E	1	1	1/4 thru 7/16	0.17
CDLC	D	1	1	1/4 thru 7/16	0.14

(1) RUS listed.



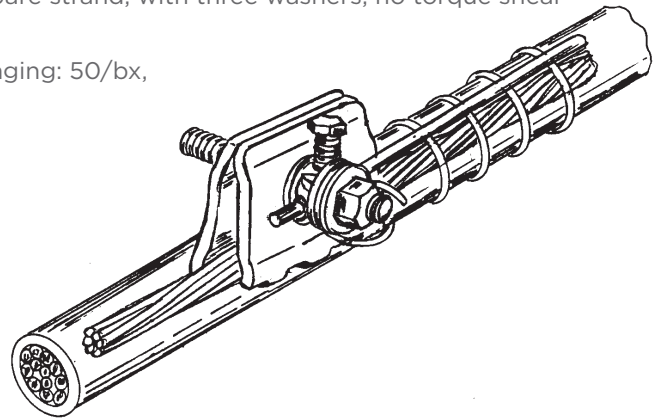
Combination Strand and Lashing Wire Clamps



Ordering information

EM-5006 - For bare strand, with three washers, no torque shear head.

Standard packaging: 50/bx,
 18 lb/bx.



Ordering information

EM-5007 - Galvanized steel clamp for terminating lashing wire and bonding and grounding messenger strand. Side teeth to penetrate jacket.

Standard packaging: 100/bx, 29 lb/bx.

Ordering information

EM-5007-1 - Same as EM 5007 (above), but with torque shear head and a #6 AWG through clip.

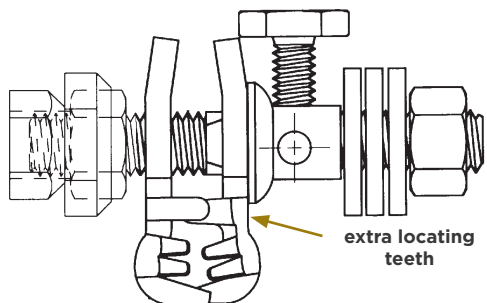
Standard packaging: 1/bg, 50/bx, 21 lb/bx.



LISTED
 84D8

Clamps and Clips

Combination Strand and Lashing Wire Clamps (continued)



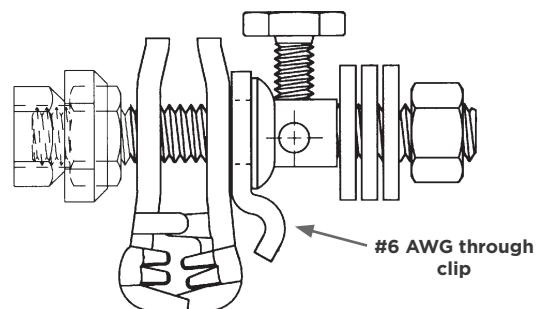
Ordering information

EM-5008 – Same as EM 5007 (opposite), but with torque shear head and extra locating teeth.

Standard packaging: 50/bx, 19 lb/bx.



LISTED
84D8

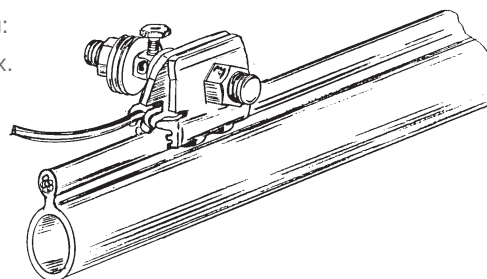


Ordering information

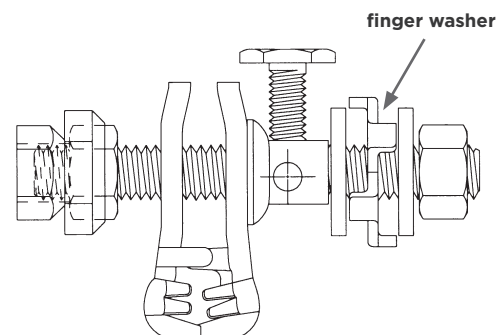
EM-5008-1 – Same as EM 5008 (above), but with added #6 AWG through clip.

Standard packaging:

1/bg, 50/bx, 21 lb/bx.



LISTED
84D8

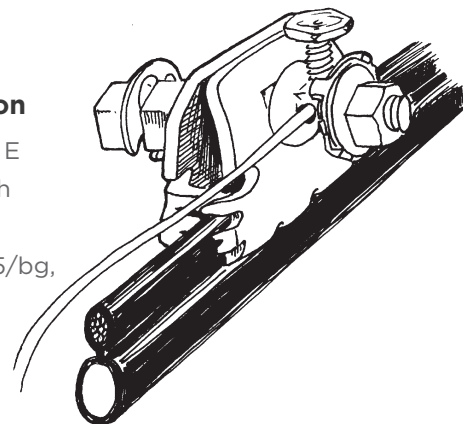


Ordering information

EM-5008-03 – Same as EM 5008 (top), but with added finger washer.

Standard packaging:

5/bg, 50/bx, 21 lb/bx.



At a glance . . .

PART NUMBER	Distinguishing Features	LISTINGS
EM-5006		
EM-5007	Side teeth to penetrate jacket	UL
EM-5007-1	Side teeth, torque shear head, #6 AWG through clip	UL
EM-5008	Side teeth, torque shear head, extra locating teeth	UL
EM-5008-1	Side teeth, torque shear head, extra locating teeth, #6 AWG through clip	
EM-5008-03	Side teeth, torque shear head, extra locating teeth, finger washer	

Wire Rope Clips

Body of each clip is galvanized ductile iron designed to fit the strand, which is protected by smooth-rounded contact surfaces. Bolts are made of high-strength steel.

Catalog Number	Strand Size Inches	Approx Ship Wt Each (lbs)
6480	1/4	0.13
6481	5/16	0.14
6482	3/8	0.23
6484	1/2	0.50
6485	5/8	1.11



Wire Rope Clip

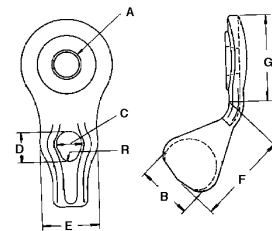
Angle Thimbleye® Eye

Used for attaching to thru-bolt or threaded end of straight or angle Thimbleye bolt for down guying. Rounded groove protects guy strand from sharp bending and kinking. Drop-forged galvanized steel. Construction for high-strength application.



Catalog Number	Dimensions Inches									Approx Ship Wt Each (lbs)
	For Bolt Diameter	Mtg. Bolt Hole A	B	C	D	E	F	G	R	
0100 ⁽¹⁾	5/8	11/16	1-1/2	11/16	13/16	1-5/8	2-1/2	2-1/2	9/32	1.20
0101	3/4	13/16	1-1/2	11/16	13/16	1-5/8	2-1/2	2-1/2	9/32	1.32

(1) RUS listed



Clamps, Clips and Eyes

Guy Wire Thimbles






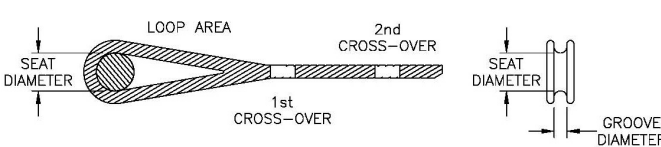
Open end slips over ovaleye anchor rods and bolts. Grooved to fit various strand sizes, they are made from crescent-shaped stock to prevent abrupt, strand-wakening kinks.

Catalog Number	Strand Size (in)	Approx Ship Wt Each (lbs)
6593	3/8	0.09
6594	1/2	0.15
6595	5/8	0.30



Guy Wire Thimble

**Guy Wire Deadends Hardware
Recommendations & Dimensions**

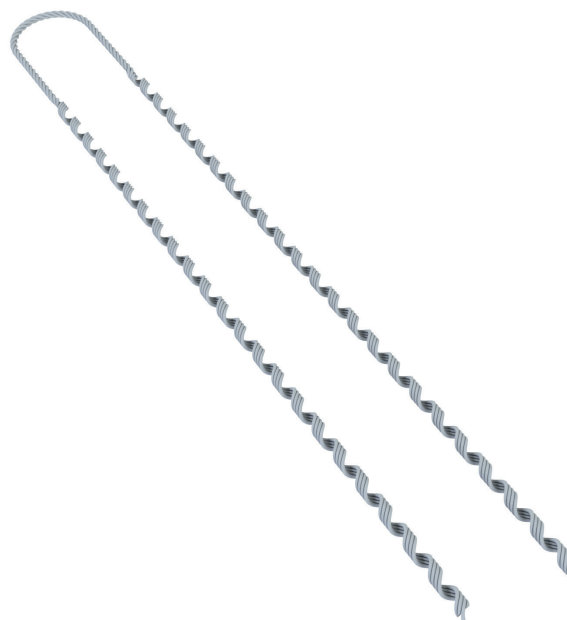
Recommended Fittings			
Pole Fittings	Anchor Heads	Anchor Rods	Guy Strain Insulators
			 ANSI 54-1 54-2 54-3 54-4
Fittings We Do Not Recommend		Dimensioning	
			

Galvanized Steel Deadends	Aluminized Steel Deadends	Nominal Strand Size	Minimum Seat Diameter, 1st Cross-Over Mark	Maximum Seat Diameter, 1st Cross-Over Mark	Maximum Seat Diameter, 2nd Cross-Over Mark	Minimum Groove Diameter (in)	Min. Hole Diameter for Anchor Rods (in)
FWDE1102 / BDE9102		3/16	1	1-3/4	2-1/2	1/4	3/8
FWDE1103 / BDE9103		7/32	1-1/8	1-3/4	2-1/2	5/16	3/8
	AWDE4110	12, 6M, 3#9	1-1/8	1-3/4	2-1/2	5/16	7/16
FWDE1104 / BDE9104		1/4	1-1/8	1-3/4	2-1/2	5/16	7/16
	AWDE4113	8, 8M, 7#11	1-1/8	1-3/4	2-1/2	3/8	1/2
FWDE1105 / BDE9105		9/32	1-1/8	1-3/4	2-1/2	3/8	1/2
	AWDE4116	10M, 7#10	1-1/4	1-3/4	2-1/2	3/8	9/16
FWDE1106 / BDE9106		5/16	1-1/4	1-3/4	2-1/2	3/8	9/16
	AWDE4119	3#6, 12.5M, 7#9	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4120	14M	1-3/8	1-3/4	2-1/2	7/16	5/8
FWDE1107 / BDE9107		3/8	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4122	3#5, 16M, 7#8	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4124	18M	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4125	7#7	1-3/8	2-3/8	2-1/2	1/2	11/16
FWDE1108 / BDE9108		7/16	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4126	20M	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4128	7#6	1-3/8	2-3/8	----	9/16	3/4
FWDE2115 / BDE9115		1/2	1-3/8	2-3/8	----	9/16	3/4
	AWDE4130	25M	1-1/2	2-5/8	----	5/8	15/16
	AWDE4131	7#5	1-1/2	2-5/8	----	5/8	15/16
FWDE2116 / BDE9116		9/16	1-1/2	2-5/8	----	5/8	15/16

Deadends Formed Wire Guy Wire

Galv. Steel / Bezinal® FWDE / BDE

- For deadend applications of support guy wires.
- Fargo FWDE series formed wire deadends are designed for use on all types of galvanized guy wire (EHS, High Strength, Common, Siemens-Martin, Utilities and Bell System Strand).
- Fargo BDE series formed wire deadends are designed for use on Bezinal® and other common Zinc-Aluminum coated strand.
- FWDE and BDE will hold a minimum of 100% of the guy wire rated breaking strength.

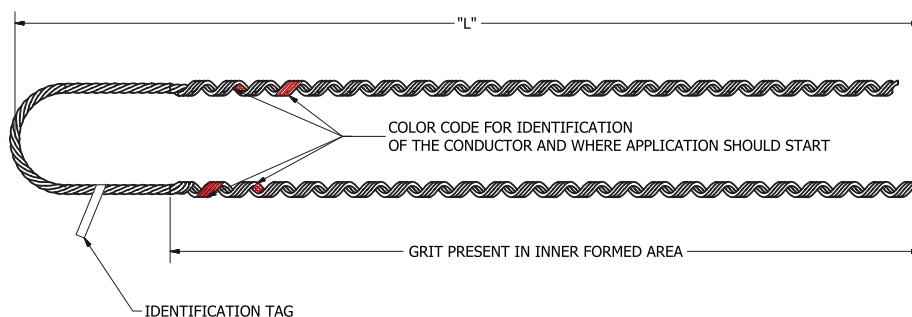


Note: Consult factory for information on other applications. Left hand lay standard.

Material: FWDE - EHS Steel wire, Zinc-plated, Class B coating per ASTM A641. For Class C coating, add C suffix.

For FWDE1104LA, LA suffix denotes Class A coating.

BDE - Steel wire, Zinc-Aluminum mischmetal alloy plated per ASTM A855.



Product Data & Conductor Size

CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	DIAMETER RANGE		NOMINAL LENGTH (L)		CARTON QTY		COLOR CODE
			MIN	MAX	IN	MM	UNITS	WEIGHT LBS. (KG)	
FWDE1102	BDE9102	3,990 (17.7)	0.174 (4.41)	0.203 (5.16)	20	508	150	30 (13.6)	Red
FWDE1103	BDE9103	5,400 (24.0)	0.204 (5.18)	0.230 (5.84)	24	610	50	19 (8.6)	Green
FWDE1104**	BDE9104	6,650 (29.6)	0.231 (5.87)	0.259 (6.58)	25	635	50	24 (10.9)	Yellow
FWDE1104LA		6,650 (29.6)	0.231 (5.87)	0.259 (6.58)	25	635	100	24 (10.9)	Yellow
FWDE1105	BDE9105	8,950 (39.8)	0.260 (6.60)	0.291 (7.39)	28	711	50	26 (11.8)	Blue
FWDE1106**	BDE9106	11,200 (49.8)	0.292 (7.42)	0.336 (8.53)	31	787	50	41 (18.6)	Black
FWDE1107**	BDE9107	15,400 (68.5)	0.337 (8.56)	0.394 (10.01)	35	891	50	53 (24.0)	Orange
FWDE1108**	BDE9108	20,800 (92.5)	0.395 (10.03)	0.474 (12.04)	38	965	25	36 (16.3)	Green
FWDE2115	BDE9115	26,900 (119.7)	0.475 (12.07)	0.515 (13.08)	49	1245	20	67 (30.4)	Blue
FWDE2116	BDE9116	35,000 (155.7)	0.516 (13.11)	0.570 (14.48)	55	1397	10	48 (21.8)	Yellow

NOTES: All dimensions: inches (mm) unless otherwise noted.

Rated at full tension of guy strand RBS for EHS, HS, Siemens-Martin, Common and Utility Grades.

** RUS Technically Accepted.

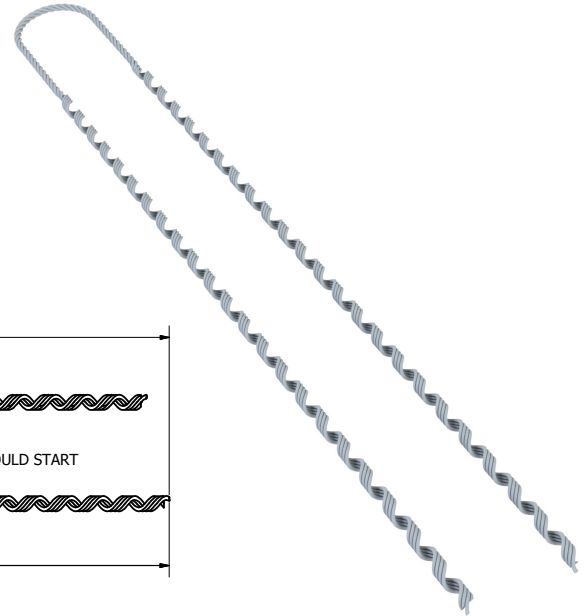
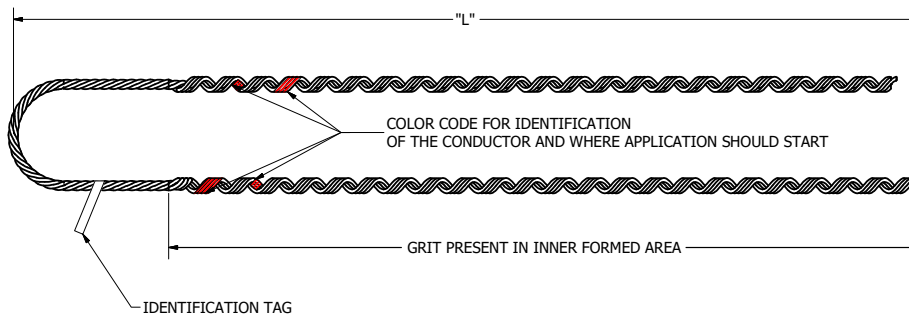
Deadends Formed Wire Guy Wire Alumoweld®

Aluminum / Steel AWDE

- For deadend applications of support guy wires.
- Fargo AWDE series formed wire deadends are designed for use on Alumoweld® and other common Aluminum coated steel guy wire.
- AWDE will hold a minimum of 100% of the guy wire rated breaking strength.

Note: Consult factory for information on other applications.
Left hand lay standard.

Material: Steel wire, Aluminum-clad per ASTM B415.



Product Data & Conductor Size

CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	DIAMETER RANGE		NOMINAL LENGTH (L)		CARTON QTY		COLOR CODE
			MIN	MAX	IN	MM	UNITS	WEIGHT LBS. (KG)	
AWDE4108	4M, 3#10	4532 (20.1)	.204 (5.18)	.230 (5.842)	21	533	50	16 (7.3)	Green
AWDE4110 **	6M, 3#9	6,000 (26.7)	0.231 (5.87)	0.259 (6.58)	22	559	50	20 (9.1)	Yellow
AWDE4113 **	3#8, 8M	8,000 (35.6)	0.260 (6.60)	0.291 (7.39)	24	610	50	20 (9.1)	Blue
AWDE4116 **	3#7, 10M, 7#10	10,000 (44.5)	0.292 (7.42)	0.336 (8.53)	26	660	50	30 (13.6)	Black
AWDE4119 **	3#6, 12.5M, 7#9	12,500 (55.6)	0.337 (8.56)	0.360 (9.14)	29	737	50	33 (14.8)	Yellow
AWDE4120 **	14M	14,000 (62.3)	0.361 (9.17)	0.384 (9.75)	31	787	50	53 (24.0)	Blue
AWDE4122 **	3#5, 16M, 7#8	16,000 (71.2)	0.385 (9.78)	0.410 (10.41)	32	813	50	55 (25.0)	Orange
AWDE4124	18M	18,000 (80.1)	0.411 (10.44)	0.430 (10.92)	34	864	25	29 (132)	Black
AWDE4125	7#7	20,000 (89.0)	0.431 (10.95)	0.474 (12.04)	36	914	25	32 (14.5)	Green
AWDE4126 **	20M	20,000 (89.0)	0.431 (10.95)	0.474 (12.04)	36	914	10	22 (10.0)	Yellow
AWDE4128	7#6	22,730 (101.1)	0.475 (12.07)	0.515 (13.08)	40	1016	10	23 (10.5)	Blue
AWDE4130	25M	25,000 (111.2)	0.516 (13.11)	0.535 (13.59)	43	1092	10	31 (14.1)	Red
AWDE4131	7#5	27,030 (120.2)	0.536 (13.61)	0.570 (14.48)	45	1143	10	32 (14.5)	Yellow

NOTES: All dimensions: inches (mm) unless otherwise noted.

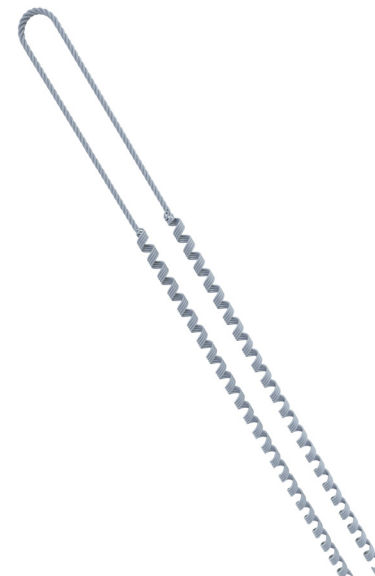
Alumoweld is a registered trademark of AFL Corporation.

** RUS Technically Accepted.

Deadends Formed Wire Guy Wire False Deadends

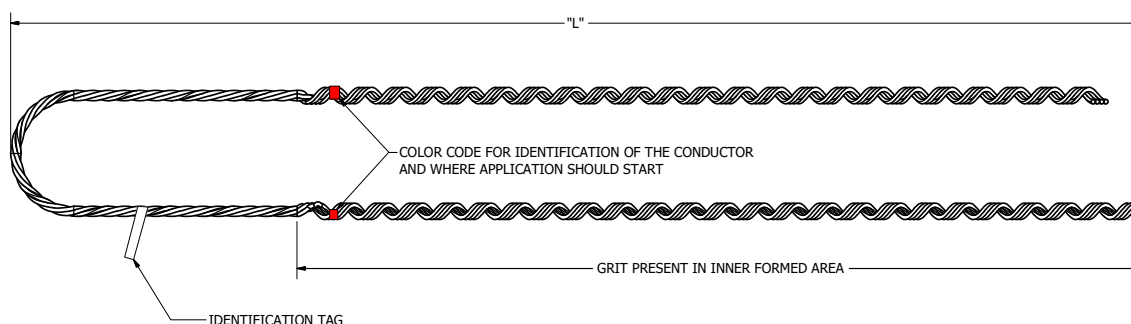
Galv. Steel / Bezinal® FWFDE / BFDE

- For false deadend applications of support guy wires. The extended loop region provides clearance for the support guy wire to exit the connector and continue beyond the deadend location.
- Fargo FWFDE series formed wire false deadends are designed for use on all types of galvanized guy wire (EHS, High Strength, Common, Siemens-Martin, Utilities and Bell System Strand).
- Fargo BFDE series formed wire false deadends are designed for use on Bezinal® and other common Zinc-Aluminum coated strand.
- FWFDE and BFDE will hold a minimum of 100% of the guy wire rated breaking strength.



Note: Consult factory for information on other applications. Left hand lay standard

Material: **FWFDE** - EHS Steel wire, Zinc-plated, Class B coating per ASTM A641.
BFDE - Steel wire, Zinc-Aluminum mischmetal alloy plated per ASTM A855



Product Data & Conductor Size

CATALOG NUMBER		NOMINAL SIZE	MAXIMUM RBS LB (KN)	DIAMETER RANGE		NOMINAL LENGTH (L)		CARTON QTY		COLOR CODE
				MIN	MAX	IN	MM	UNITS	WEIGHT LBS. (KG)	
FWFDE1104	BFDE9104	1/4	6,650 (29.6)	0.231 (5.87)	0.259 (6.58)	36	914	25	20 (9.1)	Yellow
FWFDE1106	BFDE9106	5/16	11,200 (49.8)	0.292 (7.42)	0.336 (8.53)	39	991	25	25 (11.3)	Black
FWFDE1107	BFDE9107	3/8	15,400 (68.5)	0.337 (8.56)	0.394 (10.01)	42	1067	25	34 (15.4)	Orange
FWFDE1108	BFDE9108	7/16	20,800 (92.5)	0.395 (10.03)	0.474 (12.04)	48	1219	20	50 (22.7)	Green

NOTES: All dimensions: inches (mm) unless otherwise noted.
 Bezinal is a registered trademark of Bekaert Company

ALUMINUM GDE5100

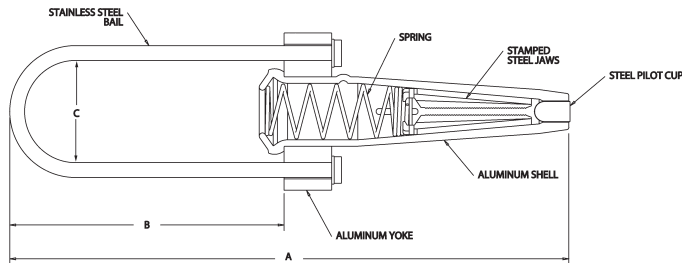
Fargo GDE5100 Series Automatic deadends are designed for use on High Strength, Common, Siemens-Martin, Utilities and Bell System Strand.

Rating: 90% of conductor breaking strength

Material: **Gripping Unit** - Aluminum Alloy

Yoke - Aluminum Alloy

Bail - Stainless Steel



Product Data & Conductor Size

CATALOG NUMBER	PRIMARY STRAND APPLICATION	RANGE IN. (MM)	DIMENSIONS IN. (MM)		
			A	B	C
GDE5100	1/4" HS, Com, S-M, Util, Bell	0.231" - 0.249" (5.87 - 6.32)	9.2" (234)	5.7" (145)	1.4" (36)
GDE5100L	1/4" HS, Com, S-M, Util, Bell	0.231" - 0.249" (5.87 - 6.32)	12.7" (234)	9.2" (234)	1.4" (36)
GDE5101	5/16" HS, Com, S-M, Util, Bell	0.300" - 0.324" (7.62 - 8.23)	9.3" (236)	5.6" (142)	1.5" (38)
GDE5101L	5/16" HS, Com, S-M, Util, Bell	0.300" - 0.324" (7.62 - 8.23)	13.1" (333)	9.5" (241)	1.5" (38)
GDE5102	3/8" HS, Com, S-M, Util, Bell	0.348" - 0.372" (8.84 - 9.45)	11.5" (292)	7.1" (180)	2.0" (51)
GDE5102L	3/8" HS, Com, S-M, Util, Bell	0.348" - 0.372" (8.84 - 9.45)	16.5" (419)	12.0" (305)	2.0" (51)

NOTES: Suffix "L" Denotes Extended Bail.

For conductors other than those listed, consult factory.

Deadends Automatic Guy Wire Heavy Duty

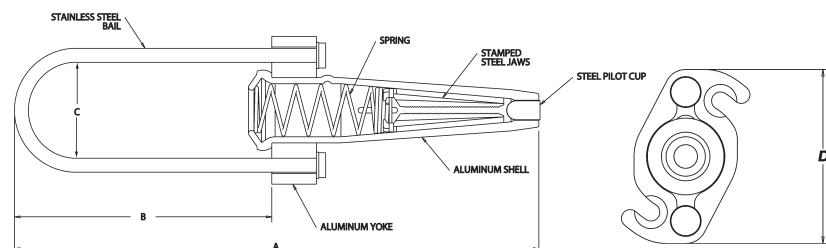
ALUMINUM GDE5200

Fargo GDE5200 Series Automatic deadends are designed for use on all grades of galvanized steel wire strand ... High Strength, Extra High Strength, Alumoweld®, Alumonized, Common, Siemens-Martin, Utilities and Bell System Strand.

Rating: 90% of conductor breaking strength

Innovative yoke design allows for installation without use of a gripping hook.

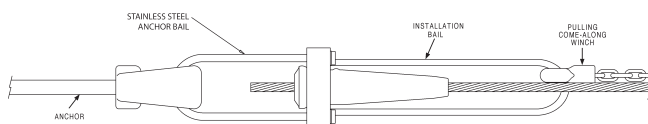
Material: Gripping Unit - Aluminum Alloy



Product Data & Conductor Size

CATALOG NUMBER	PRIMARY STRAND APPLICATION	CABLE RANGE ØIN. (MM)	DIMENSIONS IN. (MM)			
			A	B	C	D
GDE5199	3/16" EHS (2.8MS) AW	0.174" - 0.188" (4.42 - 4.78)	10.0" (254)	5.7" (145)	1.6" (41)	2.7" (69)
GDE5200	1/4" EHS 7#12 (6M) AW	0.231" - 0.249" (5.87 - 6.32)	10.2" (259)	5.7" (145)	1.6" (41)	2.7" (69)
GDE5200L	1/4" EHS 7#12 (6M) AW	0.231" - 0.249" (5.87 - 6.32)	13.9" (353)	9.4" (239)	1.6" (41)	2.7" (69)
GDE5201	5/16" EHS 7#10 (10M), 7#11 (8M) AW	0.261" - 0.324" (6.62 - 8.23)	10.3" (262)	5.5" (140)	1.8" (46)	2.8" (71)
GDE5201L	5/16" EHS 7#10 (10M), 7#11 (8M) AW	0.261" - 0.324" (6.62 - 8.23)	15.6" (396)	10.8" (274)	1.8" (46)	2.8" (71)
GDE5202	3/8" EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC	0.327" - 0.399" (8.31 - 10.13)	13.0" (330)	7.1" (180)	2.1" (53)	3.5" (89)
GDE5202L	3/8" EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC	0.327" - 0.399" (8.31 - 10.13)	16.8" (427)	11.0" (279)	2.1" (53)	3.5" (89)
GDE5203	7/16" EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC	0.402" - 0.459" (10.21 - 11.66)	15.0" (381)	8.2" (208)	2.4" (61)	3.8" (97)
GDE5203L	7/16" EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC	0.402" - 0.459" (10.21 - 11.66)	18.7" (475)	12.3" (312)	2.4" (61)	3.8" (97)
GDE5204	1/2" EHS, 25M AW #1/0-3/4, #2/0-4/3 AWAC	0.487" - 0.519" (12.37 - 13.18)	16.0" (406)	10.3" (262)	2.6" (66)	4.1" (104)
GDE5204L	1/2" EHS, 25M AW #1/0-3/4, #2/0-4/3 AWAC	0.487" - 0.519" (12.37 - 13.18)	20.1" (511)	14.5" (368)	2.6" (66)	4.1" (104)

Typical Installation with 2nd Bail



NOTES: Suffix "L" denotes extended bail.
 Alumoweld® is a registered trademark of the United States Alumoweld Company, LLC (AFL).
 AWAC is a registered trademark of Fushi Copperweld Inc.
 For conductors other than those listed, consult factory.

INSTALLATION BAIL	PART NO.
Bail for GDE5199	PS3005200
Bail for GDE5200 / GDE5200L	PS3005200
Bail for GDE5201 / GDE5201L	PS3005521
Bail for GDE5202 / GDE5202L	3005152
Bail for GDE5203 / GDE5203L	3005527
Bail for GDE5204 / GDE5204L	PS3005524

Auxiliary Eye

Adds additional guy attachment to existing anchor rod. Also can be used as a pulling eye for guying tension.



Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Anchor Rod Diameter	Maximum Strand Size	Thimble Diameter	
BB155A	5/8 to 1	1/2	1-1/2	2.70

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. U-Bolts .5" diameter.

Connector

B Strand Connector

Interlocks two strands ranging from 3/16" to 1/2". Accommodates maximum 1/2" diameter strand. Smooth thimble seating surface.



Catalog Number	Length	Width	Seating Diameter	Approx. Ship wt. per each
PSC2080286	2.65"	2.5"	1.8"	1.2 lbs

Eyelets and Eyes

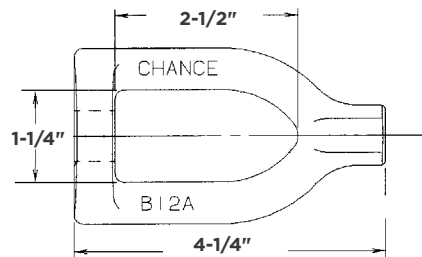
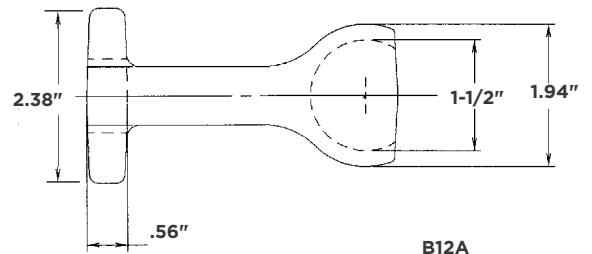
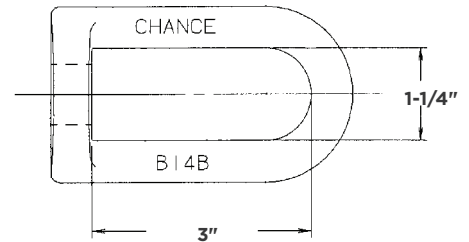
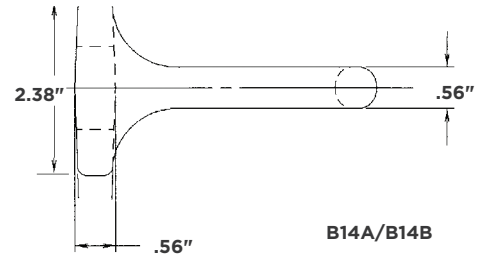
Ovaleye Eyelet

Eyelets are unthreaded and designed to be installed on the head end of a machine bolt. The oval hole facilitates insertion of the bolt.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Mounting Bolt Diameter	Maximum Strand Size	
B14A ⁽¹⁾	5/8	-	1.00
B14B	3/4	-	1.00
B12A	5/8	5/8	1.37

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. Contact Hubbell Power Systems for round bolt hole design.

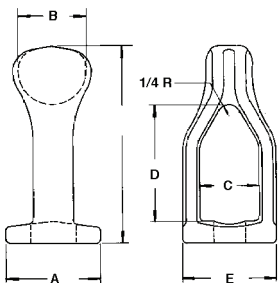
(1) RUS listed.



Thimbleye® Eyelets

Used on ordinary machine bolts for straight-away guys. Rounded groove protects guy strand from sharp kinks and bends. Drop-forged galvanized steel. Construction for high-strength applications.

Catalog Number	Dimensions Inches								Approx Ship Wt Each (lbs)
	For Bolt Diameter	Mtg. Bolt Hole A	A	B	C	D	E	F	
6519	5/8	11/16 x 1	2-1/16	1-1/2	1-5/16	2-9/16	2-1/16	4-5/16	1.23
6520	3/4	13/16 x 1-1/8	2-1/16	1-1/2	1-5/16	2-9/16	2-1/16	4-5/16	1.30



Thimbleye(R)
Eyelet

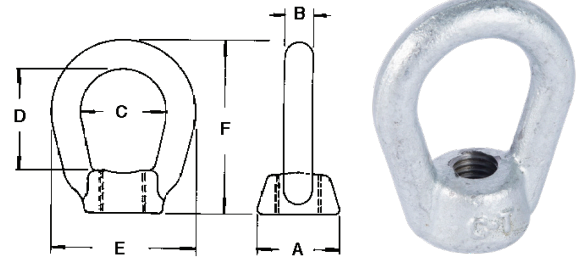
Standard EyenuTs

Most commonly used for deadending, back-guying and attaching pole head guys on the threaded ends of crossarm bolts. Drop-forged, hot-dip galvanized steel.

Catalog Number	Dimensions Inches							Approx Ship Wt Each (lbs)
	For Bolt Diameter	A	B	C	D	E	F	
6500	1/2	1-1/4	1/2	1-1/8	1-1/8	2-1/8	2-5/8	0.51
6501	5/8	1-1/4	1/2	1-1/8	1-1/8	2-1/8	2-5/8	0.46
6502 ⁽¹⁾⁽²⁾	5/8	1-3/8	1/2	1-1/2	1-3/4	2-1/2	3	0.63
6503 ⁽²⁾	3/4	1-3/8	1/2	1-1/2	1-3/4	2-1/2	3	0.54

(1) RUS listed.

(2) ANSI standard, C-135.5.



Standard EyenuT

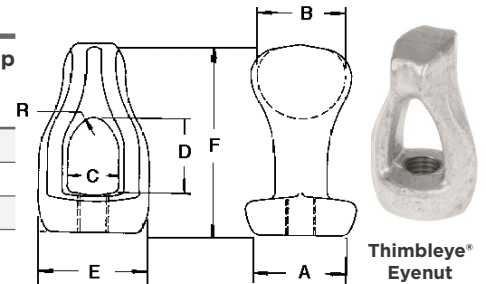
Thimbleye® EyenuTs

For attaching to thru-bolts or threaded end of straight or angle Thimbleye bolts for straight-away head guys. Drop-forged galvanized steel. Nuts are contoured to minimize bending and kinking of guy strand.

Catalog Number	Dimensions Inches								Approx Ship Wt Each (lbs)
	Tapped For Bolt	A	B	C	D	E	F	R	
6510 ⁽¹⁾⁽²⁾	5/8	1-1/2	1-1/2	7/8	1-3/8	1-7/8	3-1/4	1/4	0.78
6511 ⁽²⁾	3/4	1-1/2	1-1/2	7/8	1-3/8	1-7/8	3-1/4	1/4	0.72
6512	1 and PISA	1-1/8	1-5/8	1-1/8	1-19/32	2-25/64	3-1/4	1-3/32	1.80

(1) RUS listed.

(2) ANSI standard, C-135.5.



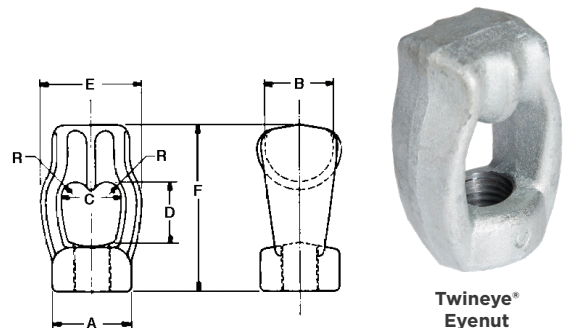
Thimbleye® EyenuT

Twineye® EyenuTs

Used for head or stub guying of two strands, Twineye EyenuTs can be attached to thru-bolts or threaded end of straight or angle Thimbleye bolts. Grooves are contoured to protect guy strands. Drop-forged galvanized steel.

Catalog Number	Dimensions Inches								Approx Ship Wt Each (lbs)
	Tapped For Bolt	A	B	C	D	E	F	R	
6560	5/8	1-7/8	1-11/16	1-1/8	1-5/16	2-3/8	3-5/8	1-5/16	1.90
6561	3/4	1-7/8	1-11/16	1-1/8	1-5/16	2-3/8	3-5/8	1-5/16	1.84
6562 ⁽¹⁾	1 and PISA	1-7/8	1-11/16	1-1/8	1-5/16	2-3/8	3-5/8	1-5/16	1.88

(1) Catalog Number 6562 eyenuT fits both 1" bolts and 1" PISA rods.



Twineye® EyenuT

Guards

Riser Pole Cable Guards

Protect telephone and power lines where circuits lead from underground to overhead.

Guards - Steel

Guards are 14-gauge hot-dip galvanized steel, formed into "U" shape.

Catalog Number	Inside Diameter (in)	Length (ft)	Approx Ship Wt Each (lbs)
C2030450	3/4	8	4.80
6531⁽¹⁾	1-1/8	5	4.80
653112⁽¹⁾	1-1/8	8	5.60
6532⁽¹⁾	2-3/16	5	8.60
6533⁽¹⁾	2-3/16	8	12.60
6534T	3-3/16	5	15.25
6535	3-3/16	8	18.00
C2030451	3-11/16	8	22.69
400314357⁽²⁾	1-1/8	8	7.50
C2030452	3/4	5	2.76
701012478	6	8	35.00

(1) RUS listed.

(2) Booted

Mounting Straps

Straps are made from hot-dip galvanized flat steel, shaped to fit steel guards. Straps not needed for polyethylene guards.

Catalog Number	Used with Guard Number	Dimensions Inches		Approx Ship Wt Each (lbs)
		Steel Size	Hole Diameter	
6538⁽¹⁾	6531 & 653112	1/8 x 3/4	9/32	0.13
6539⁽¹⁾	6532 & 6533	1/8 x 3/4	9/32	0.24
6540⁽¹⁾	6534T & 6535	3/16 x 1	11/32	0.64
C2030455	C2030450 C2030452	3/32 x 3/4	9/32	0.66
C2030456	C2030451	3/16 x 1	11/32	0.69
400314092⁽¹⁾	6531 & 653112	13/100 x 3/4	9/32	0.13
400314761	6531 & 653112	13/100 x 3/4	9/32	0.14
400314779⁽¹⁾	6532 & 6533	13/100 x 3/4	9/32	0.24
400314795	C203-0451	19/100 x 1	11/32	0.60
401370598	701012478	19/100 x 1	13/32	1.12
401370606	701012478	19/100 x 1	13/32	1.41

(1) RUS listed.



Steel U-Guard



Steel U-Guard Mounting Strap

Riser Pole Cable Guards

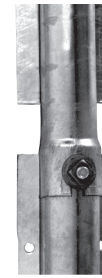
Flanged one-piece unit is formed of 14-gauge steel. Hot-dip galvanized. Extension is flared at one end so that it can be joined to the base section. A carriage bolt fastens the two sections together and also serves as a ground lead attachment point. Mounting holes in 1" wide flanges are located every 25". Straps are not needed for installation.

Cable Guards

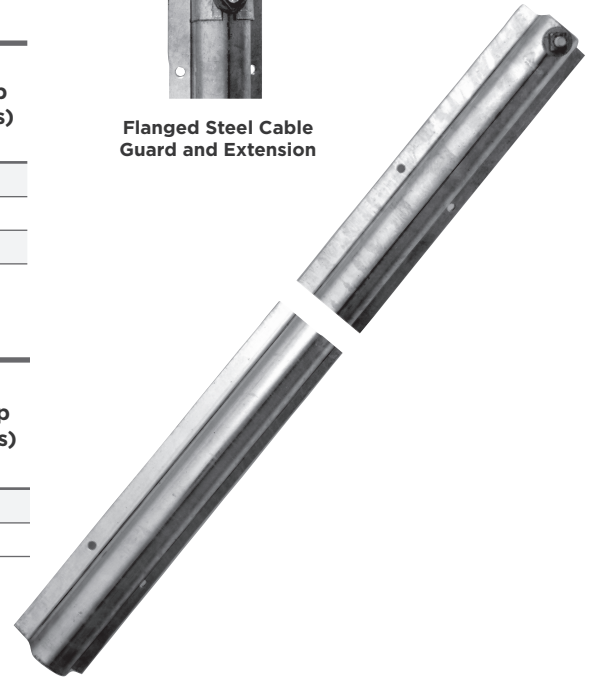
Catalog Number	Overall Length ft	Dimensions Inches		Approx Ship Wt Each (lbs)
		Inside Diameter	Inside Clearance from Face of Pole	
C2030033	9	2	1-7/8	19.00
C2030034	9	3	2-7/8	26.00
C2030035	9	3-1/2	3-3/8	28.00

Cable Guard Extensions

Catalog Number	Overall Length ft	Dimensions Inches		Approx Ship Wt Each (lbs)
		Inside Diameter	Inside Clearance from Face of Pole	
C2030036	5	2	1-1/2	10.00
C2030037	5	3	2-7/8	14.00



Flanged Steel Cable Guard and Extension



Riser Pole Cable Guards (continued)

Guards - Polyethylene

Gray plastic, in a flanged "U" shape with 8 mounting holes per side. One end is belled to allow for overlap with an adjacent cable guard.

Catalog Number	Inside Diameter (in)	Length (ft)	Approx Ship Wt Each (lbs)
PSC2030546	1	10	2.41
PSC2030547	2	5	2.78
PSC2030548	2	10	4.80
PSC2030549	3	5	4.76
PSC2030550	3	10	7.40
PSC2030551	4	5	4.00
PSC2030552	4	10	11.90
PSC2030553	5	5	8.89
PSC2030554	5	10	12.00
PSC2030555	6	5	9.17
PSC2030556	6	10	18.96



Polyethylene Cable Guard

Guards

Adapter Boots

Catalog Number	For Cable Guard Size (in)	No. of Mounting Holes	Approx Ship Wt Each (lbs)
PSC2030557	1-2	4	2.28
PSC2030558	2-5	8	4.86



Polyethylene Adapter Boot

Riser Pole Cable Guards (continued)

Back Plate

Polyethylene back plate for cable guard. Back plates are gray plastic with 3 mounting holes.

Catalog Number	For Cable Guard Width (in)	For Cable Guard Length (ft)	Approx Ship Wt Each (lbs)
PSC2030559	2	5	0.80
PSC2030560	2	10	1.60
PSC2030561	3	5	1.32
PSC2030562	3	10	2.62
PSC2030563	4	5	1.64
PSC2030564	4	10	3.31
PSC2030565	5	5	2.51
PSC2030566	5	10	4.91
PSC2030567	6	5	3.17



Polyethylene Back Plate

Guy Hooks - Strap Type

6584 guy hook is used in wrapped guy applications to prevent wire from creeping downward. Catalog Numbers 5001 and 5004 are used in down guy applications. Hooks should be used under bolt heads for maximum shear strength.

Catalog Number	Description	Dimensions Inches		Approx Ship Wt Each (lbs)
		Material Size	Hole Diameter	
5001	2-Bolt Storm	1/4 x 1-1/2 x 7	9/16 & 13/16	1.08
5004 ⁽¹⁾	1-Bolt Storm, 3/4" R	1/4 x 1-1/2 x 4-1/8	11/16	0.79
6584 ⁽¹⁾	1-Bolt Standard	7/16 x 1-3/4 x 4	11/16	0.85

(1) RUS listed.



No. 5001



No. 5004



No. 6584

Guy Attachments

Guy Hooks for Down or Span Guy Applications

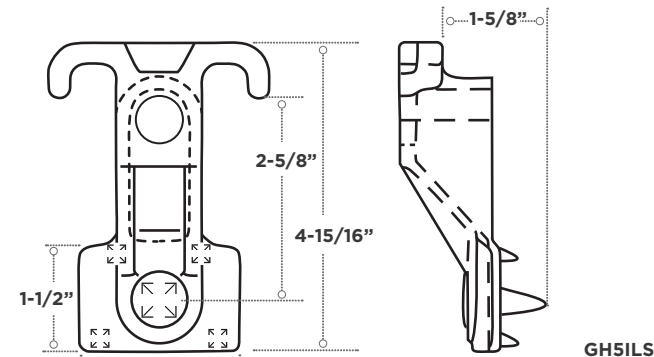
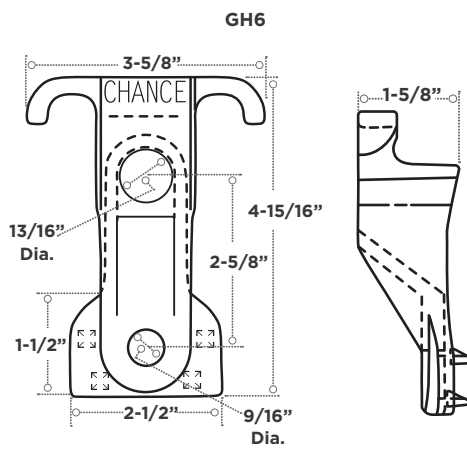
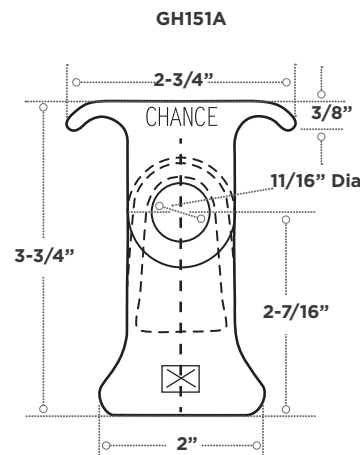
Use in down or span guy applications. Spurs resist down slotting. The overturning action is resisted by the wide lower curved heal pad. Guy Hooks are available without cleats for use on non-wood poles.

Catalog Number	Minimum Ultimate Tensile Strength lb	Dimensions Inches			Approx Ship Wt Each (lbs)
		Thru-Bolt Diameter	Max Guy Strand	Lag Screw Diameter	
400149910	10,000	5/8	7/16	—	1.52
GH151A	12,400	5/8	7/16	—	0.62
GH5⁽¹⁾*	12,400	5/8	7/16	1/2	1.30
GH5ILS	12,400	5/8	7/16	—	1.39
400149928	15,000	3/4	5/8	—	1.73
GH6*	18,350	3/4	1/2	1/2	1.50
GH6ILS	18,350	3/4	1/2	—	1.53
GH6X	25,400	7/8	5/8	1/2 or 3/4	2.40
GH6XBILS	33,500	1	5/8	—	2.25

NOTE: Suffix "ILS" indicates cast in integral lag. Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.

(1) RUS listed.

* GH5 and GH6 are available without cleats for non-wood poles. Add "N" suffix to catalog number.



Guy Hook, Span Type

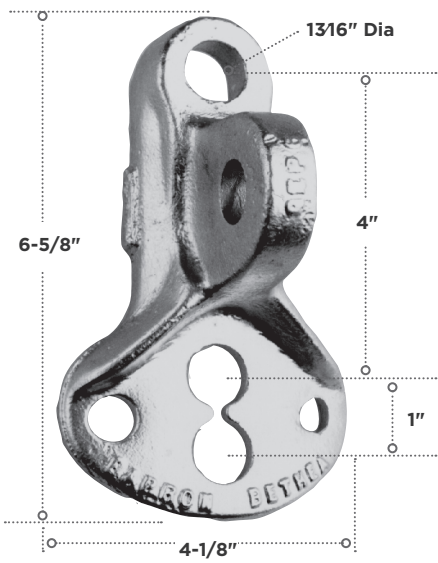
For guy attachment, use at angles 0° to 30° from horizontal.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Max Thru-Bolt Diameter	Max Guy Strand Diameter	
GH2	5/8	1/2	0.66
GH3	3/4	1/2	0.64

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.



Pole Eye Plate



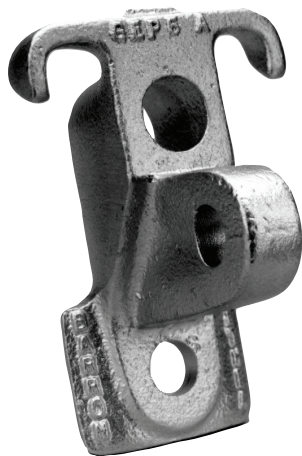
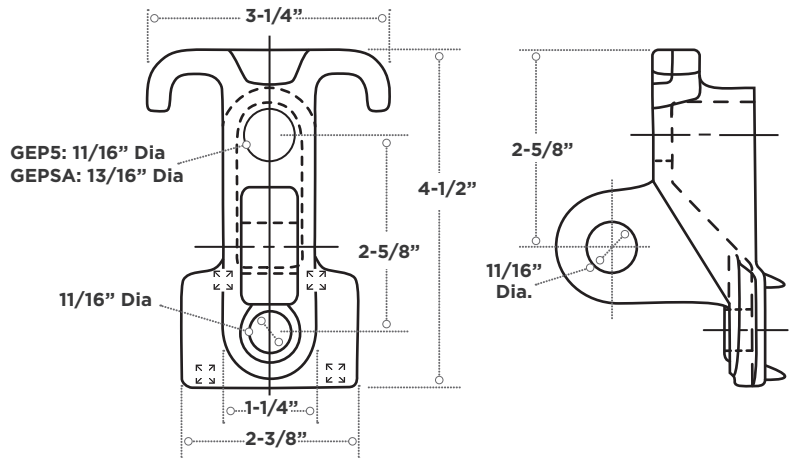
The GEP6 pole eye plate is used for clevis-type guy attachments and provides a large pad area to spread forces over the pole surface. It is ideal for guy strain insulator installation. Minimum ultimate tension rating is 21,000 lbs. at 90 and 45 degrees.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Mounting Bolt Diameter	Maximum Pin Diameter	
GEP6	3/4	3/4	2.69

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. Available with N suffix for non-wood poles, catalog number GEP6N.

Combination Pole Eye/Guy Hook

This combination allows a guy loop to be made up on the ground as well as provides a clevis eye plate capability. Spurs prevent slippage down the pole.



GEP5

Catalog Number	Minimum Ultimate Tension Strength lb	Dimensions Inches		Approx Ship Wt Each (lbs)
		Mounting Bolt Diameter	Max Strand Size	
GEP5	12,500	5/8	5/8	1.75
GEP5A	16,000	3/4	5/8	1.75
GEP5A34	21,000	3/4	5/8	2.25

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. GEP5A and GEP5A34 available with N suffix for non-wood poles.

Guy Markers

Full Round

Increased Visibility

A full 360° of 1-1/2" diameter high-visibility yellow or orange provides increased visibility to children and adults alike. Also available in green or gray for more aesthetically inconspicuous applications.

Increased Vandal Resistance

A unique strand trapping design has been added to the security of a concealed pigtail and a self-locking nylon strap. The guy strand passes easily in one direction only — into the marker.

Increased Installation Ease and Range

Easy to install; tough to remove. Simply snap the marker over the guy and lock it in place with the self-locking nylon strap and pigtail. Fits guy strand diameters from 3/16" to 1/2".

Increased Ruggedness for Demanding Service

The UV-stabilized, high impact, high density polyethylene construction has excellent color retention, cold weather properties and no cutaway sections to weaken its strength.



† Cat. No. C0790263. Reflective 10" long bright orange strip 2' from top of yellow marker for greater visibility. Ideal for heavy snow areas and also for recreational ATV-use areas.

Ordering Information

Catalog Number		Dimensions Inches			Std Package	Approx Ship Wt Each (lbs)
Yellow	Orange	Length	Diameter	Strand Range		
84FRPMYEL	—	84	1-1/2	3/16 thru 1/2	20	1.30
96FRPMYEL ⁽¹⁾	96FRPMORG	96	1-1/2	3/16 thru 1/2	20	1.48
C0790263†	—	96	1-1/2	3/16 thru 1/2	20	1.48

(1) Can be ordered without pigtail, Catalog Number T0790206.

Flame Retardant

Catalog Number	Dimensions Inches			Std Package	Approx Ship Wt Each (lbs)
Yellow	Length	Diameter	Strand Range		
96FRPMRYEL ⁽¹⁾	96	1-1/2	3/16 thru 1/2	20	1.48

(1) RUS listed.

Overlapping Full-Round Markers

Bright, high-visibility markers neither bleach out to white nor crack from cold temperatures. Made of ultraviolet-stabilized high-density polyethylene, overlapping tube-like design offers full-length coverage. No tools are required for installation. Replaceable standard tie strap allows the markers to be reused. Three holes permit the black self-locking nylon strap (furnished) to secure the lower end in a choice of two attachment methods – either above or over the anchor rod, illustrated above. This fastening design eliminates the cutaway section that would weaken its resistance to breaking. The economy marker is available in high-visibility 8' long, 1-1/8" O.D. and bright yellow sections.

Ordering Information

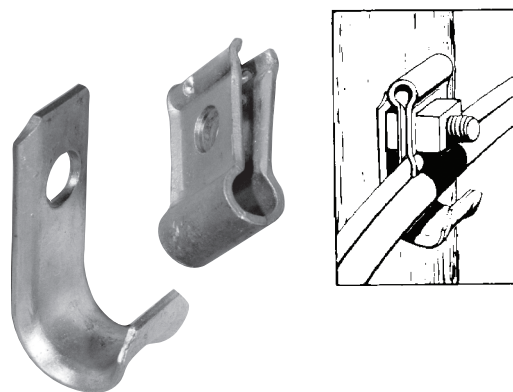
Catalog Number	Dimensions		Color	Per Carton	
	Length ft	Diameter Inches		Units	Approx Ship Wt Each (lbs)
96FRPE	8	1-1/8	Bright Yellow	25	0.96



Hangers and Hooks

Figure 8 Hanger

Used to support integrated messenger telephone cable - commonly referred to as Figure 8 Cable. Hanger is in two parts, hook and clamp, both galvanized steel. Installed with a 1/2" machine bolt and two square nuts. One nut is placed between hook and clamp for spacing. The other is used to tighten the clamp member. Order nuts and bolts separately. Accommodates .109 to .134 solid messenger wire.



No. PS9015

Figure 8 Cable

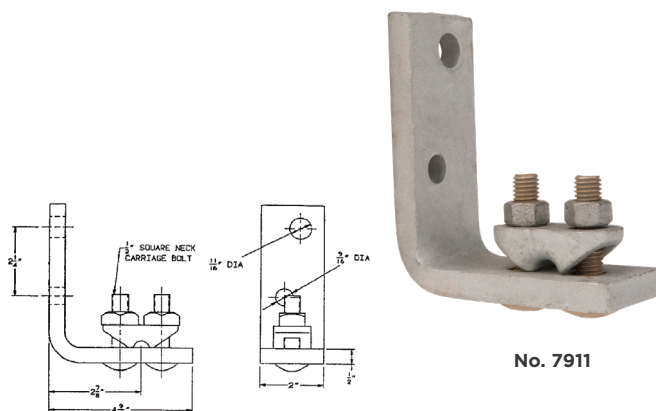
Catalog Number	Description	Approx Ship Wt Each (lbs)
PS9015	Hook and Clamp	0.54

Messenger Hangers

Used on corners and straight runs, messenger is securely clamped by two 1/2" carbon-steel guy clamp bolts. Mounted with a 5/8" thru-bolt and a 1/2" lag screw, neither of which are included. Hot-dip galvanized.

Universal Type

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Steel Size	Ext. From Pole	Strand Size	
7911	1/2 x 2	4-1/4	5/16 to 1/2	3.70



No. 7911

Drive and Screw Hooks

These hooks are used to attach wedge-type service drops and deadend clamps to crossarms, poles or buildings. Catalog Number C2050190 Drive Hook is furnished with 7/16" fether drive threads and a pilot point for easy starting. Catalog Number 0317 Screw Hook has 3/8" gimlet threads.

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Thread Diameter	Thread Length	Overall Length	
C2050190	7/16	2-1/2	4-3/4	0.27
PSC2050605	5/16	2	3-1/2	0.123
0317	3/8	2	4	0.13



No. C2050190



No. 0317

Ground Wire Molding

KOVER-GARD® molding protects surface ground wires, lead wires and conductors. Flame retardant and easy to install. Makes wood or metal molding obsolete.

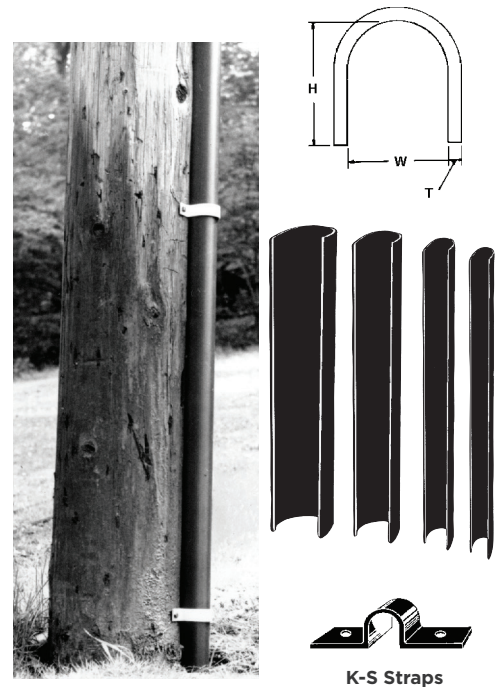
KOVER-GARD® Molding

Catalog Number	Nominal Size Inches	Measurement Inches				Std Package	Approx Ship Wt Each (lbs)
		H	W	T	Std Length		
96KG12	1/2	1/2	1/2	1/16	96	50	0.48
96KG34	3/4	3/4	3/4	1/16	96	50	0.76
96KG1	1	1	1	5/64	96	50	0.96

K-S Straps for fastening covered conductors, conduit or pipe. Anything up to 7/8" O.D., electrical or not.

K-S Straps

Catalog Number	Dimensions Inches			Pieces Per Carton	Weight Per Carton lb
	Length	Width	Thickness		
KS12 (for 96KG12)	2	5/8	1/16	1,000	6.25



Nails and Nuts

Pole Dating Nails

Used to indicate the year in which poles are set. Heads are 5/8" diameter. Hot-dip galvanized. Insert the 4-digit year in place of XXXX above. Example: For 2025 pole dating nails, use catalog number PSC2052025.

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
PSC205XXXX	2-1/2	0.05



Pole Dating Nail

Nuts

M-F Curved Lock Nuts

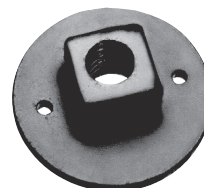
Catalog Number	Bolt Size Inches	Approx Ship Wt Each (lbs)
3510	3/8	0.01
3511	1/2	0.03
3512	5/8	0.05
3513	3/4	0.06
3514	7/8	0.08
3515	1	0.10



MF Locknut

Washer Nuts

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Accommodates Bolt Size	Width	Thickness	
3193	1/2	2	13/16	0.18
3194	5/8	2-1/2	1	0.41
3195	3/4	2-3/4	1-1/8	0.47



Washer Nut

Palnut Lock Nuts

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Bolt Size	Width	Height	
3530	3/8	5/8	.160	0.01
3531	1/2	13/16	.190	0.01
3532	5/8	1	.224	0.01
3533	3/4	11/8	.246	0.02

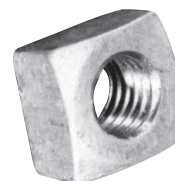


Palnut Locknut

For Bolts - Regular Square Nuts

Catalog Number	Bolt Size Inches	Threads Per Inch	Approx Ship Wt Each (lbs)
8600M	3/8	16	0.02
55083P	1/2	13	0.08
55084P	5/8	11	0.10
55085P	3/4	10	0.14
56538P	7/8	9	0.30
56073P	1	8	0.50

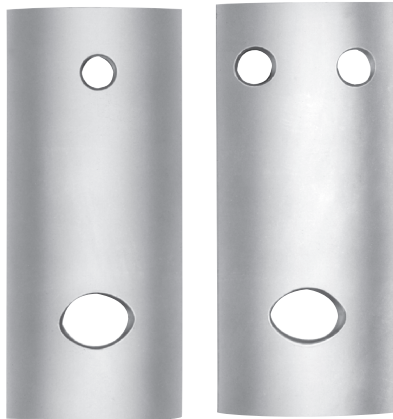
Regular square nuts are not for use on anchor rods



Regular Square Nut

Lift and Load Plates

Used to protect poles on heavy down guying when Thimbleye®, Angle-Thimbleye or Oval-Eye bolts are used through the pole. Hot-dip galvanized.



2-Hole Lift

3-Hole Lift

Catalog Number	Description	Size Holes Inches		Plate Size Inches	Approx Ship Wt Each (lbs)
		Top	Bottom		
PS7887	2-Hole Lift	9/16	3/4 x 1	3/16 x 2-1/2 x 7	0.98
7888	2-Hole Lift	9/16	7/8 x 1	1/4 x 2-1/2 x 7	1.26
7897	3-Hole Lift	9/16	3/4 x 1	3/16 x 2-1/2 x 7	0.97
7898⁽¹⁾	3-Hole Lift	9/16	7/8 x 1	1/4 x 2-1/2 x 7	1.26

(1) RUS listed.

Strain Plates

Strain Plates are used to prevent pole from being damaged by guy wire. Nail holes at corners are 3/16" diameter. Hot-dip galvanized steel plates are formed to 5" radius.

Catalog Number	Type	Dimensions Inches	Approx Ship Wt Each (lbs)
6575	Standard	4 x 8 x 14 Ga.	1.16



No. 6575

Screws

Lag Screws

Lag Screws of 1/4", 3/8" and 1/2" diameter have upset shoulders for a tight fit. Hot-dip galvanized.



Gimlet Point Type



Fetter Drive, Drive-Point



Twist-Drive Pilot Point



B-Cable Suspension Screw



Fetter Drive Pilot-Point Type



Hex Head Lag Screw with Neoprene-Steel Washer

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Diameter	Length	
Gimlet Point Type			
872112GP	1/4	1-1/2	0.02
8722GP	1/4	2	0.03
872212GP	1/4	2-1/2	0.04
DF1L3	1/4	3	0.06
DF3L3	3/8	3	0.09
Twist-Drive Pilot Point Type			
508500	1/2	4	0.23
PSC2050562	1/2	4-1/2	0.26
Fetter Drive Pilot-Point Type			
DF6L250	3/8	2-1/2	0.07
508743	3/8	3	0.10
508744	3/8	4	0.13
508753	1/2	3	0.20
508754	1/2	4	0.24
50875412	1/2	4-1/2	0.27
508755	1/2	5	0.28
B-Cable Suspension Screw			
PSC2170146	7/8	4-1/2	1.87
Hex Head Lag Screw with Neoprene-Steel Washer			
PSC2050504	1/4	2	0.03
PSC2050631	1/4	2-1/2	0.04

Sidewalk Guy Fittings

These fittings are used along sidewalks or near buildings where space is not available for standard guying. Pole Plate is attached with one 5/8" bolt and two 1/2" lag screws. End Fittings clamp the strand. Hot-dip galvanized.

Catalog Number	Description	Pipe (in)	Approx Ship Wt Each (lbs)
0501 ⁽¹⁾	Pole Plate	2	4.55
0502 ⁽¹⁾	End Fitting w/Clamp	2	4.95
0512 ⁽¹⁾	End Fitting w/Double Clamp	2	6.20
DG2D1	Pole End Plate	2-1/2	3.72
DG5D1	End Fitting w/ Three Clamps	2-1/2	4.13
DG9D1	Guy Fitting Plate A	2-1/2	4.69

(1) RUS listed.



Cable Spacers

Used to create a space between messenger strand and aerial cable. Black plastic.

Catalog Number	Type	Space Created (in)	Approx Ship Wt Each (lbs)
PSC2080519	Kinsel Saddle	1/2	0.01
PSC2080520	Kinsel Saddle	3/4	0.01
PSC2080420	Bell	1/4	0.01
PSC2080421	Bell	1/2	0.01
PSC2080422	Bell	3/4	0.02
PSC2080423	Bell	1	0.03
PSC2080424	Bell	1-1/2	0.03
PSC2080425	Bell	2	0.04
PSC2080426	Stackable	1/2" increments	0.02



Serving Sleeves

For holding down the loose end of guy strand projecting beyond the guy clamp. Chance Serving Sleeves, which have a flared end to speed application, are faster to apply than wire-wrap sleeves. Hot-dip galvanized.



Catalog Number	Dimensions (Inches)		Approx Ship Wt Each (lbs)
	Strand Size	Overall Length	
6452	1/4	1-3/8	0.028
6453	5/16	1-1/2	0.059
6454	3/8	1-3/4	0.073
6455	7/16	2	0.120
6456	1/2	2 1/4	0.130

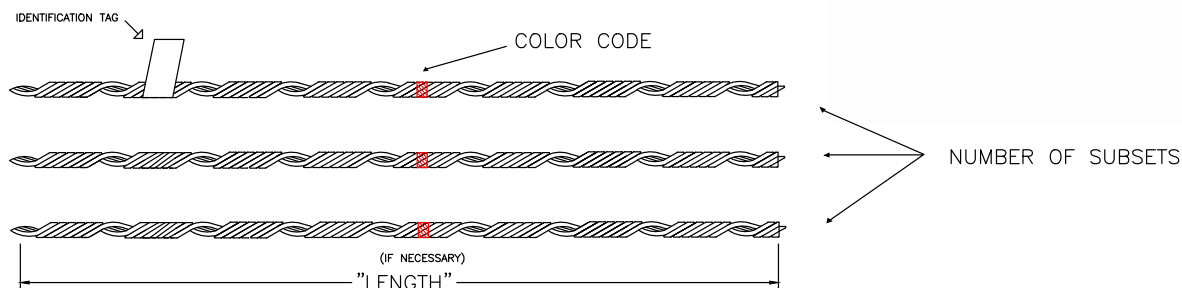
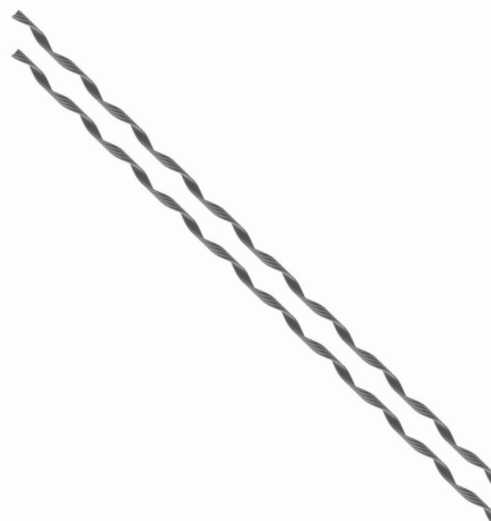
Splices Formed Wire Guy Wire

Galv. Steel FWLS

- For repairing damaged or severed guy wire or messenger cable.
- Do not use FWLS splices on overhead shield wires.
- Fargo FWLS series formed wire are designed for use on all types of galvanized guy wire (EHS, High Strength, Common, Siemens-Martin, Utilities, and Bell System Strand).
- FWLS will hold a minimum of 100% of the guy wire rated breaking strength (ultimate strength) when centered over the severed or point of damage.

Rating: Consult factory for information on other applications. Left hand lay standard.

Material: EHS Steel wire, Zinc-plated, Class B coating per ASTM A641.



Product Data & Conductor Size

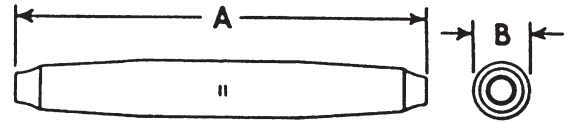
CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	NUMBER OF SUB-SETS	DIAMETER RANGE IN (MM)		NOMINAL LENGTH (L)		CARTON QTY		COLOR CODE
				MIN	MAX	IN	MM	UNITS	WEIGHT LBS. (KG)	
FWLS2102	3/16 (3W & 7W)	3,990 (17.7)	2	0.174 (4.41)	0.203 (5.16)	27	685	100	30 (13.6)	Red
FWLS2103	7/32 (7W)	5,400 (24.0)	2	0.204 (5.18)	0.230 (5.84)	29	737	100	36 (16.3)	Green
FWLS2104	1/4 (3W & 7W)	6,650 (29.6)	2	0.231 (5.87)	0.259 (6.58)	35	889	50	34 (15.4)	Yellow
FWLS2105	9/32 (7W)	8,950 (39.8)	2	0.260 (6.60)	0.291 (7.39)	38	965	50	36 (16.3)	Blue
FWLS2106	5/16 (3W & 7W)	11,200 (49.8)	2	0.292 (7.42)	0.336 (8.53)	42	1067	50	46 (20.8)	Black
FWLS2107	3/8 (3W & 7W)	15,400 (68.5)	3	0.337 (8.56)	0.394 (10.01)	50	1270	25	38 (17.2)	Orange
FWLS2108	7/16 (7W)	20,800 (92.5)	3	0.395 (10.03)	0.474 (12.04)	56	1422	25	58 (26.3)	Green
FWLS2109	1/2 (7W & 19W)	26,900 (119.7)	3	0.475 (12.07)	0.515 (13.08)	63	1600	10	36 (16.3)	Blue
FWLS2110	9/16 (7W & 19W)	35,000 (155.7)	3	0.516 (13.11)	0.570 (14.48)	71	1803	10	52 (23.5)	Yellow

Notes: All dimensions: inches (mm) unless otherwise noted.

Guy Wire GLS

- For splicing applications with overhead or support guy wires
- GLS500x series automatic splices are designed for use on High Strength (HS), Common (Com), Siemens-Martin (SM), Utilities (Util), and Bell System strand
- GLS504x series automatic splices are designed for use on all guy wire types listed above, plus Extra High Strength (EHS) and Alumoweld (AW)
- All GLS automatic splices will hold a minimum of 90% of the guy wire rated breaking strength

Material: **Shell** - High Strength Aluminum Alloy
 Jaws - Plated Steel




Product Data & Conductor Size


CATALOG NUMBER	PRIMARY STRAND APPLICATION	CABLE RANGE ØIN. (MM)	DIMENSIONS	
			DIM. A IN. (MM)	DIM B IN. (MM)
GLS5000	1/4" HS, Com, S-M, Util, Bell	0.231" - 0.249" (5.87 - 6.32)	6.4" (163)	0.9" (23)
GLS5001	5/16" HS, Com, S-M, Util, Bell	0.300" - 0.324" (7.62 - 8.23)	7.4" (189)	1.1" (28)
GLS5002	3/8" HS, Com, S-M, Util, Bell	0.348" - 0.372" (8.84 - 9.45)	9.00" (229)	1.3" (33)
GLS5039	3/16 STR EHS, AW	0.174" - 0.188" (4.42 - 4.78)	8.6" (219)	1.13" (29)
GLS5040	1/4" EHS 7#12 (6M) AW	0.231" - 0.249" (5.87 - 6.32)	8.3" (211)	1.13" (28)
GLS5041	5/16" EHS 7#10 (10M), 7#11 (8M) AW	0.300" - 0.324" (7.62 - 8.23)	9.4" (239)	1.22" (31)
GLS5042	3/8" EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC	0.348" - 0.372" (8.84 - 9.45)	10.0" (260)	1.48" (38)
GLS5043	7/16" EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC	0.402" - 0.459" (10.21 - 11.66)	11.0" (280)	1.60" (41)
GLS5044	1/2" EHS, 25M AW, #1/0-3/4, #2/0-4/3 AWAC	0.487" - 0.519" (12.37 - 13.18)	10.8" (273)	1.70" (43)

NOTE: For conductors other than those listed, consult factory.

Staples

Used to secure ground wire and ground wire molding to wood poles.

Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	Finish					
		Electro Zinc Catalog Number		Galvanized Catalog Number		Copper Coated Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Barbed Square Shank Cut Point 	1-1/2 x 3/8 x .131			C2050460 ⁽¹⁾			
				1750/350	0.014		
	1-1/2 x 3/8 x .140					C2050464	
						1500/300	0.017
	2 x 3/8 x .131			C2050461			
			1300/260	0.019			
	2 x 5/8 x .165			C2050463 ⁽¹⁾			
			800/160	0.032			
	3 x 11/16 x .218			C2050462 ⁽¹⁾			
			300/60	0.032			

Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	Finish					
		Electro Zinc Catalog Number		Galvanized Catalog Number		Copper Coated Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Cut Slash Point  Sold by the Pound	1-1/4 x 3/16 x .114					C2050245	
						6700/NA	0.007
	1-3/8 x 1/2 x .162					C2050244	
						3100/NA	0.016
	1-1/2 x 1/4 x .148	751134 ⁽³⁾		C2050247 ⁽¹⁾⁽²⁾			
		3600/NA	0.014	3600/NA	0.014		
	1-1/2 x 3/8 x .162					9167 ⁽¹⁾	
						2900/NA	0.017
	2 x 1/2 x .162					9169	
						2200/NA	0.023

(1) RUS listed. (2) ANSI standard, C-135.14.

(3) Add SP to catalog number for special package - 10 pound carton, minimum order quantity 10 cartons. Approx. ship weight of 100 pounds.

AERIAL INSTALLATION
Staples (continued)

Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	Finish					
		Electro Zinc Catalog Number		Galvanized Catalog Number		Copper Coated Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Rolled	1 x 1/4 x .114	C2050223⁽²⁾					
						5000/500	0.005
Diamond Point	1 x 5/16 x .120	7511		C2050213			
		1000/100	0.005	1000/100	0.005		
	1-1/4 x 1/4 x .114	C2050224⁽²⁾					
						5000/500	0.006
	1-1/2 x 5/16 x .144	C2050225⁽²⁾					
						2500/500	0.012
	1-1/2 x 3/8 x .148	C2050207		C2050214⁽²⁾			
		1000/100	0.014	1000/100	0.014		
	1-3/4 x 3/8 x .144	9153⁽²⁾					
						2500/500	0.014
	1-3/4 x 3/8 x .148	C2050208		C2050215⁽²⁾			
		1000/100	0.015	1000/100	0.015		
	2 x 1/2 x .162	7512⁽²⁾		C2050216⁽¹⁾⁽²⁾		9154	
		1000/100	0.022	1000/100	0.022	1000/100	0.022
	2 x 5/8 x .162	C2050209⁽²⁾		C2050217⁽²⁾		C2050226⁽²⁾	
		1000/100	0.023	1000/100	0.023	1000/100	0.023
	2 x 5/8 x 3/16	C2050210		C2050218⁽²⁾			
		1000/100	0.032	1000/100	0.032		
	2 x 1-1/16 x 3/16	7513		C2050219⁽²⁾		C2050229	
		1000/100	0.031	1000/100	0.031	1000/100	0.031
	2-1/4 x 25/32 x 3/16	C2050227					
						1000/100	0.034
	2-1/2 x 1-1/16 x 3/16	C2050230⁽²⁾					
						1000/100	0.040
	3 x 1 x 1/4	C2050232⁽²⁾					
						500/100	0.080
	3 x 1-1/16 x 1/4	7522⁽²⁾		C2050220⁽²⁾		9161⁽¹⁾⁽²⁾	
		500/100	0.080	500/100	0.080	500/100	0.080
	3 x 1-1/2 x 1/4	C2050211		C2050221⁽²⁾		C2050233	
		500/100	0.080	500/100	0.080	500/100	0.080
	3-1/2 x 1-3/4 x 1/4	C2050212		C2050222			
		250/100	0.095	250/50	0.095		



Steps

Pole Steps

Steps are made from hot-rolled, open-hearth steel. Hot-dip galvanized. Standard Drive Hook type has fether drive thread and pilot point for easy starting.

Catalog Number	Type Head	Size Inches	Approx Ship Wt Each (lbs)
506125 ⁽¹⁾	Hook	5/8 x 10	0.92

(1) NEMA standard.



No. 506125

Detachable Type

Removable steps create a neat appearance and deter unauthorized pole climbing. Installed by placing plate over lag until plate cuts into pole. Nail driven into bottom hole gives extra rigidity. Step fits on lag head. Order lags and steps separately. Lag and plate assemblies are available for either wood pole or steel pole applications.

Note: T2050433 and T2050449 are not for composite pole installations.

Catalog Number	Description	Approx Ship Wt Each (lbs)
PS6235 ⁽¹⁾	Lag & Plate (for wood pole installation)	0.60
PS6236 ⁽¹⁾	Step	1.05
T2050433	Bolt & Plate (for steel pole installation)	0.64
T2050449	Bolt, Plate, Step (for steel pole installation)	1.70

(1) NEMA standard.



for Wood Poles



No. PS6236



No. T2050433 for Steel Poles



No. T2050449 for Steel Poles

Galvanized Steel Washers

Square Curved Washers

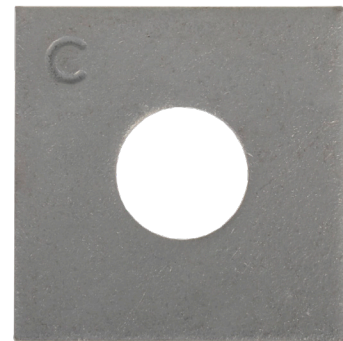
Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
680912	4 x 4 x 1/4	15/16	7/8	1.20
681012	2-1/4 x 2-1/4 x 3/16	11/16	5/8	0.31
PS6822	2-1/2 x 2-1/2 x 3/16	11/16	5/8	0.36
682212	3 x 3 x 1/4	13/16	3/4	0.66
6823	3 x 3 x 1/4	7/8	3/4	0.62
682312	3 x 3 x 1/4	11/16	5/8	0.62
6825	3-1/4 x 3-1/4 x 1/4	13/16	3/4	0.76
DF4W15	4 x 4 x 3/16	13/16	3/4	0.82
400285037	3-3/8 x 3-1/2 x 3/8	15/16	7/8	1.22
400285029	3-3/8 x 3-1/2 x 3/8	1-1/8	1	1.30



Square Curved

Square Washers

Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
6811	2 x 2 x 1/8	9/16	1/2	0.13
6812	2 x 2 x 1/8	11/16	5/8	0.12
6813	2-1/4 x 2-1/4 x 3/16	11/16	5/8	0.24
PSC2050546	3 x 3 x 1/4	11/16	5/8	0.60
6814 ⁽¹⁾	2-1/4 x 2-1/4 x 3/16	13/16	3/4	0.23
6816	3 x 3 x 3/16	13/16	3/4	0.51
6817 ⁽¹⁾	3 x 3 x 1/4	13/16	3/4	0.64
6818 ⁽¹⁾	4 x 4 x 3/16	13/16	3/4	0.87
681812	4 x 4 x 1/4	7/8	3/4	1.20
681912 ⁽¹⁾	4 x 4 x 1/2	13/16	3/4	2.36
PSC2050534	3 x 3 x 1/4	15/16	7/8	0.60
6819	4 x 4 x 1/4	15/16	7/8	1.18
PSC2050519	4 x 4 x 1/4	1-1/16	1	1.04
6820	4 x 4 x 1/2	1-1/8	1	2.28
400285714	4 x 4 x 1/2	1-3/16	1-1/8	2.28
400285722	6 x 6 x 1/2	1-7/16	1-3/8	4.18



Square

(1) RUS listed.

Washers (continued)

Galvanized Steel Washers

Round Washers

Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
PS6801	1 O.D. x 14 Ga.	7/16	3/8	0.016
PS6802	1-1/4 O.D. x 14 Ga.	9/16	3/8	0.028
PS6803⁽¹⁾	1-3/8 O.D. x 12 Ga.	9/16	1/2	0.045
400285169	1-3/8 O.D. x 12 Ga.	9/16	1/2	0.045
6805⁽¹⁾	1-3/4 O.D. x 10 Ga.	11/16	5/8	0.085
6806	2 O.D. x 9 Ga.	13/16	3/4	0.118
PS6807	2-1/4 OD x 8 Ga.	15/16	7/8	.152
6808	2-1/2 O.D. x 8 Ga.	1-1/16	1	0.21

(1) RUS listed.



Round

Galvanized Steel Washers

Spring Clip Washers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
3539	5/32 x 1	9/16	1/2	0.22
3540	1/4 x 1-3/4	11/16	5/8	0.93
3541	1/4 x 1-3/4	13/16	3/4	0.91
C2050436	1/4 x 1-3/4	15/16	7/8	0.89
C2050438	1/4 x 1-3/4	1-1/16	1	0.87



Spring Clip

Spring Lock Washers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
DF7W1	0.094 x 0.141	7/16	3/8	0.010
4035	0.125 x 0.171	9/16	1/2	0.015
4036	0.156 x 0.203	11/16	5/8	0.024
4037	0.188 x 0.234	13/16	3/4	0.048
PSC2050496	0.219 x 0.266	15/16	7/8	0.066
PSC2050497	0.250 x 0.297	1-1/16	1	0.084

(1) Packaged 300 per carton.



Spring Lock

Double Coil Spring Lockwashers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
C2050185	5/32 x 1	9/16	1/2	0.040
C2050186	3/16 x 1-3/16	11/16	5/8	0.066
C2050187	7/32 x 1-3/8	13/16	3/4	0.104
C2050188	7/64 x 3/4	7/16	3/8	0.015

Heavy Duty Double Coil Spring Lockwashers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
CMW38	0.156 x 0.196	0.40	3/8	0.030
CMW12	0.156 x 0.243	0.53	1/2	0.050
CMW58	0.234 x 0.302	0.65	5/8	0.120
CMW34	0.234 x 0.302	0.78	3/4	0.140



Double Coil Spring

Washers (continued)

Cast Galvanized Steel Washers

Cast washers provide excellent strength characteristics. Reinforcing ribs helps prevent washer from crushing.

Curved Square

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
GCW31	3 x 3	5/8	3/8	0.45
GCW31A	3 x 3	3/4	3/8	0.45
GCW41	4 x 4	3/4	1/2	1.00
GCW41A	4 x 4	7/8	17/32	1.00
GCW41B	4 x 4	1	11/16	1.230



Curved Square

Curved Rectangular

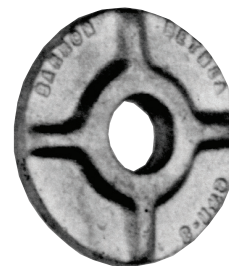
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
CRW3	2-1/4 x 3-1/2	3/4	3/8	0.45
CRW4A	3 x 4	7/8	1/2	0.93
CRW4B	3 x 4	1	1/2	0.93



Curved Rectangular

Round Flat

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Diameter	Max. Bolt Diameter	Thickness At Boss	
GWR3	3	3/4	7/16	0.44
GWR4	4	7/8	1/2	0.87
GWR4A	4	1	1/2	0.87



Round Flat

Square Flat

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
BB214	2-1/4 x 2-1/4	5/8	9/32	0.20
BB214A	2-1/4 x 2-1/4	3/4	9/32	0.20



Square Flat



Drop Line Hardware

With pole line hardware manufacturing experience going back to 1907, Hubbell's growing line of drop line hardware provides the same quality and reliability all the way to the customer's premises. Products include those needed for twisted pair, coax, or fiber from the pole to the house or business.

Siding Clips

Simplifies field installation for RG6 and RG59 coaxial cable. Wedges in-between siding. No drilling/screwing required. Made from plastic. Standard package size of 100.

Catalog Number	Color	Orientation
PSC2080442	Clear	Horizontal
PSC2080443	Black	Horizontal
PSC2080444	Clear	Vertical
PSC2080445	Black	Vertical



Horizontal House Clip



Vertical House Clip

U-Cable Clip

U-Cable Clip for RG-6 Coaxial Cable. Secures coaxial cable to wall of home or building.

Catalog Number	Material	Approx Ship Wt Each (lbs)
PSC2170151	Aluminum	.003



U-Cable Clip

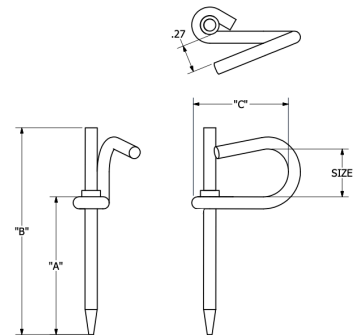
Drive Ring

Use to secure or temporarily support drop cable on the pole. Meets Bellcore CA06835.

Catalog Number	Size	Dimensions Inches (in)			Minimum Order Quantity	Approx Ship Wt Each (lbs)
		A	B	C		
PSC2170074	1/2	1-3/8	2-1/16	3/4	500	0.02
PSC2170075	5/8	1-7/16	2-1/4	1-1/8	500	0.03
PSC2170076	5/8 L	1-15/16	2-3/4	1-1/8	500	0.03
PSC2170077	7/8	1-1/2	2-9/16	2-1/16	250	0.06
PSC2170078	7/8 L	2	3-1/16	2-1/16	250	0.07
PSC2170079	1-1/4	1-5/8	2-15/16	2-3/4	250	0.10
PSC2170080	1-1/4 L	2-1/8	3-7/16	2-3/4	250	0.10



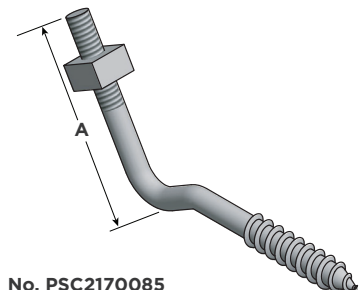
Drive Ring



Angle Screws

Hot-dip galvanized angle screws

Catalog Number	Size	Dimensions Inches (in)				Minimum Order Quantity	Approx Ship Wt Each (lbs)
		Machine Thread	Wood Screw Thread	Length A (in)	Machine Screw Thread Length (in)		
PSC2170085	5/16	5/16 - 18	#20	2-1/4	1-1/8	10	0.12
PSC2170086	3/8	3/8 - 16	#24	3-1/4	1-5/8	10	0.16



No. PSC2170085

Drop Attachments

House Hooks

Loop drop wire clamp bail over 'P' section of house hook.

Catalog Number	Dimensions (in)	Wrenchable	Minimum Order Quantity	Approx Ship Wt Each (lbs)
PSC2170095	3-3/4 x 1-1/2	No	200	0.07
PSC2170096	4-1/2 x 1-5/8	Yes	100	0.07
PSC2170097	6-1/2 x 1-5/8	Yes	100	0.07
PSC2170129	4-1/2 x 1-1/2	No	200	0.09



No. PSC2170095

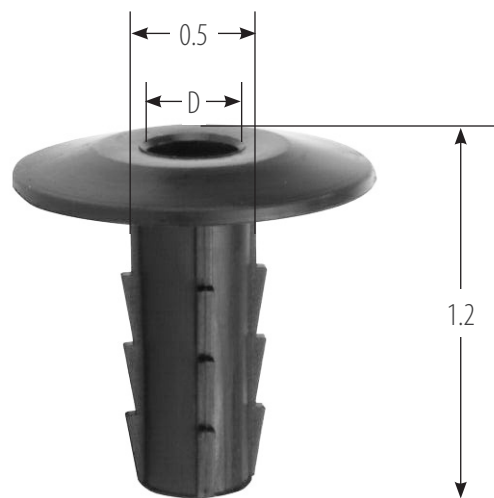


No. PSC2170096

Bushings

These single feed-through bushings seal wall openings and protect RG6 and RG6 Quad Cables from harm and abrasion damage.

Catalog Number	Dimensions (in)	Feed through diameter D (in)	Color
PSC2080429	1.2 x 0.5	0.310	Natural
PSC2080430	1.2 x 0.5	0.310	Clear
PSC2080431	1.2 x 0.5	0.310	Beige
PSC2080432	1.2 x 0.5	0.310	Black
PSC2080433	1.2 x 0.5	0.310	White
PSC2080434	1.2 x 0.5	0.265	Clear
PSC2080435	1.2 x 0.5	0.265	Beige
PSC2080436	1.2 x 0.5	0.265	Black
PSC2080437	1.2 x 0.5	0.265	White
PSC2080446	1.2 x 0.5	0.210	Clear
PSC2080447	1.2 x 0.5	0.210	Beige
PSC2080448	1.2 x 0.5	0.210	Black
PSC2080449	1.2 x 0.5	0.210	White

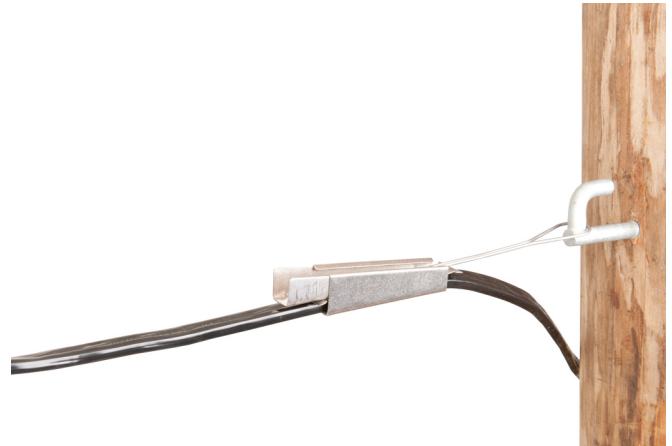


No. PSC2080432

1-2 Pair and 6 Pair Dropwire Clamps

Attaches to hooks and span clamps to secure ends (pole, building or mid-span) of 1-2 & 6 pair communication service drops

- 1-2 pair meets the requirements of Telcordia specifications GR-3174
- Clamp Strength Rating:
Ex: - Clamp Strength Rating:
1-2 pair clamps - 555 lbs.
6 pair clamps - 800 lbs.
Drop clamps will exceed the rated tensile strength of the applicable cable

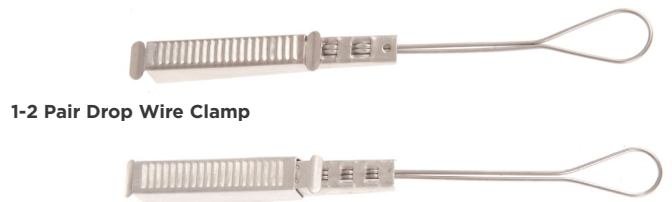


Features

- Available in either stainless steel or aluminum
- 1-2 pair supplied with serrated shims
- 6 pair supplied with dimpled shims

Material:

- Stainless steel clamps - 304 stainless steel
- Aluminum clamps - 5052-H32 aluminum
- Clamp bail wire (aluminum and stainless clamps) - 430 stainless



1-2 Pair Drop Wire Clamp

Catalog Number	Drop Cable	Material	Shim Style	Approx Ship Wt Each (lbs)
C2PRAS	1-2 Pair	Aluminum	Serrated	.08
C2PRSS		Stainless		.11
C6PRSD	6 Pair	Stainless	Dimpled	.18

6 Pair Drop Wire Clamp

Universal CATV Clamp

Attaches to hooks and span clamps to secure ends (pole, building or mid-span) of CATV messengered service drops.

Material:

- Clamp - 5052-H32 aluminum
- Clamp bail wire - 430 stainless

Catalog No. CMDCA
CATV Service Drop Clamp



Catalog Number	Drop Cable	Approx Ship Wt Each (lbs)
CMDCA	Messengered COAX	0.05

Clamps, Drop/Span

Flat Fiber Drop Clamp

Drop wire clamp for attaching flat fiber type communications cable to hooks, or span clamps that are installed on buildings, poles or at mid-span.

Approved for use on the following drop cables:

- Corning SST-Drop™ and ROC™ Drop
- Superior Essex Universal Drop FTTP and FTTP Tight Buffered Drop
- Prysmian ResiLink™ ADF Flat Drop
- Commscope O-DF Drop
- OFS Mini LT Flat Drop

Material:

- Clamp - 304 stainless
- Wire bale - 430 stainless
- Shim Style: Serrated



Catalog Number	Drop Cable	Approx Ship Wt Each (lbs)
FFD12SS	Flat Fiber Cable	0.11

Span Clamps

For attaching overhead service wire to strand.

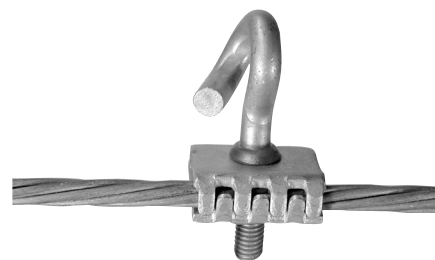
Features

- Works on 6M through 25M strand.
- Short, shaped teeth give extraordinary gripping power to clamp without touching the web.
- Works well on both self-support cable and bare strand.
- Especially effective in attaching to duct-on-strand or aerialinner duct.
- Meets Spec CA08391 for function and mechanical strength.

Ordering information

EM-8011 “The Gripper” finger version.

Standard packaging: 5/sm bx, 100/lg bx, 41 lb/lg bx. No minimum order.



EM-8010 on Strand



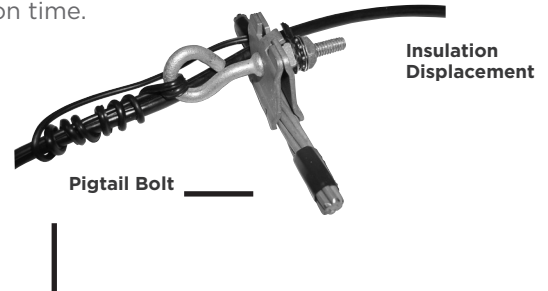
EM-8011

Mid-Span Clamps

For attaching overhead service wire to strand, and bonding messenger to strand.

Features

- Pigtail bolt reduces chance of messenger wire slipping out of bolt.
- Three stainless steel washers with insulation-penetrating teeth contact messenger through jacket. This reduces corrosion and installation time.
- Works on .109 through 25M strand.
- Short, shaped teeth give extraordinary gripping power.



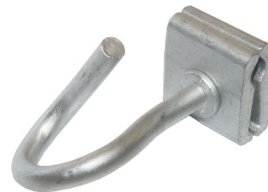
Ordering information

EM 8012-1PIDC

Provides drop wire clamp attachment at the mid-span.

- 1-2 pair meets the requirements of Telcordia specifications GR-3174
- Clamp Strength Rating:

Catalog Number	Letter Designation	Bolt/Pigtail Diameter (in)	Approx Ship Wt Each (lbs)
CQSC	Q Span	.025	0.17
CESC	E Span	0.38	0.43
COSC	O Span	0.38	0.25



Q Span Clamp



E Span Clamp



O Span Clamp

Clamps, Span

Span Clamp with Internal Teeth

When used in conjunction with messengered drop cable, the messenger wire can be installed directly to the multidrop span clamp without a drop wire clamp.

Applications

- Attaching overhead service wire to strand, and bonding messenger to strand.

Features

- Works on 6M through 25M strand.
- Short, shaped teeth give extraordinary gripping power to clamp without touching the web.
- Especially effective in attaching to duct-on-strand or aerial inner duct.
- Meets Spec CA08391 for function and mechanical strength.
- Internal insulation-penetrating teeth contact strand through jacket (no stripping).

Ordering information

EM-8012 Span clamp

Standard packaging: 5/sm bx, 100/lg bx, 43 lb/lg bx.

No minimum order.

Bonding Clip for Integrated Messenger Coax Cable

Description

A set of teeth in clip form, made of tinned copper alloy.

Applications

- Can be used under strand applied hardware to provide bonding contact through IM coax insulation.

Features

- Teeth long enough and strong enough to make reliable contact.
- A multiple of teeth to pass the high current test.
- Tinned to provide compatibility.
- Collapsible enough to be pre-applied by hand.
- Prevents having to strip insulation.
- Longer than most hardware so the clip can be seen from the ground, assuring bonding is done.

Ordering information

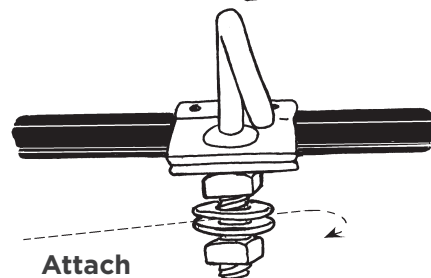
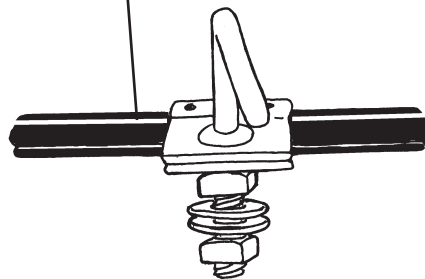
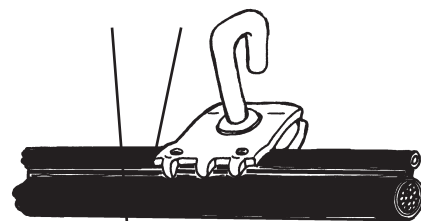
EM-8011

Bonding Clip for Integrated Messenger Coax Cable

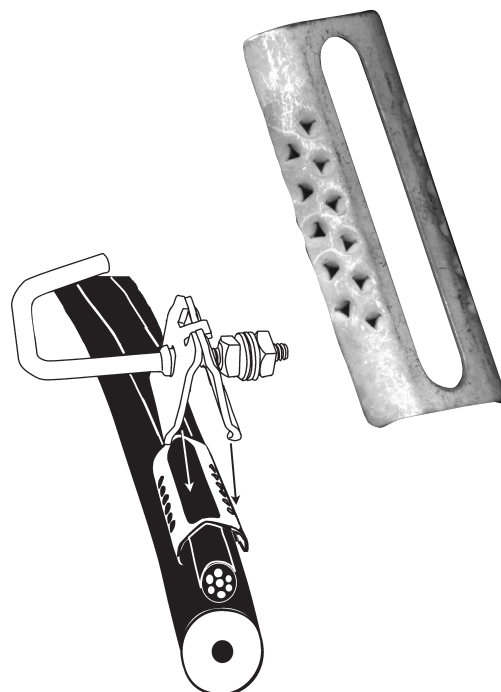
Standard packaging: 2000/bx, 30 lb/bx.

No minimum order.

Clamp on self support



Attach messenger between washers



Mid-Span Clamp Insulator

Description

The Mid-Span Clamp Insulator provides extra insulation between the support strand and aerial drop wire. Made from low density polyethylene, it helps prevent lightning burn through of the drop wire jacket, which causes nuisance ground-outs.

Features

- Simple, economical design is available as a loose piece to install on existing hardware, or it can be ordered on new mid span clamps.
- Shaped like a cam, it can be installed on pigtail bolt, located, and then turned to lock in the drop wire bail.

Applications

For use in lightning-prone areas. It is also economical enough to use on every span clamp to help prevent trouble.

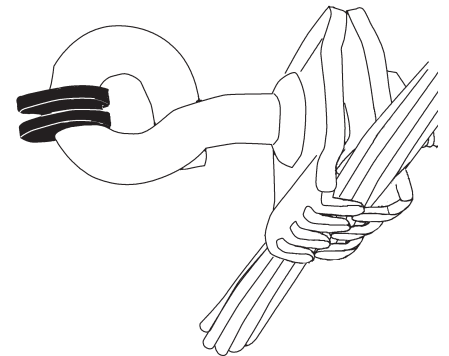
Ordering information

EM PG02 Mid-span clamp insulator

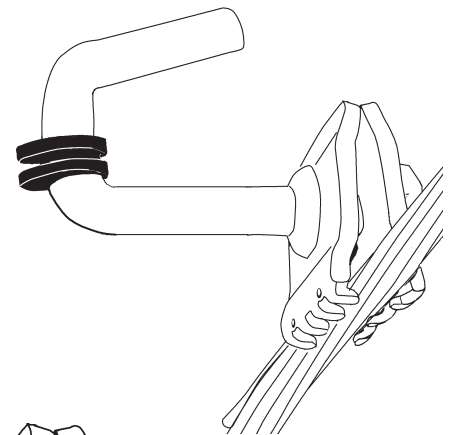
EM 8010PG Span clamp with teeth and insulator

EM 8011PG Span clamp with fingers and insulator

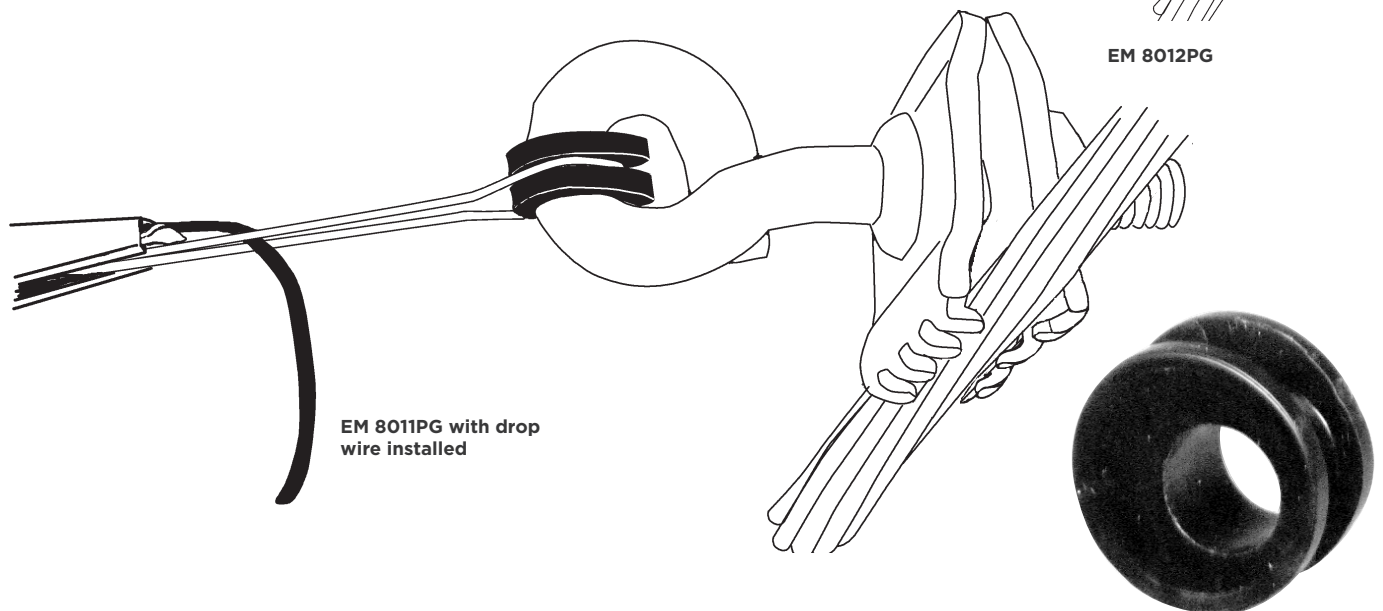
EM 8012PG Span clamp with internal teeth, "L"-shaped bolt, and insulator



EM 8010PG



EM 8012PG



EM 8011PG with drop wire installed

Hook

Ram's Horn Hook

Ram's Horn Hook attaches at the home or building with 1/4" hardware (not provided). Loop drop wire clamp bail over ram's horn hook.

Ordering information

Hubbell Catalog No. CRHH

Insulated P-Hook

House attachment for drop wire clamps. Extra long shank for aluminum siding. Porcelain knob for high strength as well as insulating qualities.

Ordering information

EM-8016 Insulated P-Hook Standard packaging: 100/bx, 12 lb/bx. No minimum order.

EM-8016-KNOB Just the porcelain knob.

Insulated P-Hook

Applications

Connecting messengered coax drop wire to house hooks, "P" clamps, ram's horns.

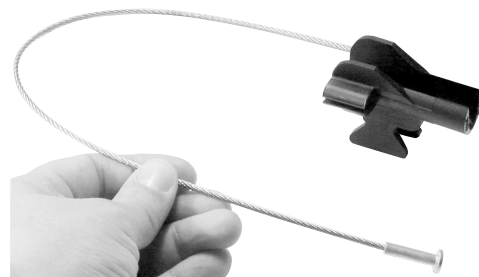
Features

- Glass-filled nylon for outstanding strength.
- Non metallic body insulates against shorts.
- Detachable bail can be threaded through a loop.
- Flexible bail can be looped around for extra stability.
- Rounded geometry prevents damage to coax or messenger.

Ordering information: EM-RD011 Coax Drop Clamp



No. CRHH







ADSS Hardware

In many cases, ADSS aerial fiber installation is faster and more cost effective than lashing, and allows communications cables to be placed in the power zone on utility poles.

Hubbell Power Systems' line of ADSS support hardware for short span distribution applications makes the job even faster, reducing installation costs while ensuring system integrity, even in heavy ice and wind loading areas.

The Hubbell ADSS Wedge Style Deadend is designed for fast, easy, and reliable installation of ADSS (All Dielectric Self-Support) aerial fiber optic cable. The deadends are designed with an open, conical body containing a pair of sliding wedges. The wedges are engineered to mechanically couple to the cable without causing damage to the sheath or fibers, providing a secure grip without fear of signal loss.

Material

- Body: UV Resistant Thermoplastic
- Bail: Stainless Steel

Benefits

- Light and compact
- Easy, quick, and safe deadending
- Installation takes seconds with no special tools
- The flexible bail provides an extra protection to the cable against Aeolian vibrations
- Safe for installation near space potentials up to 11kV

Specifications

- Deadending of 0.236" to 0.787" ADSS cables
- Spans up to 325 ft.
- All plastic parts are UV resistant and tested in conditions equivalent to minimum of 25 years in service
- Accepts standard pole line fittings
- Recommended for double jacket ADSS cables. For single jacket cables, contact the manufacturer for recommendations.



Part Number	Cable Diameter Range				Ultimate Body Strength (lbf)
	Min (in)	Max (in)	Min (mm.)	Max (mm.)	
WEGADSS100	0.236	0.315	6	8	750
WEGADSS101	0.315	0.394	8	10	750
WEGADSS102	0.394	0.472	10	12	1650
WEGADSS103	0.472	0.551	12	14	1650
WEGADSS104	0.551	0.630	14	16	1650
WEGADSS105	0.630	0.709	16	18	1650
WEGADSS106	0.709	0.787	18	20	1650

Aluminum ADSS Suspension Clamps

The Hubbell Aluminum ADSS Suspension Clamps offer fixed or hanging configuration options for a full range of ADSS cable sizes from 0.426" to 1.050" OD.

Material

- Body: Aluminum
- Insert: Polyurethane
- Hardware: Galvanized steel, Neoprene

Benefits

- Full range of ADSS cable coverage from 0.426" to 1.050" diameter
- Fixed Clamp:
 - Installation with through bolt or stainless steel banding (upto 1-1/4" wide)
 - Versatile design can be used as a stringing block (with inserts removed)
- Hanging Clamp: Installation with J-hook (PSC2080237) or eye-bolt

Specifications

- Tangent suspension for spans up to 600 ft.
- 30° max turning angle
- Ultimate vertical load: 4000 lbs.
- Meets IEEE 1591.2



HUBSUSFxxx
Fixed Suspension Clamp



HUBSUSHxxx
Hanging Suspension Clamp

Ordering Information

Part Number		Cable Diameter Range	
Fixed Clamp	Hanging Clamp	Min (Mm.)	Max (Mm.)
HUBSUSF199	HUBSUSH199	0.426 (10.8)	0.475 (12.0)
HUBSUSF200	HUBSUSH200	0.476 (12.1)	0.525 (13.3)
HUBSUSF201	HUBSUSH201	0.526 (13.4)	0.575 (14.6)
HUBSUSF202	HUBSUSH202	0.576 (14.7)	0.625 (15.9)
HUBSUSF203	HUBSUSH203	0.626 (16.0)	0.675 (17.1)
HUBSUSF204	HUBSUSH204	0.676 (17.2)	0.750 (19.1)
HUBSUSF205	HUBSUSH205	0.751 (19.2)	0.825 (21.0)
HUBSUSF206*	HUBSUSH206*	0.826 (21.1)	0.900 (22.9)
HUBSUSF207*	HUBSUSH207*	0.901 (23.0)	0.975 (24.8)
HUBSUSF208*	HUBSUSH208*	0.976 (24.9)	1.050 (26.7)

*Consult factory for information on standards qualification.

AERIAL INSTALLATION
ADSS Suspension Clamps

The Hubbell ADSS suspension clamp is a heavy duty, versatile, and reliable solution for securely suspending ADSS (All Dielectric Self-Support) aerial fiber optic cable. The versatility of the clamp allows the installer to fix the clamp to the pole using either a through bolt or band. If a loose tangent is required, the clamp can be suspended using a standard J-hook (Part # PSC2080237). Accepting a range of sizes and multiple installation methods, the Hubbell ADSS suspension clamp is sure to meet your tangent needs.

Material

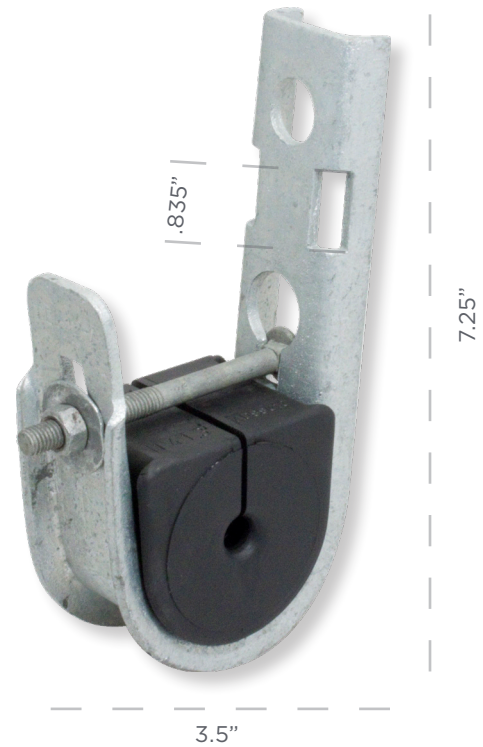
- Body: Galvanized Steel
- Insert: Neoprene Sleeve

Benefits

- Two sizes to cover the full range of ADSS cables from 0.394” to 0.787”
- Installation in just a few seconds with standard tools
- Versatility in installation methods

Specifications

- Tangent suspension for spans up to 600 ft.
- Less than 20° angle on cable routes between spans (For angles greater than 20°, double deadend or false deadend)



Part Number	Cable Diameter Range				Ultimate Body Strength (lbs.)
	Min (in)	Max (In)	Min (mm.)	Max (mm.)	
ASCF102	0.394	0.591	10	15	3000
ASCF114	0.591	0.787	15	20	3000

ADSS Hanging Suspension Clamps

The Hubbell ADSS Dielectric Suspension Clamp is a great choice when installing ADSS (All Dielectric Self-Support) aerial fiber optic cable near the energized zone on a utility pole. Installed as a float mount, the clamp is best used on a closed eye nut (Part #'s 6500, 6501, 6502, 6503).

Material

- Body: UV Resistant Thermoplastic
- Insert: Neoprene Sleeve

Benefits

- Lightweight, compact, and cost effective design
- Dielectric body
- Installation in seconds
- Suspension bails provide additional protection against Aeolian vibration

Specifications

- Tangent suspension for spans up to 325 ft
- Less than 20° angle on cable routes between spans (For angles greater than 20°, double deadend or false deadend)



Part Number	Cable Diameter Range				Ultimate Body Strength (lbf)
	Min (in)	Max (In)	Min (mm.)	Max (mm.)	
AHSC800	0.315	0.472	8	12	450
AHSC1200	0.472	0.630	12	16	450

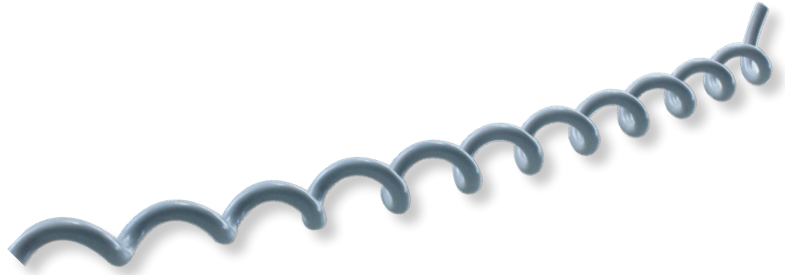
The ADSS spiral vibration damper reduces Aeolian vibration. Aeolian vibration is a high frequency, low amplitude vibration caused by wind passing across the fiber cable. This vibration can cause support hardware to breakdown and fail over time. The spiral vibration dampers are made of PVC and are very easy to install.

Material

- PVC

Benefits

- Reduces Aeolian and galloping vibrations
- Easy installation
- Dielectric material



Part Number	Cable Diameter Range				Length (in.)
	Min (in)	Max (in)	Min (mm.)	Max (mm.)	
SVD103	0.252	0.327	6.4	8.3	49
SVD104	0.327	0.461	8.3	11.7	53
SVD105	0.461	0.563	11.7	14.3	53
SVD106	0.563	0.760	14.3	19.3	65



OPTI-LOOP™ Storage Systems

Cable slack in aerial networks is critical for expansion and repairs. Hubbell's OptiLoop aerial slack storage products are ideal for storing slack on the span. Available in various sizes and materials, OptiLoop slack storage systems can be used on lashed aerial, ADSS, and drop cables.

They provide a convenient, economically priced and industry-approved method of storing extra length of fiber optic cable.

Aluminum Fiber Optic Storage System

The aluminum Opti-Loop™ FOS for strand and messenger mounted cable is available in a variety of sizes. With more than one million units in service, Opti-Loop fiber storage systems lead the industry in quality and durability.

Design features and benefits

- All aluminum construction with continuous welds at crossbars and ends.
- Each pair is individually boxed and includes stainless steel mounting bolts, nuts and washers.
- Fits all fiber cable up to 1.50" OD.
- Powder coat finish.
- Tie eyelets designed to accommodate both stainless steel and tie wrap securing methods.
- Radius ends to ensure no sharp corners.
- Outward facing channel and minimal surface area minimizes stress and ice loading.



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOS10TMK	10.2	23	11.4
FOS1TMK	12.2	26	13.4
FOS2TMK*	12.2	26	13.4
FOS3TMK	16.2	31	17.7
FOS4TMK	18.2	33	19.7
FOS5TMK*	18.2	33	19.8
FOS6TMK	20.2	34	21.4
FOS24TMK	24.0	38	25.4
FOS30TMK	30.0	44	31.4

*Indicates multi-wrap unit

Plastic Fiber Optic Storage System

The plastic Opti-Loop™ FOS for strand and messenger mounted cable is available in a variety of sizes. They provide a convenient, economically priced and industry approved method of storing extra length of fiber optic cable.

Design features and benefits

- Utilizes self-aligning tap brackets.
- Requires only one tool for installation.
- No “fishing” tie wraps through holes or slots.
- Can be stacked if necessary.
- Contains UV inhibitor.
- Cut away channel creates a smoother transition to messenger.
- Minimal surface area minimizes stress and ice loading.



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOSP17TMK	17	26	18.9
FOSP12TMK	12	18	13.1

ADSS Direct Attach Fiber Optic Storage System

The Opti-Loop™ ADSS Direct Attach unit uses the patented bowtie double deadend process for storing ADSS fiber. This system provides maximum protection for fiber cable and contains no conductive properties.

Design features and benefits

- Each pair is individually boxed and includes ADSS Direct Attach mounting brackets and an all dielectric pole block.
- No “fishing” tie wraps through holes or slots.
- Cut away channel creates a smoother transition to messenger.
- Contains UV inhibitor.



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOSDA17ADSS	17	26	18.9
FOSDA12ADSS	12	18	13.1

OptiLoop™ FOS Aluminum ADSS Storage System

The aluminum Opti-Loop™ FOS for All Dielectric Self Support (ADSS) cable is available in 3 sizes. With more than one million units in service, Opti-Loop fiber storage systems lead the industry in quality and durability.

Design features and benefits

- All aluminum construction with continuous welds at crossbars and ends
- Each pair is individually boxed and includes ADSS Direct Attach mounting brackets and an all dielectric pole block
- Fits all fiber cable up to 1.50" OD
- Powder coat finish
- Tie eyelets designed to accommodate both stainless steel and tie wrap securing methods
- Radius ends to ensure no sharp corners
- Outward facing channel and minimal surface area minimizes stress and ice loading

**Hubbell Power Systems does not recommend using the aluminum ADSS Storage System in the power zone of the pole. It is only recommended for use in the communications zone of the pole. For All Dielectric plastic units please order the FOSDA version.*



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOS20ADSS	20.2	34.0	21.4
FOS24ADSS	24.0	38.0	25.4
FOS30ADSS	30.0	44.0	31.4