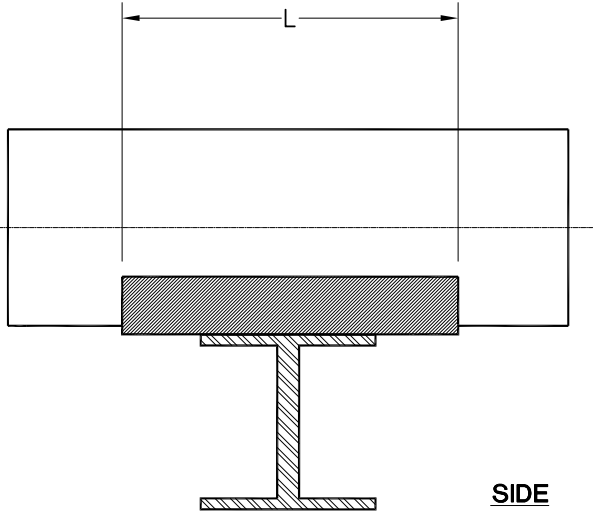
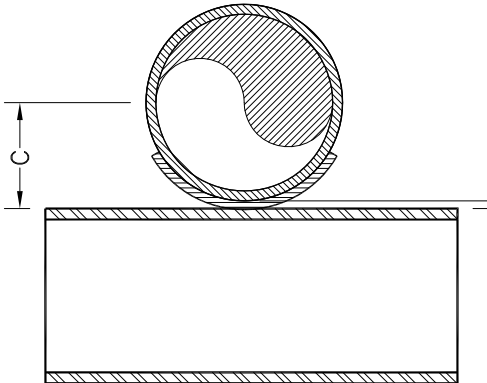


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**SIDE**



**ELEV**

0.20 to 0.32" (5 to 8mm) up to 24"ø  
 0.32 to 0.42" (8 to 10.5mm) 26" to 60"ø

Nominal Pipe Size	Nominal O.D.		C		L		Minimum L		Weight (lb/kg)	
SERIES 20FR16, 20FR16-C										
1"	1.50"	38mm	0.91"	23mm	6"	152mm	4"	102mm	0.4	0.2
1.5"	2.00"	51mm	1.16"	29mm	6"	152mm	4"	102mm	0.5	0.2
2"	2.50"	64mm	1.41"	36mm	6"	152mm	4"	102mm	0.7	0.3
3"	3.50"	89mm	1.91"	49mm	6"	152mm	4"	102mm	1.0	0.5
4"	4.50"	114mm	2.41"	61mm	6"	152mm	4"	102mm	1.3	0.6
6"	6.50"	165mm	3.41"	87mm	8"	203mm	4"	102mm	2.6	1.2
8"	8.64"	219mm	4.48"	114mm	10"	254mm	4"	102mm	4.2	1.9
10"	10.78"	274mm	5.55"	141mm	12"	305mm	4"	102mm	6.3	2.9
12"	12.92"	328mm	6.62"	168mm	12"	305mm	4"	102mm	7.5	3.4
14"	15.33"	389mm	7.92"	201mm	12"	305mm	4"	102mm	8.9	4.0
16"	17.49"	444mm	9.00"	228mm	12"	305mm	4"	102mm	10.1	4.6
18"	19.63"	499mm	10.07"	256mm	16"	406mm	6"	152mm	15.1	6.9
20"	21.77"	553mm	11.14"	283mm	16"	406mm	6"	152mm	16.7	7.6
24"	26.07"	662mm	13.29"	337mm	16"	406mm	6"	152mm	20.0	9.1
30"	31.71"	805mm	16.22"	412mm	20"	508mm	8"	203mm	46.9	21.3
36"	37.99"	965mm	19.36"	492mm	20"	508mm	8"	203mm	56.1	25.5
42"	43.59"	1107mm	22.17"	563mm	24"	610mm	10"	254mm	78.3	35.6
48"	49.79"	1265mm	25.26"	641mm	24"	610mm	10"	254mm	89.4	40.6
54"										
60"	61.21"	1555mm	30.98"	787mm	24"	610mm	10"	254mm	111.4	50.6

- NOTE 5. C = 0.5 \* Nominal O.D. + T1.
- NOTE 4. T1 dimension is from T.O.S. to B.O.P.
- NOTE 3. Wear pad to be centered on structural support.
- NOTE 2. Wear pad to have minimum 120 degrees of contact (max. 180 degrees).
- NOTE 1. Wear pad to be of the same material as the pipe.

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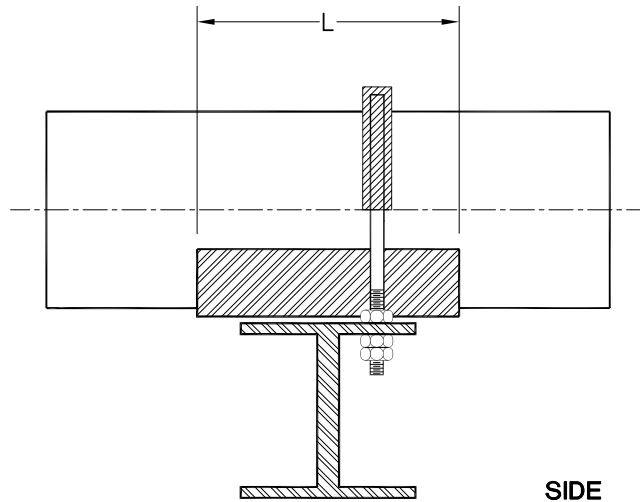
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<b>SCALE:</b> NONE	<b>BATCH:</b>	
<b>DRAWN:</b> KGS	D102904	
<b>CH'KD:</b> KGS	D102904	
		<b>DRAWING:</b> FIG210-20FR16
		<b>FILENAME:</b> FIG210-20FR16
<b>SUPPORT TYPE:</b> FRP WEAR PAD		
<b>SUPPORT GROUP:</b> ONEWAY SUPPORT		
<b>FIGURE NUMBER:</b> FIGURE 210 - 20FR16		

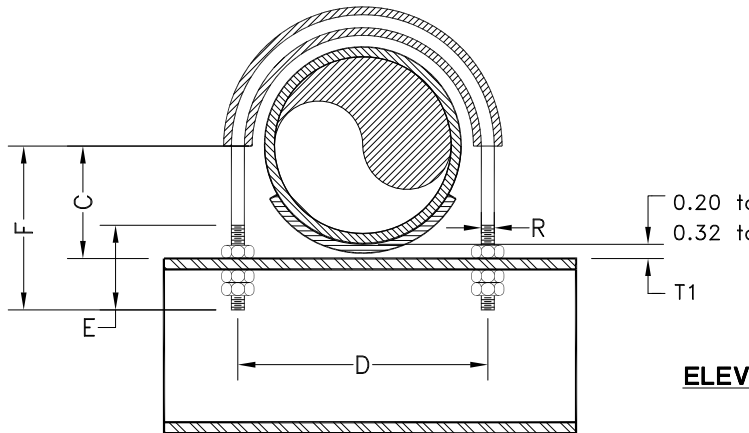
<b>REV</b>	5
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**SIDE**



**ELEV**

Nominal Pipe Size	L		R	D +/- 0.12"		E		F	
SERIES 20HV, 20FR-E, 20FR16, 20FR20, 20JF, 110FW, 20C, 20HV-D									
SERIES 20HV-C, 20FR-EC, 20FR16-C, 20FR20-C, 20JF-C, 20HV(FDA)									
1"	6"	152mm	3/8"	2.75"	70mm	3.00"	76mm	2.75"	70mm
1.5"	6"	152mm	3/8"	3.25"	83mm	3.00"	76mm	3.00"	76mm
2"	6"	152mm	3/8"	3.75"	95mm	3.00"	76mm	3.25"	83mm
3"	6"	152mm	1/2"	4.88"	124mm	3.50"	89mm	4.13"	105mm
4"	6"	152mm	1/2"	5.88"	149mm	3.50"	89mm	4.63"	118mm
6"	8"	203mm	5/8"	8.13"	206mm	4.00"	102mm	6.06"	154mm
8"	10"	254mm	5/8"	10.25"	260mm	4.00"	102mm	7.13"	181mm
10"	12"	305mm	3/4"	12.50"	317mm	4.50"	114mm	8.56"	217mm
12"	12"	305mm	7/8"	14.75"	375mm	5.00"	127mm	10.00"	254mm
14"	12"	305mm	7/8"	16.95"	430mm	5.00"	127mm	11.23"	285mm
16"	12"	305mm	7/8"	19.11"	485mm	5.00"	127mm	12.31"	313mm
18"	16"	356mm	1"	21.42"	544mm	5.50"	140mm	13.77"	350mm
20"	16"	356mm	1"	23.38"	594mm	5.50"	140mm	14.75"	375mm
24"	16"	356mm	1"	27.68"	703mm	5.50"	140mm	16.90"	429mm
30"	20"	508mm	1"	33.78"	858mm	5.50"	140mm	19.72"	501mm
36"	20"	508mm	1"	40.06"	1018mm	5.50"	140mm	22.86"	581mm
42"									
48"									

0.20 to 0.32" (5 to 8mm) up to 24"ø  
0.32 to 0.42" (8 to 10.5mm) 26" to 60"ø

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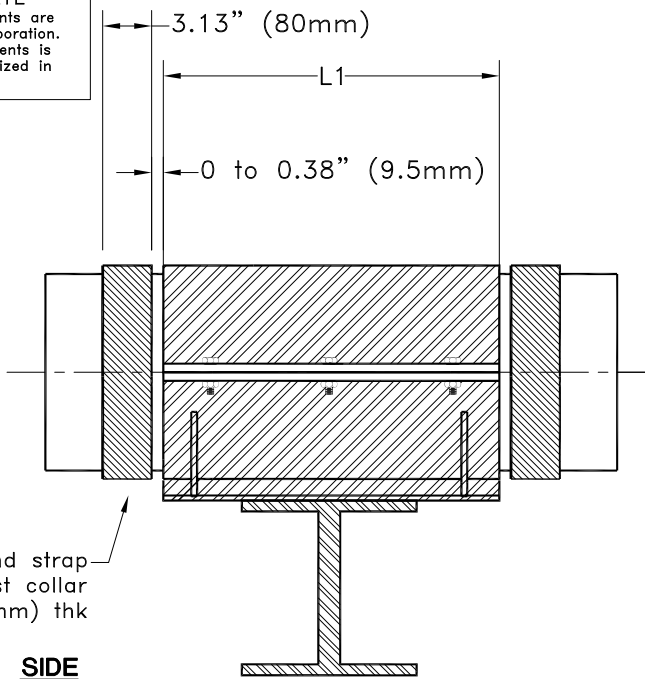
Baton Rouge, LA, U.S.A.

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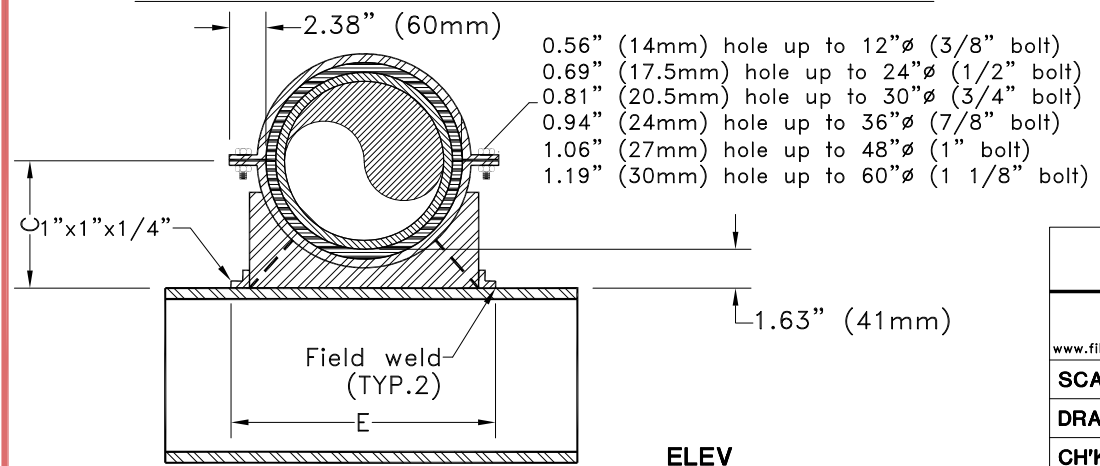
<b>SCALE:</b>	NONE	<b>BATCH:</b>	
<b>DRAWN:</b>	KGS	<b>D072098</b>	
<b>CH'KD:</b>	KGS	<b>D072098</b>	
		<b>DRAWING:</b>	FIGURE 226
		<b>FILENAME:</b>	FIG226
<b>SUPPORT TYPE:</b>	FRP WEAR PAD W/ RUBBER COATED U-BOLT		
<b>SUPPORT GROUP:</b>	GUIDE		
<b>FIGURE NUMBER:</b>	FIGURE 226		
		<b>REV</b>	<b>10</b>

- NOTE 11. An "extra-long" L dimension of 14" (356mm) may be used up to 16"ø.  
NOTE 10. Minimum L dimensions per Fig.210 may also be used.  
NOTE 9.  $F = C + 1/2in. + 3 * R$  (or use values in table).  
NOTE 8.  $E = 4 * R + 1 1/2in.$   
NOTE 7.  $C = 0.5 * Avg O.D. + T1$  (See Fig.210 for C dimensions).  
NOTE 6.  $D = Pipe O.D. + 2 * T1 + R + 1/4in.$  (or use values in table).  
NOTE 5. T1 dimension is from T.O.S. to B.O.P.  
NOTE 4. The u-bolt shall not "anchor" the pipe.  
NOTE 3. Wear pad to be centered on structural support.  
NOTE 2. Wear pad to have minimum 120 degrees of contact (max. 180 degrees).  
NOTE 1. Saddle to be of the same material as the pipe.

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**SIDE**



**ELEV**

Nominal Pipe Size	Nominal O.D.		L1		C		E	
SERIES 20FR16, 20FR16-C								
6"	6.50"	165mm	8"	203mm	4.88"	124mm	12.00"	305mm
8"	8.64"	219mm	10"	254mm	5.95"	151mm	14.00"	356mm
10"	10.78"	274mm	12"	305mm	7.02"	178mm	16.00"	406mm
12"	12.92"	328mm	12"	305mm	8.09"	205mm	18.00"	458mm
14"	15.33"	389mm	12"	305mm	9.20"	234mm	20.25"	514mm
16"	17.49"	444mm	12"	305mm	10.37"	264mm	22.25"	565mm
18"	19.63"	499mm	16"	406mm	11.44"	291mm	24.50"	622mm
20"	21.77"	553mm	16"	406mm	12.51"	318mm	26.50"	673mm
24"	26.07"	662mm	16"	406mm	14.66"	372mm	30.75"	781mm
30"	31.71"	805mm	20"	508mm	17.48"	444mm	37.25"	946mm
36"	37.99"	965mm	20"	508mm	20.62"	524mm	43.50"	1105mm
42"	43.59"	1107mm	24"	610mm	23.43"	595mm	49.50"	1257mm
48"	49.79"	1265mm	24"	610mm	26.52"	674mm	56.00"	1422mm
54"								
60"	61.21"	1555mm	24"	610mm	32.24"	819mm	68.00"	1727mm

- NOTE 5. Average O.D. is typically 0.03" to 0.10" larger than the nominal O.D.
- NOTE 4. C = 0.5 \* Nominal O.D. + 1.63in.
- NOTE 3. Steel saddle includes 1/8in. thick neoprene liner.
- NOTE 2. 1.63in. (41mm) dimension is from T.O.S to B.O.P.
- NOTE 1. Thrust collar may need to be larger depending upon design conditions.

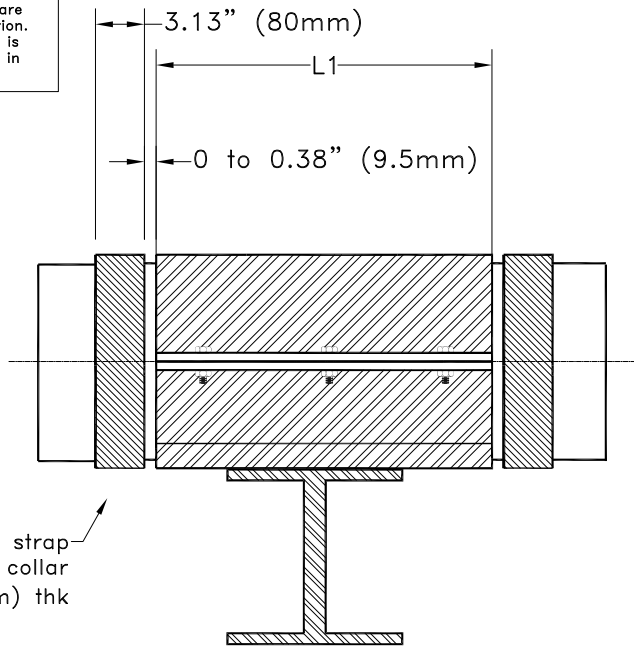
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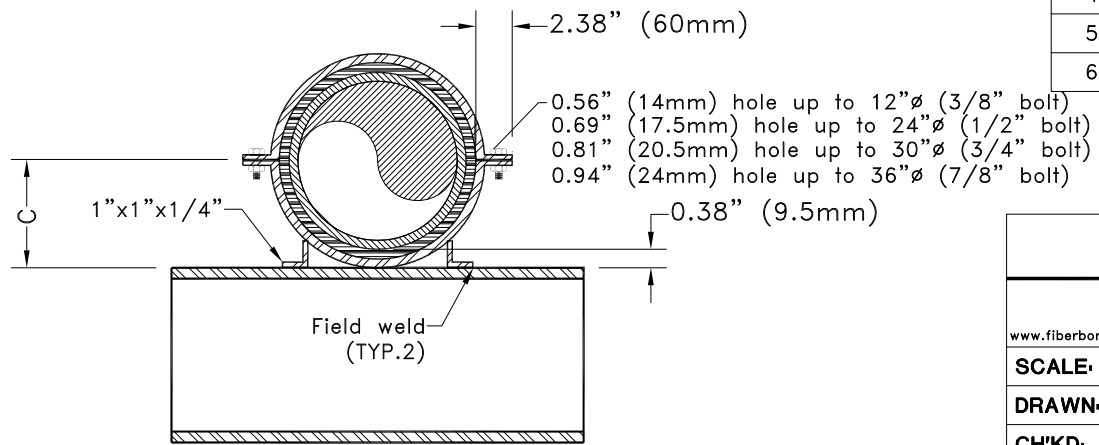
<b>SCALE:</b>	NONE	<b>BATCH:</b>	
<b>DRAWN:</b>	KGS	<b>D102904</b>	
<b>CH'KD:</b>	KGS	<b>D102904</b>	
		<b>DRAWING:</b>	FIG230 - 20FR16
		<b>FILENAME:</b>	FIG230 - 20FR16
<b>SUPPORT TYPE:</b>	STEEL ANCHOR W/ FRP THRUST COLLARS		
<b>SUPPORT GROUP:</b>	ANCHOR		
<b>FIGURE NUMBER:</b>	FIGURE 230 - 20FR16		

**REV**  
2

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**SIDE**



**ELEV**

- NOTE 5. Average O.D. is typically 0.03" to 0.10" larger than the nominal O.D.  
 NOTE 4. C = 0.5 \* Nominal O.D. + 0.38in.  
 NOTE 3. Steel saddle includes 1/8in. thick neoprene liner.  
 NOTE 2. 0.38in. (9.5mm) dimension is from T.O.S. to B.O.P.  
 NOTE 1. Thrust collar may need to be larger depending upon design conditions.

Nominal Pipe Size	Nominal O.D.		L1		C	
SERIES 20FR16, 20FR16-C						
2"	2.50"	64mm	6"	152mm	1.63"	41mm
3"	3.50"	89mm	6"	152mm	2.13"	54mm
4"	4.50"	114mm	6"	152mm	2.63"	67mm
6"	6.50"	165mm	8"	203mm	3.63"	92mm
8"	8.64"	219mm	10"	254mm	4.70"	119mm
10"	10.78"	274mm	12"	305mm	5.77"	147mm
12"	12.92"	328mm	12"	305mm	6.84"	174mm
14"	15.33"	389mm	12"	305mm	8.04"	204mm
16"	17.49"	444mm	12"	305mm	9.11"	231mm
18"	19.63"	499mm	16"	406mm	10.19"	259mm
20"	21.77"	553mm	16"	406mm	11.26"	286mm
24"	26.07"	662mm	16"	406mm	13.41"	341mm
30"	31.71"	805mm	20"	508mm	16.23"	412mm
36"	37.99"	965mm	20"	508mm	19.37"	492mm
42"	43.59"	1107mm				
48"	49.79"	1265mm				
54"						
60"	61.21"	1555mm				

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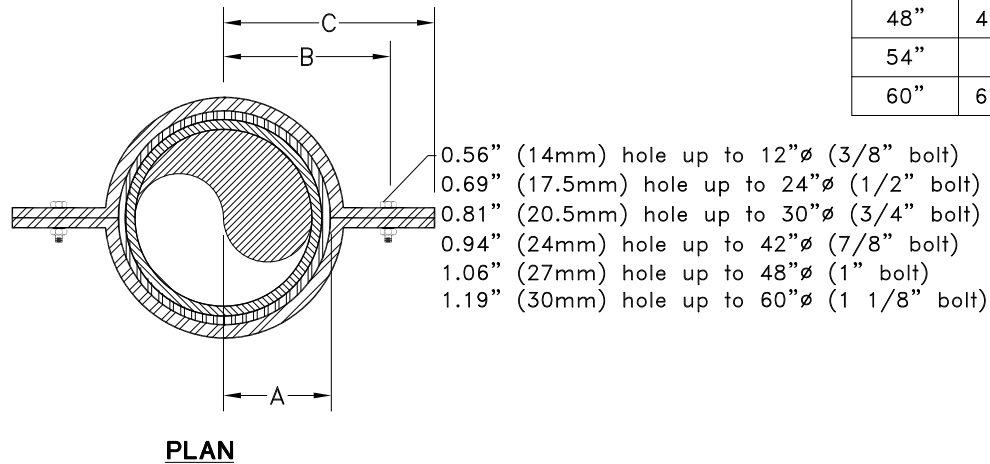
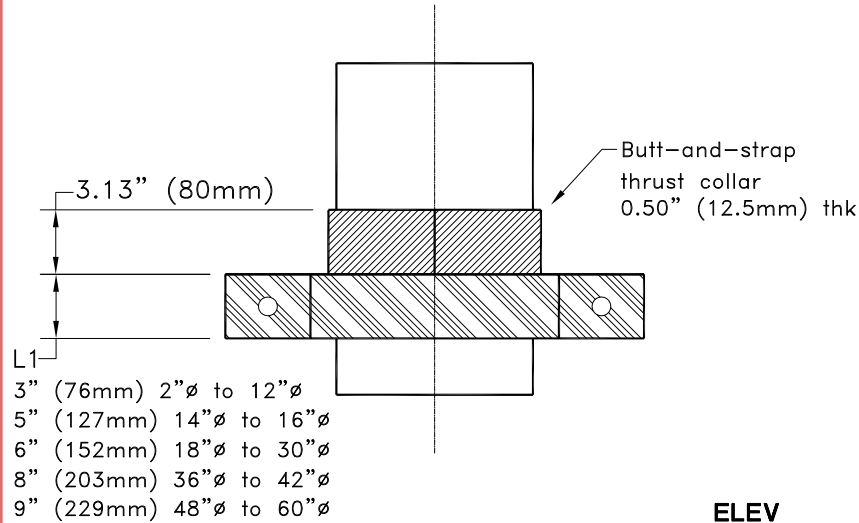
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<b>SCALE:</b>	NONE	<b>BATCH:</b>	
<b>DRAWN:</b>	KGS	<b>D102404</b>	
<b>CH'KD:</b>	KGS	<b>D102404</b>	
		<b>DRAWING:</b>	FIG232 - 20FR16
		<b>FILENAME:</b>	FIG232 - 20FR16
<b>SUPPORT TYPE:</b>	SMALL STEEL SHOE W/ THRUST COLLARS		
<b>SUPPORT GROUP:</b>	ANCHOR		
<b>FIGURE NUMBER:</b>	FIGURE 232 - 20FR16		

<b>REV</b>	<b>2</b>
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- NOTE 5. 'A' dimension is from pipe centerline to neoprene/steel interface.  
NOTE 4.  $A = 0.5 * \text{Nominal O.D.} + 0.13\text{in.}$   
NOTE 3.  $B = 0.5 * \text{Nominal O.D.} + 1.75\text{in.}; C = B + 1.25\text{in.}$   
NOTE 2. Steel saddle includes 1/8in. thick neoprene liner.  
NOTE 1. A separate bonded collar (two halves) may also be used.

Nominal Pipe Size	Nominal O.D.		A		B		C	
SERIES 20FR16, 20FR16-C								
2"	2.50"	64mm	1.38"	35mm	3.00"	76mm	4.25"	108mm
3"	3.50"	89mm	1.88"	48mm	3.50"	89mm	4.75"	121mm
4"	4.50"	114mm	2.38"	60mm	4.00"	102mm	5.25"	133mm
6"	6.50"	165mm	3.38"	86mm	5.00"	127mm	6.25"	159mm
8"	8.64"	219mm	4.45"	113mm	6.07"	154mm	7.32"	186mm
10"	10.78"	274mm	5.52"	140mm	7.14"	181mm	8.39"	213mm
12"	12.92"	328mm	6.59"	167mm	8.21"	209mm	9.46"	240mm
14"	15.33"	389mm	7.79"	198mm	9.42"	239mm	10.67"	271mm
16"	17.49"	444mm	8.86"	225mm	10.48"	266mm	11.73"	298mm
18"	19.63"	499mm	9.93"	252mm	11.56"	294mm	12.81"	325mm
20"	21.77"	553mm	11.00"	279mm	12.62"	321mm	13.87"	352mm
24"	26.07"	662mm	13.15"	334mm	14.78"	375mm	16.03"	407mm
30"	31.71"	805mm	15.97"	406mm	17.60"	447mm	18.85"	479mm
36"	37.99"	965mm	19.11"	485mm	20.74"	527mm	21.99"	559mm
42"	43.59"	1107mm	21.92"	557mm	23.55"	598mm	24.80"	630mm
48"	49.79"	1265mm	25.01"	635mm	26.64"	677mm	27.89"	708mm
54"								
60"	61.21"	1555mm	30.73"	781mm	32.36"	822mm	33.61"	854mm

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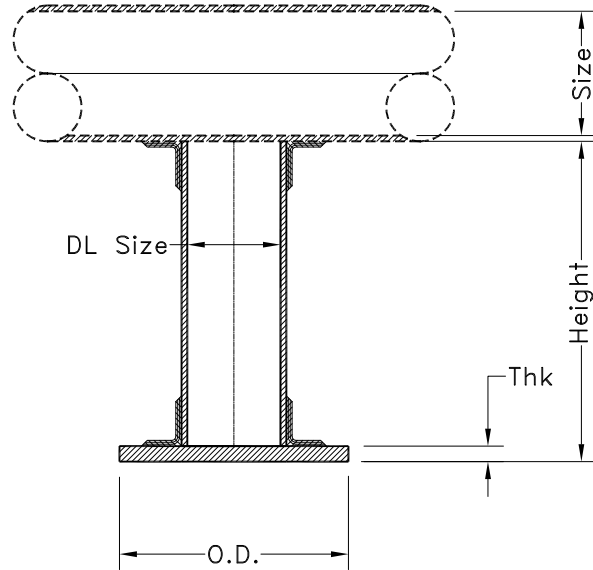
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<b>SCALE:</b>	NONE	<b>BATCH:</b>	
<b>DRAWN:</b>	KGS	<b>D102904</b>	
<b>CH'KD:</b>	KGS	<b>D102904</b>	
		<b>DRAWING:</b>	FIG240-20FR16
		<b>FILENAME:</b>	FIG240-20FR16
<b>SUPPORT TYPE:</b>	RISER CLAMP W/ THRUST COLLARS		
<b>SUPPORT GROUP:</b>	VERTICAL RISER		
<b>FIGURE NUMBER:</b>	FIGURE 240-20FR16		

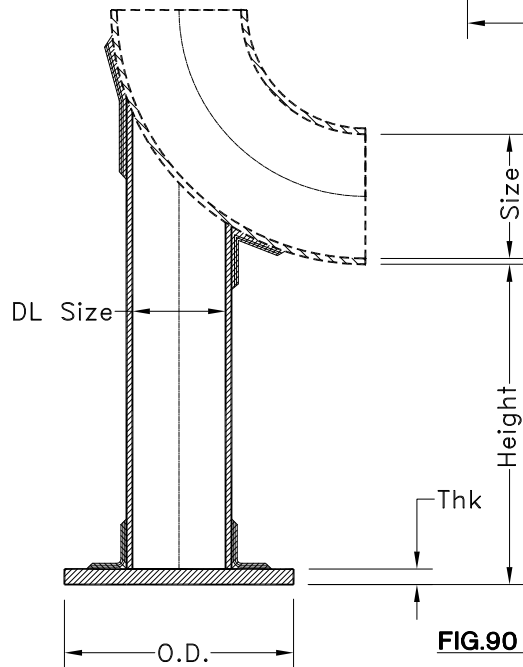
**REV**  
**2**

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**FIG.91 (shop fab'd to a tee or pipe)**



**FIG.90 (shop fab'd to an elbow)**

Nominal Pipe Size	DL Size	O.D.		Thk	
2"	2"	5"	127mm	1/2"	12.5mm
3"	2"	5"	127mm	1/2"	12.5mm
4"	3"	6"	152mm	1/2"	12.5mm
6"	4"	7"	178mm	1/2"	12.5mm
8"	6"	9"	229mm	1/2"	12.5mm
10"	6"	9"	229mm	1/2"	12.5mm
12"	8"	12"	305mm	1/2"	12.5mm
14"	10"	14"	356mm	1/2"	12.5mm
16"	12"	16"	406mm	1/2"	12.5mm
18"	14"	18"	457mm	1/2"	12.5mm
20"	18"	22"	559mm	1/2"	12.5mm
24"	18"	22"	559mm	1/2"	12.5mm
30"	24"	28"	711mm	3/4"	19mm
36"	24"	28"	711mm	3/4"	19mm
42"	36"	40"	1016mm	3/4"	19mm
48"	36"	40"	1016mm	3/4"	19mm
54"					
60"	48"	52"	1321mm	3/4"	19mm

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<b>SCALE:</b>	NONE	<b>BATCH:</b>	
<b>DRAWN:</b>	KGS	<b>D102904</b>	
<b>CH'KD:</b>	KGS	<b>D102904</b>	
		<b>DRAWING:</b>	FIGURE 90
		<b>FILENAME:</b>	FIG90

**SUPPORT TYPE:** FRP "DUMMY LEG"

**SUPPORT GROUP:** DUMMY LEG

**FIGURE NUMBER:** FIGURE 90 - ALL SERIES

**REV**  
**1**

- NOTE 4. Fig.90 and Fig.91 are identical except Fig.91 is on a tee or pipe.  
 NOTE 3. Maximum recommended length of dummy leg is 3'-0" (914mm).  
 NOTE 2. Plate to be shipped loose and field installed. 6" of trim to be included.  
 NOTE 1. Dummy leg to be of the same material as the pipe.