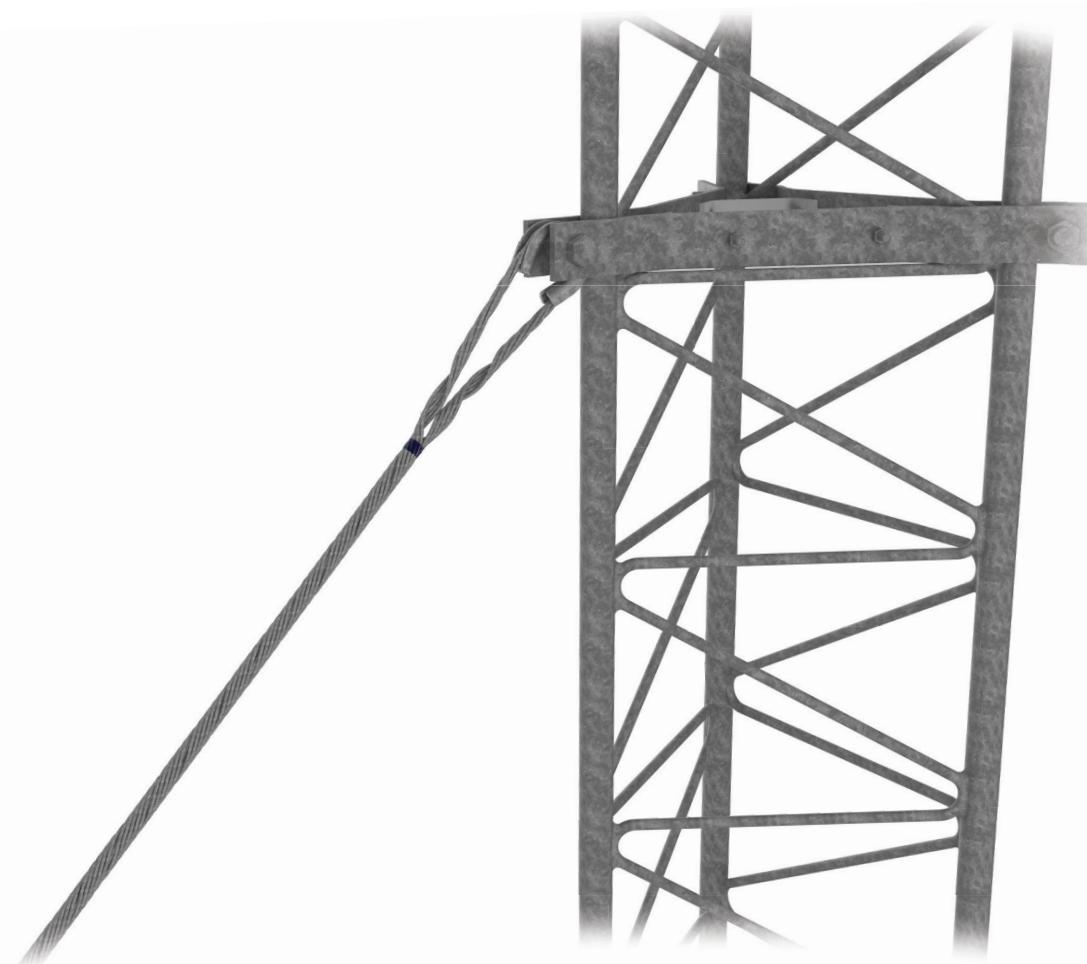




PRODUCT CATALOG



TOWER & ANTENNA SOLUTIONS

Guying Hardware | Vibration Control | Wildlife Protection | Tools & Accessories



ABOUT PLP

PLP protects the world's most critical connections by creating stronger and more reliable networks. Our precision-engineered solutions are trusted by energy and communications providers worldwide to perform better and last longer. With offices and manufacturing facilities in over 20 countries, PLP works as a united global corporation, delivering high-quality products and unparalleled service to customers around the world.





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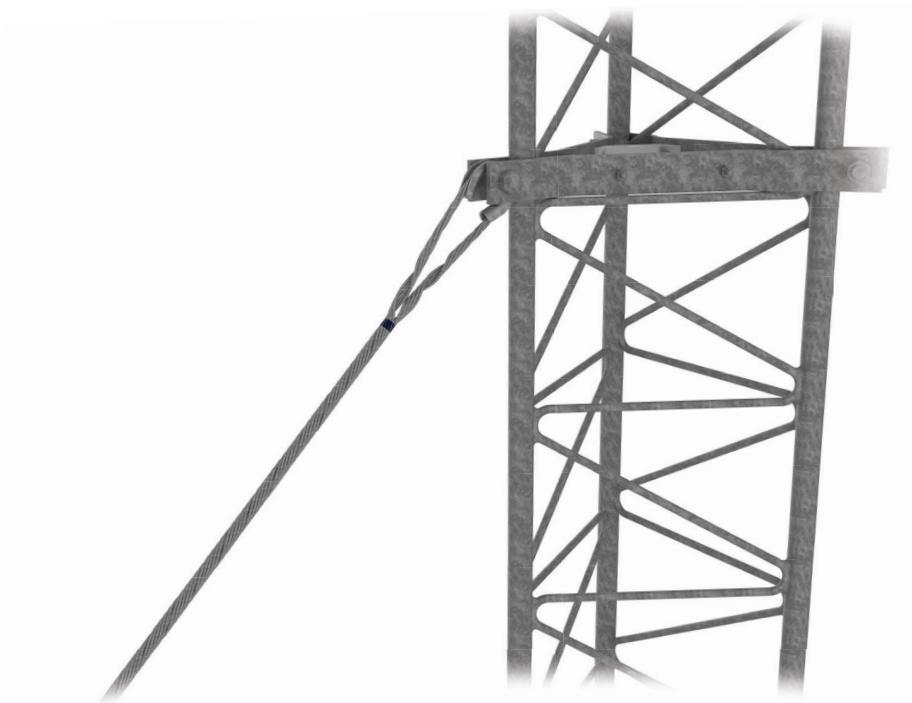
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BIG-GRIP DEAD-END

Big-Grip Dead-Ends are designed for use on transmission, antenna, communications, and other types of guyed structures that require use of large guy strand.

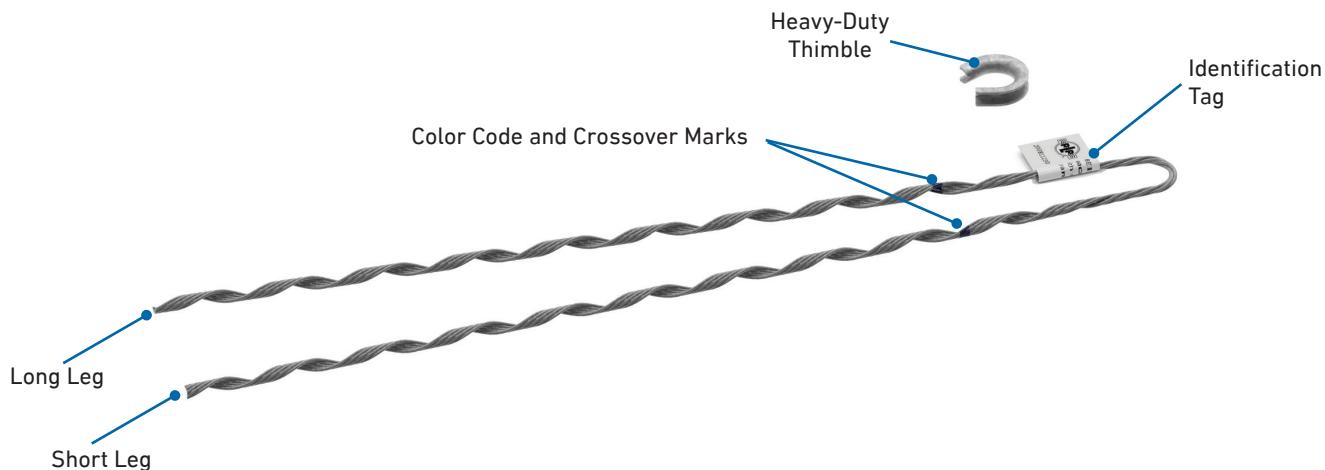
FEATURES AND BENEFITS

- Big-Grip Dead-Ends are designed at 100% of the rated breaking strength of the strand unless otherwise specified. (Test data available upon request. Reference: TR-634-E)
- Several materials available to ensure compatibility with the strand on which it will be applied
- Intended for a single (one-time) use and for the specified application, although it may be reapplied twice for re-tensioning within 90 days of initial installation.

CAUTION: Do not modify or reuse this product after 90 days of initial installation. BIG-GRIP Dead-Ends are not acceptable for use on wire rope applications.

WARNING: PLP Products are not designed or tested for uses other than those set forth herein. This includes, but is not limited to, rope/ challenge courses, aerial adventures, canopy tours, and zip line applications. If PLP Products are used in such applications, they may be subjecte

COMPONENTS



Component	Description
Crossover Marks	Indicates starting point for application
Product Identification Tag	Shows catalog number, nominal sizes
Color Code	Assists in identifying strand size, corresponding to tabular information appearing on catalog pages
Short Leg	Identifies rods belonging to each leg, after application. During application, the short leg should be applied first.
Long Leg	Identifies rods belonging to each leg, after application. During application, the long leg should be applied second.

STRAND COMPATIBILITY

Big-Grip Dead-Ends should be used only on the size and strand for which they are designed. They must have the same lay direction and be made from the same material as the strand to which they are applied.

- When ordering a Big-Grip Dead-End, make sure to specify the strand diameter, lay direction, and material on which it is to be used.
- When using types of strand and/or sizes of strand not mentioned in these catalog pages, consult PLP for compatible Big-Grip Dead-End designs.



HARDWARE ACCESSORY GUIDELINES

For hardware and hardware dimensions to be used in conjunction with Big-Grip Dead-Ends, refer to Table 1 on the next page.

Big-Grip Dead-Ends should not be used on hardware that allows the strand to rotate or spin about its axis uncontrolled. Adjustable hardware, such as a turnbuckle, may be used as long as rotational movement of the strand is restricted. Consult PLP for additional information concerning adjustable hardware that can be used with Big-Grip Dead-Ends.

Hardware used in conjunction with Big-Grip Dead-Ends should have smooth contours, ample groove clearances, acceptable diameters, and sufficient strength to minimize abrasion and fatigue of the loop area.

Table 1, Figures 1-6 illustrate some of the possible hardware and the dimensions that may be used with Big-Grip Dead-Ends:

- Figure 1 and Table 1: Minimum and maximum acceptable seat diameters to which the Big-Grip Dead-End can be applied
- Figure 2 and Table 1: Seat diameters and minimum groove diameters
- Figure 3 and Table 1: Minimum hardware hole diameters
- If not using PLP's Heavy-Duty Thimbles, only heavy-duty type wire rope thimbles or solid Hawser-type thimbles are recommended for use with Big-Grip Dead-ends. (Refer to Figures 4, 5, and 6)
- Heavy-duty type wire rope thimbles can collapse when guy tensions are high. In order to support and protect the loop area of the Big-Grip Dead-End, special precautions are necessary.
- To prevent collapse of the thimble, either a Hawser-type thimble (Figure 4), a large pin inside the thimble (Figure 5), or a smaller pin (such as a shackle pin) plus double extra strong weight pipe or equivalent (Figure 6) is necessary. Double extra strong weight pipe, which has increased wall thickness and strength over schedule 160 pipe, does not have a schedule number but information can be obtained from a pipe supplier. Thimble strengths and dimensions can be obtained from a thimble supplier.

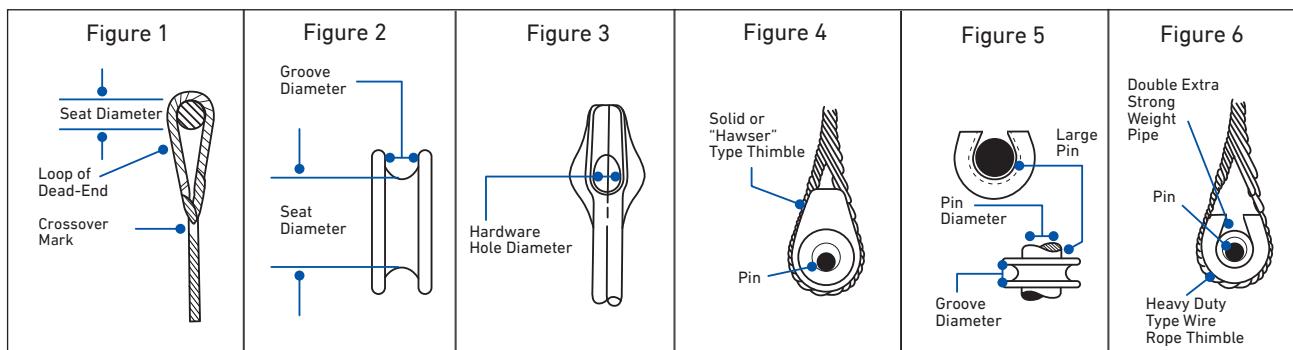
PLP suggests guy tensions be maintained at a minimum of approximately 10% of the strand's Rated Breaking Strength (RBS).

When in doubt about installations, hardware, or applications, contact a PLP representative.

HARDWARE ACCESSORY GUIDELINES

TABLE 1

Big-Grip Dead-End Hardware Accessory Dimensions												
(All Dimensions in Inches)												
Dead-End Diameter Range	Nominal Strand Sizes	Figure 1 & 2		Figure 2	Figure 3	Heavy Duty Thimble Size	Figure 4 & 5		Figure 6			
		Seat Dimensions		Minimum Groove Diameter	Minimum Hardware Hole Diameter*		Pin Diameters		Double Extra Strong Weight Pipe			
		Minimum	Maximum				Minimum	Maximum	in			
.174 - .203	3/16	1	(2-1/2) 1-3/4	1/4	3/8	7/16 - 3/8	5/8	1	3/4	1.050	.614	
.204 - .230	7/32	1-1/8	(2-1/2) 1-3/4	5/16	3/8	7/16 - 3/8	5/8	1	3/4	1.050	.614	
.231 - .259	1/4	1-1/8	(2-1/2) 1-3/4	5/16	7/16	1/2	1	1-3/8	1	1.315	.815	
.260 - .291	9/32	1-1/8	(2-1/2) 1-3/4	3/8	1/2	1/2	1	1-3/8	1	1.315	.815	
.292 - .336	5/16	1-1/4	(2-1/2) 1-3/4	3/8	9/16	1/2	1	1-3/8	1	1.315	.815	
.337 - .394	3/8	1-3/8	(2-1/2) 1-3/4	7/16	5/8	1/2	1	1-3/8	1	1.315	.815	
.395 - .474	7/16	1-3/8	(2-1/2) 2-3/8	1/2	11/16	1/2	1	1-3/8	1	1.315	.815	
.475 - .515	1/2	1-3/8	2-3/8	9/16	3/4	5/8	1	1-5/8	1-1/4	1.66	.896	
.516 - .570	9/16	1-1/2	2-5/8	5/8	15/16	5/8	1-1/8	1-5/8	1-1/4	1.66	.896	
.571 - .635	5/8	2	2-5/8	3/4	1	3/4	1-1/2	1-7/8	1-1/4	1.66	.896	
.636 - .772	3/4	2-1/2	3-1/8	7/8	1-3/16	7/8	1-7/8	2-1/8	1-1/2	1.9	1.1	
.773 - .868		2-1/2	3-5/8	1	1-3/8	1	2	2-3/8	2	2.375	1.503	
.869 - 1.024	7/8 or 1	3	4-1/8	1	1-3/8	1-1/8 - 1-1/4	2-3/8	2-3/4	2	2.375	1.503	
1.025 - 1.27		3-1/2	5-1/8	1-3/8	1-3/4	1-1/4 - 1-3/8	2-3/4	3-1/4	2-1/2	2.875	1.771	
1.30		4	5-1/8	1-3/8	1-15/16	1-3/8 - 1-1/2	2-7/8	3-3/8	2-1/2	2.875	1.771	



* Depending on geometric shape of the hole, the legs of the Big-Grip Dead-End may be inserted into a hole diameter smaller than specified.



ORDERING INFORMATION

For use on: Extra High-Strength, Siemens Martin, High-Strength, Utilities Grade

Catalog Number	Size in	Strand Construction	Actual Diameter in	Units per Carton	Weight per Carton lb	Approx Length in	Color Code	Rated Holding Strength lb	Strand's Rated Breaking Strength
									Percent
BG-2140	1/8	7W	.123	100	11	14	Blue	1,830	100
BG-2142	3/16	7W	.186	100	33	23	Red	3,990	100
BG-2144	1/4	3W 7W	.259 .240	50	25	27	Yellow	6,650	100
BG-2145	9/32	7W	.279	50	29	30	Blue	8,950	100
BG-2146	5/16	3W 7W	.312 .312	50	41	33	Black	11,200	100
BG-2147	3/8	3W 7W	.356 .360	25	33	37	Orange	15,400	100
BG-2148	7/16	7W	.435	25	47	40	Green	20,800	100
BG-2115	1/2	7W or 19W	.495 or .500	20	63	49	Blue	26,900	100
BG-2116	9/16	7W or 19W	.564 or .565	10	48	55	Yellow	35,000	100
BG-2111	5/8	7W or 19W	.621 or .625	10	65	64	Black	7W 42,400 19W 40,200	100 100
BG-1112	3/4	19W	.750	5	54	76	Orange	58,300	100
BG-1113	7/8	19W	.885	5	76	90	Green	79,700	100
BG-1114	1	19W or 37W	1.000 or 1.001	3	76	125	Blue	19W 104,500 37W 92,430	100 90

NOTES:

- 1 Left-hand lay is standard.
- 2 For strand sizes smaller than 1/2", refer to the GUY-GRIP® Dead-End.
- 3 Reference Table 1 earlier in this section for acceptable fitting dimensions.
- 4 Cabled loop design is furnished as standard for all sizes.
- 5 Rated Holding Strengths (RHS) of the Big-Grip Dead-Ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
- 6 C-Coat galvanized steel is standard for all Big-Grip Dead-Ends unless otherwise stated.
- 7 B-Coat galvanized steel is used for the Big-Grip Dead-Ends used on 3/4", 7/8", and 1" strand.
- 8 The Aluminum-Clad Steel version of the 7/8" and 1" Big-Grip Dead-End are still available as **Catalog Number: BGMS7023** (7/8") and **Catalog Number: BGMS7047** (1").
- 9 Consult PLP for sizes and stranding not shown.

ORDERING INFORMATION

For use on: Aluminum-Clad Steel Strand

Catalog Number	Strand Diameter Ranges		Nominal Strand Size	Units per Carton	Weight per Carton	Approx Length	Color Code	Rated Holding Strength	Strand's Rated Breaking Strength					
	in							lb	Percent					
	Minimum	Maximum												
BG-4202	.174	.181	3 # 12	100	22	19	Orange	2,850	100					
BG-4208	.219	.230	4M 3 # 10	50	21	22	Green	4,532	100					
BG-4210	.237	.247	7 # 12 6M	50	22	24	Yellow	6,000	100					
BG-4213	.270	.280	3 # 8 8M	50	24	27	Blue	8,000	100					
BG-4216	.303	.313	3 # 7 10M 5/16 7 # 10	50	32	29	Black	10,000	100					
BG-4220	.343	.355	3 # 12.5M 11/32 7 # 9	50	45	32	Yellow	12,500	100					
BG-4221	.350	.364	14M	50	60	35	Blue	14,000	100					
BG-4223	.380	.394	3 # 5 3/8 7 # 8 16M	50	62	36	Orange	16,000	100					
BG-4225	.410	.426	18M	25	43	39	Black	18,000	100					
BG-4226	.427	.442	7/16 7 # 7	25	44	40	Green	19,060	100					
BG-4227	.443	.459	20M	25	57	41	Yellow	20,000	100					
BG-4168	.475	.494	7 # 6	20	60	42	Blue	22,730	100					
BG-4169	.495	.515	19 # 10	25	62	44	Green	27,190	100					
BG-4170	.516	.536	25M	20	66	47	Red	25,000	100					
BG-4171	.537	.555	7 # 5	20	67	48	Yellow	27,030	100					
BG-4172	.556	.570	-	15	68	49	Blue	33,330						
BG-4173	.571	.591	19 # 9	20	68	50	Orange	34,290	100					
BG-4174	.592	.612	-	16	50	50	Green	34,450						
BG-4175	.613	.635	-	10	49	54	Yellow	45,000						
BG-4176	.636	.661	19 # 8	10	50	56	Black	43,240	100					
BG-4177	.662	.686	19 x .1363"	10	66	59	Blue	47,400	100					
BG-4178	.687	.712	-	10	68	61	Red	54,200						
BG-4179	.713	.741	19 # 7 37 # 10	10	70	63	Black	51,730 50,300	100 95					
BG-4180	.742	.772	19 x .1499"	5	41	71	Yellow	54,300	100					

The following products are for the specific cables listed:

Catalog Number	Actual Diameters	Nominal Strand Size	Units	lb	Approx Length	Color Code	RHS	RBS
BG-4181	.792	19 x .1584"	5	50	80	Blue	59,000	
BG-4183	.801, .810, .827	37 # 9 19 # 6 19 x .1660"	5	69	84	Green	63,430 61,700 63,000	95 100 100
BG-4185	.849, .850, .866	37 x .121" 19 x .170" 19 x .173" 37 x .123"	5	68	87	Black	71,250 66,000 68,500 74,100	95 100 100 95
BG-4186	.899	37 # 8	5	76	91	Yellow	80,000	95
BG-4187	.910 .934	19 # 5 19 x .1868"	5	78	93	Blue	73,350 75,000	100 100
BG-4188	.981	37 x .1404"	4	52	95	Red	90,250	95
BG-4189	1.01	37 # 7	4	85	108	Green	90,600	90
BG-4190	1.10	37 x .1571"	3	84	117	Black	101,700	90
BG-4191	1.134	37 # 6	3	86	120	Yellow	108,200	89
BG-4192	1.27	37 # 5	2	82	151	Red	127,000	89

NOTES:

- 1 Left-hand lay is standard.
- 2 For strand sizes smaller than 7#6, refer to the GUY-GRIP® Dead-End.
- 3 "Nominal Strand Size" indicates the strand which fits within the "Strand Diameter Range".
- 4 Reference Table 1 earlier in this section for acceptable fitting dimensions.
- 5 Cabled loop design is furnished as standard for all sizes.
- 6 Rated Holding Strengths (RHS) of the Big-Grip Dead-Ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
- 7 Consult PLP for sizes and stranding not shown.



ORDERING INFORMATION

For use on: Galvanized Steel Structural Strand (Bridge)

Left-Hand Lay

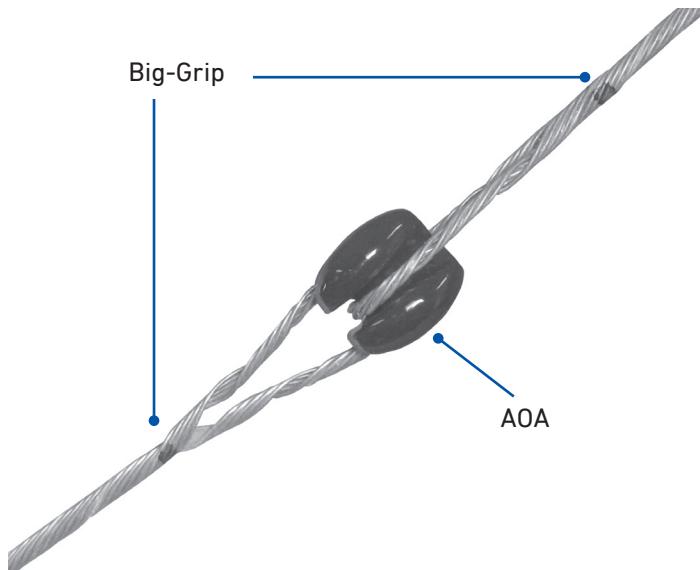
Catalog Number	Big-Grip Material	Strand Construction	Nominal Strand Size	Units per Carton	Weight per Carton	Approx Length	Number of Individual Rods in Each Big-Grip	Color Code	Cable's Published Rated Breaking Strength	Big-Grip Rated Holding Strength
									lb	lb
BGMS6599	C-Coat Galvanized Steel	19W	1/2	10	39	52	5	Orange	30,000	30,000
BGMS7648	C-Coat Galvanized Steel	19W	9/16	10	49	55	5	Yellow	38,000	38,000
BGMS6446	B-Coat Galvanized Steel	19W	5/8	10	77	67	4	Black	48,000	48,000
BGMS1035	C-Coat Galvanized Steel	19W	11/16	5	54	74	5	Blue	58,000	58,000
BGMS3690	Aluminum-Clad Steel Strand	19W	3/4	5	69	84	4	Orange	68,000	68,000
BGMS2759	Aluminum-Clad Steel Strand	19W	13/16	5	73	85	5	Red	80,000	80,000
BGMS7346	Aluminum-Clad Steel Strand	19W	7/8	3	58	94	5	Orange	92,000	92,000
BGMS7656	Aluminum-Clad Steel Strand	19W	15/16	3	74	121	5	Blue	108,000	101,300

Right-Hand Lay

Catalog Number	Big-Grip Material	Strand Construction	Nominal Strand Size	Units per Carton	Weight per Carton	Approx Length	Number of Individual Rods in Each Big-Grip	Color Code	Cable's Published Rated Breaking Strength	Big-Grip Rated Holding Strength
									lb	lb
BGMS0717	C-Coat Galvanized Steel	19W	1/2	10	39	52	5	Orange	30,000	30,000
BGMS6604	C-Coat Galvanized Steel	19W	9/16	10	49	55	5	Blue	38,000	38,000
BGMS2617	B-Coat Galvanized Steel	19W	5/8	10	77	67	4	Black	48,000	48,000
BGMS6654	C-Coat Galvanized Steel	19W	11/16	5	54	74	5	Green	58,000	58,000
BGMS0704	Aluminum-Clad Steel Strand	19W	3/4	5	69	84	4	Black	68,000	68,000
BGMS0721	Aluminum-Clad Steel Strand	19W	13/16	5	73	85	5	Red	80,000	80,000
BGMS5548	Aluminum-Clad Steel Strand	19W	7/8	3	58	94	5	Orange	92,000	92,000
BGMS7260	Aluminum-Clad Steel Strand	19W	15/16	3	74	121	5	Blue	108,000	101,300

ORDERING INFORMATION

For use on: Extra High-Strength, Siemens Martin, High-Strength, Utilities Grade
Used with AOA Guy Strain Insulators



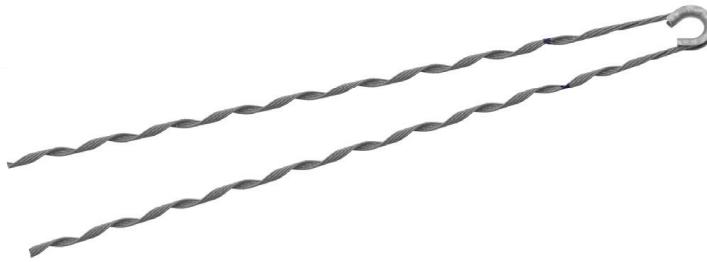
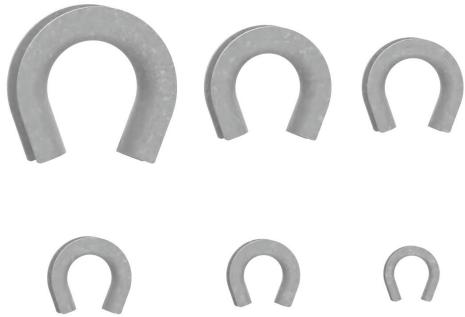
Catalog Number	Strand Rated Breaking Strength	Strand Size	Loop Diameter	Loop Rated Breaking Strength
	lb	in	in	lb
AOA-35			Seat Diameter = 2-7/16"	
BGMS5767	20,800	7/16	2.875	22,600
AOA-50			Seat Diameter = 2-11/16"	
BGMS5767	20,800	7/16	2.875	22,600
BGMS0751	26,900	1/2	3.0	29,900
BGMS4825	35,000	9/16	3.5	40,100
BGMS10417	42,400	5/8	4.0	45,300
AOA-65			Seat Diameter = 3"	
BGMS10754	42,400	5/8	3.0	45,300
BGMS9935	58,300	3/4	4.25	85,300
AOA-85			Seat Diameter = 4-3/16"	
BGMS9932	35,000	9/16	4.25	40,100
BGMS9935	58,300	3/4	4.25	85,300
BGMS7346	79,700	7/8	4.25	106,600
AOA-120			Seat Diameter = 4-5/8"	
BGMS10018	58,300	3/4	4.5	85,300
BGMS9936	79,700	7/8	4.625	106,600
BGMS14219	104,500 (19W)	1	5	106,600
	92,343 (37W)			95,900

NOTE: Left-hand lay is standard.

ACCESSORIES

Heavy-Duty Thimble

Big-Grip Dead-End Heavy-Duty Thimbles are designed specifically to fit inside the loop of Big-Grip Dead-Ends. The heavy-duty thimbles have an enlarged opening to assist with installation over mounting hardware. All thimbles are hot-dip galvanized in accordance with ASTM-A153 to ensure a long life in the field.



Thimble Fitment

Big-Grip Dead-End	Heavy-Duty Thimble	Size	Big-Grip	Thimble
Catalog Number	Catalog Number	in	Carton Quantity	Carton Quantity
BG-2140	HDT-9147	1/8	100	50
BG-2142	HDT-9147	3/16	100	50
BG-2144	HDT-9147	1/4	50	50
BG-2145	HDT-9148	9/32	50	25
BG-2146	HDT-9148	5/16	50	25
BG-2147	HDT-9148	3/8	25	25
BG-2148	HDT-9149	7/16	25	20
BG-2115	HDT-9149	1/2	20	20
BG-2116	HDT-9150	9/16	10	10
BG-2111	HDT-9150	5/8	10	10
BG-1112	HDT-9151	3/4	5	5
BG-1113	HDT-9152	7/8	5	3
BG-1114	HDT-9152	1	3	3

ACCESSORIES

End Sleeves

End Sleeves are designed to help ensure the proper application of GUY-GRIP Dead-Ends and Big-Grip Dead-Ends. They are made from galvanized steel and are compatible with GUY-GRIP Dead-Ends and Big-Grip Dead-Ends designed for EHS strand, bridge strand, and aluminum-clad steel strands.



For use on: all Galvanized Steel GUY-GRIP Dead-Ends and Big-Grip Dead-Ends – B-Coat and C-Coat

End Sleeve	GUY-GRIP Dead-Ends B-Coat	Big-Grip Dead-ends C-Coat	Galvanized Strand Size
Catalog Number	Catalog Number	Catalog Number	in
GC-65303	GDE-1102 GDE-2102	BG-2142	3/16
GC-65136	GDE-1104 GDE-2104	BG-2144	1/4
GC-65128	GDE-1106 GDE-2106	BG-2146	5/16
GC-65264	GDE-1107 GDE-2107	BG-2147	3/8
GC-65265	GDE-1108 GDE-2108	BG-2148	7/16
GC-65266	GDE-1109 GDE-2109	BG-2115	1/2
GC-65267		BG-2116	9/16
GC-65268		BG-2111	5/8
GC-65269		BG-2112	3/4
GC-65270		*BG-MS-7023	7/8
GC-65271		*BG-MS-7047	1

*Manufactured from aluminum-clad steel strand



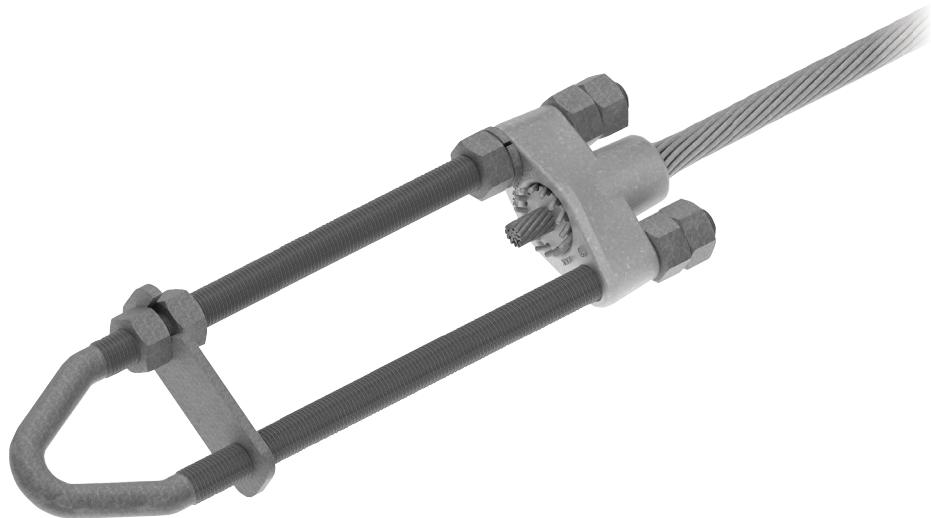
ACCESSORIES

End Sleeves

For use on: Aluminum-Clad Steel Big-Grip Dead-Ends

End Sleeve	Dead-End	Aluminum-Clad Strand Size
Catalog Number	Catalog Number	in
GC-65436	BG-4210	6M, 3 # 9
GC-65128	BG-4216	10M, 7 # 10
GC-65264	BG-4220	12.5, 7 # 9
GC-65265	BG-4221	14M
	BG-4223	16M, 7 # 8
	BG-4225	18M
	BG-4226	7 # 7
GC-65266	BG-4227	20M
	BG-4168	7 # 6
	BG-4169	19 # 10
GC-65267	BG-4170	25M
	BG-4171	7 # 5
	BG-4173	19 # 9
GC-65272	BG-4176	19 # 8
GC-65269	BG-4179	37 # 10 19 # 7
	BG-4181	19x. 1584
GC-65298	BG-4183	37 # 9
	BG-4183	19 # 6
	BG-4183	19x. 1660
	BG-4185	37x. 1213 19x. 1700 19x. 1732 37x. 1237
GC-65270	BG-4186	37 # 8
	BG-4187	19 # 5
	BG-4187	19x. 1868
GC-65271	BG-4188	37x. 1401
	BG-4189	37 # 7

*Manufactured from aluminum-clad steel wire



VARI-GRIP™ DEAD-END

The **VARI-GRIP Dead-End**, designed for transmission, antenna, and communications guyed structures, features a unique housing, wedge, and rod assembly that is designed to provide a holding strength of 100% of the strand's rated breaking strength. The high-strength U-bolt allows for adjusting the guy strand tension without the need for a turnbuckle.

The **VARI-GRIP Gen2 Dead-End** (available for select applications) allows for proper U-bolt support without the need for conformal castings. The new Gen2 design is also lighter while still maintaining the same holding strength features as the standard design.

FEATURES AND BENEFITS

VARI-GRIP Dead-End

- Retaining rods are made from a material that is compatible with the guy strand material (e.g., aluminum-clad steel rods for aluminum-clad steel guy strand)
- Available for strand sizes of .438" - 1.780" (20,800 lb - 295,500 lb)
- Take-up U-bolts in sizes 0" and 18" are available for most strand sizes

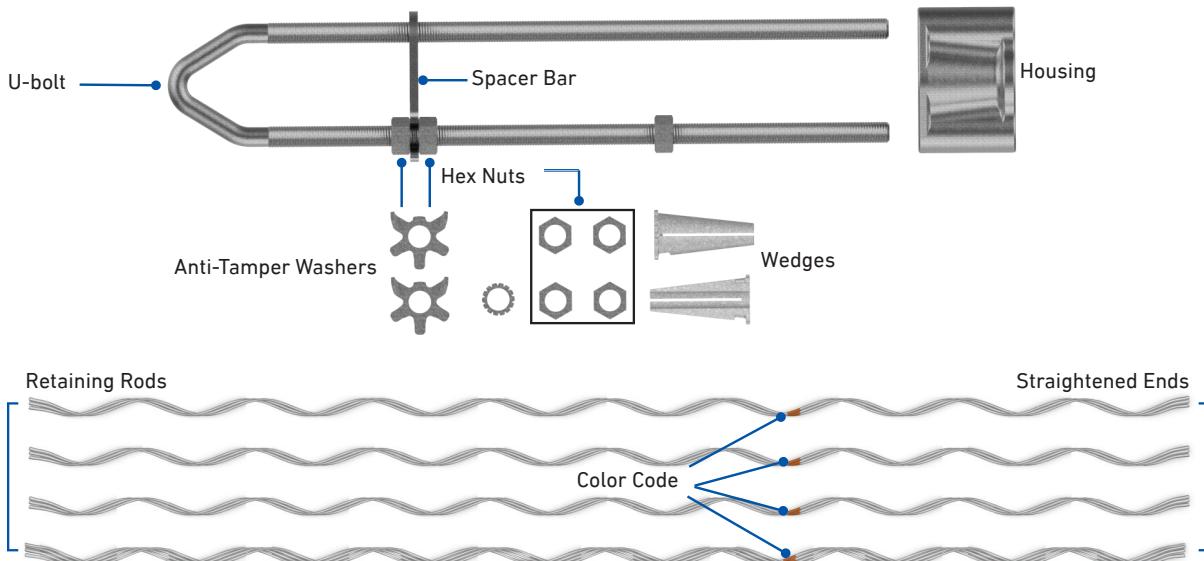
VARI-GRIP Gen2 Dead-End

- Allows for proper U-bolt support without the need for conformal castings
- Lighter design while still maintaining the same holding strength features as the standard design

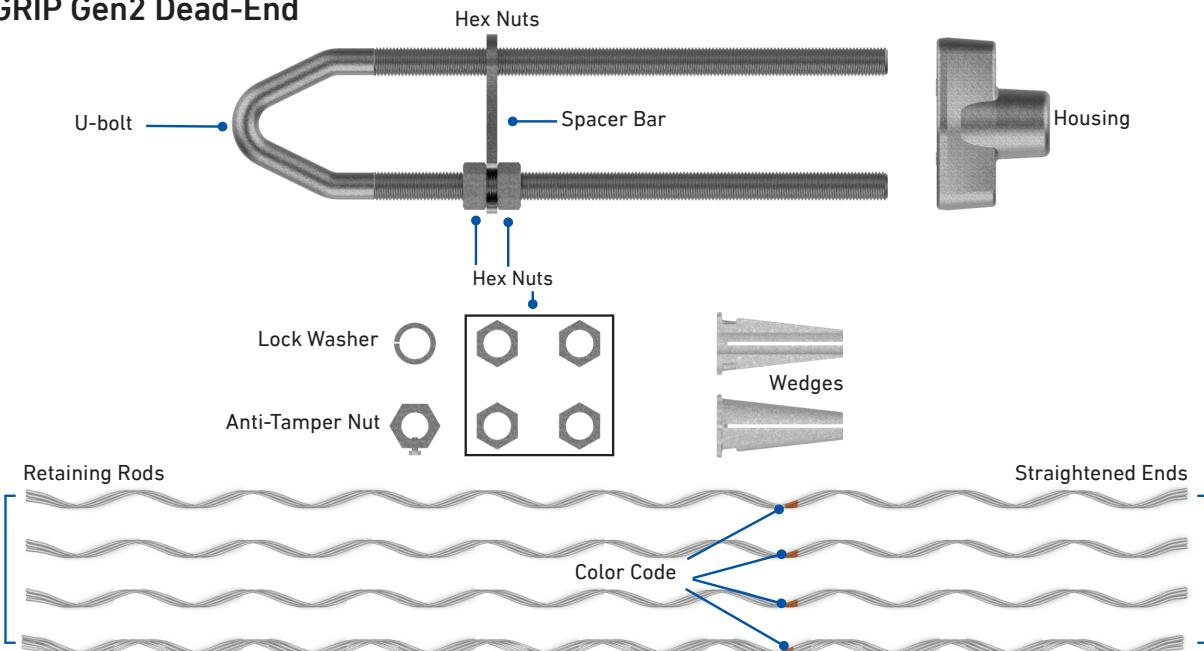
CAUTION: VARI-GRIP Dead-Ends are not acceptable for use on wire rope applications.

COMPONENTS

VARI-GRIP Dead-End



VARI-GRIP Gen2 Dead-End



Component	Material/Description
U-bolt	Galvanized Steel
Housing	VARI-GRIP: Galvanized Ductile Iron, VARI-GRIP Gen2: Galvanized Steel
Wedges	Aluminum
Spacer Bar	Galvanized Steel (supplied with adjustable models only, except for standard VARI-GRIP models with conformal 1-1/2 and 1-3/4 U-bolts which use castings. Gen2 designs do not use conformal castings)
Nuts & Washers	Galvanized Steel
Retaining Rods	Galvanized Steel for Galvanized Steel Strand, Aluminum-covered Steel for Aluminum-covered Steel Strand
Color Code	Identifies strand size



STRAND COMPATIBILITY

The retaining rods are made from a material that is compatible with the guy strand material (e.g., aluminum-clad steel rods for aluminum-clad steel guy strand). Where guying requirements call for strands not shown on the catalog pages, consult PLP.

CAUTION: VARI-GRIP Dead-Ends are not acceptable for use on wire rope applications.

VARI-GRIP Dead-Ends should be used only on the size and strand for which they are designed. The VARI-GRIP Dead-End Retaining Rods MUST have the same lay direction as the strand to which they are applied.

ATTACHMENT FITTINGS

When installing VARI-GRIP Dead-Ends to a pin or other linkage, refer to the table below for minimum and maximum diameters. The minimum dimension indicates the smallest fitting that will ensure support of the U-bolt, while the maximum dimension indicates the largest fitting that will fit through the U-bolt.

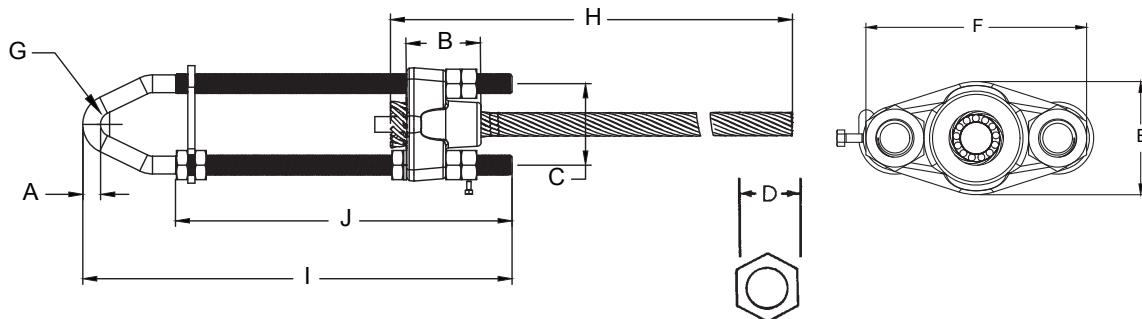
Acceptable Pin Diameters for VARI-GRIP Dead-End

Strand Range	U-bolt Diameter	Minimum	Maximum
in	in	in	in
.438 – .500	5/8	5/8	1-1/8
.546 – .661	3/4	3/4	1-1/8
.744 – .914	1	1	1-1/4
.915 – 1.034	1-1/8	1-1/8	1-3/8
1-1/8 EHS 1"BS 61#7 61#6	1-1/2	4	4
61#5 91#6	1-3/4	4	4-1/2

Acceptable Pin Diameters for VARI-GRIP Gen2 Dead-End

Strand Range	U-bolt Diameter	Minimum	Maximum
in	in	in	in
.744 – .888	1	1	1-1/4
1 – 1.125	1-1/8	1-1/8	1-1/2

SPECIFICATIONS

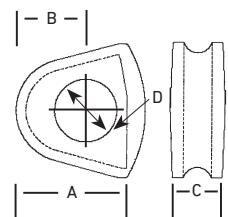


Strand Range	U-bolt Diameter										Design
	A	B	C	D	E	F	G	H	I (0 in)	I (18 in)	
in											
.438 - .500	5/8	3-1/4	3-1/4	1-1/16	3-17/32	4-3/4	15/16	See Rod Length in table on next page	N/A	29-9/16	Std
.546 - .661	3/4	3-1/2	3-9/16	1-1/8	2-3/16	5-3/16	19/32		11-11/16	28-5/16	Std
3/4, 7/8	1	4-1/2	4-1/2	1-5/8	3-1/8	6-1/4	11/16		18-5/8	23-7/8	Gen2
.744 - .914	1	4-1/2	4-3/4	1-1/2	3-5/16	6-11/16	5/8		12-11/16	33-3/16	Std
.915 - 1.034	1-1/8	4-15/16	5-3/8	1-5/8	3-5/8	7-5/8	3/4		14	33-1/2	Std
1, 1-1/8	1-1/8	4-1/3	5-1/2	1-31/32	3-3/4	7-5/8	7/8		26-3/4	27-15/16	Gen2
1.25 - 1.460	1-1/2	7-1/4	7-1/8	2-5/16	5-1/4	10-1/8	2-1/16		20-3/4	39-15/16	Std
1.5 - 1.64	1-3/4	7-1/4	8-3/16	2-5/8	5-9/16	11-11/16	2-1/2		22-1/2	42-3/4	Std
1.78	1-3/4	8-3/4	8-3/16	2-5/8	6-5/8	12-3/8	2-1/2		22-1/2	42-3/4	Std

ACCESSORIES

Conformal Casting

Catalog Number	Strand Sizes	U-bolt Diameter	A	B	C	D
			in			
V1SBG	1-1/8" EHS, 37#6, 61#8, 37#5, 61#7, 1" BS, 1-1/16" BS, 1-1/8" BS, 1-3/16" BS	1-1/2	5	2.75	2.875	2.875
V1TBG	61#6, 1-1/4" EHS, 1-1/4" BS, 1-5/16 BS, 1-3/8" BS, 1-7/16" BS,	1-1/2	5	3	2.875	3.125
V1VBG	61#5, 1-1/2" BS	1-3/4	5.844	3.75	3.375	3.625
V1WBG	91#6	1-3/4	5.844	4	3.375	3.875



NOTE: To be used with Standard VARI-GRIP Dead-End only. Gen2 VARI-GRIP Dead-Ends do not require Conformal Castings. (Supplied with Dead-Ends using 1-1/2" and 1-3/4" U-bolts to ensure proper support. Be sure that the VARI-GRIP Dead-End selected matches the material, lay direction and strength of the strand being used.



ORDERING INFORMATION

Aluminum-Clad Steel Strand (Left-Hand Lay)

Catalog Number	Catalog Number	Nominal Strand Range		Nominal Strand Size	Construction	U-bolt Diameter	Rods per Set	Rod Length	Subset	Color Code	Rated Holding Strength	Design
		Minimum	Maximum									
0" Take-Up	18" Take-Up	in	in	in							lb	
N/A	VG-18-3000	0.546	0.546	N/A	7#5	3/4	12	26	3-3-3-3	Yellow	27,030	Std
N/A	VG-18-3100	0.572	0.572	N/A	19#9	3/4	11	28	3-4-4	Orange	34,290	Std
VG-0-3101	VG-18-3101	0.636	0.661	N/A	19#8	1	11	32	3-4-4	Black	42,240	Std
VG-0-3102	VG-18-3102	0.713	0.741	N/A	19#7 37#10	1	12	35	3-3-3-3	Yellow	51,730 52,950	Std
VG-0-3103BR	VG-18-3103BR	0.800	0.810	N/A	19#6 37#9	1	12	46	3-3-3-3	Green	61,700 66,770	Gen2
VG-0-3104BR	VG-18-3104BR	0.893	0.903	N/A	37#8	1	12	54	3-3-3-3	Yellow	84,200	Gen2
VG-0-3105BR	VG-18-3105BR	0.904	0.914	N/A	19#5	1	12	54	3-3-3-3	Yellow	73,350	Gen2
VG-0-3106BR	VG-18-3106BR	0.911	0.921	N/A	61#10	1-1/8	13	54	3-3-3-4	Yellow	87,290	Gen2
VG-0-3107BR	VG-18-3107BR	1.000	1.010	N/A	37#7	1-1/8	14	58	3-3-4-4	Green	100,700	Gen2
VG-0-3108BR	VG-18-3108BR	1.024	1.034	N/A	61#9	1-1/8	14	76	3-3-4-4	Purple	110,100	Gen2
VG-0-3109BR	VG-18-3109BR	1.130	1.130	N/A	37#6	1-1/8	14	86	3-3-4-4	Yellow	120,200	Gen2
VG-0-3110	VG-18-3110	1.160	1.160	N/A	61#8	1-1/2	14	98	3-3-4-4	Orange	138,800	Std
VG-0-3111	VG-18-3111	1.270	1.270	N/A	37#5	1-1/2	16	105	4-4-4-4	Red	142,800	Std
VG-61#7-0	VG-61#7-18	1.300	1.300	N/A	61#7	1-1/2	16	106	4-4-4-4	Blue	166,100	Std
VG-61#6-0	VG-61#6-18	1.460	1.460	N/A	61#6	1-1/2	18	116	3-3-4-4-4	Green	198,100	Std
VG-61#5-0	VG-61#5-18	1.640	1.640	N/A	61#5	1-3/4	20	129	4-4-4-4-4	Orange	235,500	Std
VG-91#6-0	VG-91#6-18	1.780	1.780	N/A	91#6	1-3/4	18	165	3-3-4-4-4	Red	295,500	Std

Galvanized Steel Extra High-Strength Strand (Left-Hand Lay)

Catalog Number	Catalog Number	Nominal Strand Range		Nominal Strand Size	Construction	U-bolt Diameter	Rods per Set	Rod Length	Subset	Color Code	Rated Holding Strength	Design
		Minimum	Maximum									
0" Take-Up	18" Take-Up	in	in	in							lb	
N/A	VG-18-2101	0.459	0.500	1/2	7W or 19W	5/8	12	30	3-3-3-3	Blue	26,900	Std
VG-0-2108	VG-18-2108	0.559	0.563	9/16	7W or 19W	3/4	11	28	3-4-4	Yellow	35,000	Std
VG-0-2102	VG-18-2102	0.621	0.625	5/8	7W or 19W	3/4	11	31	3-4-4	Black	42,400	Std
VG-0-2103BR	VG-18-2103BR	0.744	0.754	3/4	1x19W	1	12	44	3-3-3-3	Orange	58,300	Gen2
VG-0-2104BR	VG-18-2104BR	0.878	0.888	7/8	1x19W	1	13	58	3-3-3-4	Green	79,700	Gen2
VG-0-2105BR	VG-18-2105BR	1.000	1.010	1	19W or 37W	1-1/8	14	66	3-3-4-4	Blue	104,500	Gen2
VG-0-2106BR	VG-18-2106BR	1.125	1.125	1-1/8	37W	1-1/8	14	95	3-3-4-4	Yellow	130,800	Gen2
VG-0-2107	VG-18-2107	1.250	1.250	1-1/4	37W	1-1/2	16	103	4-4-4-4	Red	162,200	Std

ORDERING INFORMATION

Galvanized Steel Bridge Strand

Left-Hand Lay

Catalog Number	Catalog Number	Nominal Strand Range		Nominal Strand Size	Construction	U-bolt Diameter	Rods per Set	Rod Length	Subset	Color Code	Rated Holding Strength	Design
		Minimum	Maximum									
0" Take-Up	18" Take-Up	in	in	in							lb	
VG-0-4104BR	VG-18-4104BR	0.813	0.813	13/16	1 X 19	1	12	54	3-3-3-3	Red	80,000	Gen2
VG-0-2104BR	VG-18-2104BR	0.875	0.875	7/8	1 X 19	1	12	58	3-3-3-4	Green	92,000	Gen2
VG-0-4106BR	VG-18-4106BR	0.938	0.938	15/16	19W, 31W or 37W	1-1/8	14	63	3-3-4-4	Black	108,000	Gen2
VG-0-2105BR	VG-18-2105BR	1.000	1.000	1.000	19W or 31W	1-1/8	14	66	3-3-4-4	Blue	122,000	Gen2
VG-0-4108BR	VG-18-4108BR	1.063	1.063	1-1/16	1 X 31	1-1/8	14	91	3-3-4-4	Green	138,000	Gen2
VG-0-2106BR	VG-18-2106BR	1.125	1.125	1-1/8	37W	1-1/8	14	95	3-3-4-4	Yellow	156,000	Gen2
VG-0-4109	VG-18-4109	1.187	1.187	1-3/16	1 X 37	1-1/2	15	99	3-4-4-4	Orange	172,000	Std
VG-0-2107	VG-18-2107	1.250	1.250	1-1/4	1 X 43	1-1/2	16	103	4-4-4-4	Red	192,000	Std
VG-0-4110	VG-18-4110	1.313	1.313	1-5/16	1 X 43	1-1/2	17	107	3-3-3-3-3-2	Black	212,000	Std
VG-0-4111	VG-18-4111	1.375	1.375	1-3/8	1 X 43	1-1/2	17	110	3-3-3-3-3-2	Orange	232,000	Std
VG-0-4112	VG-18-4112	1.438	1.438	1-7/16	1 X 43	1-1/2	18	114	3-3-3-3-3-3	Green	252,000	Std
VG-0-4113	VG-18-4113	1.500	1.500	1-1/2	1 X 43	1-3/4	16	119	3-3-3-3-2-2	Pink	276,000	Std

Right-Hand Lay

Catalog Number	Catalog Number	Nominal Strand Range		Nominal Strand Size	Construction	U-bolt Diameter	Rods per Set	Rod Length	Subset	Color Code	Rated Holding Strength	Design
		Minimum	Maximum									
0" Take-Up	18" Take-Up	in	in	in							lb	
VG-0-5104BR	VG-18-5104BR	0.813	0.813	13/16	1 X 19	1	12	54	3-3-3-3	Red	80,000	Gen2
VG-0-5105BR	VG-18-5105BR	0.875	0.875	7/8	1 X 19	1-1/8	13	58	3-3-3-4	Green	92,000	Gen2
VG-0-5106BR	VG-18-5106BR	0.938	0.938	15/16	19W, 31W or 37W	1-1/8	14	63	3-3-4-4	Black	108,000	Gen2
VG-0-5107BR	VG-18-5107BR	1.000	1.000	1	19W or 31W	1-1/2	14	66	3-3-4-4	Blue	122,000	Gen2
VG-0-5108BR	VG-18-5108BR	1.063	1.063	1-1/16	1 X 31	1-1/8	14	91	3-3-4-4	Green	138,000	Gen2
VG-0-5109BR	VG-18-5109BR	1.125	1.125	1-1/8	1 X 37	1-1/8	14	95	3-3-4-4	Yellow	156,000	Gen2
VG-0-5110	VG-18-5110	1.187	1.187	1-3/16	1 X 37	1-1/2	15	99	3-4-4-4	Orange	172,000	Std
VG-0-5111	VG-18-5111	1.250	1.250	1-1/4	1 X 43	1-1/2	16	103	4-4-4-4	Red	192,000	Std
VG-0-5112	VG-18-5112	1.313	1.313	1-5/16	1 X 43	1-1/2	17	107	3-3-3-3-3-2	Black	212,000	Std
VG-0-5113	VG-18-5113	1.375	1.375	1-3/8	1 X 43	1-1/2	17	110	3-3-3-3-3-2	Orange	232,000	Std
VG-0-5114	VG-18-5114	1.438	1.438	1-7/16	1 X 43	1-1/2	18	114	3-3-3-3-3-3	Green	252,000	Std
VG-0-5115	VG-18-5115	1.500	1.500	1-1/2	1 X 43	1-3/4	16	1190	3-3-3-3-2-2	Pink	276,000	Std



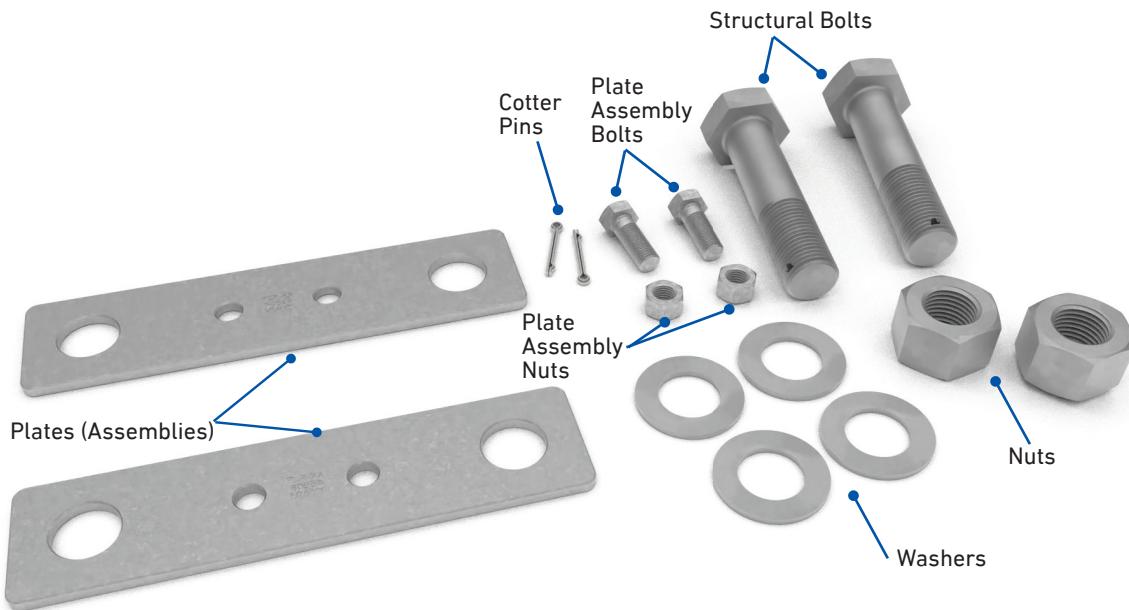
VARI-GRIP™ DEAD-END LINK PLATES

The **VARI-GRIP Dead-End Link Plates** are intended to be an alternate option to anchor shackles and can be used on transmission, tower and antenna, communications, and other types of guyed structures that require the use of galvanized steel strand. The included structural bolts allow for adjustment to accommodate conformal castings and custom anchor plates. VARI-GRIP Link Plates are designed to work with all types of VARI-GRIP Dead-Ends for multiple guy strand constructions.

FEATURES AND BENEFITS

- Parts are constructed of hot-dipped galvanized steel for corrosion resistance
- Available for strand sizes of .438" - 1.780" (20,800 lb - 295,500 lb)
- Take-up U-bolts in sizes 0" and 18" are available for most strand sizes

COMPONENTS



Component	Material/Description
Plates (Assemblies)	Galvanized steel
Structural Bolts	Galvanized steel
Washers	Galvanized steel
Nuts	Galvanized steel
Cotter Pins	Stainless steel
Plate Assembly Bolts	Galvanized steel bolt for mending together assembly plates when more than one plate is necessary
Plate Assembly Nuts	Galvanized steel nuts to be used with plate assembly bolts

NOTE: Smaller bolts in the plate assemblies are not to be removed under any circumstances.



ORDERING INFORMATION

Generation 1

	Catalog Number		
	VLP-0600	VLP-0606	VLP-0607
Image			
Max Strength Rating	42,400 lb	192,000 lb	252,000 lb
Strand Size	EHS 7/16" EHS 1/2" EHS 9/16" EHS 5/8"	BS 1-3/16" EHS 1-1/4" BS 1-1/4"	BS 1-5/16" BS 1-3/8" BS 1-7/16"
Conformal Casting	N/A	00060169	00060169
U-bolt Size	5/8" - 3/4"	1-1/2"	1-3/4"
Through Hole Diameter	1"	2-3/8"	2-3/8"
Structural Bolt Diameter	7/8"	2"	2-1/4"

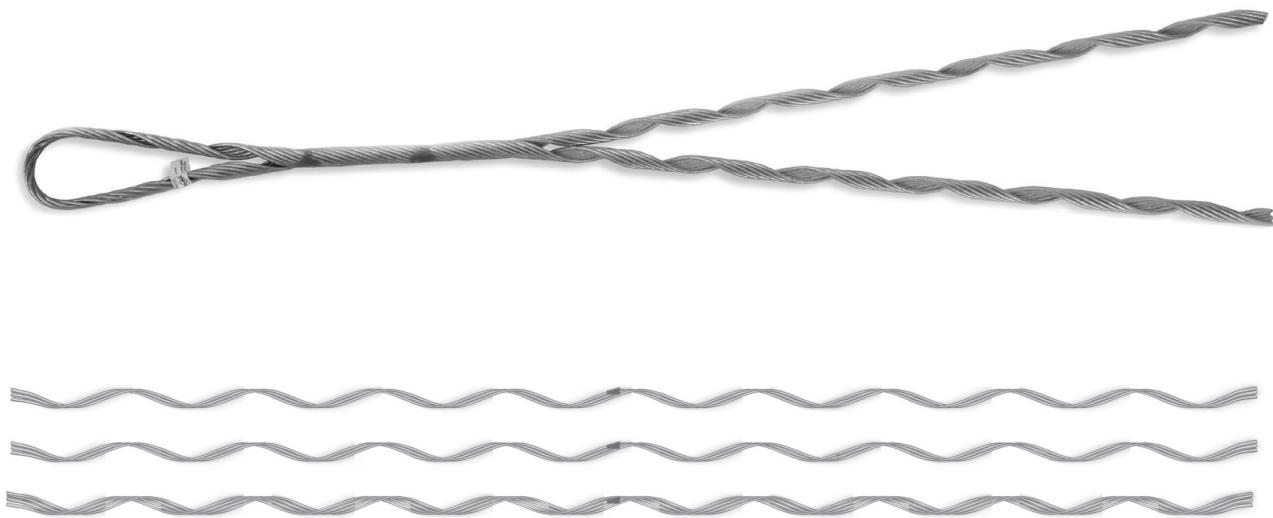
ORDERING INFORMATION

Generation 1

	Catalog Number		
	VLP-0601	VLP-0603	VLP-0604
Image			
Max Strength Rating	79,000	104,000	156,000
Strand Size	EHS 3/4" BS 3/4" EHS 7/8"	BS 7/8" EHS 1"	BS 1" EHS 1-1/8" BS 1-1/8"
Conformal Casting	N/A	N/A	N/A
U-bolt Size	1"	1-1/8"	1-1/8"
Through Hole Diameter	1-1/2"	1-1/2"	1-7/8"
Structural Bolt Diameter	1-1/4"	1-3/8"	1-1/2"

Galvanized Steel Bridge Strand (Left Hand Lay)

Catalog Number 0" Take-Up	Catalog Number 18" Take-Up	Nominal Strand Range		Nominal Strand Size	Construction	U-Bolt Diameter	Rods per Set	Rod Length	Subset	Color Code	Rated Holding Strength
		Min.	Max.								
VG-0-2103	VG-18-2103	0.750	0.750	3/4"	1 x 19	1"	12	44"	3-3-3-3	Orange	68,000#
VG-0-4104	VG-18-4104	0.813	0.813	13/16"	1 x 19	1"	12	54"	3-3-3-3	Red	80,000#
VG-0-4105	VG-18-4105	0.875	0.875	7/8"	1 x 19	1-1/8"	13	58"	3-3-3-4	Green	92,000#
VG-0-4106	VG-18-4106	0.938	0.938	15/16"	1 x 31 or 37W	1-1/8"	14	63"	3-3-4-4	Black	108,000#
VG-0-4107	VG-18-4107	1.000	1.000	1"	1 x 31	1-1/2"	14	66"	3-3-4-4	Blue	122,000#
VG-0-4108	VG-18-4108	1.063	1.063	1-1/16"	1 x 31	1-1/2"	14	91"	3-3-4-4	Green	138,000#
VG-0-2106	VG-18-2106	1.125	1.125	1-1/8"	1 x 37	1-1/2"	14	95"	3-3-4-4	Yellow	156,000#
VG-0-4109	VG-18-4109	1.187	1.187	1-3/16"	1 x 37	1-1/2"	15	99"	3-4-4-4	Orange	172,000#
VG-0-2107	VG-18-2107	1.250	1.250	1-1/4"	1 x 43	1-1/2"	16	103"	4-4-4-4	Red	192,000#
VG-0-4110	VG-18-4110	1.313	1.313	1-5/16"	1 x 43	1-1/2"	17	107"	3-3-3-3-3-2	Black	212,000#
VG-0-4111	VG-18-4111	1.375	1.375	1-3/8"	1 x 43	1-1/2"	17	110"	3-3-3-3-3-2	Orange	232,000#
VG-0-4112	VG-18-4112	1.438	1.438	1-7/16"	1 x 43	1-1/2"	18	114"	3-3-3-3-3-3	Green	252,000#
VG-0-4113	VG-18-4113	1.500	1.500	1-1/2"	1 x 43	1-3/4"	16	119"	3-3-3-3-3-2	Pink	276,000#



GLAS-GRIP® DEAD-END AND GLAS-SPlice

The **GLAS-GRIP Dead-End** and **GLAS-SPlice** are designed specifically for fiberglass rod. They are intended to be used on transmission, antenna, communications, and other types of guyed structures that require the use of insulated down guys.

FEATURES AND BENEFITS

- Glas-Grip Dead-Ends are designed to develop the published rated strength of the fiberglass rod on which they will be applied
- Use Glas-Grip Dead-Ends and Glas-Splices to make custom-length insulated guy wires
- Glas-Grips are not interchangeable with dead-ends that are designed for fiberglass strand or metal guy strand

ORDERING INFORMATION

GLAS-GRIP Dead-End

Catalog Number	Fiberglass Rod		Units per Carton	Weight per Carton	Length	Color Code
	Size Solid	Mean Diameter				
	in	in		lb	in	
DER-2168	5/16	.337	50	64	34	Orange
DER-2169	3/8	.400	25	51	40	Yellow
DER-2171	1/2	.525	10	44	53	Green
DER-2173	5/8	.670	5	40	68	Black

NOTES:

1. Recommended for use with fiberglass rod having the diameter as shown in the chart above.
2. Refer to the Application Procedure, picture number 1 for recommended protection of the Fiberglass Rod when using a come-along.
3. GLAS-GRIP Dead-End is not interchangeable with Dead-Ends that are designed for Fiberglass Strand or metal guy strand.

GLAS-SPLICER

Catalog Number	Fiberglass Rod		Units per Carton	Weight per Carton	Length	Color Code
	Size Solid	Mean Diameter				
	in	in		lb	in	
GSR-2130	1/4	.290	50	53	37	Red
GSR-2131	5/16	.337	50	54	50	Orange
GSR-2132	3/8	.400	25	68	60	Yellow
GSR-2134	1/2	.525	10	73	79	Green
GSR-2136	5/8	.670	5	66	101	Black



INSULIGN[®] GUY STRAIN INSULATOR

The **INSULIGN Guy Strain Insulator** series is intended for use with down guys or pole-to-pole guys on overhead lines. The insulative fiberglass rod electrically isolates the guy strand and provides electrical clearance for maintenance crews and the public during normal operation. Guy strain insulators provide a greater insulative distance which minimizes potential and severity of dry and wet flashover, offering a more durable solution compared to conventional porcelain insulators.

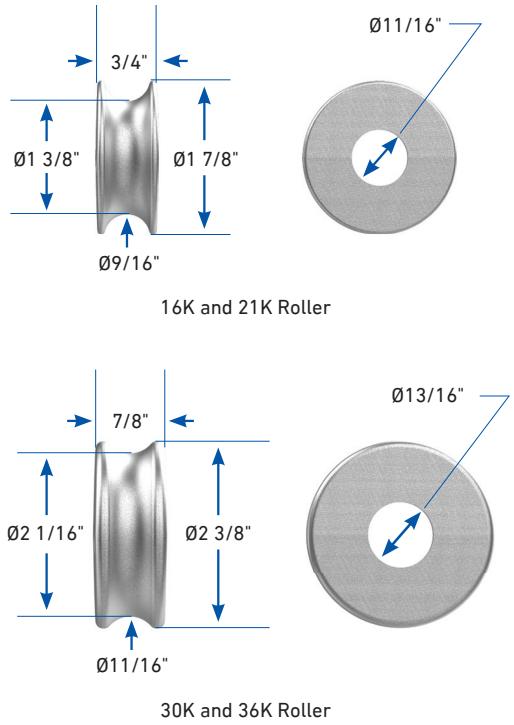
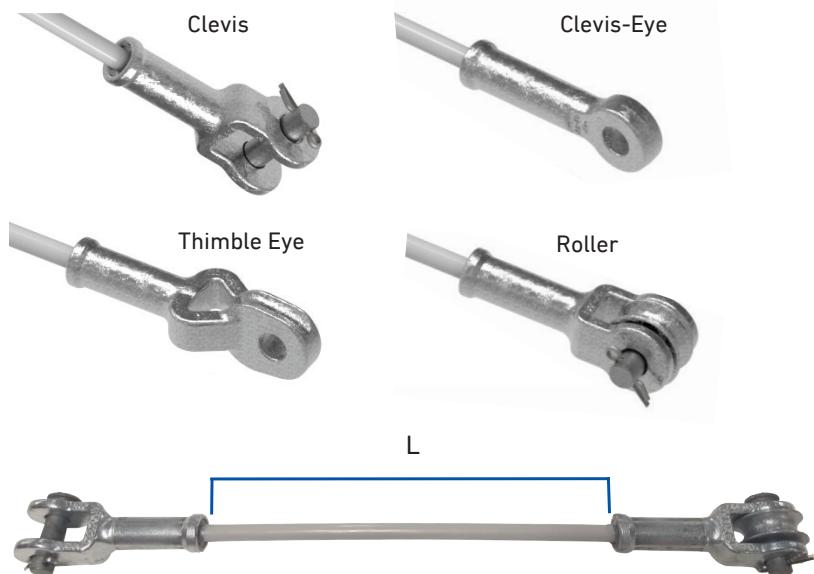
FEATURES AND BENEFITS

- Fiberglass coating rod that allows for superior performance when exposed to UV conditions
- Crimped end fittings are designed to ensure consistent, high-performance holding strength
- Manufactured, tested, and verified to meet PLP's high-quality standards
- Hardware is hot-dipped galvanized per ASTM A153 or ASTM A123

SPECIFICATIONS

Rated Strength (lb): 16K, 21K, 30K, and 36K

INSULIGN® Guy Strain Insulator - Fiberglass includes two cable storage brackets and two pairs of hanger brackets. Cable straps and cable protection kits are optional.



ORDERING INSTRUCTIONS

INSULIGN Guy Strain Insulator

GSF XX - XX XX
 (Section 1) (Section 2) (Section 3) (Section 4)

Section 1	Section 2		Section 3		Section 4	
GSF Standard Designation for Guy Strains - Fiberglass	Load Rating		Insulative Length "L" of Fiberglass		Fitting Combinations	
	16	16K	12	12"	CC	Clevis/Clevis
	21	21K	18	18"	CCR	CCR Clevis/Clevis with Roller
	30	30K	24	24"	RR	Clevis/Clevis with 2 Rollers
	36	36K	36	36"	CTE	Clevis/ Thimble-Eye
			42	42"	CTR	Clevis/ Thimble-Eye with Roller
			54	54"	CE	Clevis Eye
			78	78"		
			96	96"		
			120	120"		
			144	144"		

Custom lengths available,
contact PLP for more
information.



SPECIFICATIONS – CLEVIS - EYE

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number		Rod Length	Pin to Pin
16,000 lb	21,000 lb	in	in
GSF16-12CE	GSF21-12CE	12	20-5/8
GSF16-18CE	GSF21-18CE	18	26-5/8
GSF16-24CE	GSF21-24CE	24	32-5/8
GSF16-36CE	GSF21-36CE	36	44-5/8
GSF16-42CE	GSF21-42CE	42	50-5/8
GSF16-54CE	GSF21-54CE	54	62-5/8
GSF16-78CE	GSF21-78CE	78	86-5/8
GSF16-96CE	GSF21-96CE	96	104-5/8
GSF16-120CE	GSF21-120CE	120	128-5/8
GSF16-144CE	GSF21-144CCE	144	152-5/8

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

SPECIFICATIONS – CLEVIS - CLEVIS

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number		Rod Length	Pin to Pin
16,000 lb	21,000 lb	in	in
GSF16-12CC	GSF21-12CC	12	20-3/4
GSF16-18CC	GSF21-18CC	18	26-3/4
GSF16-24CC	GSF21-24CC	24	32-3/4
GSF16-36CC	GSF21-36CC	36	44-3/4
GSF16-42CC	GSF21-42CC	42	50-3/4
GSF16-54CC	GSF21-54CC	54	62-3/4
GSF16-78CC	GSF21-78CC	78	86-3/4
GSF16-96CC	GSF21-96CC	96	104-3/4
GSF16-120CC	GSF21-120CC	120	128-3/4
GSF16-144CC	GSF21-144CC	144	152-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

Rated Strength (lb): 30K, 36K Minimum

Minimum Ultimate Strength Rating: 30,000 lb and 36,000 lb			
Catalog Number		Rod Length	Pin to Pin
30,000 lb	36,000 lb	in	in
GSF30-12CC	GSF36-12CC	12	25-3/4
GSF30-18CC	GSF36-18CC	18	31-3/4
GSF30-24CC	GSF36-24CC	24	37-3/4
GSF30-36CC	GSF36-36CC	36	49-3/4
GSF30-42CC	GSF36-42CC	42	55-3/4
GSF30-54CC	GSF36-54CC	54	67-3/4
GSF30-78CC	GSF36-78CC	78	91-3/4
GSF30-96CC	GSF36-96CC	96	109-3/4
GSF30-120CC	GSF36-120CC	120	133-3/4
GSF30-144CC	GSF36-144CC	144	157-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 3/4"



SPECIFICATIONS – CLEVIS - CLEVIS WITH ROLLER

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number		Rod Length	Pin to Pin
16,000 lb	21,000 lb	in	in
GSF16-12CCR	GSF21-12CCR	12	20-3/4
GSF16-18CCR	GSF21-18CCR	18	26-3/4
GSF16-24CCR	GSF21-24CCR	24	32-3/4
GSF16-36CCR	GSF21-36CCR	36	44-3/4
GSF16-42CCR	GSF21-42CCR	42	50-3/4
GSF16-54CCR	GSF21-54CCR	54	62-3/4
GSF16-78CCR	GSF21-78CCR	78	86-3/4
GSF16-96CCR	GSF21-96CCR	96	104-3/4
GSF16-120CCR	GSF21-120CCR	120	128-3/4
GSF16-144CCR	GSF21-144CCR	144	152-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

Rated Strength (lb): 30K, 36K Minimum

Minimum Ultimate Strength Rating: 30,000 lb and 36,000 lb			
Catalog Number		Rod Length	Pin to Pin
30,000 lb	36,000 lb	in	in
GSF30-12CCR	GSF36-12CCR	12	25-3/4
GSF30-18CCR	GSF36-18CCR	18	31-3/4
GSF30-24CCR	GSF36-24CCR	24	37-3/4
GSF30-36CCR	GSF36-36CCR	36	49-3/4
GSF30-42CCR	GSF36-42CCR	42	55-3/4
GSF30-54CCR	GSF36-54CCR	54	67-3/4
GSF30-78CCR	GSF36-78CCR	78	91-3/4
GSF30-96CCR	GSF36-96CCR	96	109-3/4
GSF30-120CCR	GSF36-120CCR	120	133-3/4
GSF30-144CCR	GSF36-144CCR	144	157-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 3/4"

SPECIFICATIONS – CLEVIS - CLEVIS WITH TWO ROLLERS

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number		Rod Length	Pin to Pin
16,000 lb	21,000 lb	in	in
GSF16-12RR	GSF21-12RR	12	20-3/4
GSF16-18RR	GSF21-18RR	18	26-3/4
GSF16-24RR	GSF21-24RR	24	32-3/4
GSF16-36RR	GSF21-36RR	36	44-3/4
GSF16-42RR	GSF21-42RR	42	50-3/4
GSF16-54RR	GSF21-54RR	54	62-3/4
GSF16-78RR	GSF21-78RR	78	86-3/4
GSF16-96RR	GSF21-96RR	96	104-3/4
GSF16-120RR	GSF21-120RR	120	128-3/4
GSF16-144RR	GSF21-144RR	144	152-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

Rated Strength (lb): 30K, 36K Minimum

Minimum Ultimate Strength Rating: 30,000 lb and 36,000 lb			
Catalog Number		Rod Length	Pin to Pin
30,000 lb	36,000 lb	in	in
GSF30-12RR	GSF36-12RR	12	25-3/4
GSF30-18RR	GSF36-18RR	18	31-3/4
GSF30-24RR	GSF36-24RR	24	37-3/4
GSF30-36RR	GSF36-36RR	36	49-3/4
GSF30-42RR	GSF36-42RR	42	55-3/4
GSF30-54RR	GSF36-54RR	54	67-3/4
GSF30-78RR	GSF36-78RR	78	91-3/4
GSF30-96RR	GSF36-96RR	96	109-3/4
GSF30-120RR	GSF36-120RR	120	133-3/4
GSF30-144RR	GSF36-144RR	144	157-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 3/4"



SPECIFICATIONS – THIMBLE EYE

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number		Rod Length	Pin to Pin
16,000 lb	21,000 lb	in	in
GSF16-12CTE	GSF21-12CTE	12	21-1/2
GSF16-18CTE	GSF21-18CTE	18	27-1/2
GSF16-24CTE	GSF21-24CTE	24	33-1/2
GSF16-36CTE	GSF21-36CTE	36	45-1/2
GSF16-42CTE	GSF21-42CTE	42	51-1/2
GSF16-54CTE	GSF21-54CTE	54	63-1/2
GSF16-78CTE	GSF21-78CTE	78	87-1/2
GSF16-96CTE	GSF21-96CTE	96	105-1/2
GSF16-120CTE	GSF21-120CTE	120	129-1/2
GSF16-144CTE	GSF21-144CTE	144	153-1/2

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

Rated Strength (lb): 30K, 36K Minimum

Minimum Ultimate Strength Rating: 30,000 lb and 36,000 lb			
Catalog Number		Rod Length	Pin to Pin
30,000 lb	36,000 lb	in	in
GSF30-12CTE	GSF36-12CTE	12	26-3/4
GSF30-18CTE	GSF36-18CTE	18	32-3/4
GSF30-24CTE	GSF36-24CTE	24	38-3/4
GSF30-36CTE	GSF36-36CTE	36	50-3/4
GSF30-42CTE	GSF36-42CTE	42	56-3/4
GSF30-54CTE	GSF36-54CTE	54	68-3/4
GSF30-78CTE	GSF36-78CTE	78	92-3/4
GSF30-96CTE	GSF36-96CTE	96	110-3/4
GSF30-120CTE	GSF36-120CTE	120	134-3/4
GSF30-144CTE	GSF36-144CTE	144	158-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 3/4"

SPECIFICATIONS – THIMBLE EYE WITH ROLLER

Rated Strength (lb): 16K, 21K Minimum

Minimum Ultimate Strength Rating: 16,000 lb and 21,000 lb			
Catalog Number	Rod Length	Pin to Pin	
16,000 lb	21,000 lb	in	in
GSF16-12CTR	GSF21-12CTR	12	21-1/2
GSF16-18CTR	GSF21-18CTR	18	27-1/2
GSF16-24CTR	GSF21-24CTR	24	33-1/2
GSF16-36CTR	GSF21-36CTR	36	45-1/2
GSF16-42CTR	GSF21-42CTR	42	51-1/2
GSF16-54CTR	GSF21-54CTR	54	63-1/2
GSF16-78CTR	GSF21-78CTR	78	87-1/2
GSF16-96CTR	GSF21-96CTR	96	105-1/2
GSF16-120CTR	GSF21-120CTR	120	129-1/2
GSF16-144CTR	GSF21-144CTR	144	153-1/2

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 5/8"

Rated Strength (lb): 30K, 36K Minimum

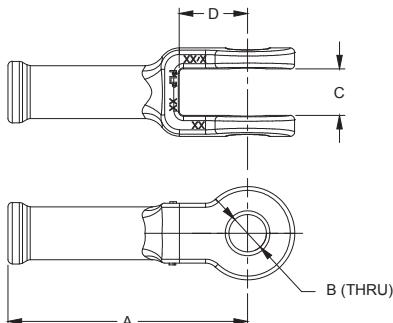
Minimum Ultimate Strength Rating: 30,000 lb and 36,000 lb			
Catalog Number	Rod Length	Pin to Pin	
30,000 lb	36,000 lb	in	in
GSF30-12CTR	GSF36-12CTR	12	25-3/4
GSF30-18CTR	GSF36-18CTR	18	31-3/4
GSF30-24CTR	GSF36-24CTR	24	37-3/4
GSF30-36CTR	GSF36-36CTR	36	49-3/4
GSF30-42CTR	GSF36-42CTR	42	55-3/4
GSF30-54CTR	GSF36-54CTR	54	67-3/4
GSF30-78CTR	GSF36-78CTR	78	91-3/4
GSF30-96CTR	GSF36-96CTR	96	109-3/4
GSF30-120CTR	GSF36-120CTR	120	134-3/4
GSF30-144CTR	GSF36-144CTR	144	157-3/4

NOTES:

- 1 Custom lengths available; please contact PLP for more information.
- 2 Quote drawing is available upon request.
- 3 Clevis Pin Diameter: 3/4"

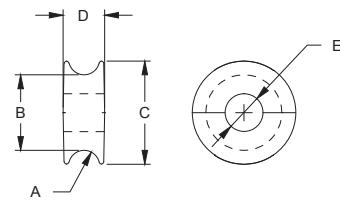
SPECIFICATIONS – FITTINGS

Rated Strength (lb): 16K, 21K Minimum



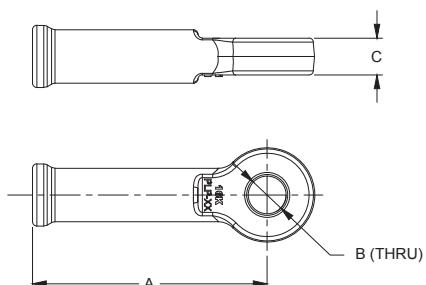
CLEVIS

Clevis			
A	B	C	D
in			
16K	4.38	0.69	0.970
21K	4.53	0.69	0.970
			1.40



ROLLER

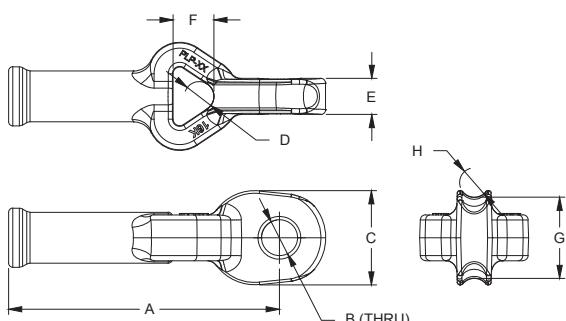
Catalog # R1



EYE

Eye		
A	B	C
in		
16K	4.25	0.69
21K	4.30	0.69
		0.67
		0.75

Roller				
A	B	C	D	E
in				
16K	0.563	1.38	1.88	0.75
21K	0.563	1.38	1.88	0.75
				0.69



THIMBLE-EYE

Thimble-Eye

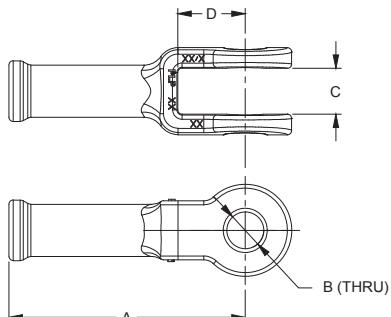
A	B	C	D	E	F	G	H
in							
16K	5.13	0.69	1.813	0.563	0.688	0.75	1.56
21K	5.15	0.69	1.813	0.563	0.660	0.80	1.56
							0.563

Clevis Pin	
A	B
in	
16K	0.625
21K	0.625
	2.19

CLEVIS PIN

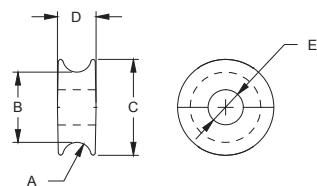
SPECIFICATIONS – FITTINGS

Rated Strength (lb): 30K, 36K Minimum

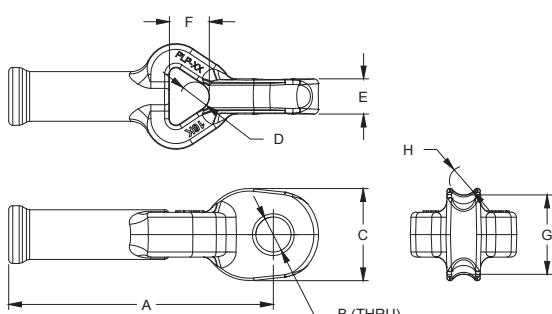


CLEVIS

Clevis				
A	B	C	D	
in				
30K	6.9	0.820	1.00	2.00
36K	6.9	0.820	1.00	2.00

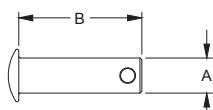


ROLLER
Catalog # R2



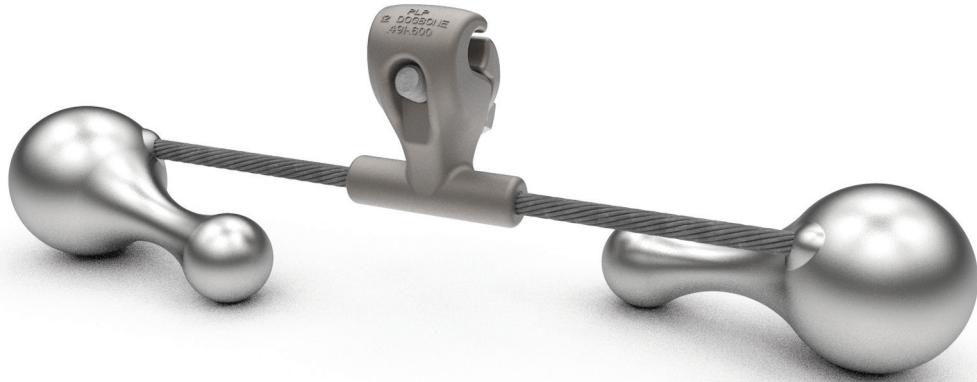
THIMBLE-EYE

Thimble-Eye							
A	B	C	D	E	F	G	H
in							
30K	7.93	0.820	2.35	0.75	0.875	1.20	2.00
36K	7.93	0.820	2.35	0.75	0.875	1.20	2.00



CLEVIS PIN

Clevis Pin	
A	B
in	
30K	0.75
36K	0.75



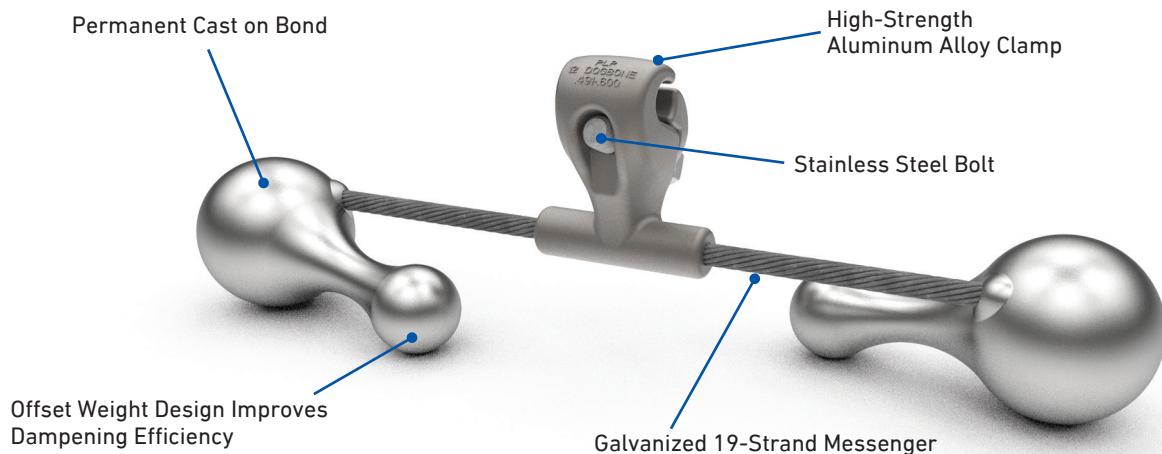
DOGBONE® VIBRATION DAMPER

The **DOGBONE Vibration Damper** is designed to eliminate guy wire fatigue damage and line maintenance costs by effectively reducing aeolian vibration. The messenger cable and unique "dog bone" shape of the masses are designed to achieve optimal energy dissipation and minimal clamp movement. The mechanical impedance of the damper is matched to the guy wires to optimize performance. The offset dogbone-shaped masses also introduce a torsional mode of vibration damping not present in conventional Stockbridge type dampers. The DOGBONE Vibration Damper is a development resulting from our extensive experience and research in the field of guy wires vibration control.

FEATURES AND BENEFITS

- The messenger cable and DOGBONE Vibration Damper weights are sized to give additional resonant modes and wider effective frequency response.
- Concept is based on the known and proven principles of the Stockbridge damper but embodies improvements which increase both power dissipation and range of frequency response beyond those of standard Stockbridge types.

COMPONENTS



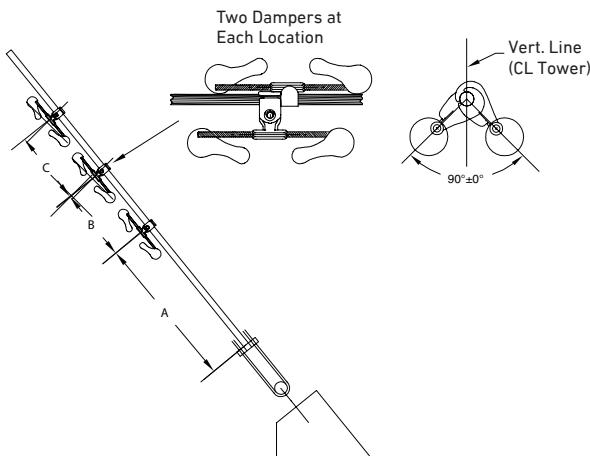
DOGBONE Vibration Damper

Component	Material/Description
Clamp	Cast of high-strength aluminum alloy
Bolt	Galvanized bolt
Flat Washer	Galvanized steel
Messenger	Exclusive preformed 19 strand EHS galvanized steel
Masses	High-grade zinc

CAUTION: Due to the many parameters involved, please contact PLP for optimum damper recommendations, placements and quantities.

NOTE: A pair of dampers is required at each placement location, phased 90 degrees apart; please refer to the "DOGBONE Tower Placements" Spec Sheet for more information.

DAMPER PLACEMENT



Contact PLP's Technical Support at (440) 461-5200 for product selection and product placement.

ORDERING INFORMATION

EXAMPLE: TDB3-21

Catalog Number	Nominal Strand Size*	Overall Length
	in	in
TDB1-09	3/8 - 7/16	16.30
TDB1-12	1/2	16.30
TDB2-12	9/16 - 5/8	18.50
TDB2-18	11/16 - 13/16	18.80
TDB3-21	7/8 - 15/16	18.80
TDB3-24	1 - 1-1/16	18.80
TDB3-27	1-1/18 - 1-3/16	18.80
TDB3-30	1-1/4 - 1-5/16	18.80
TDB4-34	1-3/8 - 1-7/16	23.60
TDB4-38	1-1/2 - 1-11/16	23.60
TDB5-42	1-3/4 - 2	33.00

TDB: Product Code (Tower Dogbone Damper)

3: Weight Combination (1, 2, 3, etc. Clamp selection based on cable diameter)

21: Clamp Code (12, 18, 21, etc. Clamp selection based on cable diameter)

*For strand sizes not listed, please contact PLP Technical Support.



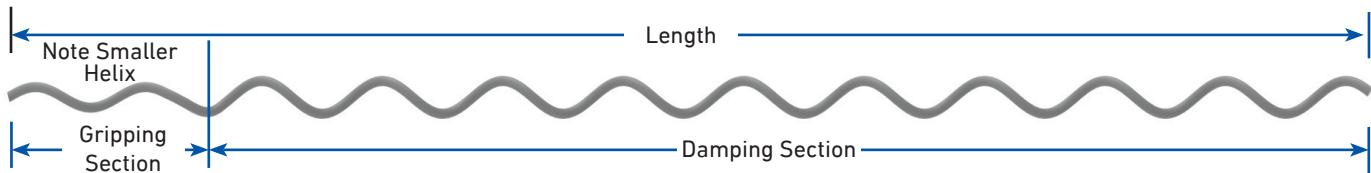
SPIRAL VIBRATION DAMPER

The **Spiral Vibration Damper** reduces aeolian vibration (the high frequency, low amplitude vibration caused by horizontal wind passing across the line). It is designed to be used on OPGW, conductors, and strand with an outside diameter less than 0.75". Damping devices are designed for the single purpose of reducing vibration. This single function is entirely different from that of protecting against stress concentrations, fretting or abrasion, and arc-over burning. The degree of protection needed on a specific line depends upon a number of factors such as line design, temperature, tension, exposure to wind flow, and vibration history on similar construction in the same area.

FEATURES AND BENEFITS

- Made of solid polyvinyl chloride, the helical rod material is noncorrosive and has a surface hardness which does not abrade the strand
- Engineering calculations are not required for placement locations. The gripping section should be installed approximately one hand's width from the ends of hardware.
- Compatible with any down guy strand

COMPONENTS



Component	Description
Length	Assists in identifying conductor size, corresponding to the table information below.
Damping Section	Helically scaled for interplay of damper and strand/conductor to provide the action/reaction motion that opposes the natural vibration wave
Gripping Section	Has a smaller helix designed to the grip strand/conductor.

ORDERING INFORMATION

Spiral Vibration Damper (Standard)

Catalog Number	Diameter Range (in)		Units per Carton	Weight per Carton	Length
	Minimum	Maximum		lb	in
5050102	.174	.249	50	29	46
5050103	.250	.326	50	31	49
5050104	.327	.461	50	34	51
5050105	.462	.563	50	36	53
5050106	.564	.760	25	50	65

Spiral Vibration Damper (Hi Mass)

The **Hi Mass Spiral Vibration Damper (HMSVD)** has a damping section close to double that of the standard SVD.

By extending the length of the damping section, one Hi Mass SVD provides the effectiveness of two standard SVDs. This allows for fewer points of installation and less components on the line.

Catalog Number	Diameter Range (in)		Units per Carton	Weight per Carton	Length
	Minimum	Maximum		lb	in
5050200	.250	.326	50	55	87
5050201	.327	.461	50	60	91
5050202	.462	.563	50	65	94
5050203	.564	.760	15	55	97

Number of SVDs per Span

Span Length	0 - 800 ft	801 - 1600 ft	1601 - 2400 ft
Standard	2	4	6
Hi Mass	1	2	3



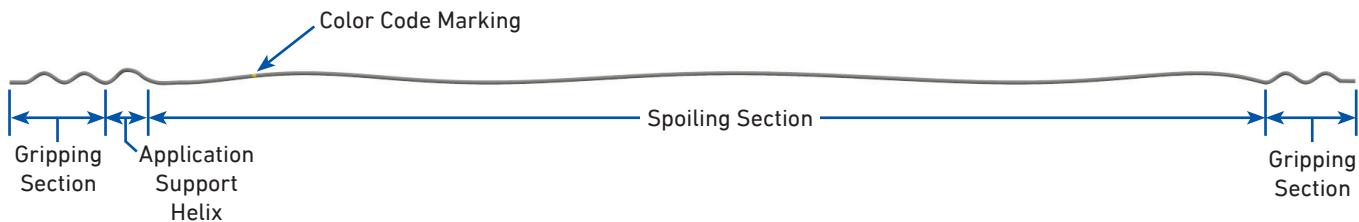
AIR FLOW SPOILER

The **Air Flow Spoiler** is a motion control product used to suppress galloping of cable spans. Galloping can rapidly cause severe damage to the cable system. Using the recommended number of Air Flow Spoilers can suppress galloping and increase cable longevity.

FEATURES AND BENEFITS

- Central spoiling section suppresses galloping by providing a constantly changing aerodynamic profile
- Helical gripping sections on both ends hold the cable securely without excess clamping forces
- Number and placement of Air Flow Spoilers in each cable span are determined by an internally-developed program based on the results of ongoing field and laboratory research
- Made of rigid, non-metallic, non-corrosive thermal plastic
- Maintains aerodynamic stability by providing a continually changing profile to the wind
- Reduces guy wire motion
- Extends support hardware and guy wire life

COMPONENTS



Component	Description
Gripping Section	Gently grips the cable
Application Support Helix	Prevents the spoiler from falling off the cable as the gripping section is applied
Spoiling Section	Provides a change in the aerodynamic profile of the cable to mitigate galloping
Color Code Marking	Identifies the product's cable diameter range

ORDERING INFORMATION

PLP uses an internally developed program that utilizes the results of ongoing field and laboratory data to determine the required number and placement of Air Flow Spoilers in each cable span.

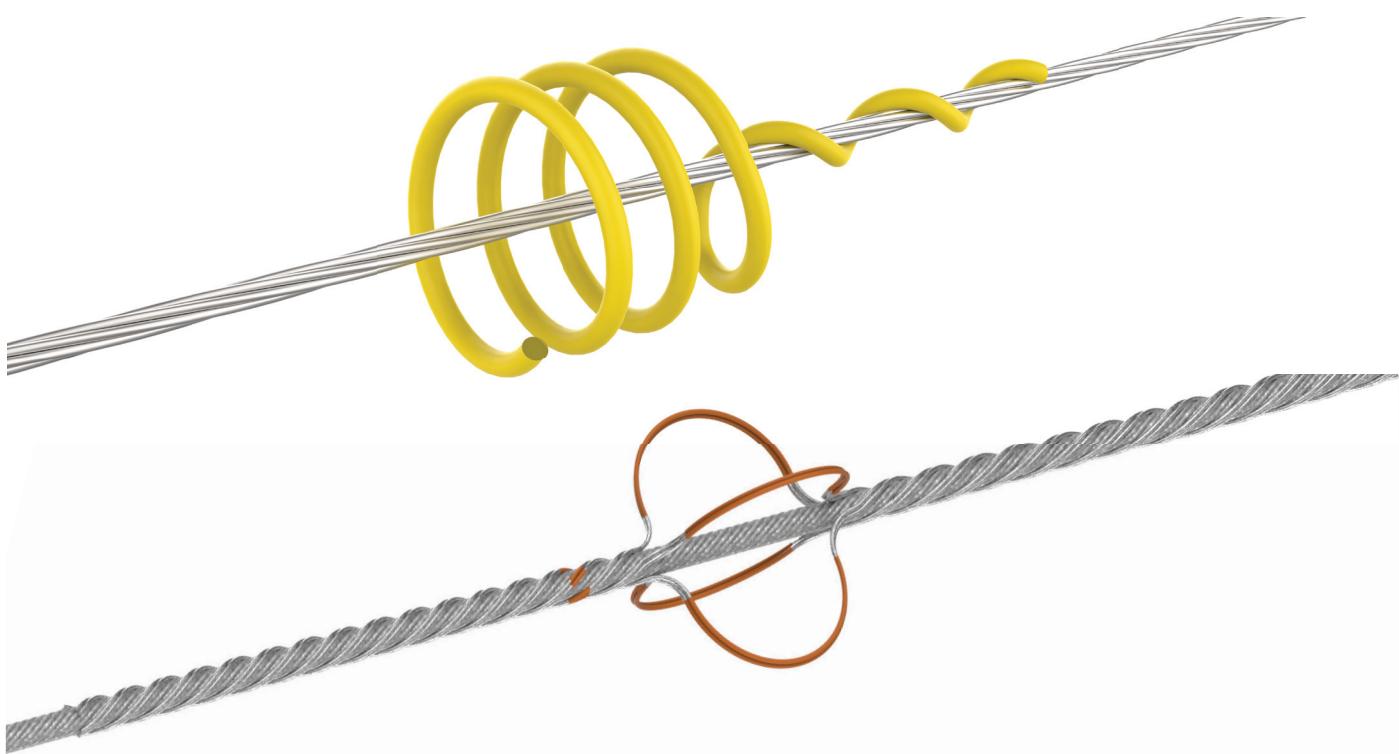
Air Flow Spoiler

Catalog Number	Cable Diameter Range		Length		Weight per Unit	Color Code
	in	mm	ft	m		
5058100	0.250 – 0.326	6.4 – 8.2	13.50	4.11	1.00	Red
5058101	0.327 – 0.461	8.3 – 11.6	13.50	4.11	1.00	White
5058102	0.462 – 0.563	11.7 – 14.2	14.00	4.27	2.25	Orange
5058103	0.564 – 0.760	14.3 – 19.2	14.50	4.42	2.40	Yellow
5058104	0.761 – 0.926	19.3 – 23.4	15.00	4.57	4.25	Blue
5058105	0.927 – 1.019	23.5 – 25.8	15.25	4.65	4.50	Black
5058106	1.020 – 1.165	25.9 – 29.6	15.75	4.80	5.50	Purple
5058107	1.166 – 1.469	29.6 – 37.3	16	4.88	5.75	Brown
5058108	1.470 – 1.602	37.3 – 40.7	17	5.12	9.50	Green
5058109	1.603 – 1.762	40.7 – 44.8	17.5	5.33	9.75	Pink

Number of Air Flow Spoilers per Cable Span

Span Length		Spoilers per Span	Span Length		Spoilers per Span
ft	m		ft	m	
0 – 120	0 – 36.6	2	551 – 600	167.9 – 182.9	11
120 – 180	36.6 – 54.9	3	601 – 650	182.9 – 198.1	12
181 – 240	55.2 – 73.2	4	651 – 700	198.4 – 213.4	13
241 – 300	73.5 – 91.4	5	701 – 750	213.7 – 228.6	14
301 – 350	91.7 – 106.7	6	751 – 800	228.9 – 243.8	15
351 – 400	106.9 – 121.9	7	801 – 850	244.1 – 259.1	16
401 – 450	122.2 – 137.2	8	851 – 900	259.4 – 274.3	17
451 – 500	137.5 – 152.4	9	901 – 950	274.6 – 289.6	18
501 – 550	152.7 – 167.6	10	951 – 1000	289.9 – 304.8	19

NOTE: Consult PLP for placement details.



BIRD-FLIGHT™ DIVERTER

The **BIRD-FLIGHT Diverter (BFD)** is designed to make overhead lines and guyed structures visible to birds and provides an economical means of reducing the hazard to both lines and birds.

The **Plastic BFD** is manufactured from rigid, high-impact PVC possessing excellent chemical resistance and tensile strength properties. The BFD will retain good physical characteristics over a range of temperatures.

The **Galvanized BFD** is designed to make guyed structures more visible to birds and provide an economical means of reducing the hazard to both lines and birds. The diverter's positive grip on the cable ensures that it remains in the applied position and will not move along the cable under aeolian vibration or other conditions.

FEATURES AND BENEFITS

- Lightweight, economical, and easily applied by hand or hot stick
- Positive grip prevents product from moving along the span
- Long service life without deterioration of material properties
- Minimal wind resistance
- Manufactured from gray or yellow high-impact PVC with UV protection or aluminum alloy for high temperature requirements (contact PLP for other color/voltage options)
- Meets **UL 94 V-0** flammability requirements
- For severe icing conditions, the Galvanized BIRD-FLIGHT Diverter is recommended

SPACING

Horizontal Line Layout



For optimal results, spacing distances are generally recommended at 15-foot intervals, depending upon local conditions. Since wind resistance is very limited, a sufficient number of BIRD-FLIGHT Diversers can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the placement between spans.

ORDERING INFORMATION

- For use on bare and jacketed conductors, strand, and fiber optic cables
- Contact a PLP representative for more information regarding which product to select for a specific application.

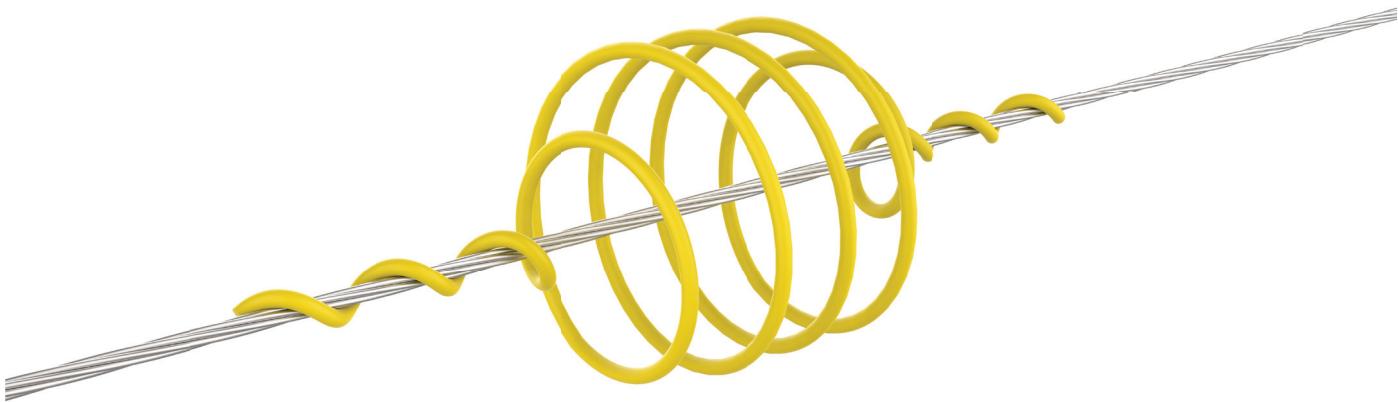
BIRD-FLIGHT Diverter

Catalog Number		Strand Size	Strand or Cable Diameter Range		Overall Length	Diverter Coil Outer Diameter	Color Code	
YELLOW	GRAY		Minimum	Maximum				
			in (mm)	in (mm)				
BFDMS3331	BFDMS3346	3/16	.175 (4.4)	.249 (6.3)	8.00 (203)	2.25 (57)	Black	
BFDMS3155	BFDMS2921	1/4, 5/16	.250 (6.4)	.349 (8.9)	8.50 (216)	2.50 (64)	Blue	
BFDMS3164	BFDMS-3355	3/8, 7/16	.350 (8.9)	.449 (11.4)	9.50 (241)	2.75 (70)	Brown	
BFDMS11135	BFDMS11060				12.37 (314)	4.25 (108)		
BFDMS3341	BFDMS3366	1/2, 9/16	.450 (11.4)	.602 (15.3)	14.50 (368)	4.25 (108)	Green	
BFDMS3344	BFDMS3371	5/8	.603 (15.3)	.770 (19.6)	17.00 (432)	4.25 (108)	Purple	
BFDMS3345	BFDMS3376	3/4	.771 (19.6)	.858 (21.8)	15.00 (381)	4.25 (108)	Red	
BFDMS3405	BFDMS11699	7/8	.859 (21.8)	.970 (24.6)	16.50 (419)	4.50 (114)	Orange	
BFDMS11111	BFDMS12290	1	.971 (24.7)	1.121 (28.5)	15.50 (394)	4.25 (108)	Pink	

Galvanized BIRD-FLIGHT Diverter

Catalog Number	Conductor Diameter	Overall Length	Diverter Coil Diameter	Weight per Set	Color Code
	in (mm)	in (mm)	in (mm)	lb	
BDG-5738	3/8 (9.5)	28.00 (711)	3.50 (88.9)	0.58	Orange
BDG-5739	7/16 (11.1)	30.50 (774)	3.50 (88.9)	0.63	Green
BDG-5740	1/2 (12.7)	32.50 (825)	3.50 (88.9)	0.90	Blue
BDG-5741	9/16 (14.2)	33.50 (851)	3.50 (88.9)	0.95	Yellow
BDG-5742	5/8 (15.8)	36.50 (927)	3.50 (88.9)	1.02	Black
BDG-5743	3/4 (19.0)	38.00 (965)	3.50 (88.9)	1.07	Orange

WARNING: The Galvanized BIRD-FLIGHT Diverter is not designed to be conductive and is not for use on energized conductors. Contact a PLP representative for information on alternative products designed for energized situations.



SWAN-FLIGHT™ DIVERTER

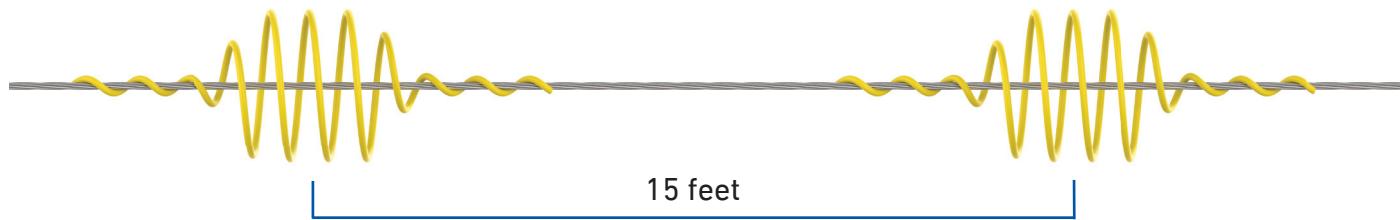
The **SWAN-FLIGHT Diverter (SFD)** is designed for use on guy wire or conductor to create greater visibility for avian flight paths on overhead lines and tower down guys. For construction up to 230 kV, the SFD can be applied to phase conductors (bare or jacketed). For EHV, it is typically installed on the shield wire. The diverter section increases the visible profile of the cable to a degree necessary to alert wildlife, but avoids an undesirably bulky outline and increased loading on the line.

FEATURES AND BENEFITS

- Increases visibility where large, slow-moving bird flight paths are present
- Lightweight, economical, and easily applied
- Positive grip prevents product from moving along the span
- Long service life without deterioration of material properties
- Minimal wind resistance
- Manufactured from gray or yellow rigid, high-impact PVC with UV protection
- Applicable for voltages below 230 kV
- Semi-conductive version available for 230 kV applications
- Meets **UL 94 V-0** flammability requirements

SPACING

Horizontal Line Layout



For optimal results, spacing distances are generally recommended at 15-foot intervals, depending upon local conditions. Since wind resistance is very limited, sufficient SWAN-FLIGHT Diverters can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the placement between the spans.

ORDERING INFORMATION

- For use on bare and jacketed conductors, strand, and fiber optic cables
- Gray is the standard color. For yellow, add "-Y" after the catalog number. Add suffix "-B" to the catalog number for black semi-conductive layer for applications at 230 kV. **Example:** SFD-2460-B

SWAN-FLIGHT Diverter

Catalog Number	Conductor Range		Overall Length in (mm)	Diverter Coil Diameter in (mm)	PVC Rod Diameter in (mm)	Approximate Weight lb	Color Code
	Minimum	Maximum					
	in (mm)	in (mm)					
SFD-0445	0.175 (4.4)	0.249 (6.3)	20 (508)	7.0 (177)	0.375 (9)	0.40	Black
SFD-0635	0.250 (6.3)	0.349 (8.8)	23 (584)	7.0 (177)	0.375 (9)	0.46	Blue
SFD-0890	0.350 (8.9)	0.449 (11.4)	25 (635)	7.5 (190)	0.375 (9)	0.50	Brown
SFD-1140	0.450 (11.4)	0.599 (15.2)	35 (889)	8.0 (203)	0.375 (9)	0.70	Green
SFD-1520	0.600 (15.2)	0.770 (19.5)	38 (965)	8.0 (203)	0.500 (14)	1.40	Purple
SFD-1960	0.771 (19.5)	0.858 (21.7)	38 (965)	8.0 (203)	0.500 (14)	1.40	Red
SFD-2220	0.859 (21.8)	0.970 (24.6)	40 (1016)	8.0 (203)	0.500 (14)	1.50	Orange
SFD-2460	0.971 (24.6)	1.121 (28.4)	40 (1016)	8.0 (203)	0.500 (14)	1.50	Pink
SFD-2700	1.122 (28.4)	1.306 (33.1)	40 (1016)	8.0 (203)	0.500 (14)	2.00	Gray
SFD-3035	1.307 (33.2)	1.530 (38.8)	46 (1168)	8.0 (203)	0.500 (14)	2.00	Black

WARNING: The SWAN-FLIGHT Diverter should not be applied on phase conductors energized at voltages of 345 kV and above.



RAPTOR CLAMP™ DIVERTER

The **RAPTOR CLAMP Diverter** is an alternative to the **BIRD-FLIGHT™ Diverter** and the **SWAN-FLIGHT™ Diverter** for making overhead power lines visible to birds of all sizes. It provides a cost-beneficial means of reducing hazards to both power lines and birds. PLP also offers the **RAPTOR CLAMP™ LED Diverter**, which includes an exclusive flashing LED module that provides a visible indication of overhead lines in dark and low-light conditions.

FEATURES AND BENEFITS

- Trigger mechanism is simple to set and operate
- Easy “bump and snap” installation on the cable
- No special tools required
- Manufactured from UV-stabilized polycarbonate and polyethylene materials
- Corrosion-resistant stainless steel hardware
- Operational temperatures up to 125°C continuous
- Installation on overhead shield wire or single conductor systems up to 138kV. Installation on dual bundle (or greater) conductor systems up to 345 kV. Contact PLP for more information.
- Installable via drone when paired with PLP’s RAPTOR CLAMP Drone Kit for DJI M300/M350 models

NOTE: Ice and wind load information is available upon request.

SPACING

Horizontal Line Layout



For optimal results, spacing distances are generally recommended at 15-foot intervals, depending upon local conditions. Since wind resistance is very limited, a sufficient number of RAPTOR CLAMP Diversers can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering placement between the spans.

DRONE INSTALLATION KIT

The industry's leading clamp-style diverter is now the first to offer a do-it-yourself drone based installation kit.



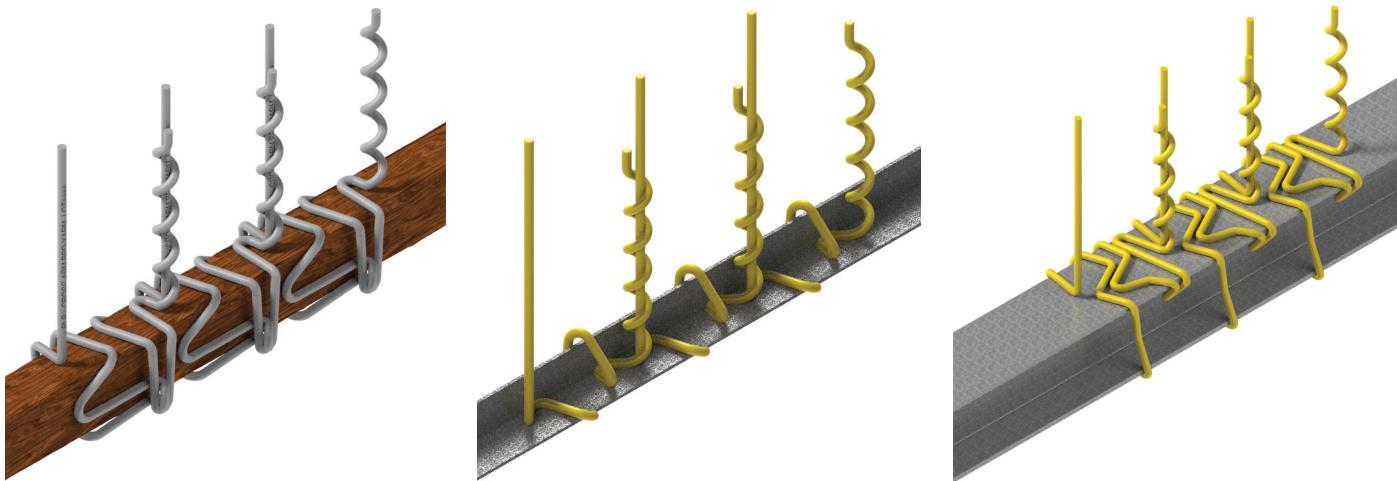
Scan or click the QR Code to learn more.

ORDERING INFORMATION

RAPTOR CLAMP™ Diverter and RAPTOR CLAMP™ LED Diverter

Catalog Number	Description	Diameter Range		Weight
		Minimum	Maximum	
		in (mm)	in (mm)	
RAPTOR-YEL	RAPTOR CLAMP Diverter, Yellow Reflective Tape	0.1 (2.5)	1.8 (45.7) Hand or Hot Stick Installed	0.4
RAPTOR-YW	RAPTOR CLAMP Diverter, White and Yellow Reflective Tape			
RAPTOR-LED-W	RAPTOR CLAMP LED Diverter, White Flasher with Yellow Reflective Tape			
RAPTOR-LED-WYW	RAPTOR CLAMP LED Diverter, White Flasher, with White and Yellow Reflective Tape	0.1 (2.5)	1.0 (25.4) Drone Installed	1.1
RAPTOR-LED-UV	RAPTOR CLAMP LED Diverter, Ultra-Violet Flasher with Yellow Reflective Tape			
RAPTOR-LED-UVYW	RAPTOR CLAMP LED Diverter, Ultra-Violet Flasher, White and Yellow Reflective Tape			1.1

NOTE: Contact PLP for other options, including brackets for hanging signs.



BIRD PERCH DETERRENT

The **Bird Perch Deterrent (BPD)** is designed to eliminate roosting areas on structures that are electrocution hazards or over equipment to keep it free from bird contamination. Bird Perch Deterrents provide an economical means of reducing avian fatalities, line outages, and equipment flashovers, and are easily installed over the structural support.

FEATURES AND BENEFITS

- Eliminate perching to prevent fouling of equipment or incidental contact electrocution
- Economical and easily applied
- Long service life without deterioration
- Interlocking design, no attachment hardware
- 8" (203 mm) spacing between uprights
- Lightweight (no metal parts), minimal wind resistance
- Outdoor-grade PVC performs in extreme temperatures
- Meets **UL 94 V-0** flammability requirements

APPLICATIONS:

- Standard Crossarms, Heavy-Duty Crossarms, Angle Iron, Davit Arms, W6 and W10 I-Beams
- Other designs are available upon request. Please provide information about structure, shape, and dimensions.



ORDERING INFORMATION

- To calculate the number of Bird Perch Deterrents required, measure the distance to be covered and divide by 8.
- A minimum of two Bird Perch Deterrents ARE REQUIRED to ensure proper application.
- Standard color is gray; to order yellow, add suffix code "-Y" to the catalog number.

Bird Perch Deterrent

Catalog Number	Application	Crossarm Dimensions		Carton Quantity
		Width	Height	
		in (mm)	in (mm)	
BPD-XARM	Crossarm	3.25 (83)	4.25 (108)	16
BPD-A22	Angle	2 (50)	2 (50)	24
BPD-IA22	Inverted Angle	2 (50)	2 (50)	24
BPD-A25	Angle	2.5 (63)	2.5 (63)	24
BPD-IA25	Inverted Angle	2.5 (63)	2.5 (63)	24
BPD-A225	Angle	2 (50)	2.5 (63)	24
BPD-IA225	Inverted Angle	2 (50)	2.5 (63)	24
BPD-W6I	I-Beam	6 (152)	6 (152)	16
BPD-W10I	I-Beam	10 (254)	10 (254)	16
BPD-HD64	Heavy-Duty Crossarm	6 (152)	4 (102)	16
BPD-HD55	Heavy-Duty Crossarm	5 (127)	5 (127)	12
BPD-DAVIT	Davit Arm	Universal	Universal	30
BPD-HD3585	Heavy-Duty Crossarm	3.5 (89)	8.5 (216)	16
BPD-HD5777	Heavy-Duty Crossarm	5.75 (146)	7.75 (197)	16

WARNING: Bird Perch Deterrents should not be used if nesting of large birds is already present.



POLE PLUG

The **Pole Plug** is designed to close existing holes in steel and composite utility poles or other equipment. Closing unused holes reduces or eliminates whistling due to the wind. The plug also provides an economical means of drastically reducing the incidence of insect infestations that can result in lineworker injuries and productivity losses.

FEATURES AND BENEFITS

- Fully UV-stabilized
- Resistant to environmental stress cracking
- Lightweight, one-piece design
- Can be installed with standard hot stick tools if required
- Positive snap-in lock
- Covers a wide range of hole diameters
- Long service life without material deterioration
- See PLP's Distribution Tips & Tricks video for more information
- **UL 94 V-0** compliant versions available



ORDERING INFORMATION

- Add suffix "B" or "G" to indicate color: "B" - Black, "G" - Gray, **Example:** PP-0625B
- To order **UL 94 V-0**, add "FR" following the color code designation, **Example:** PP-0625BFR
- To order Pole Plug for Heavy Wall Poles, add "H" following the color code designation, **Example:** PP-0625BH

NOTE: All Heavy Wall Pole Plugs are made from urethane and are **UL 94 V-0** compliant.

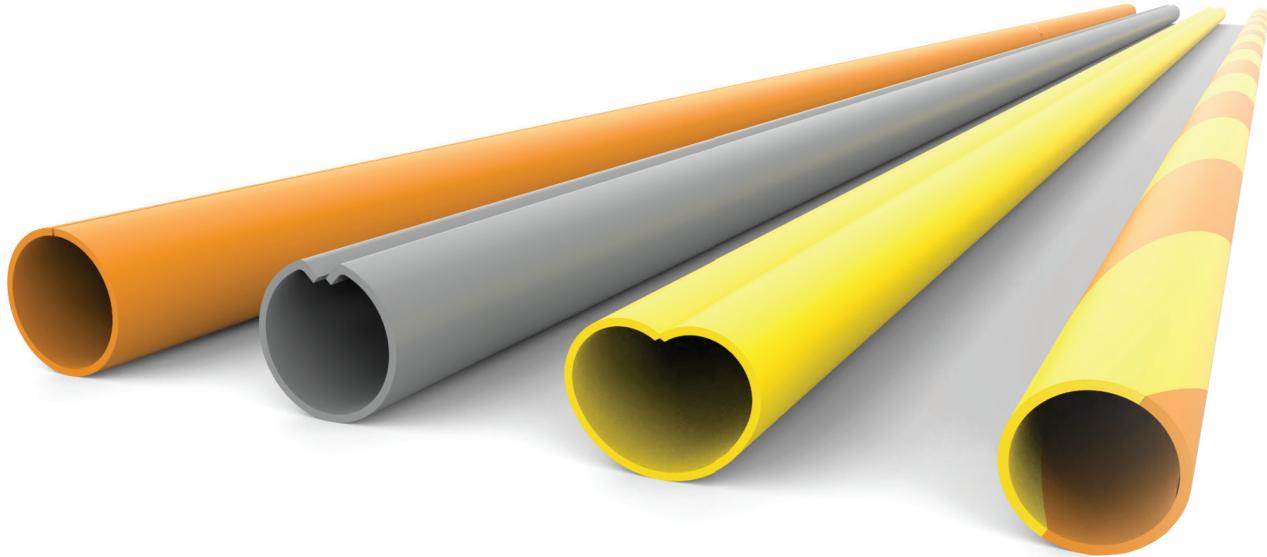
PP-1500xxx is not available with Heavy Wall.

Pole Plug

Catalog Number	Hole Size	Maximum Wall Thickness
	in	in
PP-0625xxx	9/16 and 5/8	
PP-0750xxx	11/16 and 3/4	
PP-0813xxx	13/16	1/4 Standard or 11/16 Heavy Wall
PP-0875xxx	7/8 and 15/16	
PP-1000xxx	1 and 1-1/16	
PP-1125xxx	1-1/8	
PP-1500xxx	1-1/2	3/8

NOTE: Plugs of the below sizes are urethane and are UL94 V-0 compliant.

PP-1250	1-1/4	1/4
PP-1375x	1-3/8	3/8
PP-3000x	3	3/4



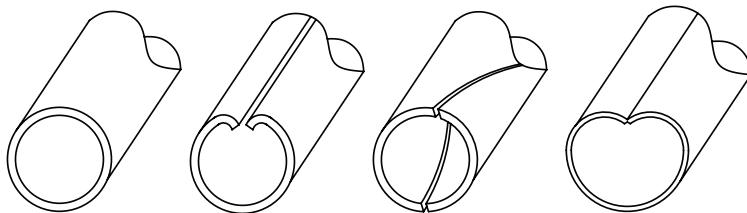
GUY MARKER

Guy Markers are used for identifying down guys or other wire and cable installations where anchoring devices are exposed to pedestrian and/or vehicular traffic. The Guy Marker comes in four different profiles with six attachment combinations.

FEATURES AND BENEFITS

- Manufactured out of Polyethylene or PVC
- Premium UV inhibitors for long life span
- One- or two-piece designs
- Lightweight
- Installs on down guys in seconds
- Easily installed on strand sizes ranging from 3/16" - 1/2" (4.7 mm - 12.7 mm)
- Reflective stripe option available
- Deters vandalism
- Ships in boxes, bags, or on bulk pallets

SPECIFICATIONS



Profile Options

Type	Description
Full Round	1-1/2" and 1-1/4" OD (outer diameter)
"B" Profile, "Heart Shape"	1-1/2" effective OD
Two-Piece Spiral Round	1-1/4" OD, helically slit to create two halves
Round-Overlapping	1-1/2" OD

Attachment Devices

Type	Abbreviation	Description
Cable Tie/Universal Cable Tie	CT	Positive locking device to deter vandalism. Recommended for dead-end hardware that restricts the use of the LOOP LOCK® Pin.
LOOP LOCK® Pin (patented)	LLP	Unique, one-way method that applies through the marker's tube and the loop of a GUY-GRIP® Dead-End. Once applied, the tube is "locked" onto the dead-end and cannot be removed easily by vandals. Removal and re-installation of the marker by authorized personnel is possible with a new pin, which can be supplied separately.
Integral Helical Pigtail - used in conjunction with Short Lock Strap or Cable Tie	PT	Attached to the inside of the marker tube and wraps on to secure to the strand. Generally fits a strand range of 3/16" – 1/2" diameters and provides a unique one-way slip down motion for ease of installation. Installed pigtail resists upward movement. Pigtail is made from specially formulated, non-corrosive material designed to provide high strength and tear resistance.
Stainless Steel Clamp	SC	Riveted to one end of the guy marker. Clamp's position gives linemen an option to install the guy marker with the clamp on the top or bottom of the tube. The clamp quickly and easily secures the guy marker to down guy wire by tightening the 9/16" bolt, included in the clamp assembly. Guy marker features a collapsible profile that wraps on itself when installed on down guy wire.
Short Lock Strap	SLS	Used with the pigtail device and helps deter vandalism.
Cable Tie	CT	Supplied as an alternative to the Short Lock Strap where hardware restricts its application.



Universal Cable Tie



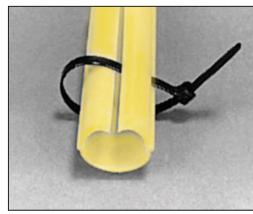
LOOP LOCK® Pin



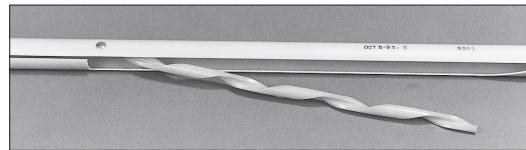
Stainless Steel Clamp



Short Lock Strap



Cable Tie Attachment



Integral Helical Pigtail



ORDERING INFORMATION

Guy Marker

Catalog Number	Color	Material	Tube Profile	Tube OD		Attachment Type	Units per Carton	Weight per Carton
				in	mm			lb
PG-5718	Yellow	Polyethylene	Round	1.5	32	PT/SLS	25	39
PG-5718P	Yellow	Polyethylene	"B"	1.5	32	PT/CT	25	35
PG-5518	Yellow	PVC	Round	1.5	32	PT/SLS	25	33
PGMS3921	Yellow	Polyethylene	Round	1.5	32	UCT	25	33
PGMS4072	Yellow	Polyethylene	"B"	1.5	32	UCT	25	35
PG-5405	Yellow	Polyethylene	Round	1.5	32	LLP	25	36
PG-5423	Yellow	Polyethylene	"B"	1.5	32	LLP	25	33
PG-5462	Yellow	Polyethylene	"B"	1.5	32	2 LLP	25	36
RPG-5618	Yellow/ Reflective Tape	PVC	Round	1.5	32	PT/SLS	25	33
RPGMS12030	Yellow/ Reflective Tape	Polyethylene	"B"	1.5	32	UCT	25	36
RPGMS10469	Yellow/ Reflective Tape	Polyethylene	"B"	1.5	32	LLP	25	36
PG-5738	Orange	Polyethylene	Round	1.5	32	PT/SLS	25	34
PG-5708	Gray	Polyethylene	Round	1.5	32	PT/SLS	25	34
PG-5708P	Gray	Polyethylene	"B"	1.5	32	PT/CT	25	36
PGMS7578	Yellow	Polyethylene	Round	2		PT/SLS	25	49
PG-6500	Yellow	Polyethylene	Round	2		None	25	34
PG-6600	Orange	Polyethylene	Round	2		None	25	34
PG-6500SC	Yellow	Polyethylene	Round	2		SC	25	42
PG-6600SC	Orange	Polyethylene	Round	2		SC	25	42
PG-6500PIN	Yellow	Polyethylene	Round	2		LLP	25	39
PG-6600PIN	Orange	Polyethylene	Round	2		LLP	25	39
PG-6500TIE	Yellow	Polyethylene	Round	2		UCT	25	38
PG-6600TIE	Orange	Polyethylene	Round	2		UCT	25	38

ORDERING INFORMATION

Universal Marker

Two-Piece Spiral Round Markers: Designed to provide increased visibility for many guying or cable applications. It can provide coverage from the ground line, around fittings, and above normal reach, depending upon installation.

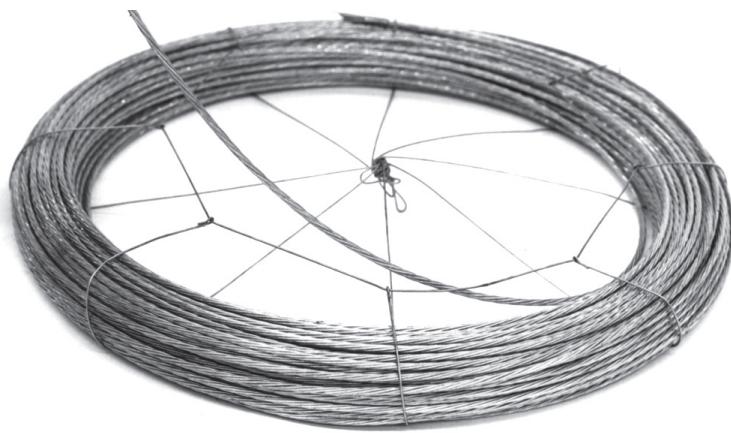
The addition of a third helical section can provide up to 360° coverage for diameters over 1". This method may require special application techniques as outlined in the application procedure.

Limited coverage is possible for diameters over 1-5/8" or over large, non-circular fittings. Consult the application procedure for special techniques.

Catalog Number	Length		Color	Material	Tube OD		Attachment Type	Units per Carton	Weight per Carton
	ft	m			in	mm			
PG-5750	8	2.4	Orange/Yellow	Polyethylene	1-1/4	32	2-CT	30	31
PG-5752	8	2.4	Orange	Polyethylene	1-1/4	32	2-CT	30	31

NOTE: For different lengths, attachments, and/or the addition of reflective tape, contact your PLP representative.

Package options: Bagged – add suffix code B
Bulk – add suffix code BULK



SAFETY GUY-WIRE DISPENSER

The **Safety Guy-Wire Dispenser** is designed to provide a functional and safe way of paying out strand. It can be used with guy wire, wire rope, cable, conductor, etc. The dispenser eliminates the hazards of "runaway" coil ends.

FEATURES AND BENEFITS

- Installs around strand coils in seconds
- Lightweight
- Pay-out strand with one person
- Simplifies inventory maintenance
- Improves coil handling
- One-time use application
- Eliminates "runaway" coils
- Occupies minimal truck space

ORDERING INFORMATION

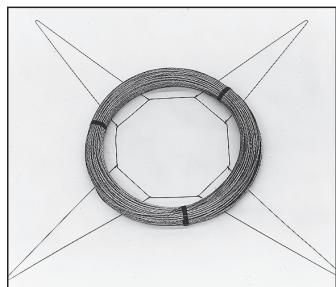
Safety Guy Wire Dispenser

Catalog Number	Standard Carton Quantity	Typical Size Coils Accommodated	Leg Length	Wire Size
			in (mm)	
SGD-0700 (Standard Size)	50	500 ft 7/16" 250 ft 1/2" Strand 23" by 9" Triplex Coils	24 (610)	14 gauge
SGD-0701 (Jumbo Size)	25	500 ft 1/2" Strand	30 (762)	12 gauge

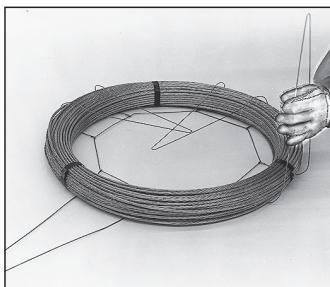
NOTES:

- 1 Accommodates any size coil, provided about 2" of the end of each leg can be twisted.
- 2 The size coil each unit can encompass depends upon the coil's girth, which is the combined diameter and width x 2. The Standard Unit will accommodate a girth up to 63". The Jumbo Unit will accommodate a girth up to 75".
- 3 The Standard Unit is designed to withstand a 15-foot free-fall impact of a 200 lb coil. The Jumbo Unit will withstand a free-fall impact of a 300 lb coil.

USAGE



1. Fold out the legs.



2. Bend the legs over the coil.



3. Twist at least 2" of the legs together until the wire cage is tight.



4. Turn the wire cage over and pay-out from the open side. Tuck the end back into the cage.



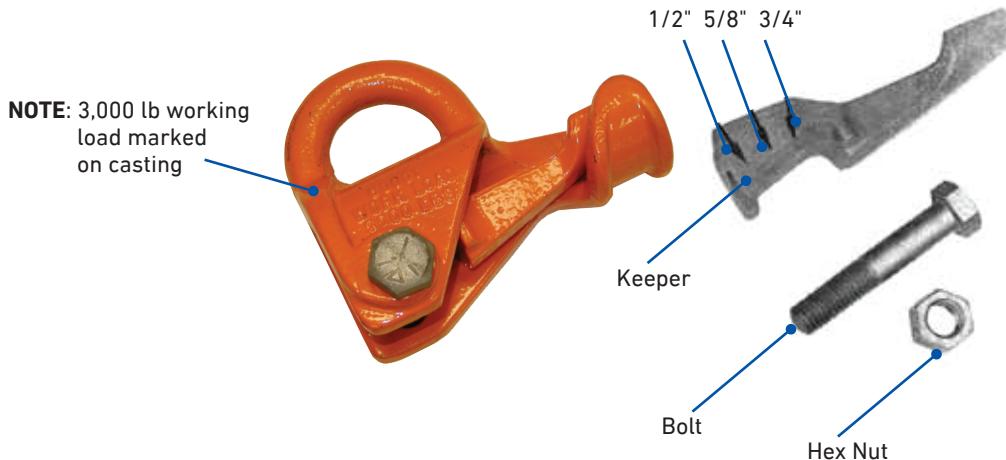
PULLING EYE

The **Pulling Eye** is designed to facilitate safe, fast installation of Big-Grip Dead-Ends at the anchor rod. Constructed of corrosion-resistant nodular iron, this reusable tool has a large eye which is offset to position the hook of the chain hoist safely to one side, permitting easy, uncrowded application of the dead-end.

FEATURES AND BENEFITS

- Installs around the anchor hardware in seconds
- Adjustable for rod size
- Engineered to withstand a 3,000 lb working load
- Orange vinyl coating provides weather and handling protection and ready identification
- Facilitates safe, fast installation of all dead-ends by a pulling point at the anchor

COMPONENTS



Component	Material/Description
Keeper	Cast of high-strength aluminum alloy, To be used with 1/2", 5/8", and 3/4" anchor rods (see Components above). For 1" and 1-1/4" anchor rods, the Pulling Eye is used without the keeper.
Bolt	Made of specially treated extra-high-strength steel, and is identified by the industry mark on its head.
Hex Nut	Galvanized steel

CAUTION: The Pulling Eye must be secured with the nut and bolt on every installation.

NOTES:

- 1 The bolt is made of heat-treated extra-high-strength steel, and is identified by the industry mark on its head. Any replacement should be of the same quality.
- 2 3,000 lb working load is based on a 5 to 1 safety factor.

ORDERING INFORMATION

Pulling Eye

Catalog Number	Description	Standard Carton
PE-0300	Pulling Eye	4 Units

Replacement Parts

Catalog Number	Description	Standard Carton
PE-A-0002	Pulling Eye Keeper	As Required
PE-B-2019	Pulling Eye Bolt	As Required
PE-C-0607	Pulling Eye Nut	As Required



GENERAL INFORMATION

The following pages include general information needed to select PLP products and understand basic design principles. PLP products are precision-engineered devices; care must be taken to ensure that the product selection from this catalog is compatible with the strand being used.

If you have additional questions, please contact PLP at info@plp.com or (440) 461-5200.

CONTENTS INCLUDE

- Types of Strand
- Helical Terminology
- Basic Design Principles
- Holding Strength
- Lay Direction Guide



TYPES OF STRAND

Strand Diameter in	Galvanized			Utilities Grade	Copperweld®	Aluminum-Clad Steel	Aluminized	Stainless
	Siemens Martin	High-Strength	Extra High-Strength					
.123	1/8", 7W	1/8", 7W	1/8", 7W					
.156	5/32", 7W	5/32", 7W	5/32", 7W					
.164					2.2M			
.174					3#12	3#12		
.186	3/16", 7W (0.62")	3/16", 7W (0.62")	3/16", 7W (0.62")				3/16", 7W	.062
.195				3/16", 7W (0.65")			3/16", 7W	.065
.209					4M			
.216	7/32", 7W	7/32", 7W	7/32", 7W				7/32", 7W	7/32", 7W
.220					3#10	3#10, 4M		
.224								7/32", 3W
.237					6M			
.240	1/4", 7W	1/4", 7W	1/4", 7W				1/4", 7W	
.242						6M		
.247					3#9	3#9		
.249								1/4", 7W
.258					6M3			
.259				1/4", 3W			1/4", 3W	1/4", 3W
.272						8M		
.276						8M		
.277					3#8	3#8		
.279	9/32", 7W	9/32", 7W	9/32", 7W	9/32", 7W			9/32", 7W	9/32", 7W
.303					10M			
.306					7#10	10M, 7#10		
.311					3#7	3#7		
.312				5/16", 3W			5/16", 3W	5/16", 3W
.312	5/16", 7W (0.104")	5/16", 7W (0.104")	5/16", 7W (0.104")				5/16", 7W (0.104")	5/16", 7W
.327				5/16", 7W (0.109")			5/16", 7W (0.109")	
.343					11/32", 7#9	7#9		
.343						12.5M		
.345					12.5M			
.349					3#6	3#6		
.356				3/8", 3W (0.355")			3/8", 3W	3/8", 3W
.360	3/8", 7W	3/8", 7W	3/8", 7W	3/8", 7W	14M		3/8", 7W	3/8", 7W
.363						14M		
.375								3/8", 19W
.385					3/8", 7#8	7#8		
.386					16M	16M		
.392					3#5	3#5		

Copperweld® is a registered trademark of the Copperweld Co.

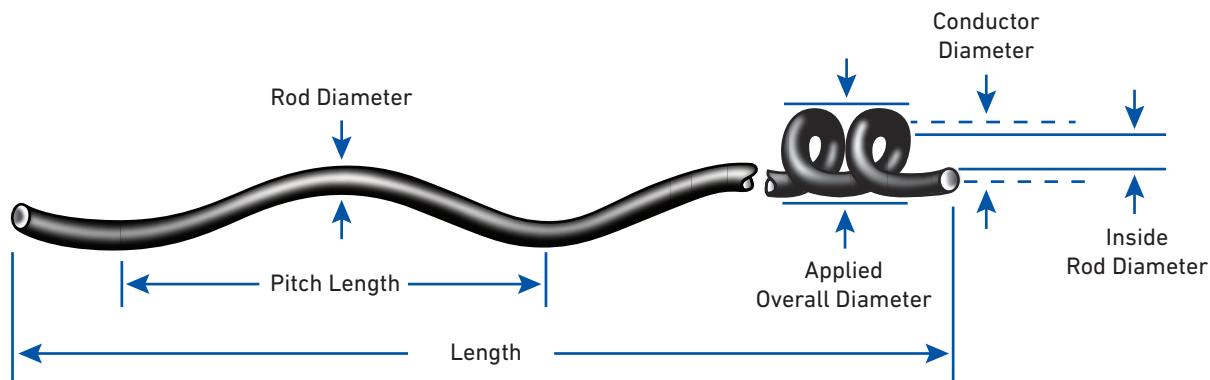
TYPES OF STRAND (CONTINUED)

Strand Diameter in	Galvanized			Utilities Grade	Copperweld®	Aluminum-Clad Steel	Aluminized	Stainless
	Siemens Martin	High-Strength	Extra High-Strength					
.414					18M			
.417						18M		
.433					7/16", 7#7	7#7		
.435	7/16", 7W	7/16", 7W	7/16", 7W	7/16", 7W			7/16", 7W	7/16", 7W
.438					20M			
.444						20M		
.486					½", 7#6	7#6		
.495	½", 7W	½", 7W	½", 7W	½", 7W			½", 7W	½", 7W
.500	½", 19W	½", 19W	½", 19W				½", 19W	½", 19W
.509						19#10		
.519						25M		
.525					25M			
.546					7/16", 7#5	7#5		
.564	9/16", 7W	9/16", 7W	9/16", 7W					
.565	9/16", 19W	9/16", 19W	9/16", 19W					
.572					9/16", 19#9	19#9		
.613					5/8", 7#4	7#4		
.621	5/8", 7W	5/8", 7W	5/8", 7W					
.625	5/8", 19W	5/8", 19W	5/8", 19W					
.642					21/32", 19#8	19#8		
.713					37#10	37#10		
.721					23/32", 19#7	19#7		
.750	3/4", 19W	3/4", 19W	3/4", 19W					
.801					37#9	37#9		
.810					13/16", 19#6	19#6		
.885	7/8", 19W	7/8", 19W	7/8", 19W					
.899					37#8	37#8		
.910					7/8", 19#5	19#5		
1.000	1", 19W	1", 19W	1", 19W					
1.001	1", 37W	1", 37W	1", 37W					
1.010					37#7	37#7		
1.134					37#6	37#6, (1.13")		
1.273					37#5	37#5, (1.27")		

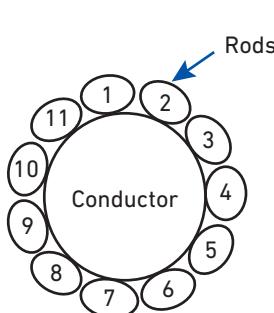
Copperweld® is a registered trademark of the Copperweld Co.

HELICAL RODS

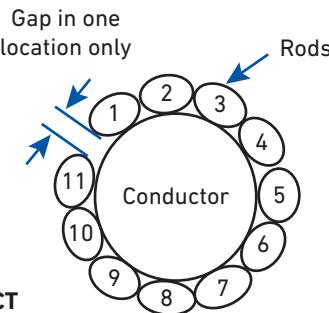
Terminology & Basic Design Principles



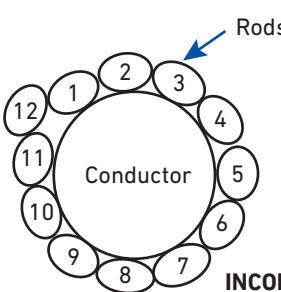
Designs of helical rod products consider the optimum combination of: conductor diameter, inside diameter, rod diameter, number of rods, pitch length, number of pitch lengths, direction of lay, and raw material. Maximum efficiency is maintained by each rod exerting a uniform low radial pressure inherent with spring tempered material. Relaxation, and subsequent looseness associated with soft wire wrapped on a mandrel is eliminated.



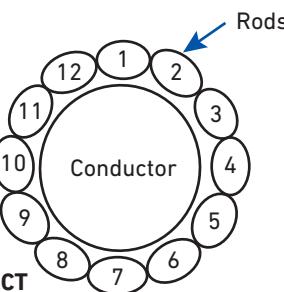
Example 1



CORRECT

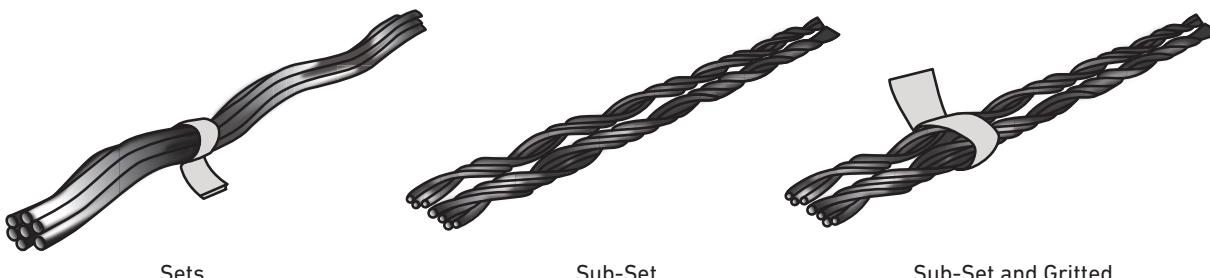


Example 3



Example 4

After application of the correct number of rods, a slight gap between the rods should be present. Study the above examples. Example 1: Excellent application. Example 2: Satisfactory, but may lead to applying an extra, un-needed rod. Example 3: Extra rod procedures bridging condition, potential rod abrasion. Example 4: Extra rod, expanded tube condition, affords little protection, allows severe abrasion and other conductor damage. If undecided about adding an extra rod, follow this rule: When in doubt, leave it out.



Depending on the intended use, helical rod products are furnished in sets, or sub-setted and gritted.

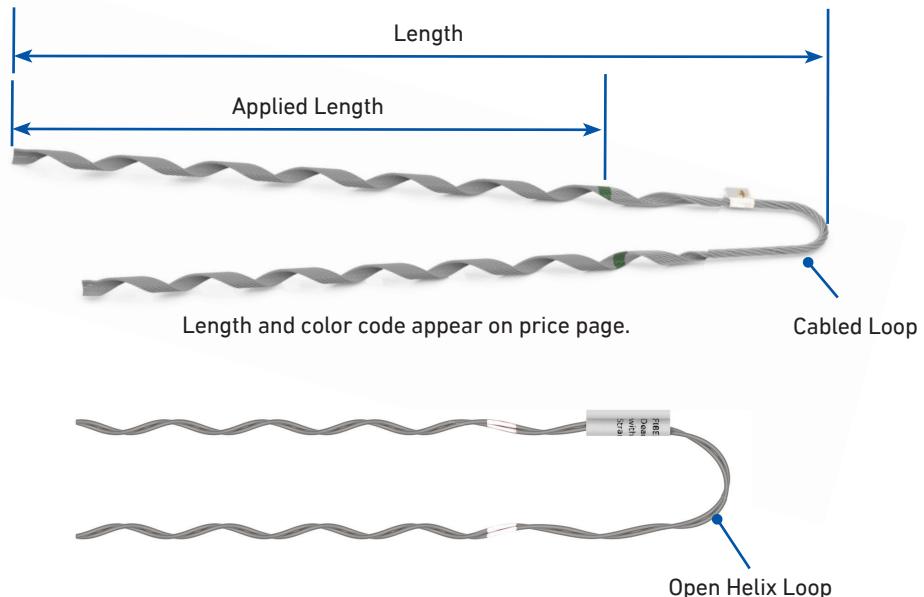
Sets: The specified number of rods per set are taped together as a unit.

Sub-Set: Assembled in two or more groups of matched lay.

Gritted: Inside surface of each sub-set is coated with grit to enhance holding strength and/or conductivity.

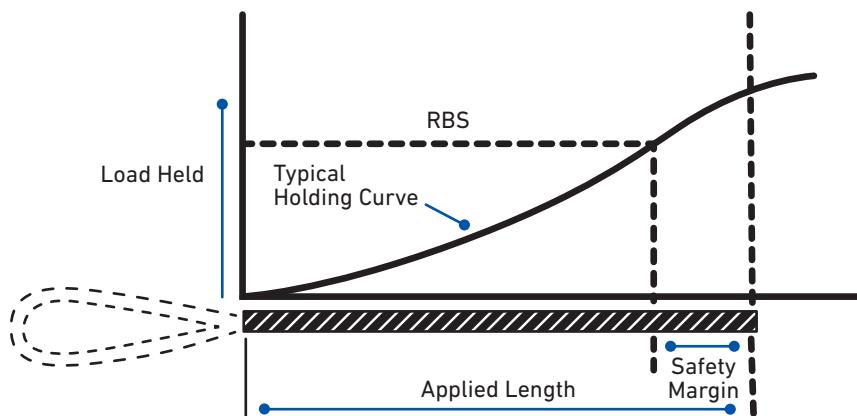
DEAD-ENDS

Terminology & Basic Design Principles



GUY-GRIP® Dead-Ends, Big-Grip Dead-Ends, and larger-sized conductor dead-ends are furnished with a cabled loop.

HOLDING STRENGTH



Typical holding strength curve illustrates that the Holding Strength and the Applied Length are not proportional. A safety factor of approximately one pitch length is designed into PLP® Dead-Ends.

LAY DIRECTION GUIDE

Examples of lay directions of strand or cable.



Left-Hand Lay



Right-Hand Lay



INSTALLATION INSTRUCTIONS

FEATURED PRODUCTS

- SP2049 Big-Grip Dead End
- SP2134 End Sleeves
- SP2037 VARI-GRIP Dead-End
- SP2097 GLAS-GRIP® Dead-End
- SP2130 Spiral Vibration Damper
- SP2697 Air Flow Spoiler
- SP2805 BIRD-FLIGHT™ Diverter
- SP3081 SWAN-FLIGHT™ Diverter
- SP3053 BIRD-FLIGHT™ Aluminum Diverters
- SP3143 Bird Perch Deterrent for Structural Steel
- SP3189 Bird Perch Deterrent for Distribution Crossarms/Box Arms
- SP3196 Bird Perch Deterrent for Inverted Structural Steel
- SP3219 Bird Perch Deterrent for I-Beams
- SP3143 Bird Perch Deterrent for Structural Steel
- SP3093 Pole Plug
- SP2948 Guy Marker
- SP2086 Safety Guy-Wire Dispenser
- SP2013 Pulling Eye

Installation instructions and videos are available on plp.com.
Easily find products by searching the product name or SP number.

NOTES:



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