

YHMC

BUTT-WELDING FITTINGS



大甲永和機械工業股份有限公司

化工級事業部

- ◆ 歷史：
 - 1943：大甲鐵工所
 - 1981：投資製造對銲管配件
 - 2007：股票上櫃掛牌買賣 (代碼: 2221)
- ◆ 登記資本：423,250,000 NTD / 員工人數：240
- ◆ 註冊商標：
- ◆ 廠區面積：15,200m²

產品

- ◆ 彎頭、三通、大小頭（漸縮管）、管帽、管節…等
- ◆ 材質：不銹鋼 300 系列與其他
- ◆ 用途：石化、造紙、化工、染整、造船等工業及建築排水管路之主要配件
- ◆ 規格：ASTM, ASME, MSS, JIS, JIS B2309 (薄壁管件)
- ◆ 有縫 / 無縫管製：1/2” ~12” , 板製：14” ~ 48” 與其他
- ◆ 生產能力：2,500 tons / 年，最高: 3,500 tons / 年
- ◆ 外銷：日本、美國、東南亞、澳洲、中國、歐洲、中東…等

TACHIA YUNG HO MACHINE INDUSTRY CO.,LTD

Industrial Division

- ◆ History：
 - 1943：Tachia Ironworks
 - 1981：Invested in manufacturing Butt Welding Pipe Fittings.
 - 2007：TPEX Listed (Code:2221)
- ◆ Capital: NT \$423,250,000 / Employees：240
- ◆ Trademark：
- ◆ Planthouse area：15,200m²

Product

- ◆ Elbow, Tee, Reducer, Cap, Stub end. etc.
- ◆ Grade：Stainless Steel 300 Series & Others.
- ◆ Usage：Petrochemical, Paper production, Dyeing, Ship building. ...etc.
- ◆ Specifications：ASTM, ASME, MSS, JIS, JIS B2309 (Su fittings)
- ◆ Weld / SMLS pipe forming：1/2” ~12” , Plate Forming：14” ~ 48” & others.
- ◆ Output：2,500 tons / year, Maximum: 3,500 tons / year
- ◆ Exportation：Japan , USA , South-East Asia, Australia , China , Europe , Middle East ...etc.



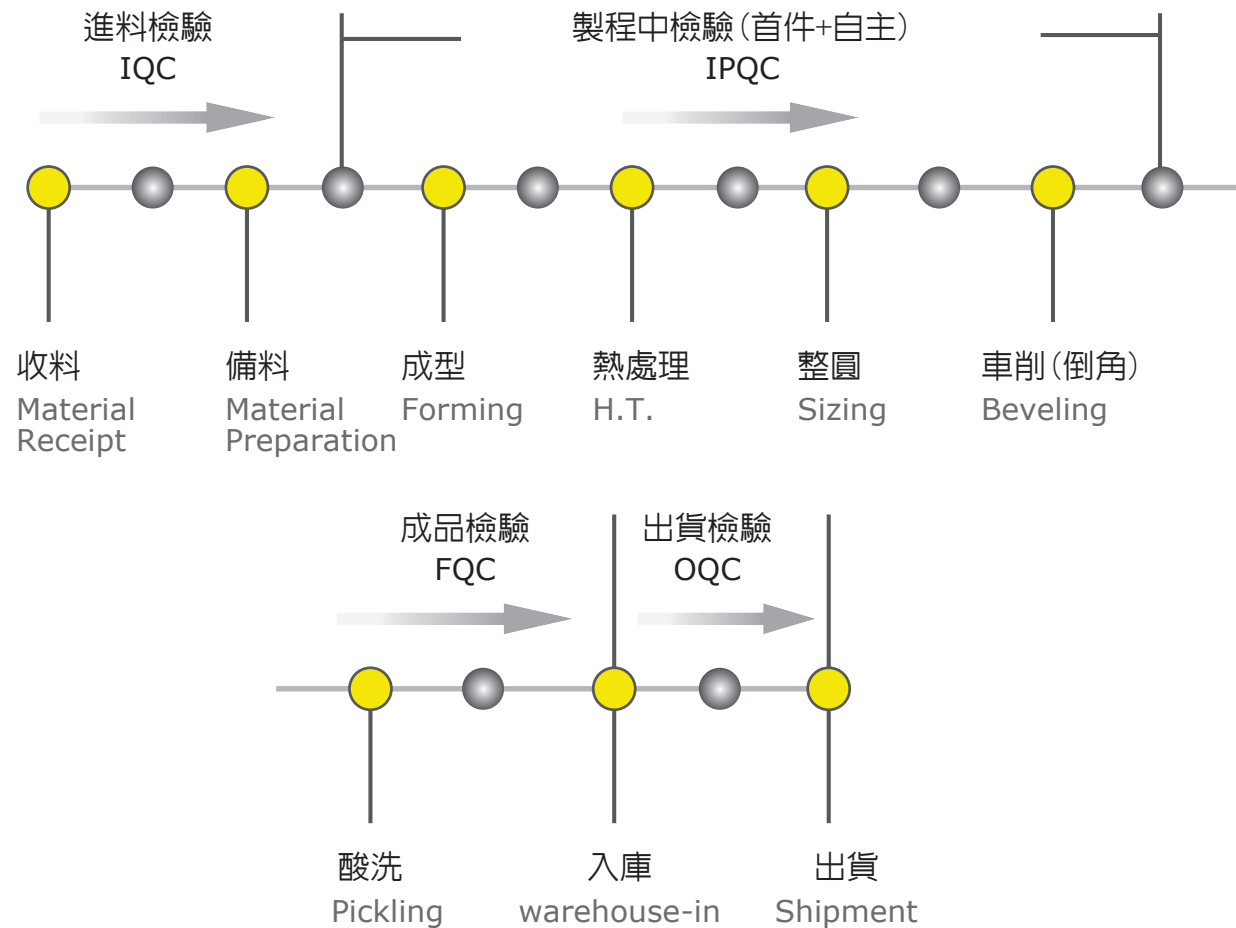
管理認證

- ISO 9001 : 2015
- ISO 14001 : 2015

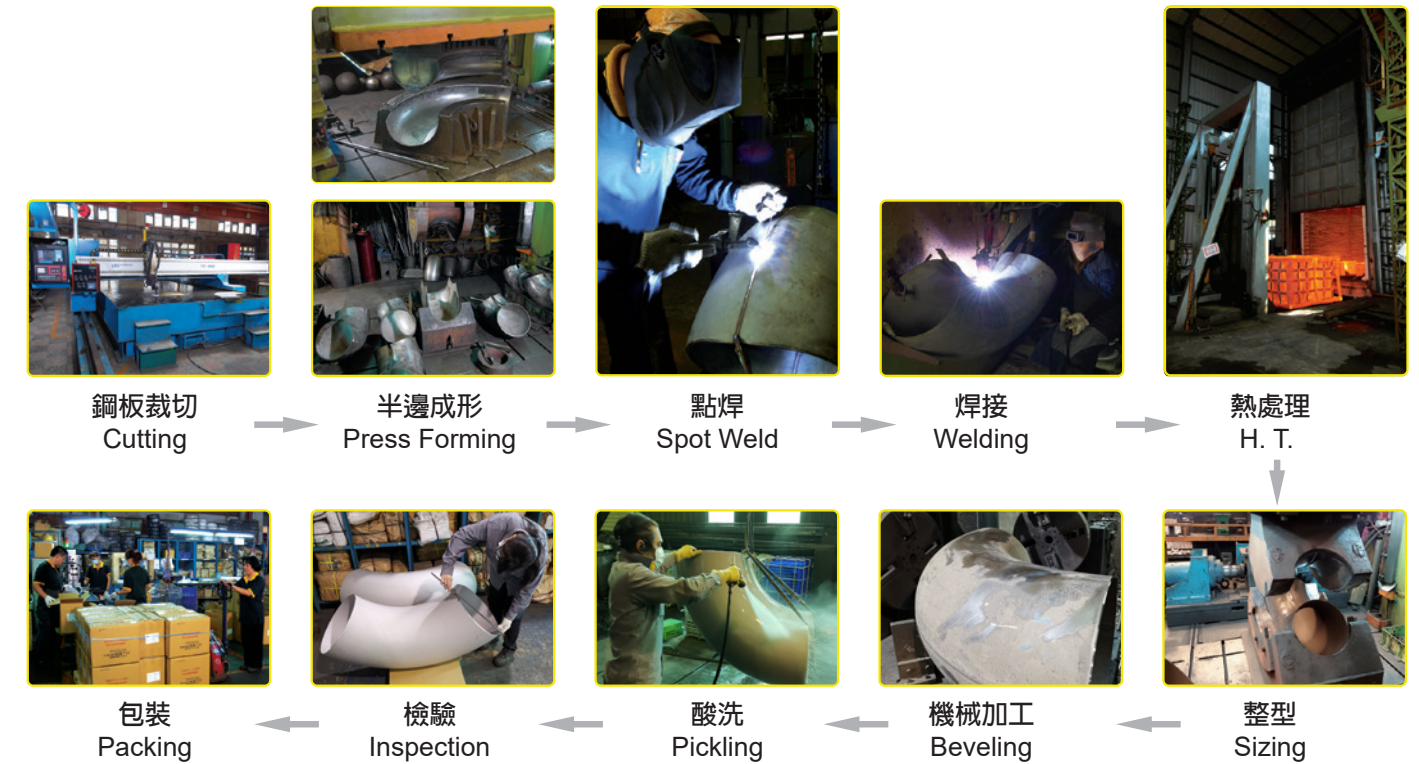
產品認證

日本工業規格 JIS
JIS B 2312 / JIS B 2313 / JIS B 2309

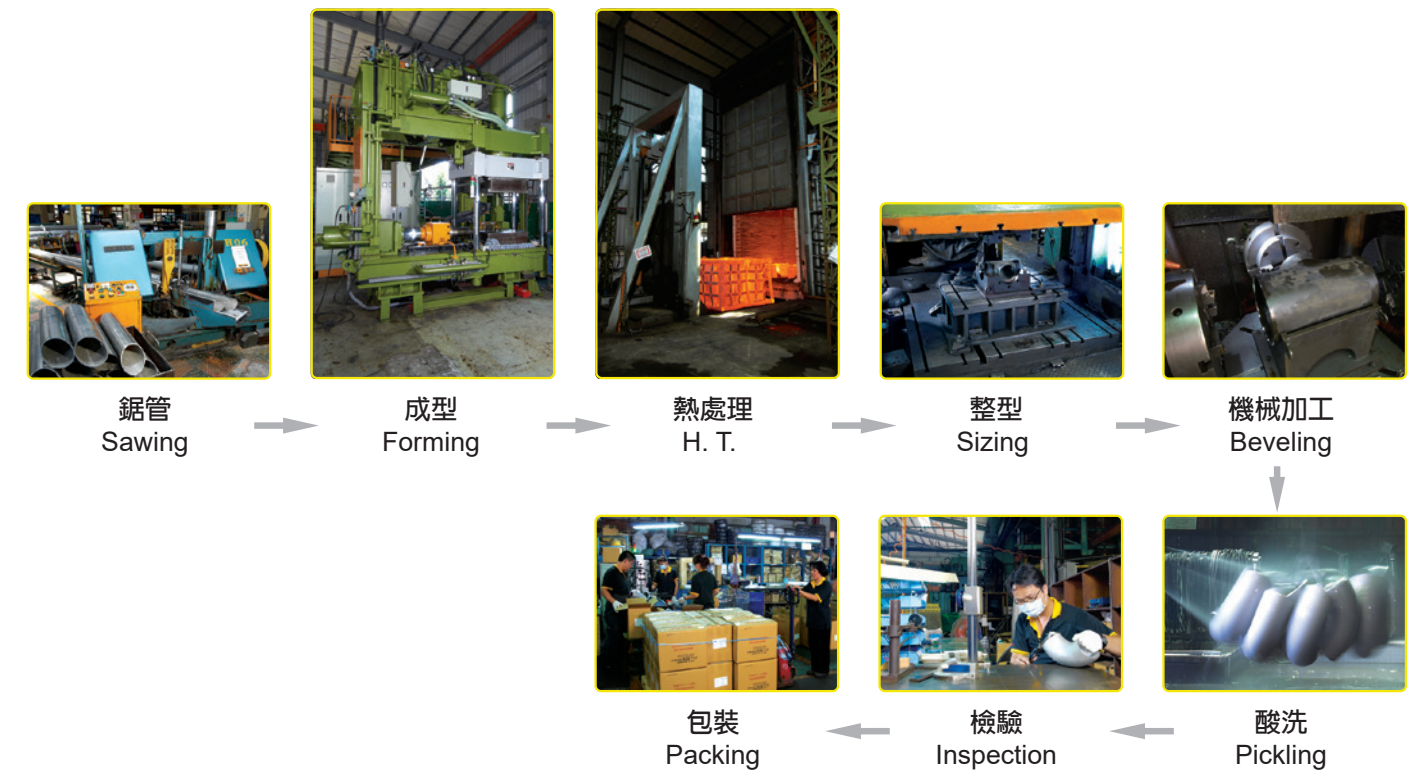
美國國家衛生基金會 NSF International
NSF/ANSI 61-G



板製品製造流程 Plate Forming

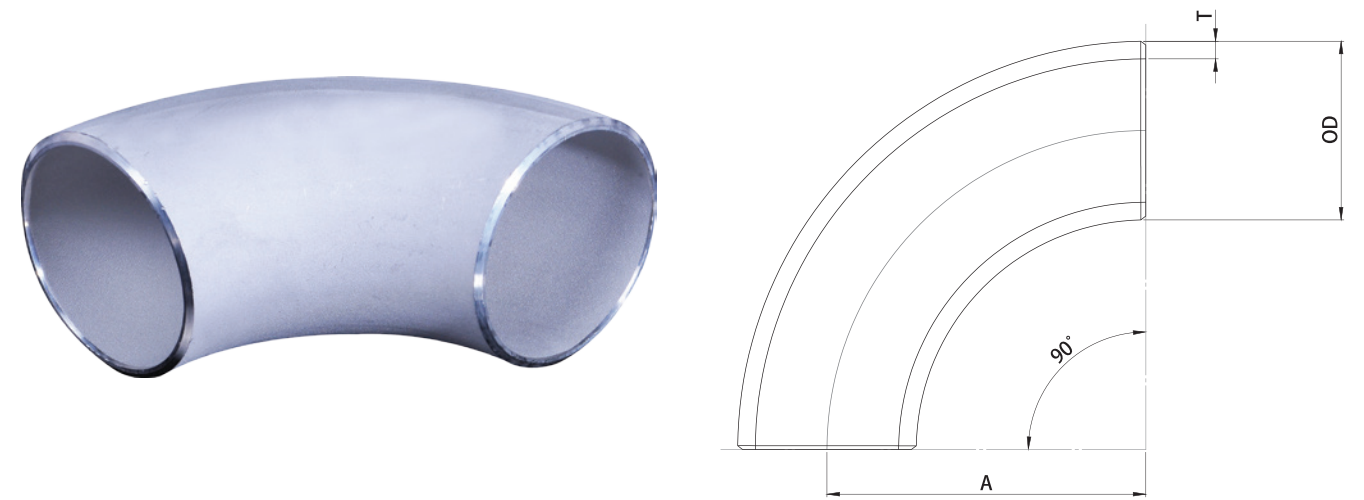
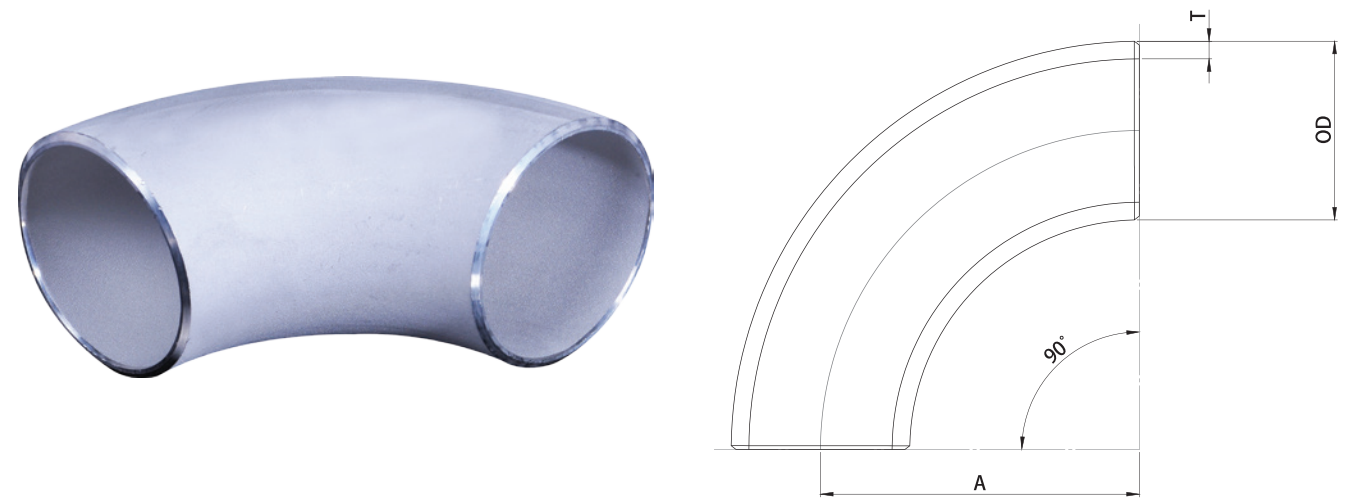


有(無)縫管製造流程 Pipe Forming



90° LR

90° 長徑彎頭



DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END A
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S	
1/2	0.84	0.065	0.083	0.109	0.147	1.50
3/4	1.05	0.065	0.083	0.113	0.154	1.50
1	1.32	0.065	0.109	0.133	0.179	1.50
1.1/4	1.66	0.065	0.109	0.140	0.191	1.88
1.1/2	1.90	0.065	0.109	0.145	0.200	2.25
2	2.38	0.065	0.109	0.154	0.218	3.00
2.1/2	2.88	0.083	0.120	0.203	0.276	3.75
3	3.50	0.083	0.120	0.216	0.300	4.50
3.1/2	4.00	0.083	0.120	0.226	0.318	5.25
4	4.50	0.083	0.120	0.237	0.337	6.00
5	5.56	0.109	0.134	0.258	0.375	7.50
6	6.62	0.109	0.134	0.280	0.432	9.00
8	8.62	0.109	0.148	0.322	0.500	12.00
10	10.75	0.134	0.165	0.365	0.500	15.00
12	12.75	0.156	0.180	0.375	0.500	18.00

WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S	Sch.80S
1/2	0.049	0.060	0.076	0.097
3/4	0.062	0.067	0.076	0.098
1	0.078	0.156	0.160	0.193
1.1/4	0.125	0.201	0.253	0.334
1.1/2	0.170	0.279	0.363	0.485
2	0.286	0.470	0.651	0.894
2.1/2	0.576	0.786	1.29	1.70
3	0.810	1.160	2.02	2.74
3.1/2	1.08	1.550	2.84	3.90
4	1.39	2.000	3.84	5.34
5	2.83	3.460	6.51	9.25
6	4.03	4.960	10.1	15.3
8	7.06	9.550	20.3	30.9
10	13.20	16.60	36.0	48.8
12	22.30	25.80	53.0	69.9

DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END A
		Sch. 10S	Sch. 20	Std	XS	
14	14.00	0.188	0.312	0.375	0.500	21.00
16	16.00	0.188	0.312	0.375	0.500	24.00
18	18.00	0.188	0.312	0.375	0.500	27.00
20	20.00	0.218	0.375	0.375	0.050	30.00
22	22.00	0.218	0.375	0.375	0.500	33.00
24	24.00	0.250	0.375	0.375	0.500	36.00
26	26.00		0.500	0.375	0.500	39.00
28	28.00		0.500	0.375	0.500	42.00
30	30.00	0.312	0.500	0.375	0.500	45.00
32	32.00		0.500	0.375	0.500	48.00
34	34.00		0.500	0.375	0.500	51.00
36	36.00		0.500	0.375	0.500	54.00
38	38.00			0.375	0.500	57.00
40	40.00			0.375	0.500	60.00
42	42.00			0.375	0.500	63.00
44	44.00			0.375	0.500	66.00
46	46.00			0.375	0.500	69.00
48	48.00			0.375	0.500	72.00

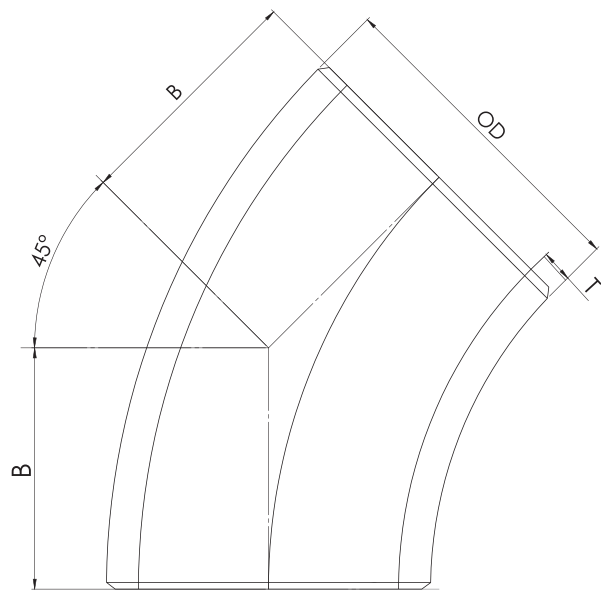
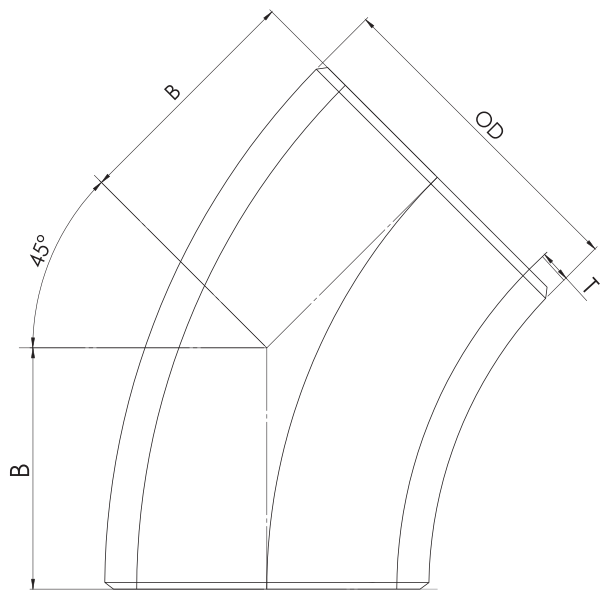
WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 10S	Sch. 20	Std	XS
14	34.6	56.7	68.0	89.9
16	45.2	74.3	89.2	118
18	57.3	94.2	113	150
20	82.0	140	140	185
22	99.4	170	170	225
24	136	202	202	268
26	198	315	238	315
28	230	366	276	366
30	264	421	317	421
32	301	479	361	479
34	339	542	408	542
36	381	608	457	608
38	425		510	678
40	471		565	751
42	520		624	829
44	571		685	910
46	624		749	995
48	679		815	1084

45° LR

45° 長徑彎頭



DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END B
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S	
1/2	0.84	0.065	0.083	0.109	0.147	0.62
3/4	1.05	0.065	0.083	0.113	0.154	0.75
1	1.32	0.065	0.109	0.133	0.179	0.88
1.1/4	1.66	0.065	0.109	0.140	0.191	1.00
1.1/2	1.90	0.065	0.109	0.145	0.200	1.12
2	2.38	0.065	0.109	0.154	0.218	1.38
2.1/2	2.88	0.083	0.120	0.203	0.276	1.75
3	3.50	0.083	0.120	0.216	0.300	2.00
3.1/2	4.00	0.083	0.120	0.226	0.318	2.25
4	4.50	0.083	0.120	0.237	0.337	2.50
5	5.56	0.109	0.134	0.258	0.432	3.12
6	6.62	0.109	0.134	0.280	0.432	3.75
8	8.62	0.109	0.148	0.322	0.500	5.00
10	10.75	0.134	0.165	0.365	0.500	6.25
12	12.75	0.156	0.180	0.375	0.500	7.50

WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S	Sch.80S
1/2	0.024	0.03	0.038	0.048
3/4	0.031	0.03	0.038	0.049
1	0.039	0.078	0.095	0.128
1.1/4	0.063	0.101	0.126	0.167
1.1/2	0.085	0.140	0.182	0.242
2	0.143	0.235	0.326	0.447
2.1/2	0.288	0.393	0.645	0.850
3	0.405	0.580	1.01	1.37
3.1/2	0.540	0.775	1.41	1.95
4	0.696	1.00	1.92	2.67
5	1.42	1.73	3.26	4.62
6	2.01	2.48	5.05	7.65
8	3.53	4.74	10.2	15.4
10	6.62	8.30	18.0	24.4
12	11.10	12.9	26.5	35.0

DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END B
		Sch. 10S	Sch. 20	Std	XS	
14	14.00	0.188	0.312	0.375	0.500	8.75
16	16.00	0.188	0.312	0.375	0.500	10.00
18	18.00	0.188	0.312	0.375	0.500	11.25
20	20.00	0.218	0.375	0.375	0.500	12.50
22	22.00	0.218	0.375	0.375	0.500	13.50
24	24.00	0.250	0.375	0.375	0.500	15.00
26	26.00		0.500	0.375	0.500	16.00
28	28.00		0.500	0.375	0.500	17.25
30	30.00	0.312	0.500	0.375	0.500	18.50
32	32.00		0.500	0.375	0.500	19.75
34	34.00		0.500	0.375	0.500	21.00
36	36.00		0.500	0.375	0.500	22.25
38	38.00			0.375	0.500	23.62
40	40.00			0.375	0.500	24.88
42	42.00			0.375	0.500	26.00
44	44.00			0.375	0.500	27.38
46	46.00			0.375	0.500	28.62
48	48.00			0.375	0.500	29.88

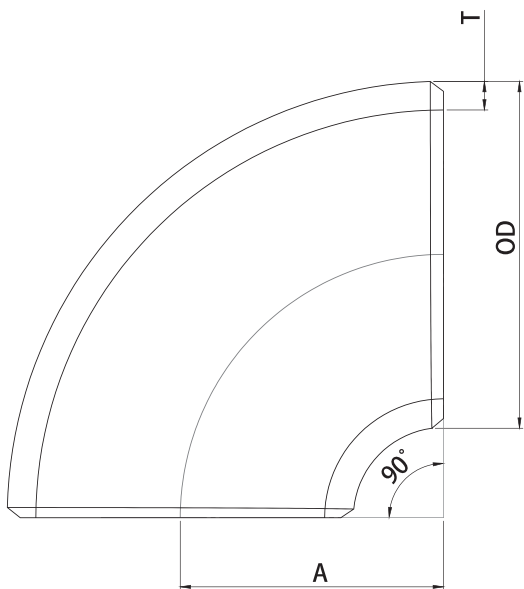
WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 10S	Sch. 20	Std	XS
14	17.3	28.4	34	45
16	22.6	37.2	44.6	59
18	28.7	47.1	56.5	75
20	41.0	70	70	92.5
22	49.7	85	85	112
24	68	101	101	134
26	99	158	119	158
28	115	183	138	183
30	132	211	159	211
32	151	240	181	240
34	170	271	204	271
36	191	304	229	304
38	213		255	339
40	236		283	376
42	260		312	415
44	286		343	455
46	312		375	498
48	340		408	542

90° SR

90° 短徑彎頭



DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END A
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S	
1	1.32	0.065	0.109	0.133	0.179	1.00
1.1/4	1.66	0.065	0.109	0.140	0.191	1.25
1.1/2	1.90	0.065	0.109	0.145	0.200	1.50
2	2.38	0.065	0.109	0.154	0.218	2.00
2.1/2	2.88	0.083	0.120	0.203	0.276	2.50
3	3.50	0.083	0.120	0.216	0.300	3.00
3.1/2	4.00	0.083	0.120	0.226	0.318	3.50
4	4.50	0.083	0.120	0.237	0.337	4.00
5	5.56	0.109	0.134	0.258	0.375	5.00
6	6.62	0.109	0.134	0.280	0.432	6.00
8	8.62	0.109	0.148	0.322	0.500	8.00
10	10.75	0.134	0.165	0.365	0.500	10.00
12	12.75	0.156	0.180	0.375	0.500	12.00
14	14.00	0.156	0.188			14.00
16	16.00	0.165	0.188			16.00
18	18.00	0.165	0.188			18.00
20	20.00	0.188	0.218			20.00
22	22.00	0.188	0.218			22.00
24	24.00	0.218	0.250			24.00

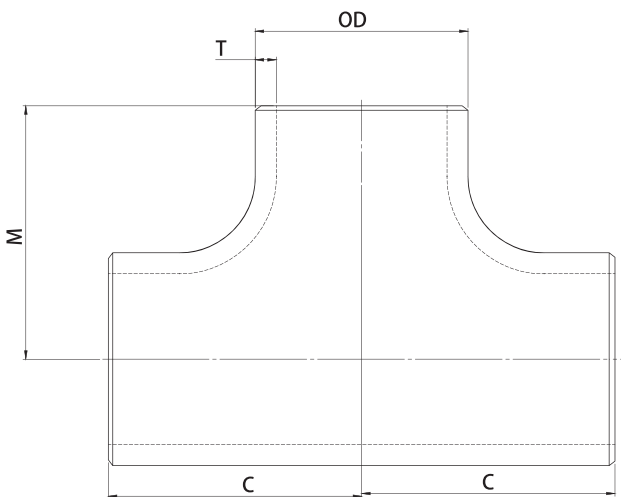
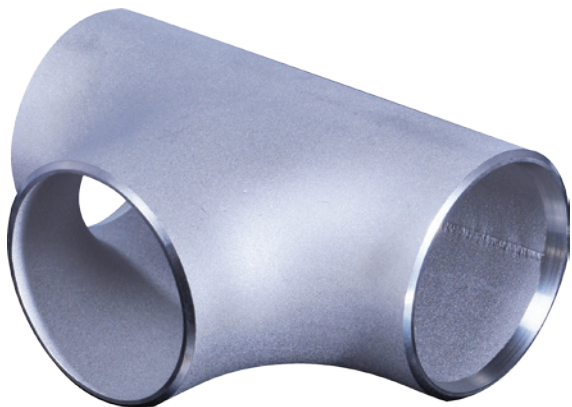
WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S	Sch.80S
1	0.077	0.083	0.100	0.122
1.1/4	0.101	0.134	0.169	0.217
1.1/2	0.114	0.186	0.242	0.323
2	0.191	0.313	0.434	0.596
2.1/2	0.383	0.524	0.86	1.14
3	0.540	0.772	1.35	1.83
3.1/2	0.719	1.03	1.89	2.60
4	0.928	1.33	2.56	3.56
5	1.89	2.31	4.34	6.17
6	2.68	3.31	6.76	10.2
8	4.71	6.36	13.6	20.6
10	8.83	11.1	24.0	32.5
12	14.8	17.2	35.3	46.6
14	15.21	23.1	45.4	59.9
16	25.60	30.2	59.4	78.6
18	33.43	38.2	75.4	99.9
20	50.42	54.7	93.3	124
22	61.06	66.2	113	150
24	86.98	90.4	135	179

Straight TEE

同徑三通 (TS)



DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Center to END C,M
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S	
1/2	0.84	0.065	0.083	0.109	0.147	1.00
3/4	1.05	0.065	0.083	0.113	0.154	1.12
1	1.32	0.065	0.109	0.133	0.179	1.50
1.1/4	1.66	0.065	0.109	0.140	0.191	1.88
1.1/2	1.90	0.065	0.109	0.145	0.200	2.25
2	2.38	0.065	0.109	0.154	0.218	2.50
2.1/2	2.88	0.083	0.120	0.203	0.276	3.00
3	3.50	0.083	0.120	0.216	0.300	3.38
4	4.50	0.083	0.120	0.237	0.337	4.12
5	5.56	0.109	0.134	0.258	0.375	4.88
6	6.62	0.109	0.134	0.280	0.432	5.62
8	8.62	0.109	0.148	0.322	0.500	7.00
10	10.75	0.134	0.165	0.365	0.500	8.50
12	12.75	0.156	0.180	0.375	0.500	10.00
14	14.00	0.156	0.188			11.00
16	16.00	0.165	0.188			12.00
18	18.00	0.165	0.188			13.50
20	20.00	0.188	0.218			15.00
22	22.00	0.188	0.218			16.50
24	24.00	0.218	0.250			17.00

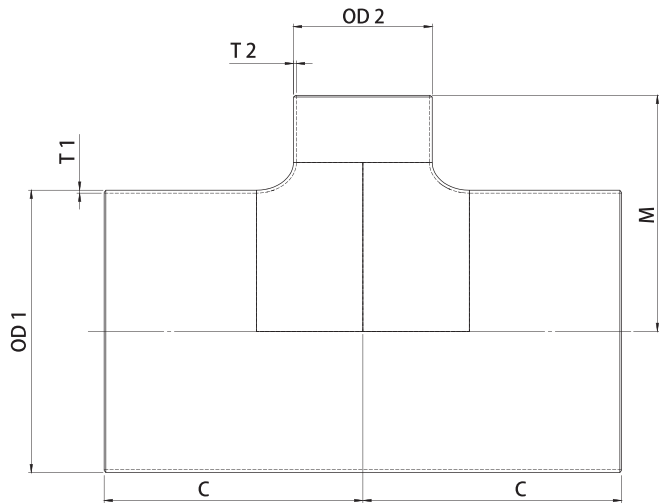
WEIGHTS

(unit: kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S	Sch.80S
1/2	0.051	0.065	0.083	0.106
3/4	0.072	0.092	0.111	0.159
1	0.120	0.204	0.244	0.316
1.1/4	0.193	0.327	0.412	0.543
1.1/2	0.270	0.457	0.596	0.797
2	0.371	0.630	0.872	1.2
2.1/2	0.71	1.01	1.66	2.19
3	0.96	1.37	1.90	3.25
4	1.51	2.15	4.13	5.74
5	2.87	3.48	6.55	9.31
6	3.92	4.76	9.73	12.8
8	5.92	8.46	18.0	27.4
10	12.07	14.2	30.8	41.7
12	19.20	21.6	44.3	58.4
14	27.75	27.3	53.7	70.9
16	29.40	33.6	66.3	87.7
18	41.39	47.3	84.1	111
20	53.24	61.0	104	138
22	64.41	73.8	126	167
24	80.35	93.5	140	185

Reducing TEE

異徑三通（TR）



DIMENSIONS

(unit: inch)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Center to End C	Center to END M
Run	Outlet			Sch. 10S		Sch. 40S		Sch. 80S			
				T1	T2	T1	T2	T1	T2		
3/4	1/2	1.05	0.84	0.083	0.083	0.113	0.109	0.154	0.147	1.12	1.12
1	1/2	1.32	0.84	0.109	0.083	0.133	0.109	0.179	0.147	1.50	1.50
1	3/4	1.32	1.05	0.109	0.083	0.133	0.113	0.179	0.154	1.50	1.50
1 1/4	3/4	1.66	1.05	0.109	0.083	0.140	0.113	0.191	0.154	1.88	1.88
1 1/4	1	1.66	1.32	0.109	0.109	0.140	0.133	0.191	0.179	1.88	1.88
1 1/2	1/2	1.90	0.84	0.109	0.083	0.145	0.109	0.200	0.147	2.25	2.25
1 1/2	3/4	1.90	1.05	0.109	0.083	0.145	0.113	0.200	0.154	2.25	2.25
1 1/2	1	1.90	1.32	0.109	0.109	0.145	0.133	0.200	0.179	2.25	2.25
1 1/2	1 1/4	1.90	1.66	0.109	0.109	0.145	0.140	0.200	0.191	2.25	2.25
2	3/4	2.38	1.05	0.109	0.830	0.154	0.113	0.218	0.154	2.50	1.75
2	1	2.38	1.32	0.109	0.109	0.154	0.133	0.218	0.179	2.50	2.00
2	1 1/4	2.38	1.66	0.109	0.109	0.154	0.140	0.218	0.191	2.50	2.25
2	1 1/2	2.38	1.90	0.109	0.109	0.154	0.145	0.218	0.200	2.50	2.38
2 1/2	1 1/2	2.88	1.90	0.120	0.109	0.203	0.145	0.276	0.200	3.00	2.62
2 1/2	2	2.88	2.38	0.120	0.109	0.203	0.154	0.276	0.218	3.00	2.75
3	1 1/2	3.50	1.90	0.120	0.109	0.216	0.145	0.300	0.200	3.38	2.88
3	2	3.50	2.38	0.120	0.109	0.216	0.154	0.300	0.218	3.38	3.00
3	2 1/2	3.50	2.88	0.120	0.120	0.216	0.203	0.300	0.276	3.38	3.25
4	1 1/2	4.50	1.90	0.120	0.109	0.237	0.145	0.337	0.200	4.12	3.38
4	2	4.50	2.38	0.120	0.109	0.237	0.154	0.337	0.218	4.12	3.50
4	2 1/2	4.50	2.88	0.120	0.120	0.237	0.203	0.337	0.276	4.12	3.75

WEIGHTS

(unit: kg)

Nominal Pipe Size		Sch. 10S	Sch. 40S	Sch. 80S
Run	Outlet			
3/4	1/2	0.083	0.115	0.15
1	1/2	0.187	0.218	0.281
1	3/4	0.187	0.227	0.293
1 1/4	3/4	0.29	0.367	0.483
1 1/2	1	0.312	0.389	0.511
1 1/2	1/2	0.397	0.518	0.69
1 1/2	3/4	0.397	0.518	0.69
1 1/2	1	0.421	0.545	0.725
1 1/2	1 1/4	0.422	0.574	0.765
2	3/4	0.542	0.742	1.02
2	1	0.542	0.742	1.02
2	1 1/4	0.571	0.804	1.07
2	1 1/2	0.592	0.826	1.11
2 1/2	1 1/2	0.895	1.49	1.90
2 1/2	2	0.937	1.53	1.99
3	1 1/2	1.19	2.05	2.77
3	2	1.23	2.16	2.85
3	2 1/2	1.31	2.29	3.05
4	1 1/2	1.88	3.52	4.91
4	2	1.88	3.52	4.91
4	2 1/2	1.95	3.7	5.11

DIMENSIONS

(unit: inch)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Center to End C	Center to END M
Run	Outlet			Sch. 10S		Sch. 40S		Sch. 80S			
				T1	T2	T1	T2	T1	T2		
4	3	4.50	3.50	0.120	0.120	0.237	0.216	0.337	0.300	4.12	3.88
5	3	5.56	3.50	0.134	0.120	0.258	0.216	0.375	0.300	4.88	4.38
5	4	5.56	4.50	0.134	0.120	0.258	0.237	0.375	0.337	4.88	4.62
6	2 1/2	6.62	2.88	0.134	0.120	0.280	0.203	0.432	0.276	5.62	4.75
6	3	6.62	3.50	0.134	0.120	0.280	0.216	0.432	0.300	5.62	4.88
6	4	6.62	4.50	0.134	0.120	0.280	0.237	0.432	0.337	5.62	5.12
6	5	6.62	5.56	0.134	0.134	0.280	0.258	0.432	0.375	5.62	5.38
8	4	8.62	4.50	0.148	0.120	0.322	0.237	0.500	0.337	7.00	6.12
8	5	8.62	5.56	0.148	0.134	0.322	0.258	0.500	0.375	7.00	6.38
8	6	8.62	6.62	0.148	0.134	0.322	0.280	0.500	0.432	7.00	6.62
10	5	10.75	5.56	0.165	0.134	0.365	0.258	0.500	0.375	8.50	7.50
10	6	10.75	6.62	0.165	0.134	0.365	0.280	0.500	0.432	8.50	7.62
10	8	10.75	8.62	0.165	0.148	0.365	0.322	0.500	0.500	8.50	8.00
12	6	12.75	6.62	0.180	0.134	0.375	0.280	0.500	0.432	10.00	8.62
12	8	12.75	8.62	0.180	0.148	0.375	0.322	0.500	0.500	10.00	9.00
12	10	12.75	10.75	0.180	0.165	0.375	0.365	0.500	0.500	10.00	9.50
14	8	14.00	8.62	0.312	0.250	0.375	0.322	0.500	0.500	11.00	9.75
14	10	14.00	10.75	0.312	0.250	0.375	0.365	0.500	0.500	11.00	10.12
14	12	14.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	11.00	10.62
16	10	16.00	10.75	0.312	0.250	0.375	0.365	0.500	0.500	12.00	11.12
16	12	16.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	12.00	11.62
16	14	16.00	14.00	0.312	0.312	0.375	0.375	0.500	0.500	12.00	12.00
18	12	18.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	13.50	12.62
18	14	18.00	14.00	0.312	0.312	0.375	0.375	0.500	0.500	13.50	13.00
18	16	18.00	16.00	0.312	0.312	0.375	0.375	0.500	0.500	13.50	13.00
20	14	20.00	14.00	0.375	0.312	0.375	0.375	0.500	0.500	15.00	14.00
20	16	20.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	15.00	14.00
20	18	20.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	15.00	14.50
22	16	22.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	16.50	15.00
22	18	22.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	16.50	15.50
22	20	22.00	20.00	0.375	0.375	0.375	0.375	0.500	0.500	16.50	16.00
24	16	24.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	17.00	16.00
24	18	24.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	17.00	16.50
24	20	24.00	20.00	0.375	0.375	0.375	0.375	0.500	0.500	17.00	17.00
24	22	24.00	22.00	0.375	0.375	0.375	0.375	0.500	0.500	17.00	17.00

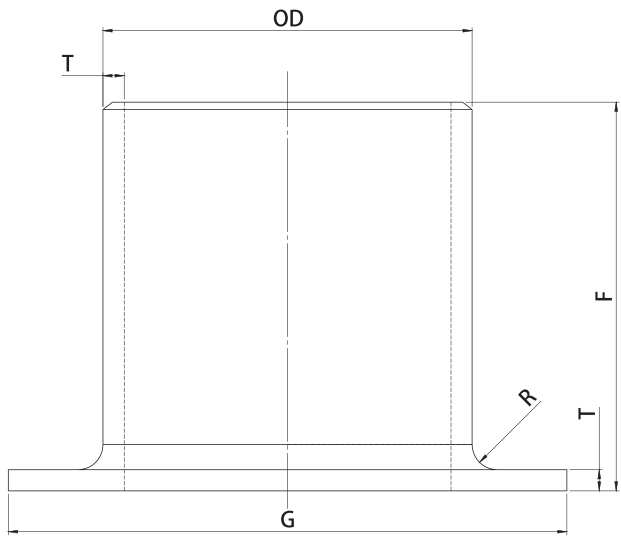
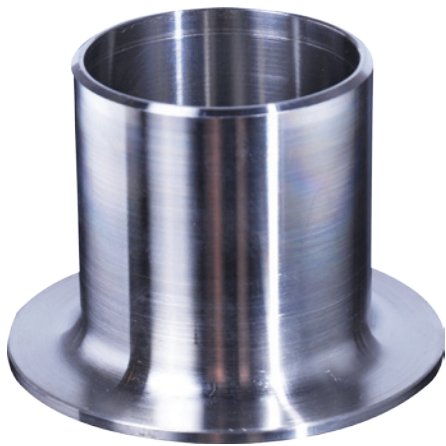
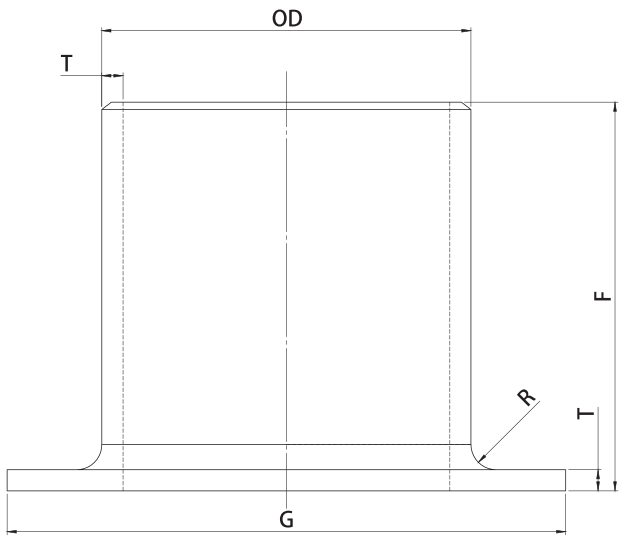
WEIGHTS

(unit: kg)

Nominal Pipe Size		Sch. 10S	Sch. 40S	Sch. 80S
Run	Outlet			
4	3	2.02	3.83	5.31
5	3	3.13	5.85	8.28
5	4	3.26	6.14	8.71
6	2 1/2	4.21	8.52	12.6
6	3	4.21	8.52	12.6
6	4	4.34	8.81	13.0
6	5	4.56	9.21	13.8
8	4	7.48	15.9	24.0
8	5	7.70	16.3	24.6
8	6	7.91	16.8	25.5
10	5	12.6	27.1	36.9
10	6	12.8	27.6	37.6
10	8	13.3	28.9	39.5
12	6	19.1	39.1	51.9
12	8	19.6	40.3	53.9
12	10	20.5	42.3	55.9
14	8	40.2	48.4	64.5
14	10	41.7	50.2	66.5
14	12	43.4	52.2	69.0
16	10	51.2	61.6	81.6
16	12	52.9	63.6	84.1
16	14	54.1	65.1	86.0
18	12	65.6	78.9	104
18	14	66.8	80.3	106
18	16	67.8	81.5	108
20	14	97.4	97.4	129
20	16	98.6	98.6	131
20	18	101	101	134
22	16	118	118	156
22	18	120	120	159
22	20	123	123	163
24	16	134	134	177
24	18	134	134	177
24	20	137	137	181
24	22	138	138	183

Lap Joint Stub End

管節



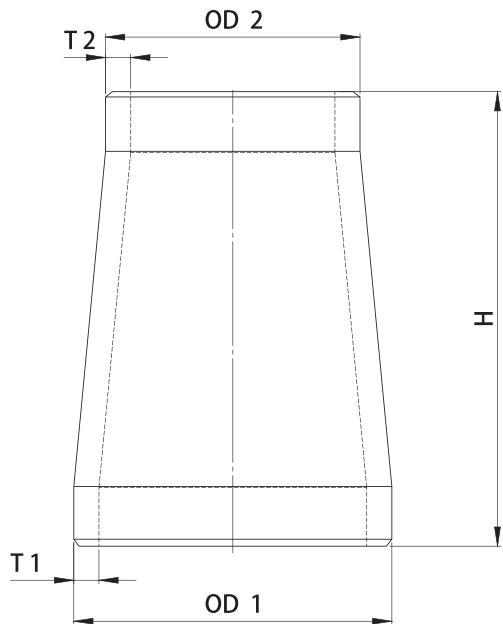
DIMENSIONS (unit: inch)											WEIGHTS (unit: kg)					
Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Dia of Lap (G)	Length F		Radius R		Nominal Pipe Size	F	Sch.5S	Sch.10S	Sch.40S	Sch.80S
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S		ANSI	MSS	Type A (Max)	Type B (Max)						
1/2	0.84	0.065	0.083	0.109	0.147	1.38	3.0	2.0	0.12	0.03	1/2	ANSI	0.068	0.091	0.136	0.115
												MSS	0.059	0.077	0.080	0.127
3/4	1.05	0.065	0.083	0.113	0.154	1.69	3.0	2.0	0.12	0.03	3/4	ANSI	0.077	0.100	0.181	0.199
												MSS	0.068	0.086	0.154	0.168
1	1.32	0.065	0.109	0.133	0.179	2.00	4.0	2.0	0.12	0.03	1	ANSI	0.145	0.227	0.299	0.385
												MSS	0.091	0.140	0.186	0.240
1.1/4	1.66	0.065	0.109	0.140	0.191	2.50	4.0	2.0	0.19	0.03	1.1/4	ANSI	0.204	0.326	0.412	0.548
												MSS	0.131	0.208	0.263	0.349
1.1/2	1.90	0.065	0.109	0.145	0.200	2.88	4.0	2.0	0.25	0.03	1.1/2	ANSI	0.231	0.367	0.553	0.675
												MSS	0.159	0.249	0.376	0.458
2	2.38	0.065	0.109	0.154	0.218	3.62	6.0	2.5	0.31	0.03	2	ANSI	0.449	0.693	0.992	1.364
												MSS	0.245	0.376	0.539	0.743
2.1/2	2.88	0.083	0.120	0.203	0.276	4.12	6.0	2.5	0.31	0.03	2.1/2	ANSI	0.684	0.924	1.563	2.079
												MSS	0.349	0.471	0.797	1.060
3	3.50	0.083	0.120	0.216	0.300	5.00	6.0	2.5	0.38	0.03	3	ANSI	0.879	1.205	2.134	2.840
												MSS	0.467	0.638	1.133	1.508
4	4.50	0.083	0.120	0.237	0.337	6.19	6.0	3.0	0.44	0.03	4	ANSI	1.191	1.640	3.035	4.227
												MSS	0.711	0.978	1.812	2.523
5	5.56	0.109	0.134	0.258	0.375	7.31	8.0	3.0	0.44	0.06	5	ANSI	2.188	2.582	5.300	7.520
												MSS	1.046	1.237	2.537	3.601

DIMENSIONS (unit: inch)											WEIGHTS (unit: kg)					
Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Dia of Lap (G)	Length F		Radius R		Nominal Pipe Size	F	Sch.5S	Sch.10S	Sch.40S	Sch.80S
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S		ANSI	MSS	Type A (Max)	Type B (Max)						
6	6.62	0.109	0.134	0.280	0.432	8.50	8.0	3.5	0.50	0.06	6	ANSI	3.01	3.61	6.89	10.42
												MSS	1.62	1.95	3.72	5.57
8	8.62	0.109	0.148	0.322	0.500	10.62	8.0	4.0	0.50	0.06	8	ANSI	2.96	3.76	10.42	15.86
												MSS	2.45	3.10	5.89	10.12
10	10.75	0.134	0.165	0.365	0.500	12.75	10.0	5.0	0.50	0.06	10	ANSI	7.02	8.45	18.12	24.28
												MSS	4.04	4.86	10.42	13.95
12	12.75	0.156	0.180	0.375	0.500	15.00	10.0	6.0	0.50	0.06	12	ANSI	9.11	10.51	22.20	29.81
												MSS	6.60	7.11	14.95	19.93
14	14.00	0.156	0.188			16.25	12.0	6.0	0.50	0.06	14	ANSI	11.78	14.19	*28.31	**37.80
												MSS	6.43	7.75	*15.46	**20.62
16	16.00	0.165	0.188			18.50	12.0	6.0	0.50	0.06	16	ANSI	14.38	16.38	*32.68	**43.57
												MSS	7.91	9.02	*17.98	**23.98
18	18.00	0.165	0.188			21.00	12.0	6.0	0.50	0.06	18	ANSI	16.51	18.81	*37.53	**50.03
												MSS	9.24	10.53	*21.00	**28.00
20	20.00	0.188	0.218			23.00	12.0	6.0	0.50	0.06	20	ANSI	20.89	24.22	*41.66	**55.55
												MSS	11.68	13.54	*23.30	**31.07
22	22.00	0.188	0.218				12.0	-			22	ANSI	23.20	26.90	*46.28	**61.07
												MSS		*	**	
24	24.00	0.218	0.250			27.25	12.0	6.0	0.50	0.06	24	ANSI	29.33	33.63	*50.45	**67.27
												MSS	16.52	18.94	*28.41	**37.88

*std=0.375 ***s=0.500

REDUCER

同心 / 偏心 大小頭



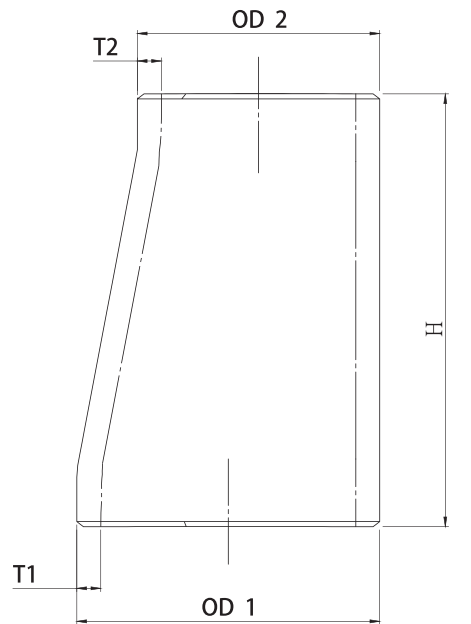
DIMENSIONS

(unit: inch)

WEIGHTS

(unit: kg)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Length H	Nominal Pipe Size		Sch. 10S	Sch. 40S	Sch. 80S
				Sch. 10S		Sch. 40S		Sch. 80S							
				T1	T2	T1	T2	T1	T2						
3/4	1/2	1.05	0.84	0.083	0.083	0.113	0.109	0.154	0.147	1.5	3/4	1/2	0.043	0.059	0.075
1	1/2	1.32	0.84	0.109	0.083	0.133	0.109	0.179	0.147	2.0	1	1/2	0.086	0.105	0.133
1	3/4	1.32	1.05	0.109	0.083	0.133	0.113	0.179	0.154	2.0	1	3/4	0.095	0.116	0.147
1 1/4	1	1.66	1.32	0.109	0.109	0.140	0.133	0.191	0.179	2.0	1 1/4	1	0.122	0.157	0.206
1 1/2	1/2	1.90	0.84	0.109	0.083	0.145	0.109	0.200	0.147	2.5	1 1/2	1/2	0.142	0.183	0.242
1 1/2	3/4	1.90	1.05	0.109	0.083	0.145	0.113	0.200	0.154	2.5	1 1/2	3/4	0.153	0.201	0.266
1 1/2	1	1.90	1.32	0.109	0.109	0.145	0.133	0.200	0.179	2.5	1 1/2	1	0.166	0.219	0.291
1 1/2	1 1/4	1.90	1.66	0.109	0.109	0.145	0.140	0.200	0.191	2.5	1 1/2	1 1/4	0.184	0.243	0.324
2	3/4	2.38	1.05	0.109	0.083	0.154	0.113	0.218	0.154	3.0	2	3/4	0.217	0.300	0.406
2	1	2.38	1.32	0.109	0.109	0.154	0.133	0.218	0.179	3.0	2	1	0.233	0.322	0.438
2	1 1/4	2.38	1.66	0.109	0.109	0.154	0.140	0.218	0.191	3.0	2	1 1/4	0.254	0.352	0.478
2	1 1/2	2.38	1.90	0.109	0.109	0.154	0.145	0.218	0.200	3.0	2	1 1/2	0.269	0.372	0.508
2 1/2	1	2.88	1.32	0.120	0.109	0.203	0.133	0.276	0.179	3.5	2 1/2	1	0.370	0.631	0.789
2 1/2	1 1/4	2.88	1.66	0.120	0.109	0.203	0.140	0.276	0.191	3.5	2 1/2	1 1/4	0.370	0.631	0.789
2 1/2	1 1/2	2.88	1.90	0.120	0.109	0.203	0.145	0.276	0.200	3.5	2 1/2	1 1/2	0.388	0.661	0.831
2 1/2	2	2.88	2.38	0.120	0.109	0.203	0.154	0.276	0.218	3.5	2 1/2	2	0.426	0.724	0.919
3	1	3.50	1.32	0.120	0.109	0.216	0.133	0.300	0.179	3.5	3	1	0.408	0.716	0.888
3	1 1/4	3.50	1.66	0.120	0.109	0.216	0.140	0.300	0.191	3.5	3	1 1/4	0.431	0.753	0.956
3	1 1/2	3.50	1.90	0.120	0.109	0.216	0.145	0.300	0.200	3.5	3	1 1/2	0.449	0.783	1.04
3	2	3.50	2.38	0.120	0.109	0.216	0.154	0.300	0.218	3.5	3	2	0.484	0.846	1.13
3	2 1/2	3.50	2.88	0.120	0.109	0.216	0.203	0.300	0.276	3.5	3	2 1/2	0.522	0.933	1.23
4	1 1/2	4.50	1.90	0.120	0.109	0.237	0.145	0.337	0.200	4.0	4	1 1/2	0.629	1.18	1.64
4	2	4.50	2.38	0.120	0.109	0.237	0.154	0.337	0.218	4.0	4	2	0.665	1.27	1.76
4	2 1/2	4.50	2.88	0.120	0.120	0.237	0.203	0.337	0.276	4.0	4	2 1/2	0.706	1.37	1.86



DIMENSIONS

(unit: inch)

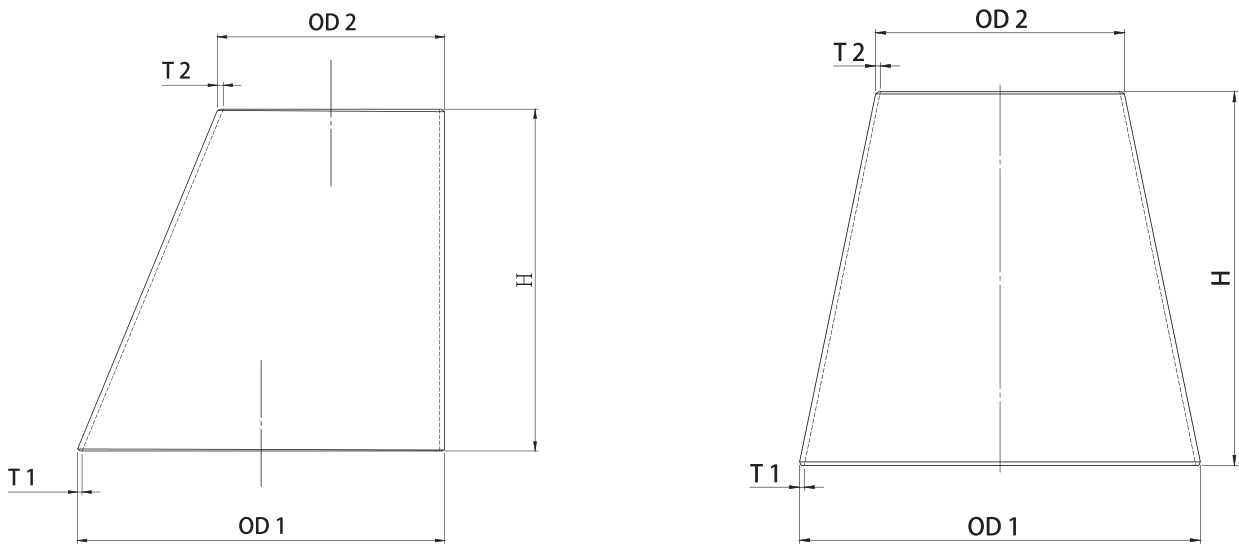
WEIGHTS

(unit: kg)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Length H	Nominal Pipe Size		Sch. 10S	Sch. 40S	Sch. 80S
				Sch. 10S		Sch. 40S		Sch. 80S							
				T1	T2	T1	T2	T1	T2						
4	3	4.50	3.50	0.120	0.120	0.237	0.216	0.337	0.300	4.0	4	3	0.758	1.45	2.02
5	3	5.56	3.50	0.134	0.120	0.258	0.216	0.375	0.300	5.0	5	3	1.22	2.27	3.18
5	4	5.56	4.50	0.134	0.120	0.258	0.237	0.375	0.337	5.0	5	4	1.33	2.50	3.52
6	2 1/2	6.62	2.88	0.134	0.120	0.280	0.203	0.432	0.276	5.5	6	2 1/2	1.35	2.74	4.51
6	3	6.62	3.50	0.134	0.120	0.280	0.216	0.432	0.300	5.5	6	3	1.53	3.04	4.56
6	4	6.62	4.50	0.134	0.120	0.280	0.237	0.432	0.337	5.5	6	4	1.65	3.30	4.96
6	5	6.62	5.56	0.134	0.134	0.280	0.258	0.432	0.375	5.5	6	5	1.78	3.57	5.38
8	4	8.62	4.50	0.148	0.120	0.322	0.237	0.500	0.337	6.0	8	4	2.43	5.10	7.68
8	5	8.62	5.56	0.148	0.134	0.322	0.258	0.500	0.375	6.0	8	5	2.57	5.40	8.14
8	6	8.62	6.62	0.148	0.134	0.322	0.280	0.500	0.432	6.0	8	6	2.72	5.71	8.63
10	5	10.75	5.56	0.165	0.134	0.365	0.258	0.500	0.375	7.0	10	5	3.98	8.42	11.3
10	6	10.75	6.62	0.165	0.134	0.365	0.280	0.500	0.432	7.0	10	6	4.14	8.78	11.8
10	8	10.75	8.62	0.165	0.148	0.365	0.322	0.500	0.500	7.0	10	8	4.49	9.58	12.9
12	6	12.75	6.62	0.180	0.134	0.375	0.280	0.500	0.432	8.0	12	6	5.92	11.8	15.9
12	8	12.75	8.62	0.180	0.148	0.375	0.322	0.500	0.500	8.0	12	8	6.31	12.7	16.7
12	10	12.75	10.75	0.180	0.165	0.375	0.365	0.500	0.500	8.0	12	10	6.78	13.6	18.0
14	12	14.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	13.0	14	12	21.1	25.4	33.6
14	10	14.00	10.75	0.312	0.250	0.375	0.365	0.500	0.500	13.0	14	10	19.6	23.6	31.2
14	8	14.00	8.62	0.312	0.250	0.375	0.322	0.500	0.500	13.0	14	8	18.1	21.8	28.9
14	6	14.00	6.62	0.312		0.375	0.280	0.500	0.500	13.0	14	6	16.8	20.2	26.6
16	14	16.00	14.00	0.312	0.312	0.375	0.375	0.500	0.500	14.0	16	14	25.8	31.0	41.1
16	12	16.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	14.0	16	12	24.6	29.6	39.2
16	10	16.00	10.75	0.312	0.250	0.375	0.365	0.500	0.500	14.0	16	10	23.1	27.8	36.8
16	8	16.00	8.62	0.312	0.250	0.375	0.322	0.500	0.500	14.0	16	8	21.8	26.2	34.4

REDUCER

同心 / 偏心 大小頭



DIMENSIONS

(unit: inch)

WEIGHTS

(unit: kg)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Length H
				Sch. 10S		Sch. 40S		Sch. 80S		
				T1	T2	T1	T2	T1	T2	
18	16	18.00	16.00	0.312	0.312	0.375	0.375	0.500	0.500	15.0
18	14	18.00	14.00	0.312	0.312	0.375	0.375	0.500	0.500	15.0
18	12	18.00	12.75	0.312	0.250	0.375	0.375	0.500	0.500	15.0
18	10	18.00	10.75	0.312	0.250	0.375	0.365	0.500	0.500	15.0
20	18	20.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
20	16	20.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
20	14	20.00	14.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
20	12	20.00	12.75	0.375	0.250	0.375	0.375	0.500	0.500	20.0
22	20	22.00	20.00	0.375	0.375	0.375	0.375	0.500	0.500	20.0
22	18	22.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
22	16	22.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
22	14	22.00	14.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
24	22	24.00	22.00	0.375	0.375	0.375	0.375	0.500	0.500	20.0
24	20	24.00	20.00	0.375	0.375	0.375	0.375	0.500	0.500	20.0
24	18	24.00	18.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
24	16	24.00	16.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
24	14	24.00	14.00	0.375	0.312	0.375	0.375	0.500	0.500	20.0
26	24	26.00	24.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0
26	20	26.00	20.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0
26	18	26.00	18.00	0.500	0.312	0.375	0.375	0.500	0.500	24.0
26	16	26.00	16.00	0.500	0.312	0.375	0.375	0.500	0.500	24.0
28	26	28.00	26.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0
28	24	28.00	24.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0
28	20	28.00	20.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0
28	18	28.00	18.00	0.500	0.312	0.375	0.375	0.500	0.500	24.0
30	28	30.00	28.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0

Nominal Pipe Size		Sch. 10S	Sch. 40S	Sch. 80S
18	16	31.4	37.8	50.1
18	14	29.7	35.7	47.4
18	12	28.5	34.3	45.5
18	10	27.2	32.7	43.1
20	18	56.4	56.4	74.9
20	16	53.5	53.5	71.1
20	14	50.8	50.8	67.4
20	12	47.9	47.9	63.7
22	20	62.6	62.6	82.9
22	18	59.7	59.7	79.2
22	16	57.1	57.1	75.6
22	14	54.5	54.5	72.0
24	22	68.6	68.6	91.0
24	20	65.7	65.7	87.3
24	18	63.0	63.0	83.7
24	16	60.3	60.3	80.1
24	14	57.6	57.6	76.5
26	24	128.28	98.53	128.03
26	20	118.02	90.65	117.79
26	18	112.88	86.70	112.66
26	16	107.76	82.76	107.54
28	26	138.54	106.41	138.27
28	24	133.41	102.47	133.15
28	20	123.15	94.59	122.91
28	18	118.02	90.65	117.78
30	28	148.80	114.29	148.51

DIMENSIONS

(unit: inch)

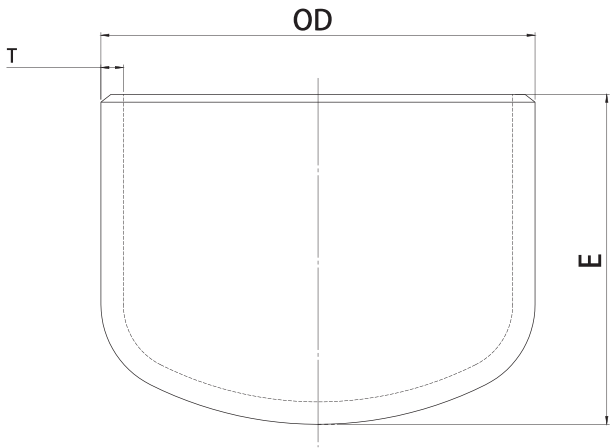
WEIGHTS

(unit: kg)

Nominal Pipe Size		Outside Dia. OD1	Outside Dia. OD2	Wall Thickness(T1,T2)						Length H			Nominal Pipe Size	Sch. 10S	Sch. 40S	Sch. 80S
				Sch. 10S		Sch. 40S		Sch. 80S								
				T1	T2	T1	T2	T1	T2							
30	26	30.00	26.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		30	26	143.67	110.35	143.39
30	24	30.00	24.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0		30	24	138.54	106.41	138.27
30	20	30.00	20.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0		30	20	128.28	98.53	128.03
32	30	32.00	30.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		32	30	159.07	122.17	158.75
32	28	32.00	28.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		32	28	153.93	118.23	153.63
32	26	32.00	26.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		32	26	148.80	114.29	148.51
32	24	32.00	24.00	0.500	0.375	0.375	0.375	0.500	0.500	24.0		32	24	143.67	110.40	143.39
34	32	34.00	32.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		34	32	169.33	130.06	168.99
34	30	34.00	30.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		34	30	164.20	126.12	163.88
34	28	34.00	28.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		34	28	159.07	122.17	158.75
34	26	34.00	26.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		34	26	153.93	118.51	153.63
36	34	36.00	34.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		36	34	148.80	137.94	179.24
36	32	36.00	32.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		36	32	143.67	133.99	174.12
36	30	36.00	30.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		36	30	169.33	130.06	168.99
36	28	36.00	28.00	0.500	0.500	0.375	0.375	0.500	0.500	24.0		36	28	164.20	126.12	163.88
38	36	38.00	36.00			0.375	0.375	0.500	0.500	24.0		38	36	159.07	145.82	189.48
38	34	38.00	34.00			0.375	0.375	0.500	0.500	24.0		38	34	153.93	141.88	184.36
38	32	38.00	32.00			0.375	0.375	0.500	0.500	24.0		38	32	179.59	137.94	179.24
38	30	38.00	30.00			0.375	0.375	0.500	0.500	24.0		38	30	147.46	133.99	174.12
38	28	38.00	28.00			0.375	0.375	0.500	0.500	24.0		38	28	169.33	130.06	168.99
38	26	38.00	26.00			0.375	0.375	0.500	0.500	24.0		38	26	164.20	126.12	163.88
40	38	40.00	38.00			0.375	0.375	0.500	0.500	24.0		40	38		153.70	199.72
40	34	40.00	34.00			0.375	0.375	0.500	0.500	24.0		40	36		149.76	194.60
40	36	40.00	36.00			0.375	0.375	0.500	0.500	24.0		40	34		145.82	189.46
40	32	40.00	32.00			0.375	0.375	0.500	0.500	24.0		40	32		141.88	184.36
40	30	40.00	30.00			0.375	0.375	0.500	0.500	24.0		40	30		137.94	179.24
42	40	42.00	40.00			0.375	0.375	0.500	0.500	24.0		42	40		161.59	209.97
42	38	42.00	38.00			0.375	0.375	0.500	0.500	24.0		42	38		157.64	204.85
42	36	42.00	36.00			0.375	0.375	0.500	0.500	24.0		42	36		153.70	199.72
42	34	42.00	34.00			0.375	0.375	0.500	0.500	24.0		42	34		149.76	194.60
42	32	42.00	32.00			0.375	0.375	0.500	0.500	24.0		42	32		145.82	189.46
42	30	42.00	30.00			0.375	0.375	0.500	0.500	24.0		42	30		141.88	184.36
44	42	44.00	42.00			0.375	0.375	0.500	0.500	24.0		44	42		169.47	220.21
44	40	44.00	40.00			0.375	0.375	0.500	0.500	24.0		44	40		165.53	215.09
44	38	44.00	38.00			0.375	0.375	0.500	0.500	24.0		44	38		161.59	209.97
44	36	44.00	36.00			0.375	0.375	0.500	0.500	24.0		44	36		157.64	204.85
46	44	46.00	44.00			0.375	0.375	0.500	0.500	28.0		46	44		177.35	230.45
46	42	46.00	42.00			0.375	0.375	0.500	0.500	28.0		46	42		173.41	225.33
46	40	46.00	40.00			0.375	0.375	0.500	0.500	28.0		46	40		169.47	220.21
46	38	46.00	38.00			0.375	0.375	0.500	0.500	28.0		46	38		165.53	215.09
46	36	46.00	36.00			0.375	0.375	0.500	0.500	28.0		46	36		165.53	215.09
48	44	48.00	44.00			0.375	0.375	0.500	0.500	28.0		48	44		181.29	235.57
48	42	48.00	42.00			0.375	0.375	0.500	0.500	28.0		48	42		177.35	230.45
48	40	48.00	40.00			0.375	0.375	0.500	0.500	28.0		48	40		173.41	225.33

CAP

管帽



DIMENSIONS

(unit: inch)

Nominal Pipe Size	Outside Dia. (OD)	Wall Thickness(T)				Length E
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S	
1/2	0.84	0.065	0.083	0.109	0.147	1.0
3/4	1.05	0.065	0.083	0.113	0.154	1.0
1	1.32	0.065	0.109	0.133	0.179	1.5
1.1/4	1.66	0.065	0.109	0.140	0.191	1.5
1.1/2	1.90	0.065	0.109	0.145	0.200	1.5
2	2.38	0.065	0.109	0.154	0.218	1.5
2.1/2	2.88	0.083	0.120	0.203	0.276	1.5
3	3.50	0.083	0.120	0.216	0.300	2.0
4	4.50	0.083	0.120	0.237	0.337	2.5
5	5.56	0.109	0.134	0.258	0.375	3.0
6	6.62	0.109	0.134	0.280	0.432	3.5
8	8.62	0.109	0.148	0.322	0.500	4.0
10	10.75	0.134	0.165	0.365	0.500	5.0
12	12.75	0.156	0.180	0.375	0.500	6.0
14	14.00		0.188	*0.375	**0.500	6.5
16	16.00		0.188	*0.375	**0.500	7.0
18	18.00		0.188	*0.375	**0.500	8.0
20	20.00		0.218	*0.375	**0.500	9.0
24	24.00		0.250	*0.375	**0.500	10.5

* Std **XS

WEIGHTS

(unit: kg)

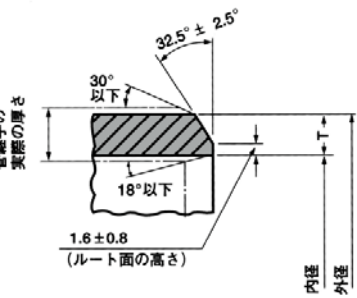
Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S	Sch.80S
1/2	0.022	0.028	0.037	0.05
3/4	0.027	0.035	0.048	0.065
1	0.053	0.087	0.106	0.143
1.1/4	0.066	0.110	0.141	0.193
1.1/2	0.076	0.127	0.169	0.234
2	0.099	0.165	0.234	0.331
2.1/2	0.169	0.232	0.393	0.534
3	0.253	0.367	0.660	0.917
4	0.409	0.594	1.17	1.67
5	0.805	0.993	1.91	2.78
6	1.11	1.39	2.90	4.47
8	1.74	2.38	5.19	8.05
10	3.26	4.14	9.15	12.5
12	5.47	6.39	13.3	17.7
14		7.98	15.9	21.2
16		10.0	20.0	26.7
18		12.8	25.6	34.1
20		18.5	31.9	42.5
24		30.1	45.1	60.1

Dimensional Tolerances and Welding Ends (JIS B2312/B2313)

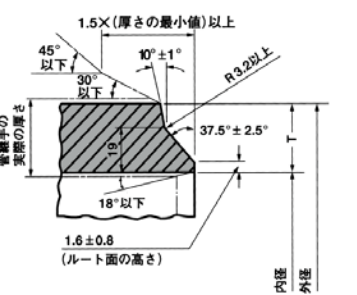
Dimension in mm

All Fittings				90° & 45° Elbow & Tee	Reducers	Cap
Nominal Pipe Size	Outside Diameter at End	Inside Diameter of End Face	Thickness	Center-to-End Face Dimension (H,F,C,M)	End Face-to-End Face Dimension (H)	Back to End Face Dimension (E)
1/2 ~ 2 1/2	+1.6 -0.8	± 0.8	not less than 87.5% of nominal thickness	± 1.6	± 1.6	± 3.2
3 ~ 4	± 1.6	± 1.6				
5 ~ 8	+2.4 -1.6			± 3.2	± 2.4	± 2.4
10 ~ 18	+4.0 -3.2	± 4.8				
20 ~ 24	+6.4 -4.8					
26 ~ 30						
32 ~ 48						

厚さ(T)が22.4mm以下の場合



厚さ(T)が22.4mmを超える場合

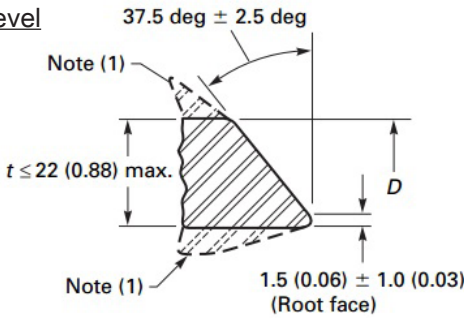


(ASME B16.9)

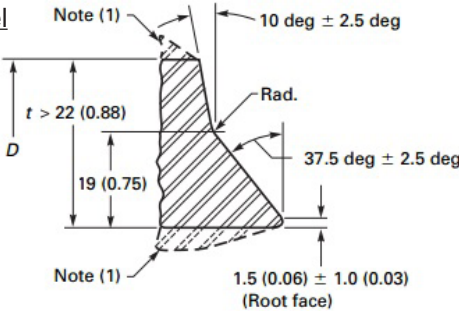
Dimension in Inches

All Fittings				90° & 45° Elbow & Tee	Reducer & Lap-joint Stub-End	Cap	Lap-joint Stub Ends		
Nominal Pipe Size	Outside Diameter at Bevel	Inside Diameter at End	Wall Thickness	Center-to-End Dimension (A B C M)	Overall Length (F H)	Overall Length (E)	Outside Diameter (G)	Thickness (T)	Fillet Radius (R)
1/2 ~ 2 1/2	+0.06 -0.03	± 0.03	Not Less than 87.5% of nominal thickness	± 0.06	± 0.06	± 0.12	+0 -0.03	+0.06 -0	+0 -0.03
3 ~ 3 1/2	± 0.06	± 0.06		± 0.06	± 0.06	± 0.12	+0 -0.03	+0.06 -0	+0 -0.03
4	± 0.06	± 0.06		± 0.06	± 0.06	± 0.12	+0 -0.03	+0.06 -0	+0 -0.06
5 ~ 8	+0.09 -0.06	± 0.06		± 0.06	± 0.06	± 0.25	+0 -0.03	+0.06 -0	+0 -0.06
10 ~ 18	+0.16 -0.12	± 0.12		± 0.09	± 0.09	± 0.25	+0 -0.06	+0.12 -0	+0 -0.06
20 ~ 24	+0.25 -0.19	± 0.19		± 0.09	± 0.09	± 0.25	+0 -0.06	+0.12 -0	+0 -0.06
26 ~ 30	+0.25 -0.19	± 0.19		± 0.12	± 0.19	± 0.38			
32 ~ 48	+0.25 -0.19	± 0.19		± 0.19	± 0.19	± 0.38			

Plain Bevel



Compound Bevel



JIS-ASTM CONTRAST LIST OF RELATIVE MATERIALS

Steel Items		JIS Specification		ASTM Specification				BS Specification	DIN Specification
		Steel Tube	Steel Plate	Steel Tube	Steel Plate	Steel Materials	Marks Of Tube Jointing materials	Steel Tube	Steel Tube
Carbon Steel		SGP	SS41	A53-Type F	A283-A	A235-A	—	3601-320	1626-st33
		STPG38	SM41B	A53-A	A242	A105	—	3601-360	1626-st37
		STPG42	SM41B	A53-B	A242	A105	—	3601-410	1626-st42
		STS35	SB35	—	—	—	—	—	—
		STS38	SB42	—	—	—	—	—	—
		SRS42	SB42	—	—	—	—	—	—
		STS49	SB49	—	—	—	—	—	—
		STPT38	SB42	A-106-A	A285-B	A105	—	3602-360	17175-st35.8
		STPTG42	SB42	A-106-B	A515-65-70	A105	WPB	3602-410	17175-st45.8
		STPT49	SB49	A-106-C	—	—	WPC	3602-460	—
Alloy Steel	1/2 Mo Steel	STPA12	SB46M	A335-P1	A240-B	A182-F1	WP1	—	17175-15Mo3
	1Cr-1/2Mo Steel	STPA22	SCMV2	A335-P12	A387-12	A182-F12	WP12	3064-620-440	17175-13CrMo44
	1 1/4Cr-1/2 Mo Steel	STPA23	SCMV3	A335-P11	A387-11	A182-F11	WP11	3604-621	—
	2 1/4Cr-1 Mo Steel	STPA24	SCMV4	A335-P22	A387-22	A182-F22	WP22	3604-622	17175-10CrMo910
	5Cr-1/2 Mo Steel	STPA25	SCMV6	A335-P5	A387-5	A182-5	WP5	3604-625	—
	9Cr-1 Mo Steel	STPA26	—	A335-P9	A387-9	A182-9	WP9	—	—
Steel For Low Temperature	A 1 gilt Steel	STPL39	SLA33A	A333-6	A516-60、65、70	A350-LF2	WPL6	3603-410LT50	—
	3 1/2 Ni Steel	STPL46	—	A333-3	A203-D	A350-LF3	WPL3	3603-503LT100	—
	9 Ni Steel	STPL70	—	A333-8	A353	A522	WPL8	3603-503LT196	—
Stainless Steel	18-8 Stainless Steel	SUS304TP	SUS304	A312-TP304	A240- Type 304	A182-F304	WP304	3605-304S18、S25	17440-X5Cr1Ni189
	High Temperature 18-8 Stainless Steel	SUS304HTP	—	A312-TP304H	A240- Type 304H	A182-F304H	WP304H	3605-304S59	—
	Low Carbon 18-8 Stainless Steel	SUS304LTP	SUS304L	A312-TP304L	A240- Type 304L	A182-F304L	WP304L	3605-304S14、S22	17440-X2CrNi189
	22-12 Stainless Steel	SUS309STP	SUS309S	A312-TP309S	A240- Type 309S	—	WP309S	—	—
	25-20 Stainless Steel	SUS310STP	SUS310S	A312-TP310S	A240- Type 310S	A182-F310	WP310S	—	—
	18-8 (Nb+ Ta) Stainless Steel	SUS347TP	SUS347	A312-TP347	A240- Type 347	A182-F347	WP347	3605-347S18、S17	17440-X10CrNiNb189
	18-8 Mo Stainless Steel	SUS316TP	SUS316	A312-TP316	A240- Type 316	A182-F316	WP316	3605-316S18、S26	17440-X5CrNiNb1810
	High Temperature 18-8 Mo Stainless Steel	SUS316HTP	—	A312-TP316H	A240- Type 316H	A182-F316H	WP316H	3605-316S59	—
	Low Carbon 18-8 Mo Stainless Steel	SUS316LTP	SUS316L	A312-TP316L	A240- Type 316L	A182-F316L	WP316L	3605-316S14、S22	17440-X2CrNiNb1810
	18-8 Ti Stainless Steel	SUS321TP	SUS321	A312-TP321	A240- Type 321	A182-F321	WP321	3605-321S18、S22	17440-X10CrNiTi189
	High Temperature 18-8 Ti Stainless Steel	SUS321HTP	—	A312-TP321H	A240- Type 321H	A182-F321H	WP321H	3605-321S59	—
	High Temperature 18-8 (Nb+ Ta) Stainless Steel	SUS347HTP	—	A312-TP347H	A240- Type 347H	A182-F347H	WP347H	3605-347S59	—
	25-5 Mo Stainless Steel	SUS329JITP	SUS329JI	A268-TP329	—	—	—	—	—

MATERIAL SPECIFICATIONS

for Fittings made from Sheets ASTM A240 shall be applied as follows.

Grade	C maximum	Mn maximum	P maximum	S maximum	Si maximum	Cr	Ni	Mo	T.S Min (ksi)	Y.S Min (ksi)	Elongation %	Hardness	
												HB	HRB
304	0.07	2.00	0.045	0.030	0.75	17.50-19.50	8.00-10.50		75	30	40	201	92
304L	0.03	2.00	0.045	0.030	0.75	17.50-19.50	8.00-12.00		70	25	40	201	92
316	0.08	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	75	30	40	217	95
316L	0.03	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00	2.00-3.00	70	25	40	217	95

for Fittigs made from SEAMLESS / WELDED Pipes ASTM A312 shall be applied as follows.

Grade	C maximum	Mn maximum	P maximum	S maximum	Si maximum	Cr	Ni	Mo	T.S Min (ksi)	Y.S Min (ksi)
Tp 304	0.08	2.00	0.045	0.030	1.00	18.0-20.0	8.0-11.0		75	30
Tp 304L	0.035	2.00	0.045	0.030	1.00	18.0-20.0	8.0-13.0		70	25
Tp 316	0.08	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00	75	30
Tp 316L	0.035	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00	70	25

TOLERANCE of Butt-Welding Fittings in JIS & ASTM

Nominal Pipe size (inch)	Outside Diameter JIS (mm)	Outside Diameter ASTM (mm)	Nominal Pipe size (inch)	Outside Diameter JIS (mm)	Outside Diameter ASTM (mm)
1/2	20.9 - 21.7 - 23.3	20.5 - 21.3 - 22.9	5	138.2 - 139.8 - 142.2	139.7 - 141.3 - 143.7
3/4	26.4 - 27.2 - 28.8	25.9 - 26.7 - 28.3	6	163.6 - 165.2 - 167.6	166.7 - 168.3 - 170.7
1	33.2 - 34.0 - 35.6	32.6 - 33.4 - 35.0	8	214.7 - 216.3 - 218.7	217.5 - 219.1 - 221.5
1.1/4	41.9 - 42.7 - 44.3	41.4 - 42.2 - 43.8	10	264.2 - 267.4 - 271.4	269.8 - 273.0 - 277.0
1.1/2	47.8 - 48.6 - 50.2	47.5 - 48.3 - 49.9	12	315.3 - 318.5 - 322.5	320.6 - 323.8 - 327.8
2	59.7 - 60.5 - 62.1	59.5 - 60.3 - 61.9	14	352.4 - 355.6 - 359.6	352.4 - 355.6 - 359.6
2.1/2	75.5 - 76.3 - 77.9	72.2 - 73.0 - 74.6	16	403.2 - 406.4 - 410.4	403.2 - 406.4 - 410.4
3	87.5 - 89.1 - 90.7	87.3 - 88.9 - 90.5	18	454.0 - 457.2 - 461.2	453.8 - 457.0 - 461.0
3.1/2	100.0 - 101.6 - 103.2	100.0 - 101.6 - 103.2	20	503.2 - 508.0 - 514.4	503.2 - 508.0 - 514.4
4	112.7 - 114.3 - 115.9	112.7 - 114.3 - 115.9	24	604.8 - 609.6 - 616.0	605.2 - 610.0 - 616.4

JIS Standard Wall Thickness Chart

Unit:mm

Nominal Pipe Size (inch)		Outside Diameter (OD)	Wall Thickness									
A	B		5S	10S	20S	LG	STD	XS	S40	S80	S120	S160
15	1/2	21.7	1.65	2.1	2.5	-	-	-	2.8	3.7	-	4.7
20	3/4	27.2	1.65	2.1	2.5	-	-	-	2.9	3.9	-	5.5
25	1	34.0	1.65	2.8	3.0	-	-	-	3.4	4.5	-	6.4
32	1.1/4	42.7	1.65	2.8	3.0	-	-	-	3.6	4.9	-	6.4
40	1.1/2	48.6	1.65	2.8	3.0	-	-	-	3.7	5.1	-	7.1
50	2	60.5	1.65	2.8	3.5	-	-	-	3.9	5.5	-	8.7
65	2.1/2	76.3	2.1	3.0	3.5	-	-	-	5.2	7.0	-	9.5
80	3	89.1	2.1	3.0	4.0	-	-	-	5.5	7.6	-	11.1
90	3.1/2	101.6	2.1	3.0	4.0	-	-	-	5.7	8.1	-	12.7
100	4	114.3	2.1	3.0	4.0	-	-	-	6	8.6	11.1	13.5
125	5	139.8	2.8	3.4	5.0	-	-	-	6.6	9.5	12.7	15.9
150	6	165.2	2.8	3.4	5.0	5.0	-	-	7.1	11.0	14.3	18.2
200	8	216.3	2.8	4.0	6.5	5.8	-	-	8.2	12.7	18.2	23.0
250	10	267.4	3.4	4.0	6.5	6.6	-	-	9.3	15.1	21.4	28.6
300	12	318.5	4.0	4.5	6.5	6.9	-	-	10.3	17.4	25.4	33.3
350	14	355.6	4.0	5.0	8.0	7.9	9.5	12.7	11.1	19.0	27.8	35.7
400	16	406.4	4.5	5.0	8.0	7.9	9.5	12.7	12.7	21.4	30.9	40.5
450	18	457.2	4.5	5.0	8.0	7.9	9.5	12.7	14.3	23.8	34.9	45.2
500	20	508.0	5.0	5.5	9.5	7.9	9.5	12.7	15.1	26.2	38.1	50.0
550	22	558.8	5.0	5.5	9.5	7.9	9.5	12.7	15.9	28.6	41.3	54.0
600	24	609.6	5.5	6.5	9.5	7.9	9.5	12.7	17.5	31.0	46.0	59.5
650	26	660.4	5.5	8.0	12.7	7.9	9.5	12.7	18.9	34.0	49.1	64.2
700	28	711.2	5.5	8.0	12.7	7.9	9.5	12.7	-	-	-	-
750	30	762	6.5	8.0	12.7	7.9	9.5	12.7	-	-	-	-
800	32	812.8	-	8.0	12.7	7.9	9.5	12.7	-	-	-	-
850	34	863.6	-	8.0	12.7	7.9	9.5	12.7	-	-	-	-
900	36	914.4	-	8.0	12.7	7.9	9.5	12.7	-	-	-	-
950	38	965.2	-	-	-	7.9	9.5	12.7	-	-	-	-
1000	40	1016	-	9.5	14.3	7.9	9.5	12.7	-	-	-	-
1050	42	1066.8	-	-	-	7.9	9.5	12.7	-	-	-	-
1100	44	1117.6	-	-	-	7.9	9.5	12.7	-	-	-	-
1150	46	1168.4	-	-	-	7.9	9.5	12.7	-	-	-	-
1200	48	1219.2	-	-	-	7.9	9.5	12.7	-	-	-	-

ASTM Standard Wall Thickness Chart

Unit:mm

Nominal Pipe Size (inch)		Outside Diameter (OD)	Wall Thickness																
A	B		5S	10S	40S	80S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
8	1/4	13.7	-	1.65	2.24	3.02	1.65	-	1.85	2.24	2.24	-	3.02	3.02	-	-	-	-	-
10	3/8	17.3	-	1.65	2.31	3.20	1.65	-	1.85	2.31	2.31	-	3.20	3.20	-	-	-	-	-
15	1/2	21.3	1.65	2.11	2.77	3.73	2.11	-	2.41	2.77	2.77	-	3.73	3.73	-	-	-	4.78	7.47
20	3/4	26.7	1.65	2.11	2.87	3.91	2.11	-	2.41	2.87	2.87	-	3.91	3.91	-	-	-	5.56	7.82
25	1	33.4	1.65	2.77	3.38	4.55	2.77	-	2.90	3.38	3.38	-	4.55	4.55	-	-	-	6.35	9.09
32	1.1/4	42.2	1.65	2.77	3.56	4.85	2.77	-	2.97	3.56	3.56	-	4.85	4.85	-	-	-	6.35	9.70
40	1.1/2	48.3	1.65	2.77	3.68	5.08	2.77	-	3.18	3.68	3.68	-	5.08	5.08	-	-	-	7.14	10.15
50	2	60.3	1.65	2.77	3.91	5.54	2.77	-	3.18	3.91	3.91	-	5.54	5.54	-	-	-	8.74	11.07
65	2.1/2	73.0	2.11	3.05	5.16	7.01	3.05	-	4.78	5.16	5.16	-	7.01	7.01	-	-	-	9.53	14.02
80	3	88.9	2.11	3.05	5.49	7.62	3.05	-	4.78	5.49	5.49	-	7.62	7.62	-	-	-	11.13	15.24
90	3.1/2	101.6	2.11	3.05	5.74	8.08	3.05	-	4.78	5.74	5.74	-	8.08	8.08	-	-	-	-	-
100	4	114.3	2.11	3.05	6.02	8.56	3.05	-	4.78	6.02	6.02	-	8.56	8.56	-	11.13	-	13.49	17.12
125	5	141.3	2.77	3.40	6.55	9.53	3.40	-	-	6.55	6.55	-	9.53	9.53	-	12.70	-	15.88	19.05
150	6	168.3	2.77	3.40	7.11	10.97	3.40	-	-	7.11	7.11	-	10.97	10.97	-	14.27	-	18.26	21.95
200	8	219.1	2.77	3.76	8.18	12.70	3.76	6.35	7.04	8.18	8.18	10.31	12.70	12.70	15.09	18.26	20.62	23.01	22.23
250	10	273.0	3.40	4.19	9.27	12.70	4.19	6.35	7.80	9.27	9.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
300	12	323.8	3.96	4.57	9.53	12.70	4.57	6.35	8.38	9.53	10.31	14.27	12.70	17.48	21.44	25.40	28.58	33.32	25.40
350	14	355.6	3.96	4.78	-	-	6.35	7.92	9.53	9.53	11.13	15.09	12.70	19.05	23.83	27.79	31.75	35.71	-
400	16	406.4	4.19	4.78	-	-	6.35	7.92	9.53	9.53	12.70	16.66	12.70	21.44	26.19	30.96	36.53	40.49	-
450	18	457.0	4.19	4.78	-	-	6.35	7.92	11.13	9.53	14.27	19.05	12.70	23.83	29.36	34.93	39.67	45.24	-
500	20	508.0	4.78	5.54	-	-	6.35	9.53	12.70	9.53	15.09	20.62	12.70	26.19	32.54	38.10	44.45	50.01	-
550	22	559.0	4.78	5.54	-	-	6.35	9.53	12.70	9.53	-	22.23	12.70	28.58	34.93	41.28	47.63	53.98	-
600	24	610.0	5.54	6.35	-	-	6.35	9.53	14.27	9.53	17.48	24.61	12.70	30.96	38.89	46.02	52.37	59.54	-
650	26	660.0	-	-	-	-	7.92	12.7	-	9.53	-	-	12.70	-	-	-	-	-	-
700	28	711.0	-	-	-	-	7.92	12.7	15.88	9.53	-	-	12.70	-	-	-	-	-	-
750	30	762.0	6.35	7.92	-	-	7.92	12.7	15.88	9.53	-	-	12.70	-	-	-	-	-	-
800	32	813.0	-	-	-	-	7.92	12.7	15.88	9.53	17.48	-	12.70	-	-	-	-	-	-
850	34	864.0	-	-	-	-	7.92	12.7	15.88	9.53	17.48	-	12.70	-	-	-	-	-	-
900	36	914.0	-	-	-	-	7.92	12.7	15.88	9.53	19.05	-	12.70	-	-	-	-	-	-
950	38	965.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-
1000	40	1016.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-
1050	42	1067.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-
1100	44	1118.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-
1150	46	1168.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-
1200	48	1219.0	-	-	-	-	-	-	-	9.53	-	-	12.70	-	-	-	-	-	-

試驗項目	目的
拉伸試驗	材料抵抗變形的能力
硬度測試	材料抵抗異物壓入表面的能力
彎曲試驗	材料焊道的強度
PMI(光譜分析)	材料化學成份符合國際規範
超音波檢測	厚度符合規範
X-ray	焊道品質
衝擊測試	管配件面對環境溫度變化時的耐性
晶間腐蝕測試	管配件的耐腐蝕性
水壓測試	管配件是否洩漏及其抗壓能力
染料滲透試驗	管配件表面是否有裂紋
金相分析	材料的金相組織，經過機械加工與熱處理後，是否產生異常變化進而影響性能

◎ 上述部份實驗依據客戶需求執行

TESTs	Purpose
Tensile Test	Confirm the material resistance of deformation.
Hardness Test	Confirm the ability of material to resist foreign body from pressure into the surface.
Bending Test	Confirm the material welding bead resistance of bending strength.
PMI(spectral analysis)	Confirm whether the material chemical compositions comply with international standard.
Ultrasonic Test	Confirm whether the pipe fitting thickness comply with standard.
X-ray	Confirm the welding bead quality.
Impact Test	Confirm the resistance of pipe fitting to facing ambient temperature changes.
Intergranular Corrosion Test	Confirm the pipe fitting corrosion resistance.
Hydrostatic Test	Check whether pipe fitting leak and its pressure resistance.
Dye Penetrant Test	Check whether cracks on the surface of pipe fitting.
Metallographic Analysis	Check the metallographic structure of the material, after machining and heat treatment, whether abnormal changes occur and affect performance.

◎Some of the above experiments are performed according to customer request



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