GO SUNG

Forged Fitting & Sleeve
NIPPLES / SOCKETS

GO SUNG FITTING CO., LTD
MARINE EQUIPMENT

Greeting Message

안녕하십니까?

고객, 미래, 인간 중심의 경영이라는 사훈 아래 저희 고성피팅은 2007년 12월 1일에 설립되었습니다.

당사는 최고의 품질, 최저의 가격과 고객의 요구 사항에 즉각 대응하며, 국내 주요 조선과 육상플랜트 및 수출 시장을 위해 전 직원이 노력을 하고 있습니다.

다년간 축적된 노하우 및 품질을 바탕으로 고객의 만족을 위하여 더욱 더 심여를 기울이며 고객과 든든한 동반자로써 함께 할 것입니다.

많은 격려와 관심 부탁드리오며 고객의 성원에 보답할 것을 약속 드립니다.

고성피팅 대표이사 **백 형 돈**

Hello?

Customers, the future, the idea of people-oriented management of our Go-Sung fittings, December 1, 2007 was established.

We have the best quality, lowest price and the immediate response to the customer's requirements.

Ship building and major domestic and export markets for terrestrial plants all employees effort.

Based on many years of accumulated know-how and quality customer satisfaction simyeo listens to customers and more and more to do with it as a reliable partner.

Come give much encouragement and interest for members to give back to your promises.

GO-SUNG FITTING CEO

HYUNG-DON, BAEK

Contents

Socket-Welding Type

Threaded Type

Outlet

KS B1542(JIS B2316)
ANSI B16.11

SLEEVE
HOPPER
FORGED STEEL
THREADED FITTINGS
NIPPLES/SOCKETS

1. Pressure Ratings

These fittings shall be disignated as pressure class 2000, 3000 and 6000 fittings for threading and pressure class 3000, 6000 and 9000 for socket-welding. This designation identifies the fittings with their ratings as shown as follows, Table 1.

Table 1 : Correlation of Fittings Class With Schedule Number of Wall Designation of Pipe for Calculation of Ratings.

Pressure Class Designation of Fitting	Type of Fitting	Pipe Used for Rating Basic	
		Schedule No.	Well Designation
2000 lb	Threaded	80	X-S
3000 lb	Threaded	160	-
6000 lb	Threaded	-	XX-S
3000 lb	Socket-Welding	80	X-S
6000 lb	Socket-Welding	160	-
9000 lb	Socket-Welding	-	XX-S

* This table is not intended to restrict the use of pipe of thinner or thicker wall with fittings. Pipe actually used may be thinner or thicker in nominal wall than that shown in Table 1. When tinner pipe is used its strength may govern the rating. When thicker pipe is used (e.g., for mechanical strength) the strength of the fitting goverms the rating.

Table 2 : Nominal wall thickness of Schedule 160 and Double Extra Strong Pipe

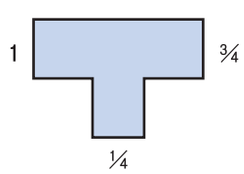
NPS.	Schedule 160		XX-S	
	in	mm	in	mm
1/8	0.124	3.15	0.190	4.83
1/4	0.145	3.68	0.230	6.05
3/8	0.158	4.01	0.252	6.40

Table 3 : Pressure/Temperaturs Ratings Non-shock Working Pressure in Pounds per Square Incd

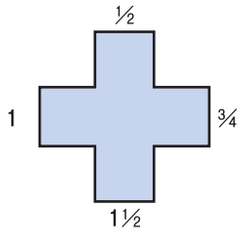
Service Tempere-ture Degree °F	2000lb Threaded Fittings					3000lb Socket Welding and Threaded Fittings					6000lb Socket Welding and Threaded Fittings				
	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5
100	2000	1715	2000	2000	2000	3000	2570	3000	3000	3000	6000	5145	6000	6000	6000
150	1970	1615	1970	1970	1970	2950	2425	2950	2950	2950	5915	4855	5915	5915	5915
200	1940	1520	1940	1940	1940	2915	2280	2915	2915	2915	5830	4565	5830	5830	5830
250	1915	1445	1915	1915	1915	2875	2170	2975	2975	2975	5750	4340	5750	5750	5750
300	1975	1370	1896	1895	1895	2845	2055	2845	2845	2845	5690	4115	5690	5690	5690
350	1875	1310	1875	1875	1875	2810	1965	2810	2810	2810	5625	3930	5690	5625	5625
400	1850	1245	1850	1850	1850	2775	1870	2775	2775	2775	5550	3745	5550	5550	5550
450	1810	1195	1810	1710	1810	2715	1790	2715	2715	2715	5430	3585	5430	5430	5430
500	1735	1140	1735	1635	1735	2605	1715	2605	2605	2605	5210	3430	5210	5210	5210
550	1640	1100	1640	1540	1640	2460	1650	2460	2460	2460	4925	3305	4925	4925	4925
600	1540	1060	1540	1440	1540	2310	1590	2310	2310	2310	4620	3180	4620	4620	4620
650	1430	1020	1430	1330	1430	2150	1535	2150	2150	2150	4300	3070	4300	4300	4300
700	1305	985	1370	1240	1340	1960	1480	2055	2010	2010	3920	2960	4110	4025	4025
750	1180	950	1305	1145	1245	1775	1425	1960	1870	1870	3550	2850	3920	3745	3745
800	1015	915	1240	1055	1155	1525	1370	1865	1735	1735	3050	2745	3730	3470	3470
850	830	880	1180	1060	1060	1250	1330	1770	1595	1595	2500	2660	3540	3190	3190
900	615	860	1115	970	970	925	1290	1675	1455	1455	1885	2580	3350	2915	2915
950	425	845	1055	880	880	640	1270	1580	1320	1320	1295	2540	3165	2640	2640
1000	235	830	990	740	695	350	1250	1485	1115	1240	715	2500	2975	2230	2085

2. Size Identification

The size of fitting is identified by the nominal pipe size.
For reducing fittings, the size of the largest run opening is to be given first, followed by the size of the opening opposite of the same run. The branch size of a Tee is given last. Where the case is a Cross, the largest side-outlet is thirdly given, then the opening opposite.



Tee
1×¾×¼



Cross
1½×½×1×¾

3. Threads

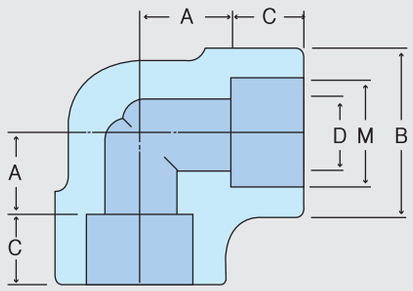
Unless otherwise specified in inquiry, all threaded fittings are supplied with NPT threads (ANSI B2. 1 American Standard Tapesr Pipe Thread) for reference, other availble threads are:

- ISO/R7, Pipe Threads for Gas List Tubes and Screwed Fittings where Pressure-tight joints are made on the threads (BS 2.1 & JIS B0203PT Thread)
- API 5B, Line Pipe Threads.
- KS B0222 Taper Pipe Threads.

SOCKET WELDING FITTINGS

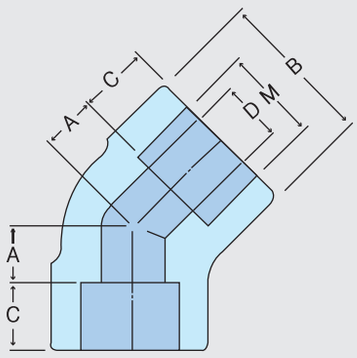
3000 lb, 6000 lb, 9000 lb

90 ° Elbow



Size	M	B	D	A	C	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be speciffied by purchaser	26.5	9.4	11.1	10	0.132
⅜		26.5	12.7	13.4	10	0.113
½		34.0	16.1	16.0	13	0.226
¾		38.5	21.2	20.0	14	0.312
1		46.5	27.0	23.0	15	0.596
1¼		56.5	35.4	28.0	17	0.709
1½		63.5	41.2	33.0	18	0.850
2		76.0	52.7	39.0	22	1.474
2½		92.0	62.7	42.0	24	2.460
3		110.0	78.0	57.1	31.5	4.650
4		146.0	102.0	68.0	45	9.410
6000 lb						
½	See Note (1)	38.5	12.0	20.0	16	0.425
¾		46.5	15.8	23.0	16	0.652
1		56.5	21.0	28.0	18	1.020
1¼		63.5	29.7	33.0	20	1.446
1½		76.0	34.2	40.0	22	2.380
2		84.0	43.1	42.0	24	3.760
2½		110.0	54.0	57.1	24	6.120
3		121.0	67.7	66.0	31.5	8.760
4		152.0	87.0	70.0	45	14.300
9000 lb						
½	See Note (1)	46.5	6.4	23.0	16	0.510
¾		56.5	11.0	28.0	16	0.782
1		63.5	15.2	33.0	18	1.224
1¼		76.0	22.7	40.0	20	1.807
1½		84.0	27.9	42.0	22	2.975
2		110.0	38.1	54.0	24	4.700
2½		121.0	45.0	66.0	24	10.512
3		146.0	58.5	70.0	31.5	13.020

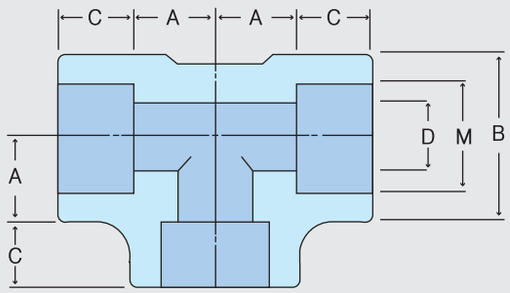
45 ° Elbow



Size	M	B	D	A	C	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be speciffied by purchaser	26.5	9.4	7.9	10	0.093
⅜		26.5	12.7	7.9	10	0.142
½		34.0	16.1	13.0	13	0.284
¾		38.5	21.2	13.0	14	0.397
1		46.5	27.0	14.0	15	0.624
1¼		56.5	35.4	18.0	17	0.907
1½		63.5	41.2	22.0	18	0.782
2		76.0	52.7	24.0	22	1.265
2½		92.0	62.7	29.0	24	3.062
3		110.0	78.0	34.0	31.5	4.763
4		146.0	102.0	42.0	45	8.250
6000 lb						
½	See Note (1)	38.5	12.0	13	16	0.397
¾		46.5	15.8	14	16	0.595
1		56.5	21.0	22	18	0.935
1¼		63.5	29.7	22	20	1.157
1½		76.0	34.2	24	22	1.982
2		84.0	43.1	29	24	4.000
2½		110.0	54.0	34	24	5.875
3		121.0	67.7	34	31.5	6.509
4		152.0	87.0	42	45	12.360
9000 lb						
½	See Note (1)	46.5	6.4	14	16	0.875
¾		56.5	11.0	22	16	1.369
1		63.5	15.2	22	18	1.725
1¼		76.0	22.7	24	20	2.931
1½		84.0	27.9	29	22	5.062
2		110.0	38.1	34	24	6.400
2½		121.0	45.0	34	24	7.925
3		146.0	58.5	42	31.5	11.569

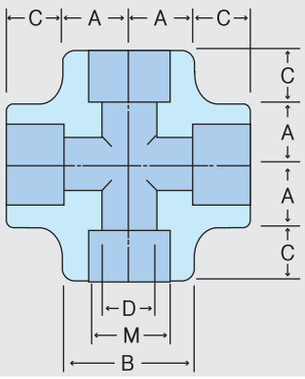
- Notes
  (1) For the ' Bore '(M) other tham standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Tee



Size	M	B	D	A	C	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be specified by purchaser	26.5	9.4	11.1	10	0.161
⅜		26.5	12.7	13.4	10	0.142
½		34.0	16.1	16.0	13	0.170
¾		38.5	21.2	20.0	14	0.397
1		46.5	27.0	23.0	15	0.624
1¼		56.5	35.4	28.0	17	0.907
1½		63.5	41.2	33.0	18	1.134
2		76.0	52.7	39.0	22	1.701
2½		92.0	62.7	42.0	24	3.424
3		110.0	78.0	57.1	31.5	5.670
4		146.0	102.0	68.0	45	12.247
6000 lb						
½	See Note (1)	38.5	12.0	20.0	16	0.623
¾		46.5	15.8	23.0	16	0.907
1		56.5	21.0	28.0	18	1.503
1¼		63.5	29.7	33.0	20	1.701
1½		76.0	34.2	40.0	22	2.948
2		84.0	43.1	42.0	24	3.702
2½		110.0	54.0	57.1	24	8.723
3		121.0	67.7	66.0	31.5	10.660
4		152.0	87.0	70.0	45	19.020
9000 lb						
½	See Note (1)	46.5	6.4	23.0	16	0.779
¾		56.5	11.0	28.0	16	1.333
1		63.5	15.2	33.0	18	1.879
1¼		76.0	22.7	40.0	20	2.126
1½		84.0	27.9	42.0	22	3.685
2		110.0	38.1	54.0	24	4.627
2½		121.0	45.0	66.0	24	10.903
3		146.0	58.4	70.0	31.5	13.325

Cross



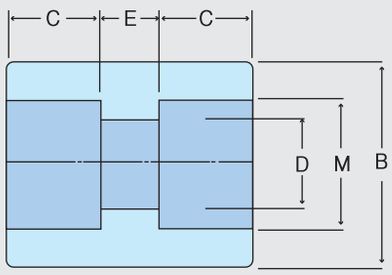
Size	M	B	D	A	C	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be specified by purchaser	26.5	9.4	11.1	10	0.182
⅜		26.5	12.7	13.4	10	0.170
½		34.0	16.1	16.0	13	0.368
¾		38.5	21.2	20.0	14	0.519
1		46.5	27.0	23.0	15	0.680
1¼		56.5	35.4	28.0	17	1.020
1½		63.5	41.2	33.0	18	1.389
2		76.0	52.7	39.0	22	2.325
2½		92.0	62.7	42.0	24	7.484
3		110.0	78.0	57.1	31.5	10.432
4		146.0	102.0	68.0	45	18.144
6000 lb						
½	See Note (1)	38.5	12.0	20.0	16	0.660
¾		46.5	15.8	23.0	16	1.120
1		56.5	21.0	28.0	18	1.730
1¼		63.5	29.7	33.0	20	2.381
1½		76.0	34.2	39.0	22	3.750
2		84.0	43.1	42.0	24	7.860
2½		110.0	54.0	57.1	24	10.600
3		121.0	67.7	66.0	31.5	13.600
4		152.0	87.0	70.0	45	26.000
9000 lb						
½	See Note (1)	46.5	6.4	23.0	16	1.615
¾		56.5	11.0	28.0	16	2.113
1		63.5	15.2	33.0	18	3.896
1¼		76.0	22.7	40.0	20	6.298
1½		84.0	27.9	42.0	22	9.280
2		110.0	38.1	54.0	24	18.741
2½		121.0	45.0	66.0	24	25.702
3		146.0	58.4	70.0	31.5	33.761

- Notes
  (1) For the ' Bore '(M) other standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

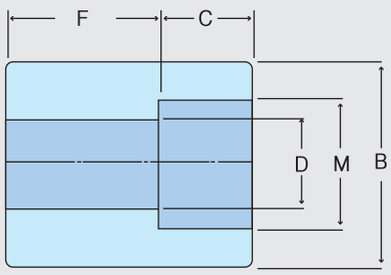
SOCKET WELDING FITTINGS

3000 lb, 6000 lb, 9000 lb

Full Couplling



Half Couplling

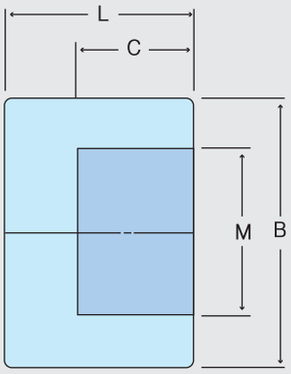


Size	M	B	D	C	E	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be speciffied by purchaser	21.0	9.4	10	6.4	0.05
⅜		25.0	12.7	10	6.4	0.12
½		31.0	16.1	10	9.6	0.12
¾		36.3	21.2	13	9.6	0.18
1		44.5	27.0	13	12.7	0.26
1¼		54.0	35.4	13	12.7	0.35
1½		60.3	41.2	13	12.7	0.47
2		73.5	52.7	16	19.1	0.81
2½		92.5	62.7	16	19.1	1.25
3		106.8	78.0	16	19.1	1.53
4		140.0	102.0	19	19.1	2.91
6000 lb						
½	See Note (1)	32.6	12.0	10	9.6	0.170
¾		40.0	15.8	13	9.6	0.249
1		48.5	21.0	13	12.7	0.420
1¼		57.2	29.7	13	12.7	0.525
1½		64.7	34.2	13	12.7	0.665
2		80.3	43.1	16	19.1	1.240
2½		98.0	54.0	16	19.1	1.640
3		114.3	67.7	16	19.1	2.746
4		160.0	87.0	19	19.1	4.679
9000 lb						
½	See Note (1)	40.4	6.4	10	9.6	0.270
¾		45.5	11.0	13	9.6	0.327
1		55.0	15.2	13	12.7	0.518
1¼		66.5	22.7	13	12.7	0.813
1½		73.0	27.9	13	12.7	0.940
2		88.0	38.1	16	19.1	1.553
2½		108.0	45.0	16	19.1	2.430
3		127.0	58.5	16	19.1	3.721
4		160.0	80.3	19	19.1	5.137

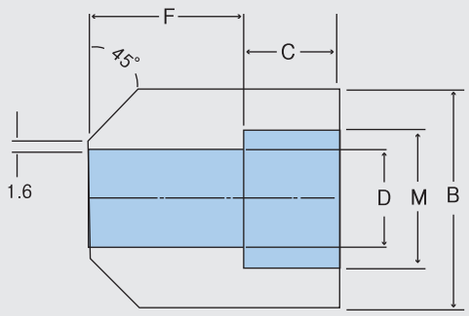
Size	M	B	D	C	E	Unit Weight (kg)
3000 lb						
¼	See Note(1) To be speciffied by purchaser	21.0	9.4	10	15.7	0.058
⅜		25.0	12.7	10	17.5	0.073
½		31.0	16.1	10	22.4	0.138
¾		36.3	21.2	13	23.9	0.203
1		44.5	27.0	13	28.4	0.313
1¼		54.0	35.4	13	30.2	0.431
1½		60.3	41.2	13	31.8	0.593
2		73.5	52.7	16	41.1	1.280
2½		92.5	62.7	16	42.9	1.490
3		106.8	78.0	16	44.5	2.202
4		140.0	102.0	19	47.7	4.250
6000 lb						
½	See Note (1)	32.6	12.0	10	22.4	0.193
¾		40.0	15.8	13	23.9	0.284
1		48.5	21.0	13	28.4	0.488
1¼		57.2	29.7	13	30.2	0.583
1½		64.7	34.2	13	31.8	0.640
2		80.3	43.1	16	41.1	1.726
2½		98.0	54.0	16	42.9	2.247
3		114.3	67.7	16	44.5	3.412
4		160.0	87.0	19	47.7	5.730
9000 lb						
½	See Note (1)	40.4	6.4	10	22.4	0.312
¾		45.5	11.0	13	23.9	0.389
1		55.0	15.2	13	28.4	0.641
1¼		66.5	22.7	13	30.2	0.980
1½		73.0	27.9	13	31.8	1.179
2		88.0	38.1	16	41.1	1.994
2½		108.0	45.0	16	42.9	3.210
3		127.0	58.5	16	44.5	4.597
4		160.0	80.3	19	47.7	7.610

- Notes
  (1) For the ' Bore '(M) other standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Cap



Boss

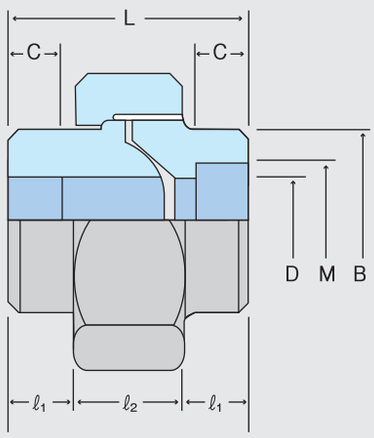


Size	M	B	C	L	Unit Weight (kg)
3000 lb					
¼	See Note(1) To be specified by purchaser	21.0	10	20	0.048
⅜		25.0	10	20	0.076
½		31.0	10	20	0.100
¾		36.3	13	25	0.182
1		44.5	13	27	0.241
1¼		54.0	13	30	0.350
1½		60.3	13	30	0.612
2		73.5	16	36	0.880
2½		92.5	16	42	1.520
3		106.8	16	46	2.208
4		140.0	19	55	4.417
6000 lb					
½	See Note (1)	32.0	10	26	0.055
¾		40.0	13	27	0.023
1		48.5	13	30	0.382
1¼		57.2	13	35	0.511
1½		64.7	13	36	0.735
2		80.3	16	39	1.289
2½		98.0	16	45	2.056
3		114.3	16	52	3.364
9000 lb					
½	See Note (1)	40.4	10	30	0.262
¾		45.5	13	30	0.320
1		55.0	13	33	0.520
1¼		66.5	13	40	1.256
1½		73.0	13	40	1.440
2		88.0	16	43	1.686
2½		108.0	16	50	2.986
3		127.0	16	58	4.666

Size	M	B	D	C	F	Unit Weight (kg)
3000 lb						
¼	See Note(1)	21.0	9.4	10	15.7	0.058
⅜		25.0	12.7	10	17.5	0.073
½		31.0	16.1	10	22.4	0.138
¾		36.3	21.2	13	23.9	0.203
1		44.5	27.0	13	28.4	0.313
1¼		54.0	35.4	13	30.2	0.431
1½		60.3	41.2	13	31.8	0.593
2		73.5	52.7	16	41.1	1.280
2½		92.5	62.7	16	42.9	1.490
3		106.8	78.0	16	44.5	2.202
4		140.0	102.0	19	47.7	4.250
6000 lb						
½	See Note (1)	32.6	12.0	10	22.4	0.193
¾		40.0	15.8	13	23.9	0.284
1		48.5	21.0	13	28.4	0.488
1¼		57.2	29.7	13	30.2	0.583
1½		64.7	34.2	13	31.8	0.640
2		80.3	43.1	16	41.1	1.726
2½		98.0	54.0	16	42.9	2.247
3		114.3	67.7	16	44.5	3.412
4		160.0	87.0	19	47.7	5.730

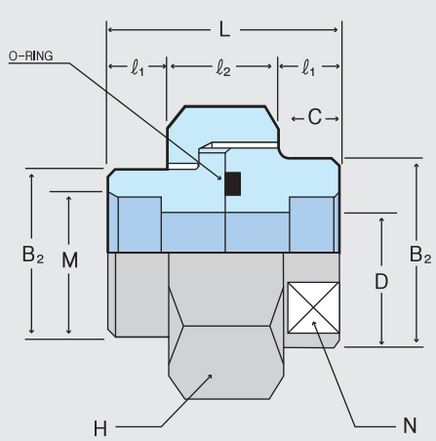
- Notes
  (1) For the ' Bore '(M) other standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

R.J Union



Size	M	B	ℓ 1	ℓ 2	L	C	D	H	Unit Weight (kg)
3000 lb									
¼	See Note(1) To be specified by purchaser	21.0	11.5	18	41	10.0	9.4	35 HEX	0.187
⅜		25.0	14.0	18	46	10.0	12.7	41 HEX	0.245
½		32.0	15.0	21	51	10.0	16.1	46 HEX	0.430
¾		38.0	17.0	23	57	13.0	21.2	58 HEX	0.620
1		45.0	19.5	25	64	13.0	27.0	65 HEX	1.030
1¼		55.0	22.5	27	72	13.0	35.4	76 OCT	1.150
1½		61.0	24.0	30	78	13.0	41.2	83 OCT	1.530
2		76.0	26.0	36	88	16.0	52.7	103 OCT	3.050
2½		95.0	34.0	42	110	18.0	62.7	124 OCT	5.140
3		110.0	37.5	45	120	22.5	78.0	142 OCT	7.120
4		140.0	45.0	50	140	25.0	102.0	176 OCT	12.400
6000 lb									
½	See Note (1)	38.0	17.0	23	57	13	12.0	58 HEX	0.62
¾		45.0	19.5	25	64	13	15.8	65 HEX	0.94
1		55.0	22.5	27	72	13	21.0	76 OCT	1.98
1¼		61.0	24.0	30	78	16	29.7	83 OCT	1.41
1½		76.0	26.0	36	88	16	34.2	103 OCT	2.75
2		95.0	34.0	42	110	16	43.1	124 OCT	5.05
2½		110.0	35.0	45	120	18	54.0	142 OCT	6.87
3		140.0	45.0	50	140	22	67.7	176 OCT	10.85

O-Ring Union



O-RING TYPE (#3000)

Size	M	B_1	B_2	D	C	ℓ 1	ℓ 2	L	N	H	O-Ring	Unit Weight (kg)
3000 lb												
¼	See Note (1)	22.0	24.0	10	10	10	18	38	21	35 HEX	P18	0.16
⅜		27.0	30.0	12	10	10	18	38	26	41 HEX	P20	0.23
½		32.0	35.0	16	10	12	20	44	32	46 HEX	G25	0.33
¾		38.0	42.0	20	13	12	26	50	38	54 HEX	G30	0.54
1		47.0	52.0	25	13	15	26	56	46	63 HEX	G35	0.79
1¼		56.0	60.0	32	13	15	30	60	54	77 HEX	G45	1.10
1½		63.0	68.0	38	13	18	36	72	63	80 OCT	G50	1.54
2		76.0	82.0	48	17	18	36	72	77	95 OCT	G65	2.08

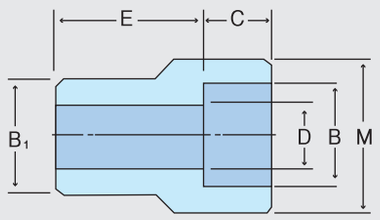
- Notes
  (1) For the ' Bore '(M) other standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Reducer Insert

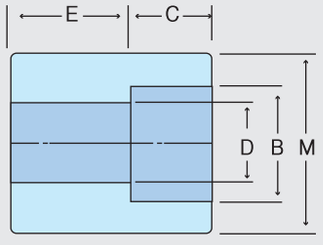
Orifice	Type	M	B_1	B	C(Min.)	E	L	D	Unit Weight (kg)
3000 lb									
3/8 × 1/4	1	22.2	See Note(1) To be specified by purchaser	See Note(1) To be specified by purchaser	9.6	21	16	9.4	0.051
1/2 × 1/4	2	-			9.6	15	-	9.4	0.052
1/2 × 3/8	1	25.4			9.6	24	20	12.7	0.086
3/4 × 1/4	3	-			9.6	19	7	9.4	0.109
3/4 × 3/8	2	-			9.6	19	-	12.7	0.697
3/4 × 1/2	1	31.8			9.6	26	22	16.1	0.146
1 × 3/8	3	25.4			9.6	22	7	12.7	0.161
1 × 1/2	2	-			9.6	22	-	16.1	0.183
1 × 3/4	1	38.1			12.7	29	23	21.4	0.208
1 1/4 × 1/2	3	31.8			9.6	24	7	16.1	0.273
1 1/4 × 3/4	2	-			12.7	24	-	21.4	0.286
1 1/4 × 1	1	46.0			12.7	32	24.5	27.2	0.436
1 1/2 × 3/4	3	38.1			12.7	26	8	21.4	0.348
1 1/2 × 1	2	-			12.7	26	-	27.2	0.384
1 1/2 × 1 1/4	1	55.0			12.7	35	27	35.5	0.463
2 × 1	3	46.0			12.7	29	8	27.2	0.615
2 × 1 1/4	2	-			12.7	29	-	35.5	0.647
2 × 1 1/2	1	65.0			12.7	37	29	41.2	0.661
2 1/2 × 1 1/4	3	55.0			12.7	35	8	35.5	1.183
2 1/2 × 1 1/2	3	65.0			12.7	35	8	41.2	1.107
2 1/2 × 2	1	76.0			15.9	39	30	52.7	1.200
3 × 1 1/2	3	65.0			12.7	39	8	41.2	1.715
3 × 2	3	75.0			15.9	39	10	52.7	1.542
3 × 2 1/2	1	95.0			15.9	51	33.5	65.9	1.825
6000 lb									
3/4 × 1/2	1	38.1	See Note(1)	See Note(1)	12.3	39	23	12.3	0.316
1 × 1/2	1	38.1			12.3	38	24	12.3	0.354
1 × 3/4	1	46.0			16.2	43	26	16.2	0.526
1 1/4 × 1/2	2	-			12.3	29	-	12.3	0.415
1 1/4 × 3/4	1	46.0			16.2	40	28	16.2	0.557
1 1/4 × 1	1	55.0			21.2	45	28	21.2	0.765
1 1/2 × 3/4	2	-			16.2	35	-	16.2	0.619
1 1/2 × 1	1	55.0			21.2	38	28	21.2	0.723
1 1/2 × 1 1/4	1	62.0			29.9	52	32	29.9	0.957
2 × 1	3	-			21.2	43	8	21.2	1.026
2 × 1 1/4	1	62.0			29.9	54	34	29.9	1.137
2 × 1 1/2	1	75.0			34.4	63	34	34.4	0.911
2 1/2 × 1 1/4	3	62.0			29.9	46	8	29.9	1.478
2 1/2 × 1 1/2	2	-			34.4	46	-	34.4	1.881
2 1/2 × 2	1	95.0			43.1	73	36	43.1	2.918
3 × 1 1/2	3	75.0			34.4	50	8	34.4	2.370
3 × 2	2	-			43.1	70	-	43.1	3.313
3 × 2 1/2	1	110.0			57.3	83	38	57.3	3.562

- Notes
  (1) For the 'Bore'(B, B_1) other standard pipe outside diameter, refer to page 20.
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

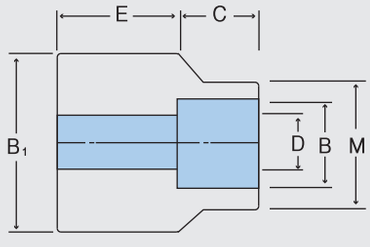
Type 1



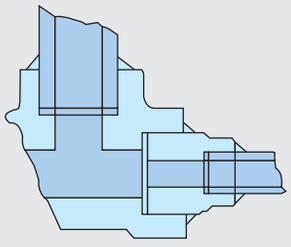
Type 2



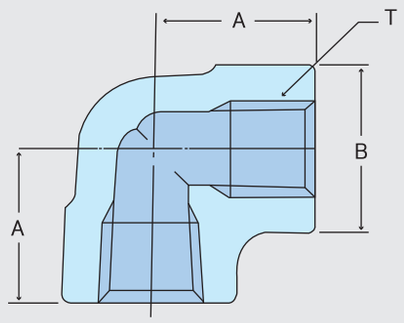
Type 3



Application of Reducer Insert

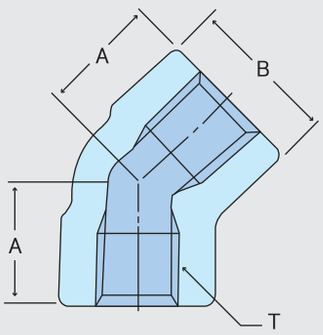


90 ° Elbow



Size T	B	A	Unit Weight (kg)
2000 lb			
¼	26.5	25.4	0.13
⅜	26.5	25.4	0.12
½	34.0	28.5	0.23
¾	38.5	33.5	0.36
1	46.5	38.1	0.55
1¼	56.5	44.5	0.95
1½	63.5	50.8	1.12
2	76.0	60.5	1.96
2½	92.0	64.0	3.25
3	110.0	83.0	5.64
3½	121.0	95.5	6.92
4	146.0	106.5	10.43
3000 lb			
¼	26.5	25.4	0.120
⅜	34.0	28.5	0.235
½	38.5	33.5	0.390
¾	46.5	38.1	0.570
1	56.5	44.5	0.990
1¼	63.5	50.8	1.260
1½	76.0	60.5	2.125
2	84.0	64.0	3.520
2½	110.0	83.0	5.460
3	121.0	95.5	8.000
3½	146.0	106.5	11.230
4	152.0	114.3	13.500
6000 lb			
⅜	38.5	33.5	0.40
½	46.5	38.5	0.68
¾	56.5	44.5	1.13
1	63.5	50.8	1.59
1¼	76.0	60.5	2.60
1½	84.0	64.0	4.32
2	110.0	83.0	7.33
2½	121.0	95.5	9.25
3	146.0	106.5	12.05
3½	152.0	114.3	14.30
4	152.0	114.3	14.10

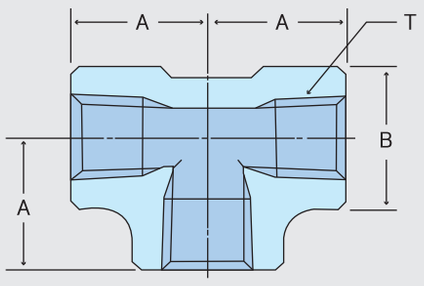
45 ° Elbow



Size T	B	A	Unit Weight (kg)
2000 lb			
¼	26.5	19.1	0.16
⅜	26.5	19.1	0.13
½	34.0	26.0	0.25
¾	38.5	28.6	0.32
1	46.5	30.0	0.43
1¼	56.5	33.3	0.75
1½	63.5	42.0	1.06
2	76.0	46.0	1.49
2½	92.0	53.0	2.45
3	110.0	64.0	4.00
3½	121.0	64.0	5.12
4	146.0	80.0	8.68
3000 lb			
¼	26.5	19.1	0.16
⅜	34.0	26.0	0.28
½	38.5	28.6	0.38
¾	46.5	30.0	0.51
1	56.5	33.3	1.03
1¼	63.5	42.0	1.22
1½	76.0	46.0	2.36
2	84.0	53.0	3.66
2½	110.0	64.0	6.12
3	121.0	64.0	6.12
3½	146.0	80.0	8.40
4	152.0	80.0	11.30
6000 lb			
⅜	38.5	28.6	0.45
½	46.5	30.0	0.72
¾	56.5	33.3	1.00
1	63.5	42.0	1.56
1¼	76.0	46.0	2.29
1½	84.0	53.0	3.80
2	110.0	64.0	5.76
2½	121.0	64.0	7.20
3	146.0	80.0	11.30
3½	152.0	80.0	13.20
4	152.0	80.0	11.80

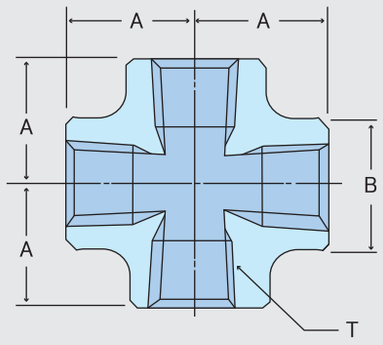
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Tee



Size T	B	A	Unit Weight (kg)
2000 lb			
1/4	26.5	25.4	0.18
3/8	26.5	25.4	0.14
1/2	34.0	28.5	0.26
3/4	38.5	33.5	0.43
1	46.5	38.1	0.65
1 1/4	56.5	44.5	0.91
1 1/2	63.5	50.8	1.25
2	76.0	60.5	2.10
2 1/2	92.0	64.0	3.94
3	110.0	83.0	5.98
3 1/2	121.0	95.5	7.41
4	146.0	106.5	12.36
3000 lb			
1/4	26.5	25.4	0.18
3/8	34.0	28.5	0.32
1/2	38.5	33.5	0.52
3/4	46.5	38.1	0.73
1	56.5	44.5	1.26
1 1/4	63.5	50.8	1.65
1 1/2	76.0	60.5	2.81
2	84.0	64.0	4.35
2 1/2	110.0	83.0	6.26
3	121.0	95.5	10.05
3 1/2	146.0	106.5	14.62
4	152.0	114.3	16.50
6000 lb			
3/8	38.5	33.5	0.59
1/2	46.5	38.1	0.96
3/4	56.5	44.5	1.50
1	63.5	50.8	2.10
1 1/4	76.0	60.5	3.30
1 1/2	84.0	64.0	5.72
2	110.0	83.0	9.64
2 1/2	121.0	95.5	13.40
3	146.0	106.5	16.15
3 1/2	152.0	114.3	18.23
4	152.0	114.3	16.70

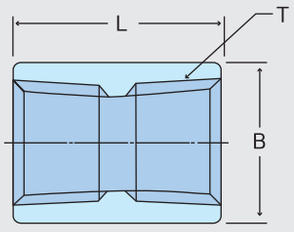
Cross



Size T	B	A	Unit Weight (kg)
2000 lb			
1/4	26.5	25.4	0.14
3/8	26.5	25.4	0.22
1/2	34.0	28.5	0.37
3/4	38.5	33.5	0.52
1	46.5	38.1	0.79
1 1/4	56.5	44.5	1.28
1 1/2	63.5	50.8	1.62
2	76.0	60.5	2.62
2 1/2	92.0	64.0	4.66
3	110.0	83.0	7.10
3 1/2	121.0	95.5	8.85
4	146.0	106.5	14.83
3000 lb			
1/4	26.5	25.4	0.23
3/8	34.0	28.5	0.40
1/2	38.5	33.5	0.63
3/4	46.5	38.1	0.93
1	56.5	44.5	1.47
1 1/4	63.5	50.8	1.78
1 1/2	76.0	60.5	3.42
2	84.0	64.0	5.50
2 1/2	110.0	83.0	7.66
3	121.0	95.5	11.21
3 1/2	146.0	106.5	16.72
4	152.0	114.3	19.00
6000 lb			
3/8	38.5	33.5	0.67
1/2	46.5	38.1	1.12
3/4	56.5	44.5	1.90
1	63.5	50.8	2.90
1 1/4	76.0	60.5	4.20
1 1/2	84.0	64.0	6.65
2	110.0	83.0	10.00
2 1/2	121.0	95.5	16.00
3	146.0	106.5	19.87
3 1/2	152.0	114.3	28.10
4	152.0	114.3	24.60

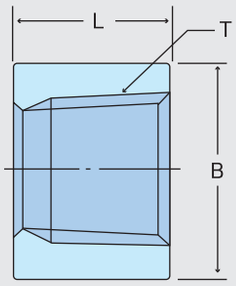
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Full Coupling



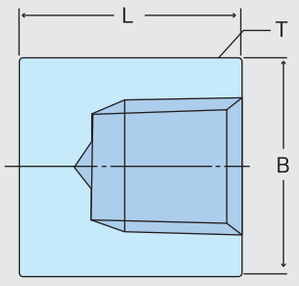
Size T	B	L	Unit Weight (kg)
2000 lb			
¼	19.0	35.0	0.050
⅜	22.0	38.0	0.061
½	28.5	48.0	0.142
¾	35.0	51.0	0.218
1	44.5	61.0	0.418
1¼	57.0	67.0	0.720
1½	63.5	80.0	1.065
2	76.0	86.0	1.400
2½	92.0	92.0	2.550
3	108.0	108.0	3.830
3½	127.0	114.3	5.720
4	140.0	121.0	6.350
3000 lb			
¼	19.0	35.1	0.050
⅜	22.0	38.1	0.061
½	28.5	48.0	0.142
¾	35.0	51.0	0.218
1	44.5	61.0	0.418
1¼	57.0	67.0	0.720
1½	63.5	80.0	1.065
2	76.0	86.0	1.400
2½	92.0	92.0	2.550
3	108.0	108.0	3.830
3½	127.0	114.3	5.720
4	140.0	121.0	6.350
6000 lb			
¼	25.4	35.0	0.120
⅜	31.8	38.0	0.180
½	38.1	48.0	0.280
¾	44.5	51.0	0.450
1	57.0	61.0	0.800
1¼	63.5	67.0	1.400
1½	76.0	80.0	1.950
2	92.0	86.0	2.800
2½	108.0	92.0	3.800
3	127.0	108.0	6.010
3½	140.0	114.3	8.250
4	160.0	121.0	10.700

Half Coupling



Size T	B	L	Unit Weight (kg)
2000 lb			
¼	19.0	17.5	0.025
⅜	22.0	19.0	0.030
½	28.5	24.0	0.070
¾	35.0	25.5	0.100
1	44.5	30.5	0.210
1¼	57.0	33.5	0.365
1½	63.5	40.0	0.520
2	76.0	43.0	0.690
2½	92.0	46.0	1.250
3	108.0	54.0	1.840
3½	127.0	57.5	2.860
4	140.0	60.5	2.510
3000 lb			
¼	19.0	17.5	0.025
⅜	22.0	19.0	0.030
½	28.5	24.0	0.070
¾	35.0	25.5	0.100
1	44.5	30.5	0.210
1¼	57.0	33.5	0.365
1½	63.5	40.0	0.520
2	76.0	43.0	0.690
2½	92.0	46.0	1.250
3	108.0	54.0	1.840
3½	127.0	57.5	2.860
4	140.0	60.5	3.510
6000 lb			
¼	25.4	17.5	0.06
⅜	31.8	19.0	0.09
½	38.1	24.0	0.14
¾	44.5	25.5	0.23
1	57.0	30.5	0.37
1¼	63.5	33.5	0.70
1½	76.0	40.0	0.90
2	92.0	43.0	1.22
2½	108.0	46.0	1.85
3	127.0	54.0	2.95
3½	140.0	57.5	4.12
4	160.0	60.5	5.40

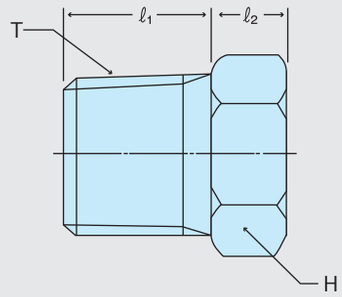
Cap



Size T	B	L	Unit Weight (kg)
2000 lb			
¼	19.0	25	0.05
⅜	22.0	25	0.08
½	28.5	32	0.12
¾	35.0	37	0.20
1	44.5	41	0.31
1¼	57.0	44	0.60
1½	63.5	44	0.73
2	76.0	48	1.05
2½	92.0	60	2.27
3	108.0	65	3.83
3½	127.0	68	4.52
4	140.0	68	6.35
3000 lb			
¼	19.0	25	0.05
⅜	22.0	25	0.08
½	28.5	32	0.12
¾	35.0	37	0.20
1	44.5	41	0.31
1¼	57.0	44	0.60
1½	63.5	44	0.73
2	76.0	48	1.05
2½	92.0	60	2.27
3	108.0	65	3.83
3½	127.0	68	4.52
4	140.0	68	6.35
6000 lb			
¼	25.4	27	0.09
⅜	31.8	27	0.14
½	38.1	33	0.25
¾	44.5	38	0.36
1	57.0	43	0.70
1¼	63.5	46	0.80
1½	76.0	48	1.28
2	92.0	51	2.16
2½	108.0	64	2.72
3	127.0	68	4.95
3½	140.0	70	6.84
4	160.0	75	9.21

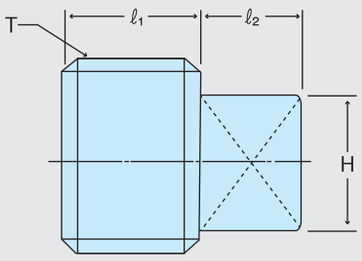
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Hex. Head Plug



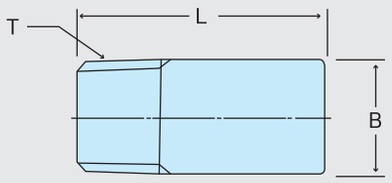
Size T	ℓ 1	ℓ 2	H	Unit Weight (kg)
1/8	11	6.3	11.0	0.03
1/4	13	6.3	16.0	0.03
3/8	14	8.0	18.0	0.06
1/2	18	8.0	22.0	0.08
3/4	19	10.0	27.0	0.14
1	21	10.0	35.0	0.22
1 1/4	22	14.0	44.0	0.51
1 1/2	24	16.0	51.0	0.62
2	25	18.0	63.5	1.02
2 1/2	32	19.0	76.2	1.76
3	40	21.0	99.0	2.66
3 1/2	41	22.0	103.0	3.72
4	42	32.0	117.0	5.90

SQ. Head Plug



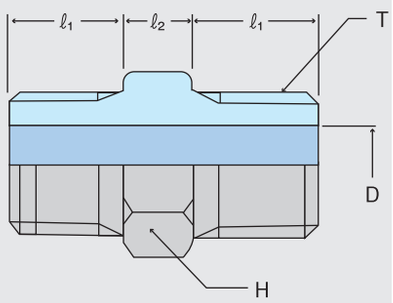
Size T	ℓ 1	ℓ 2	H	Unit Weight (kg)
1/8	9.9	6.6	7.0	0.007
1/4	13.0	6.6	9.5	0.014
3/8	13.0	7.9	11.0	0.028
1/2	15.0	9.9	14.5	0.057
3/4	16.0	11.0	16.0	0.085
1	20.1	13.0	21.0	0.140
1 1/4	21.1	15.0	24.0	0.255
1 1/2	21.1	16.0	28.5	0.397
2	23.1	18.0	33.5	0.680
2 1/2	27.0	20.0	38.1	1.020
3	29.0	21.0	42.9	1.301
3 1/2	30.0	22.2	47.6	2.050
4	32.0	25.0	63.5	3.257

Round Head Plug



Size T	B	L	Unit Weight (kg)
1/8	10.3	35.0	0.057
1/4	13.5	41.3	0.057
3/8	17.5	41.3	0.085
1/2	21.4	44.5	0.170
3/4	27.0	44.5	0.170
1	33.4	50.8	0.340
1 1/4	42.9	50.8	0.340
1 1/2	48.4	50.8	0.710
2	60.3	63.5	1.361
2 1/2	73.0	70.0	2.155
3	88.9	70.0	3.456
3 1/2	101.6	76.2	4.216
4	114.3	76.2	5.838

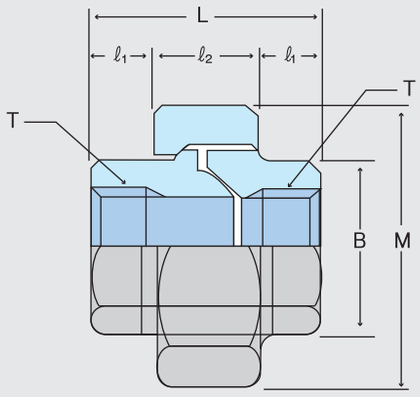
Hex. Nipple



Size T	D	H	ℓ 1	ℓ 2	Unit Weight (kg)
1/8	5.5	12	10	6	0.030
1/4	7.0	17	14	8	0.040
3/8	9.0	19	14	8	0.050
1/2	12.0	24	19	9	0.090
3/4	15.0	30	19	10	0.150
1	20.0	36	24	11	0.270
1 1/4	28.0	46	24	12	0.450
1 1/2	32.0	50	25	14	0.620
2	40.0	65	26	16	1.030
2 1/2	60.0	80	38	18	1.510
3	74.0	95	40	20	2.220
4	97.0	116	50	25	2.813

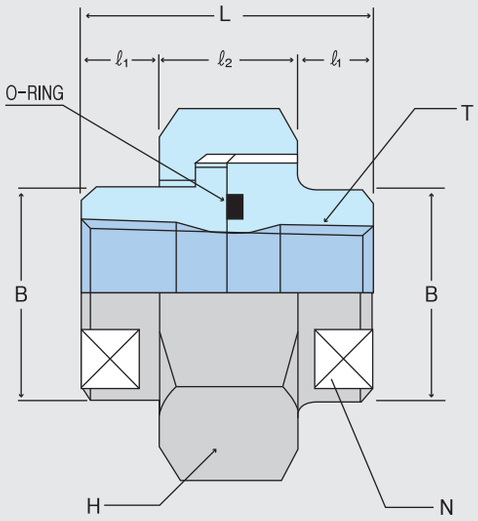
- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

R.J Union



Size T	B	ℓ 1	ℓ 2	L	H	Unit Weight (kg)
3000 lb						
¼	21.0	11.5	18	41	35 HEX	0.19
⅜	25.0	14.0	18	46	41 HEX	0.25
½	32.0	15.0	21	51	46 HEX	0.43
¾	38.0	17.0	23	57	58 HEX	0.62
1	45.0	19.5	25	64	65 HEX	1.03
1¼	55.0	22.5	27	72	76 OCT	1.15
1½	61.0	24.0	30	78	83 OCT	1.54
2	76.0	26.0	36	88	103 OCT	3.05
2½	95.0	34.0	42	110	124 OCT	5.14
3	110.0	37.0	45	120	142 OCT	7.12
4	140.0	45.0	50	140	176 OCT	12.40
6000 lb						
¼	25.0	13.5	19	46	41 HEX	0.25
⅜	32.0	15.0	21	51	46 HEX	0.43
½	38.0	17.0	23	57	58 HEX	0.62
¾	45.0	19.5	25	64	65 HEX	0.94
1	55.0	22.5	27	72	76 OCT	1.08
1¼	61.0	24.0	30	78	83 OCT	1.41
1½	76.0	26.0	36	88	103 OCT	2.75
2	95.0	34.0	42	110	124 OCT	5.05
2½	110.0	37.5	45	120	142 OCT	6.87
3	140.0	45.0	50	140	176 OCT	10.85

O-Ring Union



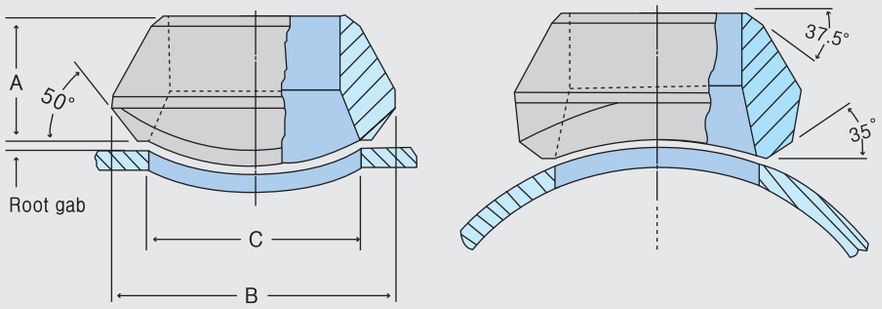
O-RING TYPE (#3000)

Size	B	ℓ 1	ℓ 2	L	N	H	O-Ring	Unit Weight (kg)
3000 lb								
¼	22.0	10	18	38	21	35 HEX	P18	0.16
⅜	27.0	10	18	38	26	41 HEX	P20	0.22
½	32.0	12	20	44	32	46 HEX	G25	0.31
¾	38.0	12	26	50	38	54 HEX	G30	0.45
1	47.0	15	26	56	46	63 HEX	G35	0.76
1¼	56.0	15	30	60	54	77 HEX	G45	1.11
1½	63.0	18	36	72	63	80 OCT	G50	1.33
2	76.0	18	36	72	77	95 OCT	G65	1.86

- Dimensions are in millimeters.
- Dimensional Tolerances See ANSI B16.11 or JIS B2316

Weldolet

STD (Sch40), X-S(Sch80)
Sch160, XX-s



STD, X-S

Outlet Size	A		B		C		APP' Weight(kg)	
	STD	X-S	STD	X-S	STD	X-S	STD	X-S
½	19.1	19.1	34.9	34.9	23.8	23.8	0.08	0.09
¾	22.2	22.2	44.5	44.5	30.2	30.2	0.11	0.14
1	27.0	27.0	54.0	54.0	36.5	36.5	0.23	0.21
1¼	31.8	31.8	65.1	65.1	44.5	44.5	0.36	0.41
1½	33.3	33.3	73.0	73.0	50.8	50.8	0.45	0.50
2	38.1	38.1	88.9	88.9	65.1	65.1	0.80	0.80
2½	41.3	41.3	103.2	103.2	76.2	76.2	1.14	1.20
3	44.5	44.5	122.2	122.2	93.7	93.7	1.82	1.90
4	50.8	50.8	152.4	152.4	120.7	120.7	2.86	2.90
5	57.2	57.2	179.4	179.4	141.3	141.3	4.66	4.70
6	60.3	77.8	215.9	225.4	169.9	169.9	6.45	10.50
8	69.9	98.5	263.5	292.1	220.7	220.7	10.68	16.80
10	77.8	93.7	322.3	323.9	274.7	265.1	17.73	20.90
12	85.7	103.2	377.8	397.4	325.4	317.5	26.82	27.70
14	88.9	100.0	409.6	431.8	357.2	350.8	30.00	31.80
16	93.7	106.4	463.6	466.7	408.0	403.2	34.10	46.40
18	96.8	111.1	520.7	523.9	458.8	455.6	44.10	59.10
20	101.6	119.1	571.5	582.6	508.0	509.6	53.60	71.80
24	115.9	139.7	689.0	708.0	614.4	638.2	100.00	131.80

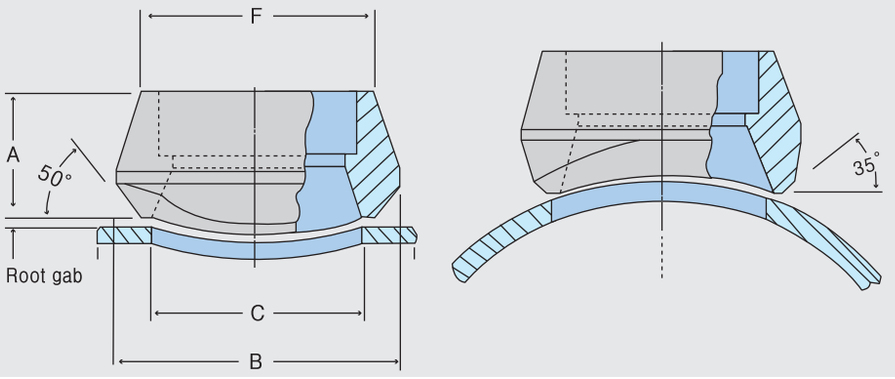
Sch 160, XX-S

Outlet Size	A		B		C		APP' Weight(kg)	
	Sch 160	XX-s	Sch 160	XX-s	Sch 160	XX-s	Sch 160	XX-s
½	28.6	28.6	34.9	34.9	14.3	14.3	0.11	-
¾	31.8	31.8	44.5	44.5	19.1	19.1	0.32	-
1	38.1	38.1	50.8	50.8	25.4	25.4	0.38	0.38
1¼	44.5	44.5	61.9	61.9	33.3	33.3	0.57	0.57
1½	50.8	50.8	69.9	69.9	38.1	38.1	0.80	0.80
2	55.6	55.6	81.0	81.0	42.9	42.9	1.00	1.00
2½	61.9	61.9	96.8	96.8	54.0	54.0	1.54	1.54
3	73.0	73.0	120.7	120.7	73.0	73.0	2.90	2.90
4	84.1	84.1	152.4	152.4	98.4	98.4	4.80	4.80
5	93.7	93.7	187.3	187.3	122.2	122.2	6.50	6.50
6	104.8	104.8	220.7	220.7	146.1	146.1	12.70	12.70
8	111.1	111.1	284.2	284.2	173.0	173.0	20.50	20.50
10	125.4	125.4	312.7	312.7	215.9	215.9	38.60	38.60

- Dimensions are in millimeters.
- Applicable Run Pipe Sizes are from Out-Let size to 36 inch

Sockolet

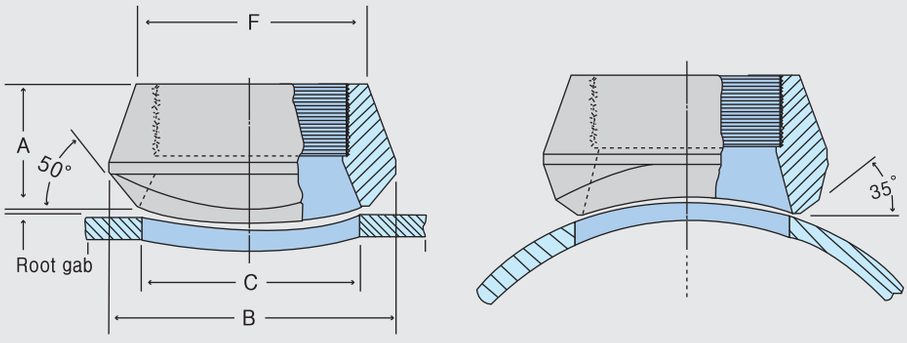
3000#, 6000#



Outlet Size	A		B		C		F		APP' Weight(kg)	
	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#
½	25.4	31.8	34.9	44.5	23.8	19.1	31.8	39.7	0.14	0.23
¾	27.0	36.5	44.5	50.8	30.2	25.4	36.5	45.2	0.15	0.36
1	33.3	39.7	54.0	61.9	36.5	33.3	46.0	57.2	0.27	0.59
1¼	33.3	41.3	65.1	69.9	44.5	38.1	55.6	65.1	0.39	0.73
1½	34.9	42.9	73.0	82.6	50.8	49.2	61.9	76.2	0.47	0.91
2	38.1	58.7	88.9	103.2	65.1	58.7	74.6	92.1	0.73	2.33
2½	46.0	-	103.2	-	76.2	-	87.3	-	1.25	-
3	50.8	-	122.2	-	93.7	-	104.8	-	1.73	-
4	57.2	-	152.4	-	120.7	-	130.2	-	3.30	-

Threadolet

3000#, 6000#

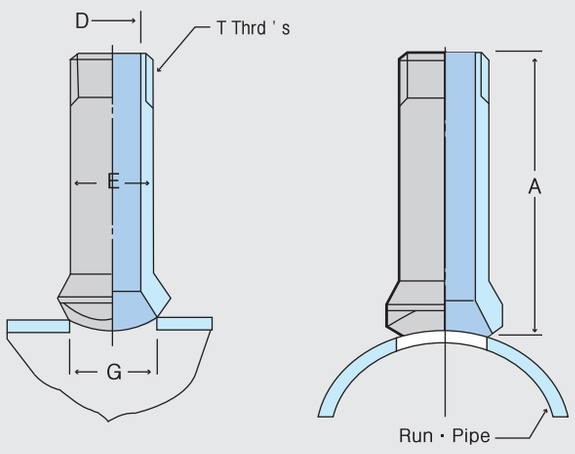


Outlet Size	A		B		C		F		APP' Weight(kg)	
	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#
½	25.4	31.8	34.9	44.5	23.8	19.1	31.8	39.7	0.11	0.20
¾	27.0	36.5	44.5	50.8	30.2	25.4	36.5	46.6	0.16	0.34
1	33.3	39.7	54.0	61.9	36.5	33.3	46.0	57.2	0.28	0.56
1¼	33.3	41.3	65.1	69.9	44.5	38.1	55.6	65.1	0.41	0.71
1½	34.9	42.9	73.0	82.6	50.8	49.2	61.9	76.2	0.45	0.89
2	38.1	52.4	88.9	103.2	65.1	69.9	74.6	92.1	0.80	2.31
2½	46.0	-	103.2	-	76.2	-	87.3	-	1.36	-
3	50.8	-	122.2	-	93.7	-	104.8	-	1.98	-
4	57.2	-	152.4	-	120.7	-	130.2	-	3.23	-

- Dimensions are in millimeters.
- Applicable Run Pipe Sizes are from Out-let Size to 36 inch
- For the 3000# and 6000# Sockolets and Thredolets, Inside Bore, Thread Socket Bore and Socket Depth Dimensions are According to ANSI B16.11

Nippolet

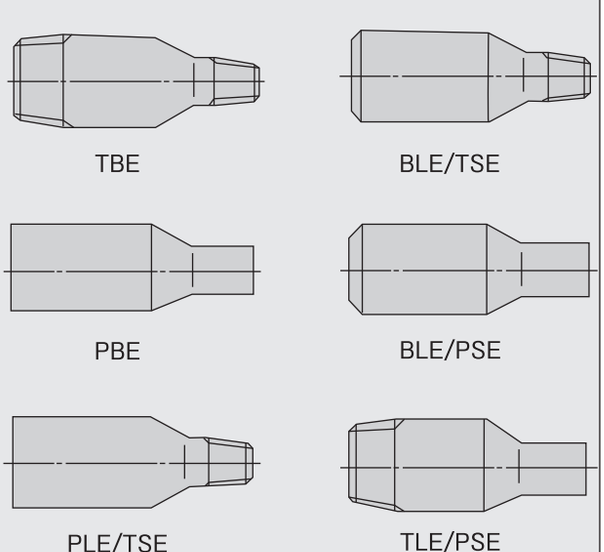
3000#



Run Pipe Size	Outlet Size T	A	G	D	E	Unit Weight (kg)
36-¾	½	88.9	23.9	14.0	21.3	0.36
36-1	¾	88.9	30.2	18.8	26.7	0.56
36-1¼	1	88.9	36.6	24.4	33.3	0.84
36-1½	1¼	88.9	44.5	32.5	42.2	1.22
36-2	1½	88.9	50.8	38.1	48.3	2.00
36-2½	2	88.9	65.0	49.3	60.5	3.12

Swaged Nipple

Mss-Sp-95



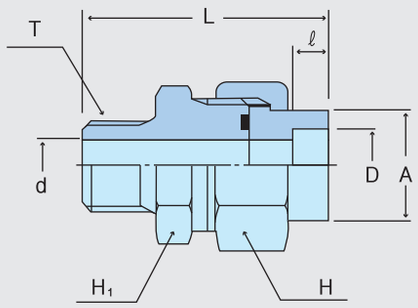
Large and Size	Small end Size	Length (mm)
½	⅜-⅛	70
¾	½-⅛	76
1	¾-⅛	89
1¼	1-⅛	102
1½	1¼-⅛	114
2	1½-⅛	165
2½	2-⅛	178
3	2½-⅛	203
3½	3-⅛	203
4	3½-¼	229
5	4-¼	279
6	5-½	305
8	6-1	330
10	8-2	381
12	10-2	406

TBE : Threaded both end
PBE : Plane both end
PLE/TSE : Plane large end-Threaded small end
BLE/TSE : Beveled large end Threaded small end
BLE/PSE : Beveled large end-Plane small end
TLE/PSE : Threaded large end-Plane small end

- Swaged Nipples are made from Forged Steel or Pipe

MALE CONNECTOR

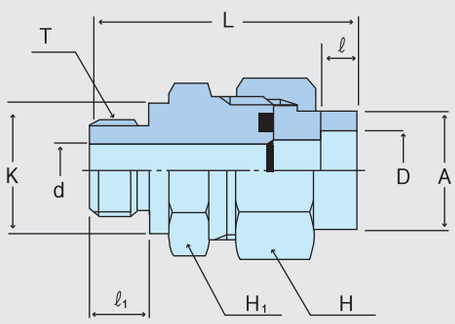
(SWMC-R)



Designations	Nom. Size	D	ℓ	d	A	L	H	H_1	T (PT)	O-RING
SWMC02-02R	¼	14.3	10	7	21	54	HEX36	HEX30	¼	P18
SWMC02-03R	¼	14.3	10	9	21	55	HEX36	HEX30	⅜	P18
SWMC03-03R	⅜	17.8	10	9	25	56	HEX41	HEX36	⅜	P20
SWMC03-04R	⅜	17.8	10	12	25	56	HEX41	HEX36	½	P20
SWMC04-04R	½	22.2	10	12	32	60	HEX46	HEX41	½	G25
SWMC04-06R	½	22.2	10	16	32	66	HEX46	HEX41	¾	G25
SWMC06-06R	¾	27.7	13	16	38	72	HEX55	HEX46	¾	G30
SWMC06-08R	¾	27.7	13	20	38	75	HEX55	HEX46	1	G30
SWMC08-08R	1	34.5	13	20	45	82	HEX60	HEX55	1	G35
SWMC08-10R	1	34.5	13	25	45	84	HEX60	HEX55	1¼	G35
SWMC10-10R	1¼	43.2	13	25	55	90	OCT75	OCT65	1¼	G45
SWMC10-12R	1¼	43.2	13	32	55	91	OCT75	OCT65	1½	G45
SWMC12-12R	1½	49.1	13	32	61	99	OCT85	OCT75	1½	G50
SWMC12-16R	1½	49.1	13	38	61	103	OCT85	OCT75	2	G50
SWMC16-16R	2	61.1	16	38	76	103	OCT100	OCT90	2	G65

MALE CONNECTOR

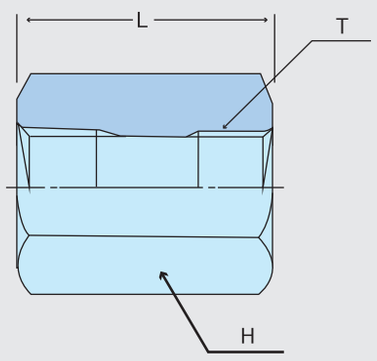
(SWMC-G)



Designations	Nom. Size	D	ℓ	d	K	A	ℓ_1	L	H	H_1	T (PT)	O-RING
SWMC02-02G	¼	14.3	10	7	18	21	12	54	HEX36	HEX30	¼	P18
SWMC02-03G	¼	14.3	10	9	21.5	21	12	54	HEX36	HEX30	⅜	P18
SWMC03-03G	⅜	17.8	10	9	21.5	25	12	55	HEX41	HEX36	⅜	P20
SWMC03-04G	⅜	17.8	10	12	25.5	25	14	57	HEX41	HEX36	½	P20
SWMC04-04G	½	22.2	10	12	25.5	32	14	61	HEX46	HEX41	½	G25
SWMC04-06G	½	22.2	10	16	31.5	32	16	63	HEX46	HEX41	¾	G25
SWMC06-06G	¾	27.7	13	16	31.5	38	16	69	HEX55	HEX46	¾	G30
SWMC06-08G	¾	27.7	13	20	38	38	18	73	HEX55	HEX46	1	G30
SWMC08-08G	1	34.5	13	20	38	45	18	78	HEX60	HEX55	1	G35
SWMC08-10G	1	34.5	13	25	48.5	45	20	80	HEX60	HEX55	1¼	G35
SWMC10-10G	1¼	43.2	13	25	48.5	55	20	84	OCT75	OCT65	1¼	G45
SWMC10-12G	1¼	43.2	13	32	53.5	55	22	86	OCT75	OCT65	1½	G45
SWMC12-12G	1½	49.1	13	32	53.5	61	22	98	OCT85	OCT75	1½	G50
SWMC12-16G	1½	49.1	13	38	66	61	24	99	OCT85	OCT75	2	G50
SWMC16-16G	2	61.1	16	38	66	76	24	103	OCT100	OCT90	2	G65

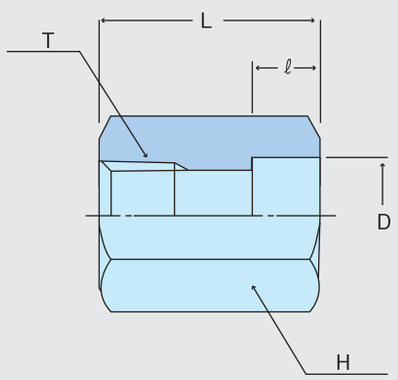
HEX SOCKET (SSA)

Designations	T (PT)	H	L
SSA-01R	1/8	HEX19	30
SSA-02R	1/4	HEX22	30
SSA-03R	3/8	HEX27	30
SSA-04R	1/2	HEX30	40
SSA-06R	3/4	HEX36	42
SSA-08R	1	HEX46	50
SSA-10R	1 1/4	HEX55	55
SSA-12R	1 1/2	HEX60	55
SSA-16R	2	HEX75	64



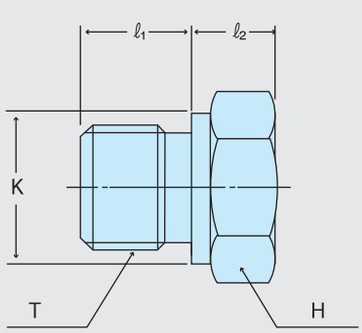
SPECIAL SOCKET (SSB)

Designations	Nom. Size	D	ℓ	L	H	T (PT)
SSB-02WR	1/4	14.3	10	30	HEX22	1/4
SSB-03WR	3/8	17.8	10	30	HEX27	3/8
SSB-04WR	1/2	22.2	10	40	HEX32	1/2
SSB-06WR	3/4	27.7	13	43	HEX38	3/4
SSB-08WR	1	34.5	13	50	HEX46	1
SSB-10WR	1 1/4	43.2	13	55	HEX55	1 1/4
SSB-12WR	1 1/2	49.1	13	55	HEX60	1 1/2
SSB-16WR	2	61.1	16	64	HEX75	2



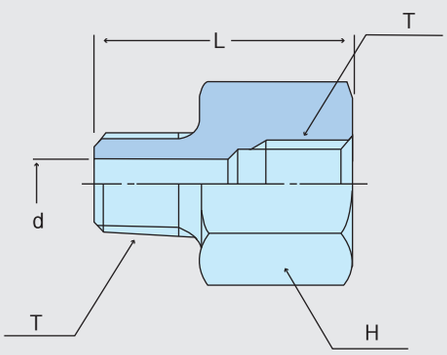
HEX HEAD PLUG (SPC)

Designations	T (PT)	ℓ 1	ℓ 2	K	H	O-RING
SPC-01G	1/8	8	7	14	HEX14	P 8
SPC-02G	1/4	12	9	19	HEX19	P11
SPC-03G	3/8	12	11	22	HEX22	P14
SPC-04G	1/2	14	13	27	HEX27	P18
SPC-06G	3/4	16	16	36	HEX36	P24
SPC-08G	1	18	18	41	HEX41	P29
SPC-10G	1 1/4	20	21	50	HEX50	P38
SPC-12G	1 1/2	21	21	55	HEX55	P44
SPC-16G	2	25	23	75	HEX75	P56



MALE/FEMALE ADAPTER

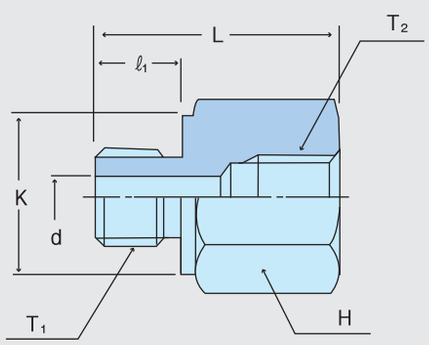
TYPE A (MFAA)



Designations	T (PT)	d	L	H
MFAA-02R	¼	7	33	HEX22
MFAA-03R	⅜	9	36	HEX24
MFAA-04R	½	12	45	HEX30
MFAA-06R	¾	16	50	HEX36
MFAA-08R	1	20	58	HEX46
MFAA-10R	1¼	28	67	HEX55
MFAA-12R	1½	32	69	HEX65
MFAA-16R	2	40	79	HEX75

MALE/FEMALE ADAPTER

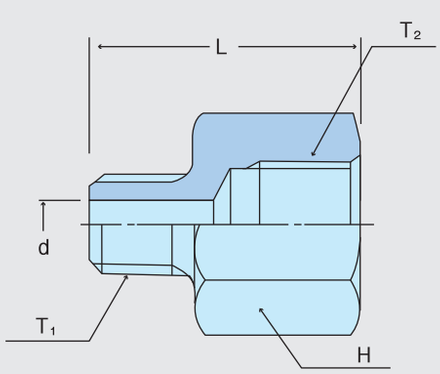
TYPE B (MFAB)



Designations	T_1 (PT)	T_2 (PT)	d	K	ℓ_1	L	H
MFAB-02GR	¼	¼	6	19	12	33	HEX22
MFAB-03GR	⅜	⅜	8	22	12	35	HEX24
MFAB-04GR	½	½	12	27	14	42	HEX30
MFAB-06GR	¾	¾	16	36	16	47	HEX36
MFAB-08GR	1	1	22	41	18	55	HEX46
MFAB-10GR	1¼	1¼	28	50	20	63	HEX55
MFAB-12GR	1½	1½	31	55	21	66	HEX65
MFAB-16GR	2	2	36	75	25	76	HEX75

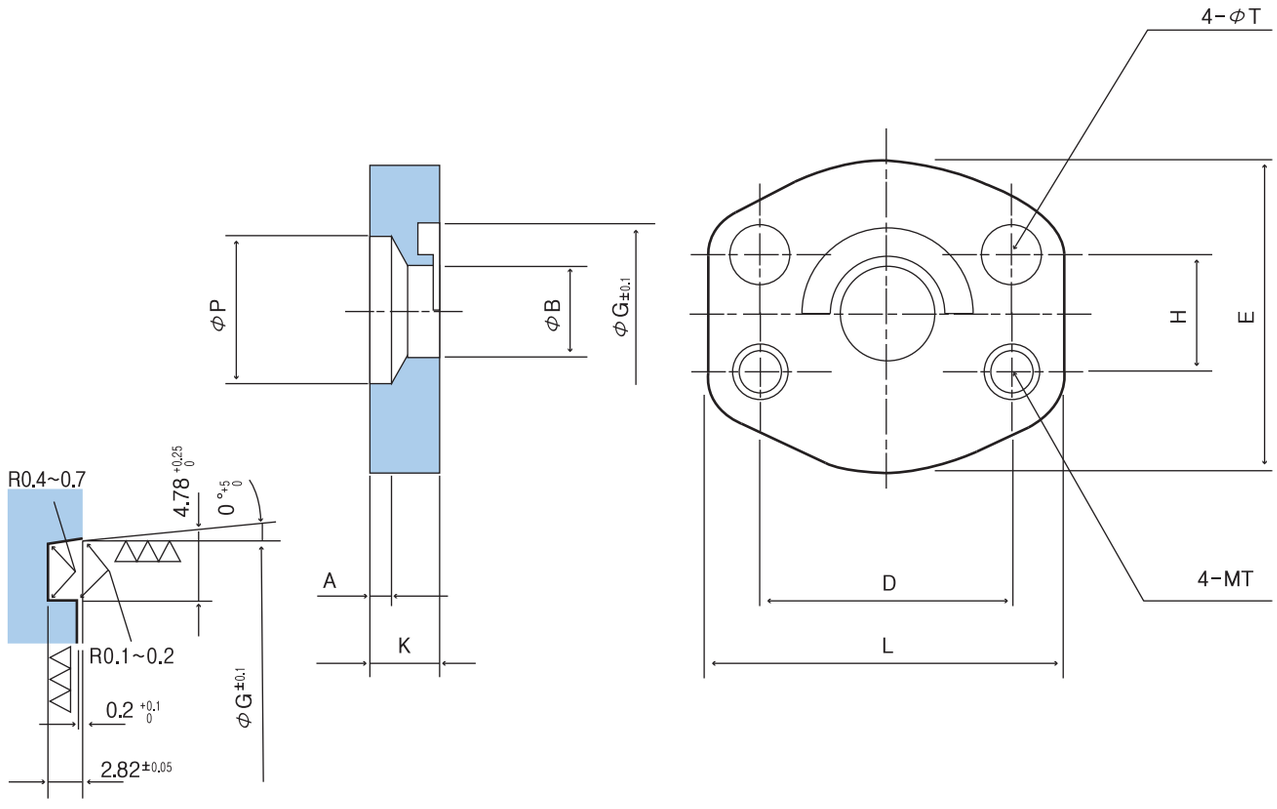
MALE/FEMALE ADAPTER

TYPE C (MFAC)



Designations	T_1 (PT) × T_2 (PT)	d	L	H
MFAC01-02R	⅛ × ¼	4	30	HEX22
MFAC01-03R	⅛ × ⅜	4	31	HEX24
MFAC02-03R	¼ × ⅜	7	35	HEX24
MFAC02-04R	¼ × ½	7	39	HEX30
MFAC02-06R	¼ × ¾	7	42	HEX36
MFAC03-04R	⅜ × ½	9	41	HEX30
MFAC03-06R	⅜ × ¾	9	44	HEX36
MFAC03-08R	⅜ × 1	9	47	HEX46
MFAC04-06R	½ × ¾	12	48	HEX36
MFAC04-08R	½ × 1	12	52	HEX46
MFAC04-10R	½ × 1¼	12	56	HEX55
MFAC06-08R	¾ × 1	16	55	HEX46
MFAC06-10R	¾ × 1¼	16	59	HEX55
MFAC06-12R	¾ × 1½	16	60	HEX65
MFAC08-10R	1 × 1¼	20	64	HEX55
MFAC08-12R	1 × 1½	20	64	HEX65
MFAC08-16R	1 × 2	20	69	HEX75
MFAC10-12R	1¼ × 1½	28	69	HEX65
MFAC10-16R	1¼ × 2	28	73	HEX75
MFAC12-16R	1½ × 2	32	75	HEX75

SOCKET WELD FLANGE



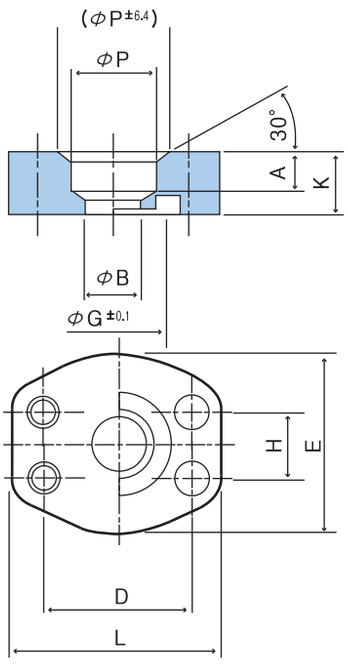
O · RING GROOVE 상세도

LOW PRESSURE 500PSI

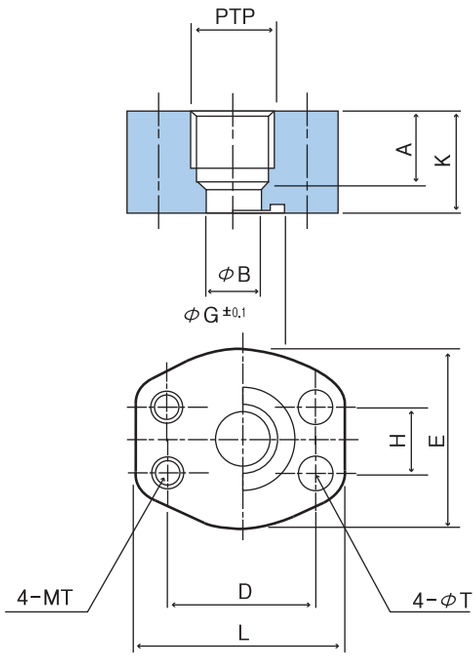
형 식	적용 PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
BB-15S	φ21.7	46	54	17.5	38.1	10	22.2	16	3	28.35	M8 / φ9	-212
BB-20S	φ27.2	52	65	22.2	47.6	12	27.7	21.5	4	31.52	M10	-214
BB-25S	φ34.0	60	70	26.2	52.4	12	34.5	28	4	39.45		-219
BB-32S	φ42.7	73	79	30.2	58.7	12	43.2	36	4	50.62	φ11	-224
BB-40S	φ48.6	82	94	35.7	69.9	15	49.1	42	4	56.97	M12	-226
BB-50S	φ60.5	94	102	42.9	77.8	15	61.0	53	4	66.50		-229
BB-65S	φ76.3	106	114	50.8	88.9	15	77.0	68	4	82.37	φ13.5	-234
BB-80S	φ89.1	130	135	61.9	106.4	20	90.0	80	5	95.07	M16	-238
BB-90S	φ101.6	136	152	69.9	120.7	20	102.4	93	5	107.77		-242
BB-100S	φ114.3	146	162	77.8	130.2	25	115.1	106	6	123.65		-247
BB-125S	φ139.8	170	190	92.1	152.4	25	140.6	130	6	145.87	φ17.5	-254

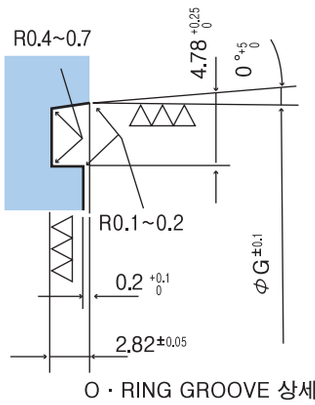
THREAD FLANGE, SOCKET WELD FLANGE

- **용접형** (SOCKET WELD TYPE)



- **나사형** (BSPT TYPE)





O · RING GROOVE 상세도

나사형 / BSPT TYPE **3000PSI**

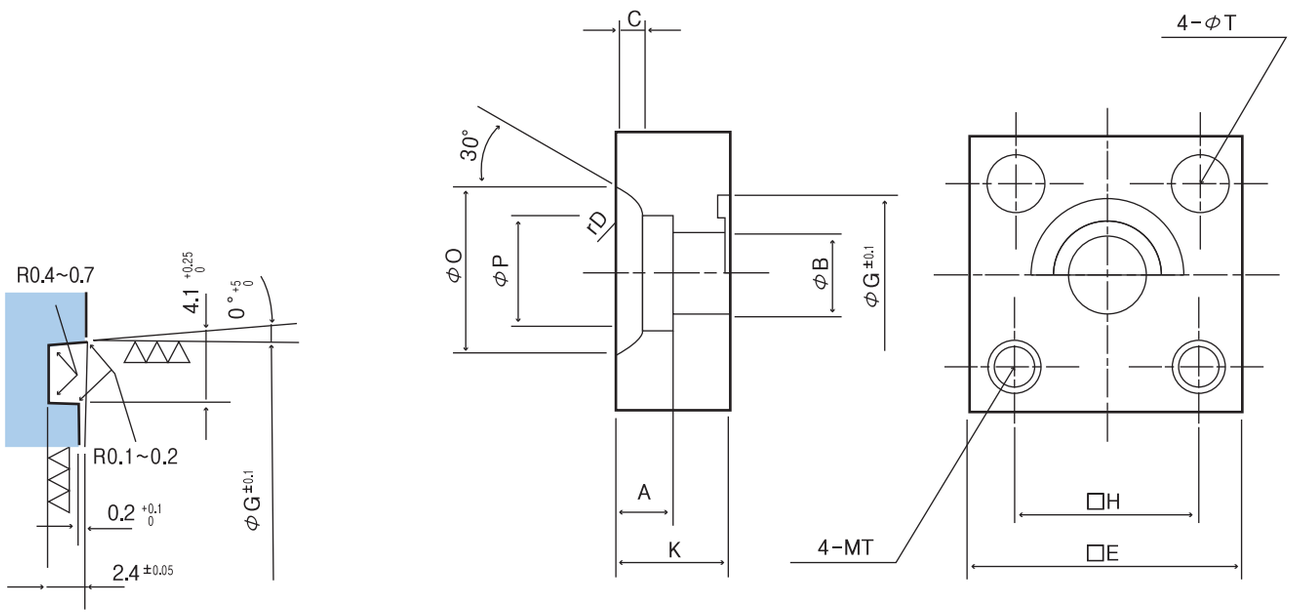
형 식	적용 PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
CL-15T	φ21.7	46	54	17.5	38.1	26	½″	14	19	26.75	M8 / φ9	-211
CL-20T	φ27.2	52	65	22.2	47.6	28	¾″	19	19	31.52	M10 / φ11	-214
CL-25T	φ34.0	60	70	26.2	52.4	32	1″	25	19	39.45		-219
CL-32T	φ42.7	73	79	30.2	58.7	36	1¼″	32	22	50.62		-222
CL-40T	φ48.6	82	94	35.7	69.9	42	1½″	38	24	56.97	M12 / φ13.5	-225
CL-50T	φ60.5	94	102	42.9	77.8	42	2″	51	30	66.50		-228
CL-65T	φ76.3	106	114	50.8	88.9	48	2½″	63	30	82.37		-232
CL-80T	φ89.1	130	135	61.9	106.4	48	3″	73	34	95.07	M16 / φ17.5	-237

용접형 / SOCKET WELD TYPE **3000PSI**

CL-15S	φ21.7	46	54	17.5	38.1	16	22.2	14	10	26.75	M8 / φ9	-211
CL-20S	φ27.2	52	65	22.2	47.6	19	27.7	19	14	31.52	M10 / φ11	-214
CL-25S	φ34.0	60	70	26.2	52.4	23	34.5	25	16	39.45		-219
CL-32S	φ42.7	73	79	30.2	58.7	28	43.2	32	18	50.62		-222
CL-40S	φ48.6	82	94	35.7	69.9	32	49.1	38	19	56.97	M12 / φ13.5	-225
CL-50S	φ60.5	94	102	42.9	77.8	36	61.0	51	22	66.50		-228
CL-65S	φ76.3	106	114	50.8	88.9	48	77.0	63	25	82.37		-232
CL-80S	φ89.1	130	135	61.9	106.4	54	90.0	73	32	95.07	M16 / φ17.5	-237
CL-90S	φ101.6	136	152	69.9	120.7	38	102.4	89	30	107.77		-241
CL-100S	φ114.3	146	162	77.8	130.2	38	115.1	99	30	123.65		-245

SQUARE FLANGE - SOCKET WELD FLANGE

210kg/cm²



O · RING GROOVE 상세도

KS SHA 및 SHB

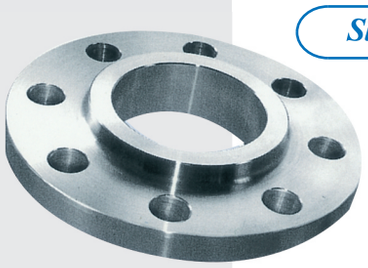
형 식	적용 PIPE	E	H	D	C	K	P	B	A	O	G	T	O-RING AS568
SHA-15	21.7	63	40	5	3.5	22	22.2	16	11	32	30	M10 / φ11	G25
SHA-20	27.2	68	45	5	4.0	22	27.7	20	12	38	35		G30
SHA-25	34.0	80	53	5	4.0	28	34.5	25	14	45	40	M12 / φ13.5	G35
SHA-32	42.7	90	63	5	6.0	28	43.2	31.5	16	56	45		G40
SHA-40	48.6	100	70	5	7.0	36	49.1	37.5	18	63	55	M16 / φ17.5	G50
SHA-50	60.5	112	80	5	7.0	36	61.1	47.5	20	75	65		G60
SHA-65	76.3	140	100	6	9.5	45	77.1	60	22	95	80	M20 / φ22	G75
SHA-80	89.1	155	112	6	11.0	45	90.0	71	25	108	90	M22 / φ24	G85

KS SSA 및 SSB

SSA-15	21.7	54	36	5	3.5	22	22.2	16	11	32	30	M10 / φ11	G25
SSA-20	27.2	58	40	5	4.0	22	27.7	20	12	38	35		G30
SSA-25	34.0	68	48	5	4.0	28	34.5	25	14	45	40	M12 / φ13.5	G35
SSA-32	42.7	76	56	5	6.0	28	43.2	31.5	16	56	45		G40
SSA-40	48.6	92	65	5	7.0	36	49.1	37.5	18	63	55	M16 / φ17.5	G50
SSA-50	60.5	100	73	5	7.0	36	61.1	47.5	20	75	65		G60
SSA-65	76.3	128	92	6	9.5	45	77.1	60	22	95	80	M20 / φ22	G75
SSA-80	89.1	140	103	6	11.0	45	90.0	71	25	108	90	M22 / φ24	G85

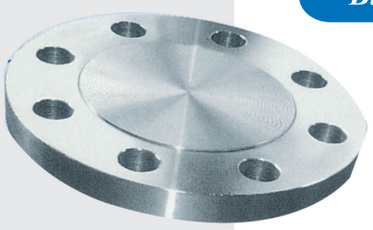
THE TYPE OF FLANGES

Slip-on Flange



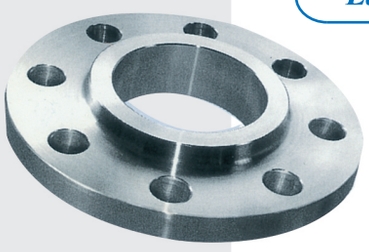
A slip-on flange has a low hub as a pipe is inserted into the flange prior to welding.
It is welded inside and out to ensure sufficient strength and prevent leakage.
Every slip-on flange has a bore slightly larger than the outer diameter of the pipe connected to it. Many users prefer slip-on flanges because of its lower initial cost than that of welding neck flanges. The overall cost difference, however, is not that great because the former requires additional welding.

Blind Flange



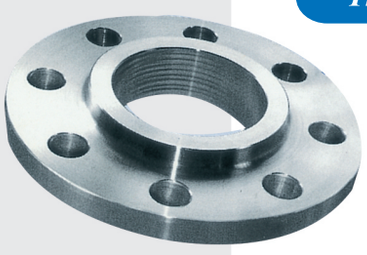
A blind flange has no bore.
This can close down either end of the latter half of a piping system or provide an easier access to a line or vessel that has been closed down but needs to be reopened.

Lap Joint Flange



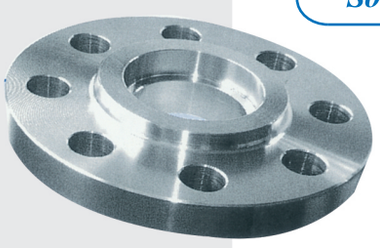
A lap joint flange is eventually identical to the slip-on flange except that it has a radius at the joint between the bore and the flange surface.
The radius is essential for the flange to regulate the lap joint stub end.
A lap joint flange and a lab joint stud end are usually coupled at the assembly system.

Threaded(Screwed) Flange



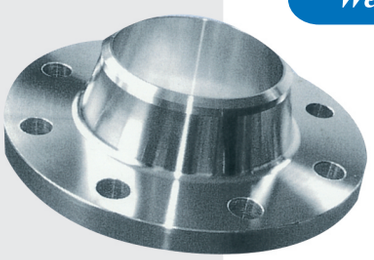
A threaded flange is similar to slip-on flange except that it has thread at the bore.
The most significant advantage of a threaded flange is that it can be connected without welding and used during low pressure process at ambient temperatures or in situations where the risk of explosion is high due to welding.

Socket Welding Flange



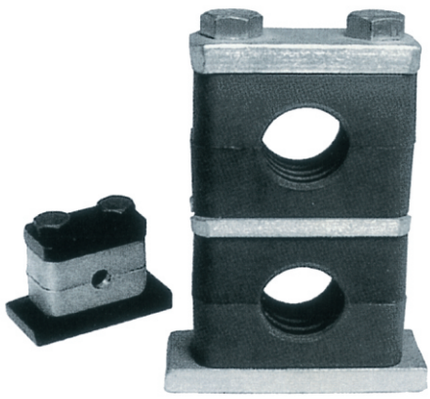
A socket welding flange is similar to a slip on flange except that it has a counterbore.
A conterbore should be slightly larger than the outer diameter of a match pipe to make it easier for a pipe to be inserted into the flange that is similar to a slip-on flange.
The diameter of a slightly smaller bore should be the same as the inner diameter of a match pipe.

Welding Neck Flange



A welding neck flange usually refers to a high hub flange. It is designed to neutralize high pressure at the bottom of the flange by transmitting the pressure to the pipe.
Welding neck flanges are the best designed butt-welded flanges among others currently available thanks to their unique structural properties.
For this reason, they are rather expensive than other flanges.

HEAVY TYPE PIPE CLAMPS



• Design

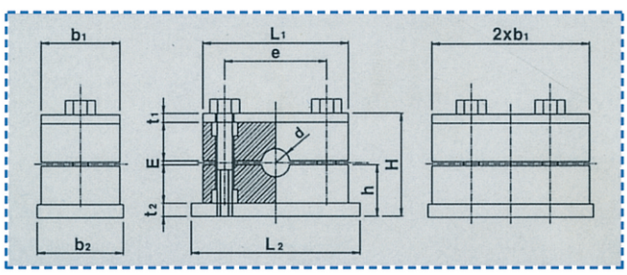
Rail type available for all series
H30, H40, H60 and H90
One double clamp on a weld plate type available for all series
Two single clamps for stacking on a weld plate type available for all series

• Clamps Material

Polypropylene PP
Polyamide PA
Aluminum AL

• Accessories Material

All metal parts available in stainless steel except rail nut



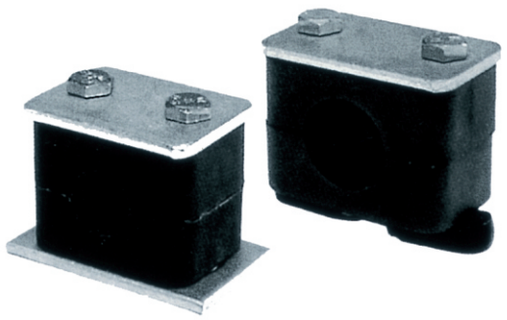
• Specifications

Series	Tubings				Dimensions(mm)										BOLT	Weight (kg)
	SIZE	A	IN	DΦ	L_1	b_1	t_1	L_2	b_2	t_2	h	E	H	e		
H30				6	55	30	8	73	32	9	25	2	52	33	M10× 45	0.3
				8												
	01	6	⅛	10.5												
				12												
	02	8	¼	13.8												
				15												
				16												
	03	10	⅜	17.3												
H40				20	70	30	8	85	32	9	33	2	68	45	M10× 60	0.5
	04	15	½	21.7												
				25												
	06	20	¾	27.2												
				30												
H60				32	85	30	8	100	32	9	38	2	78	60	M10× 75	0.6
	08	25	1	34.0												
				35												
				38												
				40												
	010	32	1¼	42.7												
				45												
H90	012	40	1½	48.6	115	45	10	150	50	12	58	3	119	90	M12×110	1.5
				50												
				55												
	016	50	2	60.5												
				65												
H120				70	150	60	10	200	65	12	72	3	147	122	M16×140	3.0
				73												
	020	65	2½	76.3												
				80												
	024	80	3	89.1												
H160	028	90	3¼	101.6	205	80	16	270	90	16	101	3	205	168	M20×190	7.3
	032	100	4	114.3												
H200	040	125	5	139.8	250	90	16	310	100	16	115	4	234	205	M24×230	9.5
	048	150	6	165.2												
H260	064	200	8	216.4	320	122	25	380	130	25	160	4	324	265	M30×310	23
H390	080	250	10	267.4	466	160	30	520	170	30	235	10	480	395	M33×460	52
	096	300	12	318.5												
H530		350	14	355.6	630	180	36	680	190	36	301	30	632	535	M36×580	108
		400		406.4												

All dimensions are in millimeters unless otherwise specified. All intermediate size are available on request.

STANDARD TYPE PIPE CLAMPS

STANDARD TYPE PIPE CLAMPS

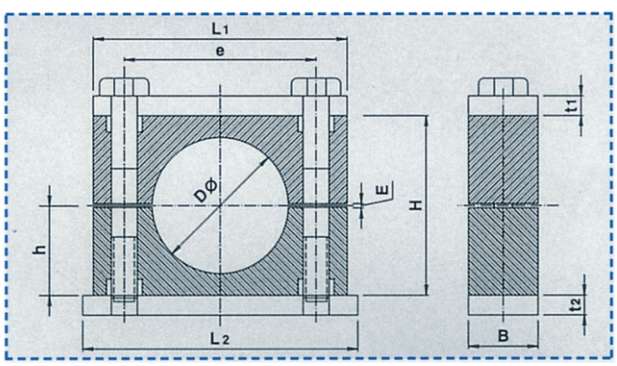


• Design

Rail type available for all series
One double clamp on a weld plate type available for all series
Two single clamps for stacking on a weld plate type available for all series

• Clamps Material

Polypropylene PP
Polyamide PA



• Accessories Material

All metal parts available in stainless steel except rail nut

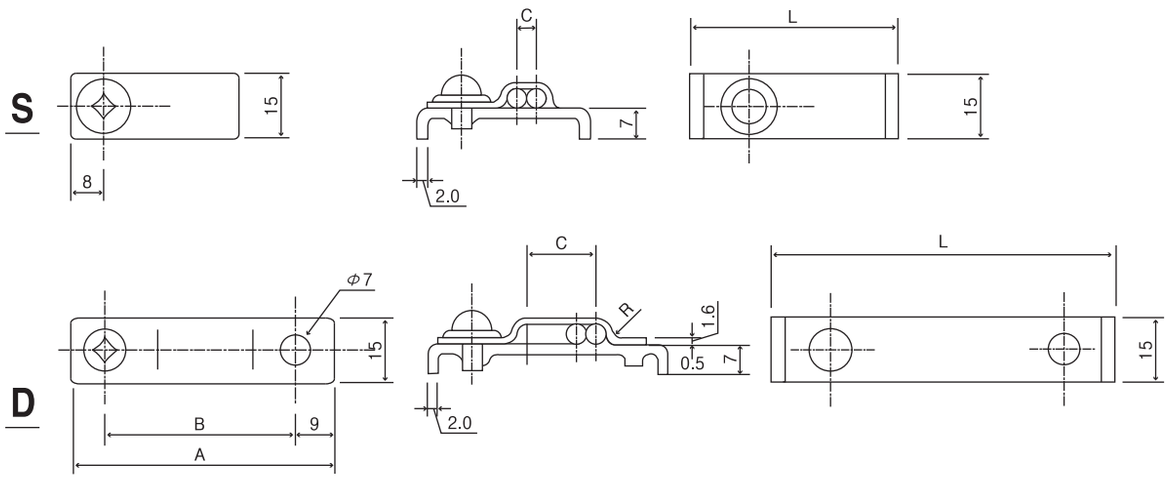
• Specifications

Series	Dϕ			Dimensions									BOLT	kg
	A	IN	mm	L_1	L_2	B	t_1	t_2	E	h	H	e		
C_1			6	28	38	30	3	6	0.4	13	27		M6 × 30	0.08
		1 / 4	6.35											
		5 /16	8											
		3 / 8	9.5											
	6		10											
			12											
C_2			6	37	47	30	3	6	0.5	13	27	20	M6 × 30	0.09
		1 / 4	6.35											
		5 /16	8											
		3 / 8	9.5											
	6		10											
			12											
		1 / 2	12.7											
C_3		1 / 2	12.7	43	53	30	3	6	0.6	16	33	26	M6 × 35	0.1
	8		13.5											
			14											
			15											
		5 / 8	16											
	10		17.2											
			18											
C_4		3 / 4	19	50	60	30	3	6	0.8	17	35	33	M6 × 40	0.1
			20											
	15		21.3											
		7 / 8	22											
		1	25											
C_5	20		27.3	57	67	30	3	6	0.8	21	44	40	M6 × 45	0.13
			28											
			30											
		1¼	32											
C_6		1¼	32	69	79	30	3	6	0.8	27.5	56	52	M6 × 60	0.16
	25		34											
			35											
		1½	38											
	32		42											
C_7		1¾	44.5	86	96	30	3	6	1.0	32	66	66	M6 × 70	0.2
	40		48.3											
		2	50.8											
			54											

All dimensions are in millimeters unless otherwise specified. All intermediate size are available on request.

FIXING CLAMPS

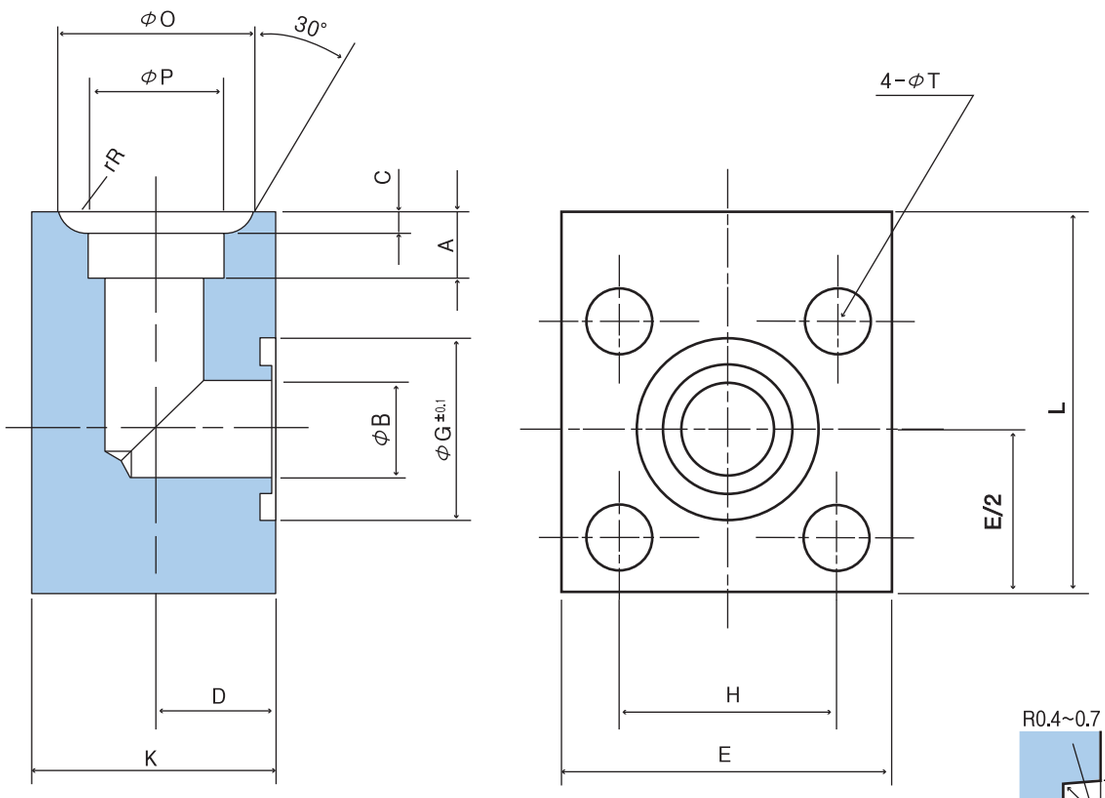
This type clamps are used to fix small sized tubings

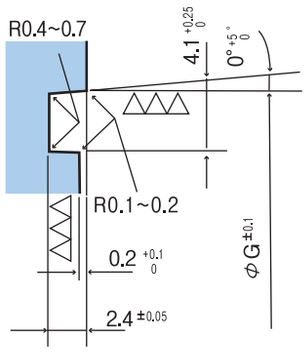


PART NAME		TYPE	TUBINGS	A	B	C	L	R
SWFC	S	a1	Φ4×1	23	-	-	40	2
		a2	Φ4×2	27	-	4	40	2
		a3	Φ4×3	31	-	8	40	2
	D	a4	Φ4×4	56	40	12	62	2
	S	A1	Φ6×1	25	-	-	40	3
		A2	Φ6×2	31	-	6	40	3
	D	A3	Φ6×3	56	40	12	62	3
		A4	Φ6×4	64	48	18	70	3
		A5	Φ6×5	72	56	24	78	3
		A6	Φ6×6	78	62	30	84	3
	S	B1	Φ8×1	25	-	-	40	4
		B2	Φ8×2	32	-	8	40	4
	D	B3	Φ8×3	64	48	16	70	4
		B4	Φ8×4	72	56	24	73	4
		B5	Φ8×5	78	62	32	84	4
		B6	Φ8×6	88	72	40	94	4
		B7	Φ8×7	101	85	48	107	4
		B8	Φ8×8	108	92	56	114	4
	S	D1	Φ10×1	29	-	-	40	5
	D	D2	Φ10×2	64	48	10	70	5
		D3	Φ10×3	72	56	20	78	5
		D4	Φ10×4	78	62	30	84	5
		D5	Φ10×5	88	72	40	94	5
		D6	Φ10×6	101	85	50	107	5
		D7	Φ10×7	108	92	60	114	5
		D8	Φ10×8	118	102	70	122	5
	S	E1	Φ12×1	32	-	-	40	6
	D	E2	Φ12×2	64	48	12	70	6
		E3	Φ12×3	78	62	24	84	6
		E4	Φ12×4	88	72	36	94	6
		E5	Φ12×5	101	85	48	107	6
		E6	Φ12×6	118	102	60	122	6
	S	G1	Φ15×1	56	-	-	62	7.5
	D	G2	Φ15×2	72	56	15	78	7.5
		G3	Φ15×3	88	72	30	94	7.5
		G4	Φ15×4	101	85	45	107	7.5

All dimensions are in millimeters unless otherwise specified. All intermediate size are available on request.

ELBOW FLANGE





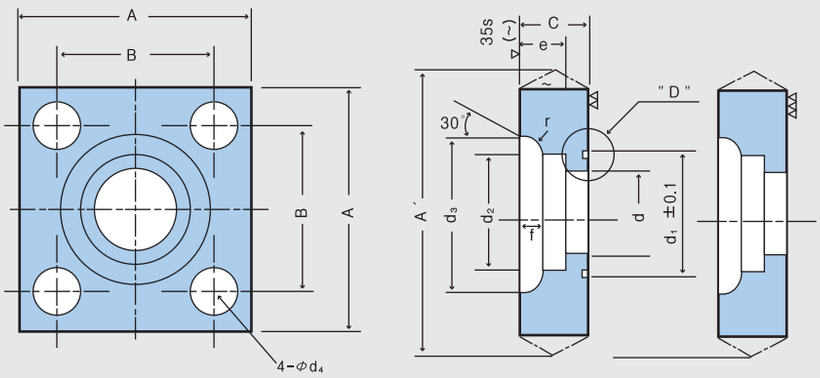
O · RING GROOVE 상세도

ELBOW FLANGE-SOCKET WELD

형 식	적용 PIPE	E	L	H	D	C	K	P	B	A	R	O	G	T	O-RING KS-1B
LSA-15	21.7	54	63	36	20	3.5	40	22.2	16	11	5	32	30	Φ11	G25
LSA-20	27.2	58	70	40	22.5	4	45	27.7	20	12	5	38	35	Φ13	G30
LSA-25	34.0	68	82	48	25	4	50	34.5	25	14	5	45	40		G35
LSA-32	42.7	76	92	56	31.5	6	63	43.2	31.5	16	5	56	45		G40
LSA-40	48.6	92	110	65	35.5	7	71	49.1	37.5	18	5	63	55	Φ17.5	G50
LSA-50	60.5	100	125	73	42.5	7	85	61.1	47.5	20	5	75	65		G60
LSA-65	76.3	128	150	92	53	9.5	106	77.1	60	22	5	95	80	Φ20	G75
LSA-80	89.1	140	170	103	59	11	118	90.0	71	25	6	108	90	Φ24	G85

FLANGE FOR OIL PRESSURE

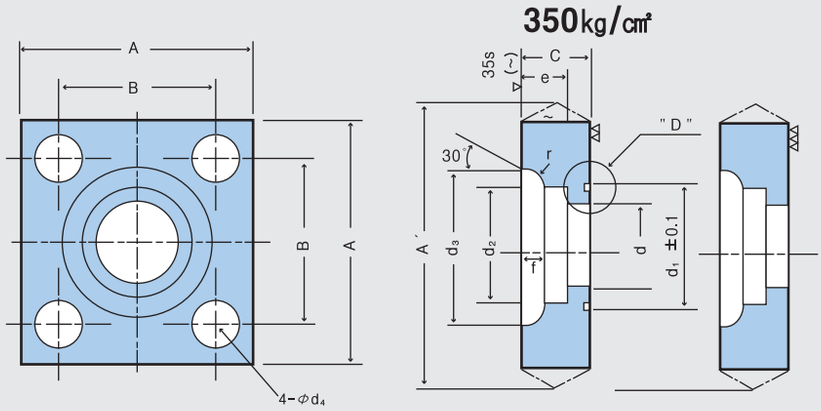
280kg/cm²



Unit : mm

Nominal Bore	A		A´ (MAX)	B		C		d	d1		d2		e	d3	d4	f	r	Weight (kg)
15	66	±1	70	43	±0.2	22	+0	12.3	24	+0.1	22.2	+0.2	12	34	11	4.0	5	0.83
20	72		76	48		25	-1	16.2	30		27.7	-0	12	40	11	4.5	5	0.85
25	85	±1.2	91	58		35	+0	21.2	35		34.5		14	48	13.5	5.0	5	1.64
32	98		104	68		35	-1.5	29.9	45		43.2	+0.3	18	60	17.5	6.5	5	2.03
40	105	±1.5	112	74	±0.4	40		34.4	50		49.1	-0	20	66	17.5	7.5	5	2.66
50	130		138	90		50	+0	43.1	60		61.1		20	79	22	8.0	5	5.14
65	150	±2	161	108		60	-2	57.3	75		77.1	+0.4	25	100	24	10.0	6	7.95
80	170		181	120		65		66.9	85		90.0	-0	25	114	26	12.0	6	11.0

350kg/cm²



Unit : mm

Nominal Bore	A		A´ (MAX)	B		C		d	d1		d2		e	d3	d4	f	r	Weight (kg)
15	68	±1.2	73	45	±0.2	28	+0	12.3	24	+0.1	22.2	+0.2	12	37.5	11	4.0	5	0.88
20	82		87	55		30		16.2	30		27.7	-0	12	43.5	13.5	5.0	5	1.34
25	95		101	65		35	-1.5	21.2	35		34.5		14	53	17.5	5.5	6	2.02
32	100		106	70		35		23.3	40		43.2	+0.3	18	63	17.5	7.0	6	2.16
40	105	±1.5	112	75	±0.4	42		28.2	45		49.1	-0	20	70	17.5	8.0	6	2.84
50	132		140	92		50	+0	38.3	55		61.1		25	84	22	9.0	6	5.30
65	160	±2	170	112		60	-2	48.3	65		77.1	+0.4	30	105	26	12.0	7	9.92
80	190		202	130		68		58.7	75		90.0	-0	30	120	33	13.5	7	14.0

1. Forged Socket Welding. Threaded Fitting Bore

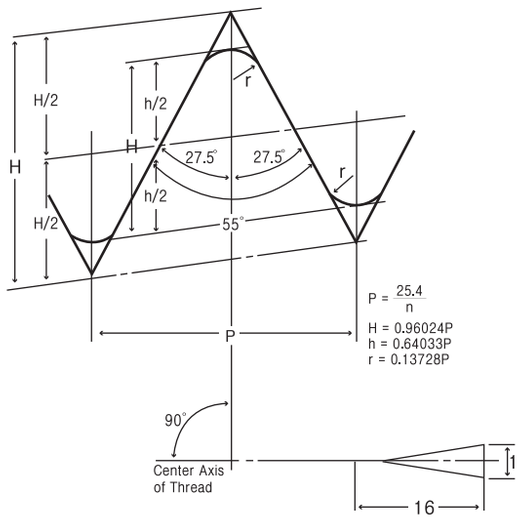
in millimeters.

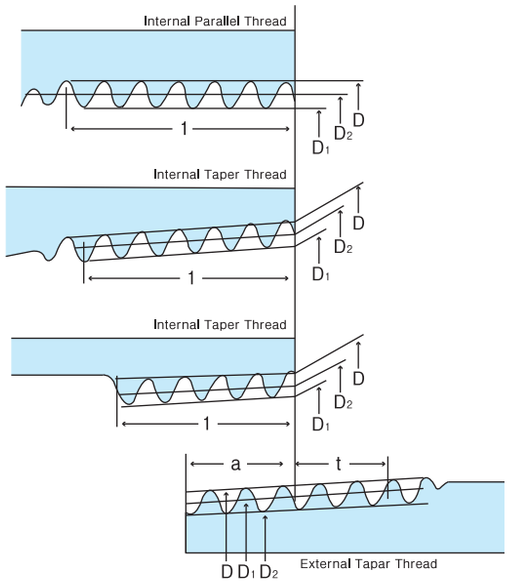
	ANSI B16.11		JIS B2316	
	Socket Welding(M)	Threaded(T)	Socket Welding(M)	Threaded(T)
1/8 "	10.90, 10.65	NPT 1/8	11.0	PT 1/8
1/4 "	14.35, 14.10	NPT 1/4	14.3	PT 1/4
3/8 "	17.80, 17.55	NPT 3/8	17.8	PT 3/8
1/2 "	21.95, 21.70	NPT 1/2	22.2	PT 1/2
3/4 "	27.30, 27.05	NPT 3/4	27.7	PT 3/4
1 "	34.05, 33.80	NPT 1	34.5	PT 1
1 1/4 "	42.80, 42.55	NPT 1 1/4	43.2	PT 1 1/4
1 1/2 "	48.90, 48.65	NPT 1 1/2	49.1	PT 1 1/2
2 "	61.35, 61.10	NPT 2	61.1	PT 2
2 1/2 "	74.20, 83.80	NPT 2 1/2	77.1	PT 2 1/2
3 "	90.15, 89.80	NPT 3	90.0	PT 3
4 "	115.8, 115.45	NPT 4	115.4	PT 4

2. TOLERANCE
Forged Socket Welding. Threaded Fitting(ANSI B16.11)

Nominal Pipe Size	All Fittings				Elbow, Tee, Cross	Coupling	Half Coupling
	Socket Bore Dia	Bore Dia. of Fitting	Concentricity of Bore	Concidence of Axis	Center to Bottom of Socket	Bottom to Bottom of Socket	Bottom to Socket to Opposite Face
1/8-1/4	+0.012 -0.000	±0.03	Socket and Fitting bores with in ±0.030	Maximum variation in alignment of socket and fitting bores for 1/8 in 12	±0.03	±0.06	±0.03
3/8-3/4	+0.012 -0.000	±0.03			±0.06	±0.12	±0.06
1-2	+0.012 -0.000	±0.03			±0.08	±0.16	±0.08
2 1/2-3	+0.012 -0.000	±0.06			±0.10	±0.20	±0.10

3. KS B0222 & JIS B0203 Pipe Threads

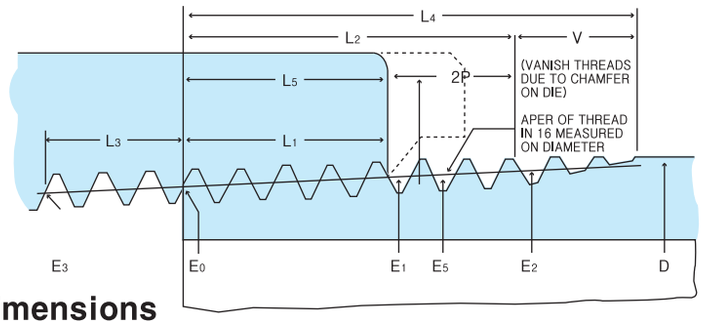




Basic Thread Date

Nominal Size	Number of Threads Per Inch	Screw Thread			Basic Diameter			Position of Basic Diameter			Tolerance on Basic Diameters of Internal Parallel Thread	Effective Thread Length(Min.)				Nominal Pipe Size (For Reference)	
					Extemal Thread			Extemal Thread		Internal Thread		Extemal Thread	Internal Thread				
					Major Diameter d	Pitch Diameter d_2	Minor Diameter d_1	From the Ena´ of Pipe		The End of Pipe		Fitting Allowance	When there is an Incomplate thread or More		When there i s no Incomplate Thread		
					Internal Thread								Internal Taper thread	Internal Par–allel Thread	Internal Taper and Parallel thread	Outside Diameter	Wall thicknese
					Major Diameter	Pitch Diameter	Minor Diameter	Basic length	Tolerance Axially	Tolerance Axially							
	n	P	h	r	D	D_2	D_1	a	±b	±c	±	f	l	l	t		
PT 15(½)	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.00	12.7	15.0	9.1	21.7	2.8
PT 20(¾)	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.60	14.1	16.3	10.2	27.2	2.8
PT 25(1)	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.180	6.40	16.2	19.0	11.5	34.0	3.2
PT 32(1¼)	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.180	6.40	18.5	21.4	13.4	42.7	3.5
PT 40(1½)	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.180	6.40	18.5	21.4	13.4	48.6	3.5
PT 50(2)	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.180	7.50	22.8	25.7	16.9	60.5	3.8
PT 65(2½)	11	2.3091	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.217	9.22	26.7	30.2	18.6	76.3	4.2
PT 80(3)	11	2.3091	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.217	9.22	29.9	33.3	21.1	89.1	4.2
PT 90(3½)	11	2.3091	1.479	0.32	100.330	98.851	97.372	22.23	3.46	3.46	0.217	9.30	31.5	34.9	22.4	101.6	4.2
PT 100(4)	11	2.3091	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.217	10.40	35.9	39.3	25.9	114.3	4.5
PT 125(5)	11	2.3091	1.479	0.32	138.430	136.952	135.472	25.58	3.46	3.46	0.217	11.40	40.1	43.6	29.3	139.8	4.5
PT 150(6)	11	2.3091	1.479	0.32	163.830	162.351	160.872	28.58	3.46	3.46	0.217	11.50	40.1	43.6	29.3	165.2	5.0

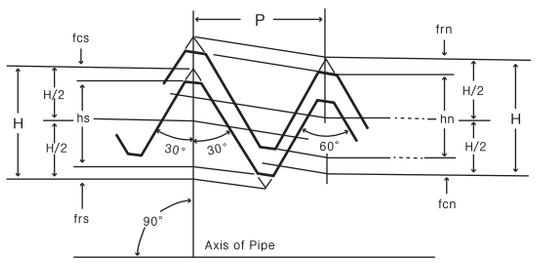
4. ANSI B2.1 Taper Pipe Threads. (Except Dryseal)



Thread Height Dimensions

Thread Element	27 Threads Per inch P= 0.03704	18 Threads Per inch P= 0.05556	14 Threads Per inch P= 0.07143	11½ Threads Per inch P= 0.08696	8 Threads Per inch P= 0.12500
H=0.866p	0.0321	0.4810	0.0619	0.0753	0.1082
hs=hh=0.760p	0.0281	0.0422	0.0543	0.0661	0.0950
frs=frn=0.033p	0.0012	0.0088	0.0024	0.0029	0.0041
fcs=fcn=0.073p	0.0027	0.0041	0.0052	0.0063	0.0091

Tapar 1 in 16 on Diameter
(Shown Exaggerated in Diagram)



Basic Thread Date

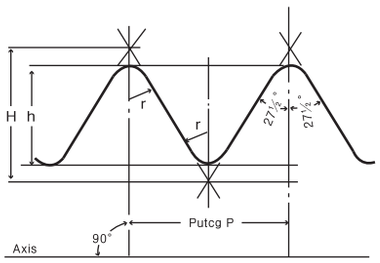
Nominal Pipe Size (NPT)	Outside Diameter of Pipe D	Threads per inch n	Pitch of Threads P	Pich Diameter at beginning of Extemal Threads	Handtight Engagement			Effective Thread, External		
					Length L1		Dia E1	Length L2		Dia E2
					In.	Thds.		In.	Thds.	
1	2	3	4	5	6	7	8	9	10	11
⅛	0.405	27.0	0.03704	0.36351	0.1615	4.36	0.37360	0.2639	7.12	0.38000
¼	0.540	18.0	0.05556	0.47739	0.2278	4.10	0.49163	0.4018	7.23	0.50250
⅜	0.675	18.0	0.05556	0.61201	0.2400	4.32	0.62701	0.4078	7.34	0.63750
½	0.840	14.0	0.07143	0.75843	0.3200	4.48	0.77843	0.5337	7.47	0.79179
¾	1.050	14.0	0.07143	0.96768	0.3390	4.75	0.98887	0.5457	7.64	1.00179
1	1.315	11.5	0.08696	1.21363	0.4000	4.60	1.23863	0.6828	7.85	1.25630
1¼	1.660	11.5	0.08696	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60130
1½	1.900	11.5	0.08696	1.79609	0.4200	4.83	1.82234	0.7235	8.32	1.84130
2	2.375	11.5	0.08695	2.26902	0.4360	5.01	2.29627	0.7565	8.70	2.31630
2½	2.875	8.0	0.12500	2.71953	0.6820	5.46	2.76216	1.1375	9.10	2.79062
3	3.500	8.0	0.12500	3.34062	0.7660	6.13	3.38850	1.2000	9.60	3.41562
3½	4.000	8.0	0.12500	3.83750	0.8210	6.57	3.88881	1.2500	10.00	3.91562
4	4.500	8.0	0.12500	4.33438	0.8440	6.75	4.38712	1.3000	10.40	4.41562

Nominal Pipe Size (NPT)	Wrench Makeup Length for Extemal Thread L2 L1		Wrench Makeup Length for Intenal Thread			Vanish Thread V		Overall Length Extemal Thread L4	Nominal, Complete Extemal Threads		Height of Thread h	Increase in Dia per Thread, 0.0625/n	Basic Mimor Dia at Small End of Pipe, Ka
			Length L3		Dia E3				Length L5	Length E5			
	In.	Thds.	In.	Thds.		In.	Thds.						
1	12	13	14	15	16	17	18	19	20	21	22	23	24
⅛	0.1024	2.76	0.1111	3	0.35656	0.1285	3.47	0.3924	0.1898	0.37537	0.02963	0.00231	0.3339
¼	0.1740	3.13	0.1667	3	0.46697	0.1928	3.47	0.5946	0.2907	0.49556	0.04444	0.00347	0.4329
⅜	0.1678	3.02	0.1667	3	0.60160	0.1928	3.47	0.6006	0.2967	0.63056	0.04444	0.00347	0.5676
½	0.2137	2.99	0.2143	3	0.74504	0.2478	3.47	0.7815	0.3909	0.78286	0.05714	0.00446	0.7013
¾	0.2067	2.89	0.2143	3	0.95429	0.2478	3.47	0.7935	0.4029	0.99286	0.05714	0.00446	0.9105
1	0.2828	3.25	0.2609	3	1.19733	0.3017	3.47	0.9845	0.5089	1.24543	0.06957	0.00543	1.1441
1¼	0.2868	3.30	0.2609	3	1.54083	0.3017	3.47	1.0085	0.5329	1.59043	0.06957	0.00543	1.4876
1½	0.3035	3.49	0.2609	3	1.77978	0.3017	3.47	1.0252	0.5496	1.83043	0.06957	0.00543	1.7265
2	0.3205	3.69	0.2609	3	2.25272	0.3017	3.47	1.0582	0.5826	2.30543	0.06957	0.00543	2.1995
2½	0.4555	3.64	0.2500[7]	2	2.70391	0.4337	3.47	1.5712	0.8875	2.77500	0.10000	0.00781	2.6195
3	0.4340	3.47	0.2500[7]	2	3.32500	0.4337	3.47	1.6337	0.9500	3.40000	0.10000	0.00781	3.2406
3½	0.4290	3.43	0.2500	2	3.82188	0.4337	3.47	1.6837	1.0000	3.90000	0.10000	0.00781	3.7375
4	0.4560	3.65	0.2500	2	4.31875	0.4337	3.47	1.7337	1.0500	4.40000	0.10000	0.00781	4.2344

• Dimensions are in inches.

5. BS21-1973 British Standard Taper Pipe Threads. (Except Dryseal)

H = 0.960237×P
h = 0.460327×P
r = 0.137278×P



Tapar 1 in 16 on Diameter
(Shown Exaggerated in Diagram)

BSP Size (Nominal Bore of Pipe)	No. of Threads per inch	Pitch		Depth of Thread		BASIC-Diameters at Grage Plane						Gauge Lenath							
						Major (Gauge Diameter)		Effective		Minor		Basic		Tolerance Plus and Minus		Max.		Min.	
in.		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
½	14	0.07143	1.814	0.0457	1.162	0.825	20.955	0.7793	19.793	0.7336	18.631	0.3214	8.2	0.0714	1.8	0.3928	10.0	0.2500	6.4
¾	14	0.07143	1.814	0.0457	1.162	1.041	24.441	0.9953	25.279	0.9496	24.117	0.3750	9.5	0.0714	1.8	0.4464	11.3	0.3036	7.7
1	11	0.09091	2.309	0.0582	1.479	1.309	33.249	1.2508	31.770	1.1926	30.291	0.4091	10.4	0.0909	2.3	0.5000	12.7	0.3182	8.1
1¼	11	0.09091	2.309	0.0582	1.479	1.650	41.910	1.5918	40.431	1.5335	38.952	0.5000	12.7	0.0909	2.3	0.5909	15.0	0.4091	10.4
1½	11	0.09091	2.309	0.0582	1.479	1.882	47.803	1.8238	46.324	1.7656	44.845	0.5000	12.7	0.0909	2.3	0.5909	15.0	0.4091	10.4
2	11	0.09091	2.309	0.0582	1.479	2.347	59.614	2.2888	58.135	2.2306	56.656	0.6250	15.9	0.0909	2.3	0.7159	18.2	0.5341	13.6
2½	11	0.09091	2.309	0.0582	1.479	2.960	75.184	2.9018	73.705	2.8436	72.226	0.6875	17.5	0.1364	3.5	0.8239	21.0	0.5511	14.0
3	11	0.09091	2.309	0.0582	1.479	3.460	87.884	3.4018	86.405	3.3436	84.926	0.8125	20.6	0.1364	3.5	0.9486	24.1	0.6761	17.1
4	11	0.09091	2.309	0.0582	1.479	4.450	113.030	4.3918	111.551	4.3336	110.072	1.0000	25.4	0.1364	3.5	1.1364	28.9	0.8636	21.9
5	11	0.09091	2.309	0.0582	1.479	5.450	138.430	5.3918	136.951	5.3336	135.472	1.1250	28.6	0.1364	3.5	1.2614	32.1	0.9886	25.1
6	11	0.09091	2.309	0.0582	1.479	6.460	163.830	6.3918	162.351	6.3336	160.872	1.1250	28.6	0.1364	3.5	1.2614	32.1	0.9886	25.1

BSP Size (Nominal Bore of Pipe)	No. of Threads per inch	Length of Useful Thread on Pipe End Not Less Than.						Fitting Allowance		Wrenhing Allowance		Tolerance of Position of Gauge Plane Relative to Face of Internally Taper Threaded Patrs(Plus and Minus)		BSP Size (Nominal Bore of Pipe)
		For Basic Gauge Length		For Max. Gauge Length		For Min. Gauge Length								
in.		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
½	14	0.5178	13.2	0.5892	15.0	0.4464	11.4	0.1964	5.0	0.1071	2.7	0.0893	2.3	½
¾	14	0.5714	14.5	0.6428	16.3	0.5000	12.7	0.1964	5.0	0.1071	2.7	0.0893	2.3	¾
1	11	0.6591	16.8	0.7500	19.1	0.5682	14.5	0.2500	6.4	0.1364	3.5	0.1136	2.9	1
1¼	11	0.7500	19.1	0.8509	21.4	0.6591	16.8	0.2500	6.4	0.1364	3.5	0.1136	2.9	1¼
1½	11	0.7200	19.1	0.8409	21.4	0.6591	16.8	0.2500	6.4	0.1364	3.5	0.1136	2.9	1½
2	11	0.9204	23.4	1.0113	25.7	0.8295	21.1	0.2954	7.5	0.1818	4.6	0.1136	2.9	2
2½	11	0.0511	26.7	1.1875	30.2	0.9247	23.2	0.3636	9.2	0.2273	5.8	0.1364	3.5	2½
3	11	1.1761	29.8	1.3125	33.3	1.0397	26.3	0.3636	9.2	0.2773	5.8	0.1364	3.5	3
4	11	1.4091	35.8	1.5455	39.3	1.2727	32.3	0.4091	10.4	0.2727	6.9	0.1364	3.5	4
5	11	1.5795	40.1	1.7159	43.6	1.4431	36.6	0.4545	11.5	0.3182	8.1	0.1364	3.5	5
6	11	1.5795	40.1	1.7159	43.6	1.4431	36.6	0.4545	11.5	0.3182	8.1	0.1364	3.5	6

6. Wall Thickness Schedules.

Nomial Pipe Size		Outside Diameter		Nomial Wall Thickness								
A	B	JIS	ANSI	Sch5S	Sch10S	Sch20S	GS	Sch 10	LG(7.9)	Sch 20	Sch 30	STD
8	1/4	13.8	13.7	1.2	1.65	2.0	2.3	-	-	-	-	(2.2)
10	3/8	17.3	17.1	1.2	1.65	2.0	2.3	-	-	-	-	(2.3)
15	1/2	21.7	21.3	1.65	2.1	2.5	2.8	-	-	-	-	(2.8)
20	3/4	27.2	26.7	1.65	2.1	2.5	2.8	-	-	-	-	(2.9)
25	1	34.0	33.5	1.65	2.8	3.0	3.2	-	-	-	-	(3.4)
32	1-1/4	42.7	42.2	1.65	2.8	3.0	3.5	-	-	-	-	(3.6)
40	1-1/2	48.6	48.3	1.65	2.8	3.0	3.5	-	-	-	-	(3.7)
50	2	60.5	60.3	1.65	2.8	3.5	3.8	-	-	-	-	(3.9)
65	2-1/2	76.3	73.0	2.1	3.0	3.5	4.2	-	-	-	-	(5.2)
80	3	89.1	88.9	2.1	3.0	4.0	4.2	-	-	-	-	(5.5)
90	3-1/2	101.6	101.6	2.1	3.0	4.0	4.2	-	-	-	-	(5.7)
100	4	114.3	114.3	2.1	3.0	4.0	4.5	-	-	-	-	(6.0)
125	5	139.8	141.3	2.8	3.4	5.0	4.5	-	-	-	-	(6.6)
150	6	165.2	168.3	2.8	3.4	5.0	5.0	-	5.0**	-	-	(7.1)
175	7	190.7	-	-	-	-	5.3	-	-	-	-	-
200	8	216.3	219.1	2.8	3.8	6.5	5.8	-	5.8**	6.4	7.0	(8.2)
225	9	241.8	-	-	-	-	6.2	-	-	-	-	-
250	10	267.4	273.1	3.4	4.2	6.5	6.6	-	6.6**	6.4	7.8	(9.3)
300	12	318.5	323.9	4.0	4.6	6.5	6.9	-	6.9**	6.4	8.4	9.5
350	14	355.6	355.6	4.0	4.8	7.9	7.9	6.4	7.9	7.9	9.5	9.5
400	16	406.4	406.4	4.2	4.8	7.9	7.9	6.4	7.9	7.9	9.5	9.5
450	18	457.2	457.2	4.2	4.8	7.9	7.9	6.4	7.9	7.9	11.1	9.5
500	20	508.0	508.0	4.8	5.5	7.9	7.9	6.4	7.9	9.5	12.7	9.5
550	22	558.8	558.8	4.8	5.5	-	-	6.4	7.9	9.5	12.7	9.5
600	24	609.6	609.6	5.5	6.4	-	-	6.4	7.9	9.5	14.3	9.5
650	26	660.4	660.4	-	-	-	-	7.9	7.9	12.7	-	9.5
700	28	711.2	711.2	-	-	-	-	7.9	7.9	12.7	15.9	9.5
750	30	762.0	762.0	6.4	7.9	-	-	7.9	7.9	12.7	15.9	9.5
800	32	812.8	812.8	-	-	-	-	7.9	7.9	12.7	15.9	9.5
850	34	863.6	863.6	-	-	-	-	7.9	7.9	12.7	15.9	9.5
900	36	914.4	914.4	-	-	-	-	7.9	7.9	12.7	15.9	9.5
950	38	965.2	965.2	-	-	-	-	-	7.9	-	-	9.5
1000	40	1016.0	1016.0	-	-	-	-	-	7.9	-	-	9.5
1050	42	1066.8	1066.8	-	-	-	-	-	7.9	-	-	9.5
1100	44	1117.6	1117.6	-	-	-	-	-	7.9	-	-	9.5
1150	46	1168.4	1168.4	-	-	-	-	-	7.9	-	-	9.5
1200	48	1219.2	1219.2	-	-	-	-	-	7.9	-	-	9.5
1250	50	1270.0	1270.0	-	-	-	-	-	* 7.9	-	-	* 9.5
1300	52	1320.8	1320.8	-	-	-	-	-	* 7.9	-	-	* 9.5
1350	54	1371.6	1371.6	-	-	-	-	-	* 7.9	-	-	* 9.5
1400	56	1422.4	1422.4	-	-	-	-	-	* 7.9	-	-	* 9.5
1450	58	1473.2	1473.2	-	-	-	-	-	* 7.9	-	-	* 9.5
1500	60	1524.0	1524.0	-	-	-	-	-	* 7.9	-	-	* 9.5

JIS G3448 ANSI B36.10M
JIS G3454 ANSI B36.19M
JIS G3455
JIS G3459

(in mm)

Nomial Wall Thickness									Outside Diameter		Nomial Pipe Size	
Sch 40	Sch 60	XS	Sch 80	Sch 100	Sch 120	Sch 140	Sch 160	XXS	JIS	ANSI	A	B
2.2	2.4	(3.0)	3.0	–	–	–	–	–	13.8	13.7	8	1/4
2.3	2.8	(3.2)	3.2	–	–	–	–	–	17.3	17.3	10	3/8
2.8	3.2	(3.7)	3.7	–	–	–	4.7	7.5	21.7	21.3	15	1/2
2.9	3.4	(3.9)	3.9	–	–	–	5.5	7.8	27.2	26.7	20	3/4
3.4	3.9	(4.5)	4.5	–	–	–	6.4	9.1	34.0	33.5	25	1
3.6	4.5	(4.9)	4.9	–	–	–	6.4	9.7	42.7	42.2	32	1-1/4
3.7	4.5	(5.1)	5.1	–	–	–	7.1	10.2	48.6	48.3	40	1-1/2
3.9	4.9	(5.5)	5.5	–	–	–	8.7	11.1	60.5	60.3	50	2
5.2	6.0	(7.0)	7.0	–	–	–	9.5	14.0	76.3	73.0	65	2-1/2
5.5	6.6	(7.6)	7.6	–	–	–	11.1	15.2	89.1	88.9	80	3
5.7	7.0	(8.1)	8.1	–	–	–	12.7	–	101.6	101.6	90	3-1/2
6.0	7.1	(8.6)	8.6	–	11.1	–	13.5	17.1	114.3	114.3	100	4
6.6	8.1	(9.5)	9.5	–	12.7	–	15.9	19.0	139.8	141.3	125	5
7.1	9.3	(11.0)	11.0	–	14.3	–	18.2	21.9	165.2	168.3	150	6
–	–	–	–	–	–	–	–	–	190.7	–	175	7
8.2	10.3	(12.7)	12.7	15.1	18.2	20.6	23.0	22.2	216.3	219.1	200	8
–	–	–	–	–	–	–	–	–	241.8	–	225	9
9.3	12.7	12.7	15.1	18.3	21.4	25.4	28.6	25.4	267.4	273.1	250	10
10.3	14.3	12.7	17.4	21.4	25.4	28.6	33.3	25.4	318.5	323.9	300	12
11.1	15.1	12.7	19.0	23.8	27.8	31.8	35.7	–	355.6	355.6	350	14
12.7	16.7	12.7	21.4	26.2	30.9	36.5	40.5	–	406.4	406.4	400	16
14.3	19.0	12.7	23.8	29.4	34.9	39.7	45.2	–	457.2	457.2	450	18
15.1	20.6	12.7	26.2	32.5	38.1	44.4	50.0	–	508.0	508.0	500	20
–	22.2	12.7	28.6	34.9	41.3	47.6	54.0	–	558.8	558.8	550	22
17.5	24.6	12.7	31.0	38.9	46.0	52.4	59.5	–	609.6	609.6	600	24
–	–	12.7	–	–	–	–	–	–	660.4	660.4	650	26
–	–	12.7	–	–	–	–	–	–	711.2	711.2	700	28
–	–	12.7	–	–	–	–	–	–	762.0	762.0	750	30
17.5	–	12.7	–	–	–	–	–	–	812.8	812.8	800	32
17.5	–	12.7	–	–	–	–	–	–	863.6	863.6	850	34
19.1	–	12.7	–	–	–	–	–	–	914.4	914.4	900	36
–	–	12.7	–	–	–	–	–	–	965.2	965.2	950	38
–	–	12.7	–	–	–	–	–	–	1016.0	1016.0	1000	40
–	–	12.7	–	–	–	–	–	–	1066.8	1066.8	1050	42
–	–	12.7	–	–	–	–	–	–	1117.6	1117.6	1100	44
–	–	12.7	–	–	–	–	–	–	1168.4	1168.4	1150	46
–	–	12.7	–	–	–	–	–	–	1219.2	1219.2	1200	48
–	–	*12.7	–	–	–	–	–	–	1270.0	1270.0	1250	50
–	–	*12.7	–	–	–	–	–	–	1320.8	1320.8	1300	52
–	–	*12.7	–	–	–	–	–	–	1371.6	1371.6	1350	54
–	–	*12.7	–	–	–	–	–	–	1422.4	1422.4	1400	56
–	–	*12.7	–	–	–	–	–	–	1473.2	1473.2	1450	58
–	–	*12.7	–	–	–	–	–	–	1524.0	1524.0	1500	60

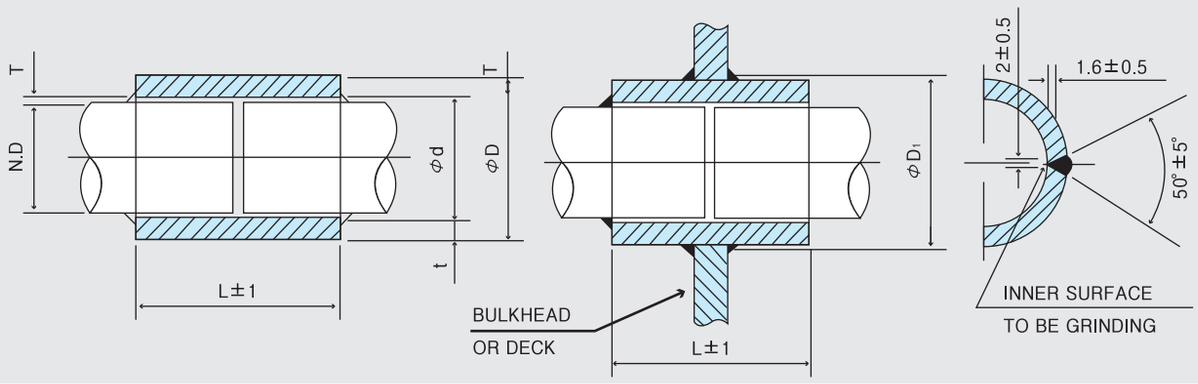
7. Materlal Specifications

ASTM STANDARD

ASTM	Grade	Classification	CHEMICAL COMPOSITION								MECHANICAL PROPERTIES				
			C %	Mn %	P Max. %	S Max. %	Si %	Ni %	Cr %	Mo %	T.S. Min. psi (kg/㎟)	Y.S. Min. psi (kg/㎟)	EL. Min. %	Red Min. %	HB
A-105*		Carbon Steel	Max 0.35	0.60~ 1.05	0.040	0.050	Max 0.35	Max 0.40	Max 0.30	Max 0.12	70,000 (49.2)	36,000 (25.3)	22	30	Max 187
A-181*	60	Carbon Steel	Max 0.35	Max 0.90	0.050	0.050	Max (0.35)				60,000 (42.2)	30,000 (21.1)	22	35	
A-181	70	Carbon Steel	Max 0.35	Max 0.90	0.050	0.050	Max 0.35				70,000 (49.2)	36,000 (25.3)	18	24	
A-182	F1	½ MO	Max 0.28	0.6~ 0.90	0.045	0.045	0.15~ 0.35			0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~ 192
A-182	F5	5Cr-½ MO	Max 0.15	0.30~ 0.60	0.030	0.030	Max 0.50	Max 0.50	4.0~ 6.00	0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	35	143~ 217
A-182	F5a	5Cr-½ MO	Max 0.25	Max 0.6	0.040	0.030	Max 0.50	Max 0.50	4.0~ 6.00	0.44~ 0.65	90,000 (63.3)	65,000 (45.7)	22	50	187~ 248
A-182	F11-1	1¼Cr-½ MO	0.05~ 0.15	0.30~ 0.60	0.030	0.030	0.50~ 1.00		1.00~ 1.50	0.44~ 0.65	60,000 (42.2)	30,000 (21.1)	20	45	121~ 174
A-182	F11-2	1¼Cr-½ MO	0.10~ 0.20	0.30~ 0.80	0.040	0.040	0.50~ 1.00		1.00~ 1.50	0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~ 207
A-182	F11-3	1¼Cr-½ MO	0.10~ 0.20	0.30~ 0.80	0.040	0.040	0.50~ 1.00		1.00~ 1.50	0.44~ 0.65	75,000 (52.7)	45,000 (31.6)	20	30	156~ 207
A-182	F12-1	1Cr-½ MO	0.05~ 0.15	0.30~ 0.60	0.045	0.045	Max 0.5		0.80~ 1.25	0.44~ 0.65	60,000 (42.2)	30,000 (21.1)	20	45	121~ 174
A-182	F12-2	1Cr-½ MO	0.10~ 0.20	0.30~ 0.80	0.040	0.040	0.10~ 0.60		0.80~ 1.25	0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~ 174
A-182	F11	1¼Cr-½ MO	0.10~ 0.20	0.30~ 0.60	0.040	0.040	0.5~ 1.00		1.00~ 1.50	0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~ 207
A-182	F12	1Cr-½ MO	0.10~ 0.20	0.30~ 0.80	0.040	0.040	0.1~ 0.6		0.8~ 1.25	0.44~ 0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~ 207
A-182	F22	2¼Cr-1 MO	Max 0.15	0.30~ 0.60	0.040	0.040	Max 0.50		2.00~ 2.50	0.87~ 1.13	75,000 (52.7)	45,000 (31.6)	20	30	156~ 207
A-182	F304	18Cr-8 Ni	Max 0.08	Max 2.00	0.040	0.030	Max 1.00	8.00~ 11.00	18.00~ 20.00		75,000 (52.7)	30,000 (21.1)	30	50	
A-182	F304L	18Cr-8 Ni Low	Max 0.035	Max 2.00	0.040	0.030	Max 1.00	8.00~ 13.00	18.00~ 20.00		75,000 (49.2)	25,000 (17.6)	30	50	
A-182	F316	18Cr-8 Ni Mo	Max 0.08	Max 2.00	0.040	0.030	Max 1.00	10:00~ 14.00	16.00~ 18.00	2.00~ 3.00	75,000 (52.7)	30,000 (21.7)	30	50	
A-182	F316L	18Cr-8 Ni Mo-Low	Max 0.035	Max 2.00	0.040	0.030	Max 1.00	10:00~ 15.00	16.00~ 18.00	2.00~ 3.00	65,000 (45.7)	25,000 (17.6)	30	50	
A-182	F321	18Cr-8 Ni Ti	Max 0.08	Max 2.00	0.030	0.030	Max 1.00	9.00~ 12.00	Min 17.00		75,000 (52.7)	30,000 (21.1)	30	50	
A-182	F347	18Cr-8 Ni Cb	Max 0.08	Max 2.00	0.030	0.030	Max 1.00	9.00~ 13.00	17.00~ 20.00		75,000 (52.7)	30,000 (21.1)	30	50	
A-350*	LF1	Carbon Steel	Max 0.30	0.75~ 1.05	0.035	0.040	0.15~ 0.30	Max 0.40	Max 0.30	Max 0.12	60,000~ 85,000 (42.2~59.7)	30,000 (21.1)	25	38	
A-350*	LF2	Carbon Steel	Max 0.30	Max 1.35	0.035	0.040	0.15~ 0.30	Max 0.40	Max 0.30	Max 0.12	70,000~ 95,000 (49.2~66.8)	36,000 (25.3)	22	30	
A-350*	LF3	3½ Ni	Max 0.20	Max 0.90	0.035	0.040	0.20~ 0.35	3.25~ 3.75	Max 0.30	Max 0.12	70,000~ 95,000 (49.2~66.8)	37,500 (26.4)	22	35	

- OTHER ELEMENTS : copper(0.40% MAX.), Vanadium(0.03% MAX.), Columbium(0.02% MAX.)
- The sum of Cu, Ni, Cr and Mo shall not be exceed 1.00%
- The sum of Cr and Mo shall not be exceed 0.32%

PIPE CONNECTION PENETRATION 250A AND ABOVE



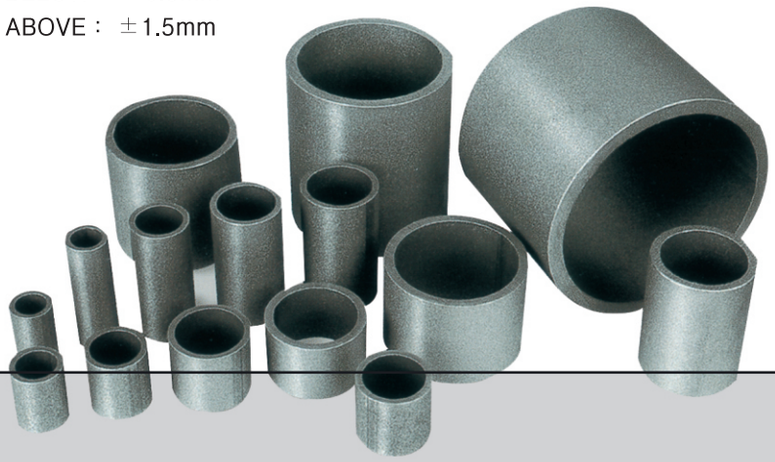
PIPE SIZE		SLEEVE				SLEEVE LENGTH/WEIGHT					SLEEVE MATERIAL	REMARK
						PIPE CONN.		PENETRATION				
N.D	O.D	D	d	t	T	L	WT./kg	L	D1	WT./kg		
10	17.3	26.7	18.9	3.9	0.80	50	0.11	100	30	0.22	(STPG370 SCH. 80 20A)	DRAWN
15	21.7	32.3	23.3	4.5	0.80	50	0.15	100	36	0.31	(STPG370 SCH. 80 25A)	DRAWN
20	27.2	38.6	28.8	4.9	0.80	50	0.20	100	42	0.41	(STPG370 SCH. 80 32A)	DRAWN
25	34.0	46.0	35.8	5.1	0.90	50	0.26	100	50	0.51	(STPG370 SCH. 80 40A)	DRAWN
32	42.7	55.5	44.5	5.5	0.90	50	0.34	100	58	0.68	(STPG370 SCH. 80 50A)	DRAWN
40	48.6	61.4	50.4	5.5	0.90	50	0.37	100	65	0.75	(STPG370 SCH. 80 50A)	DRAWN
50	60.5	76.3	62.3	7.0	0.90	50	0.60	100	80	1.20	(STPG370 SCH. 80 65A)	
65	76.3	95.4	78.2	8.6	0.95	50	0.92	100	100	1.84	(STPG370 SCH. 80 100A)	DRAWN
80	89.1	108.2	91.0	8.6	0.95	75	1.58	150	112	3.17	(STPG370 SCH. 80 100A)	DRAWN
100	114.3	135.4	116.4	9.5	1.05	75	2.21	150	140	4.42	(STPG370 SCH. 80 125A)	DRAWN
125	139.8	165.2	143.2	11.0	1.70	75	3.14	150	170	6.27	(STPG370 SCH. 80 150A)	
150	165.2	193.4	168.0	12.7	1.40	75	4.24	150	197	8.49	(STPG370 SCH. 80 200A)	DRAWN
200	216.3	244.5	219.1	12.7	1.40	75	5.45	150	250	10.89	SS400(244.5×12.7)	
250	267.4	296.0	270.6	12.7	1.60	75	6.65	150	300	13.31	SS400(296.0×12.7)	
300	318.5	347.0	321.6	12.7	1.55	75	7.85	150	352	15.71	SS400(347.0×12.7)	
350	355.6	384.0	358.6	12.7	1.50	75	8.72	150	389	17.44	SS400(384.0×12.7)	
400	406.4	435.0	409.6	12.7	1.60	75	9.92	150	440	19.84	SS400(435.0×12.7)	
450	457.2	486.0	460.6	12.7	1.70	75	11.12	150	492	22.24	SS400(386.0×12.7)	
500	508.0	537.0	511.6	12.7	1.80	75	12.32	150	543	24.63	SS400(537.0×12.7)	
550	558.8	587.0	561.6	12.7	1.40	75	13.49	150	594	26.98	SS400(587.0×12.7)	
600	609.6	638.0	612.6	12.7	1.50	75	14.69	150	645	29.38	SS400(638.0×12.7)	

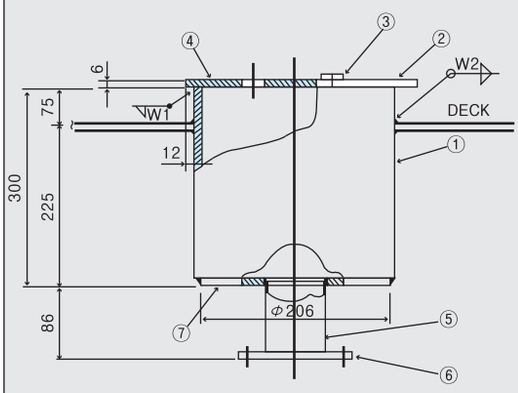
• NOTES

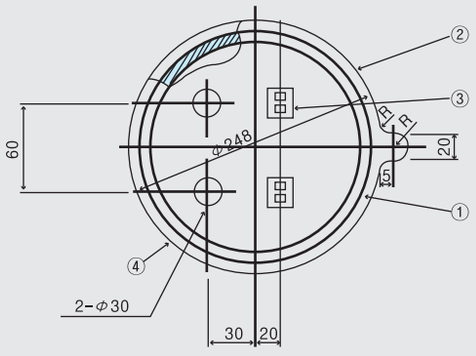
TOLERANCE(O.D) : N. D 150A AND BELOW : ±0.8mm

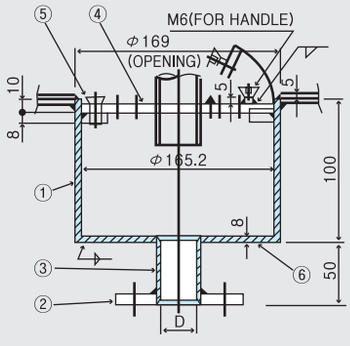
TOLERANCE(O.D) : N. D 200A AND ABOVE : ±1.5mm

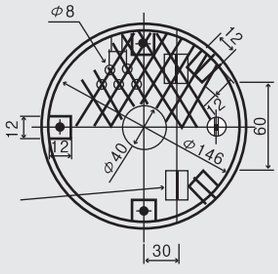
TOLERANCE(THICKNESS) : 12.5%











Drain hopper for air receiver

POS.	DESIGNTION	Q' TY	MATERIAL		REMARK
①	PIPE	1	STPG 370	#80E	200A
③	HINGED COVER	1	SS 400		6t
③	HINGE(WELDING TYPE)	2	SS 400		JIS A 5501
④	WELDED COVER	1	SS 400		6t
⑤	PIPE	1	STPG 370	#80E	40A
⑥	FLANGE	1	SS 400		JIS 5K-40A
⑦	PLATE	1	SS 400		6t

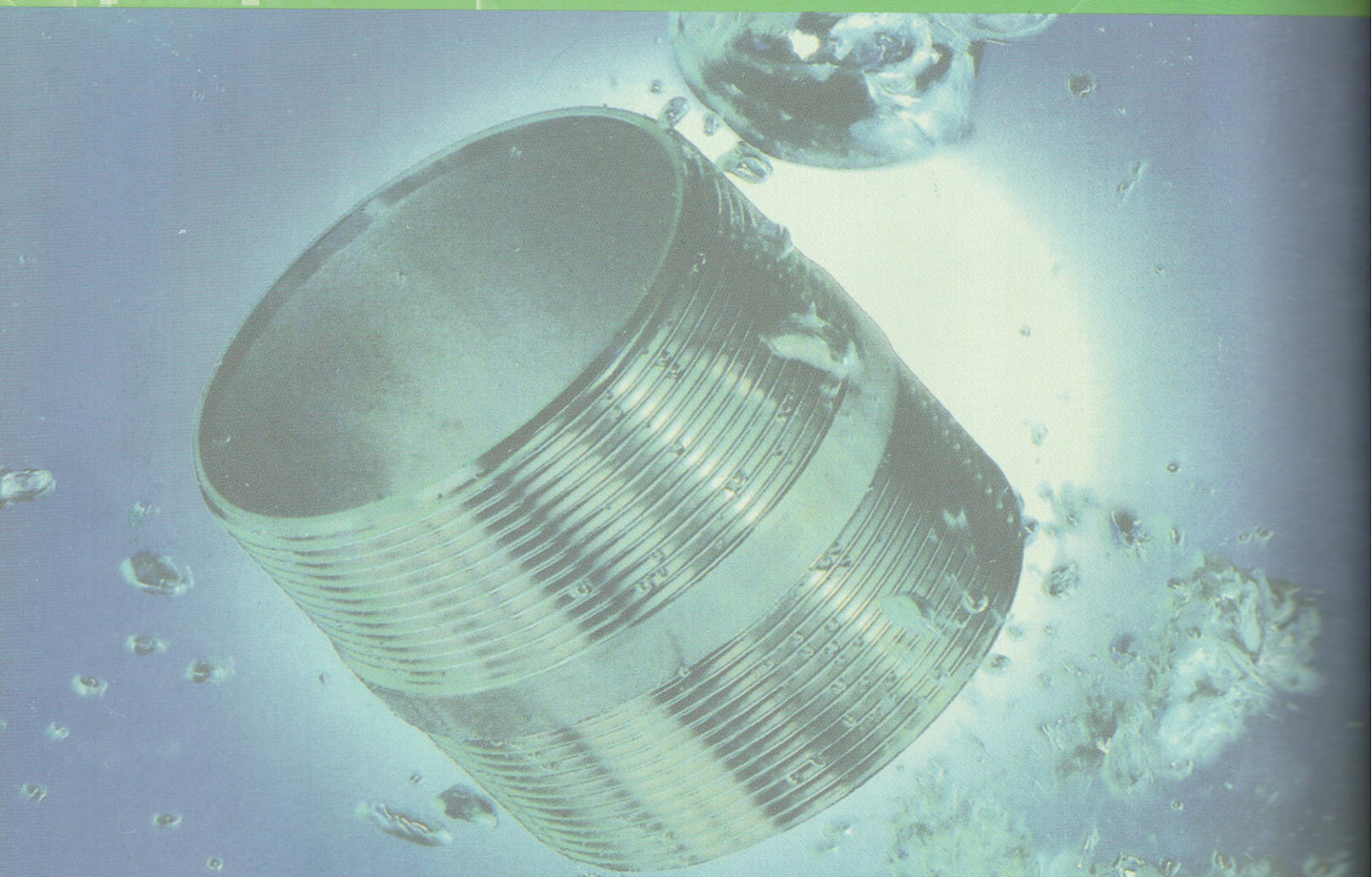
Drain hopper for hull tank

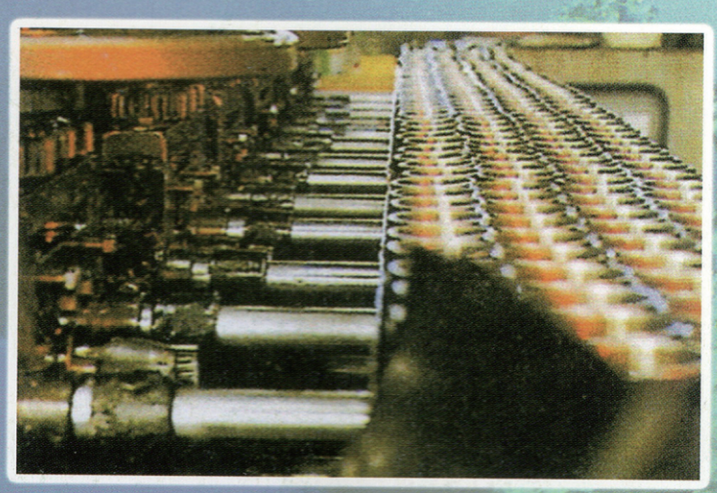
POS.	DESIGNTION	Q' TY	MATERIAL		REMARK
①	BODY(PIPE)	1	STPG 370	#40E	150A
③	FLANGE	1	SS 400		5K-25A/40A
③	PIPE	1	STPG 370	#40E	25A/40A
④	ROSE PLATE	1	SS 400		Φ148×6.0t
⑤	MACHINE SCREW	3	BSBM		M5×15L
⑥	HINGE	2	SUS		25×20

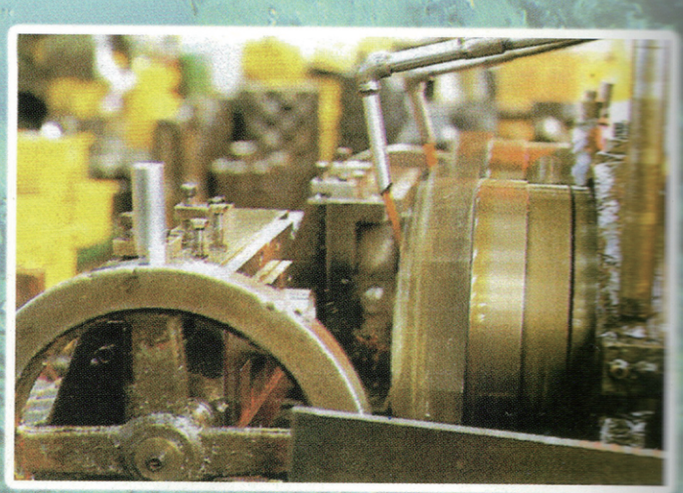
CARBON STEEL & STS STEEL THREADS TYPE PIPE FITTINGS

CARBON & STAINLESS STEEL

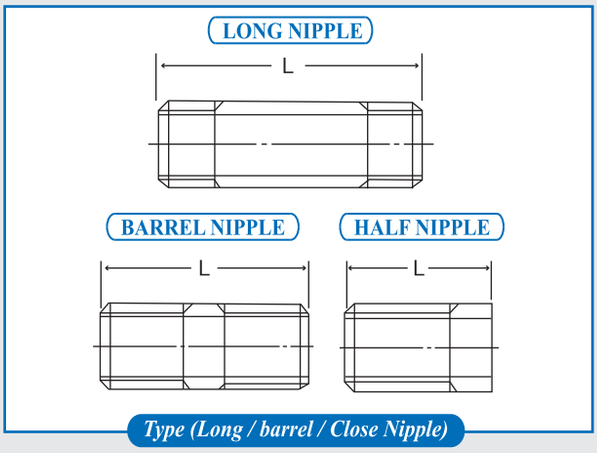
NIPPLES / SOCKETS







NIPPLE PRODUCT OF STANDARDS



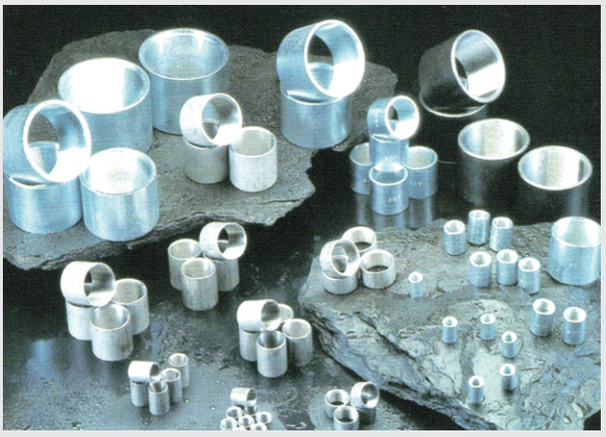
Type (Long / barrel / Close Nipple)

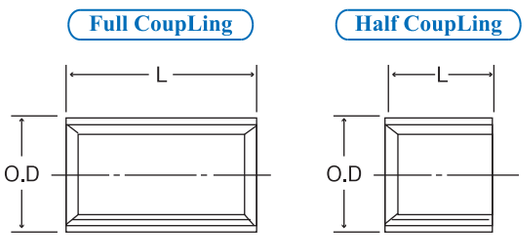
KS B 1533 / JIS B 2302

Unit : mm

Nomimal Size		Pipe Out Diameter			Close	Barrel	Long							
A	B(in)	KS D 3507 JIS G 3452	BS 1387 (Medium)	ASTM A733	Length	Length	Length							
6	1/8	10.5	-	10.3	22	24	50	65	75	100	125	150	250	300
8	1/4	13.8	13.9	13.7	24	26	50	65	75	100	125	150	250	300
10	3/8	17.3	17.4	17.1	26	28	50	65	75	100	125	150	250	300
15	1/2	21.7	21.7	21.3	29	34	50	65	75	100	125	150	250	300
20	3/4	27.2	27.2	26.7	35	38	50	65	75	100	125	150	250	300
25	1	34.0	34.2	33.4	38	42	50	65	75	100	125	150	250	300
32	1 ¼	42.7	42.9	42.2	41	50	-	65	75	100	125	150	250	300
40	1½	48.6	48.8	48.3	44	50	-	65	75	100	125	150	250	300
50	2	60.5	60.8	60.3	51	58	-	65	75	100	125	150	250	300
65	2½	76.3	76.6	73	64	70	-	-	75	100	125	150	250	300
80	3	89.1	89.5	88.9	67	78	-	-	-	100	125	150	250	300
100	4	114.3	114.9	114.33	73	90	-	-	-	100	125	150	250	300
125	5	139.8	140.6	141.3	76	103	-	-	-	-	125	150	250	300
150	6	165.2	166.1	168.3	79	103	-	-	-	-	125	150	250	300

SOCKET(COUPLING) PRODUCT OF STANDARDS





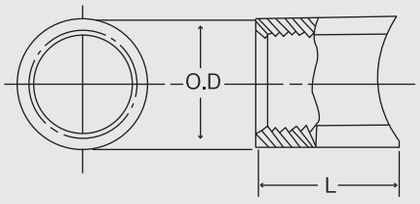
Type (Full / Half Socket)

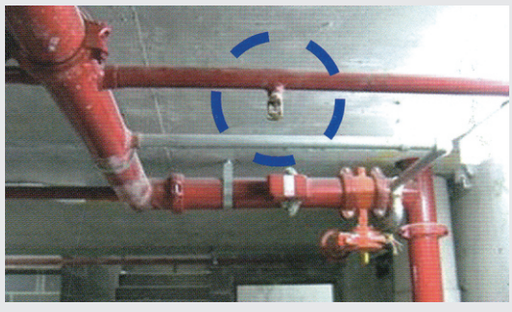
KS B 1533 / JIS B 2302

Unit : mm

Nomimal Size		KS B 1533				JISB2302 / DIN2986		BS1387		Thread No. per Inch	ASTM A865		ANSI C 80.1 (UL-6)		Thread No. per Inch
		CARBON		SUS304		Sokcet		Sokcet			Merchant Coupling		Conduit Coupling		
A	B(in)	O.D	L	O.D	L	O.D	L	O.D	L		O.D	L	O.D	L	
6	1/8	14.0	17	12.5	17	14.0	17	-	-	28	14.3	19.1	-	-	27
8	1/4	18.5	25	17.0	25	18.5	25	18.5	27	19	18.3	28.6	-	-	18
10	3/8	21.3	26	20.5	26	21.3	26	22.0	28	19	22.3	28.6	22.2	32.9	18
15	1/2	26.4	34	24.5	34	26.4	34	27.0	37	14	27.0	38.1	25.7	41.3	14
20	3/4	31.8	36	30.5	36	31.8	36	32.5	39	14	33.4	39.7	31.8	41.7	14
25	1	39.5	43	37.5	43	39.5	43	39.5	46	11	40.0	49.3	38.7	50.0	11½
32	1 ¼	48.3	48	46.4	48	48.3	48	49.0	51	11	48.3	50.8	47.5	51.6	11½
40	1½	54.5	48	52.4	48	54.5	48	56.0	51	11	55.9	50.8	54.7	52.4	11½
50	2	66.3	56	65.0	56	66.3	56	68.0	60	11	69.9	52.4	67.3	54.0	11½
65	2½	82.0	65	80.0	65	82.0	65	84.0	69	11	82.6	77.8	82.6	81.0	8
80	3	95.0	71	92.0	71	95.0	71	98.0	75	11	101.6	81.0	98.3	84.1	8
100	4	122.0	83	120.0	83	122.0	83	124.0	87	11	127.0	87.4	123.8	89.3	8
125	5	147.0	92	145.0	92	147.0	92	151.0	96	11	159.9	93.7	152.4	100.4	8
150	6	174.0	92	173.0	92	174.0	92	178.0	96	11	187.7	100.5	182.9	108.0	8

PROFILE SOCKET PRODUCT



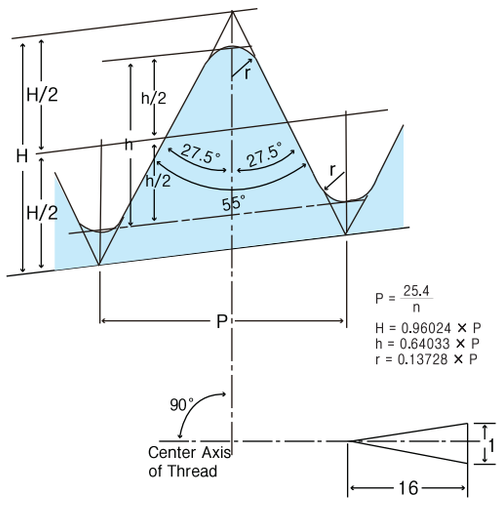


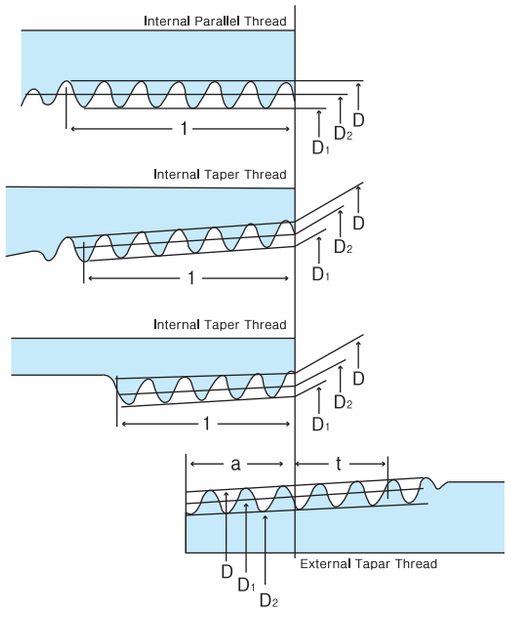
CARBON STEEL SCREWED TYPE PROFILE SOCKET

Unit : mm

Nomimal Size		O.D	L	Description			Nomimal Size		O.D	L	Description		
A	B(in)						A	B(in)					
20	¾	32.5	30	HNSP 2025	20A	× 33.7	32	1¼	49.0	28	HNSP 3294	32A	× 114.3
			29	HNSP 2040		× 48.3				28	HNSP 3296		× 164.1
			28	HNSP 2050		× 60.3	40	1½	56.0	33	HNSP 4040	40A	× 48.3
			26	HNSP 2094		× 114.3				32	HNSP 4050		× 60.3
25	1	39.5	30	HNSP 2525	25A	× 33.7				31	HNSP 4065		× 76.1
			29	HNSP 2532		× 42.4				30	HNSP 4080		× 88.9
			29	HNSP 2540		× 48.3				29	HNSP 4094		× 114.3
			28	HNSP 2550		× 60.3				28	HNSP 4096		× 165.1
			28	HNSP 2565		× 76.1	50	2	68.0	35	HNSP 5050	50A	× 60.3
			28	HNSP 2580		× 88.9				33	HNSP 5065		× 76.1
			28	HNSP 2594		× 114.3				32	HNSP 5080		× 88.9
			27	HNSP 2596		× 165.1				30	HNSP 5094		× 114.3
32	1¼	49.0	32	HNSP 3232	32A	× 42.4				29	HNSP 5096		× 165.1
			31	HNSP 3240		× 48.3	65	2½	84.0	39	HNSP 6565	65A	× 76.1
			31	HNSP 3250		× 60.3				36	HNSP 6580		× 88.9
			29	HNSP 3265		× 76.1				34	HNSP 6594		× 114.3
			28	HNSP 3280		× 88.9				31	HNSP 6596		× 165.1

1. KS B0222 & JIS B0203 Pipe Threads

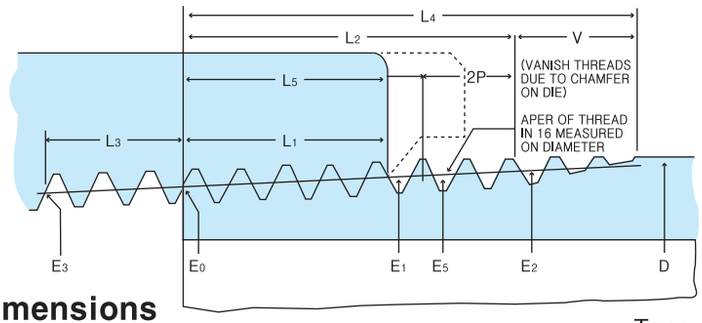




Basic Thread Date

Nominal Size	Number of Threads Per Inch	Screw Thread			Basic Diameter			Position of Basic Diameter			Tolerance on Basic Diameters of Internal Parallel Thread	Effective Thread Length(Min.)				Nominal Pipe Size (For Reference)	
					Extemal Thread			Extemal Thread		Internal Thread		Extemal Thread	Internal Thread				
					Major Diameter	Pitch Diameter	Minor Diameter	From the End of Pipe		The End of Pipe		Fitting Allowance	When there is an Incomplete thread or More		When there i s no Incomplate Thread		
					Internal Thread								Internal Taper Thread	Internal Par–allel Thread	Internal Taper and Parallel Thread		
					Major Diameter	Pitch Diameter	Minor Diameter	Basic Length	Tolerance Axially	Tolerance Axially						Outside Diameter	Wall thicknese
	n	P	h	r	D	D_2	D_1	a	±b	±c	±	f	l	l	t		
PT 15(½)	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.00	12.7	15.0	9.1	21.7	2.8
PT 20(¾)	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.60	14.1	16.3	10.2	27.2	2.8
PT 25(1)	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.180	6.40	16.2	19.0	11.5	34.0	3.2
PT 32(1¼)	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.180	6.40	18.5	21.4	13.4	42.7	3.5
PT 40(1½)	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.180	6.40	18.5	21.4	13.4	48.6	3.5
PT 50(2)	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.180	7.50	22.8	25.7	16.9	60.5	3.8
PT 65(2½)	11	2.3091	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.217	9.22	26.7	30.2	18.6	76.3	4.2
PT 80(3)	11	2.3091	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.217	9.22	29.9	33.3	21.1	89.1	4.2
PT 90(3½)	11	2.3091	1.479	0.32	100.330	98.851	97.372	22.23	3.46	3.46	0.217	9.30	31.5	34.9	22.4	101.6	4.2
PT 100(4)	11	2.3091	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.217	10.40	35.9	39.3	25.9	114.3	4.5
PT 125(5)	11	2.3091	1.479	0.32	138.430	136.952	135.472	25.58	3.46	3.46	0.217	11.40	40.1	43.6	29.3	139.8	4.5
PT 150(6)	11	2.3091	1.479	0.32	163.830	162.351	160.872	28.58	3.46	3.46	0.217	11.50	40.1	43.6	29.3	165.2	5.0

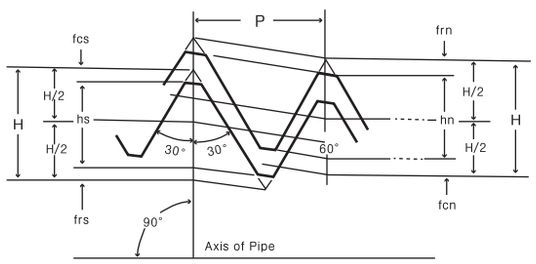
2. ASME B2.1 Taper Pipe Threads. (Except Dryseal)



Thread Height Dimensions

Thread Element	27 Threads Per inch P= 0.03704	18 Threads Per inch P= 0.05556	14 Threads Per inch P= 0.07143	11½ Threads Per inch P= 0.08696	8 Threads Per inch P= 0.12500
H=0.866p	0.0321	0.4810	0.0619	0.0753	0.1082
hs=hh=0.760p	0.0281	0.0422	0.0543	0.0661	0.0950
frs=frn=0.033p	0.0012	0.0088	0.0024	0.0029	0.0041
fcs=fcn=0.073p	0.0027	0.0041	0.0052	0.0063	0.0091

Tapar 1 in 16 on Diameter
(Shown Exaggerated in Diagram)



Basic Thread Date

Nominal Pipe Size (NPT)	Outside Diameter of Pipe D	Threads per inch n	Pitch of Threads P	Pich Diameter at beginning of Extemal Threads	Handtight Engagement			Effective Thread, External		
					Length L_1		Dia D_1	Length L_2		Dia D_2
					In.	Thds.		In.	Thds.	
1	2	3	4	5	6	7	8	9	10	11
⅛	0.405	27.0	0.03704	0.36351	0.1615	4.36	0.37360	0.2639	7.12	0.38000
¼	0.540	18.0	0.05556	0.47739	0.2278	4.10	0.49163	0.4018	7.23	0.50250
⅜	0.675	18.0	0.05556	0.61201	0.2400	4.32	0.62701	0.4078	7.34	0.63750
½	0.840	14.0	0.07143	0.75843	0.3200	4.48	0.77843	0.5337	7.47	0.79179
¾	1.050	14.0	0.07143	0.96768	0.3390	4.75	0.98887	0.5457	7.64	1.00179
1	1.315	11.5	0.08696	1.21363	0.4000	4.60	1.23863	0.6828	7.85	1.25630
1¼	1.660	11.5	0.08696	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60130
1½	1.900	11.5	0.08696	1.79609	0.4200	4.83	1.82234	0.7235	8.32	1.84130
2	2.375	11.5	0.08695	2.26902	0.4360	5.01	2.29627	0.7565	8.70	2.31630
2½	2.875	8.0	0.12500	2.71953	0.6820	5.46	2.76216	1.1375	9.10	2.79062
3	3.500	8.0	0.12500	3.34062	0.7660	6.13	3.38850	1.2000	9.60	3.41562
3½	4.000	8.0	0.12500	3.83750	0.8210	6.57	3.88881	1.2500	10.00	3.91562
4	4.500	8.0	0.12500	4.33438	0.8440	6.75	4.38712	1.3000	10.40	4.41562
5	5.563	8.0	0.12500	5.39073	0.9370	7.50	5.44929	1.4063	11.25	5.47862
6	6.625	8.0	0.12500	6.44609	0.9580	7.66	6.50597	1.5125	12.10	6.54062

Nominal Pipe Size (NPT)	Wrench Makeup Length for Extemal Thread L_2 L_1		Wrench Makeup Length for Intenal Thread			Vanish Thread V		Overall Length Extemal Thread L_4	Nominal, Complete Extemal Threads[S]		Height of Thread h	Increase in Dia per Thread, 0.0625/n	Basic Minor Dia at Small End of Pipe, Ko
			Length L_3		Dia E_3				Length L_5	Length E_5			
	In.	Thds.	In.	Thds.		In.	Thds.						
1	12	13	14	15	16	17	18	19	20	21	22	23	24
⅛	0.1024	2.76	0.1111	3	0.35656	0.1285	3.47	0.3924	0.1898	0.37537	0.02963	0.00231	0.3339
¼	0.1740	3.13	0.1667	3	0.46697	0.1928	3.47	0.5946	0.2907	0.49556	0.04444	0.00347	0.4329
⅜	0.1678	3.02	0.1667	3	0.60160	0.1928	3.47	0.6006	0.2967	0.63056	0.04444	0.00347	0.5676
½	0.2137	2.99	0.2143	3	0.74504	0.2478	3.47	0.7815	0.3909	0.78286	0.05714	0.00446	0.7013
¾	0.2067	2.89	0.2143	3	0.95429	0.2478	3.47	0.7935	0.4029	0.99286	0.05714	0.00446	0.9105
1	0.2828	3.25	0.2609	3	1.19733	0.3017	3.47	0.9845	0.5089	1.24543	0.06957	0.00543	1.1441
1¼	0.2868	3.30	0.2609	3	1.54083	0.3017	3.47	1.0085	0.5329	1.59043	0.06957	0.00543	1.4876
1½	0.3035	3.49	0.2609	3	1.77978	0.3017	3.47	1.0252	0.5496	1.83043	0.06957	0.00543	1.7265
2	0.3205	3.69	0.2609	3	2.25272	0.3017	3.47	1.0582	0.5826	2.30543	0.06957	0.00543	2.1995
2½	0.4555	3.64	0.2500	2	2.70391	0.4337	3.47	1.5712	0.8875	2.77500	0.100000	0.00781	2.6195
3	0.4340	3.47	0.2500	2	3.32500	0.4337	3.47	1.6337	0.9500	3.40000	0.100000	0.00781	3.2406
3½	0.4290	3.43	0.2500	2	3.82188	0.4337	3.47	1.6837	1.0000	3.90000	0.100000	0.00781	3.7375
4	0.4560	3.65	0.2500	2	4.31875	0.4337	3.47	1.7337	1.0500	4.40000	0.100000	0.00781	4.2344
5	0.4693	3.75	0.2500	2	5.37511	0.4337	3.47	1.8400	1.1563	5.46300	0.100000	0.00781	5.2907
6	0.5545	4.44	0.2500	2	6.43047	0.4337	3.47	1.9462	1.2625	6.52500	0.100000	0.00781	6.3461

• Dimensions are in inches.

STAINLESS STEEL PIPE

Unit : kg

N.P.S		O.D	NOMINAL WALL THICKNESS													
			SCH 5S		SCH 10S		SCH 20S		SCH 40		SCH 80		SCH 120		SCH 160	
A	B		T	WEIGHT KG/M	T	WEIGHT KG/M	T	WEIGHT KG/M	T	WEIGHT KG/M	T	WEIGHT KG/M	T	WEIGHT KG/M	T	WEIGHT KG/M
6	1/8	10.5	1	0.234	1.2	0.275	1.5	0.333	1.7	0.369	2.4	0.479	–	–	–	–
8	1/4	13.8	1.2	0.373	1.65	0.499	2	0.582	2.2	0.629	3	0.799	–	–	–	–
10	3/8	17.3	1.2	0.476	1.65	0.637	2	0.755	2.3	0.851	3.2	1.11	–	–	–	–
15	1/2	21.7	1.65	0.816	2.1	1.02	2.5	1.18	2.8	1.31	3.7	1.64	–	–	4.7	1.97
20	3/4	27.2	1.65	1.04	2.1	14.3	2.5	1.52	2.9	1.74	3.9	2.24	–	–	5.5	2.94
25	1	34	1.65	1.32	2.8	2.15	3	2.29	3.4	2.57	4.5	3.27	–	–	6.4	4.36
32	1¼	42.7	1.65	1.67	2.8	2.76	3	2.94	3.6	3.47	4.9	4.57	–	–	6.4	5.73
40	1½	48.6	1.65	1.91	2.8	3.16	3	3.37	3.7	4.1	5.1	5.47	–	–	7.1	7.29
50	2	60.5	1.65	2.39	2.8	3.98	3.5	4.92	3.9	5.44	5.5	7.46	–	–	8.7	11.1
65	2½	76.3	2.1	3.84	3	5.42	3.5	6.28	5.2	9.12	7	12	–	–	9.5	15.6
80	3	89.1	2.1	4.51	3	6.37	4	8.39	5.5	11.3	7.6	15.3	–	–	11.1	21.4
98	3½	101.6	2.1	5.15	3	7.29	4	9.63	5.7	13.5	8.1	18.7	–	–	12.7	27.8
100	4	114.3	2.1	5.81	3	8.23	4	10.9	6	16	8.6	22.4	11.1	28.2	13.5	33.6
125	5	139.8	2.8	9.463	3.4	11.4	5	16.6	6.6	21.7	9.5	30.5	12.7	39.8	15.9	48.6
150	6	165.2	2.8	11.2	3.4	13.6	5	19.8	7.1	27.7	11	41.8	14.3	53.2	18.2	66
200	8	216.3	2.8	14.7	4	20.9	6.5	33.6	8.2	42.1	13	63.8	18.2	88.9	23	110
250	10	267.4	3.4	23.1	4	26	6.5	41.8	9.3	59.2	15	93.9	21.4	130	28.6	168
300	12	318.5	4	31	4.5	34.8	6.5	50	10.3	78.3	17	129	25.4	184	33.3	234

STAINLESS STEEL PLATE

Unit : kg

	1,000 × 2,000 (3.3 × 6.6)			1,219 × 2,438 (4 × 8)			1,524 × 3,048 (5 × 10)		
	STS 304	STS 316, 310S	STS 430	STS 304	STS 316, 310S	STS 430	STS 304	STS 316, 310S	STS 430
0.3	4.76	4.79	4.62	7.07	7.11	6.86	11.05	11.10	10.70
0.4	6.35	6.38	6.16	9.43	9.49	9.15	14.73	14.80	14.30
0.5	7.93	7.98	7.70	11.78	11.90	11.40	18.42	18.50	17.90
0.6	9.52	9.58	9.24	14.14	14.20	13.70	22.10	22.20	21.50
0.7	11.10	11.20	10.80	16.49	16.60	16.00	25.79	25.90	25.00
0.8	12.69	12.80	12.30	18.85	19.00	18.30	29.47	29.70	28.60
0.9	14.28	14.40	13.80	21.21	21.30	20.60	33.15	33.40	32.20
1.0	15.86	16.00	15.40	23.56	23.70	22.90	36.84	37.10	35.80
1.2	19.03	19.20	18.50	28.27	28.50	27.50	44.20	44.50	42.90
1.5	23.79	23.90	23.10	35.34	35.60	34.30	55.25	55.60	53.70
2.0	31.72	31.90	30.80	47.12	47.40	45.80	73.67	74.10	71.50
2.5	39.65	39.90	38.50	58.90	59.30	57.20	92.09	92.70	89.40
3.0	47.58	47.90	46.20	70.68	71.10	68.60	110.51	111.00	107.00
4.0	63.44	63.80	61.60	94.24	94.90	91.50	147.34	148.00	143.00
4.5	71.37	71.80	69.30	106.02	107.00	103.00	165.76	167.00	161.00
5.0	79.30	79.80	77.00	117.80	119.00	114.00	184.18	185.00	179.00
6.0	95.16	95.80	92.40	141.36	142.00	137.00	221.02	222.00	215.00
7.0	111.02	112.00	108.00	164.92	166.00	160.00	257.85	259.00	250.00
8.0	126.88	128.00	123.00	188.48	190.00	183.00	294.69	297.00	286.00
9.0	142.74	144.00	139.00	212.04	213.00	206.00	331.52	334.00	322.00
10.0	158.60	160.00	154.00	235.60	237.00	229.00	368.36	371.00	358.00
12.0	190.32	192.00	185.00	282.72	285.00	275.00	442.03	445.00	429.00
15.0	237.90	239.00	231.00	353.40	356.00	343.00	552.54	556.00	537.00
18.0	285.48	287.00	277.00	424.08	427.00	412.00	663.05	667.00	644.00
20.0	317.20	319.00	308.00	471.20	474.00	458.00	736.72	741.00	715.00
25.0	396.50	399.00	385.00	589.00	593.00	572.00	920.90	927.00	894.00
30.0	475.80	479.00	462.00	706.80	711.00	686.00	1105.10	1110.00	1070.00

Certificate of Registration

This is to certify that the Quality Management System of

Goseong Fitting Co., Ltd.

#2048-1, Daejeo 2-dong, Gangseo-gu, Busan, KOREA

The Production of Pipe Sleeve and
Piping materials for Industrial and Ships

Has been assessed by ACE Registrar and complies with
the Quality Management System Requirements of

ISO 9001:2008 / KS Q ISO 9001:2009

Original Date of Certification	Date of Issue
07 March 2012	**07 March 2012**
Date of Expiry	Certificate No.
06 March 2015	**AQ-12C071**

APPROVED BY

ACE REGISTRAR Co., Ltd.
A-604, Digital Empire Bldg., Youngtong-dong, Youngtong-gu, Suwon-si, Gyeonggi-do, KOREA
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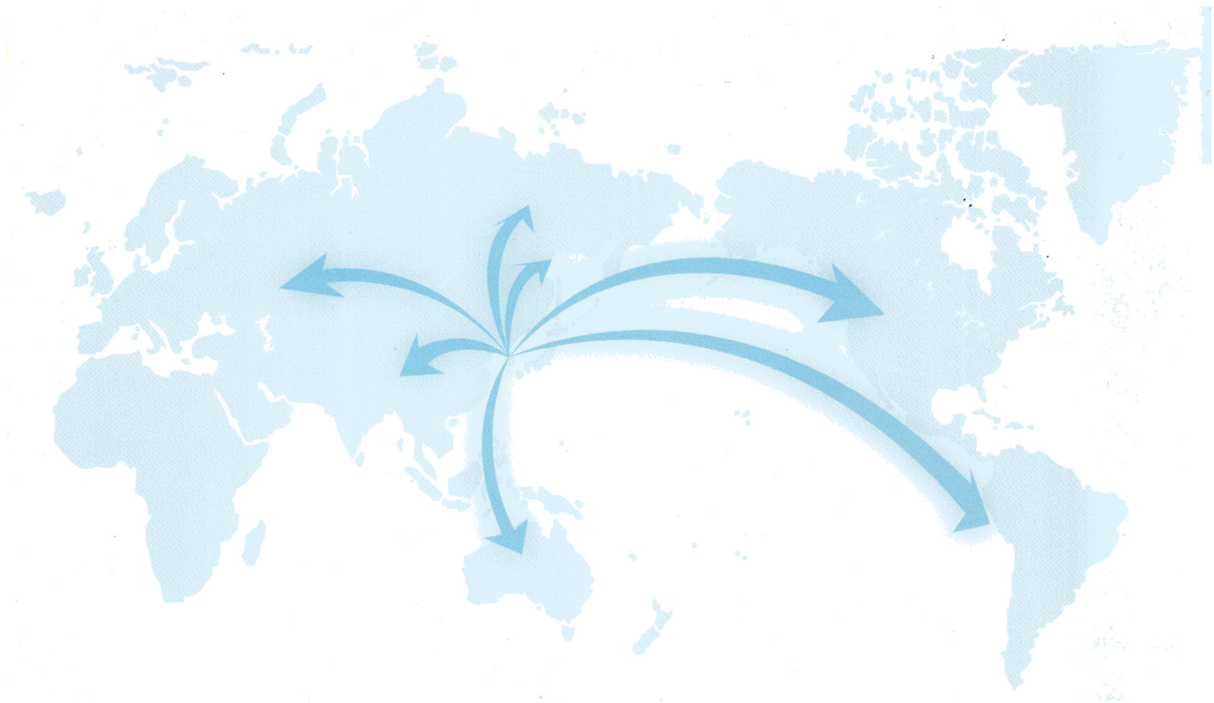
*Identification of Certified Company: www.acerkr.com –> Registration of Certification –>
Identification of Certified Company –> Certification No. or Company Name



ISO 9001:2000

ISO 9001-2008
KS Q ISO 9001-2009

GO SUNG FITTING CO., LTD

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