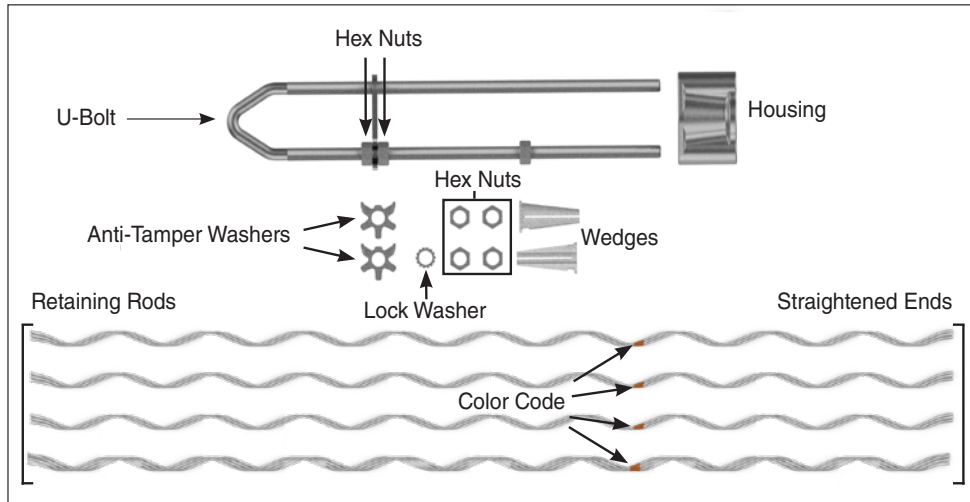




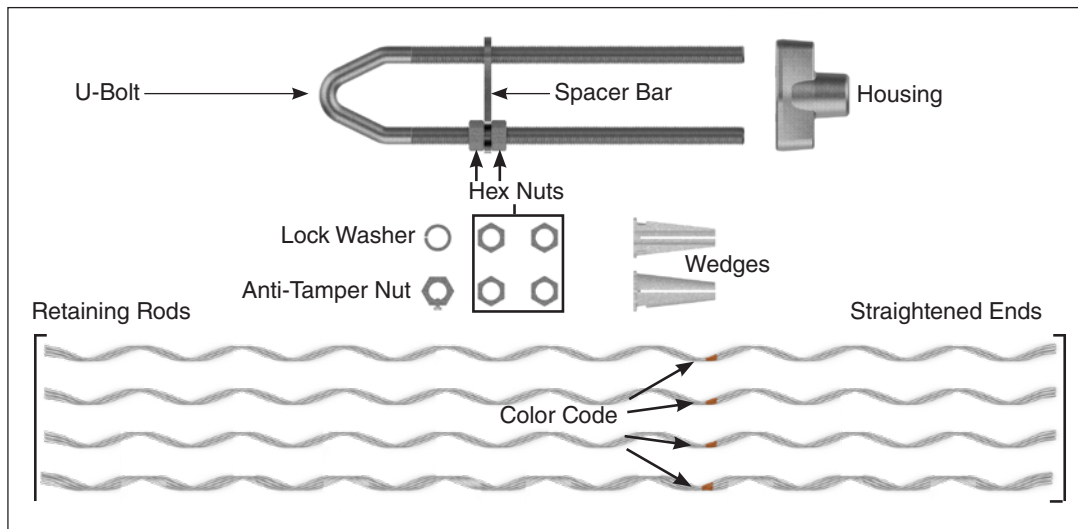
# VARI-GRIP™ Dead-End

## NOMENCLATURE

### VARI-GRIP™ Dead-End



### VARI-GRIP™ Gen2 Dead-End



- 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 1½ and 1¾ u-bolts which use conformal 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

# VARI-GRIP™ Dead-End

## GENERAL RECOMMENDATIONS

VARI-GRIP Dead-Ends are designed for use on Transmission, Tower and Antenna, Communications and other types of guyed structures that require use of large guy strand. VARI-GRIP Dead-End components, such as the housing, U-Bolt, and hex nuts allow for adjustment in guy tensions.

The unique housing, wedge and rod design of the VARI-GRIP Dead-End is designed to provide a holding strength of 100% of the strand's rated breaking load. The high-strength U-Bolt allows for adjusting the guy strand tension without the need for a turnbuckle. VARI-GRIP Dead-Ends are available for strands as small as 7/16" (20,800#) to as large as 1.78" (295,500#). 0", and 18" take-up U-Bolts are available for most strand sizes.

**Gen2 Design: The improved VARI-GRIP Gen2 design allows for proper U-bolt support without the need for conformal castings. The new design is also lighter while keeping the strength of the old design.**

**RATED HOLDING STRENGTH (RHS):** VARI-GRIP Dead-Ends are designed to hold the maximum loads published on the catalog pages for only those specific strands listed.

**MATERIAL SELECTION:** VARI-GRIP Dead-End retaining rods are made from material compatible with the strand for which they are designed.

VARI-GRIPS ARE NOT ACCEPTABLE FOR USE ON WIRE ROPE APPLICATIONS.

## INSTALLATION GUIDELINES

**Compatibility:** The retaining rods are made from a material that is compatible with the guy strand material (i.e., aluminum-clad steel rods for aluminum-clad steel guy strand). Where guying requirements call for strands not shown on the catalog pages, consult PLP. VARI-GRIPS are not acceptable for use on wire rope applications.

**Installation:** The guy strand installation tension should be at least 10% of the rated breaking strength of the strand while maintaining a service tension of 10%.

**Strand Compatibility:** 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. WHEN ORDERING VARI-GRIP DEAD-ENDS, SPECIFY THE STRAND AND THE STRAND LAY DIRECTION ON WHICH THEY ARE TO BE USED.

When installing VARI-GRIP Dead-Ends, care should be taken not to damage the protective coatings on the hardware, rods or fittings.

VARI-GRIP Dead-Ends should not be used as tools, i.e., come-alongs, pulling-grips, etc.

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

Guy tension may be roughly determined by measuring the torque on the hex nuts (during initial installation with threads well lubricated). If this method is to be used, an anti-seize compound applied liberally on the threads of the U-Bolt and anti-tamper washers will permit more accurate measurements.

The anti-seize compound will also make the nut tightening procedure easier.

Consult Factory for torque/tension information or for any unusual installations.

The spacer bar and hex nuts (supplied with the 18" take-up model) should be installed as close to the interior radius of the U-Bolt as possible.

**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 Gen2

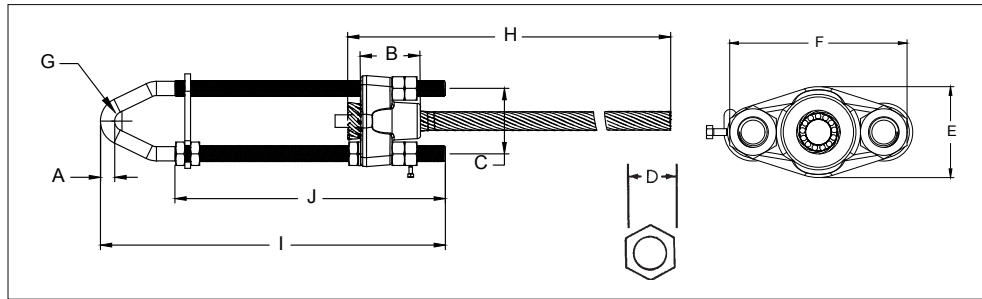
Strand Range	U-Bolt Thread Dia.	Min. Pin Dia.	Max. Pin Dia.
.744" - .910"	1"	1"	1-1/4"
.911" - 1.125"	1-1/8"	1-1/8"	1-1/2"

### Acceptable Pin Diameters for VARI-GRIP

Strand Range	U-Bolt Dia.	Minimum	Maximum
.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"



# VARI-GRIP™ Dead-End



## Dimensional Data

Strand Range	U-Bolt Dia.							H	I (0")	I (18")	Design
	A	B	C	D	E	F	G				
.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 the table on next page	N/A	29-9/16"	Std.
.546"-.661"	3/4"	3-1/2"	3-9/16"	1-1/8"	2-13/16"	5-3/16"	19/32"		11-11/16"	28-5/16"	Std.
.744"-.910"	1"	4-1/2"	4-3/4"	1-1/2"	3-5/16"	6-11/16"	5/8"		12-11/16"	33-3/16"	Gen2
.911" - 1.125"	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.

## ORDERING INFORMATION

Be sure that the VARI-GRIP Dead-End selected matches the material, lay direction, and strength of the strand being used.

### Aluminum Clad Steel Strand (left-hand lay)

Catalog Number 0" Take-Up	Catalog Number 18" Take-Up	Nominal Strand Diameter		Construction	U-Bolt Diameter	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength (Lbs.)	Design
		Min.	Max.								
N/A	VG-18-3000	.546	.546	7#5	3/4"	12	26"	3-3-3-3	Yellow	27,030	Std.
N/A	VG-18-3100	.572	.572	19#9	3/4"	11	28"	3-4-4	Orange	34,290	Std.
VG-0-3101	VG-18-3101	0.636	0.661	19#8	3/4"	11	32"	3-4-4	Black	42,240	Std.
VG-0-3102	VG-18-3102	0.713	0.741	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	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	37#8	1"	12	54"	3-3-3-3	Yellow	84,200	Gen2
VG-0-3105BR	VG-18-3105BR	0.904	0.914	19#5	1"	12	54"	3-3-3-3	Yellow	73,350	Gen2
VG-0-3106BR	VG-18-3106BR	0.911	0.921	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	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	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	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	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	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	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	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	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	91#6	1-3/4"	18	165"	3-3-4-4-4	Red	295,500	Std.

# VARI-GRIP™ Dead-End

## ORDERING INFORMATION

### Galvanized Steel Extra High Strength 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 (Lbs.)	Design
		Min.	Max.									
N/A	VG-18-2100	0.438	0.438	7/16"	7W	5/8"	11	27"	3-4-4	Red	20,800	Std.
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	0.75	0.75	3/4"	1x19	1"	12	44"	3-3-3-3	Orange	68,000	Gen2
VG-0-2104BR	VG-18-2104BR	0.875	0.875	7/8"	1x19	1"	13	58"	3-3-3-4	Green	92,000	Gen2
VG-0-2105BR	VG-18-2105BR	1	1	1"	1x31	1-1/8"	14	66"	3-3-4-4	Blue	122,000	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-0-2107	VG-18-2107	1.250	1.250	1-1/4"	37W	1-1/2"	16	103"	4-4-4-4	Red	162,200#	Std.

### 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 (Lbs.)	Design
		Min.	Max.									
VG-0-2103BR	VG-18-2103BR	0.75	0.75	3/4"	1 x 19	1"	12	44"	3-3-3-3	Orange	68,000	Gen2
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"	13	58"	3-3-3-4	Green	92,000	Gen2
VG-0-4106BR	VG-18-4106BR	0.938	0.938	15/16"	1 x 31 or 37W	1-1/8"	14	63"	3-3-4-4	Black	108,000	Gen2
VG-0-2105BR	VG-18-2105BR	1	1	1"	1 x 31	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



# VARI-GRIP™ Dead-End

## Galvanized Steel Bridge Strand (right hand lay)

Catalog Number 0" Take-Up	Catalog Number 18" Take-Up	Nominal Strand Range		Nominal Strand Size	Con-struction	U-Bolt Diameter	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength (Lbs.)	Design
		Min.	Max.									
VG-0-5103BR	VG-18-5103BR	0.75	0.75	3/4"	1x19	1"	12	44"	3-3-3-3	Orange	68,000	Gen2
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"	1x19	1"	13	58"	3-3-3-4	Green	92,000	Gen2
VG-0-5106BR	VG-18-5106BR	0.938	0.938	15/16"	1 X 31	1-1/8"	14	63"	3-3-4-4	Black	108,000	Gen2
VG-0-5107BR	VG-18-5107BR	1	1	1"	1x31	1-1/8"	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"	19	119"	3-3-3-3-2-2	Pink	276,000	Std.

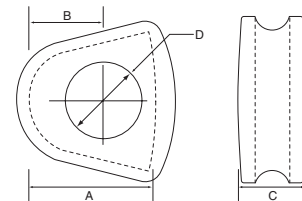
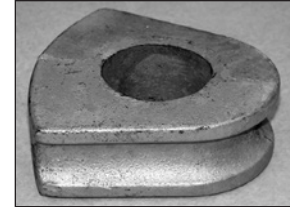
## ACCESSORIES

### Conformal Casting

To be used with Standard VARI-GRIP only. Gen2 VARI-GRIPS do not require this.

(Supplied with Dead-Ends using 1-1/2" and 1-3/4" U-Bolts to assure proper support)

Strand Sizes	U-Bolt Dia.	A	B	C	D
1-1/8" EHS, 1-1/4" 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"
61#6, 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"
61#5, 1-1/2" BS	1-3/4"	5.844"	3.75"	3.375"	3.625"
91#6	1-3/4"	5.844"	4"	3.375"	3.875"

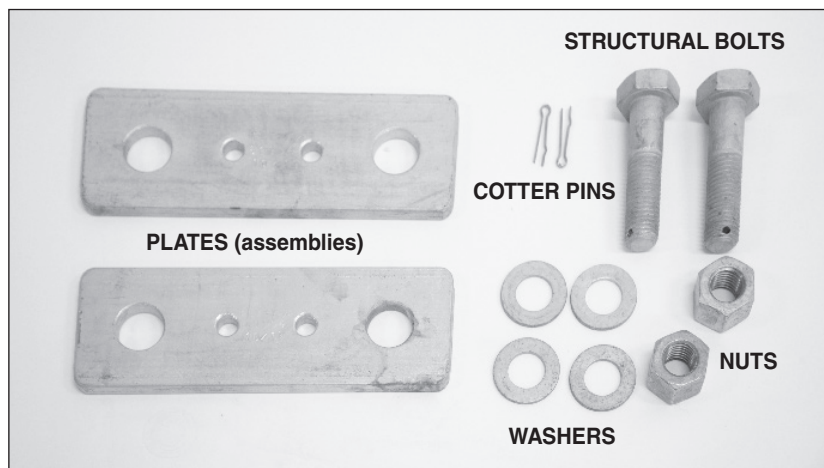


NOTE: Conformal castings are not required for Gen2 VARI-GRIP Dead-Ends.

# VARI-GRIP™ Dead-End

## VARI-GRIP™ Link Plates

### NOMENCLATURE



### GENERAL RECOMMENDATIONS

VARI-GRIP Link Plates are intended to be an alternate option to anchor shackles, and can be used in 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.

**Options:** VARI-GRIP Link Plates are designed to work with all types of VARI-GRIP Dead-Ends for multiple guy-strand constructions.

**Materials:** All included parts are constructed of hot-dipped galvanized steel, for corrosion resistance in most climates.

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

	Catalog Number					
	VLP-0600	VLP-0601	VLP-0603	VLP-0605	VLP-0606	VLP-0607
<b>Max. Strength Rating</b>	42,400 lbs.	80,000 lbs.	108,000 lbs.	156,000 lbs.	192,000 lbs.	252,000 lbs.
<b>Strand Size</b>	EHS 7/16" EHS 1/2" EHS 9/16" EHS 5/8"	EHS 3/4" BS 3/4" EHS 7/8" BS 13/16"	BS 7/8" EHS 1" BS 15/16"	BS 1" BS 1-1/16" EHS 1-1/8" BS 1-1/8"	BS 1-3/16" EHS 1-1/4" BS 1-1/4"	BS 1-5/16" BS 1-3/8" BS 1-7/16"
<b>Conformal Casting</b>	N/A	N/A	N/A	Yes	Yes	Yes
<b>U-bolt Size</b>	5/8"-3/4"	1"	1-1/8"	1-1/2"	1-1/2"	1-3/4"
<b>Thru hole Diameter</b>	1"	1-1/2"	1-1/2"	1-7/8"	2-3/8"	2-3/8"
<b>Structural Bolt Diameter</b>	7/8"	1-1/4"	1-3/8"	1-3/4"	2"	2-1/4"