

Section 8. Hubs and Clamps

Section 8a API 16A Hubs and Clamps

Hubs and Clamps are designed and manufactured in accordance with the following specifications:-

API 16A	Specification for Drill Through Equipment.
API 6A	Specification for Wellhead and Christmas Tree Equipment.
NACE MR-01-75	Sulphide Stress Cracking Resistant Metallic Materials for Oilfield Equipment.
ASME VIII	Boiler and Pressure Vessel Code.
ANSI B31.3	Chemical Plant and Petroleum Piping.

Hubs are available as Weld Neck, Integral & Blinds and are available in the following materials and pressure ratings:-

MAX. WORKING PRESSURE	2,000 PSI	3,000 PSI	5,000 PSI	10,000 PSI	15,000 PSI	20,000 PSI
TEST PRESSURE	3,000 PSI	4,500 PSI	7,500 PSI	15,000 PSI	22,500 PSI	30,000 PSI
PRODUCT SPECIFICATION LEVELS	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4
API TEMPERATURE RATING	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)
Min.YIELD	60,000 PSI	60,000 PSI	60,000 PSI	60,000 PSI	75,000 PSI	75,000 PSI
Min.TENSILE	85,000 PSI	85,000 PSI	85,000 PSI	85,000 PSI	95,000 PSI	95,000 PSI
MATERIAL	API 60K	API 60K	API 60K	API 60K	API 75K	API 75K

GENERAL NOTE: Please contact GonPetro for any special material or dimensional requirements.
 Max.working pressures stated are suitable for temperatures up to 121°C.
 De-rating of max.working pressure will occur as the operating temperature increases above 121°C. Consult GonPetro for further details.

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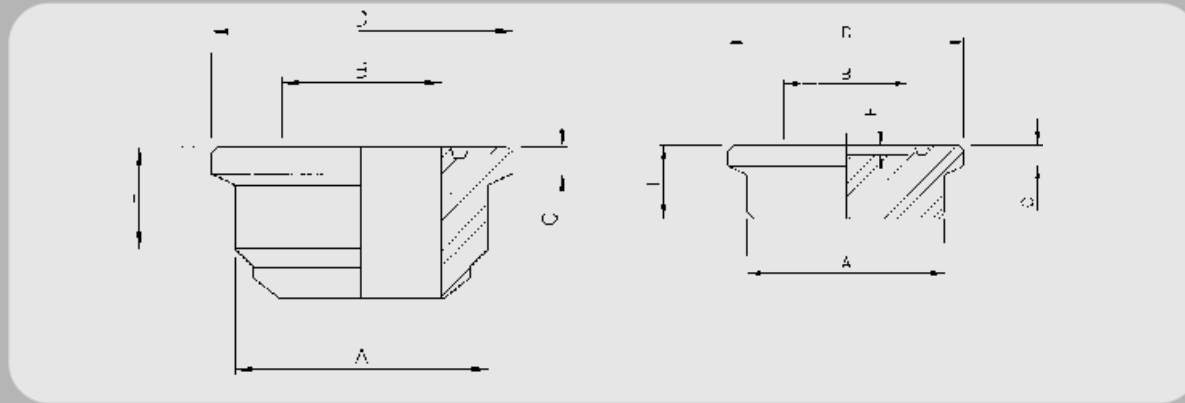


Table 8a.1 API Type 16B Integral Hub Connections for 2,000 psi and 3,000 psi Rated Working Pressure

Nominal Size and Bore B	Outside Diameter D	Total Thickness C	Large Diameter of Neck A	Neck Length for Clamp Clearance L	Ring Groove Number	Ring Gasket Number	Clamp Number	
2,000 psi								
7	1/16	10.375	1.443	8.875	2.50	SR-45	RX-45	25
	16 3/4	20.375	1.269	19.000	3.13	SR-65	RX-65	12
	21 1/4	26.375	1.872	24.500	5.00	SR-73	RX-73	18
3,000 psi								
	11	15.625	1.399	14.000	3.13	SR-53	RX-53	9
	13 5/8	18.375	1.336	16.750	3.19	SR-57	RX-57	11
	16 3/4	21.250	1.459	19.625	3.68	SR-65	RX-65	14

GENERAL NOTES: Dimensions are in inches.
Dimension 'E' Counterbore is optional

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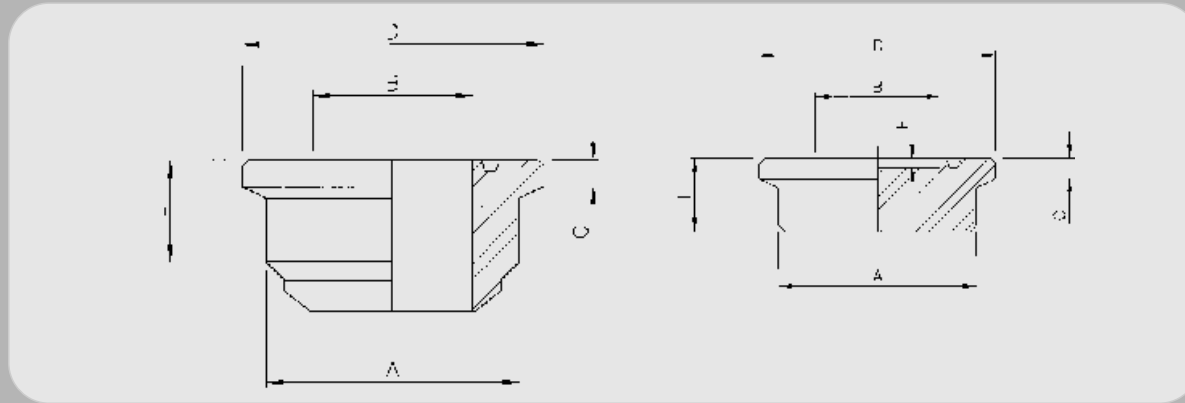


Table 8a.2 API Type 16BX Integral Hub Connections for 5,000 psi Rated Working Pressure

Nominal Size and Bore B	Outside Diameter D	Total Thickness C	Large Diameter of Neck A	Neck Length for Clamp Clearance L	Ring Gasket Number	Clamp Number
5,000 psi						
2 ¹ / ₁₆	5.031	1.166	3.656	2.22	BX-152	1
2 ³ / ₁₆	5.781	1.166	4.406	2.27	BX-153	2
3 ¹ / ₈	6.312	1.166	4.938	2.36	BX-154	4
4 ¹ / ₁₆	7.625	1.197	6.250	2.38	BX-155	5
7 ¹ / ₁₆	13.250	1.622	11.625	3.38	BX-156	6
9	13.250	1.622	11.625	3.38	BX-157	8
11	16.250	1.654	14.625	4.13	BX-158	10
13 ³ / ₈	20.625	1.871	19.000	4.88	BX-160	13
16 ¹ / ₄	25.625	1.778	24.000	5.50	BX-162	19
21 ¹ / ₄	31.250	3.630	27.875	6.75	BX-165	27

GENERAL NOTES: Dimensions are in inches.
Dimension 'E' Counterbore is optional

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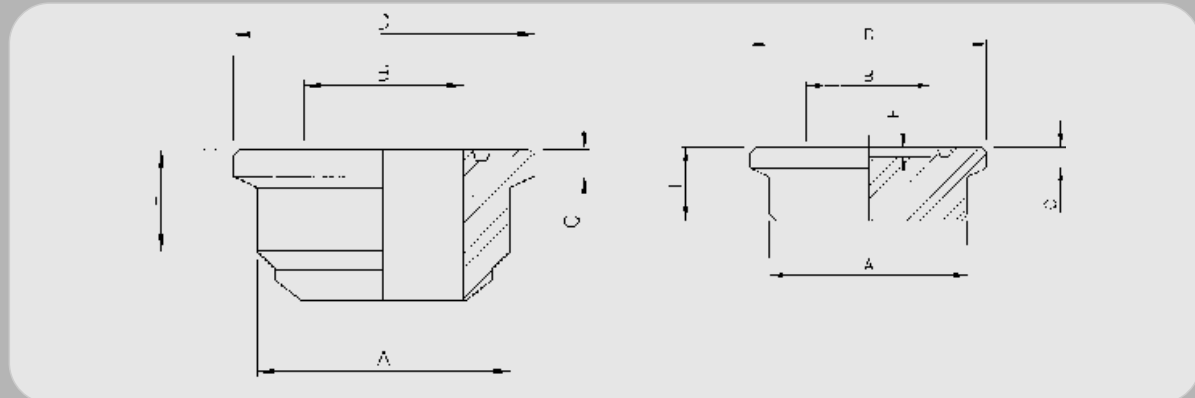


Table 8a.3 API Type 16BX Integral Hub Connections for 10,000 psi Rated Working Pressure

Nominal Size and Bore B	Outside Diameter D	Total Thickness C	Large Diameter of Neck A	Neck Length for Clamp Clearance L	Ring Gasket Number	Clamp Number
10,000 psi						
1 ³ / ₁₆	5.031	1.166	3.656	2.22	BX-151	1
2 ¹ / ₁₆	5.781	1.166	4.406	2.27	BX-152	2
2 ⁹ / ₁₆	6.312	1.166	4.938	2.36	BX-153	4
3 ¹ / ₁₆	7.625	1.197	6.250	2.38	BX-154	5
4 ¹ / ₁₆	8.437	1.310	6.812	2.82	BX-155	6
7 ¹ / ₁₆	16.250	1.653	14.625	4.13	BX-156	10
9	16.250	1.653	14.625	4.13	BX-157	10
11	20.625	2.035	18.625	4.75	BX-158	22
13 ³ / ₈	22.250	2.309	20.625	5.31	BX-159	15
16 ³ / ₄	28.000	3.005	25.000	6.17	BX-162	28
18 ³ / ₄	31.250	3.630	27.875	6.75	BX-164	27
21 ¹ / ₄	34.000	4.005	30.500	8.22	BX-166	26

GENERAL NOTES: Dimensions are in inches.
Dimension 'E' Counterbore is optional

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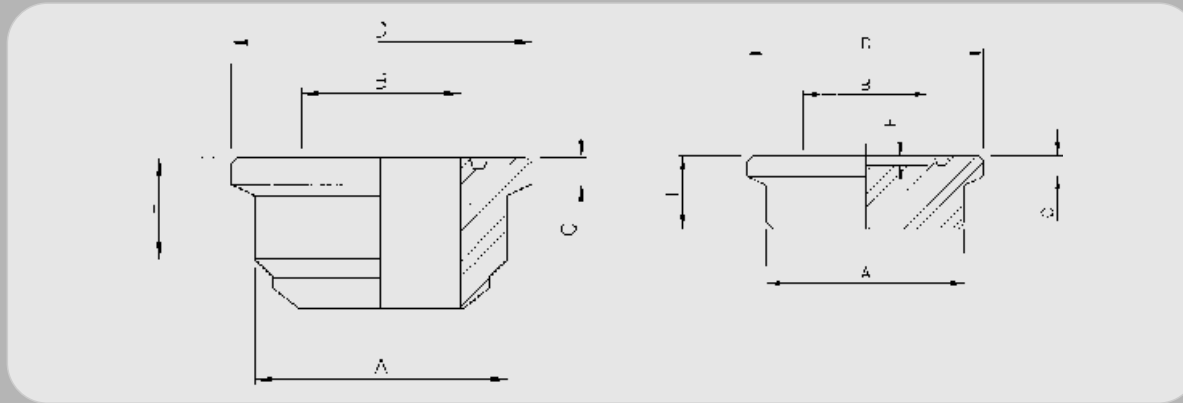


Table 8a.4 API Type 16BX Integral Hub Connections for 15,000 psi Rated Working Pressure

Nominal Size and Bore B	Outside Diameter D	Total Thickness C	Large Diameter of Neck A	Neck Length for Clamp Clearance L	Ring Gasket Number	Clamp Number
15,000 psi						
1 ³ / ₁₆	5.781	1.166	4.406	2.27	BX-151	2
2 ¹ / ₁₆	6.125	1.622	4.500	3.22	BX-152	3
2 ⁹ / ₁₆	6.125	1.622	4.500	3.22	BX-153	3
3 ¹ / ₁₆	8.437	1.310	6.812	2.82	BX-154	6
4 ¹ / ₁₆	13.250	1.622	11.625	3.38	BX-155	8
7 ¹ / ₁₆	20.626	2.035	18.625	4.75	BX-156	22
11	22.250	2.309	20.625	5.31	BX-158	15
13 ⁵ / ₈	28.000	3.005	25.000	6.17	BX-159	28
18 ³ / ₄	34.000	4.005	30.500	8.22	BX-164	26

GENERAL NOTES: Dimensions are in inches.
Dimension 'E' Counterbore is optional

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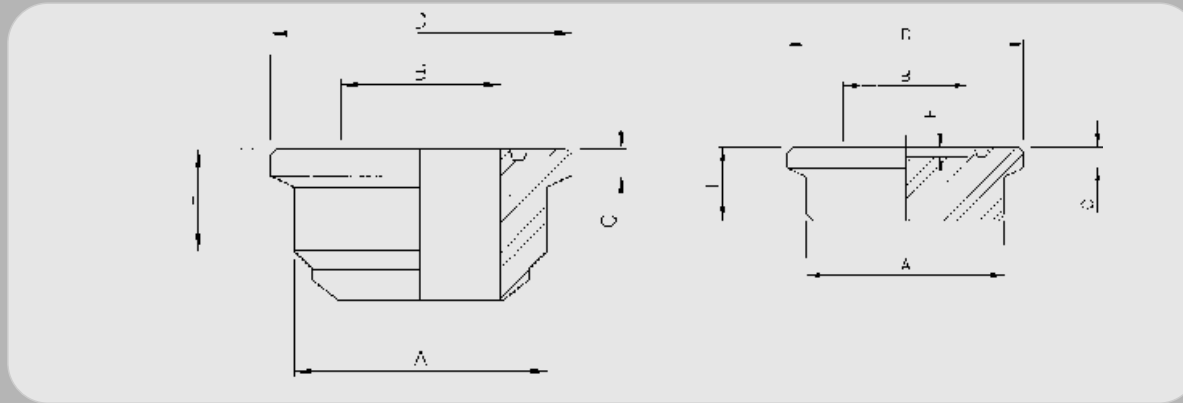


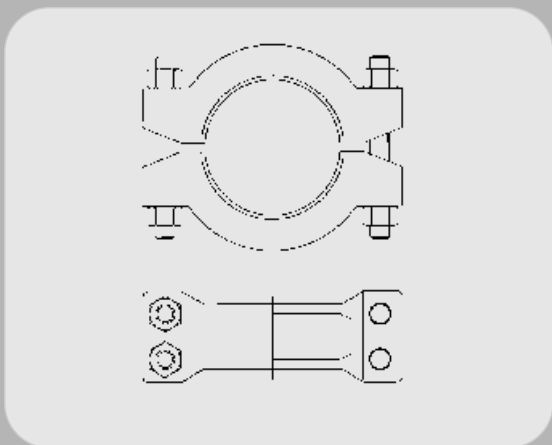
Table 8a.5 API Type 16BX Integral Hub Connections for 20,000 psi Rated Working Pressure

Nominal Size and Bore B	Outside Diameter D	Total Thickness C	Large Diameter of Neck A	Neck Length for Clamp Clearance L	Ring Gasket Number	Clamp Number
20,000 psi						
1 ¹³ / ₁₆	6.125	1.622	4.500	3.22	BX-151	3
2 ¹ / ₁₆	6.125	1.622	4.500	3.22	BX-152	3
2 ⁹ / ₁₆	8.437	1.310	6.812	2.82	BX-153	6
3 ¹ / ₁₆	13.250	1.622	11.625	3.38	BX-154	8
4 ¹ / ₁₆	16.250	1.653	14.625	4.13	BX-155	10
7 ¹ / ₁₆	22.250	2.308	20.625	5.31	BX-156	15
11	27.997	3.005	25.000	6.17	BX-158	28

GENERAL NOTES: Dimensions are in inches.
Dimension 'E' Counterbore is optional

Section 8a. API 16A Hubs and Clamps

Table 8a.6 Clamps for API Type 16B and 16BX Hub Connections



HUB		
Clamp Number	API Designated Size	Working Pressure (psi)
1	1 ³ / ₁₆	10,000
	2 ⁷ / ₁₆	5,000
2	1 ³ / ₁₆	15,000
	2 ⁷ / ₁₆	10,000
	2 ⁹ / ₁₆	5,000

HUB			
Clamp Number	API Designated Size	Working Pressure (psi)	
3	1 ³ / ₁₆	20,000	
	2 ⁷ / ₁₆	15,000	
	2 ⁷ / ₁₆	20,000	
	2 ⁹ / ₁₆	15,000	
4	2 ⁹ / ₁₆	10,000	
	3 ¹ / ₈	5,000	
5	3 ¹ / ₁₆	10,000	
	4 ¹ / ₁₆	5,000	
6	2 ⁹ / ₁₆	20,000	
	3 ¹ / ₁₆	15,000	
	4 ¹ / ₁₆	10,000	
8	3 ¹ / ₁₆	20,000	
	4 ¹ / ₁₆	15,000	
	7 ¹ / ₁₆	5,000	
	9	5,000	
9	11	3,000	
	10	4 ¹ / ₁₆	20,000
		7 ¹ / ₁₆	10,000
10	9	10,000	
	11	5,000	

HUB		
Clamp Number	API Designated Size	Working Pressure (psi)
11	13 ⁵ / ₈	3,000
12	16 ³ / ₄	2,000
13	13 ⁵ / ₈	5,000
14	16 ³ / ₄	3,000
15	7 ¹ / ₁₆	20,000
	11	15,000
18	13 ⁵ / ₈	10,000
	21 ¹ / ₄	2,000
19	16 ³ / ₄	5,000
	11	10,000
22	7 ¹ / ₁₆	15,000
	11	10,000
25	7 ¹ / ₁₆	2,000
26	16 ³ / ₄	15,000
	21 ¹ / ₄	10,000
27	18 ³ / ₄	10,000
	21 ¹ / ₄	5,000
28	11	20,000
	13 ⁵ / ₈	15,000
	16 ³ / ₄	10,000

Section 8a. API 16A Hubs and Clamps

Table 8a.7 RX & BX RTJ Ring Numbers for API Specification 16A Equipment

Ring Number	API Designated Size	Rated Working Pressure	Ring Number	API Designated Size	Rated Working Pressure	Ring Number	API Designated Size	Rated Working Pressure
Type 16B Integral Hub Connections:			Type 16BX Integral Hub Connections:			Type 16BX Integral Hub Connections:		
RX 45	7 ¹ / ₁₆	2,000	BX 156	7 ¹ / ₁₆	5,000	BX 156	7 ¹ / ₁₆	15,000
RX 65	16 ³ / ₄	2,000	BX 157	9	5,000	BX 158	11	15,000
RX 73	21 ¹ / ₄	2,000	BX 158	11	5,000	BX 159	13 ⁵ / ₈	15,000
RX 53	11	3,000	BX 160	13 ⁵ / ₈	5,000	BX 164	18 ³ / ₄	15,000
RX 57	13 ⁵ / ₈	3,000	BX 162	16 ³ / ₄	5,000	BX 156	7 ¹ / ₁₆	20,000
RX 65	16 ³ / ₄	3,000	BX 165	21 ¹ / ₄	5,000	BX 158	11	20,000
			BX 156	7 ¹ / ₁₆	10,000			
			BX 157	9	10,000			
			BX 158	11	10,000			
			BX 159	13 ⁵ / ₈	10,000			
			BX 162	16 ³ / ₄	10,000			
			BX 164	18 ³ / ₄	10,000			
			BX 166	21 ¹ / ₄	10,000			

Section 8. Hubs and Clamps

Section 8b. Pipeline Hubs and Clamps

Hubs and Clamps are designed and manufactured in accordance with the following specifications:-

API 16A	Specification for Drill Through Equipment.
API 6A	Specification for Wellhead and Christmas Tree Equipment.
NACE MR-01-75	Sulphide Stress Cracking Resistant Metallic Materials for Oilfield Equipment.
ASME VIII	Boiler and Pressure Vessel Code.
ANSI B31.3	Chemical Plant and Petroleum Piping.

Hubs are available as Weld Neck, Integral & Blinds and are available in the following materials and pressure ratings:-

	HUBS				CLAMPS		SEALRINGS	
	A350 LF2 MoD	AISI 4130	A182 F316L	A182 F51	AISI 4140	A182 F304	AISI 4130	A564 630 (17-4PH)
MIN. TENSILE	70,000 PSI	90,000 PSI	75,000 PSI	90,000 PSI	100,000 PSI	75,000PSI	100,000 PSI	115,000 PSI
MIN. YIELD	52,000 PSI	60,000 PSI	30,000 PSI	65,000 PSI	75,000 PSI	30,000 PSI	75,000 PSI	75,000 PSI
HARDNESS (MAX.)	197 BHN	235 BHN	N/A	28HRC	22 HRC	N/A	22 HRC	33 HRC
IMPACT VALUES	54/40 JOULES	40/32 JOULES	N/A	70/65 JOULES	42/32 JOULES	N/A	27/20 JOULES	27/20 JOULES
IMPACT TEST TEMP.	-46 DEG C	-46 DEG C	N/A	-46 DEG C	-46 DEG C	N/A	-46 DEG C	-46 DEG C
TEMPER TEMP	650 DEG C	650 DEG C	N/A	N/A	620 DEG C	N/A	N/A	N/A

GENERAL NOTE: Please contact GonPetro for any special material or dimensional requirements.

Section 8b. Pipeline Hubs and Clamps

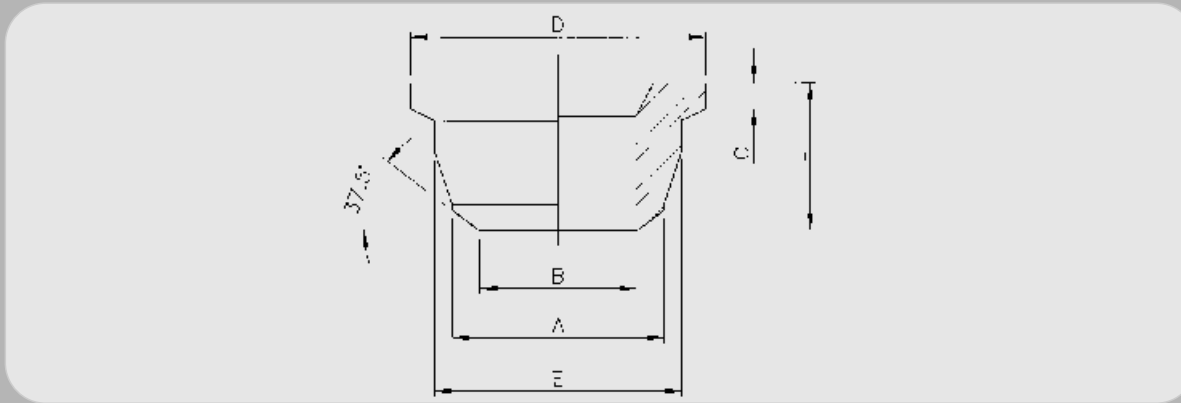


Table 8b.1 Butt Weld Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
1/2" 0.840	(DN 15) (21.3)	Std 40 40S	1in/5	0.622	15.8	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.6	0.3
		XS 80 80S	1in/5	0.546	13.9	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.6	0.3
		160	1in/4	0.466	11.8	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.6	0.3
		XXS	1in/4	0.252	6.4	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.7	0.3
3/4" 1.050	(DN20) (26.7)	Std 40 40S	1in/7	0.824	20.9	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.5	0.2
		XS 80 80S	1in/7	0.742	18.8	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.6	0.3
		160	1in/5	0.614	15.6	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.7	0.3
		XXS	1in/4	0.434	11.0	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.7	0.3
1" 1.315	(DN25) (33.4)	Std 40 40S	1in/11	1.049	26.6	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.5	0.2
		XS 80 80S	1in/11	0.957	24.3	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.5	0.2
		160	1in/7	0.815	20.7	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.6	0.3
		XXS	1in/5	0.599	15.2	2.000	50.8	1.750	44.5	1.500	38.1	0.313	8.0	0.7	0.3

Table 8b.1 Butt Weld Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
1 ½"	(DN40)	Std 40 40S	1-½in/14	1.610	40.9	3.125	79.4	2.375	60.3	2.375	60.3	0.473	11.1	1.6	0.7
1.900	(48.3)	XS 80 80S	1-½in/13	1.500	38.1	3.125	79.4	2.375	60.3	2.375	60.3	0.500	12.7	1.9	0.8
		160	1-½in/13	1.338	34.0	3.125	79.4	2.375	60.3	2.375	60.3	0.500	12.7	2.0	0.9
		XXS	1-½in/11	1.100	27.9	3.125	79.4	2.375	60.3	2.375	60.3	0.500	12.7	2.4	1.1
2"	(DN50)	Std 40 40S	2in/20	2.067	52.5	3.625	92.1	2.750	69.9	2.875	73.0	0.473	11.1	2.2	1.0
2.375	(60.3)	XS 80 80S	2in/20	1.939	49.3	3.625	92.1	2.750	69.9	2.875	73.0	0.473	11.1	2.5	1.1
		160	2in/16	1.689	42.9	3.625	92.1	2.750	69.9	2.875	73.0	0.473	11.1	3.0	1.4
		XXS	2in/14	1.503	38.2	3.625	92.1	2.750	69.9	2.875	73.0	0.473	11.1	3.4	1.5
3"	(DN75)	Std 40 40S	3in/27	3.068	77.9	5.000	127.0	3.250	82.6	4.000	101.6	0.500	12.7	4.7	2.1
3.500	(88.9)	XS 80 80S	3in/27	2.900	73.7	5.000	127.0	3.250	82.6	4.000	101.6	0.500	12.7	5.2	2.4
		160	3in/26	2.624	66.6	5.000	127.0	3.250	82.6	4.000	101.6	0.500	12.7	6.3	2.9
		XXS	3in/23	2.300	58.4	5.000	127.0	3.250	82.6	4.000	101.6	0.500	12.7	7.4	3.3
4"	(DN100)	Std 40 40S	4in/40	4.026	102.3	6.000	152.4	3.625	92.1	5.000	127.0	0.500	12.7	6.7	3.1
4.500	(114.3)	XS 80 80S	4in/40	3.826	97.2	6.000	152.4	3.625	92.1	5.000	127.0	0.500	12.7	7.7	3.5
		160	4in/34	3.438	87.3	6.000	152.4	3.625	92.1	5.000	127.0	0.500	12.7	10.0	4.5
		XXS	4in/31	3.152	80.1	6.000	152.4	3.625	92.1	5.000	127.0	0.500	12.7	11.5	5.2
5"	(DN125)	Std 40 40S	5in/52	5.047	128.2	7.500	190.5	4.375	111.1	6.500	165.1	0.625	15.9	13.3	6.0
5.563	(141.3)	XS 80 80S	5in/52	4.813	122.3	7.500	190.5	4.375	111.1	6.500	165.1	0.625	15.9	14.8	6.7
		160	5in/46	4.313	109.6	7.500	190.5	4.375	111.1	6.500	165.1	0.625	15.9	19.2	8.7
		XXS	5in/40	4.063	103.2	7.500	190.5	4.375	111.1	6.500	165.1	0.625	15.9	21.9	9.9
6"	(DN150)	Std 40 40S	6in/62	6.065	154.1	9.250	235.0	4.625	117.5	7.750	196.9	0.750	19.1	20.4	9.2

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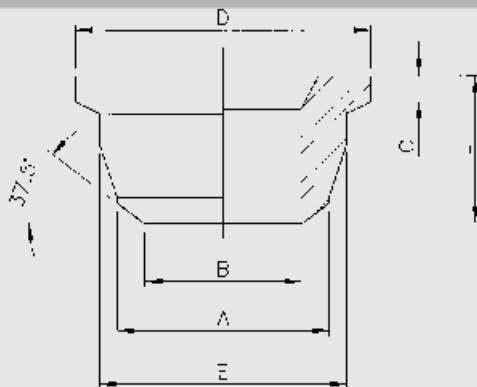


Table 8b.1 Butt Weld Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
6.625	(168.3)	XS 80 80S	6in/56	5.761	146.3	9.250	235.0	4.625	117.5	7.750	196.9	0.812	20.6	24.9	11.3
		120	6in/54	5.501	139.7	9.250	235.0	4.625	117.5	7.750	196.9	0.812	20.6	27.7	12.6
		160	6in/52	5.189	131.8	9.250	235.0	4.625	117.5	7.750	196.9	0.812	20.6	30.7	13.9
		XXS	6in/52	4.897	124.4	9.250	235.0	4.625	117.5	7.750	196.9	0.812	20.6	32.7	14.8
8"	(DN200)	Std 40 40S	8in/82	7.981	202.7	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	33.0	15.0
8.625	(219.1)	XS 80 80S	8in/76	7.625	193.7	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	40.3	18.3
		100	8in/76	7.439	189.0	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	42.4	19.2
		120	8in/72	7.189	182.6	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	47.8	21.7
		140	8in/72	7.001	177.8	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	49.9	22.6
		XXS	8in/67	6.875	174.6	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	52.9	24.0
		160	8in/67	6.813	173.1	11.500	292.1	5.375	136.5	10.000	254.0	0.750	19.1	53.6	24.3

Section 8b. Pipeline Hubs and Clamps

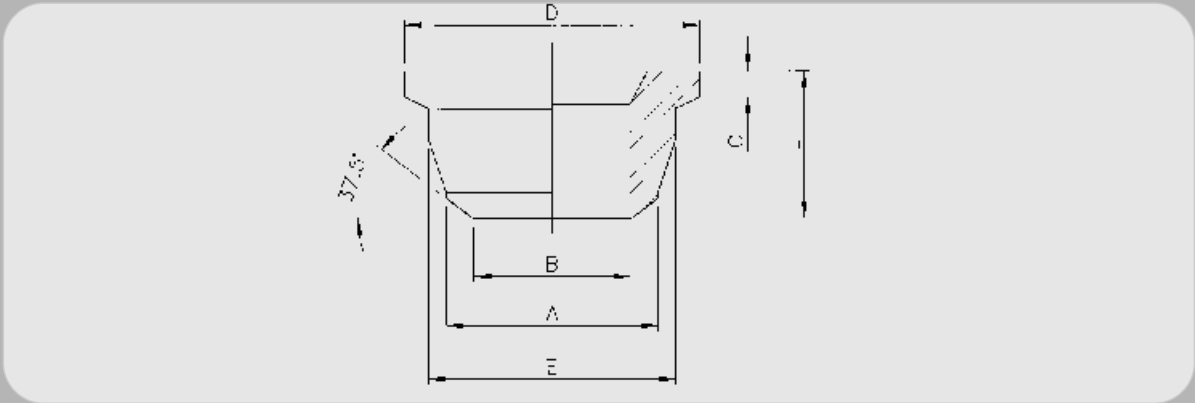


Table 8b.2 Butt Weld Hubs Heavy Duty Clamp Series (Non-standard)

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
2"	(DN50)	Std 40 40S	H2in/20	2.067	52.5	4.750	120.7	3.250	82.6	3.750	95.3	0.625	15.9	6.2	2.8
2.375	(60.3)	XS 80 80S	H2in/20	1.939	49.3	4.750	120.7	3.250	82.6	3.750	95.3	0.625	15.9	6.5	2.9
		160	H2in/16	1.689	42.9	4.750	120.7	3.250	82.6	3.750	95.3	0.625	15.9	7.1	3.2
		XXS	H2in/14	1.503	38.2	4.750	120.7	3.250	82.6	3.750	95.3	0.625	15.9	7.5	3.4
3"	(DN75)	Std 40 40S	H3in/27	3.068	77.9	5.500	139.7	3.500	88.9	4.500	114.3	0.625	15.9	7.3	3.3
3.500	(88.9)	XS 80 80S	H3in/27	2.900	73.7	5.500	139.7	3.500	88.9	4.500	114.3	0.625	15.9	8.0	3.6
		160	H3in/25	2.624	66.6	5.500	139.7	3.500	88.9	4.500	114.3	0.625	15.9	9.2	4.2
		XXS	H3in/23	2.300	58.4	5.500	139.7	3.500	88.9	4.500	114.3	0.625	15.9	10.3	4.7
4"	(DN100)	Std 40 40S	H4in/40	4.026	102.3	6.750	171.5	4.000	101.6	5.750	146.1	0.625	15.9	11.9	5.4
4.500	(114.3)	XS 80 80S	H4in/40	3.826	97.2	6.750	171.5	4.000	101.6	5.750	146.1	0.625	15.9	13.0	5.9
		160	H4in/34	3.438	87.3	6.750	171.5	4.000	101.6	5.750	146.1	0.625	15.9	15.5	7.0
		XXS	H4in/31	3.152	80.1	6.750	171.5	4.000	101.6	5.750	146.1	0.625	15.9	17.2	7.8
8"	(DN200)	Std 40 40S	H8in/82	7.981	202.7	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	31.6	14.3

Section 8b. Pipeline Hubs and Clamps

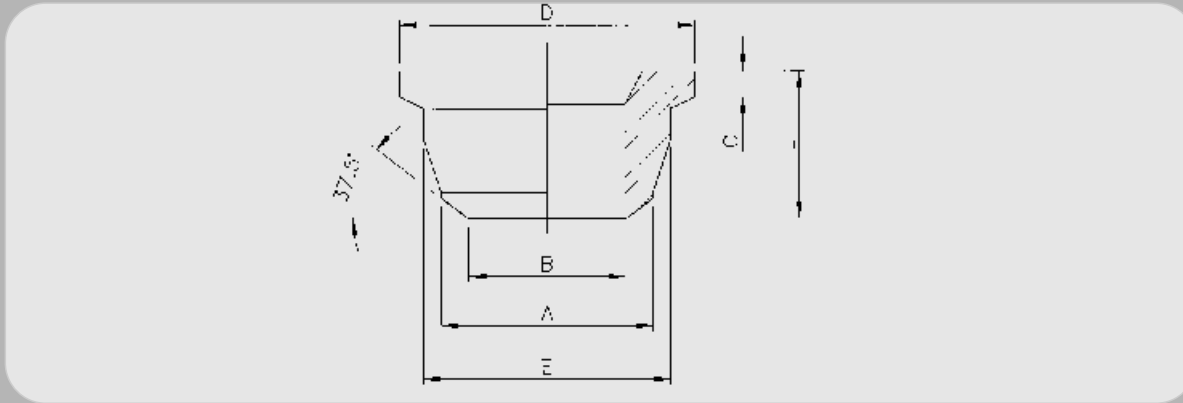


Table 8b.2 Butt Weld Hubs Heavy Duty Clamp Series (Non-standard)

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
8.625	(219.1)	XS 80 80S	H8in/76	7.625	193.7	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	38.3	17.4
		100	H8in/76	7.439	189.0	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	40.3	18.3
		120	H8in/72	7.189	182.6	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	45.4	20.6
		140	H8in/72	7.001	177.8	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	47.2	21.4
		XXS	H8in/67	6.875	174.6	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	50.1	22.7
		160	H8in/67	6.813	173.1	11.500	292.1	5.000	127.0	9.500	241.3	1.000	25.4	50.7	23.0
10"	(DN250)	Std 40 40S	H10in/102	10.020	254.5	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	49.9	22.6
10.750	(273.1)	XS 60 80S	H10in/97	9.750	247.7	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	57.5	26.1
		80	H10in/97	9.564	242.9	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	60.7	27.6
		100	H10in/94	9.314	236.6	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	67.6	30.7
		120	H10in/94	9.064	230.2	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	71.4	32.4
		XXS 140	H10in/87	8.750	222.3	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	80.5	36.5
		160	H10in/84	8.500	215.9	13.625	346.1	6.000	152.4	11.625	295.3	1.250	31.8	86.2	39.1
12"	(DN300)	Std 40S	H12in/120	12.000	304.8	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	77.1	35.0

Table 8b.2 Butt Weld Hubs Heavy Duty Clamp Series (Non-standard)

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness C		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
12.750	(323.9)	40	H12in/120	11.938	303.2	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	78.8	35.8
		XS 80S	H12in/116	11.750	298.5	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	85.4	38.7
		80	H12in/116	11.376	289.0	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	94.4	42.8
		100	H12in/112	11.064	281.0	16.000	406.4	6.625	168.3	14.000	355.6	1.250	31.8	104.3	47.3
		XXS 120	H12in/106	10.750	273.1	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	112.9	51.2
		140	H12in/106	10.500	266.7	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	118.3	53.7
		160	H12in/102	10.126	257.2	16.000	406.4	6.625	168.3	14.000	355.6	1.375	34.9	129.3	58.7
14"	(DN350)	40	H14in/134	13.124	333.3	18.500	469.9	7.250	184.2	16.500	419.1	1.187	30.1	124.7	56.6
14.000	(355.6)	XS	H14in/130	13.000	330.2	18.500	469.9	7.250	184.2	16.500	419.1	1.187	30.1	133.2	60.4
		80	H14in/124	12.500	317.5	18.500	469.9	7.250	184.2	16.500	419.1	1.250	31.8	153.3	69.5
		100	H14in/124	12.124	307.9	18.500	469.9	7.250	184.2	16.500	419.1	1.250	31.8	163.8	74.3
		120	H14in/120	11.814	300.1	18.500	469.9	7.250	184.2	16.500	419.1	1.250	31.8	177.3	80.4
		140	H14in/116	11.500	292.1	18.500	469.9	7.250	184.2	16.500	419.1	1.250	31.8	187.2	84.9
		160	H14in/112	11.188	284.2	18.500	469.9	7.250	184.2	16.500	419.1	1.125	28.6	197.0	89.4
16"	(DN400)	XS 40	H16in/152	15.000	381.0	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	194.8	88.4
16.000	(406.4)	60	H16in/152	14.688	373.1	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	206.3	93.6
		80	H16in/144	14.314	363.6	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	229.1	103.9
		100	H16in/140	13.398	354.0	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	247.5	112.3
		120	H16in/137	13.564	344.5	21.000	533.4	7.875	200.0	19.000	482.6	1.625	41.3	260.5	118.2
		140	H16in/134	13.124	333.3	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	279.4	126.8
		160	H16in/130	12.812	325.4	21.000	533.4	7.875	200.0	19.000	482.6	1.688	42.9	293.9	133.3

Section 8b. Pipeline Hubs and Clamps

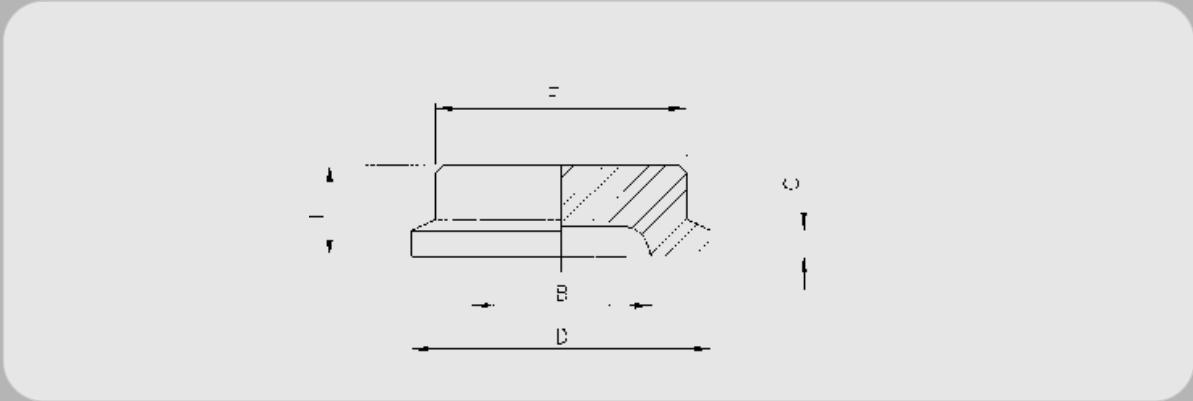


Table 8b.3 Blind Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
½"	(DN 15)	Std 40 40S	1in/5	0.622	15.8	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
0.840	(21.3)	XS 80 80S	1in/5	0.546	13.9	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		160	1in/4	0.466	11.8	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		XXS	1in/4	0.252	6.4	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
¾"	(DN 20)	Std 40 40S	1in/7	0.824	20.9	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
1.050	(26.7)	XS 80 80S	1in/7	0.742	18.8	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		160	1in/5	0.614	15.6	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		XXs	1in/4	0.434	11.0	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
1"	(DN 25)	Std 40 40S	1in/11	1.049	26.6	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
1.315	(33.4)	XS 80 80S	1in/11	0.957	24.3	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		160	1in/7	0.815	20.7	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
		XXS	1in/5	0.599	15.2	2.000	50.8	1.313	33.4	1.500	38.1	0.313	8.0	0.8	0.4
1 ½"	(DN 40)	Std 40 40S	1-½in/14	1.610	40.9	3.125	79.4	1.625	41.3	2.375	60.3	0.437	11.1	2.4	1.1
		XS 80 80S	1-½in/13	1.500	38.1	3.125	79.4	1.625	41.3	2.375	60.3	0.500	12.7	2.5	1.1
		160	1-½in/13	1.338	34.0	3.125	79.4	1.625	41.3	2.375	60.3	0.500	12.7	2.5	1.1
		XXS	1-½in/11	1.100	27.9	3.125	79.4	1.625	41.3	2.375	60.3	0.500	12.7	2.5	1.1

Table 8b.3 Blind Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Hub Outside Diameter D		Hub Length L		Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
2"	(DN 50)	Std 40 40S	2in/20	2.067	52.5	3.625	92.1	1.750	44.5	2.875	73.0	0.437	11.1	3.7	1.7
2.375	(60.3)	XS 80 80S	2in/20	1.939	49.3	3.625	92.1	1.750	44.5	2.875	73.0	0.437	11.1	3.7	1.7
		160	2in/16	1.689	42.9	3.625	92.1	1.750	44.5	2.875	73.0	0.437	11.1	3.7	1.7
		XXS	2in/14	1.503	38.2	3.625	92.1	1.750	44.5	2.875	73.0	0.437	11.1	3.7	1.7
3"	(DN 75)	Std 40 40S	3in/27	3.068	77.9	5.000	127.0	1.875	47.6	4.000	101.6	0.500	12.7	7.7	3.5
3.500	(88.9)	XS 80 80S	3in/27	2.900	73.7	5.000	127.0	1.875	47.6	4.000	101.6	0.500	12.7	7.7	3.5
		160	3in/25	2.624	66.6	5.000	127.0	1.875	47.6	4.000	101.6	0.500	12.7	7.7	3.5
		XXS	3in/23	2.300	58.4	5.000	127.0	1.875	47.6	4.000	101.6	0.500	12.7	7.7	3.5
4"	(DN 100)	Std 40 40S	4in/40	4.026	102.3	6.000	152.4	2.125	54.0	5.000	127.0	0.500	12.7	13.0	5.9
4.500	(114.3)	XS 80 80S	4in/40	3.826	97.2	6.000	152.4	2.125	54.0	5.000	127.0	0.500	12.7	13.0	5.9
		160	4in/34	3.438	87.3	6.000	152.4	2.125	54.0	5.000	127.0	0.500	12.7	13.0	5.9
		XXS	4in/31	3.152	80.1	6.000	152.4	2.125	54.0	5.000	127.0	0.500	12.7	13.0	5.9
5"	(DN 125)	Std 40 40S	5in/52	5.047	128.2	7.500	190.5	2.750	69.9	6.500	165.1	0.625	15.9	27.8	12.6
5.563	(141.3)	XS 80 80S	5in/52	4.813	122.3	7.500	190.5	2.750	69.9	6.500	165.1	0.625	15.9	27.8	12.6
		160	5in/46	4.313	109.6	7.500	190.5	2.750	69.9	6.500	165.1	0.625	15.9	27.8	12.6
		XXS	5in/40	4.063	103.2	7.500	190.5	2.750	69.9	6.500	165.1	0.625	15.9	27.8	12.6
6"	(DN 150)	Std 40 40S	6in/62	6.065	154.1	9.250	235.0	2.875	73.0	7.750	196.9	0.750	19.1	42.6	19.3
6.625	(168.3)	XS 80 80S	6in/56	5.761	146.3	9.250	235.0	2.875	73.0	7.750	196.9	0.812	20.6	43.0	19.5
		120	6in/54	5.501	139.7	9.250	235.0	2.875	73.0	7.750	196.9	0.812	20.6	43.0	19.5
		160	6in/52	5.189	131.8	9.250	235.0	2.875	73.0	7.750	196.9	0.812	20.6	43.0	19.5

Section 8b. Pipeline Hubs and Clamps

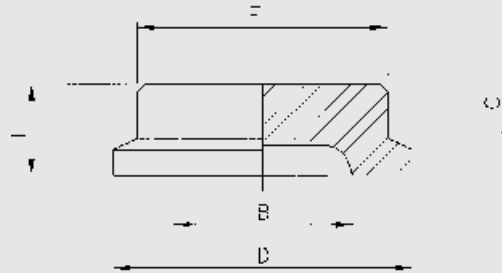


Table 8b.3 Blind Hubs Standard Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Blind Hub Diameter D		Blind Hub Length L		Blind Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
		XXS	6in/52	4.897	124.4	9.250	235.0	2.875	73.0	7.750	196.9	0.812	20.6	43.0	19.5
8"	(DN 200)	Std 40 40S	8in/82	7.981	202.7	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
8.625	(168.3)	XS 80 80S	8in/76	7.625	193.7	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
		100	8in/76	7.439	189.0	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
		120	8in/72	7.189	182.6	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
		140	8in/72	7.001	177.8	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
		XXS	8in/67	6.875	174.6	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6
		160	8in/67	6.813	173.1	11.500	292.1	3.188	81.0	10.000	254.0	0.750	19.1	76.2	34.6

Section 8b. Pipeline Hubs and Clamps

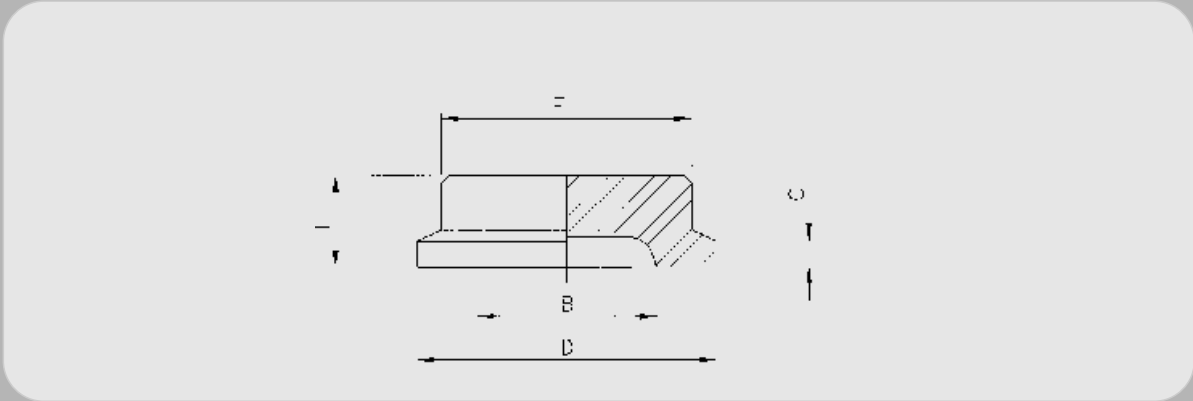


Table 8b.4 Blind Hubs Heavy Duty Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Blind Hub Diameter D		Blind Hub Length L		Blind Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
2"	(DN 50)	Std 40 40S	H2in/20	2.067	52.5	4.750	120.7	2.500	63.5	3.750	95.3	0.625	15.9	9.0	4.1
2.375	(60.3)	XS 80 80S	H2in/20	1.939	49.3	4.750	120.7	2.500	63.5	3.750	95.3	0.625	15.9	9.0	4.1
		160	H2in/16	1.689	42.9	4.750	120.7	2.500	63.5	3.750	95.3	0.625	15.9	9.0	4.1
		XXS	H2in/14	1.503	38.2	4.750	120.7	2.500	63.5	3.750	95.3	0.625	15.9	9.0	4.1
3"	(DN 75)	Std 40 40S	H3in/27	3.068	77.9	5.500	139.7	2.625	66.7	4.500	144.3	0.625	15.9	13.2	6.0
3.500	(88.9)	XS 80 80S	H3in/27	2.900	73.7	5.500	139.7	2.625	66.7	4.500	144.3	0.625	15.9	13.2	6.0
		160	H3in/25	2.624	66.6	5.500	139.7	2.625	66.7	4.500	144.3	0.625	15.9	13.2	6.0
		XXS	H3in/23	2.300	58.4	5.500	139.7	2.625	66.7	4.500	144.3	0.625	15.9	13.2	6.0
4"	(DN 100)	Std 40 40S	H4in/40	4.026	102.3	6.750	171.5	3.250	82.6	5.750	146.1	0.625	15.9	25.6	11.6
4.500	(114.3)	XS 80 80S	H4in/40	3.826	97.2	6.750	171.5	3.250	82.6	5.750	146.1	0.625	15.9	25.6	11.6
		160	H4in/34	3.483	87.3	6.750	171.5	3.250	82.6	5.750	146.1	0.625	15.9	25.6	11.6
		XXS	H4in/31	3.152	80.1	6.750	171.5	3.250	82.6	5.750	146.1	0.625	15.9	25.6	11.6

Section 8b. Pipeline Hubs and Clamps

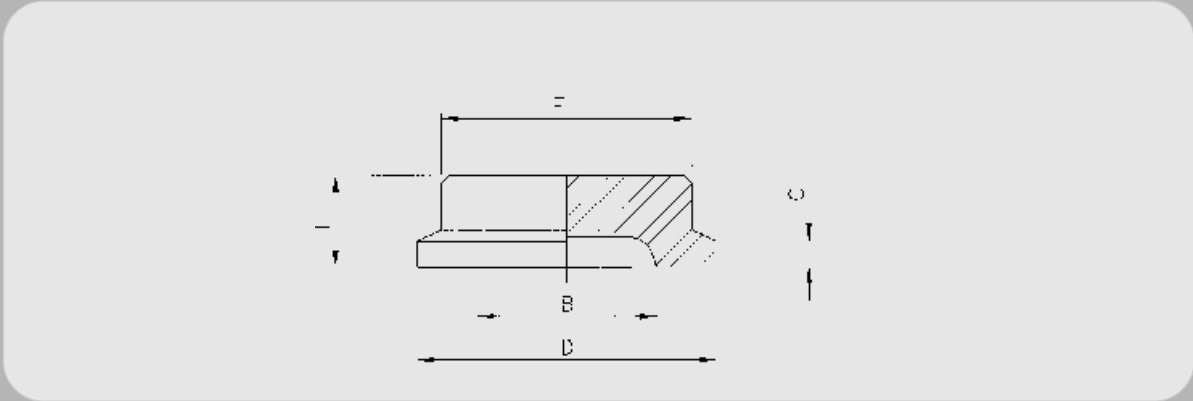


Table 8b.4 Blind Hubs Heavy Duty Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Blind Hub Diameter D		Blind Hub Length L		Blind Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
8"	(DN 200)	Std 40 40S	H8in/82	7.981	202.7	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
8.625	(219.1)	XS 80 80S	H8in/76	7.625	193.7	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
		100	H8in/76	7.439	189.0	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
		120	H8in/72	7.189	182.6	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
		140	H8in/72	7.001	177.8	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
		XXS	H8in/67	6.875	174.6	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
		160	H8in/67	6.813	173.1	11.500	292.1	3.500	88.9	9.500	241.3	1.000	25.4	79.5	36.1
10"	(DN 250)	Std 40 40S	H10in/102	10.020	254.5	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
10.750	(273.1)	XS 60 80S	H10in/97	9.750	247.7	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
		80	H10in/97	9.564	242.9	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
		100	H10in/94	9.314	236.6	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
		120	H10in/94	9.064	230.2	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
		XXS 140	H10in/87	8.750	222.3	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8
		160	H10in/84	8.500	215.9	13.625	346.1	3.188	81.0	11.625	295.3	1.250	31.8	109.8	49.8

Table 8b.4 Blind Hubs Heavy Duty Clamp Series

N.P.S. O.Dia A	(DN)	Pipe Schedule	Typical Designation Hub/S.Ring	Pipe Inside Diameter B		Blind Hub Diameter D		Blind Hub Length L		Blind Hub Backface Diameter E		Lip Thickness G		BW Hub Weight	
				ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
12"	(DN 300)	Std 40S	H12in/120	12.000	304.8	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
12.750	(232.9)	40	H12in/120	11.938	303.2	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
		XS 80S	H12in/116	11.750	298.5	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
		80	H12in/116	11.376	298.0	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
		100	H12in/112	11.064	281.0	16.000	406.4	3.813	96.9	14.000	355.6	1.375	31.8	182.8	82.9
		XXS 120	H12in/106	10.750	273.1	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
		140	H12in/106	10.500	266.7	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
		160	H12in/102	10.126	257.2	16.000	406.4	3.813	96.9	14.000	355.6	1.375	34.9	184.5	83.7
14"	(DN 350)	40	H14in/134	13.124	333.3	18.500	469.9	4.500	114.3	16.500	419.1	1.187	30.1	290.8	131.9
14.000	(355.6)	XS	H14in/130	13.000	320.2	18.500	469.9	4.500	114.3	16.500	419.1	1.187	30.1	290.8	131.9
		80	H14in/124	12.500	317.5	18.500	469.9	4.500	114.3	16.500	419.1	1.250	30.8	291.8	132.3
		100	H14in/124	12.124	307.9	18.500	469.9	4.500	114.3	16.500	419.1	1.250	30.8	291.8	132.3
		120	H14in/120	11.814	300.1	18.500	469.9	4.500	114.3	16.500	419.1	1.250	30.8	291.8	132.3
		140	H14in/116	11.500	292.1	18.500	469.9	4.500	114.3	16.500	419.1	1.250	30.8	291.8	132.3
		160	H14in/112	11.188	284.2	18.500	469.9	4.500	114.3	16.500	419.1	1.125	28.6	289.8	131.5
16"	(DN 400)	XS 40	H16in/152	15.000	381.0	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	431.2	195.6
16.000	(406.4)	60	H16in/152	14.688	373.1	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	431.5	195.7
		80	H16in/144	14.314	363.6	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	431.8	195.9
		100	H16in/140	13.938	354.0	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	432.1	196.0
		120	H16in/137	13.564	344.5	21.000	533.4	5.000	127.0	19.000	482.6	1.625	41.3	431.2	195.6
		140	H16in/134	13.124	333.3	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	432.6	196.2
		160	H16in/130	12.812	325.4	21.000	533.4	5.000	127.0	19.000	482.6	1.688	42.9	432.9	196.4

Section 8b. Pipeline Hubs and Clamps

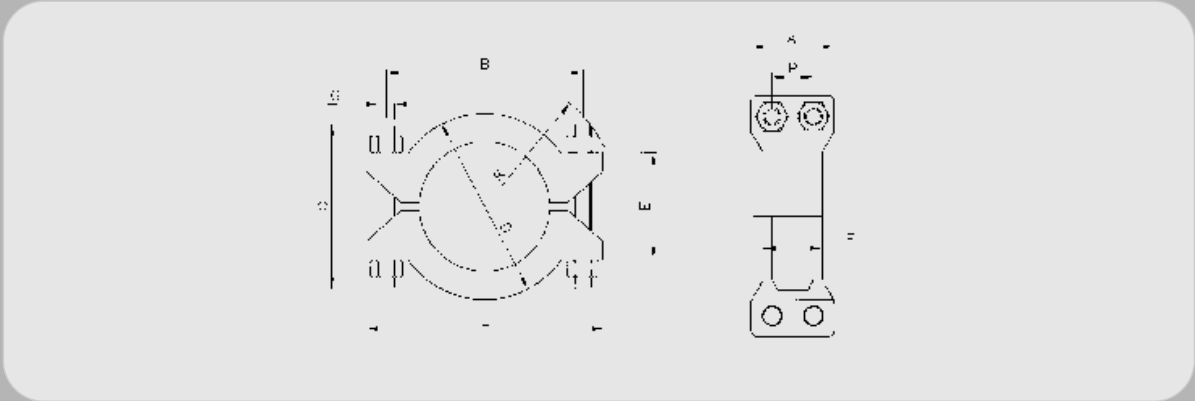


Table 8b.5 Clamps

Clamp Bolts Coating	Bolt Centres B		Clamp OD D		Overall Length L		Clamp Width F		Lug Separation E		Clamp Clearance R		Bolt Dia G		Bolt Length C		Bolt Lug Width A		Bolt Pitch P		Clamp Weight		
	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg	
Standard Series Clamp size																							
	1"	3.25	83	2.81	71	4.25	108	1.38	35	2.13	54	2.63	67	0.500	13	3.50	89	2.25	57	1.25	32	4.2	1.9
1	½"	5.00	127	4.50	114	6.50	165	2.00	51	3.25	83	4.00	102	0.625	16	5.00	127	3.13	79	1.63	41	9.9	4.5
	2"	5.75	146	5.50	140	7.50	191	2.00	51	3.63	92	4.50	114	0.750	19	5.25	133	3.38	86	1.81	46	13.2	6.0
	3"	7.50	191	6.88	175	9.25	235	2.38	60	4.50	114	5.25	133	0.750	19	6.50	165	3.38	86	1.81	46	23.6	10.7
	4"	8.50	216	8.25	210	10.50	267	2.38	60	5.25	133	6.00	152	0.875	22	7.50	191	4.00	102	2.06	52	28.7	13.0
	5"	10.25	260	9.88	251	12.38	314	3.13	79	6.13	156	7.25	184	1.000	25	8.00	203	4.50	114	2.31	59	41.0	18.6
	6"	12.63	321	12.0	305	15.25	387	3.75	95	6.63	168	8.75	222	1.125	29	10.00	254	5.25	133	2.44	62	70.3	31.9
	8"	15.25	387	14.5	386	18.5	470	3.75	95	7.5	191	9.88	251	1.250	32	10.50	267	5.75	146	2.88	73	110	50.0
Heavy Duty Series Clamp size																							
2	"	7.25	184	6.88	175	9.00	229	2.88	73	5.00	127	5.63	143	0.875	22	7.50	191	3.75	95	2.00	51	24.3	11.0
3	"	8.00	203	7.75	197	10.00	254	3.00	76	5.25	133	6.13	156	0.875	22	7.50	191	4.00	102	2.06	52	33.1	15.0
	4"	9.56	243	9.00	229	11.75	298	3.00	76	5.75	146	7.00	178	1.000	25	8.00	203	4.38	111	2.31	59	39.9	18.1

Table 8b.5 Clamps

Clamp Bolts Coating	Bolt Centres B		Clamp OD D		Overall Length L		Clamp Width F		Lug Separation E		Clamp Clearance R		Bolt Dia G		Bolt Length C		Bolt Lug Width A		Bolt Pitch P		Clamp Weight	
	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	lb	kg
8 “	16.00	406	14.75	375	18.63	473	4.50	114	7.00	178	10.75	273	1.375	35	11.00	279	5.88	149	3.13	79	138	62.6
10”	18.25	464	17.63	448	22.50	572	5.50	140	10.00	254	12.75	324	1.625	41	14.25	362	7.25	184	3.63	92	243	110.0
12”	21.00	533	20.38	518	25.00	635	5.75	146	10.63	270	14.25	362	1.750	44	17.00	432	7.50	191	3.75	95	320	145.0
14”	24.75	629	23.00	584	29.25	743	6.13	156	12.25	311	16.25	413	1.875	48	16.50	419	8.25	210	4.25	108	430	195.0
16”	29.25	743	27.19	691	34.25	870	7.63	194	13.50	343	19.13	486	2.250	57	22.00	559	9.63	244	5.00	127	683	310.0

Section 8b. Pipeline Hubs and Clamps

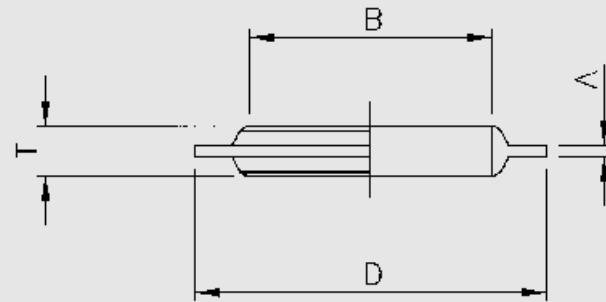


Table 8b.6 Sealrings

Sealring Size	Outside Diameter D		Inside Diameter B		Rib Thickness A		Overall Thickness T		Sealring Weight	
	ins	mm	ins	mm	ins	mm	ins	mm	lbs	kg
4	1.000	25.4	0.500	12.7	0.125	3.2	0.375	9.5	0.03	0.01
5	1.094	27.8	0.625	15.9	0.125	3.2	0.375	9.5	0.03	0.01
7	1.375	34.9	0.906	23	0.125	3.2	0.375	9.5	0.04	0.02
11	1.750	44.5	1.125	28.6	0.125	3.2	0.375	9.5	0.06	0.03
13	2.375	60.3	1.500	38.1	0.125	3.2	0.375	9.5	0.11	0.05
14	2.625	66.7	1.609	40.9	0.250	6.4	0.563	14.3	0.28	0.13
16	2.750	69.9	1.868	47.4	0.250	6.4	0.625	15.9	0.28	0.13
20	3.250	82.6	2.063	52.4	0.250	6.4	0.750	19.1	0.45	0.2
23	3.500	88.9	2.375	60.3	0.250	6.4	0.750	19.1	0.48	0.22
25	4.000	102	2.672	67.9	0.250	6.4	0.750	19.1	0.62	0.28
27	4.250	108	3.063	77.8	0.250	6.4	0.750	19.1	0.62	0.28
31	4.500	114	3.250	82.6	0.250	6.4	0.750	19.1	0.69	0.31
34	5.000	127	3.688	93.7	0.250	6.4	0.750	19.1	0.80	0.36
40	5.500	140	4.063	103	0.250	6.4	1.000	25.4	1.13	0.51

Table 8b.6 Sealrings

Sealring Size	Outside Diameter D		Inside Diameter B		Rib Thickness A		Overall Thickness T		Sealring Weight	
	ins	mm	ins	mm	ins	mm	ins	mm	lbs	kg
42	6.375	162	4.188	106	0.250	6.4	1.000	25.4	1.68	0.76
46	6.250	159	4.750	121	0.250	6.4	1.000	25.4	1.34	0.61
52	6.625	168	5.313	135	0.250	6.4	1.000	25.4	1.33	0.60
54	6.812	173	5.500	140	0.250	6.4	1.000	25.4	1.57	0.71
56	7.500	191	5.750	146	0.250	6.4	1.000	25.4	1.82	0.83
62	7.875	200	6.065	154	0.375	9.5	1.375	34.9	3.13	1.42
64	8.625	219	6.500	165	0.375	9.5	1.375	34.9	3.80	1.72
67	8.750	222	6.875	175	0.375	9.5	1.375	34.9	3.61	1.64
72	9.500	241	7.250	184	0.375	9.5	1.375	34.9	4.40	2.00
76	10.000	254	7.750	197	0.375	9.5	1.375	34.9	4.67	2.12
82	10.125	257	8.250	210	0.375	9.5	1.375	34.9	4.26	1.93
84	11.125	283	8.500	216	0.375	9.5	1.375	34.9	5.79	2.63
87	11.375	289	8.875	225	0.375	9.5	1.375	34.9	5.77	2.62
91	11.500	292	9.125	232	0.375	9.5	1.375	34.9	5.66	2.57
92	11.625	295	9.250	235	0.375	9.5	1.375	34.9	5.78	2.62
94	11.750	298	9.500	241	0.375	9.5	1.375	34.9	5.61	2.54
97	12.000	305	9.875	251	0.375	9.5	1.375	34.9	5.55	2.52
102	12.250	311	10.250	260	0.375	9.5	1.375	34.9	5.48	2.49
106	12.750	324	10.750	273	0.375	9.5	1.375	34.9	5.72	2.59
112	14.125	359	11.250	286	0.625	15.9	1.625	41.3	12.30	5.59
116	14.125	359	11.750	298	0.375	9.5	1.375	34.9	7.21	3.27
120	13.875	352	12.000	305	0.375	9.5	1.375	34.9	6.04	2.74

Section 8b. Pipeline Hubs and Clamps

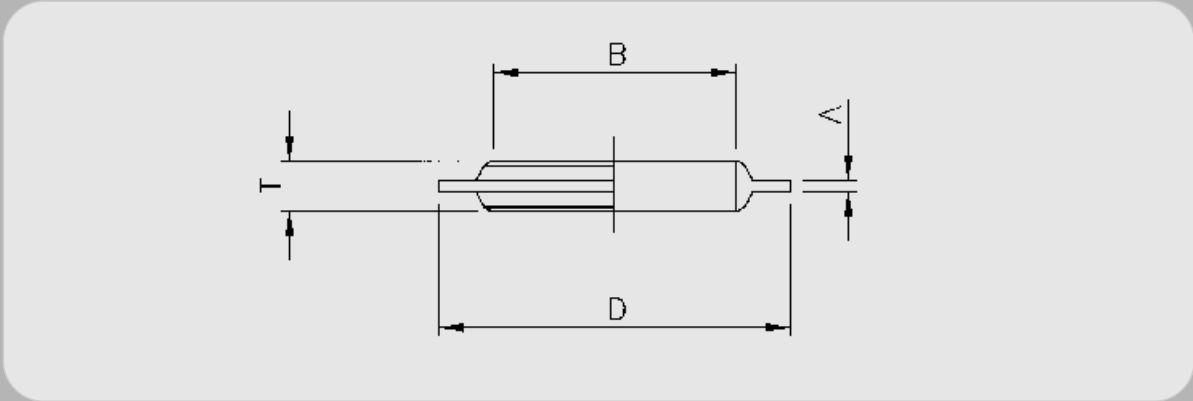


Table 8b.6 Sealrings

Sealring Size	Outside Diameter D		Inside Diameter B		Rib Thickness A		Overall Thickness T		Sealring Weight	
	ins	mm	ins	mm	ins	mm	ins	mm	lbs	kg
122	14.125	359	12.250	311	0.375	9.5	1.375	34.9	6.16	2.79
124	14.625	371	12.500	318	0.375	9.5	1.375	34.9	7.10	3.22
130	15.000	381	13.000	330	0.500	12.7	1.500	38.1	8.47	3.84
134	15.500	394	13.500	343	0.500	12.7	1.500	38.1	8.78	3.98
137	16.500	419	13.875	352	0.625	15.9	1.625	41.3	13.70	6.21
140	16.500	419	14.000	356	0.500	12.7	1.500	38.1	10.98	4.98
144	17.000	432	14.500	368	0.500	12.7	1.500	38.1	11.35	5.15
152	17.750	451	15.250	387	0.500	12.7	1.500	38.1	11.89	5.39
160	18.500	470	16.000	406	0.500	12.7	1.500	38.1	12.44	5.64

Section 9. API 6A Gate Valves

Gate Valves are designed and manufactured in accordance with the following specifications:-

API 6A	Specification for Wellhead and Christmas Tree Equipment
API 14D	Specification for Wellhead Surface Safety Valves and Underwater Safety Valves for Offshore Service
ANSI B31.3	Chemical Plant and Petroleum Refinery Piping
ASME VIII	Boiler and Pressure Vessel Code
MSS-SP-55	Quality Standard for Steel Castings for Valve, Flanges and Fittings and Other Piping Components
NACE MR-01-75	Sulphide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

Gate Valves are available in manual or remote operation for use in the following pressure ratings and services:-

PRESSURE & TEMPERATURE RATINGS					
MAX. WORKING PRESSURE	3,000 PSI	5,000PSI	10,000PSI	15,000PSI	20,000PSI
TEST PRESSURE	4,500PSI	7,500PSI	15,000PSI	22,500PSI	30,000PSI
PRODUCT SPECIFICATION LEVELS	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4	1,2,3 & 4
PRODUCT RATING	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2
API TEMPERATURE RATING	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)	K (-60 DEG C) TO Y (+345 DEG C)

MATERIAL REQUIREMENTS		
MATERIAL CLASS	BoDY, BoNNET, END AND oUTLET CoNNECTIoNS	PRESSURE CoNTRoLLING PARTS E.G. STEMS
AA - GENERAL SERVICE	CARBON OR LOW ALLOY STEEL	CARBON OR LOW ALLOY STEEL
BB - GENERAL SERVICE	CARBON OR LOW ALLOY STEEL	STAINLESS STEEL
CC - GENERAL SERVICE	STAINLESS STEEL	STAINLESS STEEL
DD - SOUR SERVICE**	CARBON OR LOW ALLOY STEEL*	CARBON OR LOW ALLOY STEEL*
EE - SOUR SERVICE**	CARBON OR LOW ALLOY STEEL*	STAINLESS STEEL*
FF - SOUR SERVICE**	STAINLESS STEEL*	STAINLESS STEEL*
HH - SOUR SERVICE**	CORROSION RESISTANT ALLOYS*	CORROSION RESISTANT ALLOYS*

**As defined in NACE MR-01-75 *In accordance with NACE MR-01-75

GENERAL NOTE: Please contact GonPetro for any special material or dimensional requirements.

Max.working pressures stated are suitable for temperatures up to 121°C.

De-rating of max.working pressure will occur as the operating temperature increases above 121°C. Consult GonPetro for further details.