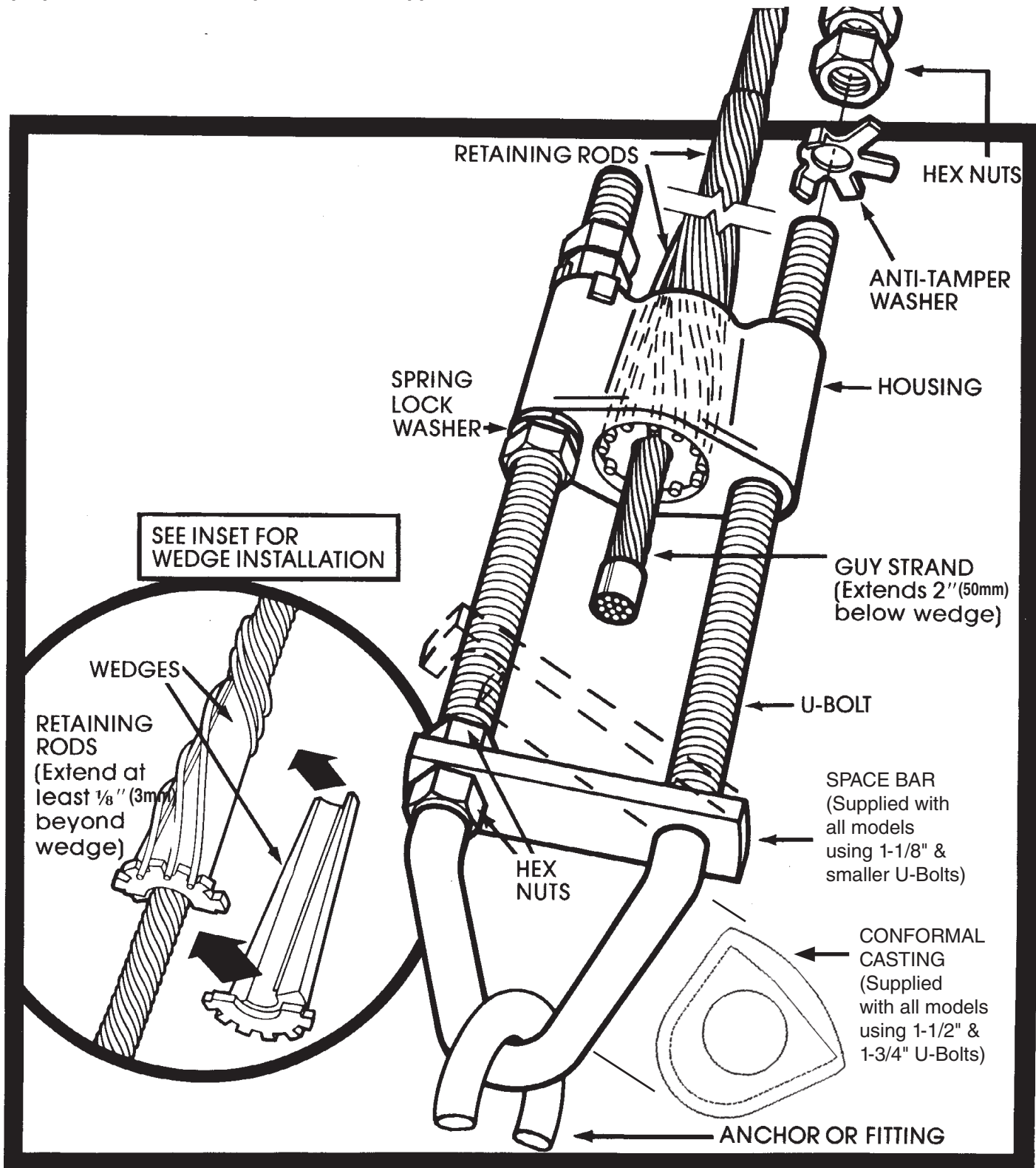




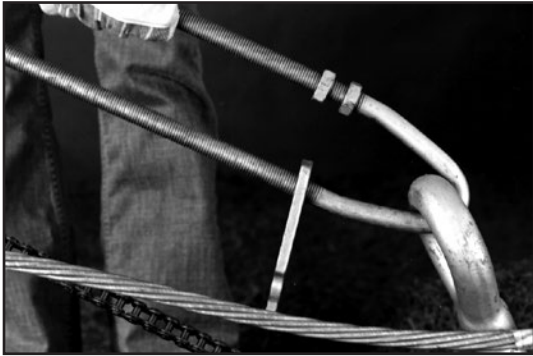
VARI-GRIP™ Dead-end

Be sure to read and understand this procedure completely before applying product. Be sure to select the proper size PREFORMED product before application.

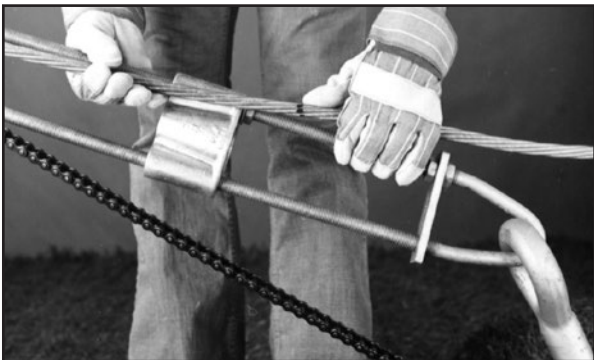


Step #1 Pretension guy strand with hoist attached high enough to permit installation of retaining rods.

Step #2 Insert U-Bolt through anchor or fitting. Installation of adjustable models may require removal and replacement of spacer bar and associated hex nuts.



Step #3 Place housing on U-Bolt at the desired location, with the larger opening of the tapered bore facing the fitting. Mark strand at lower end of housing and cut strand AT LEAST 2" (50mm) BEYOND MARK. If desired, the strand may be left uncut and extended beyond the mark as far as necessary. Move housing on strand and temporarily fasten it far enough away to permit installation of retaining rods.



Step #4 Attach BOTH wedges on strand, with a single wrap of tape near the mark and AT LEAST 2" (50mm) from the end of the strand. The larger end of the wedges should face the fitting.

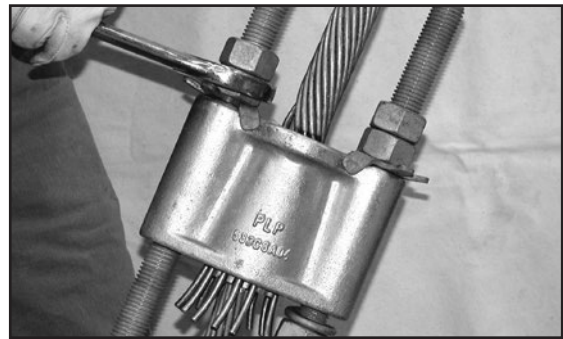


Step #5 Installation of the retaining rods is as follows: Place the straight end of the rods (color code end) in the notches of the wedges so AT LEAST 1/8" (3mm) EXTENDS BEYOND THE WEDGE. Wrap rod subset on strand completely and repeat procedure for subsequent subsets. All rods should be placed into the grooves on the wedge. A screwdriver can be used to equalize gap between the wedge halves.



Step #6 Slide housing over wedge/rod assembly and onto the U-Bolt until it is firmly seated over the wedge.

Step #7 Apply anti-tamper washers and four (4) hex nuts on U-Bolt as illustrated below. The two pre-bent lips, on the anti-tamper washer, fit over the housing. Tighten hex nuts EQUALLY so the housing is SQUARE on U-Bolt.



Step #8 After final tensioning, secure the nuts closest to the housing by bending the anti-tamper washer lip over them. These lips may be rebent for disassembly and reassembly.



Step #9 Tighten hex nut below housing until spring lock washer is flat. The application is now complete. If retensioning is required, reverse and repeat steps 7, 8, & 9. To aid in disassembly of the wedge/housing unit, strike the bottom of the housing with a hammer.



Step #10 Completed application.



Installation Guidelines

- This procedure is an aid to installation and does not imply any line design recommendations.
- VARI-GRIP™ Dead-ends should be used only on the size and type of strand for which they are designed. Lay direction of both the VARI-GRIP Dead-end retaining rods and the guy strand should be the same.
- When installing VARI-GRIP Dead-ends to a pin type fitting, refer to Table 1 for recommended diameters of the pin. Refer to Table 2 for hex nut dimensions when using sockets or wrenches to tighten nuts. Table 2 also provides housing dimensions to be considered in placement of multiple guying. In applications that require a 1-1/2" or 1-3/4" U-Bolt, a conformal casting is required. Refer to Table 3 for conformal casting dimensions.

Installation Guidelines continued

- VARI-GRIP™ Dead-ends should be applied on smoothly contoured hardware. Minimum diameter of pins is listed in Table 1; however, the hardware manufacturer should be consulted for other dimensions and hardware strength. PLP offers suitable shackle (cat # 0065470) for attachment plates up to 1" (25mm) thick.
- An "anti-seize" compound applied liberally to the U-Bolt threads and anti-tamper washer will aid in tensioning the hex nuts and is necessary to achieve consistent readings. Guy tensions can be approximated by measuring the nut torque of the U-Bolt. If desired, consult PLP for the torque/guy tension relationship.
- Care should be taken to avoid gouging or damaging the corrosion preventative coating on the VARI-GRIP Dead-end Components and on aluminum coated or galvanized steel strand.
- VARI-GRIP Dead-ends are precision devices and should be installed as illustrated herein to prevent distortion and damage.
- VARI-GRIP Dead-ends should only be used for the purpose for which they were designed and should not be used as tools, come-alongs, pulling-in grips, etc.
- The U-Bolt, housing, washers, nuts, wedges, and spacer bar (where applicable) may be reused provided no damages have been sustained. The retaining rods may be removed and reapplied twice, provided they are not distorted or damaged, within 90 days after initial tensioning. New rods must be used after 90 days.
- PLP recommended guy tension should be maintained at approximately 10% of the Rated Breaking Strength of the Strand.

Table 1: Acceptable Pin Diameters

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"

Table 2: Dimensional Data

Strand Range	A	B	C	D	E	F	G	H	I (0")	I (18")
.438"-.500"	5/8"	3-1/4"	3-1/4"	1-1/16"	3-17/32"	4-3/4"	15/16"	Refer to the VARI-GRIP™ Dead-end section of the PLP catalog to determine rod lengths for specific designs.	N/A	29-9/16"
.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"
.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"
.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"
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"
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"
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"

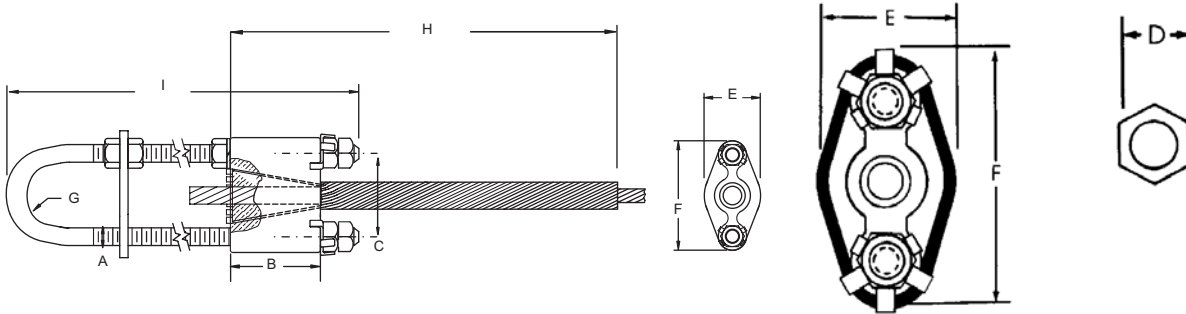
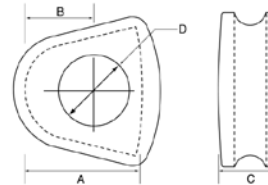
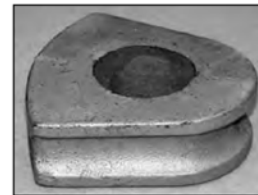


Table 3: Conformal Casting

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

Strand Sizes	U-Bolt Thread Diameter	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"



SAFETY CONSIDERATIONS

This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual. **FAILURE TO FOLLOW THESE PROCEDURES MAY RESULT IN PERSONAL INJURY OR DEATH.**

Do not reuse or modify this product under any circumstances.

This product is intended for use by trained technicians only. **This product should not be used by anyone who is not familiar with, and not trained to use it.**

When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact. For proper performance and personal safety, be sure to select the proper size PREFORMED™ product before application.

PREFORMED products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.



PREFORMED LINE PRODUCTS

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