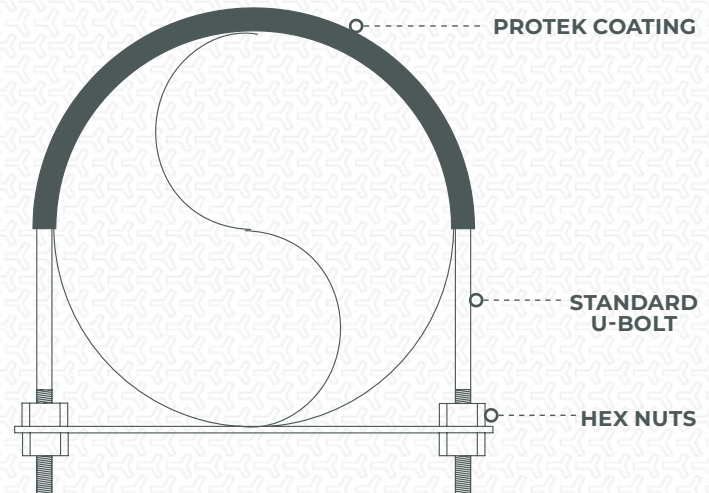


U-Bolts



APP's stocked U-Bolts are built to the standard Grinnell figure 137 specifications and come hot dipped galvanized with nuts included. U-Bolts act as the simplest but also the most widely used pipe guiding restraint. Custom finishes and materials include: Carbon steel, Stainless Steel, Xylan or Teflon coated. Custom sizes are readily available upon request including variable: rod thickness, width, length, and thread length. APP also offers the option to add a buffer pad to the U-Bolt package. Options include: ProTek Flat Plate, ProTek Rod, Neoprene, or PTFE.



OPTION FOR U-BOLTS:

ProTek U-Bolts

APP's ProTek U-Bolts are in stock and combine the strength and simplicity of a u-bolt with our advanced polymer technology. They successfully restrain the pipe while shielding it from metal to metal contact and rough abrasion from pipe movement. The ProTek coating is strong enough to withstand high compressive loads and harsh environmental conditions, but has a low coefficient of friction to seamlessly cradle the pipe.

BENEFITS

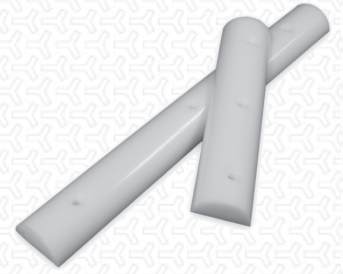
- » Eliminates metal to metal contact that could damage pipe coatings and lead to corrosion
- » Coating has a low coefficient of friction to allow pipe movement
- » Low cost of installation
- » Product helps minimize maintenance and operational costs throughout the lifetime of the piping system
- » Can be used on any type of pipe.

SPECIFICATIONS

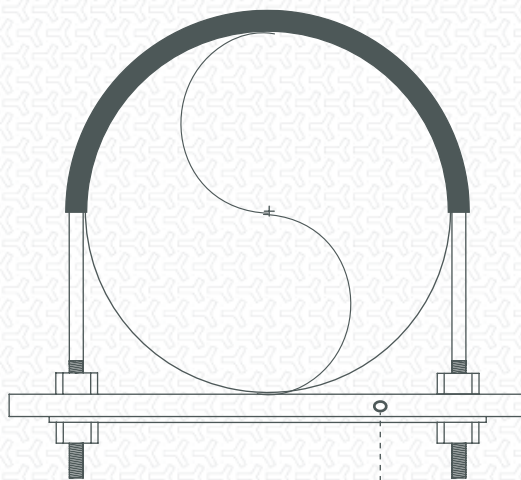
COMPOSITION	Carbon Steel or Stainless Steel
TENSILE STRENGTH (ASTM D412)	1,500 lbs. per square inch
TEMPERATURE RANGE	-67°F to 230°F
INSTALLATION	Four heavy hex nuts
POTENTIAL ACCESSORIES	ProTek Rod, ProTek Package (ProTek Wear Pad and ProTek Flat Plate)

CUSTOM MANUFACTURING Available in custom sizes and metal finishes including stainless steel, teflon coated and cadmium coated.

ProTek Rod



ProTek Rods serve as a barrier between a metallic pipe and the metallic support. The ProTek Rod is made out of a durable thermoplastic material. It effectively prevents pipe corrosion by inhibiting a corrosion cell from forming, thus prolonging the life of your piping system.

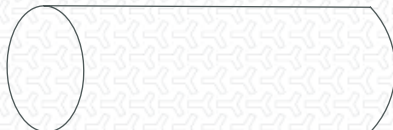


PROTEK ROD
HALF ROUND

HALF ROUND



FULL ROUND

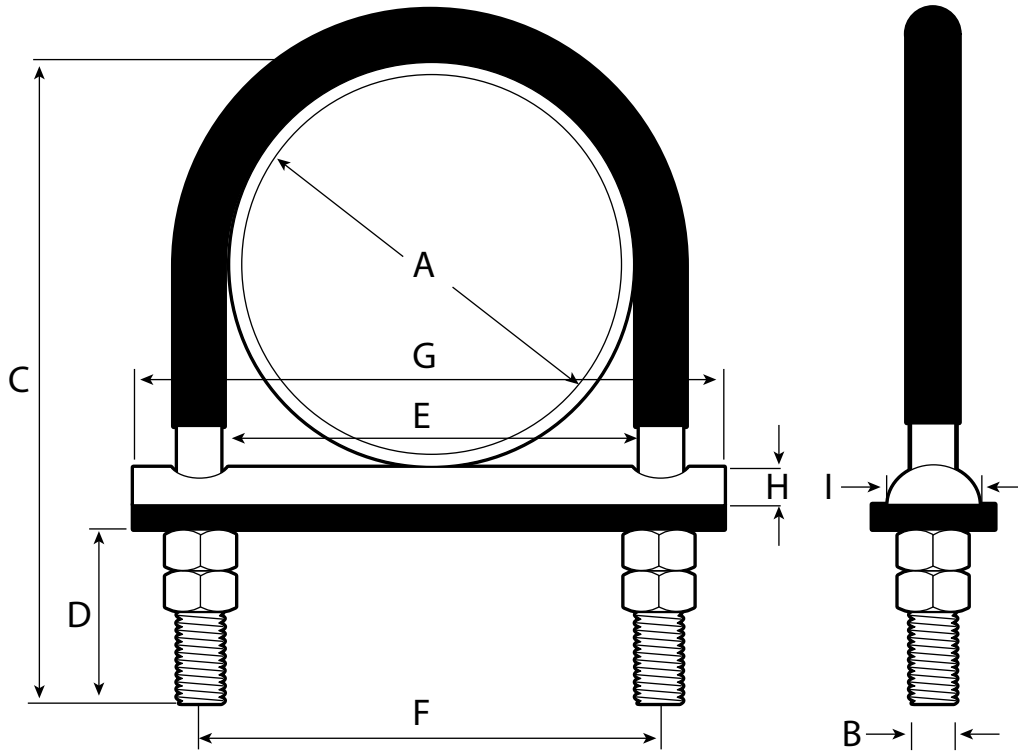


BENEFITS

- » Prevents galvanic corrosion
- » High strength
- » High temperature resistance
- » Low coefficient of friction, which protects the pipe coating by limiting abrasion
- » Low moisture absorption
- » Good creep resistance

SPECIFICATIONS

COMPOSITION	Thermoplastic (acetal homopolymer)
TENSILE STRENGTH (ASTM D368)	9,500 psi
ELONGATION (ASTM D368)	30%
FLEXURAL STRENGTH (ASTM D790)	12,000 psi
MODULUS OF ELASTICITY (FLEXURAL TEST)	400,000 psi
SHEAR STRENGTH (ASTM D732)	8,000 psi
COMPRESSIVE STRENGTH (ASTM D695)	15,000 psi
IZOD IMPACT STRENGTH (ASTM D256)	1.0 ft-lbs/inch
TEMPERATURE LIMIT	Continuous service up to 180°F
MELTING POINT	335°F
DEFLECTION TEMPERATURE	220°F
ROCKWELL HARDNESS (@73° F)	88/120
COEFFICIENT OF FRICTION	0.21
POTENTIAL ACCESSORIES	ProTek Coated U-Bolt
INSTALLATION	ProTek Rod is anchored to a structural support with either the ProTek U-Bolt or a standard bolt.
CUSTOM MANUFACTURING	Available in various lengths.



ProTek U-Bolt assembly dimensions

(A) Nominal pipe size mm [in]	(B) U-bolt stock Ø mm [in]	(C) U-bolt height mm [in]	(D) Thread length mm [in]	(E) Inside gap mm [in]	(F) Bolt C-to-C mm [in]	(G) ProTek Rod length mm [in]	(H) ProTek Rod height mm [in]	(I) ProTek Rod width mm [in]
15 [1/2]	6 [1/4]	83 [3 1/4]	60 [2 3/8]	24 [15/16]	31 [1 3/16]	64 [2 1/2]	8 [5/16]	19 [3/4]
20 [3/4]	6 [1/4]	85 [3 5/16]	60 [2 3/8]	29 [1 1/8]	35 [1 3/8]	76 [3]	8 [5/16]	19 [3/4]
25 [1]	6 [1/4]	87 [3 7/16]	60 [2 3/8]	35 [1 3/8]	41 [1 5/8]	76 [3]	8 [5/16]	19 [3/4]
25 [1]	10 [3/8]	87 [3 7/16]	60 [2 3/8]	35 [1 3/8]	44 [1 3/4]	76 [3]	11 [7/16]	25 [1]
32 [1 1/4]	10 [3/8]	95 [3 3/4]	64 [2 1/2]	43 [1 3/4]	54 [2 1/8]	89 [3 1/2]	11 [7/16]	25 [1]
40 [1 1/2]	10 [3/8]	102 [4]	64 [2 1/2]	51 [2]	60 [2 3/8]	102 [4]	11 [7/16]	25 [1]
50 [2]	10 [3/8]	114 [4 1/2]	64 [2 1/2]	62 [2 7/16]	71 [2 13/16]	114 [4 1/2]	11 [7/16]	25 [1]
65 [2 1/2]	13 [1/2]	134 [5 1/4]	76 [3]	75 [2 15/16]	87 [3 7/16]	127 [5]	11 [7/16]	25 [1]
80 [3]	13 [1/2]	148 [5 13/16]	76 [3]	90 [3 9/16]	103 [4 1/16]	152 [6]	11 [7/16]	25 [1]
100 [4]	13 [1/2]	173 [6 13/16]	76 [3]	116 [4 9/16]	129 [5 1/16]	178 [7]	11 [7/16]	25 [1]
120 [5]	13 [1/2]	198 [7 13/16]	76 [3]	143 [5 5/8]	156 [6 1/8]	203 [8]	11 [7/16]	25 [1]
150 [6]	16 [5/8]	241 [9 1/2]	95 [3 3/4]	171 [6 3/4]	187 [7 3/8]	229 [9]	11 [7/16]	25 [1]
200 [8]	16 [5/8]	292 [11 1/2]	95 [3 3/4]	222 [8 3/4]	238 [9 3/8]	279 [11]	11 [7/16]	25 [1]
250 [10]	19 [3/4]	351 [13 13/16]	102 [4]	279 [10 7/8]	295 [11 5/8]	343 [13 1/2]	18 [11/16]	38 [1 1/2]
300 [12]	22 [7/8]	408 [16 1/16]	108 [4 1/4]	327 [12 7/8]	349 [13 3/4]	406 [16]	18 [11/16]	38 [1 1/2]
350 [14]	22 [7/8]	440 [17 5/16]	108 [4 1/4]	359 [14 1/8]	381 [15]	432 [17]	18 [11/16]	38 [1 1/2]
400 [16]	22 [7/8]	490 [19 5/16]	108 [4 1/4]	410 [16 1/8]	432 [17]	483 [19]	18 [11/16]	38 [1 1/2]
450 [18]	25 [1]	551 [21 11/16]	121 [4 3/4]	461 [18 1/8]	486 [19 1/8]	546 [21 1/2]	18 [11/16]	38 [1 1/2]
500 [20]	25 [1]	602 [23 11/16]	121 [4 3/4]	511 [20 1/8]	537 [21 1/8]	597 [23 1/2]	18 [11/16]	38 [1 1/2]
600 [24]	25 [1]	703 [27 11/16]	121 [4 3/4]	613 [24 1/8]	638 [25 1/8]	699 [27 1/2]	18 [11/16]	38 [1 1/2]
700 [28]	25 [1]	805 [31 11/16]	121 [4 3/4]	715 [28 1/8]	740 [29 1/8]	800 [31 1/2]	18 [11/16]	38 [1 1/2]
750 [30]	25 [1]	856 [33 11/16]	121 [4 3/4]	765 [31 1/8]	791 [31 1/8]	851 [33 1/2]	18 [11/16]	38 [1 1/2]
900 [36]	25 [1]	1008 [39 11/16]	121 [4 3/4]	918 [36 1/8]	943 [37 1/8]	1003 [39 1/2]	18 [11/16]	38 [1 1/2]