

# TECHNICAL DATA SHEET

CARBON/ALLOY STEELS  
HIGH ALLOYED STEELS  
HEAT RESISTANT STEELS  
FERRITIC STEELS  
AUSTENITIC STEELS  
DUPLEX STEELS  
UREA INDUSTRY STEELS

**SURVEY OF GRADES**

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# Comparison Table DIN / EN / ASTM

PIPES/TUBE			
Material number		EN	ASTM
<b>NON-ALLOY</b>			
1.0254	St 37.0	P235TR1	A 53 Grade A
1.0570	St 52-3	S355J2H	-
1.0305	St 35.8/I	P235GH TC1	A 106 Grade A
1.0305	St 35.8/III	P235GH TC2	-
1.0405	St 45.8/I	P265GH TC1	A 106 Grade B
1.0405	St 45.8/III	P265GH TC2	-
<b>ALLOYED HEAT-RESISTANT</b>			
1.5415	15 Mo3	16Mo3	A335 Grade P1
1.7335	13CrMo 4 4	13CrMo4-5	A335 Grade P11, P12
1.7380	10CrMo9-10	10CrMo9-10	A335 Grade P22
1.7362	12 CrMo19 5	X11CrMo5	A335 Grade P5
-	-	-	A335 Grade P9
1.4903	-	X10CrMoVNb9-1	A335 Grade P91
<b>LOW TEMPERATURE</b>			
1.5637	10 Ni 14	-	A 333 Grade 3
1.0356	TTSt 35 N	P215NL(1.0451)	A 333 Grade 1
1.0356	TTSt 35V	P255QL(1.0452)	-
-	-	-	A 333 Grade 6
<b>HIGH YIELD STEELS</b>			
1.0486	StE 285	L290NB	API 5L Grade X42
1.0562	StE 355	P355N (L360NB)	API 5L Grade X52
1.8902	StE 420	P420N (L415NB)	API 5L Grade X60
1.8905	StE 460	P460N	API 5L Grade X70
<b>STAINLESS STEEL</b>			
1.4541	X 6 CrNiTi 18 10	X 6 CrNiTi 18 10	A 312 Grade TP321
1.4571	X 6 CrNiMoTi 18 17 12 2	X 6 CrNiMoTi 18 17 12 2	A 312 Grade TP316Ti
1.4301	X 5 CrNi 18 10	X 5 CrNi 18 10	A 312 Grade TP304
1.4306	X 2 crNi 19 11	X 2 crNi 19 11	A 312 Grade TP304L
1.4307	-	X 2CrNi18-9	A 312 Grade TP304L
1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12 2	A 312 Grade TP316
1.4404	X 2 CrNiMo 17 13 2	X 2 CrNiMo 17 13 2	A 312 Grade TP316L
1.4462	X 2 CrNiMoN 22 5 3	X 2 CrNiMoN 22 5 3	UNS S 31803(Duplex)
1.4529	X 1 NiCrMoCuN 25 20 7	X1 NiCrMoCuN 25 20 7	UNS N 08926
1.4539	X 1 NiCrMoCu 25 20 5	X1 NiCrMoCu 25 20 5	UNS N 08904 (904L)
1.4547	X 1 NiCrMoCuN20 18 7	X1 NiCrMoCuN20 18 7	UNS S 31254

FLANGES			
Material number		EN	ASTM
<b>NON-ALLOY</b>			
1.0038	RSt 37-2	S235JR	-
1.0570	St 52-3	S355J2(1.0577)	-
1.0460	C22.8	P250GH	-
1.0432	C 21	-	-
1.0352	-	P245GH	A105
-	-	-	-
<b>ALLOYED HEAT-RESISTANT</b>			
1.5415	15 Mo3	16Mo3	A 182 Grade F1
1.7335	13CrMo 4 4	13CrMo4-5	A 182 Grade F1, F12
1.7380	10CrMo9-10	10CrMo9-10	A 182 Grade F22
1.7362	12 CrMo19 5	-	A 182 Grade F5
-	-	-	A 182 Grade F9
1.4903	-	X10CrMoVNb9-1	A 182 Grade F91
<b>LOW TEMPERATURE</b>			
1.5637	10 Ni 14	12 Ni 14	A350 Grade LF3
1.0356	TTSt 355	P355QH1(1.0571)	A350 Grade LF2
1.0356	-	-	-
-	-	-	-
<b>HIGH YIELD STEELS</b>			
1.0486	StE 285	-	A 694 Grade F42
1.0562	StE 355	P355N	A 694 Grade F52
1.8902	StE 420	P420N	A 694 Grade F60
1.8905	StE 460	P460N	A 694 Grade F70
<b>STAINLESS STEEL</b>			
1.4541	X 6 CrNiTi 18 10	X 6 CrNiTi 18 10	A 182 Grade F321
1.4571	X 6 CrNiMoTi 18 17 12 2	X 6 CrNiMoTi 18 17 12 2	A 182 Grade F316Ti
1.4301	X 5 CrNi 18 10	X 5 CrNi 18 10	A 182 Grade F304
1.4306	X 2 crNi 19 11	-	A 182 Grade F304L
1.4307	-	X 2CrNi18-9	A 182 Grade F304L
1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12 2	A 182 Grade F316
1.4404	X 2 CrNiMo 17 13 2	X 2 CrNiMo 17 13 2	A 182 Grade F316L
1.4462	X 2 CrNiMoN 22 5 3	X 2 CrNiMoN 22 5 3	A 182 Grade F51 (Duplex)
1.4529	X1 NiCrMoCuN 25 20 7	X1 NiCrMoCuN 25 20 7	UNS N 08926
1.4539	X1 NiCrMoCu 25 20 5	X1 NiCrMoCu 25 20 5	A 182 Grade F904L
1.4547	X1 NiCrMoCuN20 18 7	X1 NiCrMoCuN20 18 7	UNS S 31254

BUTTWELDING FITTINGS			
Material number		EN	ASTM
<b>NON-ALLOY</b>			
1.0254	St 37.0	-	-
-	-	-	-
1.0305	St 35.8/I	P235GH TC1	A 234 WPA
1.0305	St 35.8/III	P235GH TC2	-
1.0405	St 45.8/I	P265GH TC1	A 234 WPB
1.0405	St 45.8/III	P265GH TC2	-
<b>ALLOYED HEAT-RESISTANT</b>			
1.5415	15 Mo3	16Mo3	A 234 Grade WPI
1.7335	13CrMo 4 4	13CrMo4-5	A 234 Grade WPI1, WPI2
1.7380	10CrMo9-10	10CrMo9-10	A 234 Grade WP22
1.7362	12 CrMo19 5	X11CrMo5	A 234 Grade WP5
-	-	-	A 234 Grade WP9
1.4903	-	X10CrMoVNb9-1	A 234 Grade WP91
<b>LOW TEMPERATURE</b>			
1.5637	10 Ni 14	12 Ni 14	A420 Grade WPL3
1.0356	TTSt 35 N	P215NL(1.0451)	-
1.0356	TTSt 35V	-	-
-	-	-	A420 Grade WPL6
<b>HIGH YIELD STEELS</b>			
1.0486	StE 285	-	A860 Grade WPHY42
1.0562	StE 355	P355N(L360NB)	A860 Grade WPHY52
1.8902	StE 420	P420N (L415NB)	A860 Grade WPHY60
1.8905	StE 460	-	A860 Grade WPHY70
<b>STAINLESS STEEL</b>			
1.4541	X 6 CrNiTi 18 10	X 6 CrNiTi 18 10	A 403 Grade WP321
1.4571	X 6 CrNiMoTi 18 17 12 2	X 6 CrNiMoTi 18 17 12 2	A 403 Grade WP316Ti
1.4301	X 5 CrNi 18 10	X 5 CrNi 18 10	A 403 Grade WP304
1.4306	X 2 crNi 19 11	X 2 crNi 19 11	A 403 Grade WP304L
1.4307	-	X 2CrNi18-9	A 403 Grade WP304L
1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12 2	A 403 Grade WP316
1.4404	X 2 CrNiMo 17 13 2	X 2 CrNiMo 17 13 2	A 403 Grade WP316L
1.4462	X 2 CrNiMoN 22 5 3	X 2 CrNiMoN 22 5 3	UNS S 31803 (Duplex)
1.4529	X1 NiCrMoCuN 25 20 7	X1 NiCrMoCuN 25 20 7	UNS N 08926
1.4539	X1 NiCrMoCu 25 20 5	X1 NiCrMoCu 25 20 5	UNS N 08904 (904L)
1.4547	X1 NiCrMoCuN20 18 7	X1 NiCrMoCuN20 18 7	UNS S 31254

# High alloyed steels

NAME	ASTM STANDARDS		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES				Operating Temp.
	UNS	Standard	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)	T(°C)
Alloy 825	N08825	B 163 B 423	Ni Cr 21 Mo	2.4858	max 0.025	21,5	2,7	40,0	Cu 1.7; Ti 0.8	240 190	241 190	586 517	30	550
Alloy 28	N08028	B 668	X1 Ni Cr Mo Cu N 31 27 4	1.4563	max 0.03	27,0	3,5	31,0	Cu 1.0	150	214	500	40	550
TP904L	N08904	B 677	X1 Ni Cr Mo Cu N 25 20 5	1.4539	max 0.025	20,0	4,5	25,0	Cu 1.4; N 0.06	190	230	530	35	550
Alloy 800	N08800 N08810	B 163 B 407	X10 Ni Cr Al Ti 32 20 X10 Ni Cr Al Ti 32 21 X5 Ni Cr Al Ti 31 20 X8 Ni Cr Al Ti 32 21	1.4876 1.4876 1.4958 1.4959	max 0.07	20,0		31,5	Al+Ti < 0.7	192	207 170	520 450	30	1100
Alloy 20	N8020	B 729	Ni Cr 20 Cu Mo	2.4660	max 0.05	20,0	2,5	35,0	Cu 3.5; Nb+Ta≥8xC	220	240	550	40	500
Alloy 600	N06600	B 163 B 167	Ni Cr 15 Fe	2.4816	0,04	15,5		min 72	Fe 8.0	180	241 170	552 515	30-35	1150
Alloy 625	N06625	B 444	Ni Cr 22 Mo 9 Nb	2.4856	max 0.03	21,5	9,0	min 58	Nb 3.65	200	276	690	30	1000
Alloy 617	N06617	B 167	Ni Cr 23 Co 12 Mo	2.4663	0,07	22,0	9,0	65,0	Co 12; b 0.001; Al 1.1	230	300	700	35	1000
Alloy 690	N06690	B 163 B 167	Ni Cr 29 Fe	2.4662	max 0.05	29,0		min 58	Fe 9		241 170	586 515	30-35	1000
254 SMO	S31254	B 269 B 312	X1 Cr Ni Mo Cu N 20 18 7	1.4547	max 0.025	20,0	6,25	18,0	Cu 0.75; N 0.2	210	300	650	35	500

# Heat resistant steels

ASTM STANDARDS A312 – A213 – A269		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES				Operating Temp.
Grade	UNS	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)	T(C°)
TP304 TP304H	S30400 S30409	X5 Cr Ni 18 10	1.4301	0,06	18,5		9,5		90	205	515	40	590
TP310S TP310H	S31008 S31009	X8 Cr Ni 2521	1.4845	0,06	25,0		20,0		90	210	515	35	1050
TP347 TP347H	S34700 S34709	X6 Cr Ni Nb 18 10	1.4550	0,06	17,5		11,0	Nb ≥ 10 x C	90	205	515	35	610
TP321 TP321H	S32100 S32109	X6 Cr Ni Ti 18 10 X12 Cr Ni Ti 18 9	1.4541 1.4878	0,06	17,5		11,0	Ti ≥ 5 x (C+N)	90	210	515	40	850
TP316 TP316H	S31600 S31609	X5 CrNi Mo 17 12 2	1.4401	0,05	17,0	2.2	11,5		90	205	515	40	610

# Ferritic steels

ASTM STANDARDS A268		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			
Grade	UNS	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)
TP410	S41000	X12 Cr 13	1.4006	0,12	12,4				170-210	205-450	415-600	20.Grd

# Austenitic steels

ASTM STANDARDS A312 - A213 - A269		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			
Grade	UNS	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)
TP304 TP304L	S30400 S30403	X5 Cr Ni 18 10 X2 Cr Ni 19 11 X2 Cr Ni 18 9	1.4301 1.4306 1.4307	max 0.03	18,5		10,2		90	205	515	40
TP304LN	S30453			max 0.03	18,5		10,0	N 0.12	90	205	515	35
TP316N TP316LN	S31651 S31653	X3 Cr Ni Mo Bn 17 13 3	1.4910	max 0.03	17,0	2.2	12,5	N 0.13	90	260	550	35
TP317 TP317L	S31700 S31703			max 0.03	18,5	3,2	13,5		90	205	515	35
TP316Ti	S31635	X6 Cr Ni Mo Ti 17 12 2	1.4571	0,06	17,0	2.2	12,0	Ti ≥ 5x(C+N)	90	205	515	35
TP316 TP316L	S31600 S31603	X2 Cr Ni Mo 17 12 2 X2 Cr Ni Mo 17 12 2	1.4401 1.4404	max 0.02	17,0	2.2	12,0	Co, Nb + Ta < 0.15%	90	205	515	40

# Duplex steels

ASTM STANDARDS A789 - A790		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			
Type	UNS	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)
2205	S31803 S32205	X2 Cr Ni Mo N 22 5 3	1.4462	max 0.03	22,5	3,0	5,5	N 0.17	28	450	680	25
255	S32550	X2 Cr Ni Mo Cu W N 25 6 3	1.4507	max 0.03	25,0	3,4	6,0	N 0.02	31	550	760	20
2507	S32750	X2 Cr Ni Mo N 25 7 4	1.4410	max 0.03	25,5	3,5	7,0	N 0.28	32	550	800	20
	S32760	X2 Cr Ni Mo Cu W N 25 7 4	1.4501	max 0.03	25	3,7	7,0	N 0.24; W 0.7; Cu 0.7	28	550	800	25

# Urea industry steels

ASTM STANDARDS A312 - A213 - A269 A789 - A790		EN STANDARDS		CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			
Grade	UNS	Steel name	Steel	C	Cr	Mo	Ni	Others	Hardness HRBmax	Yield Rp0.2min (Mpa)	Tensile Rm min (Mpa)	Elg. (%)
TP316LUG	S31603	X2 Cr Ni Mo 18 14 3	1.4435	max 0.02	17,5	2,7	13,5		192	190	490	40

# Dimensions and theoretical Weights Seamless and Welded Stainless Steel pipe to ASTM B36.10 and B36.19 (Wall Thickness in mm)

NPS	O.D.	DN	sch.5S		sch.10S		sch.10		sch.20		sch.30		sch.40S		STD		sch.40		sch.60		sch.80S		XS		sch.80		sch.100		sch.120		sch.140		sch.160		XXS			
			WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M		
1/8	10.30				1,24	0,281	1,24	0,281					1,73	0,371	1,73	0,371	1,73	0,371			2,41	0,480	2,41	0,480	2,41	0,480												
1/4	13,72				1,65	0,498	1,65	0,498					2,24	0,643	2,24	0,643	2,24	0,643			3,02	0,808	3,02	0,808	3,02	0,808												
3/8	17,1	10			1,65	0,698	1,65	0,698					2,31	0,858	2,31	0,858	2,31	0,858			3,20	1,114	3,20	1,114	3,20	1,114												
1/2	21,3	15	1,65	0,814	2,11	1,016	2,11	1,016					2,77	1,288	2,77	1,288	2,77	1,288			3,73	1,645	3,73	1,645	3,73	1,645							4,77	1,979	7,47	2,594		
3/4	26,7	20	1,65	1,034	2,11	1,298	2,11	1,298					2,87	1,710	2,87	1,710	2,87	1,710			3,91	2,228	3,91	2,228	3,91	2,228							5,56	2,939	7,82	3,691		
1	33,4	25	1,65	1,312	2,77	2,125	2,77	2,125					3,38	2,541	3,38	2,541	3,38	2,541			4,55	3,287	4,55	3,287	4,55	3,287							6,35	4,301	9,09	5,533		
1 1/4	42,2	32	1,65	1,674	2,77	2,732	2,77	2,732					3,56	3,441	3,56	3,441	3,56	3,441			4,85	4,531	4,85	4,531	4,85	4,531							6,35	5,694	9,70	7,884		
1 1/2	48,3	40	1,65	1,926	2,77	3,155	2,77	3,155					3,68	4,108	3,68	4,108	3,68	4,108			5,08	5,493	5,08	5,493	5,08	5,493							7,14	7,352	10,16	9,693		
2	60,3	50	1,65	2,424	2,77	3,992	2,77	3,992					3,91	5,524	3,91	5,524	3,91	5,524			5,54	7,601	5,54	7,601	5,54	7,601							8,74	11,290	11,07	13,655		
2 1/2	73,0	65	2,11	3,747	3,05	5,345	3,05	5,345					5,16	8,769	5,16	8,769	5,16	8,769			7,01	11,589	7,01	11,589	7,01	11,589							9,52	15,140	14,02	20,716		
3	88,9	80	2,11	4,585	3,05	6,557	3,05	6,557					5,49	11,466	5,49	11,466	5,49	11,466			7,62	15,509	7,62	15,509	7,62	15,509							11,12	21,657	15,24	28,109		
3 1/2	101,6		2,11	5,256	3,05	7,526	3,05	7,526					5,74	13,778	5,74	13,778	5,74	13,778			8,08	18,921	8,08	18,921	8,08	18,921												
4	114,3	100	2,11	5,927	3,05	8,496	3,05	8,496					6,02	16,322	6,02	16,322	6,02	16,322			8,56	22,665	8,56	22,665	8,56	22,665			11,12	28,730			13,49	34,053	17,12	41,660		
5	141,3	125	2,77	9,609	3,40	11,740	3,40	11,740					6,55	22,101	6,55	22,101	6,55	22,101			9,52	31,414	9,52	31,414	9,52	31,414			12,70	40,896			15,87	49,844	19,05	58,315		
6	168,3	150	2,77	11,481	3,40	14,039	3,40	14,039					7,11	28,697	7,11	28,697	7,11	28,697			10,97	43,217	10,97	43,217	10,97	43,217			14,27	55,038			18,26	68,603	21,95	80,433		
8	219,1	200	2,77	15,005	3,76	20,274	3,76	20,274	6,35	33,828	7,04	37,382	8,18	43,202	8,18	43,202	8,18	43,202	10,31	53,902	12,70	65,637	12,70	65,637	12,70	65,637	15,08	77,04	18,26	91,830	20,63	102,525	23,01	112,981	22,22	109,542		
10	273,0	250	3,40	22,953	4,19	28,203	4,19	28,203	6,35	42,398	7,80	51,797	9,27	61,217	9,27	61,217	9,27	61,217	12,70	82,777	12,70	82,777	12,70	82,777	15,08	97,391	18,26	116,48	21,44	135,052	25,40	157,478	28,57	174,863	25,40	157,478		
12	323,9	300	3,96	31,725	4,57	36,542	4,57	36,542	6,35	50,492	8,38	66,207	9,52	74,942	9,52	74,942	10,31	80,957	14,27	110,637	12,70	98,964	12,70	98,964	17,47	134,047	21,44	162,38	25,40	189,851	28,58	211,344	33,32	242,440	25,40	157,478		
14	355,6	350	3,96	34,868	4,77	41,903	6,35	55,532	7,92	68,951	9,52	82,499	9,52	82,500	9,52	82,500	11,12	95,919	15,09	128,663	12,70	109,045	12,70	109,045	19,05	160,538	23,82	197,89	27,79	228,110	31,75	257,467	35,71	286,039				
16	406,4	400	4,19	42,199	4,77	47,971	6,35	63,610	7,92	79,025	9,52	94,609	9,52	94,609	9,52	94,609	12,70	125,200	16,66	162,586	12,70	125,200	12,70	125,200	21,44	206,669	26,19	249,34	30,96	291,056	36,53	338,324	40,49	370,985				
18	457,2	450	4,19	47,529	4,77	54,039	6,35	71,687	7,92	89,100	11,12	124,209	9,52	106,718	9,52	106,718	14,27	158,268	19,05	209,003	12,70	141,355	12,70	141,355	23,82	258,491	29,36	314,54	34,92	369,240	39,67	414,748	45,24	466,672				
20	508,0	500	4,77	60,106	5,54	69,702	6,35	79,764	9,52	118,828	12,70	157,509	9,52	118,828	9,52	118,828	15,08	186,128	20,62	251,646	12,70	157,509	12,70	157,509	26,19	315,970	32,54	387,41	38,10	448,296	44,45	515,944	50,01	573,518				
22	558,8	550	4,77	66,174	5,54	76,749	6,35	87,842	9,52	130,938	12,70	173,664		9,52	130,438	15,87	215,752	22,22	298,547	12,70	173,664	12,70	173,664	28,57	379,323	34,92	458,08	41,27	534,816	47,62	609,533	53,97	682,232					
24	609,6	600	5,54	83,796	6,35	95,919	6,35	95,919	9,52	143,048	14,27	212,724	9,52	143,048	9,52	143,048	17,47	259,027	24,61	360,491	12,70	189,819	12,70	189,819	30,96	448,584	38,89	555,76	46,02	649,436	52,37	730,720	59,54	820,074				
26	660,4	650					7,92	129,398	12,70	205,974				9,52	155,157							12,70	205,974															
28	711,2	700					7,92	139,472	12,70	222,129	15,87	276,314		9,52	167,267							12,70	222,129															
30	762,0		6,35	120,151	7,92	147,547	7,92	149,547	12,70	238,283	15,87	296,501		9,52	179,377							12,70	238,238															
32	812,8	800					7,92	159,621	12,70	254,438	15,87	316,688		9,52	191,487	17,47	347,916					12,70	254,438															
34	863,8						7,92	169,696	12,70	270,593	15,87	336,875		9,52	203,596	17,47	370,139					12,70	270,593															
36	914,4	900					7,92	179,770	12,70	286,748	15,87	357,062		9,52	215,706	19,05	427,096					12,70	286,748															



# Dimensions and theoretical weights for carbon/alloy steel pipes

NPS	O.D.	DN	STD		XS		XXS		sch.10		sch.20		sch.30		sch.40		sch.60		sch.80		sch.100		sch.120		sch.140		sch.160		
			WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT	KG/M	WT
3/8	17,1	10	2,31	0,84	3,20	1,10									2,31	0,84			3,20	1,10									
1/2	21,3	15	2,77	1,27	3,73	1,62	7,47	2,55	2,11	1,00			2,41	1,12	2,77	1,27			3,73	1,62							4,78	1,95	
3/4	26,7	20	2,87	1,69	3,91	2,20	7,82	3,64	2,11	1,28			2,41	1,44	2,87	1,69			3,91	2,20							5,56	2,90	
1	33,4	25	3,38	2,50	4,55	3,24	9,09	5,45	2,77	2,09			2,90	2,18	3,38	2,50			4,55	3,24							6,35	4,24	
1¼	42,2	32	3,56	3,39	4,85	4,47	9,70	7,77	2,77	2,69			2,97	2,87	3,56	3,39			4,85	4,47							6,35	5,61	
1½	48,3	40	3,68	4,05	5,08	5,41	10,15	9,55	2,77	3,11			3,18	3,53	3,68	4,05			5,08	5,41							7,14	7,25	
2	60,3	50	3,91	5,44	5,54	7,48	11,07	13,44	2,77	3,93			3,18	4,48	3,91	5,44			5,54	7,48							8,74	11,11	
2½	73,0	65	5,16	8,63	7,01	11,41	14,02	20,39	3,05	5,26			4,78	8,04	5,16	8,63			7,01	11,41							9,53	14,92	
3	88,9	80	5,49	11,29	7,62	15,27	15,24	27,68	3,05	6,46			4,78	9,92	5,49	11,29			7,62	15,27							11,13	21,35	
3½	101,6		5,74	13,57	8,08	18,64			3,05	7,41			4,78	11,41	5,74	13,57			8,08	18,64							16,15	34,03	
4	114,3	100	6,02	16,07	8,56	22,32	17,12	41,03							6,02	16,07			8,56	22,32			11,13	28,32			13,49	33,54	
5	141,3	125	6,55	21,77	9,53	30,97	19,05	57,43	3,40	11,56					6,55	21,77			9,53	30,97			12,70	40,28			15,88	49,11	
6	168,3	150	7,11	28,26	10,97	42,56	21,95	79,22	3,40	13,83					7,11	28,26			10,97	42,56			14,27	54,20			18,26	67,56	
8	219,1	200	8,18	42,55	12,70	64,64	22,23	107,92	3,76	29,97	6,35	33,31	7,04	36,81	8,18	42,55	10,31	53,08	12,70	64,64	15,09	75,92	18,26	90,44	20,62	100,92	23,01	111,27	
10	273,0	250	9,27	60,31	12,70	81,55	25,40	155,15	4,19	27,79	6,35	41,77	7,80	51,03	9,27	60,31	12,70	81,55	15,09	96,01	18,26	114,75	21,44	133,06	25,40	155,15	28,58	172,33	
12	323,9	300	9,53	73,88	12,70	97,46	25,40	186,97	4,57	35,98	6,35	49,73	8,38	65,20	10,31	79,73	14,27	108,96	17,48	132,08	21,44	159,91	25,40	186,97	28,58	208,14	33,32	238,76	
14	355,6	350	9,53	81,33	12,70	107,39			6,35	54,69	7,92	67,90	9,53	81,33	11,13	94,55	15,09	126,71	19,05	158,10	23,83	194,96	27,79	224,65	31,75	253,56	35,71	281,70	
16	406,4	400	9,53	93,27	12,70	123,30			6,35	62,64	7,92	77,83	9,53	93,27	12,70	123,30	16,66	160,12	21,44	203,53	26,19	245,56	30,96	286,64	36,53	333,19	40,49	365,35	
18	457,2	450	9,53	105,16	12,70	139,15			6,35	70,57	7,92	87,71	11,13	122,38	14,27	155,80	19,05	205,74	23,83	254,55	29,36	309,62	34,93	363,56	39,67	408,26	45,24	459,37	
20	508,0	500	9,53	117,15	12,70	155,12			6,35	78,55	9,53	117,15	12,70	155,12	15,09	183,42	20,62	247,83	26,19	311,17	32,54	381,53	38,10	441,49	44,45	508,11	50,01	564,81	
22	558,8	550	9,53	129,13	12,70	171,09			6,35	86,54	9,53	129,13	12,70	171,09			22,23	294,25	28,58	373,83	34,93	451,42	41,28	527,02	47,63	600,63	53,98	672,26	
24	609,6	600	9,53	141,12	12,70	187,06			6,35	94,53	9,53	141,12	14,27	209,64	17,48	255,41	24,61	355,26	30,96	442,08	38,89	547,71	46,02	640,03	52,37	720,15	59,54	808,22	
26	660,4	650	9,53	152,87	12,70	202,72			7,92	127,36	12,70	202,72																	
28	711,2	700	9,53	164,85	12,70	218,69			7,92	137,32	12,70	218,69	15,88	271,21															
30	762,0		9,53	176,84	12,70	234,67			7,92	147,28	12,70	234,67	15,88	292,18															
32	812,8	800	9,53	188,82	12,70	250,64			7,92	157,24	12,70	250,64	15,88	312,15	17,48	342,91													
34	863,8		9,53	200,31	12,70	266,61			7,92	167,20	12,70	266,61	15,88	332,12	17,48	364,90													
36	914,4	900	9,53	212,56	12,70	282,27			7,92	176,96	12,70	282,27	15,88	351,70	19,05	420,42													
38	965,0		9,53	224,54	12,70	298,24																							
40	1016,0	1000	9,53	236,53	12,70	314,22																							
42	1067,0	1100	9,53	248,52	12,70	330,19																							

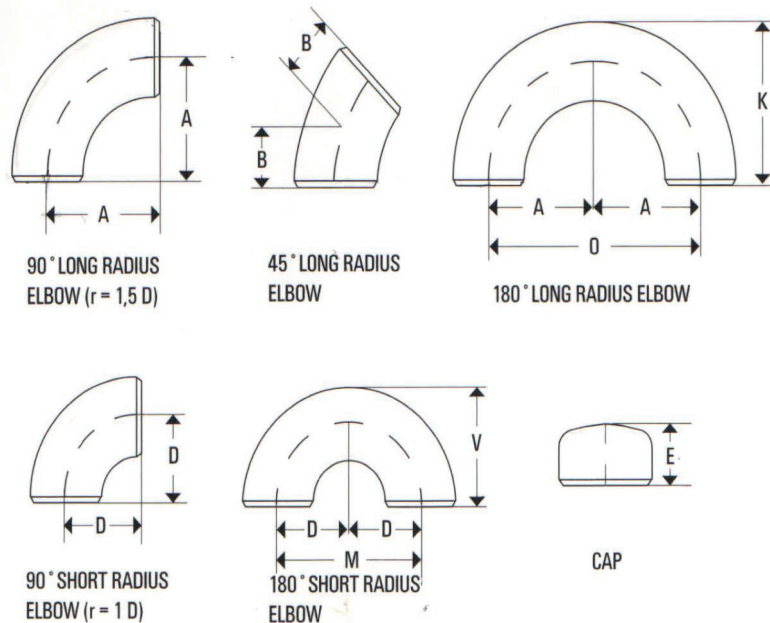
# Dimensions for elbows & caps in mm

**Process:** Cold Extrusion & Hot Extrusion Forming  
Seamless/Welded Type: 1/2" to 102"

**Standards:** ASME/ANSI B16.9, B16.28; MSS SP-43;  
DIN 2605, DIN2609, DIN2615, DIN2616:

**Schedules:** STD, XS, XXS, SCH10, SCH20, SCH30, SCH40, SCH60,  
SCH80, SCH100, SCH120, SCH140, SCH160

**Materials:** Carbon steel, Stainless steel, Alloy Steel, High Yield steel, Nickel Alloy, Copper Alloy, Titanium Alloy.



Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)	LONG RADIUS				SHOT RADIUS			CAP
		A	B	O	K	D	M	V	
1/2"	21,3	38	16	76	48	---	---	---	25
3/4"	26,7	38	19	76	51	---	---	---	25
1"	33,4	38	22	76	56	25	51	41	38
1.1/4"	42,2	48	25	95	70	32	64	52	38
1.1/2"	48,3	57	29	114	83	38	76	62	38
2"	60,3	76	35	152	106	51	102	81	38
2.1/2"	73	95	44	190	132	64	127	100	38
3"	88,9	114	51	229	159	76	152	121	51
3.1/2"	101,6	133	57	267	184	89	178	140	64
4"	114,3	152	64	305	210	102	203	159	64
5"	141,3	190	79	381	262	127	254	197	76
6"	168,3	229	95	457	313	152	305	237	89
8"	219,1	305	127	610	414	203	406	313	102
10"	273	381	159	762	518	254	508	391	127
12"	323,8	457	190	914	619	305	610	467	152
14"	355,6	533	222	1067	711	356	711	533	165
16"	406,4	610	254	1219	813	406	813	610	178
18"	457	686	286	1372	914	457	914	686	203
20"	508	762	318	1524	1016	508	1016	762	229
22"	559	838	343	1676	1118	559	1118	838	254
24"	610	914	381	1829	1219	610	1219	914	267
26"	660	991	406	---	---	---	---	---	267
28"	711	1067	438	---	---	---	---	---	267
30"	762	1143	470	---	---	---	---	---	267
32"	813	1219	502	---	---	---	---	---	267
34"	864	1295	533	---	---	---	---	---	267
36"	914	1372	565	---	---	---	---	---	267

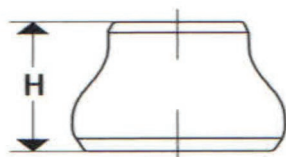
# Dimensions for concentric/eccentric reducers in mm

**Process:** Cold & Mandrel Forming  
Seamless/Welded Type: 1/2" to 102"

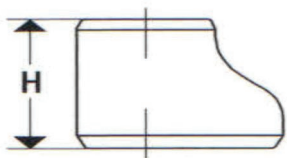
**Standards:** ASME/ANSI B16.9, B16.28; MSS SP -43;  
DIN2605; DIN 2615; DIN2616; B.S 1640

**Schedules:** STD, XS, XXS, SCH10, SCH20, SCH30,  
SCH40, SCH60, SCH80, SCH100, SCH120, SCH140,  
SCH160

**Material:** Carbon steel, Stainless steel, Alloy  
Steel, High Yield steel, Nickel Alloy, Copper Alloy,  
Titanium Alloy.



CONCENTRIC REDUCER



ECCENTRIC REDUCER

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		End-to-End	Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)		End-to-End
	Run	Outlet	H		Run	Outlet	H
3/4" x 1/2"	26,7	21,3	38	12" x 10" 12" x 8" 12" x 6" 12" x 5"	323,8	273	203
3/4" x 3/8"	26,7	17,3	38		323,8	219,1	203
					323,8	168,3	203
1" x 3/4"	33,4	26,7	51		323,8	141,3	203
1" x 1/2"	33,4	21,3	51				
1.1/4" x 1"	42,2	33,4	51	14" x 12" 14" x 10" 14" x 8" 14" x 6"	355,6	323,8	330
1.1/4" x 3/4"	42,2	26,7	51		355,6	273	330
1.1/4" x 1/2"	42,2	21,3	51		355,6	219,1	330
					355,6	168,3	330
1.1/2" x 1.1/4"	48,3	42,2	64	16" x 14" 16" x 12" 16" x 10" 16" x 8"	406,4	355,6	356
1.1/2" x 1"	48,3	33,4	64		406,4	323,8	356
1.1/2" x 3/4"	48,3	26,7	64		406,4	273	356
1.1/2" x 1/2"	46,3	21,3	64		406,4	219,1	356
2" x 1.1/2"	60,3	48,3	76	18" x 16" 18" x 14" 18" x 12" 18" x 10"	457	406,4	381
2" x 1.1/4"	60,3	42,2	76		457	356,6	381
2" x 1"	60,3	33,4	76		457	323,8	381
2" x 3/4"	60,3	26,7	76		457	273	381
2.1/2" x 2"	73,0	60,3	89	20" x 18" 20" x 16" 20" x 14" 20" x 12"	508	457	508
2.1/2" x 1.1/2"	73,0	48,3	89		508	406,4	508
2.1/2" x 1.1/4"	73,0	42,2	89		508,0	355,6	508
2.1/2" x 1"	73	33,4	89		508	323,8	508
3" x 2.1/2"	88,9	73,0	89	22" x 20" 22" x 18" 22" x 16" 22" x 14"	559	508	508
3" x 2"	88,9	60,3	89		559	457	508
3" x 1.1/2"	88,9	48,3	89		559	406,4	508
3" x 1.1/4"	88,9	42,2	89		559	355,6	508

3.1/2" x 3"	101,6	88,9	102	24" x 22" 24" x 20" 24" x 18" 24" x 16"	610	559	508
3.1/2" x 2.1/2"	101,6	73,0	102		610	508	508
3.1/2" x 2"	101,6	60,3	102		610	457	508
3.1/2" x 1.1/2"	101,6	48,3	102		610	406,4	508
4" x 3.1/2"	114,3	101,6	102	26" x 24" 26" x 22" 26" x 20" 26" x 18"	660	610	610
4" x 3"	114,3	88,9	102		660.0	559	610
4" x 2.1/2"	114,3	73	102		660	508	610
4" x 2"	114,3	60,3	102		660	457	610
4" x 1.1/2"	114,3	48,3	102				
5" x 4"	141,3	114,3	127	28" x 26" 28" x 24" 28" x 20" 28" x 18"	711	660	610
5" x 3.1/2"	141,3	101,6	127		711.0	610	610
5" x 3"	141,3	88,9	127		711	508	610
5" x 2.1/2"	141,3	73,0	127		711	457	610
5" x 2"	141,3	60,3	127				
6" x 5"	168,3	141,3	140	30" x 28" 30" x 26" 30" x 24" 30" x 20"	762	711	610
6" x 4"	168,3	114,3	140		762	660	610
6" x 3.1/2"	168,3	101,6	140		762	610	610
6" x 3"	168,3	88,9	140		762	508	610
6" x 2.1/2"	168,3	73	140				
8" x 6"	219,1	168,3	152	32" x 30" 32" x 28" 32" x 26" 32" x 24"	813	762	610
8" x 5"	219,1	141,3	152		813	711	610
8" x 4"	219,1	114,3	152		813	660	610
8" x 3.1/2"	219,1	101,6	152		813	610	610
10" x 8"	273	219,1	178	34" x 32" 34" x 30" 34" x 26" 34" x 24"	864	813	610
10" x 6"	273,0	168,3	178		864	762	610
10" x 5"	273	141,3	178		864	660	610
10" x 4"	273	114,3	178		864	610	610

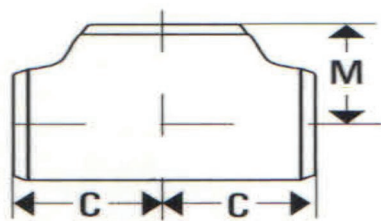
# Dimensions for equal/reducing tees in mm

**Seamless/Welded Type:** 1/2" to 102"

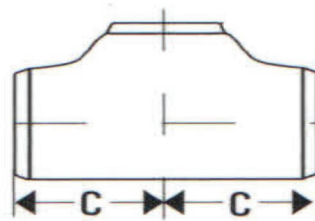
**Standards:** ASME/ANSI B16.9,B16.28; MSS SP-43;DIN 2605, DIN2609, DIN2615, DIN2616

**Schedules:** STD, XS, XXS, SCH10, SCH20, SCH30, SCH40, SCH60, SCH80, SCH100, SCH120, SCH140, SCH160

**Materials:** Carbon steel, Stainless steel, Alloy Steel, High Yield steel, Nickel Alloy, Copper Alloy, Titanium Alloy.



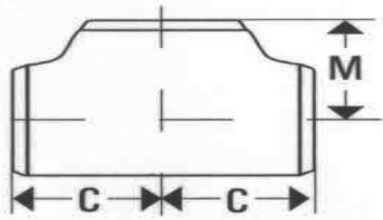
**STRAIGHT TEE**



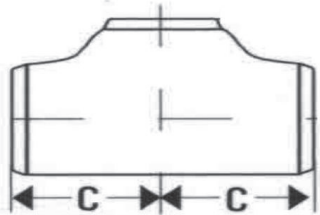
**REDUCING TEE**

Nominal Pipe Size (NPS)	Outside Diameter at Bevel (O/D)	Run 'C'	Outlet 'M'
1/2"	21,3	25	25
3/4"	26,7	29	29
1"	33,4	38	38
1.1/4"	42,2	48	48
1.1/2"	48,3	57	57
2"	60,3	64	64
2.1/2"	73	76	76
3"	88,9	86	86
3.1/2"	101,6	95	95
4"	114,3	105	105
5"	141,3	124	124
6"	168,3	143	143
8"	219,1	178	178
10"	273	216	216
12"	323,8	254	254
14"	355,6	279	279
16"	406,4	305	305
18"	457	343	343
20"	508	381	381
22"	559	419	419
24"	610	432	432
26"	660	495	495
28"	711	521	521
30"	762	559	559
32"	813	597	597
34"	864	635	635
36"	914	673	673

# Weights for Equal and Reducing Tees in kg



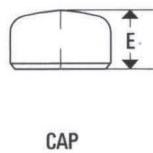
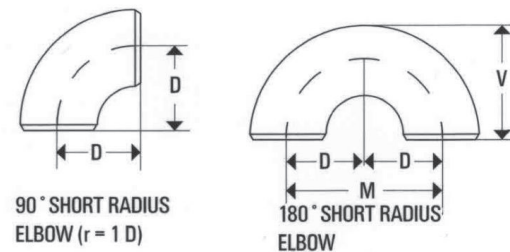
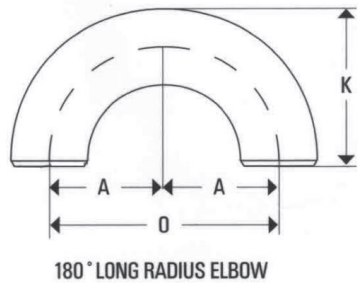
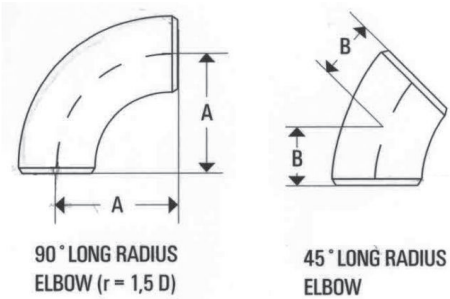
**STRAIGHT TEE**



**REDUCING TEE**

NPS	O.D.	C	STD	XS	SCH 10	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
inch	mm	mm													
1/2	21,3	25,4	0,10	0,16	-	-	-	0,10	-	0,16	-	-	-	0,25	0,30
3/4	26,7	28,5	0,16	0,22	-	-	-	0,16	-	0,22	-	-	-	0,35	0,45
1	33,4	38,1	0,36	0,47	-	-	-	0,36	-	0,47	-	-	-	0,70	0,80
1¼	42,2	47,6	0,50	0,70	-	-	-	0,50	-	0,70	-	-	-	1,00	1,20
1½	48,3	57,1	0,70	0,90	-	-	-	0,70	-	0,90	-	-	-	1,50	1,80
2	60,3	63,5	1,00	1,40	-	-	-	1,00	-	1,40	-	-	-	2,50	3,00
2½	73,0	76,2	1,80	2,20	-	-	-	1,80	-	2,20	-	-	-	4,00	6,00
3	88,9	85,7	2,70	3,00	-	-	-	2,70	-	3,00	-	-	-	6,00	8,00
3½	101,6	95,2	3,55	4,89	-	-	-	3,55	-	4,89	-	-	-	8,00	11,00
4	114,3	104,8	4,40	6,40	-	-	-	4,40	-	6,40	-	-	-	10,00	13,00
5	141,3	142,8	7,00	9,30	-	-	-	7,00	-	9,30	-	-	-	20,00	24,00
6	168,3	142,8	10,00	15,00	-	-	-	10,00	-	15,00	-	-	-	25,00	30,00
8	219,1	177,8	19,00	28,90	-	-	-	19,00	-	28,90	-	-	-	52,00	52,00
10	273,0	215,9	30,00	48,00	-	-	-	30,00	-	52,00	-	-	-	88,00	95,00
12	323,9	254,0	47,00	77,00	-	-	-	49,00	-	90,00	-	-	-	145,00	130,00
14	355,6	279,4	60,00	95,00	-	-	-	85,00	-	125,00	-	-	-	270,00	-
16	406,4	304,9	75,00	103,0	-	-	-	103,00	-	195,00	-	-	-	360,00	-
18	457,2	342,9	105,0	125,0	-	-	-	170,00	-	235,00	-	-	-	500,00	-
20	508,0	381,0	125,0	160,0	-	-	-	250,00	-	330,00	-	-	-	680,00	-
22	558,8	419,1	165,0	205,0	-	-	-	300,00	-	490,00	-	-	-	1130,00	-
24	609,6	431,8	185,0	235,0	-	-	-	330,00	-	550,00	-	-	-	1160,00	-
26	660,4	495,3	250,0	320,0	-	-	-	-	-	-	-	-	-	-	-
28	711,2	520,7	300,0	380,0	-	-	-	-	-	-	-	-	-	-	-
30	762,0	559,0	345,0	435,0	-	-	-	-	-	-	-	-	-	-	-
32	812,8	597,0	410,0	500,0	-	-	-	-	-	-	-	-	-	-	-
34	863,8	813,0	460,0	580,0	-	-	-	-	-	-	-	-	-	-	-
36	914,4	673,0	520,0	650,0	-	-	-	-	-	-	-	-	-	-	-
38	965,0	711,0	-	-	-	-	-	-	-	-	-	-	-	-	-
40	1016,0	749,0	-	-	-	-	-	-	-	-	-	-	-	-	-
42	1067,0	762,0	-	-	-	-	-	-	-	-	-	-	-	-	-

# Weight for elbows and for caps in kg



Weights for Short Radius (R=1 D) Elbow in kg

NPS inch	O.D. mm	STD	XS	SCH 10	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
1/2	21,3	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	26,7	-	-	-	-	-	-	-	-	-	-	-	-	-
1	33,4	0,10	0,13	-	-	-	0,10	-	0,13	-	-	-	0,17	0,2
1¼	42,2	0,17	0,22	-	-	-	0,17	-	0,22	-	-	-	0,28	0,39
1½	48,3	0,24	0,32	-	-	-	0,24	-	0,32	-	-	-	0,43	0,57
2	60,3	0,44	0,60	-	-	-	0,44	-	0,60	-	-	-	0,90	1,10
2½	73,0	0,87	1,15	-	-	-	0,87	-	1,15	-	-	-	1,50	2,05
3	88,9	1,35	1,83	-	-	-	1,35	-	1,83	-	-	-	2,60	3,10
3½	101,6	1,90	2,65	-	-	-	1,90	-	2,65	-	-	-	-	-
4	114,3	2,60	3,60	-	-	-	2,60	-	3,60	-	4,60	-	5,40	6,60
5	141,3	4,40	6,20	-	-	-	4,40	-	6,20	-	8,00	-	9,90	11,50
6	168,3	7,00	10,00	-	-	-	7,00	-	10,00	-	13,00	-	16,00	19,00
8	219,1	14,00	21,00	-	11,00	12,00	14,00	17,00	21,00	25,0	29,00	33,00	36,00	35,00
10	273,0	24,00	33,00	-	17,00	21,00	24,00	33,00	39,00	46,0	54,00	62,00	70,00	62,00
12	323,9	36,00	47,00	-	24,00	32,00	39,00	53,00	64,00	77,0	90,00	100,00	115,0	90,00
14	355,6	46,00	61,00	31,00	39,00	46,00	53,00	71,00	90,00	110,0	126,0	142,00	160,0	-
16	406,4	60,00	79,00	40,00	50,00	60,00	79,00	103,0	130,0	157,0	184,0	213,0	235,0	-
18	457,2	76,0	100,0	51,00	64,00	88,00	113,00	148,0	185,0	223,0	262,0	300,0	332,0	-
20	508,0	94,0	124,0	63,00	94,00	124,0	147,0	200,0	250,0	305,0	353,0	408,0	452,0	-
22	558,8	114,0	151,0	77,00	114,0	151,0	-	260,0	330,0	400,0	464,0	530,0	591,0	-
24	609,6	136,0	180,0	97,0	136,0	202,0	245,0	341,0	424,0	526,0	614,0	691,0	775,0	-
26	660,4	158,0	210,0	-	-	-	-	-	-	-	-	-	-	-
28	711,2	184,0	244,0	-	-	-	-	-	-	-	-	-	-	-
30	762,0	211,0	281,0	-	-	-	-	-	-	-	-	-	-	-
32	812,8	240,0	320,0	-	-	-	-	-	-	-	-	-	-	-
34	863,8	271,0	361,0	-	-	-	-	-	-	-	-	-	-	-
36	914,4	304,0	405,0	-	-	-	-	-	-	-	-	-	-	-
38	965,0	-	-	-	-	-	-	-	-	-	-	-	-	-
40	1016,0	376,0	501,0	-	-	-	-	-	-	-	-	-	-	-
42	1067,0	-	-	-	-	-	-	-	-	-	-	-	-	-

### Weights for Long Radius (R=1.5D) Elbow in kg

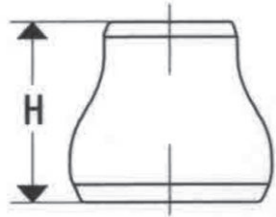
NPS inch	O.D. mm	STD	XS	SCH 10	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
1/2	21,3	0,08	0,10	-	-	-	0,08	-	0,1	-	-	-	0,12	0,15
3/4	26,7	0,08	0,10	-	-	-	0,08	-	0,10	-	-	-	0,13	0,17
1	33,4	0,15	0,19	-	-	-	0,15	-	0,19	-	-	-	0,25	0,33
1¼	42,2	0,26	0,34	-	-	-	0,26	-	0,34	-	-	-	0,42	0,60
1½	48,3	0,36	0,49	-	-	-	0,36	-	0,49	-	-	-	0,65	0,86
2	60,3	0,65	0,90	-	-	-	0,65	-	0,90	-	-	-	1,35	1,62
2½	73,0	1,30	1,71	-	-	-	1,30	-	1,71	-	-	-	2,25	3,00
3	88,9	2,00	2,75	-	-	-	2,00	-	2,75	-	-	-	4,00	5,00
3½	101,6	3,00	4,00	-	-	-	3,00	-	4,00	-	-	-	-	-
4	114,3	3,90	5,00	-	-	-	4,00	-	5,00	-	7,00	-	8,00	10,00
5	141,3	7,00	9,00	-	-	-	7,00	-	9,00	-	12,00	-	15,00	18,00
6	168,3	10,00	15,00	-	-	-	10,00	-	15,00	-	20,00	-	25,00	29,00
8	219,1	21,00	31,00	-	16,00	18,00	21,00	26,0	31,00	37,0	44,00	49,00	55,00	52,00
10	273,0	37,00	49,00	-	25,00	31,00	37,00	50,0	58,00	70,0	80,00	95,00	105,0	94,00
12	323,9	54,00	71,00	-	36,00	47,00	58,00	80,0	95,00	115,0	135,00	150,0	175,0	135,0
14	355,6	69,00	91,00	46,00	57,00	69,00	80,00	108,0	133,00	195,0	197,00	215,0	240,0	-
16	406,4	90,00	119,0	61,00	75,00	90,00	119,00	155,0	196,00	240,0	276,0	320,0	360,0	-
18	457,2	114,0	151,0	77,00	133,0	170,0	223,00	275,0	335,0	395,0	411,0	340,0	500,0	-
20	508,0	141,0	186,0	95,00	141,0	186,0	220,0	300,0	375,0	460,0	530,0	610,0	680,0	-
22	558,8	171,0	226,0	115,00	171,0	226,0	-	390,0	495,0	595,0	695,0	795,0	890,0	-
24	609,6	203,0	270,0	136,0	203,0	302,0	370,0	512,0	640,0	790,0	920,0	1035,0	1165,0	-
26	660,4	237,0	315,0	200,0	317,0	405,0	-	-	-	-	-	-	-	-
28	711,2	275,0	366,0	232,0	368,0	458,0	-	-	-	-	-	-	-	-
30	762,0	316,0	421,0	265,0	422,0	526,0	-	-	-	-	-	-	-	-
32	812,8	360,0	480,0	302,0	482,0	600,0	660,0	-	-	-	-	-	-	-
34	863,8	407,0	545,0	342,0	544,0	680,0	745,0	-	-	-	-	-	-	-
36	914,4	457,0	608,0	382,0	610,0	760,0	910,0	-	-	-	-	-	-	-
38	965,0	509,0	678,0	-	-	-	-	-	-	-	-	-	-	-
40	1016,0	564,0	752,0	-	-	-	-	-	-	-	-	-	-	-
42	1067,0	622,0	828,0	-	-	-	-	-	-	-	-	-	-	-
44	1118,0	683,0	911,0	-	-	-	-	-	-	-	-	-	-	-
46	1168,0	814,0	1085,0	-	-	-	-	-	-	-	-	-	-	-
48	1219,2	849,0	1132,0	-	-	-	-	-	-	-	-	-	-	-



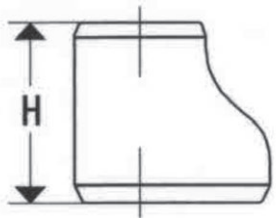
### Weights for CAPS in kg (E for wall thickness up to XS EI for wall thickness over XS)

NPS	O.D.	E	EI	STD	XS	SCH 10	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
inch	mm	mm	mm													
1/2	21,3	25,9	25,9	0,03	0,05	-	-	-	0,03	-	0,05	-	-	-	0,10	0,15
3/4	26,7	25,9	25,9	0,06	0,10	-	-	-	0,06	-	0,10	-	-	-	0,10	0,15
1	33,4	38,1	38,1	0,10	0,15	-	-	-	0,10	-	0,15	-	-	-	0,15	0,20
1¼	42,2	38,1	38,1	0,20	0,25	-	-	-	0,20	-	0,25	-	-	-	0,25	0,30
1½	48,3	38,1	38,1	0,25	0,30	-	-	-	0,25	-	0,30	-	-	-	0,30	0,40
2	60,3	38,1	44,4	0,30	0,35	-	-	-	0,30	-	0,35	-	-	-	0,55	0,60
2½	73,0	38,1	50,8	0,50	0,50	-	-	-	0,50	-	0,50	-	-	-	0,90	1,00
3	88,9	50,8	63,5	0,60	0,90	-	-	-	0,60	-	0,90	-	-	-	1,40	1,80
3½	101,6	63,5	76,2	1,10	1,70	-	-	-	1,10	-	1,70	-	-	-	2,50	2,70
4	114,3	63,5	76,2	1,20	2,00	-	-	-	1,20	-	2,00	-	-	-	3,00	4,00
5	141,3	76,2	88,9	2,10	3,00	-	-	-	2,10	-	3,00	-	-	-	5,50	7,00
6	168,3	88,9	101,6	3,60	5,00	-	-	-	3,60	-	5,00	-	-	-	7,50	9,00
8	219,1	101,6	127,0	5,50	7,00	-	-	-	5,50	-	7,00	-	-	-	18,00	18,00
10	273,0	127,0	152,4	10,00	12,00	-	-	-	10,00	-	17,00	-	-	-	34,00	30,00
12	323,9	152,4	177,8	14,00	18,00	-	-	-	14,00	18,00	31,00	-	-	-	55,00	42,00
14	355,6	165,1	190,5	17,00	23,00	-	-	-	23,00	-	42,00	-	-	-	77,0	-
16	406,4	177,8	203,2	23,00	30,00	-	-	-	30,00	-	55,00	-	-	-	100,0	-
18	457,2	203,2	228,6	28,00	32,00	-	-	-	43,00	-	75,0	-	-	-	110,0	-
20	508,0	228,6	254,0	35,00	46,00	-	-	-	60,0	-	100,0	-	-	-	175,0	-
22	558,8	254	254,0	44,00	54,00	-	-	-	85,0	-	130,0	-	-	-	240,0	-
24	609,6	266,7	304,8	51,00	60,00	-	-	-	98,0	-	155,00	-	-	-	285,0	-
26	660,4	266,7	-	56,00	70,00	-	-	-	-	-	-	-	-	-	-	-
28	711,2	266,7	-	60,00	75,00	-	-	-	120,0	-	-	-	-	-	-	-
30	762,0	266,7	-	65,00	85,00	-	-	-	-	-	-	-	-	-	-	-
32	812,8	266,7	-	71,00	95,00	-	-	-	-	-	-	-	-	-	-	-
34	863,8	266,7	-	80,00	100,0	-	-	-	-	-	-	-	-	-	-	-
36	914,4	266,7	-	85,00	110,0	-	-	-	-	-	-	-	-	-	-	-
38	965,0	305,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	1016,0	305,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	1067,0	305,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# Weights for Concentric and Eccentric Reducers in kg



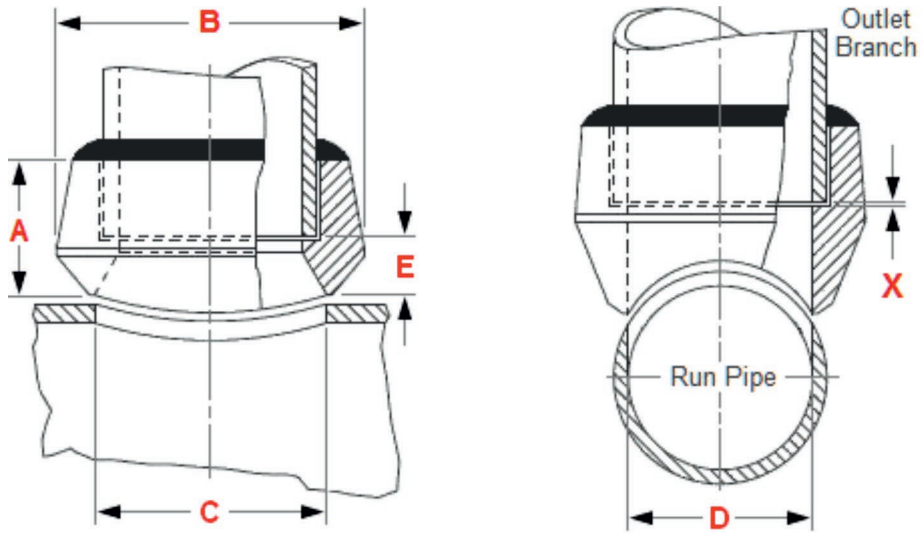
CONCENTRIC REDUCER



ECCENTRIC REDUCER

NPS	O.D.	H	STD	XS	SCH 10	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
inch	mm	mm													
1/2	21,3		-	-	-	-	-		-		-	-	-	-	-
3/4	26,7	38,0	0,09	0,16	-	-	-	0,09	-	0,16	-	-	-	-	-
1	33,4	51,0	0,10	0,20	-	-	-	0,10	-	0,20	-	-	-	0,25	-
1¼	42,2	51,0	0,20	0,30	-	-	-	0,20	-	0,30	-	-	-	0,30	0,35
1½	48,3	64,0	0,30	0,40	-	-	-	0,30	-	0,40	-	-	-	0,50	0,45
2	60,3	76,0	0,40	0,60	-	-	-	0,40	-	0,60	-	-	-	1,10	0,70
2½	73,0	89,0	0,80	1,00	-	-	-	0,80	-	1,00	-	-	-	1,60	1,30
3	88,9	89,0	1,00	1,40	-	-	-	1,00	-	1,40	-	-	-	2,00	2,10
3½	101,6	102,0	1,40	2,00	-	-	-	1,40	-	2,00	-	-	-	2,80	2,60
4	114,3	102,0	1,60	2,20	-	-	-	1,60	-	2,20	-	3,00	-	4,00	3,70
5	141,3	127,0	2,80	4,00	-	-	-	2,80	-	4,00	-	5,60	-	7,00	4,70
6	168,3	140,0	4,00	6,00	-	-	-	4,00	-	6,00	-	8,30	-	10,50	8,00
8	219,1	152,0	6,50	9,90	-	5,80	6,20	6,50	-	9,90	12,6	15,00	17,00	18,80	12,30
10	273,0	171,0	10,00	14,00	-	9,00	10,00	10,00	-	18,00	22,0	26,00	30,00	32,00	18,00
12	323,9	203,0	15,00	19,00	-	13,00	14,00	16,00	-	29,00	35,0	41,00	46,00	56,00	34,00
14	355,6	330,0	30,00	36,00	25,00	28,00	30,00	34,00	-	60,00	72,0	82,00	92,00	104,0	46,0
16	406,4	356,0	37,00	48,00	33,00	35,00	37,00	48,00	-	82,00	98,0	114,0	131,0	145,0	-
18	457,2	381,0	45,0	58,00	40,00	42,00	54,00	68,00	-	110,0	132,0	150,0	172,0	195,0	-
20	508,0	508,0	68,0	86,00	62,00	68,00	86,00	105,0	-	173,0	210,0	240,0	275,0	310,0	-
22	558,8	508,0	70,0	77,00	67,00	72,00	93,00	130,0	-	-	-	-	-	450,0	-
24	609,6	508,0	72,0	93,00	115,0	143,0	205,0	257,0	315,0	380,00	440,0	480,0	-	-	-
26	660,4	610,0	100,0	130,0	-	130,0	-	-	-	-	-	-	-	-	-
28	711,2	610,0	105,0	140,0	-	140,0	-	-	-	-	-	-	-	-	-
30	762,0	610,0	110,0	145,0	-	-	-	-	-	-	-	-	-	-	-
32	812,8	610,0	125,0	150,0	-	-	-	-	-	-	-	-	-	-	-
34	863,8	610,0	130,0	158,0	-	-	-	-	-	-	-	-	-	-	-
36	914,4	610,0	135,0	175,0	-	-	-	-	-	-	-	-	-	-	-
38	965,0	610,0	-	-	-	-	-	-	-	-	-	-	-	-	-
40	1016,0	610,0	-	-	-	-	-	-	-	-	-	-	-	-	-
42	1067,0	610,0	-	-	-	-	-	-	-	-	-	-	-	-	-

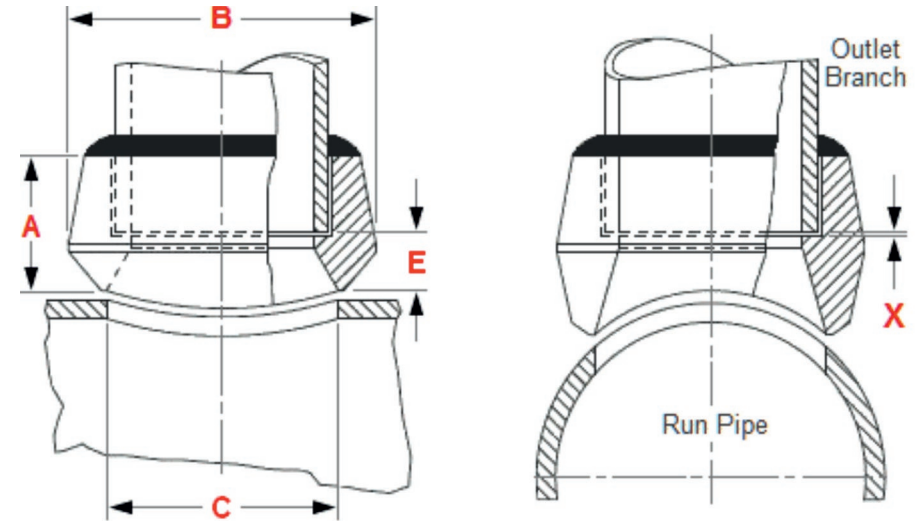
# Dimensions Size on Size Socklets® – MSS SP97



CLASS 3000						
NPS	A	B	C	D	E	Weight KG
1/2	1 25.4	1.3/8 34.92	15/16 23.81	0.622 15.80	17/32 13.49	0.12
3/4	1.1/16 26.98	1.5/8 41.27	1.3/16 30.16	0.824 20.93	15/32 11.90	0.19
1	1.5/16 33.33	2 50.8	1.7/16 36.51	1.049 26.64	23/32 18.25	0.31
1¼	1.5/16 33.33	2.3/8 60.32	1.3/4 44.45	1.380 35.05	9/16 14.28	0.45
1½	1.3/8 34.92	2.7/8 73.02	2 50.8	1.610 40.89	21/32 16.66	0.50
2	1½ 38.1	3½ 88.9	2.9/16 65.08	2.067 52.50	15/16 23.81	0.87
2½	1.9/16 39.68	4.1/16 103.18	3 76.2	2.469 62.71	3/4 19.05	1.50
3	1.3/4 44.45	4.13/16 122.23	3.11/16 93.66	3.068 77.93	15/16 23.81	2.15
3½	1.11/16 42.86	5.3/8 136.52	4.7/16 112.71	3.548 90.12	11/16 17.46	2.80
4	1.7/8 47.62	6.1/16 153.98	4.3/4 120.65	4.026 102.26	1.1/16 26.98	3.50
5	2.7/16 61.91	7¼ 184.15	5¼ 133.35	5.047 128.19	1 25.4	5.10
6	2.11/16 68.26	8.11/16 220.66	6.1/16 153.98	6.065 154.05	1.3/16 30.16	7.50
			X = Min. 1/16 (1.6 mm)			

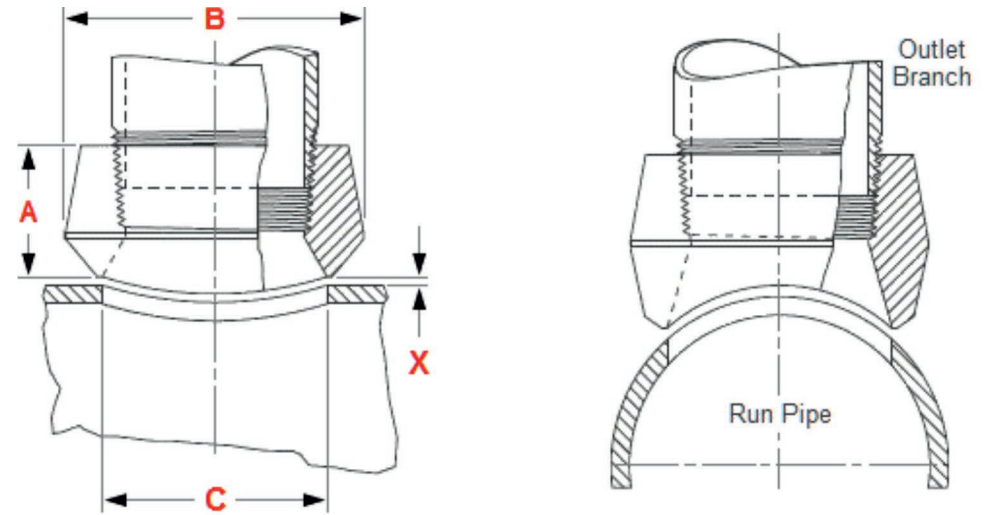
# Dimensions Reducing Socklets® – MSS SP97

CLASS 3000						
NPS	A	B	C	D	E	Weight KG
1/2	1 25.40	1.13/32 35.71	29/32 23.01	0.622 15.80	9/16 14.28	0.11
3/4	1.1/16 26.98	1.23/32 43.65	1.5/32 29.36	0.824 20.93	9/16 14.28	0.17
1	1.5/16 33.33	2 50.8	1.7/16 36.51	1.049 26.64	25/32 19.84	0.29
1¼	1.5/16 33.33	2.9/16 65.08	1.3/4 44.45	1.380 35.05	3/4 19.05	0.41
1½	1.3/8 34.92	2.27/32 72.23	2 50.8	1.610 40.89	3/4 19.05	0.46
2	1½ 38.1	3.15/32 88.10	2.9/16 65.08	2.067 52.50	13/16 20.63	0.80
2½	1.9/16 39.68	4.1/16 103.18	3 76.2	2.469 62.71	3/4 19.05	1.40
3	1.3/4 44.45	4.13/16 122.23	3.11/16 93.66	3.068 77.93	15/16 23.81	2.00
3½	1.11/16 42.86	5.3/8 136.52	4.7/16 112.71	3.548 90.12	11/16 17.46	2.60
4	1.7/8 47.62	5.31/32 151.60	4.3/4 120.65	4.026 102.26	1.1/16 26.98	3.30
5	2.5/8 66.67	7.5/16 185.73	5.9/16 141.28	5.047 128.19	1.11/32 34.13	4.90
6	2.3/4 69.85	8.5/8 219.07	6.11/16 169.86	6.065 154.05	1.13/32 35.71	7.30
			X = Min. 1/16 (1.6 mm)			



CLASS 6000						
NPS	A	B	C	D	E	Weight KG
1/2	1¼ 31.75	1.23/32 43.65	3/4 19.05	0.466 11.84	7/8 22.22	0.30
3/4	1.7/16 36.51	1.61/64 49.60	1 25.4	0.614 15.60	7/8 22.22	0.50
1	1.9/16 39.68	2.7/16 61.91	1.5/16 33.33	0.815 20.70	15/16 23.81	0.90
1¼	1.5/8 41.27	2.23/32 69.05	1½ 38.1	1.160 29.46	13/16 20.63	0.85
1½	1.11/16 42.86	3¼ 82.55	1.15/16 49.21	1.338 33.99	7/8 22.22	1.45
2	2.1/16 52.38	4.1/32 102.39	2.3/4 69.85	1.689 42.90	1.3/16 30.16	2.75
			X = Min. 1/16 (1.6 mm)			

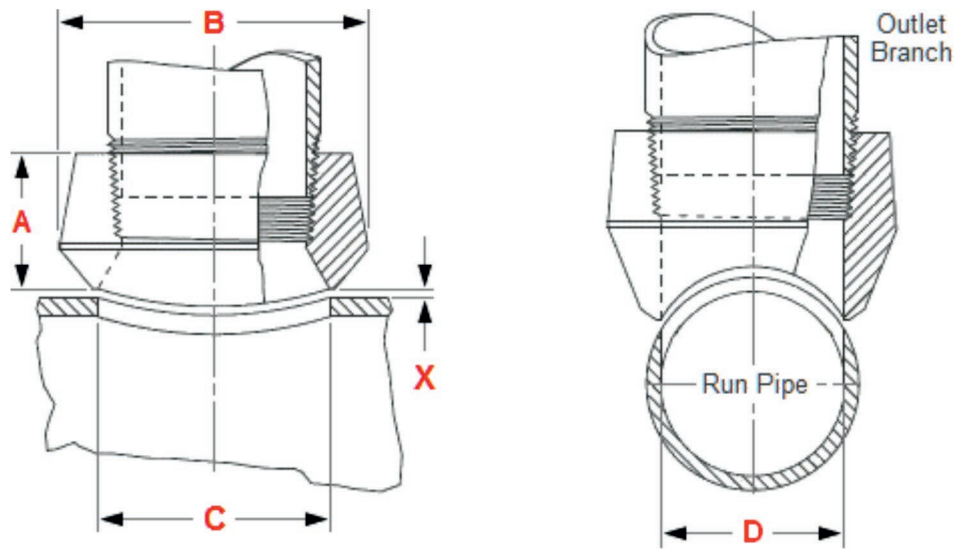
# Dimensions Reducing Thredolets – MSS SP97



CLASS 3000				
NPS	A	B	C	Weight KG
1/2	1	1.13/32	15/16	0.11
	25.40	35.71	23.81	
3/4	1.1/16	1.23/32	1.5/32	0.17
	26.98	43.65	29.36	
1	1.5/16	2	1.7/16	0.29
	33.33	50.80	36.51	
1¼	1.5/16	2.9/16	1.3/4	0.41
	33.33	65.08	44.45	
1½	1.3/8	2.27/32	2	0.46
	34.92	72.23	50.80	
2	1½	3.15/32	2.9/16	0.80
	38.10	88.10	65.08	
2½	1.13/16	4.1/16	3	1.74
	46.03	103.18	76.20	
3	2	4.13/16	3.11/16	2.00
	50.80	122.23	93.66	
3½	2.1/8	5.7/32	4	2.80
	53.975	132.55	101.6	
4	2¼	5.31/32	4.3/4	3.35
	57.15	151.60	120.65	
5	2.5/8	7.5/16	5.9/16	4.90
	66.67	185.73	141.28	
6	2.3/4	8.5/8	6.11/16	7.50
	69.85	219.07	169.86	

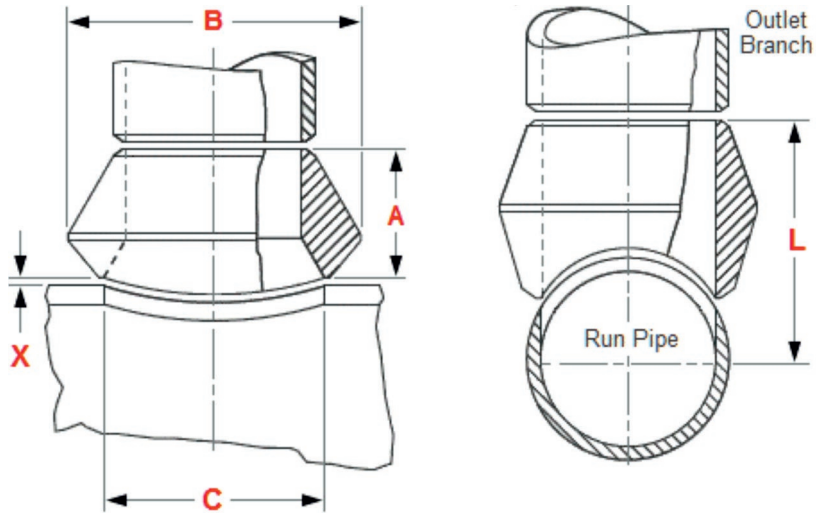
CLASS 6000				
NPS	A	B	C	Weight KG
1/2	¼	1.23/32	3/4	0.3
	31.75	43.65	19.05	
3/4	1.7/16	1.61/64	1	0.50
	36.51	49.60	25.40	
1	1.9/16	2.7/16	1.5/16	0.90
	39.68	61.91	33.33	
1¼	1.5/8	2.23/32	1½	0.85
	41.27	69.05	38.10	
1½	1.11/16	3¼	1.15/16	1.45
	42.86	82.55	49.21	
2	2.1/16	4.1/32	2.3/4	2.75
	52.38	102.39	69.85	

# Dimensions Size on Size Thredolets – MSS SP97



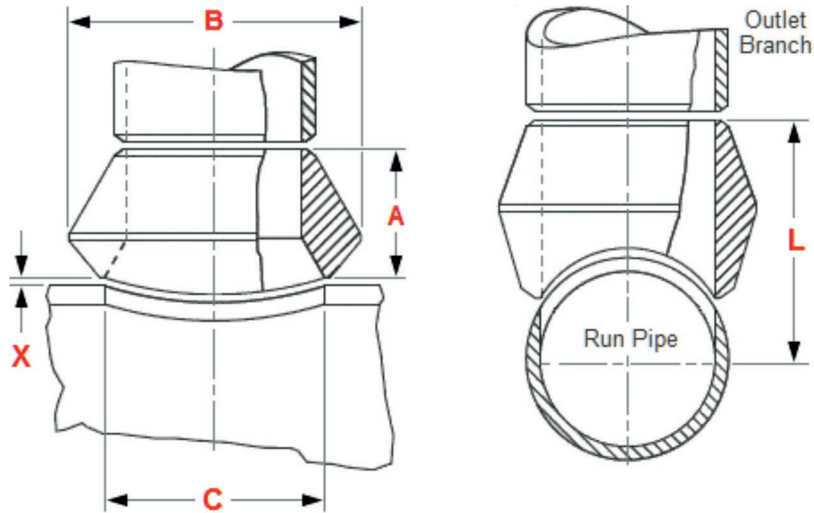
CLASS 3000					
NPS	A	B	C	D	Weight KG
1/2	1 25.40	1.3/8 34.92	15/16 23.81	5/8 15.87	0.12
3/4	1.1/16 26.98	1.5/8 41.27	1.3/16 30.16	13/16 20.63	0.19
1	1.5/16 33.33	2 50.80	1.7/16 36.51	1.1/16 26.98	0.31
1¼	1.5/16 33.33	2.3/8 60.32	1.3/4 44.45	1.3/8 34.92	0.45
1½	1.3/8 34.92	2.7/8 73.02	2 50.80	1.5/8 41.27	0.50
2	1½ 38.10	3½ 88.90	2.9/16 65.08	2.1/16 52.38	0.87
2½	1.29/32 48.41	4.1/16 103.18	3 76.20	2½ 63.50	1.50
3	2 50.80	4.13/16 122.23	3.11/16 93.66	3.1/16 77.78	2.15
3½	2.1/8 53.97	5.3/8 136.52	4.7/16 112.71	3.9/16 90.48	3.02
4	2¼ 57.15	6.1/16 153.98	4.3/4 120.65	4.1/16 103.18	3.60
5	2.7/16 61.91	7¼ 184.15	5¼ 133.35	5¼ 133.35	5.20
6	2.3/4 69.85	8.11/16 220.66	5.3/4 146.05	5.3/4 146.05	8.10

# Dimensions Weldolet Size on Size - STD - MSS SP97



DIMENSIONS NPS 1/2 TO 24					
NPS	A	B	C	D	Weight KG
1/2	3/4 19.05	1.3/8 34.93	15/16 23.81	5/8 15.88	0.07
3/4	7/8 22.23	1.5/8 41.28	1.3/16 30.16	13/16 20.64	0.12
1	1.1/16 26.99	2 50.80	1.7/16 36.51	1.1/32 26.19	0.18
1¼	1¼ 31.75	2.3/8 60.3	1.3/4 44.45	1.3/8 34.93	0.32
1½	1.5/16 33.34	2.7/8 73	2 50.80	1.5/8 41.28	0.36
2	1½ 38.10	3½ 88.90	2.9/16 65.09	2.1/16 52.39	0.70
2½	1.5/8 41.28	4.1/16 103.19	3 76.20	2.7/16 61.91	1.10
3	1.3/4 44.45	4.13/16 122.24	3.11/16 93.66	3.1/16 77.79	1.70
3½	2 50.80	5.3/8 136.53	3.7/8 98.43	3.9/16 90.49	2.25
4	2 50.80	6 152.40	4.3/4 120.65	4 101.60	3.05
5	2¼ 57.15	7.1/8 180.98	5.9/16 141.29	5.1/16 128.59	4.85
6	2.3/8 60.3	8½ 215.90	6.11/16 169.86	6.1/16 153.99	7.50
8	2.3/4 69.85	10.3/8 263.53	8.11/16 220.66	7.15/16 201.61	12.70
10	3.1/16 77.79	12.9/16 319.09	10.13/16 274.64	10 254.00	20.00
12	3.3/8 85.73	14.7/8 377.83	12.13/16 325.44	12 304.80	29.40
14	3½ 88.90	16.1/8 409.58	14.1/16 357.19	13¼ 336.55	31.80
16	3.11/16 93.66	18¼ 463.55	16.1/16 407.99	15¼ 387.35	41.70
18	4.1/16 103.19	20.3/4 527.05	18.5/8 473.08	17¼ 438.15	56.70
20	4.5/8 117.48	23.1/16 585.79	20.1/16 509.59	19¼ 488.95	79.30
24	5.3/8 136.53	27.7/8 708.03	25.1/8 638.18	23¼ 590.55	127.00

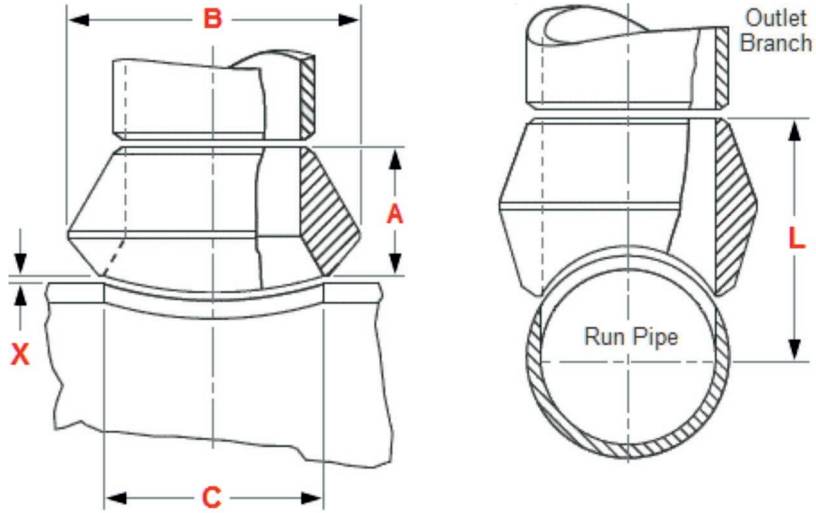
# Dimensions Weldolet Size on Size - XS - MSS SP97



DIMENSIONS NPS 1/2 TO 24					
NPS	A	B	C	D	Weight KG
1/2	3/4 19.05	1.3/8 34.93	15/16 23.81	5/8 15.88	0.07
3/4	7/8 22.23	1.5/8 41.28	1.3/16 30.16	13/16 20.64	0.12
1	1.1/16 26.99	2 50.80	1.7/16 36.51	1.1/32 26.19	0.18
1¼	1¼ 31.75	2.7/16 61.91	1.3/4 44.45	1.3/8 34.93	0.32
1½	1.5/16 33.34	2.7/8 73	2 50.80	1.5/8 41.28	0.40
2	1½ 38.10	3½ 88.90	2.9/16 65.09	2.1/16 52.39	0.72
2½	1.5/8 41.28	4.1/16 103.19	3 76.20	2.7/16 61.91	1.13
3	1.3/4 44.45	4.13/16 122.24	3.11/16 93.66	3.1/16 77.79	1.85
3½	2 50.80	5.3/8 136.53	3.7/8 98.43	3.9/16 90.49	2.30
4	2 50.80	6 152.40	4.3/4 120.65	4 101.60	3.40
5	2¼ 57.15	7.1/8 180.98	5.9/16 141.29	5.1/16 128.59	5.00
6	3.1/16 77.79	8.7/8 225.43	6.11/16 169.86	6.1/16 153.99	10.40
8	3.7/8 98.43	10.5/8 269.88	8.11/16 220.66	7.5/8 193.68	21.00
10	3½ 88.90	12.7/8 327.03	10.7/16 265.11	9.3/4 254.00	25.40
12	3.15/16 100.01	15.3/16 385.76	13 330.20	11.3/4 304.80	35.00
14	4.1/8 104.78	16.11/16 423.86	14.5/16 363.54	13 330.20	39.00
16	4.7/16 112.71	18.7/8 479.43	16½ 419.10	15 381.00	52.00
18	4.11/16 119.06	21.1/8 536.58	18.5/8 473.08	17 431.80	59.00
20	5 127.00	23.3/8 593.73	20.13/16 528.64	19 482.60	84.70
24	5½ 139.70	27.7/8 708.03	25.1/8 638.18	23 584.20	146.00

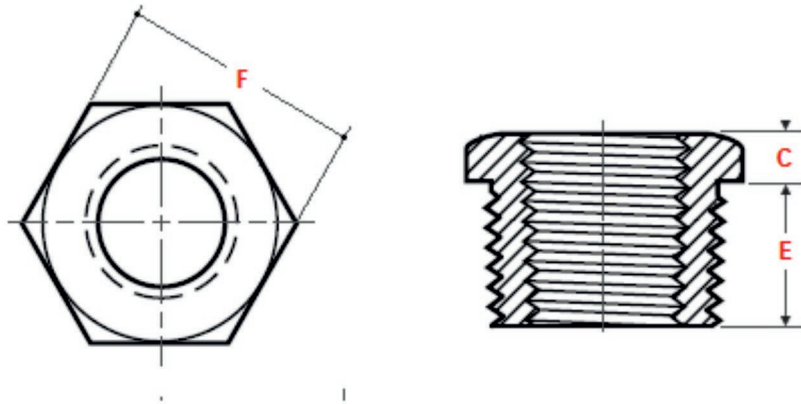


# Dimensions Weldolet Size on Size - 160 - XXS - MSS SP97



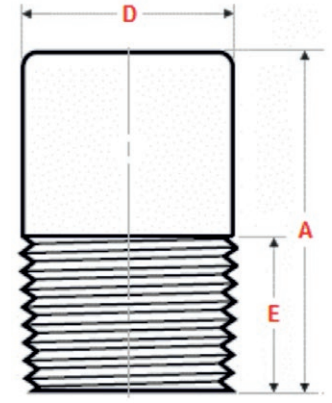
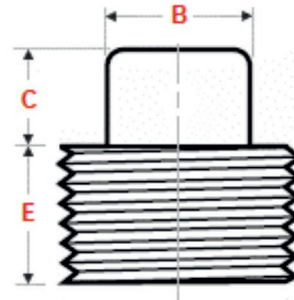
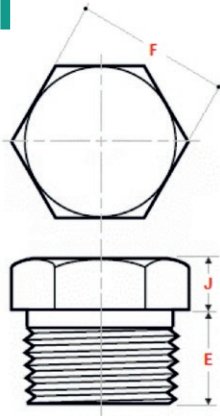
NPS	A	B	C	D	Weight KG
1/8	3/4 19.05	1.3/8 34.93	15/16 23.81	7/16 11.50	0.15
3/4	7/8 22.23	1.5/8 41.28	1.3/16 30.16	5/8 15.50	0.32
1	1.1/16 26.99	2 50.80	1.7/16 36.51	13/16 21.00	0.38
1¼	1¼ 31.75	2.7/16 61.91	1.3/4 44.45	1.3/16 29.50	0.60
1½	1.5/16 33.34	2.7/8 73	2 50.80	1.5/16 34.00	0.85
2	1½ 38.10	3½ 88.90	2.9/16 65.09	1.11/16 43.00	1.00
2½	1.5/8 41.28	4.1/16 103.19	3 76.20	2.1/8 54.00	1.70
3	1.3/4 44.45	4.13/16 122.24	3.11/16 93.66	2.5/8 66.50	2.95
4	2 50.80	6 152.40	4.3/4 120.65	3.7/16 87.00	4.95
5	2¼ 57.15	7.1/8 180.98	5.9/16 141.29	4.5/16 109.50	6.80
6	3.1/16 77.79	8.7/8 225.43	6.11/16 169.86	5.3/16 132.00	13.70

# Dimensions Hex Head Bushings – ASME B16.11- NPS 1/2 to 4



CLASS 3000-6000			
NPS	Minimum Length E	Minimum Hex Height C	Nominal F
1/2	14	5	22
3/4	16	6	27
1	19	6	35
1¼	21	7	44.5
1½	21	8	51
2	22	9	63.5
2½	27	10	76
3	28	10	89
4	32	13	117.5

# Dimensions Hex & Square & Round Head Plugs – ASME B16.11



HEX PLUG – NPS 1/2 TO 4 CLASS 3000 – 6000			
NPS	Minimum Length E	Minimum Hex Height J	Nominal F
1/2	14	8	22
3/4	16	10	27
1	19	10	35
1¼	21	14	44.5
1½	21	16	51
2	22	18	63.5
2½	27	19	76
3	28	21	89
4	32	25	117.5

Dimensions are in millimetres

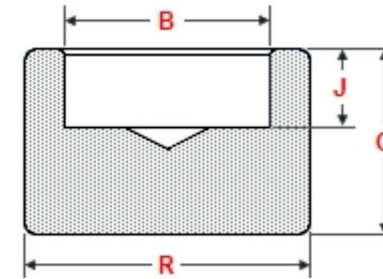
SQUARE HEAD PLUG – NPS 1/2 TO 4 CLASS 3000 – 6000			
NPS	Minimum Length E	Minimum Square Height C	Minimum Width Flats B
1/2	14	10	14
3/4	16	11	16
1	19	13	21
1¼	21	14	24
1½	21	16	28
2	22	18	32
2½	27	19	36
3	28	21	41
4	32	25	65

Dimensions are in millimetres

ROUND HEAD PLUG – NPS 1/2 TO 4 CLASS 3000 – 6000			
NPS	Minimum Length A	Nominal Head Height D	Minimum Length E
1/2	44	21	14
3/4	44	27	16
1	51	33	19
1¼	51	43	21
1½	51	48	21
2	64	60	22
2½	70	73	37
3	70	89	28
4	76	114	32

Dimensions are in millimetres

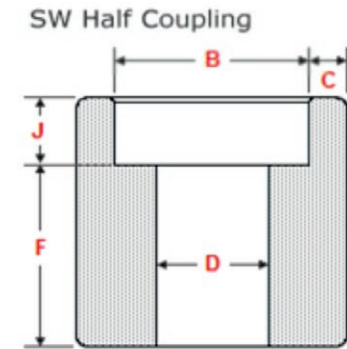
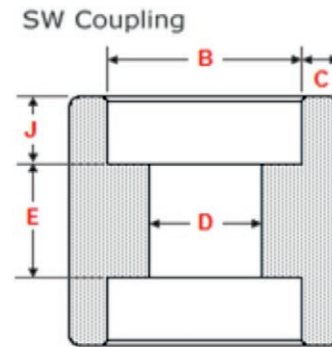
# Dimensions Socket Weld Caps ASME B16.11



DIMENSIONS NPS 1/2 TO 4 - CLASS 3000					
NPS	Socket Bore	Depth Socket	Length Cap	Diameter Cap	Weight
	B	J	Q	R	KG
1/2	21.95 21.70	10	19	32	0.14
3/4	27.30 27.05	13	23	38	0.18
1	34.05 33.80	13	26	45	0.30
1¼	42.80 42.55	13	28	55	0.51
1½	48.90 48.65	13	30	65	0.65
2	61.35 61.10	16	36	75	0.92
2½	74.20 73.80	16	38	92	1.40
3	90.15 89.80	16	42	110	2.50
4	115.80 115.45	19	48	140	3.50

DIMENSIONS NPS 1/2 TO 4 - CLASS 6000					
NPS	Socket Bore	Depth Socket	Length Cap	Diameter Cap	Weight
	B	J	Q	R	KG
1/2	21.95 21.70	10	22	34	1.18
3/4	27.30 27.05	13	26	41	0.21
1	34.05 33.80	13	28	50	0.46
1¼	42.80 42.55	13	30	58	0.7
1½	48.90 48.65	13	32	66.5	0.89
2	61.35 61.10	16	38	85	1.20

# Dimensions Socket Weld Couplings ASME B16.11



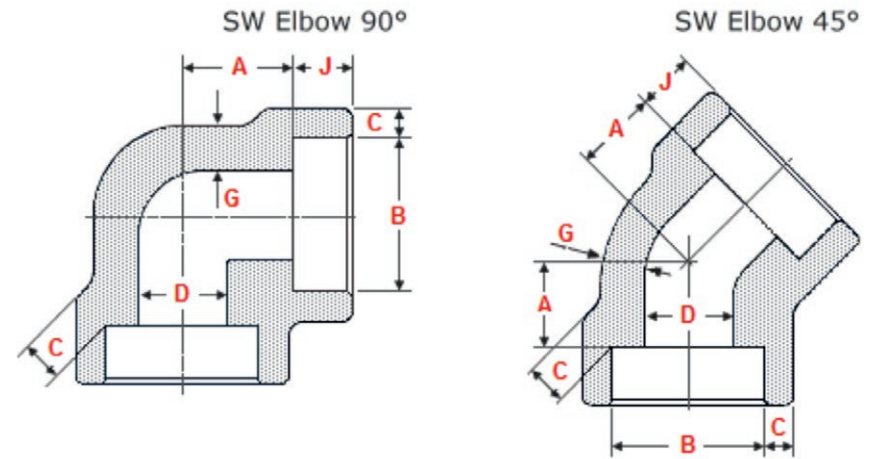
**DIMENSIONS NPS 1/2 TO 4 - CLASS 3000**

NPS	Socket Bore	Depth Socket	Bore DIA	Socket wall THK	Coupling Laying lengths	Half Laying lengths	Weight Coupling	Weight Half Coupling
	B	J	D	C	E	F	KG	KG
1/2	21.95 21.70	10	16.6 15	4.65 4.10	9.5	22.5	0.11	0.18
3/4	27.30 27.05	13	21.7 20.2	4.90 4.25	9.5	23.5	0.15	0.21
1	34.05 33.80	13	27.4 25.9	5.70 5.00	13	29	0.26	0.32
1¼	42.80 42.55	13	35.8 34.3	6.05 5.30	13	30	0.37	0.41
1½	48.90 48.65	13	41.7 40.1	6.35 5.55	13	32	0.42	0.56
2	61.35 61.10	16	53.5 51.7	6.95 6.05	19	41	0.77	0.96
2½	74.20 73.80	16	64.2 61.2	8.75 7.65	19	42.5	1.10	1.50
3	90.15 89.80	16	79.5 46.4	9.50 8.30	19	44.5	1.40	2.00
4	115.80 115.45	19	103.8 100.7	10.70 9.35	19	47.5	2.35	3.40

**DIMENSIONS NPS 1/2 TO 2 - CLASS 6000**

NPS	Socket Bore	Depth Socket	Bore DIA	Socket wall THK	Coupling Laying lengths	Half Laying lengths	Weight Coupling	Weight Half Coupling
	B	J	D	C	E	F	KG	KG
1/2	21.95 21.70	10	12.5 11	5.95 5.20	9.5	9.5	0.15	0.21
3/4	27.30 27.05	13	16.3 14.8	6.95 6.05	9.5	9.5	0.34	0.30
1	34.05 33.80	13	21.5 19.9	7.90 6.95	13	13	0.37	0.47
1¼	42.80 42.55	13	30.2 28.7	7.90 6.95	13	13	0.49	0.60
1½	48.90 48.65	13	34.7 33.2	8.90 7.80	13	13	0.68	1.05
2	61.35 61.10	16	43.6 42.1	10.90 9.50	19	19	1.24	1.60

# Dimensions Socket Weld Elbows ASME B16.11



DIMENSIONS NPS 1/2 TO 4 - 90°/45° - CLASS 3000							
NPS	Socket Bore	Depth Socket	Bore DIA	Socket WT	Body WT	Weight 45°	Weight 90°
	B	J	D	C	G	KG	KG
1/2	21.95	10	16.6	4.65	3.75	0.19	0.24
	21.70		15	4.10			
3/4	27.30	13	21.7	4.90	3.90	0.25	0.29
	27.05		20.2	4.25			
1	34.05	13	27.4	5.70	4.55	0.38	0.48
	33.80		25.9	5.00			
1 1/4	42.80	13	35.8	6.05	4.85	0.58	0.75
	42.55		34.3	5.30			
1 1/2	48.90	13	41.7	6.35	5.10	0.83	0.95
	48.65		40.1	5.55			
2	61.35	16	53.5	6.95	5.55	1.15	1.65
	61.10		51.7	6.05			
2 1/2	74.20	16	64.2	8.75	7.00	2.05	2.50
	73.80		61.2	7.65			
3	90.15	16	79.5	9.50	7.60	3.4	4.30
	89.80		46.4	8.30			
4	115.80	19	103.8	10.70	8.55	9.0	9.70
	115.45		100.7	9.35			

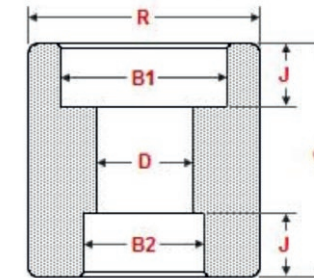
NPS	Center to bottom of socket A	
	90°	45°
1/2	15.5	11.5
3/4	19.5	12.5
1	22	14
1 1/4	27	17
1 1/2	32	21
2	38	25
2 1/2	41.5	29
3	57.5	31.5
4	66.5	41.5

DIMENSIONS NPS 1/2 TO 2 - 90°/45° - CLASS 6000							
NPS	Socket Bore	Depth Socket	Bore DIA	Socket WT	Body WT	Weight 45°	Weight 90°
	B	J	D	C	G	KG	KG
1/2	21.95	10	12.5	5.95	4.80	0.30	0.43
	21.70		11	5.20			
3/4	27.30	13	16.3	6.95	5.55	0.53	0.66
	27.05		14.8	6.05			
1	34.05	13	21.5	7.90	6.35	0.86	1.14
	33.80		19.9	6.95			
1 1/4	42.80	13	30.2	7.90	6.35	1.07	1.60
	42.55		28.7	6.95			
1 1/2	48.90	13	34.7	8.90	7.15	1.90	2.70
	48.65		33.2	7.80			
2	61.35	16	43.6	10.90	8.75	2.35	2.95
	61.10		42.1	9.50			

NPS	Center to bottom of socket A	
	90°	45°
1/2	19.5	12.5
3/4	22.5	14.5
1	27	17
1 1/4	32	21
1 1/2	38	25
2	41	29

# Dimensions SW Reducing Couplings ASME B16.11

SW Reducing Coupling



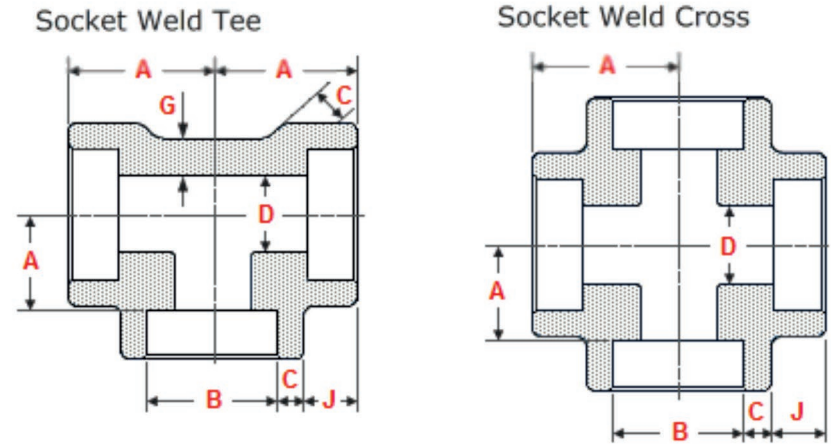
**DIMENSIONS NPS 1/2 TO 2 – CLASS 3000**

NPS			Socket Bore		Depth Socket J		Bore DIA	Length Coupling	Diameter Coupling	Weight
			B1	B2	B1	B2				
3/4	x	1/2	27.30 27.05	21.95 21.70	13	10	16.6 15	35	36	0.15
1	x	3/4	34.05 33.80	27.30 27.05	13	13	21.7 20.2	38.1	45.2	0.26
1	x	1/2	34.05 33.80	21.95 21.70	13	10	16.6 15	38.1	45.2	0.24
1 1/4	x	1	42.80 42.55	34.05 33.80	13	13	27.4 25.9	38.1	55.1	0.37
1 1/2	x	1	48.90 48.65	34.05 33.80	13	13	27.4 25.9	38.1	60	0.42
1 1/2	x	3/4	48.90 48.65	27.30 27.05	13	13	21.7 20.2	38.1	60	1.40
1 1/2	x	1/2	48.90 48.65	21.95 21.70	13	10	16.6 15	38.1	60	1.39
2	x	1 1/2	61.35 61.10	48.90 48.65	16	13	41.7 40.1	51.3	74.9	0.77
2	x	1	74.20 73.80	34.05 33.80	16	13	27.4 25.9	51.3	74.9	0.76

**DIMENSIONS NPS 1/2 TO 2 – CLASS 6000**

NPS			Socket Bore		Depth Socket J		Bore DIA	Length Coupling	Diameter Coupling	Weight
			B1	B2	B1	Q				
3/4	x	1/2	27.30 27.05	21.95 21.70	13	10	12.5 11	35	40.1	0.34
1	x	3/4	34.05 33.80	27.30 27.05	13	13	16.3 14.8	38.1	50	0.37
1	x	1/2	34.05 33.80	21.95 21.70	13	10	12.5 11	38.1	50	0.35
1 1/4	x	1	42.80 42.55	34.05 33.80	13	13	21.5 19.9	38.1	57.9	0.49
1 1/2	x	1	48.90 48.65	34.05 33.80	13	13	21.5 19.9	38.1	65	0.68
1 1/2	x	3/4	48.90 48.65	27.30 27.05	13	13	16.3 14.8	38.1	65	0.67
1 1/2	x	1/2	48.90 48.65	21.95 21.70	13	10	12.5 11	38.1	65	0.65
2	x	1 1/2	61.35 61.10	48.90 48.65	16	13	34.7 33.2	51.3	82	1.24
2	x	1	74.20 73.80	34.05 33.80	16	13	21.5 19.9	51.3	82	1.23

# Dimensions SW Tees & Crosses ASME B16.11



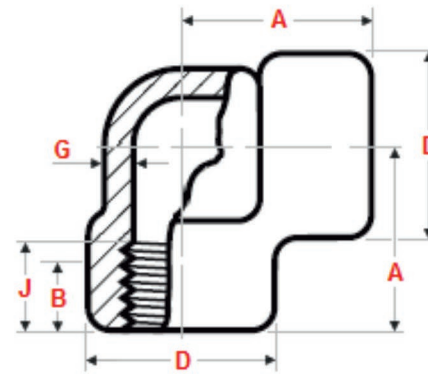
DIMENSIONS NPS 1/2 TO 4 CLASS 3000								
NPS	Socket Bore	Depth Socket	Bore DIA	Socket WT	Body WT	Center to bottom of socket	Weight Tee	Weight Cross
	B	J	D	C	G	A	KG	KG
1/2	21.95 21.70	10	16.6 15	4.65 4.10	3.75	15.5	0.34	0.34
3/4	27.30 27.05	13	21.7 20.2	4.90 4.25	3.90	19.5	0.47	0.47
1	34.05 33.80	13	27.4 25.9	5.70 5.00	4.55	22	0.80	0.80
1 1/4	42.80 42.55	13	35.8 34.3	6.05 5.30	4.85	27	1.25	1.25
1 1/2	48.90 48.65	13	41.7 40.1	6.35 5.55	5.10	32	1.50	1.50
2	61.35 61.10	16	53.5 51.7	6.95 6.05	5.55	38	2.23	2.23
2 1/2	74.20 73.80	16	64.2 61.2	8.75 7.65	7.00	41.5	3.95	3.95
3	90.15 89.80	16	79.5 46.4	9.50 8.30	7.60	57.5	6.50	6.50
4	115.80 115.45	19	103.8 100.7	10.70 9.35	8.55	66.5	16.00	16.00

DIMENSIONS NPS 1/2 TO 2 - CLASS 6000								
NPS	Socket Bore	Depth Socket	Bore DIA	Socket WT	Body WT	Center to bottom of socket	Weight Tee	Weight Cross
	B	J	D	C	G	A	KG	KG
1/2	21.95 21.70	10	12.5 11	5.95 5.20	4.80	19.5	0.67	0.67
3/4	27.30 27.05	13	16.3 14.8	6.95 6.05	5.55	22.5	1.06	1.06
1	34.05 33.80	13	21.5 19.9	7.90 6.95	6.35	27	1.79	1.79
1 1/4	42.80 42.55	13	30.2 28.7	7.90 6.95	6.35	32	2.15	2.15
1 1/2	48.90 48.65	13	34.7 33.2	8.90 7.80	7.15	38	4.45	4.45
2	61.35 61.10	16	43.6 42.1	10.90 9.50	8.75	41	5.40	5.4

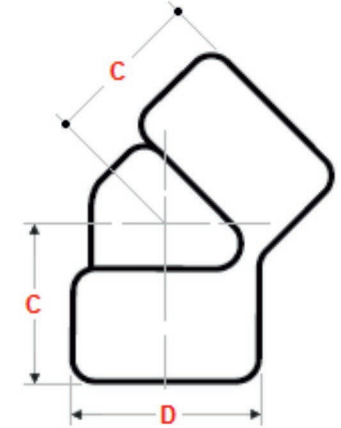


# Dimensions Threaded Elbows – 90°/45° – ASME B16.11

Threaded Elbow 90°



Threaded Elbow 45°

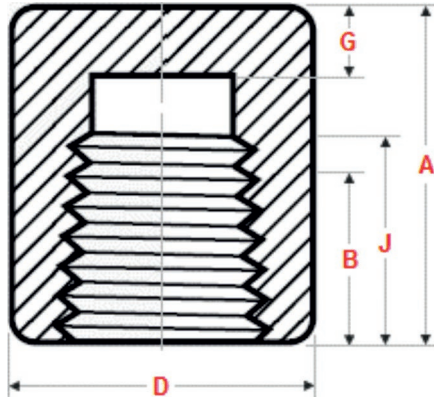


DIMENSIONS NPS 1/2 TO 4 – CLASS 2000						
NPS	Min Length of Thread		Outside Dia of Band D	Min WT G	Center to End	
	B	J			90° A	45° C
1/2	10.9	13.6	33	3.18	28	22
3/4	12.7	13.9	38	3.18	33	25
1	14.7	17.3	46	3.68	38	28
1¼	17	18	56	3.89	44	33
1½	17.8	18.4	62	4.01	51	35
2	19	19.2	75	4.27	60	43
2½	23.6	28.9	92	5.61	76	52
3	25.9	30.5	109	5.99	86	64
4	27.7	33	146	6.55	106	79

DIMENSIONS NPS 1/2 TO 4 – CLASS 3000						
NPS	Min Length of Thread		Outside Dia of Band D	Min WT G	Center to End	
	B	J			90° A	45° C
1/2	10.9	13.6	38	4.09	33	25
3/4	12.7	13.9	46	4.32	38	28
1	14.7	17.3	56	4.98	44	33
1¼	17	18	62	5.28	51	35
1½	17.8	18.4	75	5.56	60	43
2	19	19.2	84	7.14	64	44
2½	23.6	28.9	102	7.65	83	52
3	25.9	30.5	121	8.84	95	64
4	27.7	33	152	11.18	114	79

DIMENSIONS NPS 1/2 TO 4 – CLASS 6000						
NPS	Min Length of Thread		Outside Dia of Band D	Min WT G	Center to End	
	B	J			90° A	45° C
1/2	10.9	13.6	46	8.15	38	28
3/4	12.7	13.9	56	8.53	44	33
1	14.7	17.3	62	9.93	51	35
1¼	17	18	75	10.59	60	43
1½	17.8	18.4	84	11.07	64	44
2	19	19.2	102	12.09	83	52
2½	23.6	28.9	121	15.29	95	64
3	25.9	30.5	146	16.64	106	79
4	27.7	33	152	18.67	114	79

# Dimensions Threaded Elbows – 90°/45°– ASME B16.11

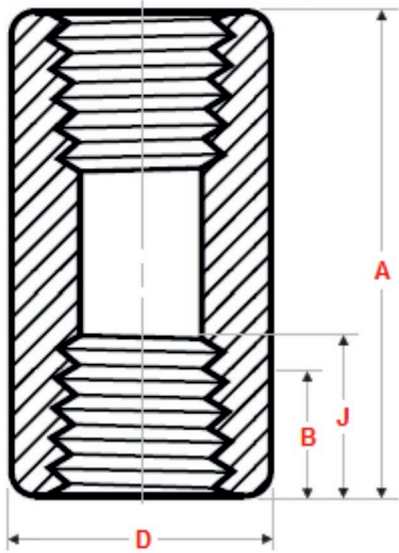


DIMENSIONS NPS 1/2 TO 4 – CLASS 3000					
NPS	End to End	Outside Diameter	Minimum End Wall Thickness	Min Length of Thread	
	A	D	G	B	J
1/2	32	28	6.4	10.9	13.6
3/4	37	35	6.4	12.7	13.9
1	41	44	9.7	14.7	17.3
1¼	44	57	9.7	17	18
1½	44	64	11.2	17.8	18.4
2	48	76	12.7	19	19.2
2½	60	92	15.7	23.6	28.9
3	65	108	19	25.9	30.5
4	68	140	22.4	27.7	33

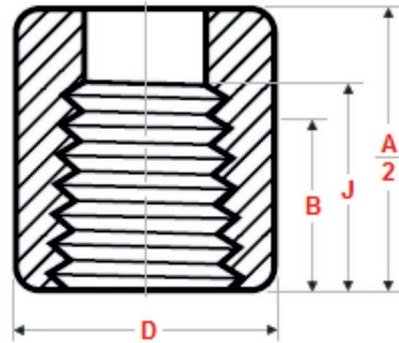
DIMENSIONS NPS 1/2 TO 4 – CLASS 6000					
NPS	End to End	Outside Diameter	Minimum End Wall Thickness	Min Length of Thread	
	A	D	G	B	J
1/2	33	38	7.9	10.9	13.6
3/4	38	44	7.9	12.7	13.9
1	43	57	11.2	14.7	17.3
1¼	46	64	11.2	17	18
1½	48	76	12.7	17.8	18.4
2	51	92	15.7	19	19.2
2½	64	108	19	23.6	28.9
3	68	127	22.4	25.9	30.5
4	75	159	28.4	27.7	33

# Dimensions Threaded Full & Half Couplings – ASME B16.11

Threaded Full-Coupling



Threaded Half-Coupling



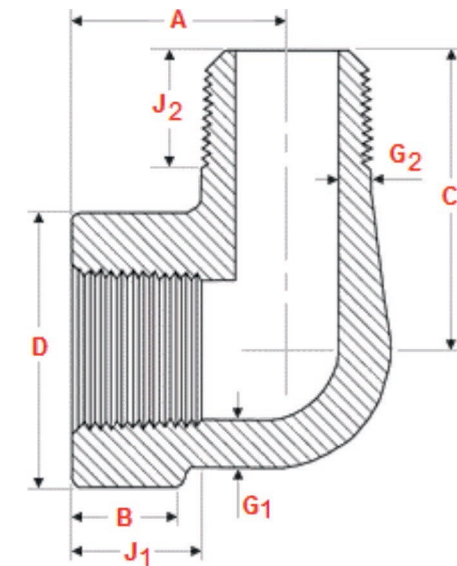
DIMENSIONS NPS 1/2 TO 4 – CLASS 3000				
NPS	End to End	Outside Diameter	Min Length of Thread	
	A	D	B	J
1/2	48	28	10.9	13.6
3/4	51	35	12.7	13.9
1	60	44	14.7	17.3
1¼	67	57	17	18
1½	79	64	17.8	18.4
2	86	76	19	19.2
2½	92	92	23.6	28.9
3	108	108	25.9	30.5
4	121	140	27.7	33

DIMENSIONS NPS 1/2 TO 4 – CLASS 6000				
NPS	End to End	Outside Diameter	Min Length of Thread	
	A	D	B	J
1/2	48	38	10.9	13.6
3/4	51	44	12.7	13.9
1	60	57	14.7	17.3
1¼	67	64	17	18
1½	79	76	17.8	18.4
2	86	92	19	19.2
2½	92	108	23.6	28.9
3	108	127	25.9	30.5
4	121	159	27.7	33

# Dimensions Threaded Street Elbows – ASME B16.11

DIMENSIONS – NPS 1/2 TO 4 – CLASS 3000					
NPS	Center to Female End	Center to Male End	Outside Dia of Band	Min WT	Min WT
	A	C	D	G1	G2
1/2	28	41	38	4.09	4.16
3/4	35	48	44	4.32	4.88
1	44	57	51	4.98	5.56
1¼	51	66	62	5.28	5.56
1½	54	71	70	5.56	6.25
2	64	84	84	7.14	7.64

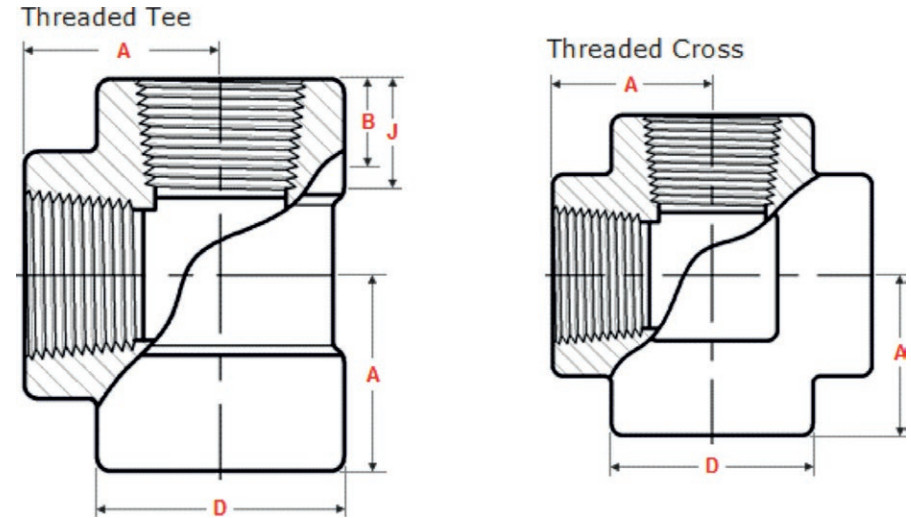
NPS	Min Length Internal Thread		Min Length Male Thread
	B	J1	J2
1/2	10.9	13.6	14
3/4	12.7	13.9	16
1	14.7	17.3	19
1¼	17	18	21
1½	17.8	18.4	21
2	19	19.2	22



DIMENSIONS – NPS 1/2 TO 4 – CLASS 6000					
NPS	Center to Female End	Center to Male End	Outside Dia of Band	Min WT	Min WT
	A	C	D	G1	G2
1/2	35	48	44	8.15	6.53
3/4	44	57	51	8.53	6.86
1	51	66	62	9.93	7.95
1¼	54	71	70	10.59	8.48
1½	64	84	84	11.07	8.89
2	83	105	102	12.09	9.70

NPS	Min Length Internal Thread		Min Length Male Thread
	B	J1	J2
1/2	10.9	13.6	14
3/4	12.7	13.9	16
1	14.7	17.3	19
1¼	17	18	21
1½	17.8	18.4	21
2	19	19.2	22

# Dimensions Threaded Tees & Crosses - ASME B16.11

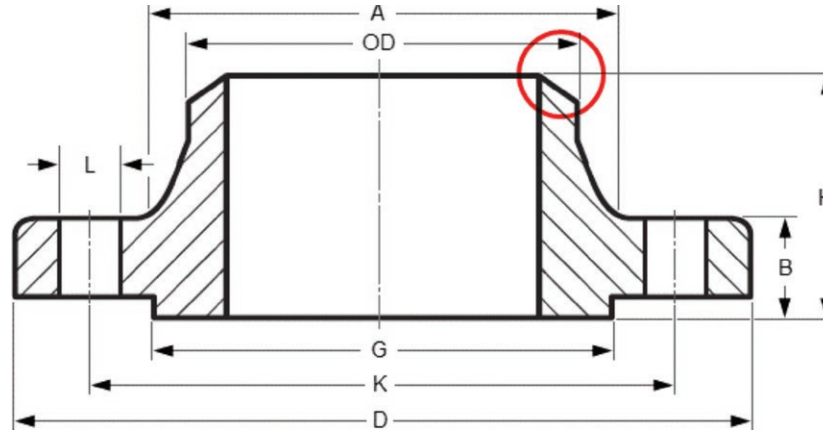


DIMENSIONS - NPS 1/2 TO 4 - CLASS 2000					
NPS	Min Length of Thread		Outside Dia of Band	Center to End	Min WT
	B	J	D	A	
1/2	10.9	13.6	33	28	3.18
3/4	12.7	13.9	38	33	3.18
1	14.7	17.3	46	38	3.68
1¼	17	18	56	44	3.89
1½	17.8	18.4	62	51	4.01
2	19	19.2	75	60	4.27
2½	23.6	28.9	92	76	5.61
3	25.9	30.5	109	86	5.99
4	27.7	33	146	106	6.55

DIMENSIONS - NPS 1/2 TO 4 - CLASS 3000					
NPS	Min Length of Thread		Outside Dia of Band	Center to End	Min WT
	B	J	D	A	
1/2	10.9	13.6	38	33	4.09
3/4	12.7	13.9	46	38	4.32
1	14.7	17.3	56	44	4.98
1¼	17	18	62	51	5.28
1½	17.8	18.4	75	60	5.56
2	19	19.2	84	64	7.14
2½	23.6	28.9	102	83	7.65
3	25.9	30.5	121	95	8.84
4	27.7	33	152	114	11.18

DIMENSIONS - NPS 1/2 TO 4 - CLASS 6000					
NPS	Min Length of Thread		Outside Dia of Band	Center to End	Min WT
	B	J	D	A	
1/2	10.9	13.6	46	38	8.15
3/4	12.7	13.9	56	44	8.53
1	14.7	17.3	62	51	9.93
1¼	17	18	75	60	10.59
1½	17.8	18.4	84	64	11.07
2	19	19.2	102	83	12.09
2½	23.6	28.9	121	95	15.29
3	25.9	30.5	146	106	16.64
4	27.7	33	152	114	18.67

# Dimensions and weights for Weld Neck Flanges & Stud Bolts ASME B16.5



Weld Neck Flanges NPS ½" – O.D. 21.3							
Class	150	300	400	600	900	1500	2500
Diameter - A	30	38	38	38	38	38	43
Diameter - D	90	95	95	95	120	120	135
Thickness - B	9.6	12.7	14.3	14.3	22.3	22.3	30.2
	11.2	14.3	20.7	20.7	28.7	28.7	36.6
Diameter - G	35.1	35.1	35.1	35.1	35.1	35.1	35.1
Diameter - K	60.3	66.7	66.7	66.7	82.6	82.6	88.9
Height - H	46	51	52	52	60	60	73
	47.6	52.6	58.4	58.4	66.4	66.4	79.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	15.9	15.9	15.9	22.2	22.2	22.2
Weight kg for sch STD	0.48	0.75	0.87	0.87	1.87	1.87	3.12
Stud Bolts Diameter x Length							
Diameter (in)	1/2	1/2	1/2	1/2	3/4	3/4	3/4
Length (mm)	55	65	75	75	110	110	120

Weld Neck Flanges NPS ¾" – O.D. 26.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	38	48	48	48	44	44	51
Diameter - D	100	115	115	115	130	130	140
Thickness - B	11.2	14.3	15.9	15.9	25.4	25.4	31.8
	12.8	15.9	22.3	22.3	31.8	31.8	38.2
Diameter - G	42.9	42.9	42.9	42.9	42.9	42.9	42.9
Diameter - K	69.9	82.6	82.6	82.6	88.9	88.9	95
Height - H	51	56	57	57	70	70	79
	52.6	57.6	63.4	63.4	76.4	76.4	85.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	22.2	22.2	22.2
Weight kg for sch STD	0.71	1.26	1.45	1.45	2.56	2.56	3.70
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	3/4	3/4	3/4
Length (mm)	65	75	90	90	115	115	125

### Weld Neck Flanges NPS 1" – O.D. 33.4

Class	150	300	400	600	900	1500	2500
Diameter - A	49.2	54	54	54	52	52	57
Diameter - D	110	125	125	125	150	150	160
Thickness - B	12.7	15.9	17.5	17.5	28.6	28.6	35
	14.3	17.5	23.9	23.9	35	35	41.4
Diameter - G	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Diameter - K	79.4	88.9	88.9	88.9	101.6	101.6	107.4
Height - H	54	60	62	62	73	73	89
	55.6	61.6	68.4	68.4	79.4	79.4	95.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	25.4
Weight kg for sch STD	1.01	1.52	1.76	1.76	3.74	3.74	5.24
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	7/8
Length (mm)	65	75	90	90	125	125	140

### Weld Neck Flanges NPS 1½" – O.D. 48.3

Class	150	300	400	600	900	1500	2500
Diameter - A	65	70	70	70	70	70	79
Diameter - D	125	155	155	155	180	180	205
Thickness - B	15.9	19.1	22.3	22.3	31.8	31.8	44.5
	17.5	20.7	28.7	28.7	38.2	38.2	50.9
Diameter - G	73.2	73.2	73.2	73.2	73.2	73.2	73.2
Diameter - K	98.4	114.3	114.3	114.3	123.8	123.8	146
Height - H	60	67	70	70	83	83	111
	61.6	68.6	76.4	76.4	89.4	89.4	117.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg for sch STD	1.72	2.89	3.49	3.49	5.94	5.94	10.90
Stud Bolts Diameter x Length							
Diameter (in)	1/2	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	70	90	110	110	140	140	170

### Weld Neck Flanges NPS 1¼" – O.D. 42.2

Class	150	300	400	600	900	1500	2500
Diameter - A	59	63.5	64	64	64	64	73
Diameter - D	115	135	135	135	160	160	185
Thickness - B	14.3	17.5	20.7	20.7	28.6	28.6	38.1
	15.9	19.1	27.1	27.1	35	35	44.5
Diameter - G	63.5	63.5	63.5	63.5	63.5	63.5	63.5
Diameter - K	88.9	98.4	98.4	98.4	111.1	111.1	130
Height - H	56	64	67	67	73	73	95
	57.6	65.6	73.4	73.4	79.4	79.4	101.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg for sch STD	1.33	2.03	2.49	2.49	4.33	4.33	7.74
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	70	85	95	95	125	125	150

### Weld Neck Flanges NPS 2 – O.D. 60.3

Class	150	300	400	600	900	1500	2500
Diameter - A	78	84	84	84	105	105	95
Diameter - D	150	165	165	165	215	215	235
Thickness - B	17.5	20.7	25.4	25.4	38.1	38.1	50.9
	19.1	22.3	31.8	31.8	44.5	44.5	57.3
Diameter - G	91.9	91.9	91.9	91.9	91.9	91.9	91.9
Diameter - K	120.7	127	127	127	165.1	165.1	171.4
Height - H	62	68	73	73	102	102	127
	63.6	69.6	79.4	79.4	108.4	108.4	133.4
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg for sch STD	2.58	3.40	4.36	4.36	10.80	10.80	16.20
Stud Bolts Diameter x Length							
Diameter (in)	5/8	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	85	90	110	110	145	145	180

### Weld Neck Flanges NPS 2½" – O.D. 73.0

Class	150	300	400	600	900	1500	2500
Diameter - A	90	100	100	100	125	125	114
Diameter - D	180	190	190	190	245	245	265
Thickness - B	20.7	23.9	28.6	28.6	41.3	41.3	57.2
	22.3	25.5	35	35	47.7	47.7	63.6
Diameter - G	104.6	104.6	104.6	104.6	104.6	104.6	104.6
Diameter - K	139.7	149.2	149.2	149.2	190.5	190.5	197
Height - H	68	75	79	79	105	105	143
	69.6	76.6	85.4	85.4	111.4	111.4	149.4
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg for sch STD	4.11	5.17	6.43	6.43	15.00	15.00	23.70
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	90	100	120	120	160	160	195

### Weld Neck Flanges NPS 3" – O.D. 88.9

Class	150	300	400	600	900	1500	2500
Diameter - A	108	115	115	115	127	125	125
Diameter - D	190	210	210	210	240	265	305
Thickness - B	22.3	27	31.8	31.8	38.1	47.7	66.7
	23.9	28.6	38.2	38.2	44.5	54.1	73.1
Diameter - G	127	127	127	127	127	127	127
Diameter - K	152.4	168.3	168.3	168.3	190.5	205	230
Height - H	68	78	83	83	102	117	168
	69.6	79.6	89.4	89.4	108.4	123.4	174.4
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	25.4	31.8	34.9
Weight kg for sch STD	4.92	6.93	8.53	8.53	13.70	19.90	36.20
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	7/8	1 1/8	1 1/4
Length (mm)	90	110	125	125	145	180	220

### Weld Neck Flanges NPS 3½" – O.D. 101.6

Class	150	300	400	600	900	1500	2500
Diameter - A	122	135	133	133	...	...	...
Diameter - D	215	230	230	230	...	...	...
Thickness - B	22.3	28.6	35	35	...	...	...
	23.9	30.2	41.4	41.4	...	...	...
Diameter - G	139.7	139.7	139.7	139.7	...	...	...
Diameter - K	177.8	184.2	184.2	184.2	...	...	...
Height - H	70	79	86	86	...	...	...
	71.6	80.6	92.4	92.4	...	...	...
Bolt Holes	8	8	8	8	...	...	...
Diameter - L	19.1	22.2	25.4	25.4	...	...	...
Weight kg for sch STD	6.08	8.67	10.70	10.70			
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	...	...	...
Length (mm)	90	110	140	140	...	...	...

### Weld Neck Flanges NPS 4" – O.D. 114.3

Class	150	300	400	600	900	1500	2500
Diameter - A	135	146	146	152	160	162	165
Diameter - D	230	255	255	275	290	310	355
Thickness - B	22.3	30.2	35	38.1	44.5	54	76.2
	23.9	31.8	41.4	44.5	50.9	60.4	82.6
Diameter - G	157.2	157.2	157.2	157.2	157.2	157.2	157.2
Diameter - K	190.5	200	200	215.9	235	240	273
Height - H	75	84	89	102	114	124	190
	76.6	85.6	95.4	108.4	120.4	130.4	196.4
Bolt Holes	8	8	8	8	8	8	8
Diameter - L	19.1	22.2	25.4	25.4	31.8	34.9	41.3
Weight kg for sch STD	6.84	11.20	12.80	17.40	22.50	29.90	55.30
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	1 1/8	1 1/4	1 1/2
Length (mm)	90	115	140	145	170	195	255



### Weld Neck Flanges NPS 5 – O.D. 141.3

Class	150	300	400	600	900	1500	2500
Diameter - A	164	180	180	189	190	197	205
Diameter - D	255	280	280	330	350	375	420
Thickness - B	22.3	33.4	38.1	44.5	50.8	73.1	92.1
	23.9	35	44.5	50.9	57.2	79.5	98.5
Diameter - G	185.7	185.7	185.7	185.7	185.7	185.7	185.7
Diameter - K	215.9	235	235	266.7	279.4	290	323.8
Height - H	87	97	102	114	127	156	226
	88.6	98.6	108.4	120.4	133.4	162.4	232.4
Bolt Holes	8	8	8	8	8	8	8
Diameter - L	22.2	22.2	25.4	28.6	34.9	41.3	47.6
Weight kg for sch STD	8.56	15.10	16.90	29.20	37.40	55.40	92.50
Stud Bolts Diameter x Length							
Diameter (in)	3/4	3/4	7/8	1	1 1/4	1 1/2	1 3/4
Length (mm)	95	120	145	165	190	250	300

### Weld Neck Flanges NPS 6" – O.D. 168.3

Class	150	300	400	600	900	1500	2500
Diameter - A	192	206	206	222	235	230	235
Diameter - D	280	320	320	355	380	395	485
Thickness - B	23.9	35	41.3	47.7	55.6	82.6	108
	25.5	36.6	47.7	54.3	62	89	114.4
Diameter - G	215.9	215.9	215.9	215.9	215.9	215.9	215.9
Diameter - K	241.3	269.9	269.9	292.1	317.5	320	368
Height - H	87	97	103	117	140	171	273
	88.6	98.6	109.4	123.4	146.4	177.4	279.4
Bolt Holes	8	12	12	12	12	12	8
Diameter - L	22.2	22.2	25.4	28.6	31.8	38.1	54
Weight kg for sch STD	10.60	19.10	22.00	34.90	47.70	68.40	143.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	3/4	7/8	1	1 1/8	1 3/8	2
Length (mm)	100	120	150	170	190	260	345

### Weld Neck Flanges NPS 8" – O.D. 219.0

Class	150	300	400	600	900	1500	2500
Diameter - A	246	260	260	272	298	290	305
Diameter - D	345	380	380	420	470	485	550
Thickness - B	27	39.7	47.7	55.6	63.5	92.1	127
	28.6	41.3	54.1	62	69.9	98.5	133.4
Diameter - G	269.7	269.7	269.7	269.7	269.7	269.7	269.7
Diameter - K	298.5	330.2	330	349.2	393.7	395	438.1
Height - H	100	110	117	133	162	213	318
	101.6	111.6	123.4	139.4	168.4	219.4	324.4
Bolt Holes	8	12	12	12	12	12	12
Diameter - L	22.2	25.4	28.6	31.8	38.1	44.5	54
Weight kg for sch STD	17.60	29.90	34.70	53.90	81.30	117.00	215.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	7/8	1	1 1/8	1 3/8	1 5/8	2
Length (mm)	110	140	170	190	220	290	380

### Weld Neck Flanges NPS 10" – O.D. 273.0

Class	150	300	400	600	900	1500	2500
Diameter - A	305	321	321	345	368	368	375
Diameter - D	405	445	445	510	545	585	675
Thickness - B	28.6	46.1	54	63.5	69.9	108	165
	30.2	47.7	60.4	69.9	76.3	114.4	171.5
Diameter - G	323.9	323.9	323.9	323.9	323.9	323.9	323.9
Diameter - K	362	387.4	387.4	431.8	469.9	485	539.7
Height - H	100	116	124	152	184	254	419
	101.6	117.6	130.4	158.4	190.4	260.4	425.4
Bolt Holes	12	16	16	16	16	12	12
Diameter - L	25.4	28.6	31.8	34.9	38.1	50.8	66.7
Weight kg for sch STD	24.00	42.70	48.50	86.50	119.00	194.00	406.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1	1 1/8	1 1/4	1 3/8	1 7/8	2 1/2
Length (mm)	115	160	190	215	235	335	490

### Weld Neck Flanges NPS 12" – O.D. 323.9

Class	150	300	400	600	900	1500	2500
Diameter - A	365	375	375	400	420	451	441
Diameter - D	485	520	520	560	610	675	760
Thickness - B	30.2	49.3	57.2	66.7	79.4	123.9	184.2
	31.8	50.9	63.4	73.1	85.8	130.3	190.6
Diameter - G	381	381	381	381	381	381	381
Diameter - K	431.8	450.8	450.8	489	533.4	571.5	619.1
Height - H	113	129	137	156	200	283	464
	114.6	130.6	143.4	162.4	206.4	289.4	470.4
Bolt Holes	12	16	16	20	20	16	12
Diameter - L	25.4	31.8	34.9	34.9	38.1	54	73
Weight kg for sch STD	36.50	61.80	69.60	103.00	157.00	288.00	572.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1 1/8	1 1/4	1 1/4	1 3/8	2	2 3/4
Length (mm)	120	170	205	220	255	375	540

### Weld Neck Flanges NPS 14" – O.D. 355.0

Class	150	300	400	600	900	1500	2500
Diameter - A	400	425	425	432	451	495	...
Diameter - D	535	585	585	605	640	750	...
Thickness - B	33.4	52.4	60.4	69.9	85.8	133.4	...
	35	54	66.8	76.3	92.2	139.8	...
Diameter - G	412.8	412.8	412.8	412.8	412.8	412.8	...
Diameter - K	476.3	514.4	514.4	527	558.8	635	...
Height - H	125	141	149	165	212	298	...
	126.6	142.6	155.4	171.4	219.4	304.4	...
Bolt Holes	12	20	20	20	20	16	...
Diameter - L	28.6	31.8	34.9	38.1	41.3	60.3	...
Weight kg for sch STD	48.40	85.80	95.50	122.00	180.00	380.00	...
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/8	1 1/4	1 3/8	1 1/2	2 1/4	...
Length (mm)	135	180	210	235	275	405	...

### Weld Neck Flanges NPS 16" – O.D. 406.4

Class	150	300	400	600	900	1500	2500
Diameter - A	457	485	485	495	508	550	...
Diameter - D	595	650	650	685	705	825	...
Thickness - B	35	55.6	63.5	76.2	88.9	146.1	...
	36.6	57.2	69.9	82.6	95.3	152.5	...
Diameter - G	469.9	469.9	469.9	469.9	469.9	469.9	...
Diameter - K	539.8	571.5	571.5	603.2	616	705	...
Height - H	125	144	152	178	216	311	...
	126.6	145.6	158.4	184.4	222.4	317.4	...
Bolt Holes	16	20	20	20	20	16	...
Diameter - L	28.6	34.9	38.1	41.3	44.5	66.7	...
Weight kg for sch STD	60.60	106.00	118.00	170.00	217.00	485.00	...
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/4	1 3/8	1 1/2	1 5/8	2 1/2	...
Length (mm)	135	190	220	255	285	445	...

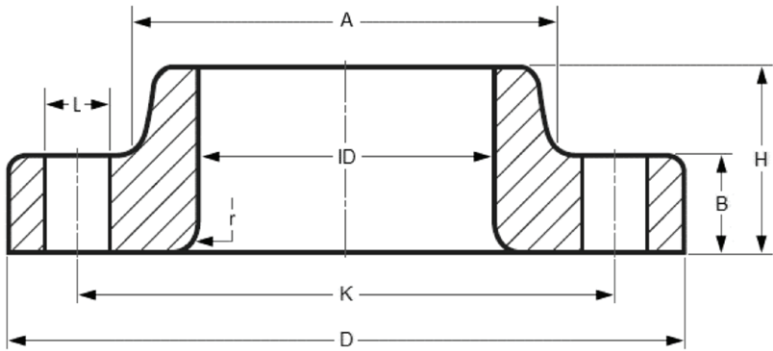
### Weld Neck Flanges NPS 18" – O.D. 457.2

Class	150	300	400	600	900	1500	2500
Diameter - A	505	533	533	545	565	597	...
Diameter - D	635	710	710	745	785	915	...
Thickness - B	38.1	58.8	66.7	82.6	101.6	162	...
	39.7	60.4	73.1	89	108	168.4	...
Diameter - G	533.4	533.4	533.4	533.4	533.4	533.4	...
Diameter - K	577.9	628.6	628.6	654	685.8	775	...
Height - H	138	157	165	184	229	327	...
	139.6	158.6	171.4	190.4	235.4	333.4	...
Bolt Holes	16	24	24	20	20	16	...
Diameter - L	31.8	34.9	38.1	44.5	50.8	73	...
Weight kg for sch STD	68.30	131.00	145.00	204.00	292.00	644.00	...
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 3/8	1 5/8	1 7/8	2 3/4	...
Length (mm)	145	195	230	275	325	495	...

Weld Neck Flanges NPS 20" – O.D. 508.0							
Class	150	300	400	600	900	1500	2500
Diameter - A	560	587	587	610	622	640	...
Diameter - D	700	775	775	815	855	985	...
Thickness - B	41.3	62	69.9	88.9	108	180	...
	42.9	63.6	76.3	95.3	114.4	184.2	...
Diameter - G	584.2	584.2	584.2	584.2	584.2	584.2	...
Diameter - K	635	685.8	685.8	723.9	749.3	831.8	...
Height - H	143	160	168	190	248	356	...
	144.6	161.6	174.4	196.4	254.4	362.4	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	31.8	34.9	41.3	44.5	54	79.4	...
Weight kg for sch STD	84.50	158.00	173.00	254.00	362.00	775.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 1/2	1 5/8	2	3	...
Length (mm)	160	205	240	285	350	540	...

Weld Neck Flanges NPS 24" – O.D. 610.0							
Class	150	300	400	600	900	1500	2500
Diameter - A	663	702	702	718	750	762	...
Diameter - D	815	915	915	940	1040	1170	...
Thickness - B	46.1	68.3	76.2	101.6	139.7	203.2	...
	47.7	69.9	82.6	108	146.1	209.6	...
Diameter - G	692.2	692.2	692.2	692.2	692.2	692.2	...
Diameter - K	749.3	812.8	812.8	838.2	901.7	990.6	...
Height - H	151	167	175	203	292	406	...
	152.6	168.6	181.4	209.4	298.4	412.4	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	34.9	41.3	47.6	50.8	66.7	92.1	...
Weight kg for sch STD	115.00	230.0	249.00	358.00	665.00	1232.0	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/4	1 1/2	1 3/4	1 7/8	2 1/2	3 1/2	...
Length (mm)	170	230	265	330	440	615	...

# Dimensions and weights for Lap Joint Flanges & Stud Bolts ASME B16.5



NPS 1/2" - ID = 22.9 - r = 3							
Class	150	300	400	600	900	1500	2500
Diameter - A	30	38	38	38	38	38	43
Diameter - D	90	95	95	95	120	120	135
Thickness - B	11.2	14.3	14.3	14.3	22.3	22.3	30.2
Diameter - G	35.1	35.1	35.1	35.1	35.1	35.1	35.1
Diameter - K	60.3	66.7	66.7	66.7	82.6	82.6	88.9
Height - H	16	22	22	22	32	32	40
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	15.9	15.9	15.9	22.2	22.2	22.2
Weight kg	0.38	0.62	0.72	0.72	1.71	1.71	2.92
Stud Bolts Diameter x Length							
Diameter (in)	1/2	1/2	1/2	1/2	3/4	3/4	3/4
Length (mm)	55	65	75	75	110	110	120

NPS 3/4" - ID = 28.2 - r = 3							
Class	150	300	400	600	900	1500	2500
Diameter - A	38	48	48	48	44	44	51
Diameter - D	100	115	115	115	130	130	140
Thickness - B	12.7	15.9	15.9	15.9	25.4	25.4	31.8
Diameter - G	42.9	42.9	42.9	42.9	42.9	42.9	42.9
Diameter - K	69.9	82.6	82.6	82.6	88.9	88.9	95.2
Height - H	16	25	25	25	35	35	43
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	22.2	22.2	22.2
Weight kg	0.55	1.10	1.25	1.25	2.30	2.30	3.40
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	3/4	3/4	3/4
Length (mm)	65	75	90	90	115	115	125

NPS 1" - ID = 35 - r = 3							
Class	150	300	400	600	900	1500	2500
Diameter - A	49.2	54	54	54	52	52	57
Diameter - D	110	125	125	125	150	150	160
Thickness - B	14.3	17.5	17.5	17.5	28.6	28.6	35
Diameter - G	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Diameter - K	79.4	88.9	88.9	88.9	101.6	101.6	108
Height - H	17	27	27	27	41	41	48
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	25.4
Weight kg for sch STD	0.76	1.33	1.50	1.50	3.40	3.40	4.77
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	7/8
Length (mm)	65	75	90	90	125	125	140

NPS 1¼" - ID = 43.7 - r = 5							
Class	150	300	400	600	900	1500	2500
Diameter - A	59	64	64	64	64	64	73
Diameter - D	115	135	125	135	160	160	185
Thickness - B	15.9	19.1	20.7	20.7	28.6	28.6	38.1
Diameter - G	63.5	63.5	63.5	63.5	63.5	63.5	63.5
Diameter - K	88.9	98.4	98.4	98.4	111.1	111.1	130.2
Height - H	21	27	29	29	41	41	52
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg for sch STD	1.01	1.65	2.00	2.00	3.85	3.85	7.08
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	70	85	95	95	125	125	150

NPS 1½" - ID = 50 - r = 6							
Class	150	300	400	600	900	1500	2500
Diameter - A	65	70	70	70	70	70	79
Diameter - D	125	155	155	155	180	180	205
Thickness - B	17.5	20.7	22.3	22.3	31.8	31.8	44.5
Diameter - G	73.2	73.2	73.2	73.2	73.2	73.2	73.2
Diameter - K	98.4	114.3	114.3	114.3	123.8	123.8	146
Height - H	22	30	32	32	44	44	60
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg for sch STD	1.30	2.44	2.92	2.92	5.28	5.28	9.93
Stud Bolts Diameter x Length							
Diameter (in)	1/2	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	70	90	110	110	140	140	170

NPS 2" - ID = 62.5 - r = 8							
Class	150	300	400	600	900	1500	2500
Diameter - A	78	84	84	84	105	105	95
Diameter - D	150	165	165	165	215	215	235
Thickness - B	19.1	22.3	25.4	25.4	38.1	38.1	50.9
Diameter - G	91.9	91.9	91.9	91.9	91.9	91.9	91.9
Diameter - K	120.7	127	127	127	165.1	165.1	171.4
Height - H	25	33	37	37	57	57	70
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg for sch STD	2.03	2.83	3.55	3.55	9.78	9.78	14.70
Stud Bolts Diameter x Length							
Diameter (in)	5/8	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	85	90	110	110	145	145	180

NPS 2½" - ID = 75.4 - r = 8							
Class	150	300	400	600	900	1500	2500
Diameter - A	90	100	100	100	124	125	114
Diameter - D	180	190	190	190	245	245	265
Thickness - B	22.3	25.4	28.6	28.6	41.3	41.3	57.2
Diameter - G	104.6	104.6	104.6	104.6	104.6	104.6	104.6
Diameter - K	139.7	149.2	149.2	149.2	190.5	190.5	196.8
Height - H	29	38	41	41	64	64	79
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg for sch STD	3.25	4.25	5.23	5.23	13.60	13.60	21.30
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	90	100	120	120	160	160	195

NPS 3" - ID = 91.4 - r = 10							
Class	150	300	400	600	900	1500	2500
Diameter - A	108	115	115	115	127	125	125
Diameter - D	190	210	210	210	240	265	305
Thickness - B	23.9	28.6	31.8	31.8	38.1	47.7	66.7
Diameter - G	127	127	127	127	127	127	127
Diameter - K	152.4	168.3	168.3	168.3	190.5	203.2	228.6
Height - H	30	43	46	46	54	73	92
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	25.4	31.8	34.9
Weight kg for sch STD	3.81	5.78	6.95	6.95	11.30	17.80	32.30
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	7/8	1 1/8	1 1/4
Length (mm)	90	110	125	125	145	180	220

NPS 3 1/2" - ID = 104.1 - r = 10							
Class	150	300	400	600	900	1500	2500
Diameter - A	122	135	133	133	...	...	...
Diameter - D	215	230	230	230	...	...	...
Thickness - B	23.9	30.2	35	35	...	...	...
Diameter - G	139.7	139.7	139.7	139.7	...	...	...
Diameter - K	177.8	184.2	184.2	184.2	...	...	...
Height - H	32	44	49	49	...	...	...
Bolt Holes	8	8	8	8	...	...	...
Diameter - L	19.1	22.2	25.4	25.4	...	...	...
Weight kg for sch STD	4.76	7.27	8.78	8.78			
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	...	...	...
Length (mm)	90	110	140	140	...	...	...

NPS 4" - ID = 116.8 - r = 11							
Class	150	300	400	600	900	1500	2500
Diameter - A	135	146	146	152	160	162	165
Diameter - D	230	255	254	275	290	310	355
Thickness - B	23.9	31.8	35	38.1	44.5	54	76.2
Diameter - G	157.2	157.2	157.2	157.2	157.2	157.2	157.2
Diameter - K	190.5	200	200	215.9	235	241.3	273
Height - H	33	48	51	54	70	90	108
Bolt Holes	8	8	8	8	8	8	8
Diameter - L	19.1	22.2	25.4	25.4	31.8	34.9	41.3
Weight kg for sch STD	5.25	9.55	10.90	14.40	19.20	27.50	52.50
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	1 1/8	1 1/4	1 1/2
Length (mm)	90	115	140	145	170	195	255

NPS 6" - ID = 171.4 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	192	206	206	222	235	230	235
Diameter - D	280	320	320	355	380	395	485
Thickness - B	25.4	36.6	41.3	47.7	55.6	82.6	108
Diameter - G	215.9	215.9	215.9	215.9	215.9	215.9	215.9
Diameter - K	241.3	269.9	269.9	292.1	317.5	317.5	368.3
Height - H	40	52	57	67	86	119	152
Bolt Holes	8	12	12	12	12	12	8
Diameter - L	22.2	22.2	25.4	28.6	31.8	38.1	54
Weight kg for sch STD	7.40	15.50	18.00	28.50	40.50	62.00	127.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	3/4	7/8	1	1 1/8	1 3/8	2
Length (mm)	100	120	150	170	190	260	345

NPS 8" - ID = 222.2 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	246	260	260	272	298	290	305
Diameter - D	345	380	381	420	470	485	550
Thickness - B	28.6	41.3	47.7	55.6	63.5	92.1	127
Diameter - G	269.7	269.7	269.7	269.7	269.7	269.7	269.7
Diameter - K	298.5	330.2	330	349.2	393.7	393.7	438.2
Height - H	44	62	68	76	114	143	178
Bolt Holes	8	12	12	12	12	12	12
Diameter - L	22.2	25.4	28.6	31.8	38.1	44.5	54
Weight kg for sch STD	12.10	24.10	28.30	43.10	71.50	105.00	186.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	7/8	1	1 1/8	1 3/8	1 5/8	2
Length (mm)	110	140	170	190	220	290	380

NPS 10" - ID = 277.4 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	305	321	321	345	368	368	375
Diameter - D	405	445	445	510	545	585	675
Thickness - B	30.2	47.7	54	63.5	69.9	108	165.1
Diameter - G	323.9	323.9	323.9	323.9	323.9	323.9	323.9
Diameter - K	362	387.4	387.4	431.8	469.9	482.6	539.8
Height - H	49	95	102	111	127	178	229
Bolt Holes	12	16	16	16	16	12	12
Diameter - L	25.4	28.6	31.8	34.9	38.1	50.8	66.7
Weight kg for sch STD	16.40	34.40	38.80	70.50	104.00	179.00	352.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1	1 1/8	1 1/4	1 3/8	1 7/8	2 1/2
Length (mm)	115	160	190	215	235	335	490

NPS 12" - ID = 328.2 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	365	375	375	400	420	451	441
Diameter - D	485	520	520	560	610	675	760
Thickness - B	31.8	50.8	57.2	66.7	79.4	123.9	184.2
Diameter - G	381	381	381	381	381	381	381
Diameter - K	431.8	450.8	450.8	489	533.4	571.5	619.1
Height - H	56	102	108	117	143	219	254
Bolt Holes	12	16	16	20	20	16	12
Diameter - L	25.4	31.8	34.9	34.9	38.1	54	73
Weight kg for sch STD	26.10	50.40	56.60	86.10	139.00	269.00	501.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1 1/8	1 1/4	1 1/4	1 3/8	2	2 3/4
Length (mm)	120	170	205	220	255	375	540

NPS 14" - ID = 360.2 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	400	425	425	432	451	495	...
Diameter - D	535	585	585	605	640	750	...
Thickness - B	35	54	60.4	69.9	85.8	133.4	...
Diameter - G	412.8	412.8	412.8	412.8	412.8	412.8	...
Diameter - K	476.3	514.4	514.4	527	558.8	635	...
Height - H	79	111	117	127	156	241	...
Bolt Holes	12	20	20	20	20	16	...
Diameter - L	28.6	31.8	34.9	38.1	41.3	60.3	...
Weight kg for sch STD	34.50	70.90	78.60	100.00	161.00	365.00	...
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/8	1 1/4	1 3/8	1 1/2	2 1/4	...
Length (mm)	135	180	210	235	275	405	...

NPS 16" - ID = 411.2 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	457	485	485	495	508	552	...
Diameter - D	595	650	650	685	705	825	...
Thickness - B	36.6	57.2	63.5	76.2	88.9	146.1	...
Diameter - G	469.9	469.9	469.9	469.9	469.9	469.9	...
Diameter - K	539.8	571.5	571.5	603.2	616	704.8	...
Height - H	87	121	127	140	165	260	...
Bolt Holes	16	20	20	20	20	16	...
Diameter - L	28.6	34.9	38.1	41.3	44.5	66.7	...
Weight kg for sch STD	44.60	89.50	100.00	145.00	194.00	459.00	
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/4	1 3/8	1 1/2	1 5/8	2 1/2	...
Length (mm)	135	190	220	255	285	445	...

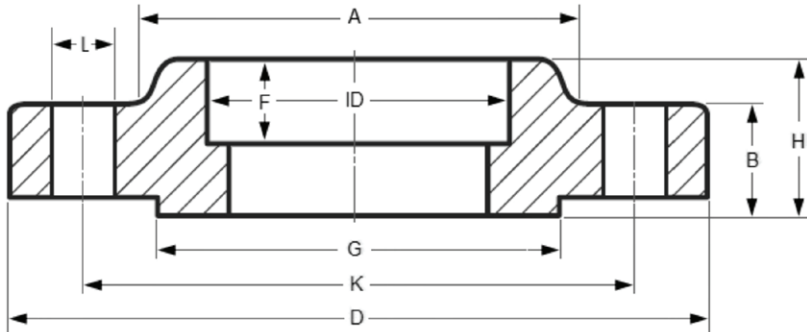
NPS 18" - ID = 462.3 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	505	533	533	545	565	597	...
Diameter - D	635	710	710	745	785	915	...
Thickness - B	39.7	60.4	66.7	82.6	101.6	162	...
Diameter - G	533.4	533.4	533.4	533.4	533.4	533.4	...
Diameter - K	577.9	628.6	628.6	654	685.8	774.7	...
Height - H	97	130	137	152	190	276	...
Bolt Holes	16	24	24	20	20	16	...
Diameter - L	31.8	34.9	38.1	44.5	50.8	73	...
Weight kg for sch STD	48.70	111.00	122.00	177.00	267.00	598.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 3/8	1 5/8	1 7/8	2 3/4	...
Length (mm)	145	195	230	275	325	495	...

NPS 20" - ID = 514.3 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	560	587	587	610	622	641	...
Diameter - D	700	775	775	815	855	985	...
Thickness - B	42.9	63.5	69.9	88.9	108	177.8	...
Diameter - G	584.2	584.2	584.2	584.2	584.2	584.2	...
Diameter - K	635	685.8	685.8	723.9	749.3	831.8	...
Height - H	103	140	146	165	210	292	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	31.8	34.9	41.3	44.5	54	79.4	...
Weight kg for sch STD	61.60	137.00	145.00	225.00	334.00	712.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 1/2	1 5/8	2	3	...
Length (mm)	160	205	240	285	350	540	...

NPS 24" - ID = 615.9 - r = 13							
Class	150	300	400	600	900	1500	2500
Diameter - A	663	702	702	718	750	762	...
Diameter - D	815	915	915	940	1040	1170	...
Thickness - B	47.7	69.9	76.2	101.6	139.7	203.2	...
Diameter - G	692.2	692.2	692.2	692.2	692.2	692.2	...
Diameter - K	749.3	812.8	812.8	838.2	901.7	990.6	...
Height - H	111	152	159	184	267	330	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	34.9	41.3	47.6	50.8	66.7	92.1	...
Weight kg for sch STD	86.60	204.00	217.00	318.00	618.00	1090.0	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/4	1 1/2	1 3/4	1 7/8	2 1/2	3 1/2	...
Length (mm)	170	230	265	330	440	615	...



# Dimensions and weights for Socket Weld Flanges & Stud Bolts ASME B16.5



NPS 1/2" - ID = 22.3 - F = 9.5							
Class	150	300	400	600	900	1500	2500
Diameter - A	30	38	...	38	...	38	...
Diameter - D	90	95	...	95	...	120	...
Thickness - B	9.6	12.7	...	14.3	...	22.3	...
	11.2	14.3	...	20.7	...	28.7	...
Diameter - G	35.1	35.1	...	35.1	...	35.1	...
Diameter - K	60.3	66.7	...	66.7	...	82.6	...
Height - H	14	21	...	22	...	32	...
	15.6	22.6	...	28.4	...	38.4	...
Bolt Holes	4	4	...	4	...	4	...
Diameter - L	15.9	15.9	...	15.9	...	22.2	...
Weight kg	0.42	0.66	...	0.76	...	1.80	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	1/2	...	1/2	...	3/4	...
Length (mm)	55	65	...	75	...	110	...

NPS 3/4" - ID = 27.7 - F = 11.1							
Class	150	300	400	600	900	1500	2500
Diameter - A	38	48	...	48	...	44	...
Diameter - D	100	115	...	115	...	130	...
Thickness - B	11.2	14.3	...	15.9	...	25.4	...
	12.8	15.9	...	22.3	...	31.8	...
Diameter - G	42.9	42.9	...	42.9	...	42.9	...
Diameter - K	69.9	82.6	...	82.6	...	88.9	...
Height - H	14	24	...	25	...	35	...
	15.6	25.6	...	31.4	...	41.4	...
Bolt Holes	4	4	...	4	...	4	...
Diameter - L	15.9	19.1	...	19.1	...	22.2	...
Weight kg	0.59	1.15	...	1.29	...	2.41	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	...	5/8	...	3/4	...
Length (mm)	65	75	...	90	...	115	...

NPS 1" - ID = 34.5 - F = 12.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	49.2	54	...	54	...	52	...
Diameter - D	110	125	...	125	...	150	...
Thickness - B	12.7	15.9	...	17.5	...	28.6	...
	14.3	17.5	...	23.9	...	35	...
Diameter - G	50.8	50.8	...	50.8	...	50.8	...
Diameter - K	79.4	88.9	...	88.9	...	101.6	...
Height - H	16	25	...	27	...	41	...
	17.6	26.6	...	33.4	...	47.4	...
Bolt Holes	4	4	...	4	...	4	...
Diameter - L	15.9	19.1	...	19.1	...	25.4	...
Weight kg	0.81	1.40	...	1.55	...	3.55	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	...	5/8	...	7/8	...
Length (mm)	65	75	...	90	...	125	...

### NPS 1¼" - ID = 43.2 - F = 14.3

Class	150	300	400	600	900	1500	2500
Diameter - A	59	64	...	64	...	64	...
Diameter - D	115	135	...	135	...	160	...
Thickness - B	14.3	17.5	...	20.7	...	28.6	...
	15.9	19.1	...	27.1	...	35	...
Diameter - G	63.5	63.5	...	63.5	...	63.5	...
Diameter - K	88.9	98.4	...	98.4	...	111.1	...
Height - H	19	25	...	29	...	41	...
	20.6	26.6	...	35.4	...	47.4	...
Bolt Holes	4	4	...	4	...	4	...
Diameter - L	15.9	19.1	...	19.1	...	25.4	...
Weight kg	1.07	1.75		2.06		4.02	
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	...	5/8	...	7/8	...
Length (mm)	70	85	...	95	...	125	...

### NPS 1½" - ID = 49.5 - F = 15.9

Class	150	300	400	600	900	1500	2500
Diameter - A	65	70	...	70	...	70	...
Diameter - D	125	155	...	155	...	180	...
Thickness - B	15.9	19.1	...	22.3	...	31.8	...
	17.5	20.7	...	28.7	...	38.2	...
Diameter - G	73.2	73.2	...	73.2	...	73.2	...
Diameter - K	98.4	114.3	...	114.3	...	123.8	...
Height - H	21	29	...	32	...	44	...
	22.6	30.6	...	38.4	...	50.4	...
Bolt Holes	4	4	...	4	...	4	...
Diameter - L	15.9	22.2	...	22.2	...	28.6	...
Weight kg	1.36	2.55		3.00		5.45	
Stud Bolts Diameter x Length							
Diameter (in)	1/2	3/4	...	3/4	...	1	...
Length (mm)	70	90	...	110	...	140	...

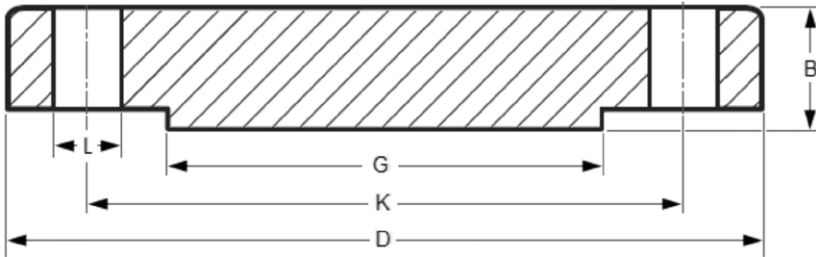
### NPS 2" - ID = 62.0 - F = 17.5

Class	150	300	400	600	900	1500	2500
Diameter - A	78	84	...	84	...	105	...
Diameter - D	150	165	...	165	...	215	...
Thickness - B	17.5	20.7	...	25.4	...	38.1	...
	19.1	22.3	...	31.8	...	44.5	...
Diameter - G	91.9	91.9	...	91.9	...	91.9	...
Diameter - K	120.7	127	...	127	...	165.1	...
Height - H	24	32	...	37	...	57	...
	25.6	33.6	...	43.4	...	63.4	...
Bolt Holes	4	8	...	8	...	8	...
Diameter - L	19.1	19.1	...	19.1	...	25.4	...
Weight kg	2.10	2.93		3.67		10.20	
Stud Bolts Diameter x Length							
Diameter (in)	5/8	5/8	...	5/8	...	7/8	...
Length (mm)	85	90	...	110	...	145	...

### NPS 2½" - ID = 74.7 - F = 19.1

Class	150	300	400	600	900	1500	2500
Diameter - A	90	100	...	100	...	125	...
Diameter - D	180	190	...	190	...	245	...
Thickness - B	20.7	23.9	...	28.6	...	41.3	...
	22.3	25.5	...	35	...	47.7	...
Diameter - G	104.6	104.6	...	104.6	...	104.6	...
Diameter - K	139.7	149.2	...	149.2	...	190.5	...
Height - H	27	37	...	41	...	64	...
	28.6	38.6	...	47.4	...	70.4	...
Bolt Holes	4	8	...	8	...	8	...
Diameter - L	19.1	22.2	...	22.2	...	28.6	...
Weight kg	3.33	4.40		5.35		13.90	
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	...	3/4	...	1	...
Length (mm)	90	100	...	120	...	160	...

# Dimensions and weights for Blind Flanges & Stud Bolts ASME B16.5



NPS 1/2"							
Class	150	300	400	600	900	1500	2500
Diameter - D	90	95	95	95	120	120	135
Thickness - B	9.6	12.7	14.3	14.3	22.3	22.3	30.2
	11.2	14.3	20.7	20.7	28.7	28.7	36.6
Diameter - G	35.1	35.1	35.1	35.1	35.1	35.1	35.1
Diameter - K	60.3	66.7	66.7	66.7	82.6	82.6	88.9
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	15.9	15.9	15.9	22.2	22.2	22.2
Weight kg	0.42	0.64	0.76	0.76	1.77	1.77	2.99
Stud Bolts Diameter x Length							
Diameter (in)	1/2	1/2	1/2	1/2	3/4	3/4	3/4
Length (mm)	55	65	75	75	110	110	120

NPS 3/4"							
Class	150	300	400	600	900	1500	2500
Diameter - D	100	115	115	115	130	130	140
Thickness - B	11.2	14.3	15.9	15.9	25.4	25.4	31.8
	12.8	15.9	22.3	22.3	31.8	31.8	38.2
Diameter - G	42.9	42.9	42.9	42.9	42.9	42.9	42.9
Diameter - K	69.9	82.6	82.6	82.6	88.9	88.9	95
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	22.2	22.2	22.2
Weight kg	0.61	1.11	1.28	1.28	2.42	2.42	3.50
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	3/4	3/4	3/4
Length (mm)	65	75	90	90	115	115	125

NPS 1"							
Class	150	300	400	600	900	1500	2500
Diameter - D	110	125	125	125	150	150	160
Thickness - B	12.7	15.9	17.5	17.5	28.6	28.6	35
	14.3	17.5	23.9	23.9	35	35	41.4
Diameter - G	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Diameter - K	79.4	88.9	88.9	88.9	101.6	101.6	107.4
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	25.4
Weight kg	0.86	1.39	1.60	1.60	3.57	3.57	4.96
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	7/8
Length (mm)	65	75	90	90	125	125	140

NPS 1¼"							
Class	150	300	400	600	900	1500	2500
Diameter - D	115	135	125	135	160	160	185
Thickness - B	14.3	17.5	20.7	20.7	28.6	28.6	38.1
	15.9	19.1	27.1	27.1	35	35	44.5
Diameter - G	63.5	63.5	63.5	63.5	63.5	63.5	63.5
Diameter - K	88.9	98.4	98.4	98.4	111.1	111.1	130
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg	1.17	1.79	2.23	2.23	4.14	4.14	7.35
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	70	85	95	95	125	125	150

NPS 1½"							
Class	150	300	400	600	900	1500	2500
Diameter - D	125	155	155	155	180	180	205
Thickness - B	15.9	19.1	22.3	22.3	31.8	31.8	44.5
	17.5	20.7	28.7	28.7	38.2	38.2	50.9
Diameter - G	73	73	73	73	73	73	73
Diameter - K	98.4	114.3	114.3	114.3	123.8	123.8	146
Bolt Holes	4	4	4	4	4	4	4
Diameter - L	15.9	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg	1.53	2.66	3.25	3.25	5.75	5.75	10.40
Stud Bolts Diameter x Length							
Diameter (in)	1/2	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	70	90	110	110	140	140	170

NPS 2"							
Class	150	300	400	600	900	1500	2500
Diameter - D	150	165	165	165	215	215	235
Thickness - B	17.5	20.7	25.4	25.4	38.1	38.1	50.9
	19.1	22.3	31.8	31.8	44.5	44.5	57.3
Diameter - G	91.9	91.9	91.9	91.9	91.9	91.9	91.9
Diameter - K	120.7	127	127	127	165.1	165.1	171.4
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	19.1	19.1	19.1	25.4	25.4	28.6
Weight kg	2.42	3.18	4.15	4.15	10.10	10.10	15.60
Stud Bolts Diameter x Length							
Diameter (in)	5/8	5/8	5/8	5/8	7/8	7/8	1
Length (mm)	85	90	110	110	145	145	180

NPS 2½"							
Class	150	300	400	600	900	1500	2500
Diameter - D	180	190	190	190	245	245	265
Thickness - B	20.7	23.9	28.6	28.6	41.3	41.3	57.2
	22.3	25.5	35	35	47.7	47.7	63.6
Diameter - G	104.6	104.6	104.6	104.6	104.6	104.6	104.6
Diameter - K	139.7	149.2	149.2	149.2	190.5	190.5	197
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	28.6	28.6	31.8
Weight kg	3.94	4.85	6.13	6.13	14.00	14.00	22.60
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	1	1	1 1/8
Length (mm)	90	100	120	120	160	160	195

NPS 3"							
Class	150	300	400	600	900	1500	2500
Diameter - D	190	210	210	210	240	265	305
Thickness - B	22.3	27	31.8	31.8	38.1	47.7	66.7
	23.9	28.6	38.2	38.2	44.5	54.1	73.1
Diameter - G	127	127	127	127	127	127	127
Diameter - K	152.4	168.3	168.3	168.3	190.5	205	230
Bolt Holes	4	8	8	8	8	8	8
Diameter - L	19.1	22.2	22.2	22.2	25.4	31.8	34.9
Weight kg	4.93	6.81	8.44	8.44	13.10	19.10	34.80
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	7/8	1 1/8	1 1/4
Length (mm)	90	110	125	125	145	180	220

NPS 3½"							
Class	150	300	400	600	900	1500	2500
Diameter - D	215	230	230	230	...	...	...
Thickness - B	22.3	28.6	35	35	...	...	...
	23.9	30.2	41.4	41.4	...	...	...
Diameter - G	139.7	139.7	139.7	139.7	...	...	...
Diameter - K	177.8	184.2	184.2	184.2	...	...	...
Bolt Holes	8	8	8	8	...	...	...
Diameter - L	19.1	22.2	25.4	25.4	...	...	...
Weight kg	6.17	8.71	11.00	11.00			
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	...	...	...
Length (mm)	90	110	140	140	...	...	...

NPS 4"							
Class	150	300	400	600	900	1500	2500
Diameter - D	230	255	254	275	290	310	355
Thickness - B	22.3	30.2	35	38.1	44.5	54	76.2
	23.9	31.8	41.4	44.5	50.9	60.4	82.6
Diameter - G	157.2	157.2	157.2	157.2	157.2	157.2	157.2
Diameter - K	190.5	200	200	215.9	235	240	273
Bolt Holes	8	8	8	8	8	8	8
Diameter - L	19.1	22.2	25.4	25.4	31.8	34.9	41.3
Weight kg	7.00	11.50	13.7	17.30	26.90	29.90	53.90
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	1 1/8	1 1/4	1 1/2
Length (mm)	90	115	140	145	170	195	255

NPS 6"							
Class	150	300	400	600	900	1500	2500
Diameter - D	280	320	320	355	380	395	485
Thickness - B	23.9	35	41.3	47.7	55.6	82.6	108
	25.5	36.6	47.7	54.3	62	89	114.4
Diameter - G	215.9	215.9	215.9	215.9	215.9	215.9	215.9
Diameter - K	241.3	269.9	269.9	292.1	317.5	320	368
Bolt Holes	8	12	12	12	12	12	8
Diameter - L	22.2	22.2	25.4	28.6	31.8	38.1	54
Weight kg	11.30	20.90	25.50	36.10	47.40	71.80	141.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	3/4	7/8	1	1 1/8	1 3/8	2
Length (mm)	100	120	150	170	190	260	345

NPS 8"							
Class	150	300	400	600	900	1500	2500
Diameter - D	345	380	381	420	470	485	550
Thickness - B	27	39.7	47.7	55.6	63.5	92.1	127
	28.6	41.3	54.1	62	69.9	98.5	133.4
Diameter - G	269.9	269.7	269.7	269.7	269.7	269.7	269.7
Diameter - K	298.5	330.2	330	349.2	393.7	395	438.1
Bolt Holes	8	12	12	12	12	12	12
Diameter - L	22.2	25.4	28.6	31.8	38.1	44.5	54
Weight kg	19.60	34.30	42.60	58.90	82.50	122.00	214.00
Stud Bolts Diameter x Length							
Diameter (in)	3/4	7/8	1	1 1/8	1 3/8	1 5/8	2
Length (mm)	110	140	170	190	220	290	380

NPS 10"							
Class	150	300	400	600	900	1500	2500
Diameter - D	405	445	445	510	545	585	675
Thickness - B	28.6	46.1	54	63.5	69.9	108	165
	30.2	47.7	60.4	69.9	76.3	114.4	171.5
Diameter - G	323.9	323.9	323.9	323.9	323.9	323.9	323.9
Diameter - K	362	387.4	387.4	431.8	469.9	485	539.7
Bolt Holes	12	16	16	16	16	12	12
Diameter - L	25.4	28.6	31.8	34.9	38.1	50.8	66.7
Weight kg	28.80	53.30	64.50	97.50	122.00	210.00	411.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1	1 1/8	1 1/4	1 3/8	1 7/8	2 1/2
Length (mm)	115	160	190	215	235	335	490

NPS 12"							
Class	150	300	400	600	900	1500	2500
Diameter - D	485	520	520	560	610	675	760
Thickness - B	30.2	49.3	57.2	66.7	79.4	123.9	184.2
	31.8	50.9	63.4	73.1	85.8	130.3	190.6
Diameter - G	381	381	381	381	381	381	381
Diameter - K	431.8	450.8	450.8	489	533.4	571.5	619.1
Bolt Holes	12	16	16	20	20	16	12
Diameter - L	25.4	31.8	34.9	34.9	38.1	54	73
Weight kg	43.20	78.80	94.30	124.00	173.00	316.00	592.00
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1 1/8	1 1/4	1 1/4	1 3/8	2	2 3/4
Length (mm)	120	170	205	220	255	375	540

NPS 14"							
Class	150	300	400	600	900	1500	2500
Diameter - D	535	585	585	605	640	750	...
Thickness - B	33.4	52.4	60.4	69.9	85.8	133.4	...
	35	54	66.8	76.3	92.2	139.8	...
Diameter - G	412.8	412.8	412.8	412.8	412.8	412.8	...
Diameter - K	476.3	514.4	514.4	527	558.8	635	...
Bolt Holes	12	20	20	20	20	16	...
Diameter - L	28.6	31.8	34.9	38.1	41.3	60.3	...
Weight kg	58.10	105.00	124.00	151.00	206.00	420.00	...
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/8	1 1/4	1 3/8	1 1/2	2 1/4	...
Length (mm)	135	180	210	235	275	405	...

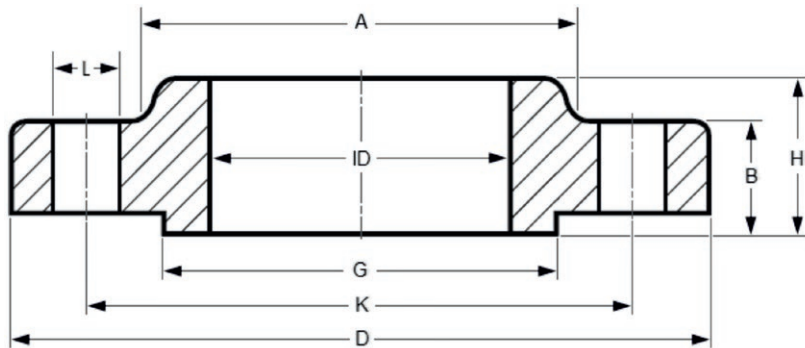
NPS 16"							
Class	150	300	400	600	900	1500	2500
Diameter - D	595	650	650	685	705	825	...
Thickness - B	35	55.6	63.5	76.2	88.9	146.1	...
	36.6	57.2	69.9	82.6	95.3	152.5	...
Diameter - G	469.9	469.9	469.9	469.9	469.9	469.9	...
Diameter - K	539.8	571.5	571.5	603.2	616	705	...
Bolt Holes	16	20	20	20	20	16	...
Diameter - L	28.6	34.9	38.1	41.3	44.5	66.7	...
Weight kg	76.00	137.00	162.00	214.00	259.00	558.00	
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/4	1 3/8	1 1/2	1 5/8	2 1/2	...
Length (mm)	135	190	220	255	285	445	...

NPS 18"							
Class	150	300	400	600	900	1500	2500
Diameter - D	635	710	710	745	785	915	...
Thickness - B	38.1	58.8	66.7	82.6	101.6	162	...
	39.7	60.4	73.1	89	108	168.4	...
Diameter - G	533.4	533.4	533.4	533.4	533.4	533.4	...
Diameter - K	577.9	628.6	628.6	654	685.8	775	...
Bolt Holes	16	24	24	20	20	16	...
Diameter - L	31.8	34.9	38.1	44.5	50.8	73	...
Weight kg	93.70	175.00	205.00	272.00	367.00	760.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 3/8	1 5/8	1 7/8	2 3/4	...
Length (mm)	145	195	230	275	325	495	...

NPS 20"							
Class	150	300	400	600	900	1500	2500
Diameter - D	700	775	775	815	855	985	...
Thickness - B	41.3	62	69.9	88.9	108	180	...
	42.9	63.6	76.3	95.3	114.4	184.2	...
Diameter - G	584.2	584.2	584.2	584.2	584.2	584.2	...
Diameter - K	635	685.8	685.8	723.9	749.3	831.8	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	31.8	34.9	41.3	44.5	54	79.4	...
Weight kg	122.00	221.00	254.00	349.00	463.00	965.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 1/2	1 5/8	2	3	...
Length (mm)	160	205	240	285	350	540	...

NPS 24"							
Class	150	300	400	600	900	1500	2500
Diameter - D	815	915	915	940	1040	1170	...
Thickness - B	46.1	68.3	76.2	101.6	139.7	203.2	...
	47.7	69.9	82.6	108	146.1	209.6	...
Diameter - G	692.2	692.2	692.2	692.2	692.2	692.2	...
Diameter - K	749.3	812.8	812.8	838.2	901.7	990.6	...
Bolt Holes	20	24	24	24	20	16	...
Diameter - L	34.9	41.3	47.6	50.8	66.7	92.1	...
Weight kg	185.00	339.00	386.00	533.00	876.00	1558.00	
Stud Bolts Diameter x Length							
Diameter (in)	1 1/4	1 1/2	1 3/4	1 7/8	2 1/2	3 1/2	...
Length (mm)	170	230	265	330	440	615	...

# Dimensions and weights for Slip On Flanges & Stud Bolts ASME B16.5



NPS 1/2" - I.D. 22.3							
Class	150	300	400	600	900	1500	2500
Diameter - A	30	38	38	38	38	38	...
Diameter - D	90	95	95	95	120	120	...
Thickness - B	9.6	12.7	14.3	14.3	22.3	22.3	...
	11.2	14.3	20.7	20.7	28.7	28.7	...
Diameter - G	35.1	35.1	35.1	35.1	35.1	35.1	...
Diameter - K	60.3	66.7	66.7	66.7	82.6	82.6	...
Height - H	14	21	22	22	32	32	...
	15.6	22.6	28.4	28.4	38.4	38.4	...
Bolt Holes	4	4	4	4	4	4	...
Diameter - L	15.9	15.9	15.9	15.9	22.2	22.2	...
Weight kg	0.39	0.64	0.74	0.74	1.74	1.74	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	1/2	1/2	1/2	3/4	3/4	...
Length (mm)	55	65	75	75	110	110	...

NPS 3/4" - I.D. 27.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	38	48	48	48	44	44	...
Diameter - D	100	115	115	115	130	130	...
Thickness - B	11.2	14.3	15.9	15.9	25.4	25.4	...
	12.8	15.9	22.3	22.3	31.8	31.8	...
Diameter - G	42.9	42.9	42.9	42.9	42.9	42.9	...
Diameter - K	69.9	82.6	82.6	82.6	88.9	88.9	...
Height - H	14	24	25	25	35	35	...
	15.6	25.6	31.4	31.4	41.4	41.4	...
Bolt Holes	4	4	4	4	4	4	...
Diameter - L	15.9	19.1	19.1	19.1	22.2	22.2	...
Weight kg	0.56	1.12	1.27	1.27	2.34	2.34	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	3/4	3/4	...
Length (mm)	65	75	90	90	115	115	...

NPS 1" - I.D. 34.5							
Class	150	300	400	600	900	1500	2500
Diameter - A	49	54	54	54	52	52	...
Diameter - D	110	125	125	125	150	150	...
Thickness - B	12.7	15.9	17.5	17.5	28.6	28.6	...
	14.3	17.5	23.9	23.9	35	35	...
Diameter - G	50.8	50.8	50.8	50.8	50.8	50.8	...
Diameter - K	79.4	88.9	88.9	88.9	101.6	101.6	...
Height - H	16	25	27	27	41	41	...
	17.6	26.6	33.4	33.4	47.4	47.4	...
Bolt Holes	4	4	4	4	4	4	...
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	...
Weight kg	0.78	1.36	1.52	1.52	3.44	3.44	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	...
Length (mm)	65	75	90	90	125	125	...



NPS 1¼" - I.D. 43.2							
Class	150	300	400	600	900	1500	2500
Diameter - A	59	64	64	64	64	64	...
Diameter - D	115	135	125	135	160	160	...
Thickness - B	14.3	17.5	20.7	20.7	28.6	28.6	...
	15.9	19.1	27.1	27.1	35	35	...
Diameter - G	63.5	63.5	63.5	63.5	63.5	63.5	...
Diameter - K	88.9	98.4	98.4	98.4	111.1	111.1	...
Height - H	19	25	29	29	41	41	...
	20.6	26.6	35.4	35.4	47.4	47.4	...
Bolt Holes	4	4	4	4	4	4	...
Diameter - L	15.9	19.1	19.1	19.1	25.4	25.4	...
Weight kg	1.03	1.68	2.03	2.03	3.91	3.91	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	5/8	5/8	5/8	7/8	7/8	...
Length (mm)	70	85	95	95	125	125	...

NPS 2" - I.D. 62.0							
Class	150	300	400	600	900	1500	2500
Diameter - A	78	84	84	84	105	105	...
Diameter - D	150	165	165	165	215	215	...
Thickness - B	17.5	20.7	25.4	25.4	38.1	38.1	...
	19.1	22.3	31.8	31.8	44.5	44.5	...
Diameter - G	91.9	91.9	91.9	91.9	91.9	91.9	...
Diameter - K	120.7	127	127	127	165.1	165.1	...
Height - H	24	32	37	37	57	57	...
	25.6	33.6	43.4	43.4	63.4	63.4	...
Bolt Holes	4	8	8	8	8	8	...
Diameter - L	19.1	19.1	19.1	19.1	25.4	25.4	...
Weight kg	2.06	2.87	3.62	3.62	9.85	9.85	...
Stud Bolts Diameter x Length							
Diameter (in)	5/8	5/8	5/8	5/8	7/8	7/8	...
Length (mm)	85	90	110	110	145	145	...

NPS 1½" - I.D. 49.5							
Class	150	300	400	600	900	1500	2500
Diameter - A	65	70	70	70	70	70	...
Diameter - D	125	155	155	155	180	180	...
Thickness - B	15.9	19.1	22.3	22.3	31.8	31.8	...
	17.5	20.7	28.7	28.7	38.2	38.2	...
Diameter - G	73.2	73.2	73.2	73.2	73.2	73.2	...
Diameter - K	98.4	114.3	114.3	114.3	123.8	123.8	...
Height - H	21	29	32	32	44	44	...
	22.6	30.6	38.4	38.4	50.4	50.4	...
Bolt Holes	4	4	4	4	4	4	...
Diameter - L	15.9	22.2	22.2	22.2	28.6	28.6	...
Weight kg	1.32	2.49	2.96	2.96	5.36	5.36	...
Stud Bolts Diameter x Length							
Diameter (in)	1/2	3/4	3/4	3/4	1	1	...
Length (mm)	70	90	110	110	140	140	...

NPS 2½" - I.D. 74.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	90	100	100	100	124	124	...
Diameter - D	180	190	190	190	245	245	...
Thickness - B	20.7	23.9	28.6	28.6	41.3	41.3	...
	22.3	25.5	35	35	47.7	47.7	...
Diameter - G	104.6	104.6	104.6	104.6	104.6	104.6	...
Diameter - K	139.7	149.2	149.2	149.2	190.5	190.5	...
Height - H	27	37	41	41	64	64	...
	28.6	38.6	47.4	47.4	70.4	70.4	...
Bolt Holes	4	8	8	8	8	8	...
Diameter - L	19.1	22.2	22.2	22.2	28.6	28.6	...
Weight kg	3.28	4.32	5.28	5.28	13.70	13.70	...
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	1	1	...
Length (mm)	90	100	120	120	160	160	...

NPS 3" – I.D. 90.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	108	117	117	117	127	...	...
Diameter - D	190	210	210	210	240	...	...
Thickness - B	22.3	27	31.8	31.8	38.1	...	...
	23.9	28.6	38.2	38.2	44.5	...	...
Diameter - G	127	127	127	127	127	...	...
Diameter - K	152.4	168.3	168.3	168.3	190.5	...	...
Height - H	29	41	46	46	54	...	...
	30.6	42.6	52.4	52.4	60.4	...	...
Bolt Holes	4	8	8	8	8	...	...
Diameter - L	19.1	22.2	22.2	22.2	25.4	...	...
Weight kg	3.85	5.85	7.00	7.00	11.60		
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	3/4	3/4	7/8	...	...
Length (mm)	90	110	125	125	145	...	...

NPS 3½" – I.D. 103.4							
Class	150	300	400	600	900	1500	2500
Diameter - A	122	133	133	133	...	...	...
Diameter - D	215	230	230	230	...	...	...
Thickness - B	22.3	28.6	35	35	...	...	...
	23.9	30.2	41.4	41.4	...	...	...
Diameter - G	139.7	139.7	139.7	139.7	...	...	...
Diameter - K	177.8	184.2	184.2	184.2	...	...	...
Height - H	30	43	49	49	...	...	...
	31.6	44.6	55.4	55.4	...	...	...
Bolt Holes	8	8	8	8	...	...	...
Diameter - L	19.1	22.2	25.4	25.4	...	...	...
Weight kg	4.81	7.34	8.84	8.84			
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	...	...	...
Length (mm)	90	110	140	140	...	...	...

NPS 4" – I.D. 116.1							
Class	150	300	400	600	900	1500	2500
Diameter - A	135	146	146	152	159	...	...
Diameter - D	230	255	254	275	290	...	...
Thickness - B	22.3	30.2	35	38.1	44.5	...	...
	23.9	31.8	41.4	44.5	50.9	...	...
Diameter - G	157.2	157.2	157.2	157.2	157.2	...	...
Diameter - K	190.5	200	200	215.9	235	...	...
Height - H	32	46	51	54	70	...	...
	33.6	47.6	57.4	60.4	76.4	...	...
Bolt Holes	8	8	8	8	8	...	...
Diameter - L	19.1	22.2	25.4	25.4	31.8	...	...
Weight kg	5.30	9.61	11.10	14.50	19.70		
Stud Bolts Diameter x Length							
Diameter (in)	5/8	3/4	7/8	7/8	1 1/8	...	...
Length (mm)	90	115	140	145	170	...	...

NPS 6" – I.D. 170.7							
Class	150	300	400	600	900	1500	2500
Diameter - A	192	206	206	222	235	...	...
Diameter - D	280	320	320	355	380	...	...
Thickness - B	23.9	35	41.3	47.7	55.6	...	...
	25.5	36.6	47.7	54.3	62	...	...
Diameter - G	215.9	215.9	215.9	215.9	215.9	...	...
Diameter - K	241.3	269.9	269.9	292.1	317.5	...	...
Height - H	38	51	57	67	86	...	...
	39.6	52.6	63.4	73.4	92.4	...	...
Bolt Holes	8	12	12	12	12	...	...
Diameter - L	22.2	22.2	25.4	28.6	31.8	...	...
Weight kg	7.45	15.60	18.30	28.70	41.10		
Stud Bolts Diameter x Length							
Diameter (in)	3/4	3/4	7/8	1	1 1/8	...	...
Length (mm)	100	120	150	170	190	...	...

NPS 8" - I.D. 221.5							
Class	150	300	400	600	900	1500	2500
Diameter - A	246	260	260	273	298	...	...
Diameter - D	345	380	381	420	470	...	...
Thickness - B	27	39.7	47.7	55.6	63.5	...	...
	28.6	41.3	54.1	62	69.9	...	...
Diameter - G	269.7	269.7	269.7	269.7	269.7	...	...
Diameter - K	298.5	330.2	330	349.2	393.7	...	...
Height - H	43	60	68	76	102	...	...
	44.6	61.6	74.4	82.4	108.4	...	...
Bolt Holes	8	12	12	12	12	...	...
Diameter - L	22.2	25.4	28.6	31.8	38.1	...	...
Weight kg	12.10	24.20	28.60	43.40	70.70		
Stud Bolts Diameter x Length							
Diameter (in)	3/4	7/8	1	1 1/8	1 3/8	...	...
Length (mm)	110	140	170	190	220	...	...

NPS 10" - I.D. 276.3							
Class	150	300	400	600	900	1500	2500
Diameter - A	305	321	321	343	368	...	...
Diameter - D	405	445	445	510	545	...	...
Thickness - B	28.6	46.1	54	63.5	69.9	...	...
	30.2	47.7	60.4	69.9	76.3	...	...
Diameter - G	323.9	323.9	323.9	323.9	323.9	...	...
Diameter - K	362	387.4	387.4	431.8	469.9	...	...
Height - H	48	65	73	86	108	...	...
	49.6	66.6	79.4	92.4	114.4	...	...
Bolt Holes	12	16	16	16	16	...	...
Diameter - L	25.4	28.6	31.8	34.9	38.1	...	...
Weight kg	16.50	34.10	39.20	70.30	101.00		
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1	1 1/8	1 1/4	1 3/8	...	...
Length (mm)	115	160	190	215	235	...	...

NPS 12" - I.D. 327.1							
Class	150	300	400	600	900	1500	2500
Diameter - A	365	375	375	400	419	...	...
Diameter - D	485	520	520	560	610	...	...
Thickness - B	30.2	49.3	57.2	66.7	79.4	...	...
	31.8	50.9	63.4	73.1	85.8	...	...
Diameter - G	381	381	381	381	381	...	...
Diameter - K	431.8	450.8	450.8	489	533.4	...	...
Height - H	54	71	79	92	117	...	...
	55.6	72.6	85.4	98.4	123.4	...	...
Bolt Holes	12	16	16	20	20	...	...
Diameter - L	25.4	31.8	34.9	34.9	38.1	...	...
Weight kg	26.20	49.80	57.00	84.20	133.00		
Stud Bolts Diameter x Length							
Diameter (in)	7/8	1 1/8	1 1/4	1 1/4	1 3/8	...	...
Length (mm)	120	170	205	220	255	...	...

NPS 14" - I.D. 359.1							
Class	150	300	400	600	900	1500	2500
Diameter - A	400	425	425	432	451	...	...
Diameter - D	535	585	585	605	640	...	...
Thickness - B	33.4	52.4	60.4	69.9	85.8	...	...
	35	54	66.8	76.3	92.2	...	...
Diameter - G	412.8	412.8	412.8	412.8	412.8	...	...
Diameter - K	476.3	514.4	514.4	527	558.8	...	...
Height - H	56	75	84	94	130	...	...
	57.6	76.6	90.4	100.4	136.4	...	...
Bolt Holes	12	20	20	20	20	...	...
Diameter - L	31.8	31.8	34.9	38.1	41.3	...	...
Weight kg	34.60	69.90	79.10	98.70	153.00		
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/8	1 1/4	1 3/8	1 1/2	...	...
Length (mm)	135	180	210	235	275	...	...

NPS 16" – I.D. 410.5							
Class	150	300	400	600	900	1500	2500
Diameter - A	457	483	483	495	508	...	...
Diameter - D	595	650	650	685	705	...	...
Thickness - B	35	55.6	63.5	76.2	88.9	...	...
	36.6	57.2	69.9	82.6	95.3	...	...
Diameter - G	469.9	469.9	469.9	469.9	469.9	...	...
Diameter - K	539.8	571.5	571.5	603.2	616	...	...
Height - H	62	81	94	106	133	...	...
	63.6	82.6	100.4	112.4	139.4	...	...
Bolt Holes	16	20	20	20	20	...	...
Diameter - L	28.6	34.9	38.1	41.3	44.5	...	...
Weight kg	44.80	88.10	101.00	142.00	185.00		
Stud Bolts Diameter x Length							
Diameter (in)	1	1 1/4	1 3/8	1 1/2	1 5/8	...	...
Length (mm)	135	190	220	255	285	...	...

NPS 18" – I.D. 461.8							
Class	150	300	400	600	900	1500	2500
Diameter - A	505	533	533	546	565	...	...
Diameter - D	635	710	710	745	785	...	...
Thickness - B	38.1	58.8	66.7	82.6	101.6	...	...
	39.7	60.4	73.1	89	108	...	...
Diameter - G	533.4	533.4	533.4	533.4	533.4	...	...
Diameter - K	577.9	628.6	628.6	654	685.8	...	...
Height - H	67	87	98	117	152	...	...
	68.6	88.6	104.4	123.4	158.4	...	...
Bolt Holes	16	24	24	20	20	...	...
Diameter - L	31.8	34.9	38.1	44.5	50.8	...	...
Weight kg	48.90	109.00	123.00	173.00	258.00		
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 3/8	1 5/8	1 7/8	...	...
Length (mm)	145	195	230	275	325	...	...

NPS 20" – I.D. 513.1							
Class	150	300	400	600	900	1500	2500
Diameter - A	559	587	587	610	622	...	...
Diameter - D	700	775	775	815	855	...	...
Thickness - B	41.3	62	69.9	88.9	108	...	...
	42.9	63.6	76.3	95.3	114.4	...	...
Diameter - G	584.2	584.2	584.2	584.2	584.2	...	...
Diameter - K	635	685.8	685.8	723.9	749.3	...	...
Height - H	71	94	102	127	159	...	...
	72.6	95.6	108.4	133.4	165.4	...	...
Bolt Holes	20	24	24	24	20	...	...
Diameter - L	31.8	34.9	41.3	44.5	54	...	...
Weight kg	61.90	134.00	146.00	220.00	317.00		
Stud Bolts Diameter x Length							
Diameter (in)	1 1/8	1 1/4	1 1/2	1 5/8	2	...	...
Length (mm)	160	205	240	285	350	...	...

NPS 24" – I.D. 615.9							
Class	150	300	400	600	900	1500	2500
Diameter - A	663	702	702	718	749	...	...
Diameter - D	815	915	915	940	1040	...	...
Thickness - B	46.1	68.3	76.2	101.6	139.7	...	...
	47.7	69.9	82.6	108	146.1	...	...
Diameter - G	692.2	692.2	692.2	692.2	692.2	...	...
Diameter - K	749.3	812.8	812.8	838.2	901.7	...	...
Height - H	81	105	114	140	203	...	...
	82.6	106.6	120.4	146.4	209.4	...	...
Bolt Holes	20	24	24	24	20	...	...
Diameter - L	34.9	41.3	47.6	50.8	66.7	...	...
Weight kg	86.90	201.00	219.00	312.00	606.00		
Stud Bolts Diameter x Length							
Diameter (in)	1 1/4	1 1/2	1 3/4	1 7/8	2 1/2	...	...
Length (mm)	170	230	265	330	440	...	...