



ISO 9001 : 2011

고압단조 피팅류 일절 A 105 • S.U.S
With regard to high pressure forging fitting
products A 105 • S.U.S

FORGED FITTINGS



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“ 삼가 인사 드립니다.

저희 성원피팅은 1986년 5월에 창업하여 오늘에 이르기까지 고객 여러분께서 성원해 주시고 협조해 주신 덕분에 꾸준히 성장하고 발전하여 국내외의 석유화학, 발전설비, 조선 등 중요 플랜트 분야에 양질의 다양한 고압 피팅류를 생산 공급해 왔습니다.

폐사는 항상 고객 제위의 만족을 위한 기술생산, 수량품질, 적기 납품이라는 기업 이념을 토대로 배관업을 경영하시는 여러분의 사업에 일부를 담당하고자, 저희 직원 일동은 최선을 다하겠습니다. 많은 지도와 편달을 바라겠습니다.

성원피팅 대표 박재곤

I am writing to have an opportunity to introduce Sung-won Fitting Co. to you.

Sung-won Fitting Co. was established in May 1986 and has developed and provided diverse range of fitting products for petrochemicals, stationary power generation, and ship construction industries both domestically and globally.

We are committed to provide our customers in plumbing business with best customer experiences by ensuring quality of products, quantity of products and delivering products in contracted time. We would like to have an opportunity to provide the products and services as described above.

I am looking forward to hearing from you.

President of Sung-won Fitting Co. Jae Kon Park

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JIS B2316
ASTM B16.11
ASME B16.11

FORGED STEEL
SOCKET-WELDING & THREADED FITTINGS





1. Pressure Ratings

These fittings shall be designated 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 governs 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

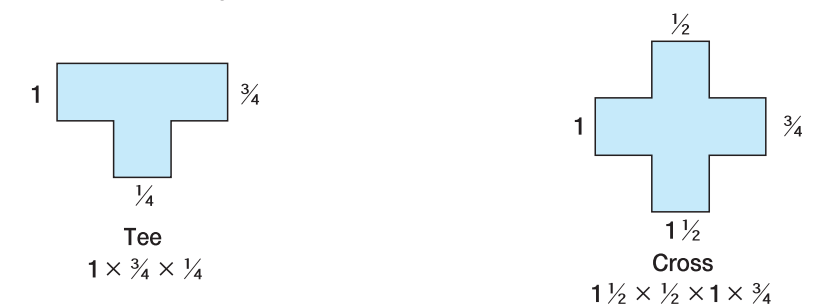
Table 3 : Pressure/Temperaturs Ratings Non-shock Working Pressure in Pounds per Square Incc

Service Temperature 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 a 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.

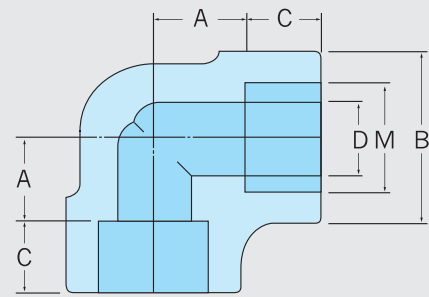


3. Threads

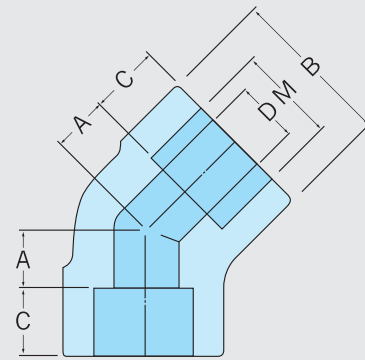
Unless otherwise specified in inquiry, all threaded fittings are supplied with NPT threads (ANSI B2.1 American Standard Tapesr Pipe Thread) for reference, other availble threads are:

- 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.
- KSB0222 Taper Pipe Threads

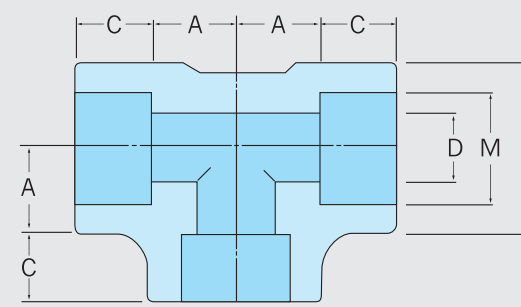
90° Elbow



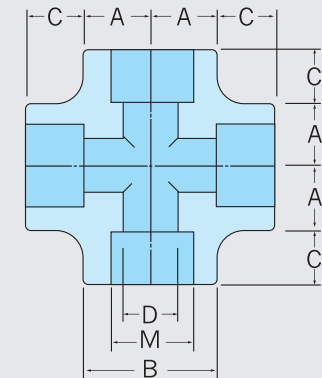
45° Elbow



Tee



Cross



Size	M	B	D	A	C	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	26.5	9.4	11.1	10	0.132
3/8		26.5	12.7	13.4	10	0.113
1/2		34.0	16.1	16.0	13	0.226
3/4		38.5	21.2	20.0	16	0.312
1		46.5	27.0	23.0	16	0.596
1 1/4	56.5	35.4	28.0	18	0.709	
1 1/2	63.5	41.2	33.0	20	0.850	
2	76.0	52.7	40.0	22	1.474	
2 1/2	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	70.0	45	9.410	

6000 lb						
1/2	See Note (1)	38.5	12.0	20.0	16	0.425
3/4		46.5	15.8	23.0	16	0.652
1		56.5	21.0	28.0	18	1.020
1 1/4		63.5	29.7	33.0	20	1.446
1 1/2		76.0	34.2	40.0	22	2.380
2	92.0	43.1	42.0	24	3.760	
2 1/2	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						
1/2	See Note (1)	46.5	6.4	23.0	16	0.510
3/4		56.5	11.0	28.0	16	0.782
1		63.5	15.2	33.0	18	1.224
1 1/4		76.0	22.7	40.0	20	1.807
1 1/2		92.0	27.9	42.0	22	2.975
2	110.0	38.1	54.0	24	4.700	
2 1/2	121.0	45.0	66.0	24	10.512	
3	146.0	58.4	70.0	31.5	13.020	

Size	M	B	D	A	C	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	26.5	9.4	7.9	10	0.093
3/8		26.5	12.7	7.9	10	0.142
1/2		34.0	16.1	13.0	13	0.284
3/4		38.5	21.2	13.0	14	0.397
1		46.5	27.0	14.0	16	0.624
1 1/4	56.5	35.4	18.0	18	0.907	
1 1/2	63.5	41.2	22.0	20	0.782	
2	76.0	52.7	24.0	22	1.265	
2 1/2	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						
1/2	See Note (1)	38.5	12.0	13	16	0.397
3/4		46.5	15.8	14	16	0.595
1		56.5	21.0	22	18	0.935
1 1/4		63.5	29.7	22	20	1.157
1 1/2		76.0	34.2	24	22	1.982
2	92.0	43.1	29	24	4.000	
2 1/2	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						
1/2	See Note (1)	46.5	6.4	14	16	0.875
3/4		56.5	11.0	22	16	1.369
1		63.5	15.2	22	18	1.725
1 1/4		76.0	22.7	24	20	2.931
1 1/2		92.0	27.9	29	22	5.062
2	110.0	38.1	34	24	6.400	
2 1/2	121.0	45.0	34	24	7.925	
3	146.0	58.4	42	31.5	11.569	

- Notes
- (1) For the 'Bore'(M) other than standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

Size	M	B	D	A	C	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	26.5	9.4	11.1	10	0.161
3/8		26.5	12.7	13.4	10	0.142
1/2		34.0	16.1	16.0	13	0.170
3/4		38.5	21.2	20.0	16	0.397
1		46.5	27.0	23.0	16	0.624
1 1/4	56.5	35.4	28.0	18	0.907	
1 1/2	63.5	41.2	33.0	20	1.134	
2	76.0	52.7	40.0	22	1.701	
2 1/2	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	70.0	45	12.247	

6000 lb						
1/2	See Note (1)	38.5	12.0	20.0	16	0.623
3/4		46.5	15.8	23.0	16	0.907
1		56.5	21.0	28.0	18	1.503
1 1/4		63.5	29.7	33.0	20	1.701
1 1/2		76.0	34.2	40.0	22	2.948
2	92.0	43.1	42.0	24	3.702	
2 1/2	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						
1/2	See Note (1)	46.5	6.4	23.0	16	0.779
3/4		56.5	11.0	28.0	16	1.333
1		63.5	15.2	33.0	18	1.879
1 1/4		76.0	22.7	40.0	20	2.126
1 1/2		92.0	27.9	42.0	22	3.685
2	110.0	38.1	54.0	24	4.627	
2 1/2	121.0	45.0	66.0	24	10.903	
3	146.0	58.4	70.0	31.5	13.325	

- Notes
- (1) For the 'Bore'(M) other standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

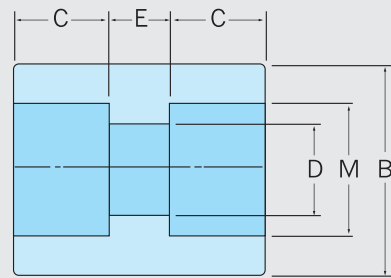
Size	M	B	D	A	C	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	26.5	9.4	11.1	10	0.182
3/8		26.5	12.7	13.4	10	0.170
1/2		34.0	16.1	16.0	13	0.368
3/4		38.5	21.2	20.0	16	0.519
1		46.5	27.0	23.0	16	0.680
1 1/4	56.5	35.4	28.0	18	1.020	
1 1/2	63.5	41.2	33.0	20	1.389	
2	76.0	52.7	40.0	22	2.325	
2 1/2	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	70.0	45	18.144	

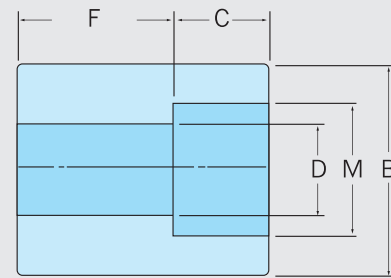
6000 lb						
1/2	See Note (1)	38.5	12.0	20.0	16	0.660
3/4		46.5	15.8	23.0	16	1.120
1		56.5	21.0	28.0	18	1.730
1 1/4		63.5	29.7	33.0	20	2.381
1 1/2		76.0	34.2	40.0	22	3.750
2	92.0	43.1	42.0	24	7.860	
2 1/2	110.0	54.0	57.1	24	10.600	
3	121.0	67.7	66.0	31.5	13.600	
4	152.0	87.0	70.0	45	26.000	

9000 lb						
1/2	See Note (1)	46.5	6.4	23.0	16	1.615
3/4		56.5	11.0	28.0	16	2.113
1		63.5	15.2	33.0	18	3.896
1 1/4		76.0	22.7	40.0	20	6.298
1 1/2		92.0	27.9	42.0	22	9.280
2	110.0	38.1	54.0	24	18.741	
2 1/2	121.0	45.0	66.0	24	25.702	
3	146.0	58.4	70.0	31.5	33.761	

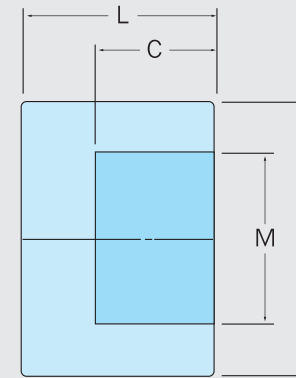
Full Coupling



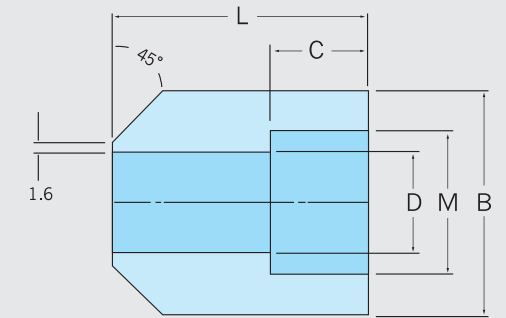
Half Coupling



Cap



Boss



Size	M	B	D	C	E	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	22.0	9.4	10	7	0.05
3/8		25.4	12.7	10	7	0.12
1/2		32.0	16.1	10	10	0.12
3/4		38.0	21.2	13	13	0.18
1		45.0	27.0	13	13	0.26
1 1/4		55.0	35.4	13	13	0.35
1 1/2		60.3	41.2	13	13	0.47
2		75.0	52.7	16	19	0.81
2 1/2	95.0	62.7	16	19	1.25	
3	110.0	78.0	16	19	1.53	
4	140.0	102.0	19	19	2.91	

6000 lb						
1/2	See Note (1)	35.0	12.0	10	7	0.170
3/4		40.0	15.8	13	7	0.249
1		50.8	21.0	13	10	0.420
1 1/4		60.3	29.7	13	10	0.525
1 1/2		65.0	34.2	13	13	0.665
2		80.0	43.1	16	19	1.240
2 1/2		100.0	54.0	16	19	1.640
3		120.0	67.7	16	19	2.746
4	160.0	87.0	19	19	4.679	

9000 lb						
1/2	See Note (1)	40.0	6.4	10	7	0.270
3/4		45.0	11.0	13	7	0.327
1		55.0	15.2	13	10	0.518
1 1/4		65.0	22.7	13	10	0.813
1 1/2		75.0	27.9	13	13	0.940
2		90.0	38.1	16	19	1.553
2 1/2		110.0	45.0	16	19	2.430
3		130.0	58.5	16	19	3.721
4	160.0	80.3	19	19	5.137	

- Notes
- (1) For the 'Bore'(M) other standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

Size	M	B	D	C	F	Unit Weight (Kg)
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3000 lb						
1/4	See Note (1) To be specified by purchaser	22.0	9.4	10	16	0.058
3/8		25.4	12.7	10	18	0.073
1/2		32.0	16.1	10	23	0.138
3/4		38.0	21.2	13	24	0.203
1		45.0	27.0	13	29	0.313
1 1/4		55.0	35.4	13	30	0.431
1 1/2		60.3	41.2	13	32	0.593
2		75.0	52.7	16	41	1.280
2 1/2	95.0	62.7	16	43	1.490	
3	110.0	78.0	16	45	2.202	
4	140.0	102.0	19	48	4.250	

6000 lb						
1/2	See Note (1)	35.0	12.0	10	23	0.193
3/4		40.0	15.8	13	24	0.284
1		50.8	21.0	13	29	0.488
1 1/4		60.3	29.7	13	30	0.583
1 1/2		65.0	34.2	13	32	0.640
2		80.0	43.1	16	41	1.726
2 1/2		100.0	54.0	16	43	2.247
3		120.0	67.7	16	45	3.412
4	160.0	87.0	19	48	5.730	

9000 lb						
1/2	See Note (1)	40.0	6.4	10	23	0.312
3/4		45.0	11.0	13	24	0.389
1		55.0	15.2	13	29	0.641
1 1/4		65.0	22.7	13	30	0.980
1 1/2		75.0	27.9	13	32	1.179
2		90.0	38.1	16	41	1.994
2 1/2		110.0	45.0	16	43	3.210
3		130.0	58.5	16	45	4.597
4	160.0	80.3	19	48	7.610	

Size	M	B	C	L	Unit Weight (Kg)
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3000 lb					
1/4	See Note (1) To be specified by purchaser	22.0	10	20	0.048
3/8		25.4	10	20	0.076
1/2		32.0	10	20	0.100
3/4		38.0	13	25	0.182
1		45.0	13	27	0.241
1 1/4		55.0	13	30	0.350
1 1/2		60.3	13	30	0.612
2		75.0	16	36	0.880
2 1/2	95.0	16	42	1.520	
3	110.0	16	46	2.208	
4	140.0	19	55	4.417	

6000 lb					
1/2	See Note (1)	35.0	10	26	0.055
3/4		40.0	13	27	0.023
1		50.8	13	30	0.382
1 1/4		60.3	13	35	0.511
1 1/2		65.0	13	36	0.735
2		80.0	16	39	1.289
2 1/2		100.0	16	45	2.056
3		120.0	16	52	3.364

9000 lb					
1/2	See Note (1)	40.0	10	30	0.262
3/4		45.0	13	30	0.320
1		55.0	13	33	0.520
1 1/4		65.0	13	40	1.256
1 1/2		75.0	13	40	1.440
2		90.0	16	43	1.686
2 1/2		110.0	16	50	2.986
3		130.0	16	58	4.666

- Notes
- (1) For the 'Bore'(M) other standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

Size	M	B	D	A	L	Unit Weight (Kg)
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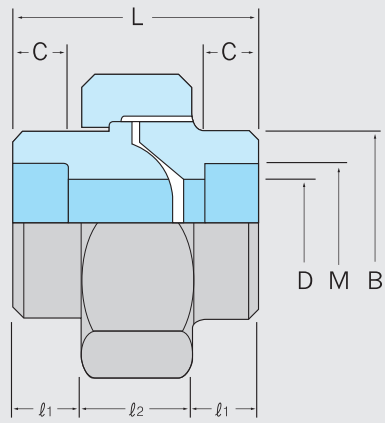
3000 lb						
1/4	See Note (1)	22.0	9.4	10	26	0.09
3/8		25.4	12.7	10	28	0.14
1/2		32.0	16.1	10	33	0.24
3/4		38.0	21.2	13	37	0.28
1		45.0	27.0	13	42	0.41
1 1/4		55.0	35.4	13	43	0.44
1 1/2		60.3	41.2	13	45	0.63
2		75.0	52.7	16	57	1.09

6000 lb						
1/2	See Note (1)	35.0	12.0	10	33	0.45
3/4		40.0	15.8	13	37	0.52
1		50.8	21.0	13	42	0.73
1 1/4		60.3	29.7	13	43	0.77
1 1/2		65.0	34.2	13	45	0.12
2		80.0	43.1	16	57	1.82

SOCKET WELDING FITTINGS

3000 lb, 6000 lb

R.J Union

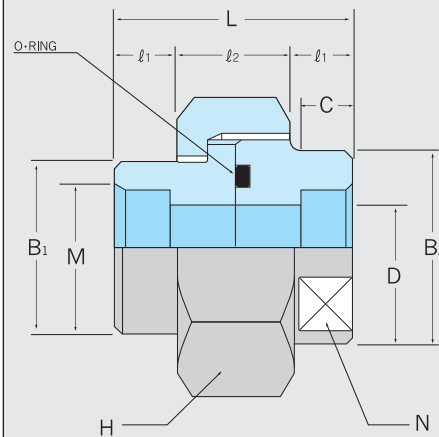


Size	M	B	l ₁	l ₂	L	C	D	H	Unit Weight (Kg)
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3000 lb									
1/4	See Note (1) To be specified by purchaser	21.0	11.5	18	41	10.0	9.4	35 HEX	0.187
3/8		25.0	14.0	18	46	10.0	12.7	41 HEX	0.245
1/2		32.0	15.0	21	51	10.0	16.1	46 HEX	0.430
3/4		38.0	17.0	23	57	13.0	21.2	58 HEX	0.620
1		45.0	19.5	25	64	13.0	27.0	65 HEX	1.030
1 1/4		55.0	22.5	27	72	13.0	35.4	76 OCT	1.150
1 1/2		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
2 1/2		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									
1/2	See Note (1)	38.0	17.0	23	57	13	12.0	58 HEX	0.62
3/4		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
1 1/4		61.0	24.0	30	78	16	29.7	83 OCT	1.41
1 1/2		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
2 1/2		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



Size	M	B ₁	B ₂	D	C	l ₁	l ₂	L	N	H	O-Ring	Unit Weight (Kg)
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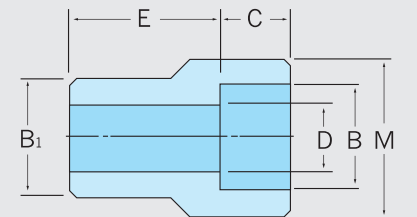
3000 lb												
1/4	See Note (1)	21.0	23.0	10	10	10	18	38	21	35 HEX	P18	0.160
3/8		25.0	27.0	12	10	10	18	38	25	41 HEX	P20	0.228
1/2		32.0	34.0	16	10	12	21	45	32	46 HEX	G25	0.328
3/4		38.0	40.0	20	13	12	23	47	38	58 HEX	G30	0.535
1		45.0	47.0	25	13	15	25	55	45	65 HEX	G35	0.786
1 1/4		55.0	58.0	32	13	15	27	57	55	76 HEX	G45	1.104
1 1/2		61.0	64.0	38	13	18	30	66	61	83 OCT	G50	1.542
2		76.0	79.0	48	17	18	36	72	76	103 OCT	G65	2.080

- Notes
- (1) For the 'Bore'(M) other standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

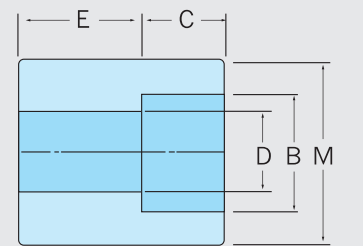
SUNG WON FITTING

Reducer Insert

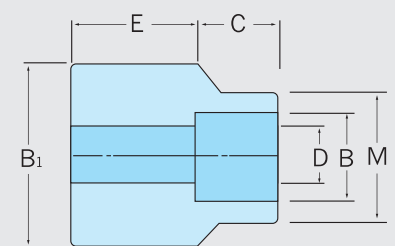
Type 1



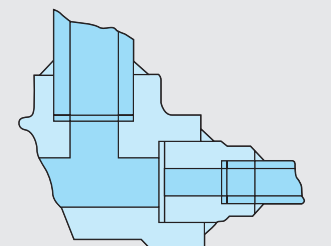
Type 2



Type 3



Application of Reducer Insert



Orifice	Type	M	B ₁	B	C(Min.)	E	L	D	Unit Weight (Kg)
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3000 lb										
3/8 x 1/4	1	22.2	See Note (1) To be specified purchaser	See Note (1) To be specified purchaser		9.6	21	16	9.4	0.051
1/2 x 1/4	2	-				9.6	15	-	9.4	0.052
1/2 x 3/8	1	25.4				9.6	24	20	12.7	0.086
3/4 x 1/4	3	-				9.6	19	7	9.4	0.109
3/4 x 3/8	2	-				9.6	19	-	12.7	0.697
3/4 x 1/2	1	31.8				9.6	26	22	16.1	0.146
1 x 3/8	3	25.4				9.6	22	7	12.7	0.161
1 x 1/2	2	-				9.6	22	-	16.1	0.183
1 x 3/4	1	38.1				12.7	29	23	21.4	0.208
1 1/4 x 1/2	3	31.8				9.6	24	7	16.1	0.273
1 1/4 x 3/4	2	-	12.7	24	-	21.4	0.286			
1 1/4 x 1	1	46.0	12.7	32	24.5	27.2	0.436			
1 1/2 x 3/4	3	38.1	12.7	26	8	21.4	0.348			
1 1/2 x 1	2	-	12.7	26	-	27.2	0.384			
1 1/2 x 1 1/4	1	55.0	12.7	35	27	35.5	0.463			
2 x 1	3	46.0	12.7	29	8	27.2	0.615			
2 x 1 1/4	2	-	12.7	29	-	35.5	0.647			
2 x 1 1/2	1	65.0	12.7	37	29	41.2	0.661			
2 1/2 x 1 1/4	3	55.0	12.7	35	8	35.5	1.183			
2 1/2 x 1 1/2	3	65.0	12.7	35	8	41.2	1.107			
2 1/2 x 2	1	76.0	15.9	39	30	52.7	1.200			
3 x 1 1/2	3	65.0	12.7	39	8	41.2	1.715			
3 x 2	3	75.0	15.9	39	10	52.7	1.542			
3 x 2 1/2	1	95.0	15.9	51	33.5	65.9	1.825			

6000 lb										
3/4 x 1/2	1	38.1	See Note (1)	See Note (1)		12.3	39	23	12.3	0.316
1 x 1/2	1	38.1				12.3	38	24	12.3	0.354
1 x 3/4	1	46.0				16.2	43	26	16.2	0.526
1 1/4 x 1/2	2	-				12.3	29	-	12.3	0.415
1 1/4 x 3/4	1	46.0				16.2	40	28	16.2	0.557
1 1/4 x 1	1	55.0				21.2	45	28	21.2	0.765
1 1/2 x 3/4	2	-				16.2	35	-	16.2	0.619
1 1/2 x 1	1	55.0				21.2	38	28	21.2	0.723
1 1/2 x 1 1/4	1	62.0				29.9	52	32	29.9	0.957
2 x 1	3	-				21.2	43	8	21.2	1.026
2 x 1 1/4	1	62.0	29.9	54	34	29.9	1.137			
2 x 1 1/2	1	75.0	34.4	63	34	34.4	0.911			
2 1/2 x 1 1/4	3	62.0	29.9	46	8	29.9	1.478			
2 1/2 x 1 1/2	2	-	34.4	46	-	34.4	1.881			
2 1/2 x 2	1	95.0	43.1	73	36	43.1	2.918			
3 x 1 1/2	3	75.0	34.4	50	8	34.4	2.370			
3 x 2	2	-	43.1	70	-	43.1	3.313			
3 x 2 1/2	1	110.0	57.3	83	38	57.3	3.562			

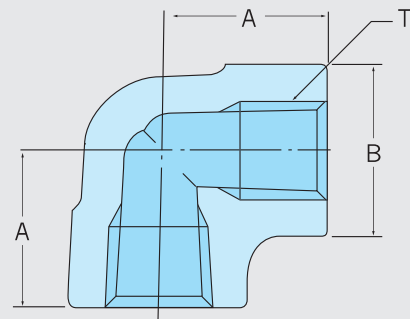
- Notes
- (1) For the 'Bore'(B, B₁) other standard pipe outside diameter, refer to page 30.
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

THREADED FITTINGS

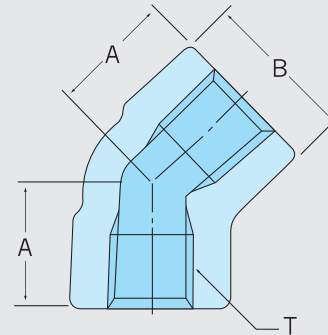
2000 lb, 3000 lb, 6000 lb

SUNG WON FITTING

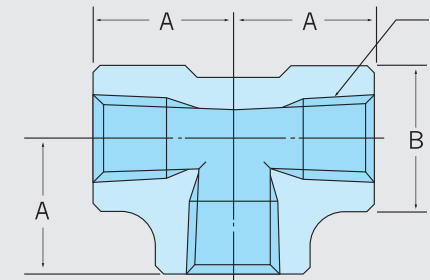
90° Elbow



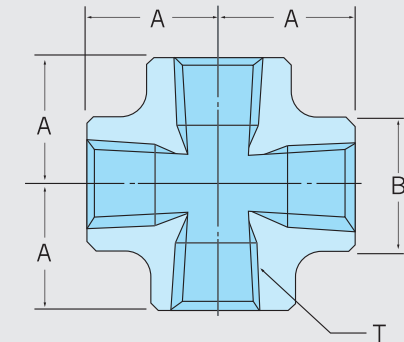
45° Elbow



Tee



Cross



Size T	B	A	Unit Weight (Kg)
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2000 lb			
1/4	26.5	25.4	0.13
3/8	26.5	25.4	0.12
1/2	34.0	28.5	0.23
3/4	38.5	33.5	0.36
1	46.5	38.1	0.55
1 1/4	56.5	44.5	0.95
1 1/2	63.5	50.8	1.12
2	76.0	60.5	1.96
2 1/2	92.0	76.0	3.25
3	110.0	86.0	5.64
3 1/2	121.0	95.5	6.92
4	146.0	106.5	10.43

3000 lb			
1/4	26.5	25.4	0.120
3/8	34.0	28.5	0.235
1/2	38.5	33.5	0.390
3/4	46.5	38.1	0.570
1	56.5	44.5	0.990
1 1/4	63.5	50.8	1.260
1 1/2	76.0	60.5	2.125
2	84.0	64.0	3.520
2 1/2	110.0	83.0	5.460
3	121.0	95.5	8.000
3 1/2	146.0	106.5	11.230
4	152.0	114.3	13.500

6000 lb			
3/8	38.5	33.5	0.40
1/2	46.5	38.5	0.68
3/4	56.5	44.5	1.13
1	63.5	50.8	1.59
1 1/4	76.0	60.5	2.60
1 1/2	84.0	64.0	4.32
2	110.0	85.0	7.33
2 1/2	121.0	95.5	9.25
3	146.0	106.5	12.05
3 1/2	152.0	114.3	14.30
4	152.0	114.3	14.10

Size T	B	A	Unit Weight (Kg)
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2000 lb			
1/4	26.5	19.1	0.16
3/8	26.5	19.1	0.13
1/2	34.0	26.0	0.25
3/4	38.5	28.6	0.32
1	46.5	30.0	0.43
1 1/4	56.5	33.3	0.75
1 1/2	63.5	42.0	1.06
2	76.0	46.0	1.49
2 1/2	92.0	53.0	2.45
3	110.0	64.0	4.00
3 1/2	121.0	64.0	5.12
4	146.0	80.0	8.68

3000 lb			
1/4	26.5	19.1	0.16
3/8	34.0	26.0	0.28
1/2	38.5	28.6	0.38
3/4	46.5	30.0	0.51
1	56.5	33.3	1.03
1 1/4	63.5	42.0	1.22
1 1/2	76.0	46.0	2.36
2	84.0	53.0	3.66
2 1/2	110.0	64.0	6.12
3	121.0	64.0	6.12
3 1/2	146.0	80.0	8.40
4	152.0	80.0	11.30

6000 lb			
3/8	38.5	28.6	0.45
1/2	46.5	30.0	0.72
3/4	56.5	33.3	1.00
1	63.5	42.0	1.56
1 1/4	76.0	46.0	2.29
1 1/2	84.0	53.0	3.80
2	110.0	64.0	5.76
2 1/2	121.0	64.0	7.20
3	146.0	80.0	11.30
3 1/2	152.0	80.0	13.20
4	152.0	80.0	11.80

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

Size T	B	A	Unit Weight (Kg)
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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	67.0	3.94
3	110.0	85.0	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	92.0	67.0	4.35
2 1/2	110.0	85.0	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	38.5	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	92.0	67.0	5.72
2	110.0	85.0	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

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

Size T	B	A	Unit Weight (Kg)
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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	67.0	4.66
3	110.0	85.0	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	92.0	67.0	5.50
2 1/2	110.0	85.0	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

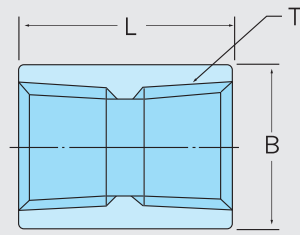
6000 lb			
3/8	38.5	33.5	0.67
1/2	46.5	38.1	1.12
3/4	56.5	44.5	1.90
1	63.5	50.8	2.90
1 1/4	76.0	60.5	4.20
1 1/2	92.0	67.0	6.65
2	110.0	85.0	10.00
2 1/2	121.0	95.5	16.00
3	146.0	106.5	19.87
3 1/2	152.0	114.3	28.10
4	152.0	114.3	24.60

THREADED FITTINGS

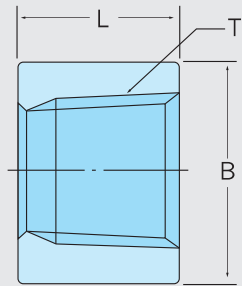
2000 lb, 3000 lb, 6000 lb

SUNG WON FITTING

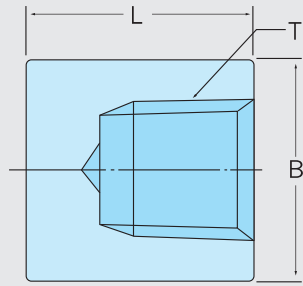
Full Coupling



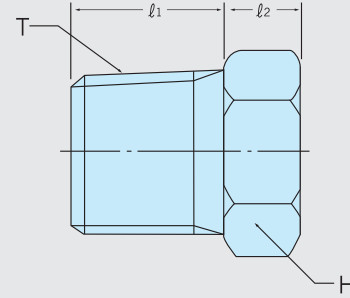
Half Coupling



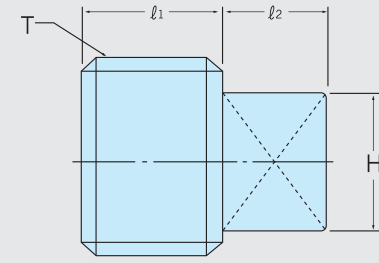
Cap



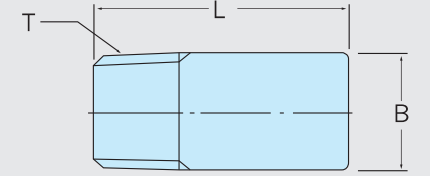
Hex. Head Plug



SQ. Head Plug



Round Head Plug



Size T	B	L	Unit Weight (Kg)
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2000 lb			
1/4	22.0	35.0	0.050
3/8	25.4	38.0	0.061
1/2	30.0	48.0	0.142
3/4	35.0	51.0	0.218
1	45.0	61.0	0.418
1 1/4	55.0	67.0	0.720
1 1/2	60.3	80.0	1.065
2	75.0	86.0	1.400
2 1/2	95.0	92.0	2.550
3	110.0	108.0	3.830
3 1/2	130.0	114.3	5.720
4	140.0	121.0	6.350

3000 lb			
1/4	22.0	35.0	0.050
3/8	25.4	38.0	0.061
1/2	30.0	48.0	0.142
3/4	35.0	51.0	0.218
1	45.0	61.0	0.418
1 1/4	55.0	67.0	0.720
1 1/2	60.3	80.0	1.065
2	75.0	86.0	1.400
2 1/2	95.0	92.0	2.550
3	110.0	108.0	3.830
3 1/2	130.0	114.3	5.720
4	140.0	121.0	6.350

6000 lb			
1/4	25.4	35.0	0.120
3/8	32.0	38.0	0.180
1/2	38.0	48.0	0.280
3/4	45.0	51.0	0.450
1	55.0	61.0	0.800
1 1/4	60.3	67.0	1.400
1 1/2	75.0	80.0	1.950
2	95.0	86.0	2.800
2 1/2	110.0	92.0	3.800
3	130.0	108.0	6.010
3 1/2	140.0	114.3	8.250
4	160.0	121.0	10.700

Size T	B	L	Unit Weight (Kg)
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2000 lb			
1/4	22.0	17.5	0.025
3/8	25.4	19.0	0.030
1/2	30.0	24.0	0.070
3/4	35.0	25.5	0.100
1	45.0	30.5	0.210
1 1/4	55.0	33.5	0.365
1 1/2	60.3	40.0	0.520
2	75.0	43.0	0.690
2 1/2	95.0	46.0	1.250
3	110.0	54.0	1.840
3 1/2	130.0	57.5	2.860
4	140.0	60.5	2.510

3000 lb			
1/4	22.0	17.5	0.025
3/8	25.4	19.0	0.030
1/2	30.0	24.0	0.070
3/4	35.0	25.5	0.100
1	45.0	30.5	0.210
1 1/4	55.0	33.5	0.365
1 1/2	65.0	40.0	0.520
2	75.0	43.0	0.690
2 1/2	95.0	46.0	1.250
3	110.0	54.0	1.840
3 1/2	130.0	57.5	2.860
4	140.0	60.5	3.510

6000 lb			
1/4	25.4	17.5	0.06
3/8	32.0	19.0	0.09
1/2	38.0	24.0	0.14
3/4	45.0	25.5	0.23
1	55.0	30.5	0.37
1 1/4	60.3	33.5	0.70
1 1/2	75.0	40.0	0.90
2	95.0	43.0	1.22
2 1/2	110.0	46.0	1.85
3	130.0	54.0	2.95
3 1/2	140.0	57.5	4.12
4	160.0	60.5	5.40

Size T	B	L	Unit Weight (Kg)
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2000 lb			
1/4	22.0	25	0.05
3/8	25.4	25	0.08
1/2	30.0	32	0.12
3/4	35.0	37	0.20
1	45.0	41	0.31
1 1/4	55.0	44	0.60
1 1/2	60.3	44	0.73
2	75.0	48	1.05
2 1/2	95.0	60	2.27
3	110.0	65	3.83
3 1/2	130.0	68	4.52
4	140.0	68	6.35

3000 lb			
1/4	22.0	25	0.05
3/8	25.4	25	0.08
1/2	30.0	32	0.12
3/4	35.0	37	0.20
1	45.0	41	0.31
1 1/4	55.0	44	0.60
1 1/2	60.3	44	0.73
2	75.0	48	1.05
2 1/2	95.0	60	2.27
3	110.0	65	3.83
3 1/2	130.0	68	4.52
4	140.0	68	6.35

6000 lb			
1/4	25.4	27	0.09
3/8	32.0	27	0.14
1/2	38.0	33	0.25
3/4	45.0	38	0.36
1	55.0	43	0.70
1 1/4	60.3	46	0.80
1 1/2	75.0	48	1.28
2	95.0	51	2.16
2 1/2	110.0	64	2.72
3	130.0	68	4.95
3 1/2	140.0	70	6.84
4	160.0	75	9.21

Size T	l1	l2	H	Unit Weight (Kg)
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1/8	11	7.0	11.0	0.03
1/4	13	8.0	14.0	0.03
3/8	14	9.0	17.0	0.06
1/2	18	9.0	22.0	0.08
3/4	19	10.0	27.0	0.14
1	21	10.0	36.0	0.22
1 1/4	22	14.0	46.0	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	78.0	1.76
3	40	21.0	95.0	2.66
3 1/2	41	22.0	103.0	3.72
4	42	32.0	116.0	5.90

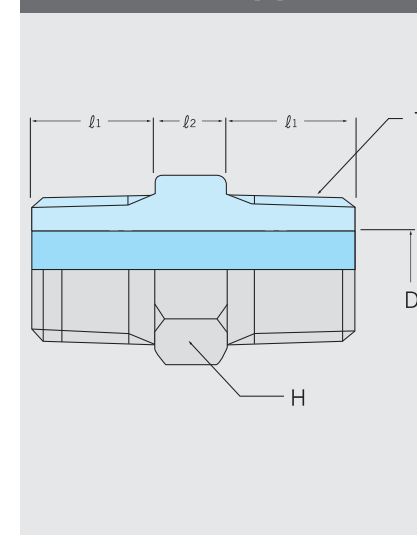
Size T	l1	l2	H	Unit Weight (Kg)
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1/8	9.9	6.6	7.0	0.007
1/4	13.0	6.6	9.5	0.014
3/8	13.0	7.9	11.0	0.028
1/2	15.0	9.9	14.5	0.057
3/4	16.0	11.0	16.0	0.085
1	20.1	13.0	21.0	0.140
1 1/4	21.1	15.0	24.0	0.255
1 1/2	21.1	16.0	28.5	0.397
2	23.1	18.0	33.5	0.680
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

Size T	B	L	Unit Weight (Kg)
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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	l1	l2	Unit Weight (Kg)
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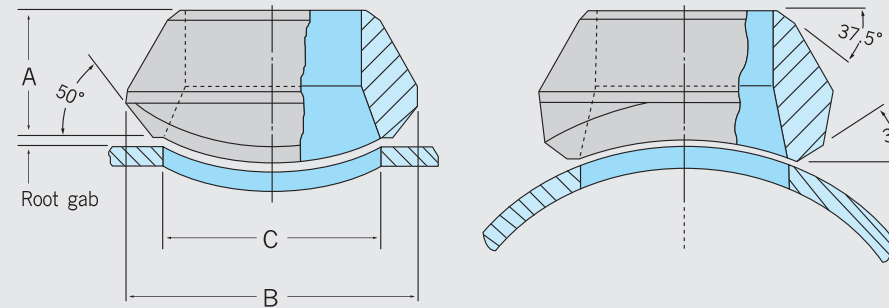
1/8	5.5	11	10	7	0.030
1/4	7.0	14	14	9	0.040
3/8	9.0	17	14	9	0.050
1/2	12.0	22	19	9	0.090
3/4	15.0	27	19	10	0.150
1	20.0	36	24	11	0.270
1 1/4	28.0	46	24	12	0.450
1 1/2	32.0	50	25	14	0.620
2	40.0	65	26	16	1.030
2 1/2	60.0	78	38	18	1.510
3	74.0	95	40	20	2.220
4	97.0	116	50	25	2.813

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

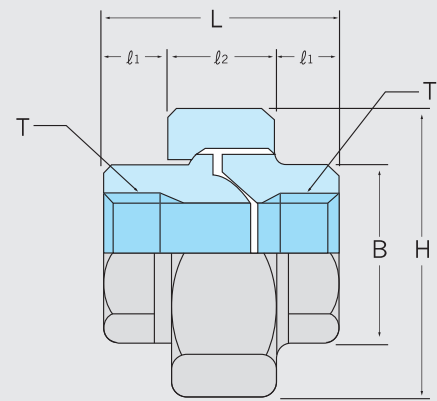
- Dimensions are in millimeters.
- Dimensional Tolerances See ASTM B16.11 or JIS B2316

Weldolet

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



R.J Union

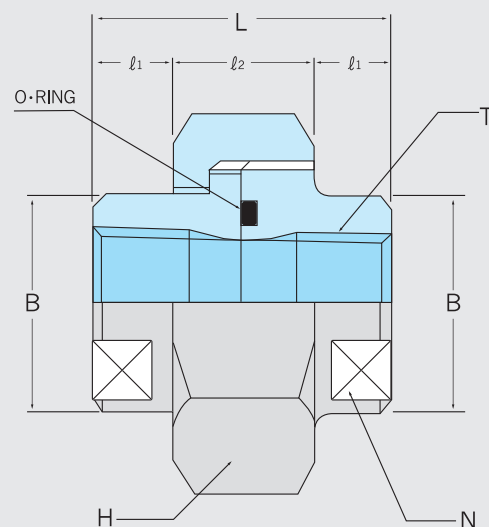


Size T	B	l ₁	l ₂	L	H	Unit Weight (Kg)
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3000 lb						
1/4	21.0	11.5	18	41	35 HEX	0.19
3/8	25.0	14.0	18	46	41 HEX	0.25
1/2	32.0	15.0	21	51	46 HEX	0.43
3/4	38.0	17.0	23	57	58 HEX	0.62
1	45.0	19.5	25	64	65 HEX	1.03
1 1/4	55.0	22.5	27	72	76 OCT	1.15
1 1/2	61.0	24.0	30	78	83 OCT	1.54
2	76.0	26.0	36	88	103 OCT	3.05
2 1/2	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						
1/4	25.0	13.5	19	46	41 HEX	0.25
3/8	32.0	15.0	21	51	46 HEX	0.43
1/2	38.0	17.0	23	57	58 HEX	0.62
3/4	45.0	19.5	25	64	65 HEX	0.94
1	55.0	22.5	27	72	76 OCT	1.08
1 1/4	61.0	24.0	30	78	83 OCT	1.41
1 1/2	76.0	26.0	36	88	103 OCT	2.75
2	95.0	34.0	42	110	124 OCT	5.05
2 1/2	110.0	37.5	45	120	142 OCT	6.87
3	140.0	45.0	50	140	176 OCT	10.85

O-Ring Union



Size T	B	l ₁	l ₂	L	N	H	O-Ring	Unit Weight (Kg)
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3000 lb								
1/4	21.0	10	18	38	19	35 HEX	P18	0.160
3/8	25.0	10	18	38	23	41 HEX	P20	0.215
1/2	32.0	12	20	44	30	46 HEX	G25	0.312
3/4	38.0	12	26	50	36	58 HEX	G30	0.447
1	45.0	15	26	56	43	65 HEX	G35	0.764
1 1/4	55.0	15	30	60	52	76 HEX	G45	1.106
1 1/2	61.0	18	36	72	58	83 OCT	G50	1.327
2	76.0	18	36	72	73	103 OCT	G65	1.856

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

STD, X-S

Outlet Size	A		B		C		APP'Weight(kg)	
	STD	X-S	STD	X-S	STD	X-S	STD	X-S
1/2	19.1	19.1	34.9	34.9	23.8	23.8	0.08	0.09
3/4	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
1 1/4	31.8	31.8	65.1	65.1	44.5	44.5	0.36	0.41
1 1/2	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
2 1/2	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
1/2	28.6	28.6	34.9	34.9	14.3	14.3	0.11	-
3/4	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
1 1/4	44.5	44.5	61.9	61.9	33.3	33.3	0.57	0.57
1 1/2	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
2 1/2	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

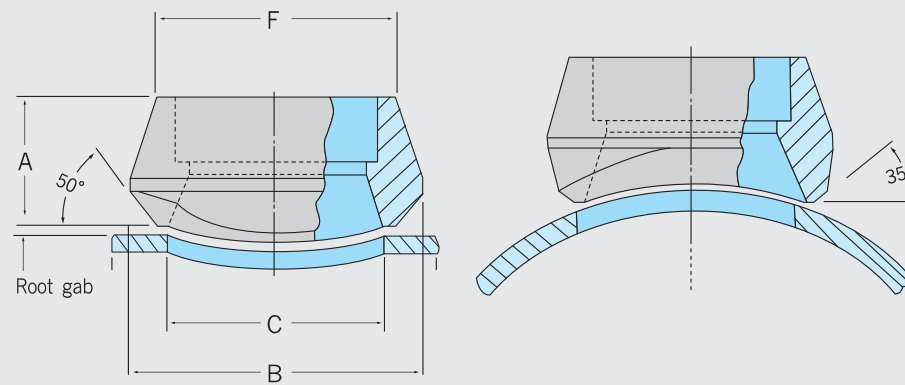
- Dimensions are in millimeters.
- Applicable Run Pipe Sizes are from Out-Let size to 36 inch

FORGED OUTLET FITTINGS

SUNG WON FITTING

Socket

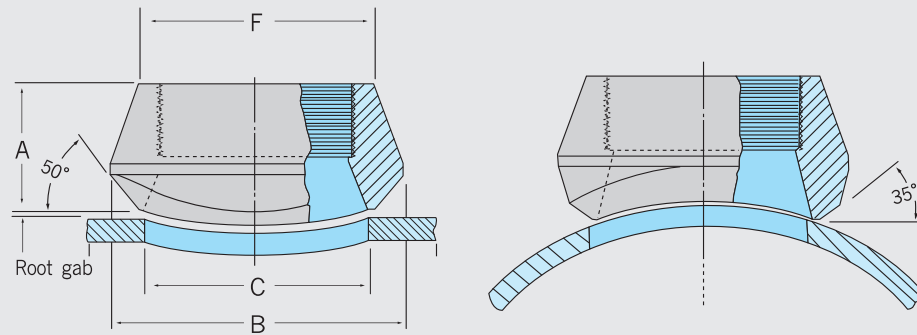
3000#, 6000#



Outlet Size	A		B		C		F		APP'Weight(kg)	
	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1	31.8	39.7	0.14	0.23
3/4	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
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1	55.6	65.1	0.39	0.73
1 1/2	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
2 1/2	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	-

Thredolet

3000#, 6000#

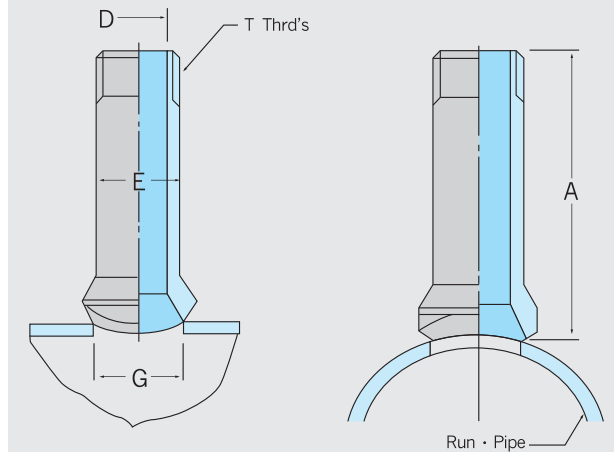


Outlet Size	A		B		C		F		APP'Weight(kg)	
	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1	31.8	39.7	0.11	0.20
3/4	27.0	36.5	44.5	50.8	30.2	25.4	36.5	46.6	0.16	0.34
1	33.3	39.7	54.0	61.9	36.5	33.3	46.0	57.2	0.28	0.56
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1	55.6	65.1	0.41	0.71
1 1/2	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
2 1/2	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# Socketlets and Thredolets, Inside Bore, Thread Socket Bore and Socket Depth Dimensions are According to ASTM B16.11.

Nippolet

3000#



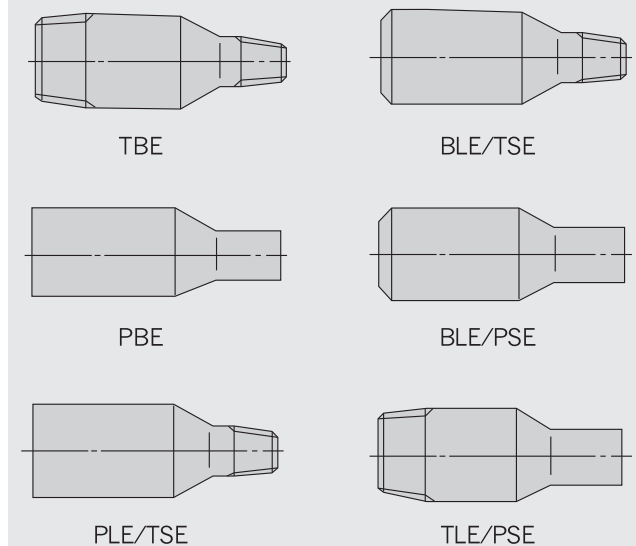
Run Pipe Size	Outlet Size T	A	G	D	E	Unit Weight (kg)
36- 3/4	1/2	88.9	23.9	14.0	21.3	0.36
36-1	3/4	88.9	30.2	18.8	26.7	0.56
36-1 1/4	1	88.9	36.6	24.4	33.3	0.84
36-1 1/2	1 1/4	88.9	44.5	32.5	42.2	1.22
36-2	1 1/2	88.9	50.8	38.1	48.3	2.00
36-2 1/2	2	88.9	65.0	49.3	60.5	3.12

Large end Size	Small end Size	Length (mm)
1/2	3/8-1/8	70
3/4	1/2-1/8	76
1	3/4-1/8	89
1 1/4	1-1/8	102
1 1/2	1 1/4-1/8	114
2	1 1/2-1/8	165
2 1/2	2-1/8	178
3	2 1/2-1/8	203
3 1/2	3-1/8	203
4	3 1/2-1/8	229

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

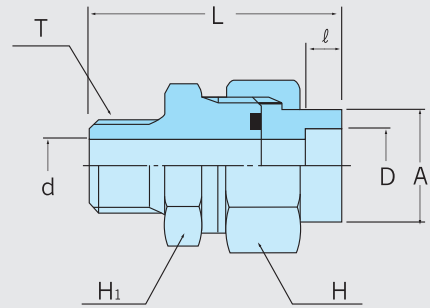
Swaged Nipple

Mss-Sp-95



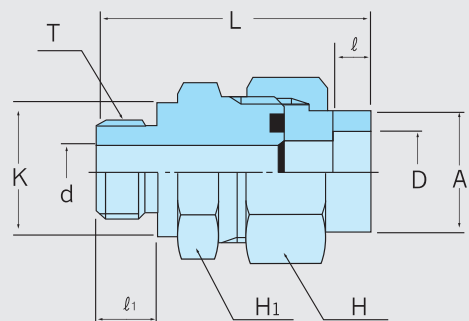
- Swaged Nipples are made from Forged Steel or Pipe

**MALE CONNECTOR
(SWMC-R)**



Designations	Nom. Size	D	l	d	A	L	H	H ₁	T (PT)	O-RING
SWMC02-02R	1/4	14.3	10	7	21	54	HEX36	HEX30	1/4	P18
SWMC02-03R	1/4	14.3	10	9	21	55	HEX36	HEX30	3/8	P18
SWMC03-03R	3/8	17.8	10	9	25	56	HEX41	HEX36	3/8	P20
SWMC03-04R	3/8	17.8	10	12	25	56	HEX41	HEX36	1/2	P20
SWMC04-04R	1/2	22.2	10	12	32	60	HEX46	HEX41	1/2	G25
SWMC04-06R	1/2	22.2	10	16	32	66	HEX46	HEX41	3/4	G25
SWMC06-06R	3/4	27.7	13	16	38	72	HEX55	HEX46	3/4	G30
SWMC06-08R	3/4	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	1 1/4	G35
SWMC10-10R	1 1/4	43.2	13	25	55	90	OCT75	OCT65	1 1/4	G45
SWMC10-12R	1 1/4	43.2	13	32	55	91	OCT75	OCT65	1 1/2	G45
SWMC12-12R	1 1/2	49.1	13	32	61	99	OCT85	OCT75	1 1/2	G50
SWMC12-16R	1 1/2	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)**



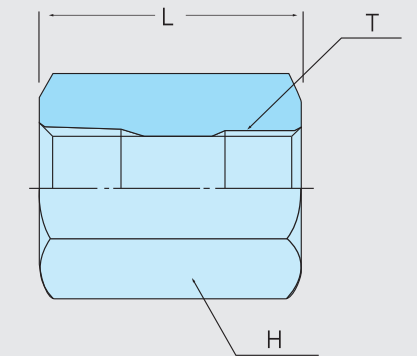
Designations	Nom. Size	D	l	d	K	A	l ₁	L	H	H ₁	T (PF)	O-RING
SWMC02-02G	1/4	14.3	10	7	18	21	12	54	HEX36	HEX30	1/4	P18
SWMC02-03G	1/4	14.3	10	9	21.5	21	12	54	HEX36	HEX30	3/8	P18
SWMC03-03G	3/8	17.8	10	9	21.5	25	12	55	HEX41	HEX36	3/8	P20
SWMC03-04G	3/8	17.8	10	12	25.5	25	14	57	HEX41	HEX36	1/2	P20
SWMC04-04G	1/2	22.2	10	12	25.5	32	14	61	HEX46	HEX41	1/2	G25
SWMC04-06G	1/2	22.2	10	16	31.5	32	16	63	HEX46	HEX41	3/4	G25
SWMC06-06G	3/4	27.7	13	16	31.5	38	16	69	HEX55	HEX46	3/4	G30
SWMC06-08G	3/4	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	1 1/4	G35
SWMC10-10G	1 1/4	43.2	13	25	48.5	55	20	84	OCT75	OCT65	1 1/4	G45
SWMC10-12G	1 1/4	43.2	13	32	53.5	55	22	86	OCT75	OCT65	1 1/2	G45
SWMC12-12G	1 1/2	49.1	13	32	53.5	61	22	98	OCT85	OCT75	1 1/2	G50
SWMC12-16G	1 1/2	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

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

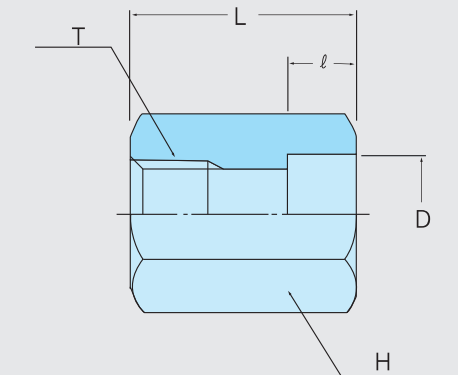
Designations	Nom. Size	D	l	L	H	T (PT)
SSB-02WR	1/4	14.3	10	30	HEX22	1/4
SSB-03WR	3/8	17.8	10	30	HEX27	3/8
SSB-04WR	1/2	22.2	10	40	HEX32	1/2
SSB-06WR	3/4	27.7	13	43	HEX38	3/4
SSB-08WR	1	34.5	13	50	HEX46	1
SSB-10WR	1 1/4	43.2	13	55	HEX55	1 1/4
SSB-12WR	1 1/2	49.1	13	55	HEX60	1 1/2
SSB-16WR	2	61.1	16	64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

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

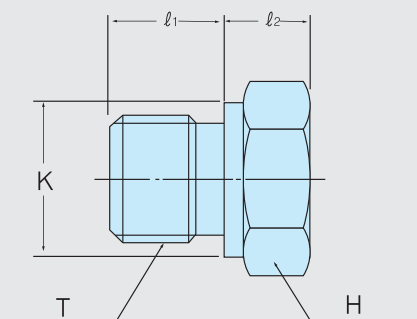
HEX SOCKET (SSA)



SPECIAL SOCKET (SSB)

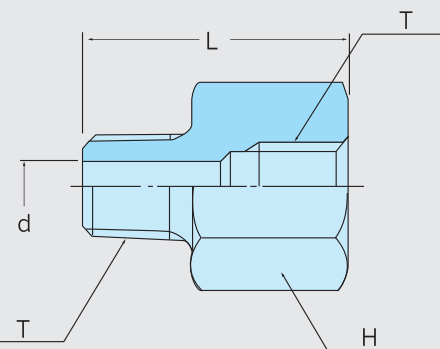


HEX HEAD PLUG (SPC)



MALE/FEMALE ADAPTER

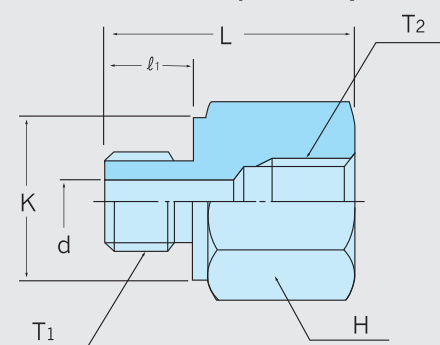
TYPE A (MFAA)



Designations	T (PT)	d	L	H
MFAA-02R	1/4	7	33	HEX22
MFAA-03R	3/8	9	36	HEX24
MFAA-04R	1/2	12	45	HEX30
MFAA-06R	3/4	16	50	HEX36
MFAA-08R	1	20	58	HEX46
MFAA-10R	1 1/4	28	67	HEX55
MFAA-12R	1 1/2	32	69	HEX65
MFAA-16R	2	40	79	HEX75

MALE/FEMALE ADAPTER

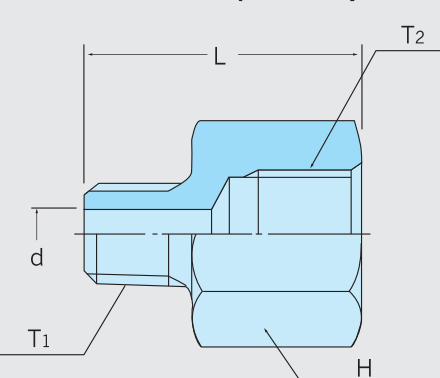
TYPE B (MFAB)



Designations	T1 (PF)	T2 (PT)	d	K	l1	L	H
MFAB-02GR	1/4	1/4	6	19	12	33	HEX22
MFAB-03GR	3/8	3/8	8	22	12	35	HEX24
MFAB-04GR	1/2	1/2	12	27	14	42	HEX30
MFAB-06GR	3/4	3/4	16	36	16	47	HEX36
MFAB-08GR	1	1	22	41	18	55	HEX46
MFAB-10GR	1 1/4	1 1/4	28	50	20	63	HEX55
MFAB-12GR	1 1/2	1 1/2	31	55	21	66	HEX65
MFAB-16GR	2	2	36	75	25	76	HEX75

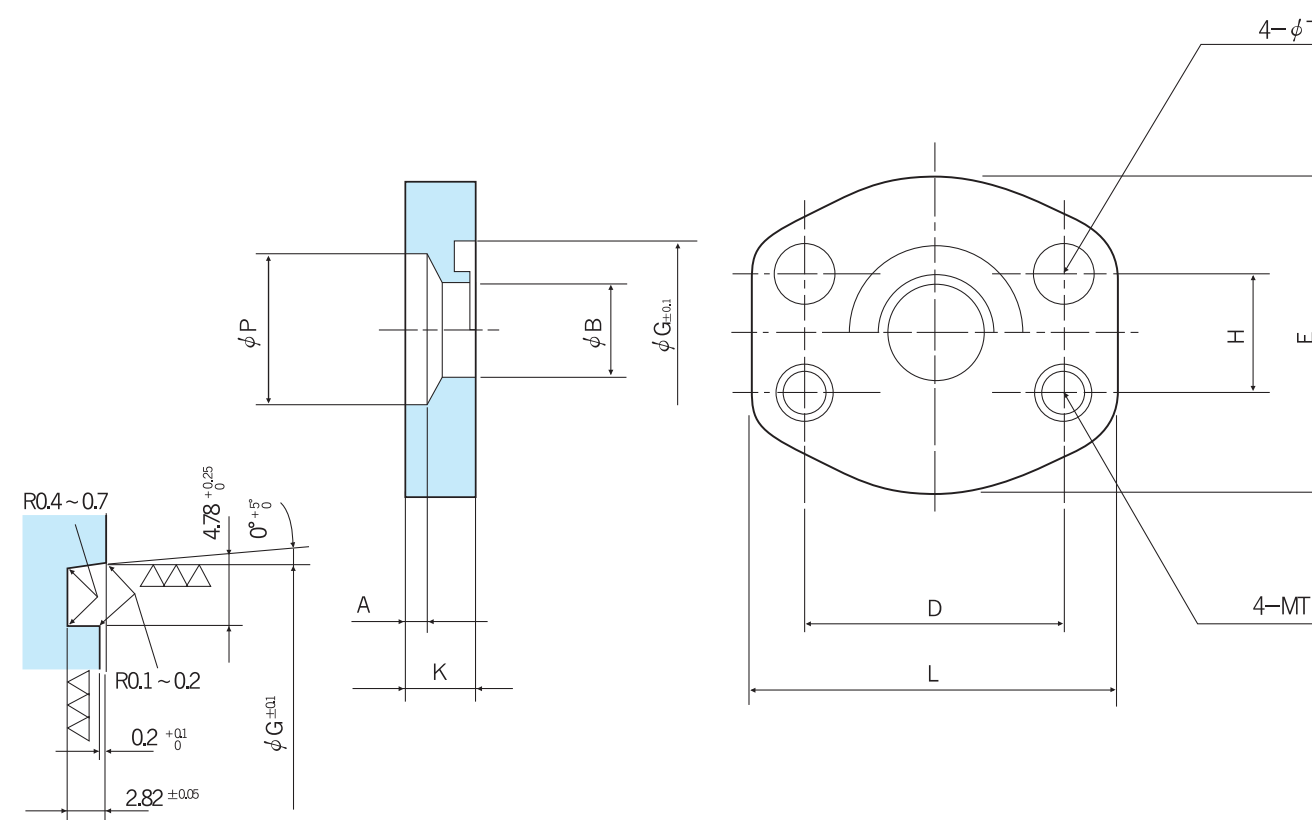
MALE/FEMALE ADAPTER

TYPE C (MFAC)



Designations	T1 (PT) × T2 (PT)	d	L	H
MFAC01-02R	1/8 × 1/4	4	30	HEX22
MFAC01-03R	1/8 × 3/8	4	31	HEX24
MFAC02-03R	1/4 × 3/8	7	35	HEX24
MFAC02-04R	1/4 × 1/2	7	39	HEX30
MFAC02-06R	1/4 × 3/4	7	42	HEX36
MFAC03-04R	3/8 × 1/2	9	41	HEX30
MFAC03-06R	3/8 × 3/4	9	44	HEX36
MFAC03-08R	3/8 × 1	9	47	HEX46
MFAC04-06R	1/2 × 3/4	12	48	HEX36
MFAC04-08R	1/2 × 1	12	52	HEX46
MFAC04-10R	1/2 × 1 1/4	12	56	HEX55
MFAC06-08R	3/4 × 1	16	55	HEX46
MFAC06-10R	3/4 × 1 1/4	16	59	HEX55
MFAC06-12R	3/4 × 1 1/2	16	60	HEX65
MFAC08-10R	1 × 1 1/4	20	64	HEX55
MFAC08-12R	1 × 1 1/2	20	64	HEX65
MFAC08-16R	1 × 2	20	69	HEX75
MFAC10-12R	1 1/4 × 1 1/2	28	69	HEX65
MFAC10-16R	1 1/4 × 2	28	73	HEX75
MFAC12-16R	1 1/2 × 2	32	75	HEX75

SOCKET WELD FLANGE



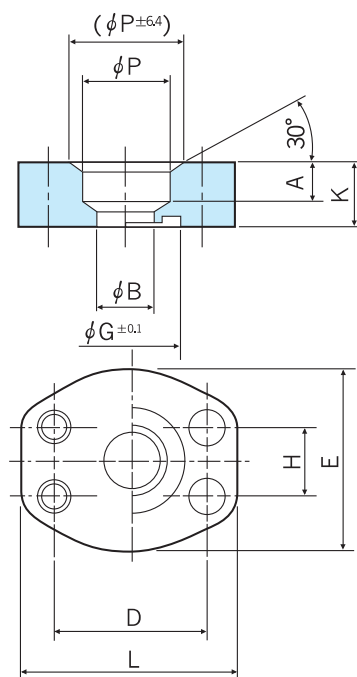
O · RING GROOVE 상세도

LOW PRESSURE 500PSI

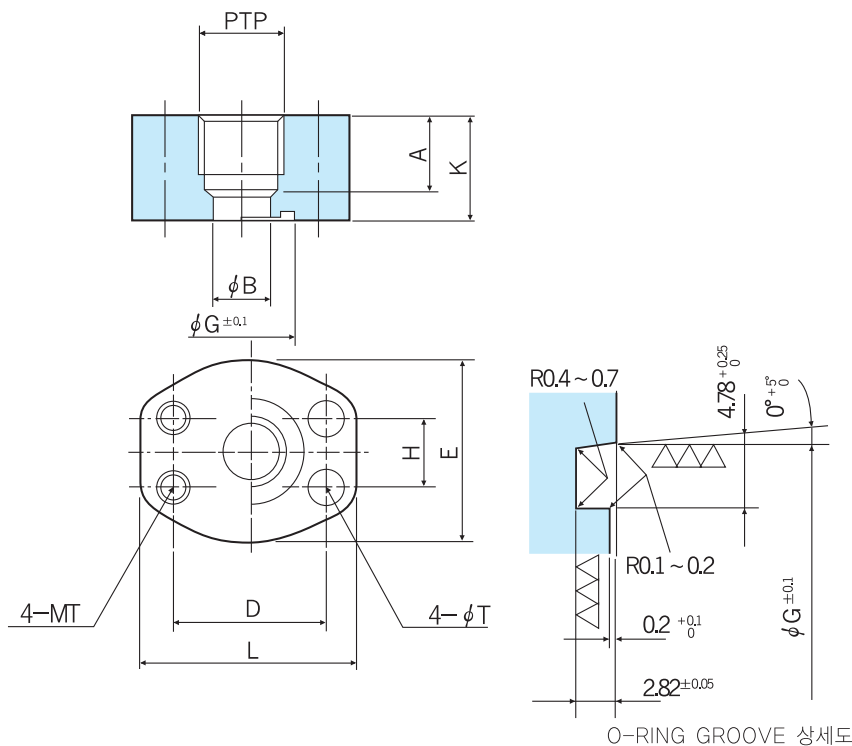
형식	적용 PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
BB-15S	φ 21.7	46	54	17.5	38.1	10	22.2	16	3	28.35	M8 φ9	-212
BB-20S	φ 27.2	52	65	22.2	47.6	12	27.7	21.5	4	31.52	M10	-214
BB-25S	φ 34.0	60	70	26.2	52.4	12	34.5	28	4	39.45	φ11	-219
BB-32S	φ 42.7	73	79	30.2	58.7	12	43.2	36	4	50.62	φ11	-224
BB-40S	φ 48.6	82	94	35.7	69.9	15	49.1	42	4	56.97	M12	-226
BB-50S	φ 60.5	94	102	42.9	77.8	15	61.0	53	4	66.50	M12	-229
BB-65S	φ 76.3	106	114	50.8	88.9	15	77.0	68	4	82.37	φ13.5	-234
BB-80S	φ 89.1	130	135	61.9	106.4	20	90.0	80	5	95.07	M16	-238
BB-90S	φ 101.6	136	152	69.9	120.7	20	102.4	93	5	107.77	M16	-242
BB-100S	φ 114.3	146	162	77.8	130.2	25	115.1	106	6	123.65	M16	-247
BB-125S	φ 139.8	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

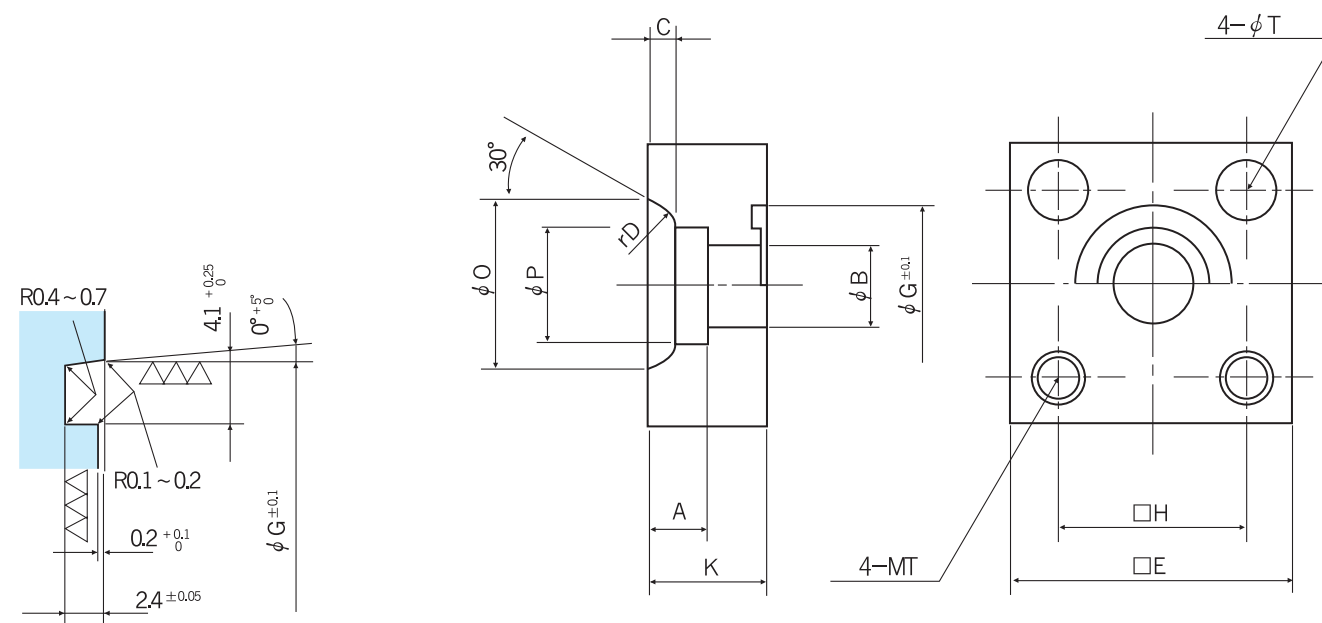
형식	적용 PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
CL-15T	φ21.7	46	54	17.5	38.1	26	1/2"	14	19	26.75	M8 φ9	-211
CL-20T	φ27.2	52	65	22.2	47.6	28	3/4"	19	19	31.52	M10	-214
CL-25T	φ34.0	60	70	26.2	52.4	32	1"	25	19	39.45	φ11	-219
CL-32T	φ42.7	73	79	30.2	58.7	36	1 1/4"	32	22	50.62	φ11	-222
CL-40T	φ48.6	82	94	35.7	69.9	42	1 1/2"	38	24	56.97	M12	-225
CL-50T	φ60.5	94	102	42.9	77.8	42	2"	51	30	66.50	φ13.5	-228
CL-65T	φ76.3	106	114	50.8	88.9	48	2 1/2"	63	30	82.37	φ13.5	-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

형식	적용 PIPE	E	L	H	D	K	P	B	A	G	T	O-RING AS568
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	-214
CL-25S	φ34.0	60	70	26.2	52.4	23	34.5	25	16	39.45	φ11	-219
CL-32S	φ42.7	73	79	30.2	58.7	28	43.2	32	18	50.62	φ11	-222
CL-40S	φ48.6	82	94	35.7	69.9	32	49.1	38	19	56.97	M12	-225
CL-50S	φ60.5	94	102	42.9	77.8	36	61.0	51	22	66.50	φ13.5	-228
CL-65S	φ76.3	106	114	50.8	88.9	48	77.0	63	25	82.37	φ13.5	-232
CL-80S	φ89.1	130	135	61.9	106.4	54	90.0	73	32	95.07	M16	-237
CL-90S	φ101.6	136	152	69.9	120.7	38	102.4	89	30	107.77	φ17.5	-241
CL-100S	φ114.3	146	162	77.8	130.2	38	115.1	99	30	123.65	φ17.5	-245

SQUARE FLANGE-SOCKET WELD

210kg/cm²



O-RING GROOVE 상세도

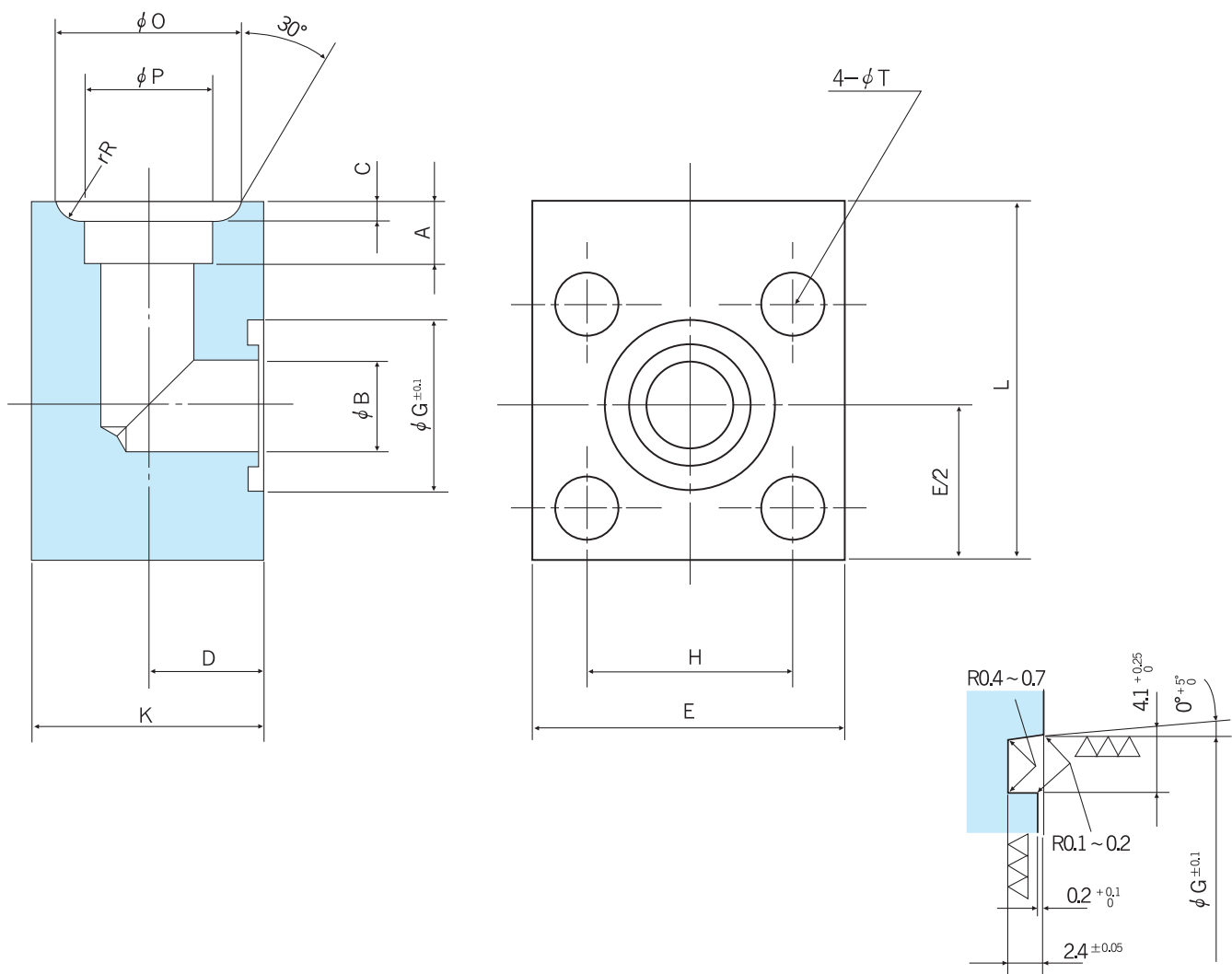
KS SHA 및 SHB

형식	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	G25
SHA-20	27.2	68	45	5	4.0	22	27.7	20	12	38	35	φ11	G30
SHA-25	34.0	80	53	5	4.0	28	34.5	25	14	45	40	M12	G35
SHA-32	42.7	90	63	5	6.0	28	43.2	31.5	16	56	45	φ13.5	G40
SHA-40	48.6	100	70	5	7.0	36	49.1	37.5	18	63	55	M16	G50
SHA-50	60.5	112	80	5	7.0	36	61.1	47.5	20	75	65	φ17.5	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

형식	적용 PIPE	E	H	D	C	K	P	B	A	O	G	T	O-RING AS568
SSA-15	21.7	54	36	5	3.5	22	22.2	16	11	32	30	M10	G25
SSA-20	27.2	58	40	5	4.0	22	27.7	20	12	38	35	φ11	G30
SSA-25	34.0	68	48	5	4.0	28	34.5	25	14	45	40	M12	G35
SSA-32	42.7	76	56	5	6.0	28	43.2	31.5	16	56	45	φ13.5	G40
SSA-40	48.6	92	65	5	7.0	36	49.1	37.5	18	63	55	M16	G50
SSA-50	60.5	100	73	5	7.0	36	61.1	47.5	20	75	65	φ17.5	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

ELBOW FLANGE



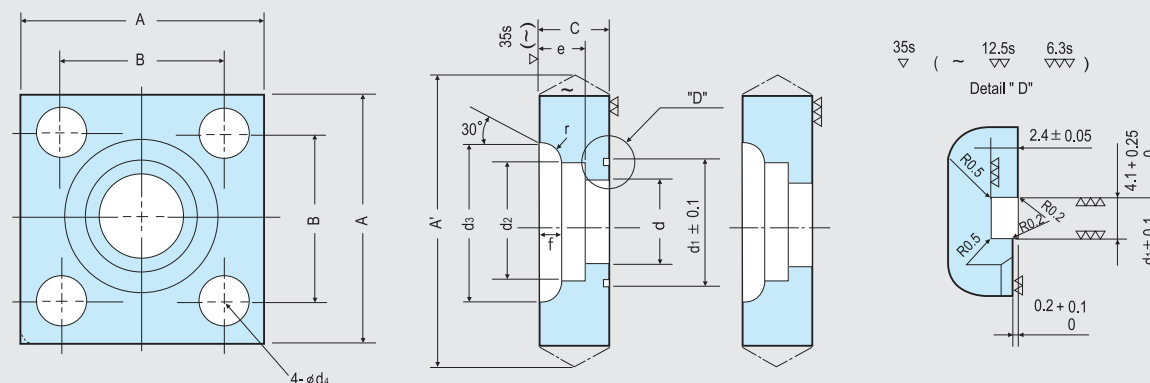
O-RING GROOVE 상세도

ELBOW FLANGE-SOCKET WELD

형식	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		G30
LSA-25	34.0	68	82	48	25	4	50	34.5	25	14	5	45	40	φ13	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	φ18	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	φ22	G75
LSA-80	89.1	140	170	103	59	11	118	90.0	71	25	6	108	90		φ24

FLANGE FOR OIL PRESSURE

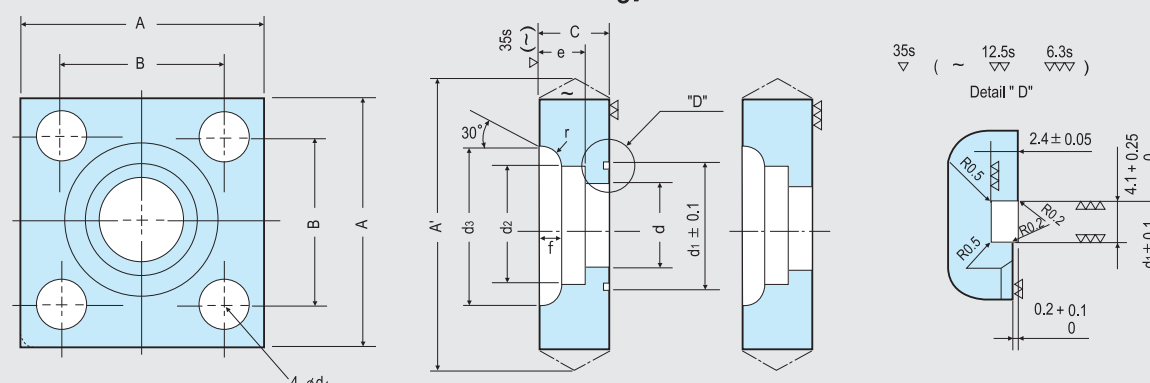
280kg/cm²



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	±0.2	35	+0	21.2	35	+0.1	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	+0.1	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	±0.4	60	-2	57.3	75	+0.1	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	+0	16.2	30		27.7	-0	12	43.5	13.5	5.0	5	1.34
25	95	±1.2	101	65	±0.2	35	-1.5	21.2	35	+0.1	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	+0.1	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	±0.4	60	-2	48.3	65	+0.1	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.

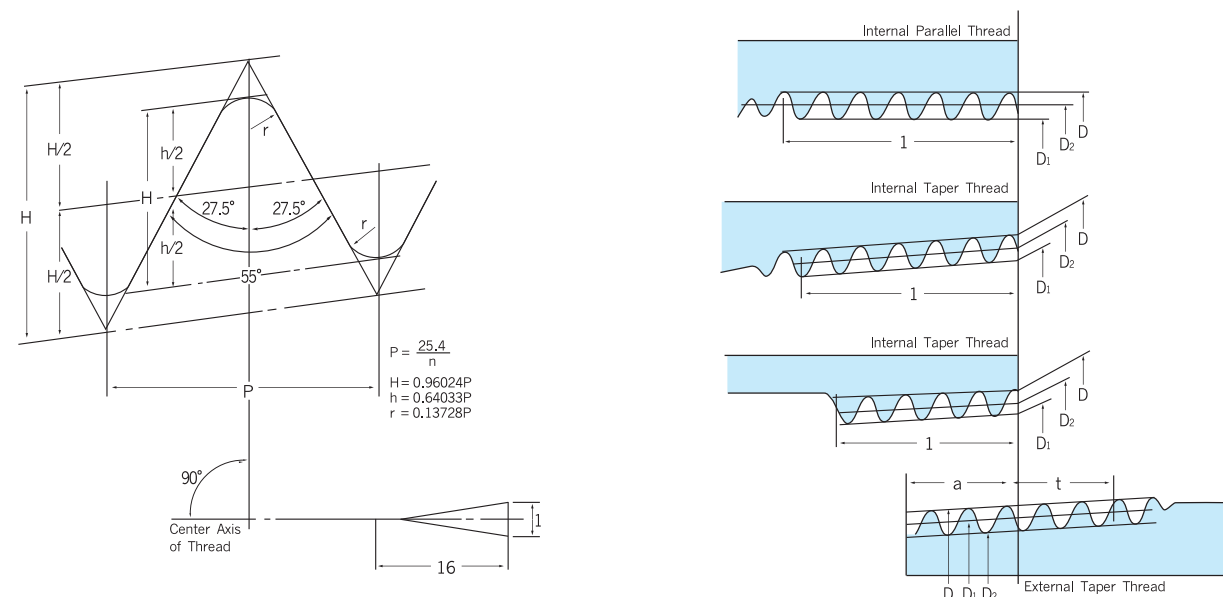
	ANSI B16.11		JIS B2316	
	Socket Welding(M)	Threaded(T)	Socket Welding(M)	Threaded(T)
1/8"	10.90, 10.65	NPT 1/8	11.0	PT 1/8
1/4"	14.35, 14.10	NPT 1/4	14.3	PT 1/4
3/8"	17.80, 17.55	NPT 3/8	17.8	PT 3/8
1/2"	21.95, 21.70	NPT 1/2	22.2	PT 1/2
3/4"	27.30, 27.05	NPT 3/4	27.7	PT 3/4
1"	34.05, 33.80	NPT 1	34.5	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(ASTM 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			
1/8-1/4	+0.012 -0.000	±0.03	Socket and Fitting bores within ±0.030	Maximum variation in alignment of socket and fitting bores for 1/8 in 12	center to Bottom of Socket	Bottom to Bottom of Socket	Bottom to Socket to Opposite Face
3/8-3/4	+0.012 -0.000	±0.03			±0.03	±0.06	±0.03
1-2	+0.012 -0.000	±0.03			±0.06	±0.12	±0.06
2 1/2-3	+0.012 -0.000	±0.06			±0.08	±0.16	±0.08
					±0.10	±0.20	±0.10

3. KS B0222 & JIS B0203 Pipe Threads

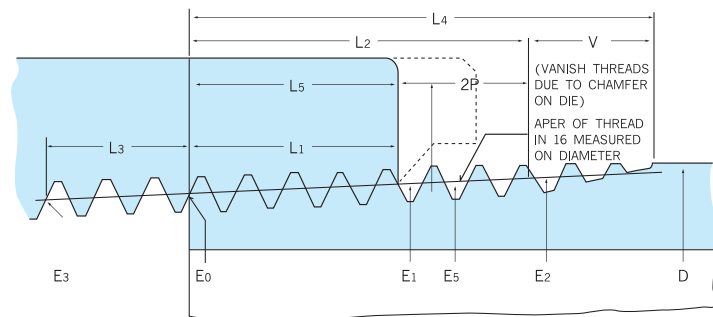


Basic Thread Data

Nominal Size	Number of Threads Per Inch	Screw Thread				Basic Diameter			Position of Basic Diameter			Effective Thread Length(Min.)				Nominal Pipe Size (For Reference)	
		Pitch	Height of Thread	Rounding	External Thread			External Thread	Internal Thread	Tolerances on Basic Diameters of Internal Parallel Thread	External Thread	Internal Thread		Outside Diameter	Wall thickness		
					Major Diameter d	Pitch Diameter d2	Minor Diameter d1	From the End of Pipe	The End of Pipe		Fitting Allowance	When there is an incomplete thread or more	When there is no incomplete thread				
					Major Diameter	Pitch Diameter	Minor Diameter	Basic length	Tolerance Axially		Tolerance Axially	Internal Taper thread	Internal Parallel Thread				
n	P	h	r	D	D2	D1	a	±b	±c	±	f	l	l	t			
PT 15(1/2)	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(3/4)	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(1 1/4)	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(1 1/2)	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(2 1/2)	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(3 1/2)	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

• Dimensions are in millimeters.

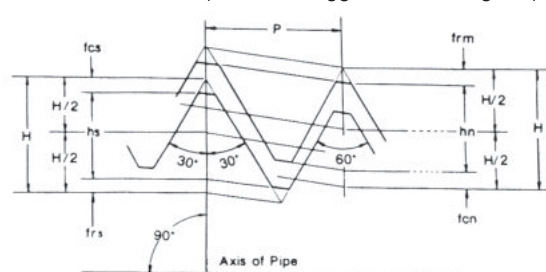
4. ANSI B2.1 Taper Pipe Threads. (Except Dryseal)



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

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



Basic Thread Data

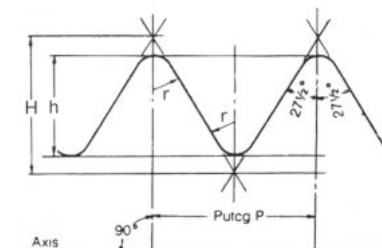
Nominal Pipe Size (NPT)	Outside Diameter of Pipe D	Threads per inch n	Pitch of Thread P	Pitch Diameter at beginning of External Thread	Handtight Engagement		Effective Thread, External			
					Length L1		Dia E1	Length L2		Dia E2
					In.	Thds.		In.	Thds.	
1	2	3	4	5	6	7	8	9	10	11
1/8	0.405	27.0	0.03704	0.36351	0.1615	4.36	0.37360	0.2639	7.12	0.38000
1/4	0.540	18.0	0.05556	0.47739	0.2278	4.10	0.49163	0.4018	7.23	0.50250
3/8	0.675	18.0	0.05556	0.61201	0.2400	4.32	0.62701	0.4078	7.34	0.63750
1/2	0.840	14.0	0.07143	0.75843	0.3200	4.48	0.77843	0.5337	7.47	0.79179
3/4	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
1 1/4	1.660	11.5	0.08696	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60130
1 1/2	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	0.08696	2.26902	0.4360	5.01	2.29627	0.7565	8.70	2.31630
2 1/2	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
3 1/2	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 External Thread L2 L1		Wrench Makeup Length for Internal Thread		Vanish Thread V		Overall Length External Thread L4	Nominal, Complete External Threads ^s		Height of Thread h	Increase in Dia per Thread, 0.0625/n	Basic Minor Dia at Small End of Pipe, Ka	
	In.	Thds.	Length L3		Dia, E3	In.		Thds.	Length L5				Length E5
			In.	Thds.									
1	12	13	14	15	16	17	18	19	20	21	22	23	24
1/8	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
1/4	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
3/8	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
1/2	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
3/4	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
1 1/4	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
1 1/2	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
2 1/2	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
3 1/2	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

^s 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



Taper 1 in 16 on dia. (Shown exaggerated in diagram)

BSP Size (Nominal Bore of Pipe)	NO. of Threads per inch	Pitch		Depth of Thread		BASIC-Diameters at Graze Plane			Gauge Length										
						Major (Gauge Diameter)	Effective	Minor	Basic	Tolerance Plus and Minus	Max.	Min.							
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm						
1/2	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
3/4	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
1 1/4	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
1 1/2	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
2 1/2	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		Wrenching Allowance		Tolerance of Position of Gauge Plane Relative to Face of Internally Taper Threaded Parts (Plus and Minus)		BSP Size (Nominal Bore of pipe)
		For Basic Gauge Length		For Max. Gauge Length		For Min. Gauge Length								
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
1/2	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	1/2
3/4	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	3/4
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
1 1/4	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	1 1/4
1 1/2	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	1 1/2
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
2 1/2	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	2 1/2
3	11	1.1761	29.8	1.3125	33.3	1.0397	26.3	0.3636	9.2	0.2273	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.

JIS G3448 ANSI B36.10M
 JIS G3454 ANSI B36.19M
 JIS G3455
 JIS G3459 (in mm)

Nomial Pipe Size		Outside Diameter		Nominal 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	33.4	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

Nominal 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	17.1	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



고압단조 피팅류 일절 A 105 • S.U.S
With regard to high pressure forging fitting
products A 105 • S.U.S

ISO 9001 : 2011

7. Material 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/mm ²)	Y.S. Min. psi (kg/mm ²)	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				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	4.0~6.0	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	0.5~1.00		1.00~1.50	0.44~0.65	70,000 (49.2)	40,000 (28.1)	20	30	143~207
A-182	F11-3	1¼Cr-½ MO	0.10~0.20	0.30~0.80	0.040	0.040	0.5~1.00		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%

Material Approval Unit



SUNG WON
FORGED FITTINGS



사업자등록증


(일반과세자)

등록번호 : 617-09-77988

상 호 : 성원피팅
 성 명 : 박재곤 생년월일 : 1961년 04월 25일
 개업년월일 : 1994년 10월 25일
 사업장소재지 : 부산광역시 강서구 낙동북로138번길 25 (강동동)

사업의 종류 : 업태 제조업 종목 철강관련결구류


교부사유 : 정정
 공동사업자 :



국세청

사업자단위과세 적용사업자 여부 : 여() 부()
 전자세금계산서 전용메일주소 :

2012년 10월 05일
 북부산 세무서장 (인)



공정실용온라인지원시스템(www.femis.go.kr)에서도 신청할 수 있습니다.


공장등록증명(신청서)

※ []에는 해당되는 곳에 √표를 합니다. (앞쪽)

접수번호	접수일자	처리기간	즉시
	회사명 성원피팅	전화번호 051) 644-6618	
신청인	대표자 성명 박재곤	생년월일(법인등록번호) 61.04.25	
	대표자주소(법인소재지) 부산광역시 남구 우암로2번나길 9, 감만현대아파트 301동 109호 (감만동)		
	공장소재지 부산광역시 강서구 낙동북로138번길 27 (강동동)	지목 대	보유구분 자가 [√], 임대 []
등록내용	공장등록일 2012-09-24	사업시작일	종업원수 남:6 여:2
	공장의 업종(분류번호) 철삭가공 및 유사처리업 (25924)		
	공장부지면적 826.00 m ²	제조시설면적 494.00 m ²	부대시설면적 0 m ²
등록조건			
	등록변경·증설등 기재사항 변경내용(변경 날짜 및 내용)		

「산업집적활성화 및 공장설립에 관한 법률 시행규칙」 제12조의3에 따라 위와 같이 공장등록증명서를 신청합니다.

2012년 09월 25일
 신청인 박재곤 (서명 또는 인)
 귀하




수수료
원

「산업집적활성화 및 공장설립에 관한 법률」 제16조([] 제1항· [] 제2항· [] 제3항)에 따라 위와 같이 등록된 공장임을 증명합니다.

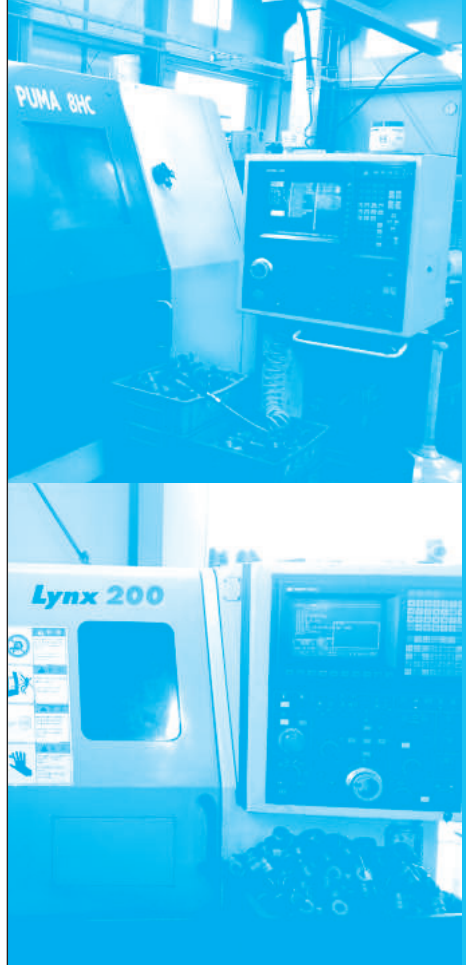
2012년 09월 25일

210mm×297mm [일반용지 70g/㎡(재활용품)]



부산광역시 강서구청장
 (수입증지가 인영(첨부)되지 아니한 조인에 의해 2012년 09월 25일 13:58
 증명은 그 효력을 보증할 수 없습니다)

01. BUSINESS SYNOPSIS



I am writing to have an opportunity to introduce Sung-won Fitting Co. to you.

Sung-won Fitting Co. was established in May 1986 and has developed and provided diverse range of fitting products for petrochemicals, stationary power generation, and ship construction industries both domestically and globally.

We are committed to provide our customers in plumbing business with best customer experiences by ensuring quality of products, quantity of products and delivering products in contracted time. We would like to have an opportunity to provide the products and services as described above.

I am looking forward to hearing from you.

President of Sung-won Fitting Co. Jae Kon Park

SUNG WON

FORGED FITTINGS

Products item

[High pressure]

A105	A106	F304	F316L	TP304/L	TP316/L
	90° ELBOW			PLUG	
	TEE			CAP	
	COUPLING			PIPE-NIPPLE	
	UNION CAP			WELDOLET	
	SWAGE-NIPPLE			SOCKOLET	
	THREDOLET SQ FLANG				

02. COMPANY SYNOPSIS

Designation	Sung-Wong Fitting co.	Representatives	Jae Gone Park
Business Registration Number	617-09-77988		
Location	138-25 KangDongDong Kangseo-gu, busan , korea	T) 051-644-6618 F) 051-644-6620	
E-MAIL	elbowtee@daparasteel.co.kr tee0909@naver.com	homepage	www.sung-won.or.kr
Company Personnel	Production : 20	Administration : 5	
Area	1853.00 m ²	Own division	own

Corporate logo

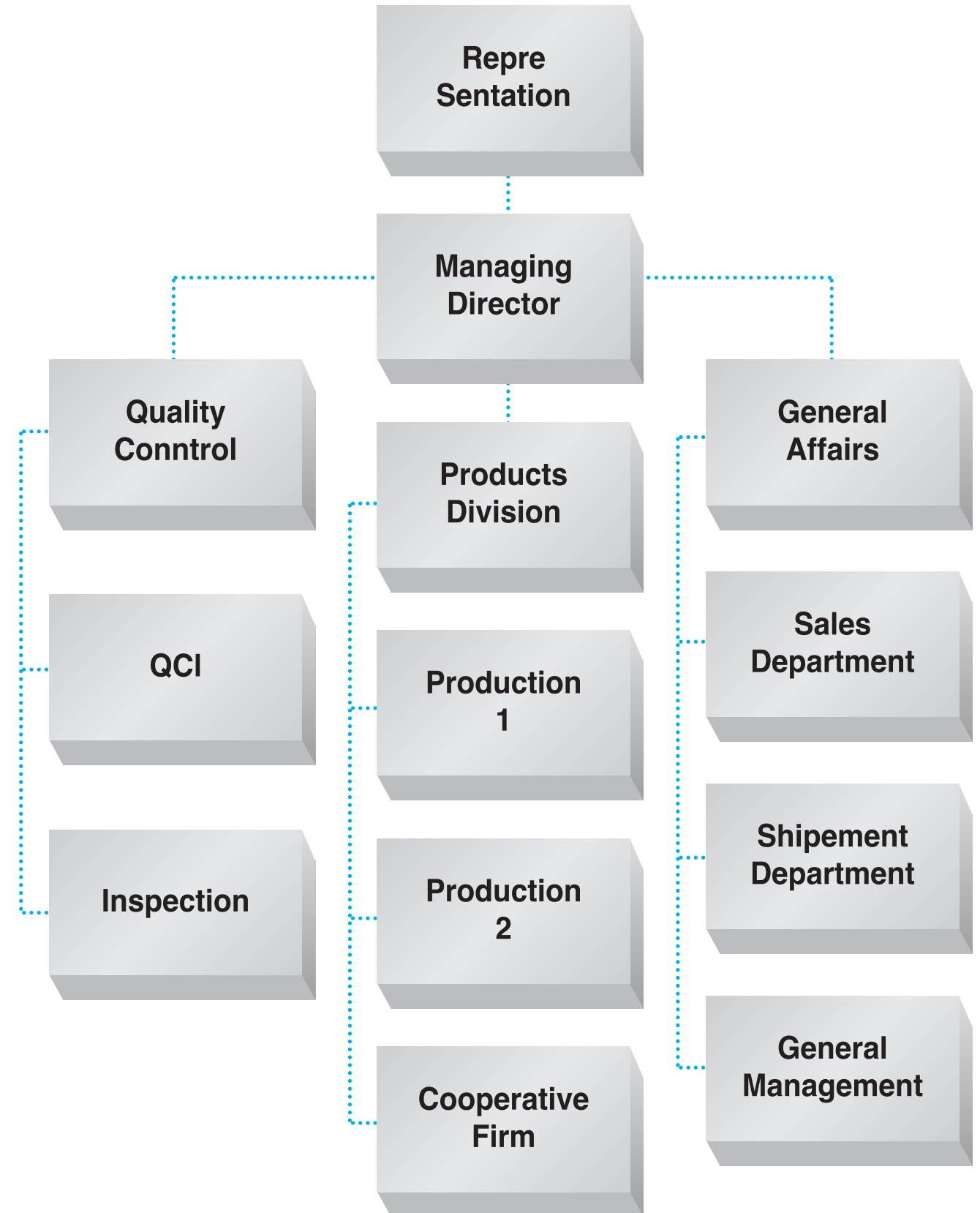
SUNG-WON FITTING
MARK



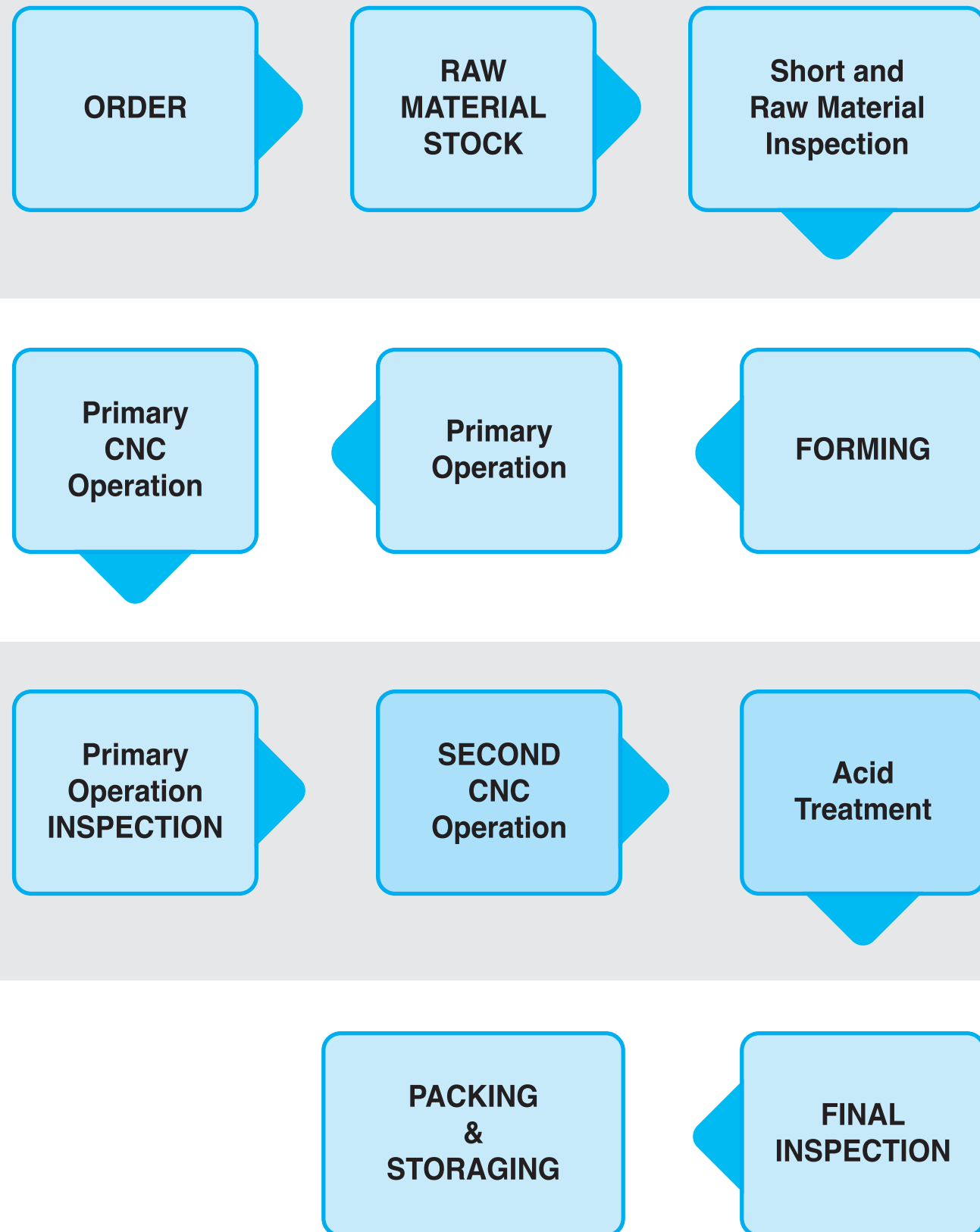
03. COMPANY HISTORY



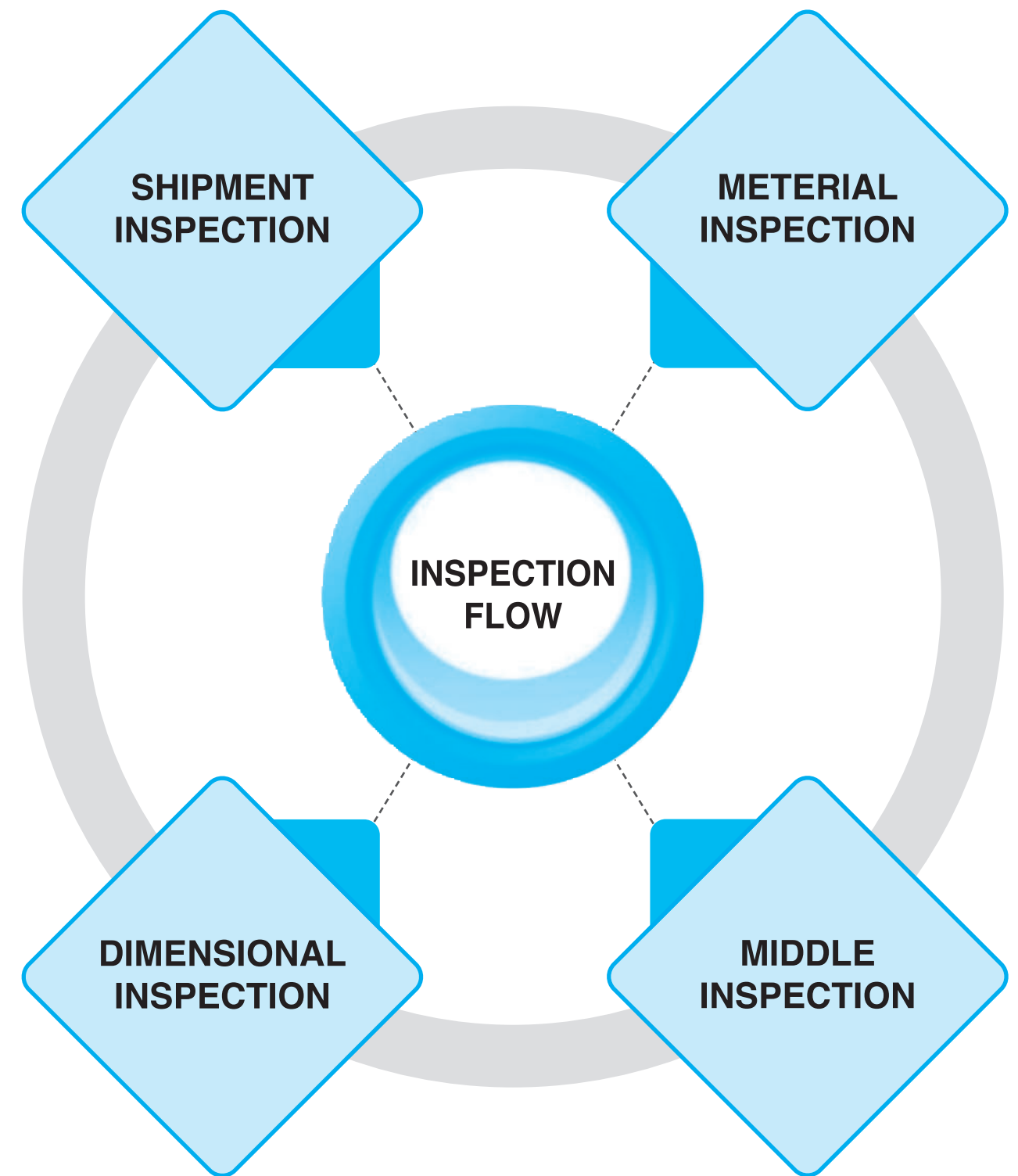
04. ORGANIZATION CHART



05. LAYOUT FOR MANUFACTURING



06. INSPECTION FLOW CHART



07. MANUFACTURING FACILITY

[EXPERIENCES]


NO	TYPE	Designation	Quantity	Capacity
1	CNC Machine	DAEWOO CNC	6EA	8"
2	CNC Machine	DAEWOO CNC	4EA	6"
3	CNC Machine	DAEWOO CNC	4EA	8HC
4	CNC Machine	DAEWOO CNC	3EA	10"
5	Hydraulic jet drill		14EA	
6	Lathe Machine	DAEHAN 460	1EA	
7	Lathe Machine	TONG -IL435	1EA	
8	SHOT MACHINE		1EA	
9	MAKING MACHINE		1EA	
10				
11				
12				
13				
14				
15				

NO	ORDER COMPANY	ITEM	Construction site
1	DAE UOK SOU DO	90"ELBOW SW 2" 外	POSCO<CHANG WON>
2	DAESUNG GOE YAK	90"ELBOW F304 ¾" 外	AN-TACK
3	JOO-NO JONG HAP	90"ELBOW A105 2½" 外	DELPA KOREA
4	YAL SUNG GL GONG	90"ELBOW A105 1½" 外	LGTWIN TOWER
5	DAESUNG GOE YAK	TEE A105 ½" 外	Vietnam EXPORT
6	KVNF	90"ELBOW 6000# A105 1½" 外	IRAN EXPORT
7	SUNG-KANG FITTING	90"ELBOW 6000# F304 ½" 外	KANG YANG
8	JOO-NO JONG HAP	90"ELBOW, TEE A105 2" 外	DO-SAN COMPANY
9	HYUNDAVALVE CONTROL	90"ELBOW A105 ½" 外	HAN-IL SEE-MENT
10	HAN-KOOK BAE GAN	90"ELBOW F304 ½" 外	SKPetrochemical
11	SUNG-KANG FITTING	90"ELBOW F304 2" 外	POSCO
12	KVNF	90"ELBOW A105 ½" 外	Thailand EXPORT
13	JOO-NO JONG HAP	NIPPLE A106 1¼" 外	DO-SAN COMPANY
14	WOO-KANG VALVE	90"ELBOW F304 1" 外	LG chemistry
15	SAE-JIN GI GONG	90"ELBOW F304 ½" 外	LG chemistry
16	JOO-NO JONG HAP	90"ELBOW F304 ½" 外	DO-SAN COMPANY
17	DO-WON V/V	90"ELBOW SW F316 外	Myanmar SHWE
18			
19			

[EXPERIENCES]

NO	ORDER COMPANY	ITEM	Construction site
1	DO-WON V/V	90"ELBOW SW F316 外	Myanmar SHWE
2	HOSAN CO.	90"ELBOW SW F316 外	AZENCO SHIMAL 2 FOR CWP
3	KI SAN CO.	TEE SW F316 外	DOOSAN/MONG DOUNG
4	Wolseong CO.	TEE SW F316 外	Oman SUR PJT PUMP
5	KI SAN CO.	NIPPLE TP304 外	Youngheung Feed pump
6	DO-WON V/V	TEE SW F304 外	POSCO Biomass
7	HOSAN CO.	UNION SW F316 外	KA1330 BOOSTER PUMP
8	KI SAN CO.	NIPPLE A106 外	DAE-WOO SHUWEIHAT S3
9	Wolseong CO.	H/COUPLING 外	SAMSUNG TODAL ARMATICS
10	HOSAN CO.	NIPPLE TP304 外	EMAL II POWER PJT LUBE
11	HYUNDAI V/V	90"ELBOW SW F304 外	SOUTH PARS 19 BFP LUBE
12	KI SAN CO.	H/COUPLING F316 外	HYUNDAL GREEN POWER 5-6
13	SUNGWOO STEEL	90"ELBOW SW F316 外	Yeongheung small pipe
14	SUNGWOO STEEL	90"ELBOW SW F316 外	Gwangyang AUX PIPING
15	HOSAN CO.	NIPPLE A106 外	JAEWOO-DRAIN SPOOL PIECE
16	HOSAN CO.	90"ELBOW SW A105 外	BOROUGE3 XLPE PJT UNIT
17	SAMSUNG JONG HAB CO.	90"ELBOW SW F304 外	HAW CHAN PLANT
18	HYUNDAL V/V CONTROL	TEE SW F316 外	HAE DONG POWER PLANT
19	WORLD E.N.G	90" ELBOW PT A105 外	WOL SAN POWER PLANT

[CERTIFICATION]




제 2013001 호

유망중소기업지정서


업체명 : 성원피팅
 대표자 : 박재곤
 사업자등록번호 : 617-09-77988
 선정일자 : 2013.01.21

귀사를 정부의 중소기업 육성시책에 의거 부산은행의 유망중소기업으로 지정합니다.

2013년 01월 21일



부 산 은 행
은행장 성세환





MSA Certification Co., Ltd.
Quality Management System Certificate

Sung Won Fitting

#238-1 Gamman-dong, Nam-gu, Busan, Korea

MSA Certification Co., Ltd. Hereby certifies that the Quality Management System of the above organization has been evaluated and found to be in line with the requirements of the following standard:

ISO 9001:2008

(Excluding Clause: 7.3 Design & Development)

For the scope of

Manufacture and Service of Metal Fittings

Certificate Number : **KorQ-118822**

Certificate Valid Until : **09 May 2012 ~ 08 May 2013**

Initial Certification Date : 09 May 2011

MSA Certification Date : 09 May 2011

Certification Expiry Date : 08 May 2014

Robert Plee

Scheme Manager



10F, Jeongwoo Bldg, Yeouido-dong, Eunhaeng-ro 29, Yeongdeungpo-gu, Seoul 150-739, Korea
This certificate is a sole property of MSA Certification Co., Ltd. and therefore shall be returned to it upon its request. (Rev.3)

INSPECTION CERTIFICATE

ORDER NO : A0528-11 DATE : 2012. 11. 20 MATERIAL : A105		CERTIFICATE NO : S-1117-13 CUSTOMER : 성원피팅 STARTING MATERIAL : FORGED STEEL		SUNG WON FITTING 138-2S KANG DONGJONG GANGSEON BUSAN CITY, KOREA TEL1 (051)-644-6618 IPAX1 (051)644-6620								
SPEC.	C x100	Si x100	Mn x100	P x1000	S x10000	Cu x100	Ni x100	Cr x100	Mo x100	[CHEMICAL COMPOSITION] (%)		V x100
										MIN	MAX	
MIN	35	35	60	35	40	40	40	30	12	8		
MAX	19	20	95	17	6	8	5	7	2	3		
1C7266	20	22	94	15	5	7	6	6	3	2		
3C6745	20	22	94	15	5	6	5	5	3	2		
1C1497	18	21	93	16	5	6	6	4	2	3		
1B4463	20	22	93	15	4	6	6	4	2	3		
1C0257	18	21	95	16	5	7	5	6	3	2		
485963	19	22	94	14	5	5	5	4	2	2		

DESCRIPTION & SIZE	Lot No 포트번호 control No	QTY	TEST ITEM	RULE	MAKER	Y.S KSI		T.S KSI		ELON-GATION (%)		RED.OF AREA (%)		HARDNESS TEST HB	BEND TEST	IMPACT FT.LBF	Heat Treatment
						MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX				
90°ELBW SW #3000 1/2"	1C7266	50EA	ASME B16.11	HYUNDAL	43.0	72.0	72.0	22.0	22.0	65.0	152.155						NORMALIZING
90°ELBW SW #3000 3/4"	3C6745	50EA	ASME B16.11	HYUNDAL	46.0	76.0	76.0	36.0	36.0	66.0	154.157						Dimensional Inspection
90°ELBW SW #3000 1"	1C1497	50EA	ASME B16.11	HYUNDAL	46.0	76.0	76.0	36.0	36.0	66.0	154.157						GOOD
90°ELBW SW #3000 1-1/4"	1B4463	50EA	ASME B16.11	HYUNDAL	43.0	72.0	72.0	22.0	22.0	65.0	152.155						GOOD
90°ELBW SW #3000 1-1/2"	485963	50EA	ASME B16.11	HYUNDAL	44.0	72.0	72.0	34.0	34.0	63.0	155.158						Ultrasonic Examination
90°ELBW SW #3000 2"	1C0257	50EA	ASME B16.11	HYUNDAL	45.0	75.0	75.0	35.0	35.0	64.0	153.158						N/A
																	Magnetic Examination
																	GOOD

												Quality Control Manager
--	--	--	--	--	--	--	--	--	--	--	--	-------------------------

We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification

[ROUGH MAP]



SUNG WON
FORGED FITTINGS



SUNG WON
FORGED FITTINGS



고압단조 피팅류 일절 A 105 • S.U.S
With regard to high pressure forging fitting products A 105 • S.U.S

