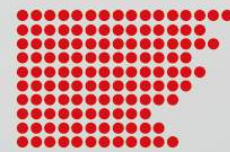




WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd



WPT[®]



WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd

GROOVED COUPLINGS AND FITTINGS

WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng Pipe Co.,Ltd

WEIFANG CHANGSHENG PIPE CO.,LTD.

Company Profile

Weifang Changsheng Group is a professional manufacturer of Steel Pipes, Grooved Couplings and Fittings, Malleable Iron Threaded Fittings whose annual production capacity is more than 500,000 tons of pipes, 50,000 tons of Grooved Couplings and Fittings and 30,000 tons of Malleable Iron Threaded Fittings. The company was founded 20 years ago, and has already exported our products to more than 80 countries and areas in the world.

The company now owns five factories, two for pipes, two for grooved couplings and fittings, one for malleable fittings, and totally covers an area of 500,000 square meters.

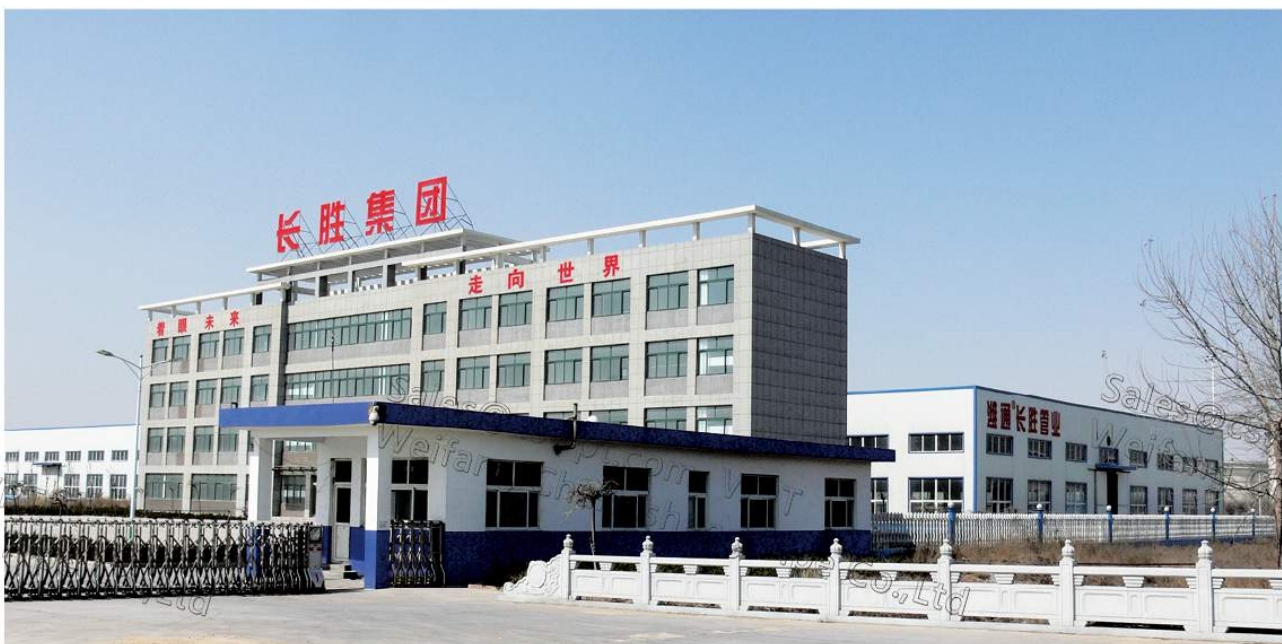
Our company has gradually got FM, UL, CE and CCC approvals, which can guarantee the good quality of our products. To further improve our administrations and production standards,

ISO approval was also got to standardize all related procedures and operations. Insurances have already covered all our products, which will give all customers 100% guarantee during using of our products.

Complete logistics system is already well organized to cater to customers' different requirements, the goods can be delivered to anywhere in the world as per different trade terms and customers' requirements.

Among all the 1000 professional staff, 20% of them are engineers and technicians, who are in charge of the design, development and inspections of the products. No matter OEM or Customization, we have great ability to do all that for you.

We will offer you great services, we will offer you great quality, we will offer you great prices, so, please contact us now, we will be very glad to offer services at any time.



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GROOVED FITTINGS



Rigid Coupling



Flexible Coupling



Angle Bolt Pad Coupling



Reducing Coupling



Mechanical Tee Threaded



U-Bolted Mechanical Tee



Mechanical Tee Grooved



Mechanical Cross



Equal Tee



Reducing Tee Grooved



Reducing Tee Threaded



90° Elbow



45° Elbow



Reducer Grooved



Reducer Threaded



Nipple Adaptor



Flange Adaptor



Flange Adaptor Threaded



Flange Grooved



Cross



Cap



End-all Fittings



Coupling (Galvanized)

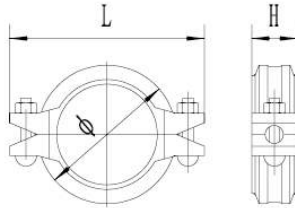


Coupling (Blue)

Finish: ①Epoxy ②Painted ③Galvanized

Color: ①Red ②Orange ③Blue ④According to requirements

Rigid Coupling

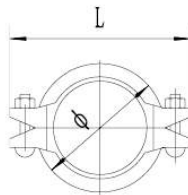


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in		
				Ø	L	H
25	33.7	300	2-M10*45	55.6	98	44
1	1.327	2.07	2-M10*45	2.188	3.858	1.732
32	42.4	300	2-M10*45	66	107	44
1 1/4	1.669	2.07	2-M10*45	2.598	4.213	1.732
40	48.3	300	2-M10*45	74	115	44
1 1/2	1.9	2.07	2-M10*45	2.913	4.527	1.732
50	60.3	300	2-M10*55	84	124	44
2	2.372	2.07	2-M10*55	3.307	4.882	1.732
65	73	300	2-M10*55	98	138	45
2 1/2	2.875	2.07	2-M10*55	3.858	5.433	1.772
65	76.1	300	2-M10*55	100	143	45
2 1/2	3	2.07	2-M10*55	3.937	5.63	1.772
80	88.9	300	2-M10*60	114	157	45
3	3.5	2.07	2-M10*60	4.488	6.181	1.772
100	114.3	300	2-M10*60	140	187	50
4	4.5	2.07	2-M10*60	5.512	7.362	1.889
125	139.7	300	2-M12*75	172	220	50
5	5.5	2.07	2-M12*75	6.771	8.661	1.889
125	141.3	300	2-M12*75	172	220	50
5	5.563	2.07	2-M12*75	6.771	8.661	1.889
150	165.1	300	2-M12*75	197	252	51
6	6.5	2.07	2-M12*75	7.756	9.921	2.008
150	168.3	300	2-M12*75	197	255	51
6	6.625	2.07	2-M12*75	7.756	10.039	2.008
200	216.3	225	2-M16*100	253	322	60
8	8.516	1.55	2-M16*100	9.961	12.677	2.362
200	219.1	225	2-M16*100	254	330	61
8	8.625	1.55	2-M16*100	10	12.992	2.405
250	267.4	225	2-M20*110	251	322	60
10	10.528	1.55	2-M20*110	9.882	12.677	2.362
250	273	225	2-M20*110	317	397.8	62
10	10.75	1.55	2-M20*110	12.48	15.661	2.441
300	318.5	225	2-M20*120	360	435	61
12	12.539	1.55	2-M20*120	14.173	17.126	2.405
300	323.9	225	2-M20*120	370	457	60
12	12.751	1.55	2-M20*120	14.566	17.992	2.362

Flexible Coupling

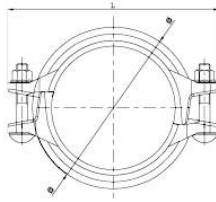


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in		
				Ø	L	H
25 1	33.7 1.327	300 2.07	2-M10*45	55.6 2.188	98 3.858	44 1.732
32 1 1/4	42.4 1.669	300 2.07	2-M10*45	66 2.598	107 4.213	44 1.732
40 1 1/2	48.3 1.9	300 2.07	2-M10*45	74 2.913	115 4.527	44 1.732
50 2	60.3 2.372	300 2.07	2-M10*55	84 3.307	124 4.882	44 1.732
65 2 1/2	73 2.875	300 2.07	2-M10*55	98 3.858	138 5.433	45 1.772
65 2 1/2	76.1 3	300 2.07	2-M10*55	100 3.937	143 5.63	45 1.772
80 3	88.9 3.5	300 2.07	2-M10*60	114 4.488	157 6.181	45 1.772
100 4	114.3 4.5	300 2.07	2-M10*60	140 5.512	187 7.362	50 1.889
125 5	139.7 5.5	300 2.07	2-M12*75	172 6.771	220 8.661	50 1.889
125 5	141.3 5.563	300 2.07	2-M12*75	172 6.771	220 8.661	50 1.889
150 6	165.1 6.5	300 2.07	2-M12*75	197 7.756	252 9.921	51 2.008
150 6	168.3 6.625	300 2.07	2-M12*75	197 7.756	255 10.039	51 2.008
200 8	216.3 8.516	225 1.55	2-M16*100	253 9.961	322 12.677	60 2.362
200 8	219.1 8.625	300 2.07	2-M16*100	254 10	330 12.992	58 2.283
250 10	267.4 10.528	225 1.55	2-M20*110	251 9.882	322 12.677	60 2.362
250 10	273 10.75	300 2.07	2-M20*110	327 12.874	445 17.52	62 2.441
300 12	318.5 12.539	225 1.55	2-M20*120	360 14.173	435 17.126	61 2.405
300 12	323.9 12.751	300 2.07	2-M20*120	370 14.566	457 17.99	62 2.441

Angle Bolt Pad Coupling

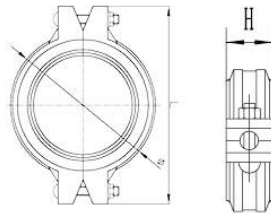


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

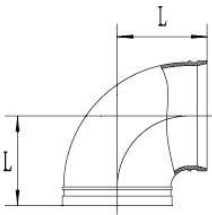
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in		
				Ø	L	H
25 1	33.7 1.327	300 2.07	M10*55	57 2.24	97 3.82	44 1.732
32 1.25	42.4 1.669	300 2.07	M10*55	66 2.6	107 4.21	45 1.772
40 1.5	48.3 1.9	300 2.07	M10*55	74 2.91	115 4.53	45 1.772
50 2	60.3 2.375	300 2.07	M10*60	84 3.31	124 4.88	45 1.772
65 2.5	73 2.874	300 2.07	M10*60	98 3.9	138.4 5.45	45 1.772
65 2.5	76.1 3	300 2.07	M10*60	99 3.9	143 5.63	45 1.772
80 3	88.9 3.5	300 2.07	M10*60	114 4.49	154 6.06	45 1.772
100 4	114.3 4.5	300 2.07	M10*65	144 5.67	189 7.441	51 2.008
125 5	139.7 5.5	300 2.07	M12*75	171 6.73	213 8.386	51 2.008
150 6	165.1 6.5	300 2.07	M12*75	197 7.76	253 9.961	51 2.008
150 6	168.3 6.625	300 2.07	M12*80	198 7.8	255 10.039	51 2.008
200 8	216.3 8.516	225 1.55	M16*100	253 9.961	322 12.677	60 2.362
200 8	219.1 8.625	225 1.55	M16*100	256 10.08	324 12.756	62 2.441
250 10	267.4 10.528	225 1.55	M20*110	251 9.882	322 12.677	60 2.362
250 10	273 10.75	225 1.55	M20*120	315 12.4	398 15.669	62 2.441
300 12	318.5 12.539	225 1.55	M20*120	360 14.173	435 17.126	61 2.405
300 12	323.9 12.75	300 2.07	M20*120	371 14.61	454 17.874	62 2.441

Reducing Flexible Coupling



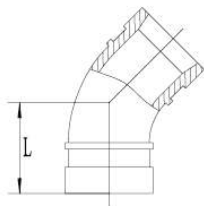
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in		
				Ø	L	H
50*25	60.3*33.7	300	2-M10*60	88	123	45
2*1	2.375*1.327	2.07	2-M10*60	3.46	4.84	1.77
50*32	60.3*42.4	300	2-M10*60	88	123	45
2*1 1/4	2.375*1.669	2.07	2-M10*60	3.46	4.84	1.77
50*40	60.3*48.3	300	2-M10*60	88	123	45
2*1 1/2	2.375*1.900	2.07	2-M10*60	3.46	4.84	1.77
65*40	73*48.3	300	2-M10*65	100	135	45
2 1/2*1 1/2	2.875*1.900	2.07	2-M10*65	3.94	5.31	1.77
65*50	73*60.3	300	2-M10*65	100	137	45
2 1/2*2	2.874*2.375	2.07	2-M10*65	3.94	5.39	1.77
65*40	76.1*48.3	300	2-M10*65	104	142	45
2 1/2*1 1/2	2.996*1.902	2.07	2-M10*65	4.09	5.59	1.77
65*50	76.1*60.3	300	2-M10*65	104	142	45
2 1/2*2	2.996*2.375	2.07	2-M10*65	4.09	5.59	1.77
80*25	88.9*33.7	300	2-M12*65	117	169	45
3*1	3.5*1.327	2.07	2-M12*65	4.61	6.65	1.77
80*32	88.9*42.4	300	2-M12*65	117	169	45
3*1 1/4	3.5*1.669	2.07	2-M12*65	4.61	6.65	1.77
80*40	88.9*48.3	300	2-M12*65	117	169	45
3*1 1/2	3.5*1.902	2.07	2-M12*65	4.61	6.65	1.77
80*50	88.9*60.3	300	2-M12*65	118	169	45
3*2	3.5*2.375	2.07	2-M12*65	4.65	6.65	1.77
80*65	88.9*73	300	2-M12*65	118	169	45
3*2 1/2	3.5*2.874	2.07	2-M12*65	4.65	6.65	1.77
80*65	88.9*76.1	300	2-M12*65	118	169	45
3*2 1/2	3.5*2.996	2.07	2-M12*65	4.65	6.65	1.77
100*25	114.3*33.7	300	2-M12*60	145	198	49
4*1	4.5*1.327	2.07	2-M12*60	5.71	7.8	1.93
100*32	114.3*42.4	300	2-M12*65	145	198	49
4*1 1/4	4.5*1.669	2.07	2-M12*65	5.71	7.8	1.93
100*40	114.3*48.3	300	2-M12*65	145	198	49
4*1 1/2	4.5*1.902	2.07	2-M12*65	5.71	7.8	1.93
100*50	114.3*60.3	300	2-M12*65	146	199	49
4*2	4.5*2.375	2.07	2-M12*65	5.75	7.83	1.93
100*65	114.3*73	300	2-M12*65	146	199	49
4*2 1/2	4.5*2.874	2.07	2-M12*65	5.75	7.83	1.93
100*65	114.3*76.1	300	2-M12*65	146	199	49
4*2 1/2	4.5*2.996	2.07	2-M12*65	5.75	7.83	1.93
100*80	114.3*88.9	300	2-M12*65	146	199	49
4*3	4.5*3.5	2.07	2-M12*65	5.75	7.83	1.93
125*50	139.7*60.3	300	2-M12*75	169	220	49
5*2	5.5*2.374	2.07	2-M12*75	6.65	8.66	1.93
125*65	139.7*73	300	2-M12*75	169	220	49
5*2 1/2	5.5*2.874	2.07	2-M12*75	6.65	8.66	1.93
125*80	139.7*88.9	300	2-M12*75	169	220	49
5*3	5.5*3.5	2.07	2-M12*75	6.65	8.66	1.93
125*100	139.7*114.3	300	2-M12*75	169	220	49
5*4	5.5*4.5	2.07	2-M12*75	6.65	8.66	1.93
150*50	168.3*60.3	300	2-M12*75	197	253	49
6*2	6.625*2.375	2.07	2-M12*75	7.76	9.96	1.93
150*65	168.3*73	300	2-M12*75	197	253	49
6*2 1/2	6.625*2.874	2.07	2-M12*75	7.76	9.96	1.93
150*80	168.3*88.9	300	2-M12*75	197	253	49
6*3	6.625*3.5	2.07	2-M12*75	7.76	9.96	1.93
150*100	168.3*114.3	300	2-M12*75	200	253	49
6*4	6.625*4.5	2.07	2-M12*75	7.87	9.96	1.93
200*50	219.1*60.3	225	2-M16*100	254	321	53
8*2	8.626*2.375	1.55	2-M16*100	10	12.64	2.09
200*65	219.1*73	225	2-M16*100	254	321	53
8*2 1/2	8.626*2.874	1.55	2-M16*100	10	12.64	2.09
200*80	219.1*88.9	225	2-M16*100	254	321	53
8*3	8.626*3.5	1.55	2-M16*100	10	12.64	2.09
200*100	219.1*114.3	225	2-M16*100	254	321	54
8*4	8.626*4.5	1.55	2-M16*100	10	12.64	2.13
200*125	219.1*139.7	225	2-M16*100	254	321	54
8*5	8.626*5.5	1.55	2-M16*100	10	12.64	2.13
200*150	219.1*168.3	225	2-M16*100	254	321	54
5*6	8.626*6.626	1.55	2-M16*100	10	12.64	2.13
250*100	273*114.3	225	2-M20*140	314	398	57
10*4	10.748*4.5	1.55	2-M20*140	12.36	15.67	2.24

90° Elbow



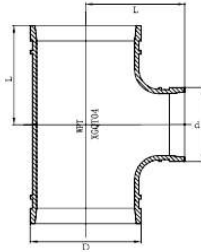
Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/Mpa	Standard	Long
			Radius L mm/in	Radius L mm/in
25	33.7	300	57	60
1	1.327	2.07	2.244	2.362
32	42.4	300	60	70
1.25	1.669	2.07	2.362	2.756
40	48.3	300	60	70
1.5	1.9	2.07	2.362	2.756
50	60.3	300	70	83
2	2.375	2.07	2.756	3.268
65	73	300	76	101
2.5	2.875	2.07	2.992	3.976
65	76.1	300	76	101
2.5	3	2.07	2.992	3.976
80	88.9	300	86	108
3	3.5	2.07	3.386	4.252
100	114.3	300	102	127
4	4.5	2.07	4.016	5
125	139.7	300	122	140
5	5.5	2.07	4.803	5.512
125	141.3	300	122	140
5	5.563	2.07	4.803	5.512
150	165.1	300	140	165
6	6.5	2.07	5.512	6.496
150	168.3	300	140	165
6	6.625	2.07	5.512	6.496
200	216.3	225	160	-
8	8.516	1.55	6.299	-
200	219.1	225	160	197
8	8.625	1.55	6.299	7.756
250	267.4	225	205	-
10	10.528	1.55	8.071	-
250	273	225	205	229
10	10.75	1.55	8.071	9.016
300	318.5	225	225	-
12	12.539	1.55	8.858	-
300	323.9	225	225	254
12	12.75	1.55	8.858	10

45° Elbow



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/Mpa	Standard	Long
			Radius L mm/in	Radius L mm/in
25	33.7	300	57	-
1	1.327	2.07	2.244	-
32	42.4	300	60	-
1.25	1.669	2.07	2.362	-
40	48.3	300	60	-
1.5	1.9	2.07	2.362	-
50	60.3	300	51	55
2	2.375	2.07	2.008	2.165
65	73	300	57	60
2.5	2.875	2.07	2.244	2.362
65	76.1	300	57	60
2.5	3	2.07	2.244	2.362
80	88.9	300	64	65
3	3.5	2.07	2.52	2.559
100	114.3	300	76	80
4	4.5	2.07	2.992	3.15
125	139.7	300	64	90
5	5.5	2.07	2.52	3.543
125	141.3	300	64	90
5	5.563	2.07	2.52	3.543
150	165	300	89	95
6	6.5	2.07	3.504	3.74
150	168	300	89	95
6	6.625	2.07	3.504	3.74
200	216.3	225	99	-
8	8.516	1.55	3.504	-
200	219.1	225	99	110
8	8.625	1.55	3.504	4.331
250	267.4	225	105	-
10	10.528	1.55	4.134	-
250	273	225	105	121
10	10.75	1.55	4.134	4.764
300	318.5	225	115	-
12	12.539	1.55	4.527	-
300	323.9	225	115	133
12	12.75	1.55	4.527	5.236

Reducing Tee Grooved



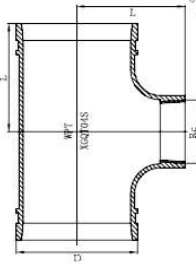
Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
50*25	60.3*33.7	300	70
2*1	2.375*1.327	2.07	2.756
50*32	60.3*42.4	300	70
2*1 1/4	2.375*1.669	2.07	2.756
50*40	60.3*48.3	300	70
2*1 1/2	2.375*1.902	2.07	2.756
65*25	73*33.7	300	76
2 1/2*1	2.874*1.327	2.07	2.992
65*32	73*42.4	300	76
2*1 1/4	2.874*1.669	2.07	2.992
65*40	73*48.3	300	76
2*1 1/2	2.874*1.902	2.07	2.992
65*25	76.1*33.7	300	76
2 1/2*1	2.996*1.327	2.07	2.992
65*32	76.1*42.4	300	76
2 1/2*1 1/4	2.996*1.669	2.07	2.992
65*40	76.1*48.3	300	76
2 1/2*1 1/2	2.996*1.902	2.07	2.992
65*50	76.1*60.3	300	76
2 1/2*2	2.996*2.375	2.07	2.992
80*25	88.9*33.7	300	86
3*1	3.5*1.327	2.07	3.386
80*32	88.9*42.4	300	86
3*1 1/4	3.5*1.669	2.07	3.386
80*40	88.9*48.3	300	86
3*1 1/2	3.5*1.902	2.07	3.386
80*50	88.9*60.3	300	86
3*2	3.5*2.375	2.07	3.386
80*65	88.9*73	300	86
3*2 1/2	3.5*2.874	2.07	3.386
80*65	88.9*76.1	300	86
3*2 1/2	3.5*2.996	2.07	3.386
100*25	114.3*33.7	300	102
4*1	4.5*1.327	2.07	4.016
100*32	114.3*42.4	300	102
4*1 1/4	4.5*1.669	2.07	4.016
100*40	114.3*48.3	300	102
4*1 1/2	4.5*1.902	2.07	4.016
100*50	114.3*60.3	300	102
4*2	4.5*2.375	2.07	4.016
100*65	114.3*73	300	102
4*2 1/2	4.5*2.874	2.07	4.016
100*65	114.3*76.1	300	102
4*2 1/2	4.5*2.996	2.07	4.016
100*80	114.3*88.9	300	102
4*3	4.5*3.5	2.07	4.016
125*25	139.7*33.7	300	122
5*1	5.5*1.327	2.07	4.803
125*32	139.7*42.4	300	122
5*1 1/4	5.5*1.669	2.07	4.803
125*40	139.7*48.3	300	122
5*1 1/2	5.5*1.902	2.07	4.803
125*50	139.7*60.3	300	122
5*2	5.5*2.375	2.07	4.803
125*65	139.7*73	300	122
5*2 1/2	5.5*2.874	2.07	4.803
125*65	139.7*76.1	300	122
5*2 1/2	5.5*2.996	2.07	4.803
125*80	139.7*88.9	300	122
5*3	5.5*3.5	2.07	4.803

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
150*25	165.1*33.7	300	140
6*1	6.5*1.327	2.07	5.512
150*32	165.1*42.4	300	140
6*1 1/4	6.5*1.669	2.07	5.512
150*40	165.1*48.3	300	140
6*1 1/2	6.5*1.902	2.07	5.512
150*50	165.1*60.3	300	140
6*2	6.5*2.375	2.07	5.512
150*65	165.1*73	300	140
6*2 1/2	6.5*2.874	2.07	5.512
150*65	165.1*76.1	300	140
6*2 1/2	6.5*2.996	2.07	5.512
150*80	165.1*88.9	300	140
6*3	6.5*3.5	2.07	5.512
150*100	165.1*114.3	300	140
6*4	6.5*4.5	2.07	5.512
150*25	168.3*33.7	300	140
6*1	6.626*1.327	2.07	5.512
150*32	168.3*42.4	300	140
6*1 1/4	6.626*1.669	2.07	5.512
150*40	168.3*48.3	300	140
6*1 1/2	6.626*1.902	2.07	5.512
150*50	168.3*60.3	300	140
6*2	6.626*2.375	2.07	5.512
150*65	168.3*73	300	140
6*2 1/2	6.626*2.874	2.07	5.512
150*65	168.3*76.1	300	140
6*2 1/2	6.626*2.996	2.07	5.512
150*80	168.3*88.9	300	140
6*3	6.626*3.5	2.07	5.512
150*100	168.3*114.3	300	140
6*4	6.626*4.5	2.07	5.512
200*80	216.3*108	225	175
8*4	8.516*4.252	1.55	6.89
200*100	216.3*114.3	225	175
8*4	8.516*4.5	1.55	6.89
200*125	216.3*165.1	225	176
8*6	8.516*6.5	1.55	6.89
200*80	219*108	225	175
8*4	8.622*4.252	1.55	6.89
200*100	219*114.3	225	175
8*4	8.622*4.5	1.55	6.89
200*125	219*165.1	225	176
8*6	8.622*6.5	1.55	6.89
250*80	267.4*88.9	225	216
10*3	10.528*3.5	1.55	6.89
250*100	267.4*114.3	225	216
10*4	10.528*4.5	1.55	6.89
250*150	267.4*165.1	225	216
10*6	10.528*6.5	1.55	6.89
250*80	273*88.9	225	216
10*3	10.748*3.5	1.55	6.89
250*100	273*114.3	225	216
10*4	10.748*4.5	1.55	6.89
250*150	273*165.1	225	216
10*6	10.748*6.5	1.55	6.89

Reducing Tee Threaded

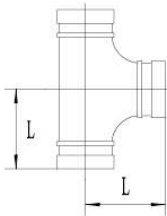


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

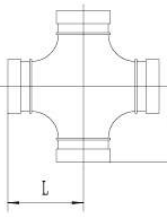
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in	Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
50*25 2*1	60.3*33.7 2.375*1.327	300 2.07	70 2.756	125*32 5*1 1/4	139.7*42.4 5.5*1.669	300 2.07	122 4.803
50*32 2*1 1/4	60.3*42.4 2.375*1.669	300 2.07	70 2.756	125*40 5*1 1/2	139.7*48.3 5.5*1.902	300 2.07	122 4.803
50*40 2*1 1/2	60.3*48.3 2.375*1.902	300 2.07	70 2.756	125*50 5*2	139.7*60.3 5.5*2.374	300 2.07	122 4.803
65*25 2 1/2*1	73*33.7 2.874*1.327	300 2.07	76 2.992	125*32 5*1 1/4	141.3*42.4 5.563*1.669	300 2.07	122 4.803
65*32 2 1/2*1 1/4	73*42.4 2.874*1.669	300 2.07	76 2.992	125*40 5*1 1/2	141.3*48.3 5.563*1.902	300 2.07	122 4.803
65*40 2 1/2*1 1/2	73*48.3 2.874*1.902	300 2.07	76 2.992	125*50 5*2	141.3*60.3 5.563*2.374	300 2.07	122 4.803
65*50 2 1/2*2	73*60.3 2.874*2.374	300 2.07	76 2.992	150*32 6*1 1/4	165.1*42.4 6.5*1.669	300 2.07	140 5.512
65*25 2 1/2*1	76.1*33.7 2.996*1.327	300 2.07	76 2.992	150*40 6*1 1/2	165.1*48.3 6.5*1.902	300 2.07	140 5.512
65*32 2 1/2*1 1/4	76.1*42.4 2.996*1.669	300 2.07	76 2.992	150*50 6*2	165.1*60.3 6.5*2.374	300 2.07	140 5.512
65*40 2 1/2*1 1/2	76.1*48.3 2.996*1.902	300 2.07	76 2.992	150*25 6*1	168.3*33.7 6.626*1.327	300 2.07	140 5.512
65*50 2 1/2*2	76.1*60.3 2.996*2.374	300 2.07	76 2.992	150*32 6*1 1/4	168.3*42.4 6.626*1.669	300 2.07	140 5.512
80*25 3*1	88.9*33.7 3.5*1.327	300 2.07	86 3.386	150*40 6*1 1/2	168.3*48.3 6.626*1.902	300 2.07	140 5.512
80*32 3*1 1/4	88.9*42.4 3.5*1.669	300 2.07	86 3.386	150*50 6*2	168.3*60.3 6.626*2.375	300 2.07	140 5.512
80*40 3*1 1/2	88.9*48.3 3.5*1.902	300 2.07	86 3.386	150*65 6*2 1/2	168.3*73 6.626*2.874	300 2.07	140 5.512
80*50 3*2	88.9*60.3 3.5*2.374	300 2.07	86 3.386	150*65 6*2 1/2	168.3*76.1 6.626*2.996	300 2.07	140 5.512
100*25 4*1	114.3*33.7 4.5*1.327	300 2.07	102 4.016	150*80 6*3	168.3*88.9 6.626*3.5	300 2.07	140 5.512
100*32 4*1 1/4	114.3*42.4 4.5*1.669	300 2.07	102 4.016				
100*40 4*1 1/2	114.3*48.3 4.5*1.902	300 2.07	102 4.016				
100*50 4*2	114.3*60.3 4.5*2.374	300 2.07	102 4.016				

Equal Tee



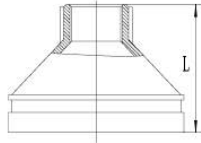
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Standard	Long
			Radius L mm/in	Radius L mm/in
25	33.7	300	57	60
1	1.327	2.07	2.244	2.362
32	42.4	300	60	70
1.25	1.669	2.07	2.362	2.756
40	48.3	300	60	70
1.5	1.9	2.07	2.362	2.756
50	60.3	300	70	83
2	2.375	2.07	2.756	3.268
65	73	300	76	101
2.5	2.875	2.07	2.992	3.976
65	76.1	300	76	101
2.5	3	2.07	2.992	3.976
80	88.9	300	86	108
3	3.5	2.07	3.386	4.252
100	114.3	300	102	127
4	4.5	2.07	4.016	5
125	139.7	300	110	140
5	5.5	2.07	4.331	5.512
125	141.3	300	122	140
5	5.563	2.07	4.803	5.512
150	165	300	125	165
6	6.5	2.07	4.921	6.496
150	168	300	140	165
6	6.625	2.07	5.512	6.496
200	216.3	225	177	-
8	8.516	1.55	6.968	-
200	219.1	225	177	197
8	8.625	1.55	6.968	7.756
250	267.4	225	208	-
10	10.528	1.55	8.189	-
250	273	225	208	229
10	10.75	1.55	8.189	9.016
300	318.5	225	244	-
12	12.539	1.55	9.606	-
300	323.9	225	244	254
12	12.752	1.55	9.606	10

Equal Cross



Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
50	60.3	300	70
2	2.375	2.07	2.756
65	73	300	76
2.5	2.875	2.07	2.992
65	76.1	300	76
2.5	3	2.07	2.992
80	88.9	300	94
3	3.5	2.07	3.701
100	114.3	300	102
4	4.5	2.07	4.016
125	139.7	300	122
5	5.5	2.07	4.803
150	165.1	300	140
6	6.5	2.07	5.512
150	168.3	300	140
6	6.625	2.07	5.512
200	216.3	225	179
8	8.516	1.55	7.047
200	219.1	225	179
8	8.625	1.55	7.047
250	267.4	225	215
10	10.528	1.55	8.465
250	273	225	215
10	10.75	1.55	8.465
300	318.5	225	245
12	12.539	1.55	9.646
300	323.9	225	245
12	12.752	1.55	9.646

Concentric Reducer Threaded

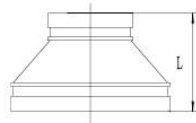


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in	Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
40*32	48.3*42.4	300	60	125*40	139.7*48.3	300	80
1 1/2*1 1/4	1.9*1.669	2.07	2.362	5*1 1/2	5.5*1.902	2.07	3.15
50*25	60.3*33.7	300	60	125*50	139.7*60.3	300	80
2*1	2.375*1.327	2.07	2.362	5*2	5.5*2.375	2.07	3.15
50*32	60.3*42.4	300	60	125*65	139.7*76.1	300	80
2*1 1/4	2.375*1.669	2.07	2.362	5*2 1/2	5.5*2.996	2.07	3.15
50*40	60.3*48.3	300	60	125*80	139.7*88.9	300	80
2*1 1/2	2.375*1.902	2.07	2.362	5*3	5.5*3.5	2.07	3.15
65*25	73*33.7	300	60	125*25	141.3*33.7	300	80
2 1/2*1	2.874*1.327	2.07	2.362	5*1	5.563*1.327	2.07	3.15
65*32	73*42.4	300	60	125*32	141.3*42.4	300	80
2 1/2*1 1/4	2.874*1.669	2.07	2.362	5*1 1/4	5.563*1.669	2.07	3.15
65*40	73*48.3	300	60	125*40	141.3*48.3	300	80
2 1/2*1 1/2	2.874*1.902	2.07	2.362	5*1 1/2	5.563*1.902	2.07	3.15
65*50	73*60.3	300	60	125*50	141.3*60.3	300	80
2 1/2*2	2.874*2.375	2.07	2.362	5*2	5.563*2.374	2.07	3.15
65*25	76.1*33.7	300	60	125*65	141.3*73	300	80
2 1/2*1	2.996*1.327	2.07	2.362	5*2 1/2	5.563*2.874	2.07	3.15
65*32	76.1*42.4	300	60	125*65	141.3*76.1	300	80
2 1/2*1 1/4	2.996*1.669	2.07	2.362	5*2 1/2	5.563*2.996	2.07	3.15
65*40	76.1*48.3	300	60	125*80	141.3*88.9	300	80
2 1/2*1 1/2	2.996*1.902	2.07	2.362	5*3	5.563*3.5	2.07	3.15
65*50	76.1*60.3	300	60	150*25	165.1*33.7	300	80
2 1/2*2	2.996*2.375	2.07	2.362	6*1	6.5*1.327	2.07	3.15
80*25	88.9*33.7	300	60	150*32	165.1*42.4	300	80
3*1	3.5*1.327	2.07	2.362	6*1 1/4	6.5*1.669	2.07	3.15
80*32	88.9*42.4	300	60	150*40	165.1*48.3	300	80
3*1 1/4	3.5*1.669	2.07	2.362	6*1 1/2	6.5*1.902	2.07	3.15
80*40	88.9*48.3	300	60	150*50	165.1*60.3	300	80
3*1 1/2	3.5*1.902	2.07	2.362	6*2	6.5*2.375	2.07	3.15
80*50	88.9*60.3	300	60	150*65	165.1*76.1	300	80
3*2	3.5*2.375	2.07	2.362	6*2 1/2	6.5*2.996	2.07	3.15
80*65	88.9*76.1	300	60	150*80	165.1*88.9	300	80
3*2 1/2	3.5*2.996	2.07	2.362	6*3	6.5*3.5	2.07	3.15
100*25	114.3*33.7	300	65	150*100	165.1*114.3	300	80
4*1	4.5*1.327	2.07	2.559	6*4	6.5*4.5	2.07	3.15
100*32	114.3*42.4	300	65	200*65	216.3*73	225	98
4*1 1/4	4.5*1.669	2.07	2.559	8*2 1/2	8.516*2.874	1.55	3.858
100*40	114.3*48.3	300	65	200*65	216.3*76.1	225	98
4*1 1/2	4.5*1.902	2.07	2.559	8*2 1/2	8.516*2.874	1.55	3.858
100*50	114.3*60.3	300	65	200*80	216.3*88.9	225	98
4*2	4.5*2.375	2.07	2.559	8*3	8.516*3.5	1.55	3.858
100*65	114.3*76.1	300	65	200*65	219.1*73	225	98
4*2 1/2	4.5*2.996	2.07	2.559	8*2 1/2	8.626*2.874	1.55	3.858
100*80	114.3*88.9	300	65	200*65	219.1*76.1	225	98
4*3	4.5*3.5	2.07	2.559	8*2 1/2	8.626*2.874	1.55	3.858
125*25	139.7*33.7	300	80	200*80	219.1*88.9	225	98
5*1	5.5*1.327	2.07	3.15	8*3	8.626*3.5	1.55	3.858
125*32	139.7*42.4	300	80				
5*1 1/4	5.5*1.669	2.07	3.15				

Concentric Reducer Grooved

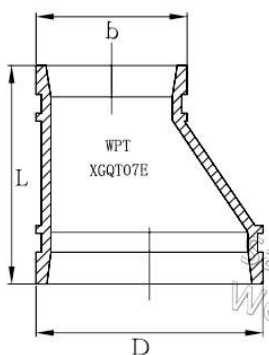


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in	Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
40*32	48.3*42.4	300	64	150*65	165.1*76.1	300	78
1 1/2*1 1/4	1.9*1.669	2.07	2.52	6*2 1/2	6.5*2.996	2.07	3.071
50*32	60.3*42.4	300	64	150*80	165.1*88.9	300	78
2*1 1/4	2.375*1.669	2.07	2.52	6*3	6.5*3.5	2.07	3.071
50*40	60.3*48.3	300	64	150*100	165.1*114.3	300	102
2*1 1/2	2.375*1.902	2.07	2.52	6*4	6.5*4.5	2.07	4.016
65*25	73*33.7	300	64	150*125	165.1*139.7	300	78
2 1/2*1	2.874*1.327	2.07	2.52	6*5	6.5*5.5	2.07	3.071
65*32	73*42.4	300	64	150*125	165.1*141.3	300	78
2 1/2*1 1/4	2.874*1.669	2.07	2.52	6*5	6.5*5.563	2.07	3.071
65*40	73*48.3	300	64	200*80	216.3*88.9	225	100
2 1/2*1 1/2	2.874*1.902	2.07	2.52	8*3	8.516*3.5	1.55	3.937
65*25	76.1*33.7	300	64	200*100	216.3*114.3	225	100
2 1/2*1	2.996*1.327	2.07	2.52	8*4	8.516*4.5	1.55	3.937
65*32	76.1*42.4	300	64	200*125	216.3*139.7	225	100
2 1/2*1 1/4	2.996*1.669	2.07	2.52	8*5	8.516*5.5	1.55	3.937
65*40	76.1*48.3	300	64	200*125	216.3*141.3	225	100
2 1/2*1 1/2	2.996*1.902	2.07	2.52	8*5	8.516*5.563	1.55	3.937
80*50	88.9*60.3	300	64	200*150	216.3*165.1	225	100
3*2	3.5*2.374	2.07	2.52	8*6	8.516*6.5	1.55	3.937
80*65	88.9*73	300	64	200*150	216.3*168.3	225	100
3*2 1/2	3.5*2.874	2.07	2.52	8*6	8.516*6.626	1.55	3.937
80*65	88.9*76.1	300	64	200*80	219.1*88.9	225	100
3*2 1/2	3.5*2.996	2.07	2.52	8*3	8.626*3.5	1.55	3.937
100*50	114.3*60.3	300	70	200*100	219.1*114.3	225	100
4*2	4.5*2.374	2.07	2.756	8*4	8.626*4.5	1.55	3.937
100*65	114.3*73	300	70	200*125	219.1*139.7	225	100
4*2 1/2	4.5*2.874	2.07	2.756	8*5	8.626*5.5	1.55	3.937
100*65	114.3*76.1	300	70	200*125	219.1*141.3	225	100
4*2 1/2	4.5*2.996	2.07	2.756	8*5	8.626*5.563	1.55	3.937
100*80	114.3*88.9	300	70	200*150	219.1*165.1	225	100
4*3	4.5*3.5	2.07	2.756	8*6	8.626*6.5	1.55	3.937
125*50	139.7*60.3	300	74	200*150	219.1*168.3	225	100
5*2	5.5*2.374	2.07	2.913	8*6	8.626*6.626	1.55	3.937
125*65	139.7*73	300	74	250*100	267.4*114.3	225	127
5*2 1/2	5.5*2.874	2.07	2.913	10*4	10.528*4.5	1.55	5
125*65	139.7*76.1	300	74	250*125	267.4*139.7	225	127
5*2 1/2	5.5*2.996	2.07	2.913	10*5	10.528*5.5	1.55	5
125*80	139.7*88.9	300	74	250*125	267.4*141.3	225	127
5*3	5.5*3.5	2.07	2.913	10*5	10.528*5.563	1.55	5
125*100	139.7*114.3	300	74	250*150	267.4*165.1	225	127
5*4	5.5*4.5	2.07	2.913	10*6	10.528*6.5	1.55	5
125*50	141.3*60.3	300	89	250*150	267.4*168.3	225	127
5*2	5.563*2.374	2.07	3.503	10*6	10.528*6.625	1.55	5
125*65	141.3*73	300	89	250*100	273*114.3	225	127
5*2 1/2	5.563*2.874	2.07	3.503	10*4	10.748*4.5	1.55	5
125*65	141.3*76.1	300	89	250*125	273*139.7	225	127
5*2 1/2	5.563*2.996	2.07	3.503	10*5	10.748*5.5	1.55	5
125*80	141.3*88.9	300	89	250*125	273*141.3	225	127
5*3	5.563*3.5	2.07	3.503	10*5	10.748*5.563	1.55	5
125*100	141.3*114.3	300	89	250*150	273*165.1	225	127
5*4	5.5*4.5	2.07	3.503	10*6	10.748*6.5	1.55	5
150*50	165.1*60.3	300	78	250*150	273*168.3	225	127
6*2	6.5*2.374	2.07	3.071	10*6	10.748*6.625	1.55	5

Eccentric Grooved Reducer



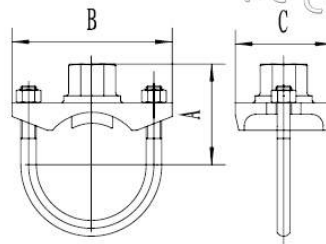
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
80*65	88.9*76.1	300	64
3'2 1/2	3.5'2.996	2.07	2.519
100*65	114.3*76.1	300	102
4'2 1/2	4.5'2.996	2.07	4.016
100*80	114.3*88.9	300	102
4'3	4.5'3.5	2.07	4.016
125*65	139.7*76.1	300	102
5'2 1/2	5.5'2.996	2.07	4.016
125*80	139.7*88.9	300	102
5'3	5.5'3.5	2.07	4.016
125*100	139.7*114.3	300	102
5'7	5.5'4.5	2.07	4.016
150*65	165.1*76.1	300	102
6'2 1/2	6.5'2.996	2.07	4.016
150*80	165.1*88.9	300	102
6'3	6.5'3.5	2.07	4.016
150*100	165.1*114.3	300	102
6'4	6.5'4.5	2.07	4.016
150*125	165.1*139.7	300	102
6'5	6.5'5.5	2.07	4.016
150*65	168.3*76.1	300	102
6'2 1/2	6.625'2.996	2.07	4.016
150*80	168.3*88.9	300	102
6'3	6.625'3.5	2.07	4.016
150*100	168.3*114.3	300	102
6'4	6.625'4.5	2.07	4.016
150*125	168.3*139.7	300	102
6'5	6.625'5.5	2.07	4.016
200*80	216.3*88.9	225	130
8'3	8.516'3.5	1.55	5.118
200*100	216.3*114.3	225	130
8'4	8.516'4.5	1.55	5.118
200*125	216.3*139.7	225	130
8'5	8.516'5.5	1.55	5.118
200*150	216.3*165.1	225	130
8'6	8.516'6.5	1.55	5.118
200*150	216.3*168.3	225	130
8'6	8.516'6.626	1.55	5.118
200*80	219.1*88.9	225	130
8'3	8.626'3.5	1.55	5.118
200*100	219.1*114.3	225	130
8'4	8.626'4.5	1.55	5.118
200*125	219.1*139.7	225	130
8'5	8.626'5.5	1.55	5.118
200*150	219.1*165.1	225	130
8'6	8.626'6.5	1.55	5.118
200*150	219.1*168.3	225	130
8'6	8.626'6.626	1.55	5.118

Cap



Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	L mm/in
25	33.7	300	26
1	1.327	2.07	1.023
32	42.4	300	26
1.25	1.669	2.07	1.023
40	48.3	300	26
1.5	1.9	2.07	1.023
50	60.3	300	26
2	2.375	2.07	1.024
65	73	300	26
2.5	2.875	2.07	1.024
65	76.1	300	26
2.5	2.996	2.07	1.024
80	88.9	300	26
3	3.5	2.07	1.024
100	114.3	300	26
4	4.5	2.07	1.024
125	139.7	300	26
5	5.5	2.07	1.024
125	141.3	300	26
5	5.563	2.07	1.024
150	165.1	300	26
6	6.5	2.07	1.024
150	168.3	300	26
6	6.625	2.07	1.024
200	216.3	225	30
8	8.516	1.55	1.181
200	219.1	225	30
8	8.626	1.55	1.181
256	267.4	225	30
10	10.528	1.55	1.181
250	273	225	30
10	10.75	1.55	1.181
300	318.5	225	30
12	12.539	1.55	1.181
300	323.9	225	30
12	12.752	1.55	1.181

U-Bolted Mechanical Tee(Threaded)

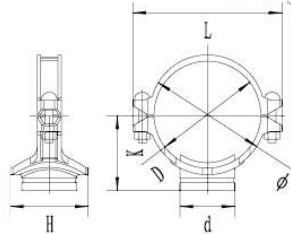


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in			Hole Cutting Dimension mm/in
				A	B	C	
25*15 1*1/2	33.7*21.3 1.327*0.839	300 2.07	M10-55	49 1.929	76 2.99	42 1.654	30 1.18
32*15 1 1/4*1/2	42.4*21.3 1.669*0.839	300 2.07	M10-68	51 2.01	92 3.62	45 1.772	30 1.18
32*20 1 1/4*3/4	42.4*26.9 1.669*1.059	300 2.07	M10-68	51 2.01	92 3.62	45 1.772	30 1.18
32*25 1 1/4*1	42.4*33.7 1.669*1.327	300 2.07	M10-68	51 2.01	92 3.62	60 2.36	30 1.18
40*15 1 1/2*1/2	48.3*21.3 1.900*0.839	300 2.07	M10-68	58 2.28	92 3.62	60 2.36	30 1.18
40*20 1 1/2*3/4	48.3*26.9 1.900*1.059	300 2.07	M10-68	58 2.28	92 3.62	60 2.36	30 1.18
40*25 1 1/2*1	48.3*33.7 1.900*1.327	300 2.07	M10-68	58 2.28	92 3.62	60 2.36	30 1.18
50*15 2*1/2	60.3*21.3 2.375*0.839	300 2.07	M10-78	64 2.52	102 4.02	60 2.36	30 1.18
50*20 2*3/4	60.3*26.9 2.375*1.059	300 2.07	M10-78	64 2.52	102 4.02	60 2.36	30 1.18
50*25 2*1	60.3*33.7 2.375*1.327	300 2.07	M10-78	64 2.52	102 4.02	60 2.36	30 1.18
65*15 2 1/2*1/2	73*21.3 2.874*0.839	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18
65*20 2 1/2*3/4	73*26.9 2.874*1.059	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18
65*25 2 1/2*1	73*33.7 2.874*1.327	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18
65*15 2 1/2*1/2	76.1*21.3 2.996*0.839	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18
65*20 2 1/2*3/4	76.1*26.9 2.996*1.059	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18
65*25 2 1/2*1	76.1*33.7 2.996*1.327	300 2.07	M10-94	70 2.76	118 4.65	60 2.36	30 1.18

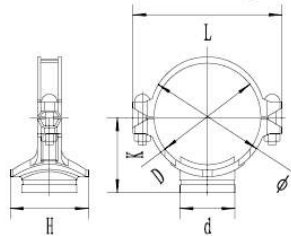
Mechanical Tee Grooved



- Finish:
- ① Epoxy
 - ② Painted
 - ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in				Hole cutting dimensions mm/in
				Ø	L	K	H	
50*32 2*1 1/4	60.3*42.4 2.375*1.669	300 2.07	2-M10*55	74 2.913	116 4.566	59 2.322	69 2.716	46 1.811
50*40 2*1 1/2	60.3*48.3 2.375*1.900	300 2.07		78 3.07	116 4.566	59 2.322	69 2.716	46 1.811
65*25 2 1/2*1	73*33.7 2.875*1.327	300 2.07		87 3.425	124 4.881	74 2.913	76 2.992	38 1.496
65*32 2 1/2*1 1/4	73*42.4 2.875*1.669	300 2.07		87 3.425	124 4.881	74 2.913	76 2.992	46 1.811
65*40 2 1/2*1 1/2	73*48.3 2.875*1.900	300 2.07		87 3.425	124 4.881	74 2.913	76 2.992	51 2.007
65*25 2 1/2*1	76.1*33.7 2.996*1.327	300 2.07		93 3.661	144 5.669	70 2.755	77 3.031	38 1.496
65*32 2 1/2*1 1/4	76.1*42.4 2.996*1.669	300 2.07		93 3.661	144 5.669	70 2.755	84 3.307	46 1.811
65*40 2 1/2*1 1/2	76.1*48.3 2.996*1.900	300 2.07		93 3.661	144 5.669	70 2.755	83 3.267	51 2.007
80*25 3*1	88.9*33.7 3.500*1.327	300 2.07		104 4.094	152 5.984	76 2.992	78 3.07	38 1.496
80*32 3*1 1/4	88.9*42.4 3.500*1.669	300 2.07		104 4.094	152 5.984	76 2.992	82 3.228	46 1.811
80*40 3*1 1/2	88.9*48.3 3.500*1.900	300 2.07		104 4.094	152 5.984	77 3.031	91 3.582	51 2.007
80*50 3*2	88.9*60.3 3.500*2.375	300 2.07		114 4.094	152 5.984	82 3.228	97 3.819	61 2.402
100*25 4*1	114.3*33.7 4.500*1.327	300 2.07		135 5.315	180 7.087	94 3.701	77 3.031	35 1.496
100*32 4*1 1/4	114.3*42.4 4.500*1.669	300 2.07		135 5.315	180 7.087	94 3.701	83 3.267	46 1.811
100*40 4*1 1/2	114.3*48.3 4.500*1.900	300 2.07		135 5.315	180 7.087	94 3.701	94 3.701	51 2.007
100*50 4*2	114.3*60.3 4.500*2.375	300 2.07		140 5.512	180 7.087	94 3.701	100 3.937	61 2.402
100*65 4*2 1/2	114.3*73 4.500*2.875	300 2.07		140 5.512	188 7.402	93 3.661	122 4.803	81 3.189
100*65 4*2 1/2	114.3*76.1 4.500*2.996	300 2.07		140 5.512	188 7.402	93 3.661	122 4.803	81 3.189
100*80 4*3	111.3*88.9 4.500*3.500	300 2.07		140 5.512	188 7.402	93 3.661	122 4.803	84 3.307

Mechanical Tee Grooved

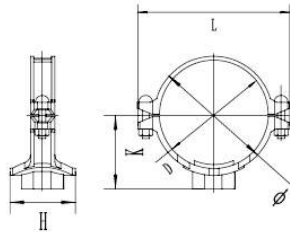


Finish:

- ① Epoxy
- ② Painted
- ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in				Hole cutting dimensions mm/in
				Ø	L	K	H	
125*50	139.7*60.3	300	2-M12*75	168	220	107	97	61
5*2	5.500*2.375	2.07		6.614	8.661	4.213	3.819	2.402
125*65	139.7*73	300		168	220	107	112	81
5*2 1/2	5.500*2.875	2.07		6.614	8.661	4.213	4.409	3.189
125*65	139.7*76.1	300		168	220	107	112	81
5*2 1/2	5.500*2.996	2.07		6.614	8.661	4.213	4.409	3.189
125*80	139.7*88.9	300		168	220	107	122	86
5*3	5.500*3.500	2.07		6.614	8.661	4.213	4.803	3.386
150*50	165.1*60.3	300		194	247	125	97	61
6*2	6.500*2.375	2.07		7.638	9.724	4.921	3.819	2.402
150*65	165.1*73	300		194	247	125	112	81
6*2 1/2	6.500*2.875	2.07		7.638	9.724	4.921	4.409	3.189
150*65	165.1*76.1	300		194	247	125	112	81
6*2 1/2	6.500*2.996	2.07		7.638	9.724	4.921	4.409	3.189
150*80	165.1*88.9	300		194	247	125	122	86
6*3	6.500*3.500	2.07		7.638	9.724	4.921	4.803	3.386
150*100	165.1*114.3	300		194	247	125	134	114
6*4	6.500*4.500	2.07		7.638	9.724	4.921	5.276	4.488
150*32	168.3*42.4	300		198	247	128	82	46
6*1 1/4	6.625*1.669	2.07		7.795	9.724	5.039	3.228	1.811
150*40	168.3*48.3	300		198	247	128	92	51
6*1 1/2	6.625*1.900	2.07		7.795	9.724	5.039	3.622	2.007
150*50	168.3*60.3	300		198	247	128	98	61
6*2	6.625*2.375	2.07		7.795	9.724	5.039	3.858	2.401
150*65	168.3*73	300		198	247	128	121	81
6*2 1/2	6.625*2.875	2.07		7.795	9.724	5.039	4.763	3.228
150*65	168.3*76.1	300		198	247	128	121	81
6*2 1/2	6.625*2.996	2.07		7.795	9.724	5.039	4.763	3.228
150*80	168.3*88.9	300	198	247	128	134	86	
6*3	6.625*3.500	2.07	7.795	9.724	5.039	5.275	3.385	
150*100	168.3*114.3	300	198	247	128	157	114	
6*4	6.625*4.500	2.07	7.795	9.724	5.039	6.181	4.488	
200*50	219.1*60.3	225	2-M16*100	250	310	146	97	61
8*2	8.625*2.375	1.55		9.843	12.205	5.748	3.819	2.402
200*65	219.1*73	225		250	310	146	112	81
8*2 1/2	8.625*2.875	1.55		9.843	12.205	5.748	4.409	3.189
200*65	219.1*76.1	225		250	310	146	112	81
8*2 1/2	8.625*2.996	1.55		9.843	12.205	5.748	4.409	3.189
200*80	219.1*88.9	225		250	310	146	122	86
8*3	8.625*3.500	1.55		9.843	12.205	5.748	4.803	3.386
200*100	219.1*108.0	225		250	310	146	134	114
8*4	8.625*4.250	1.55		9.843	12.205	5.748	5.276	4.488
200*100	219.1*114.3	225		250	310	146	134	114
8*4	8.625*4.500	1.55		9.843	12.205	5.748	5.276	4.488
200*150	219.1*165.1	225		309	376	174	214	160
8*6	8.625*6.500	1.55		12.165	14.803	6.85	8.425	6.299

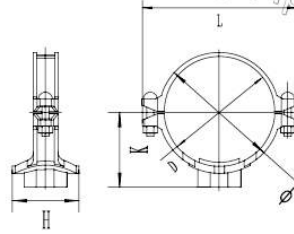
Mechanical Tee Threaded



- Finish:
- ① Epoxy
 - ② Painted
 - ③ Galvanized

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size No.-Size mm	Dimensions mm/in				Hole cutting dimensions mm/in
				Ø	L	K	H	
40*25	48.3*33.7	300	2-M10*45	67	112	56	61	32
1 1/2*1	1.900*1.327	2.07		2.638	4.409	2.205	2.402	1.26
50*25	60.3*33.7	300		74	118	56	72	38
2*1	2.375*1.327	2.07		2.913	4.252	2.205	2.835	1.496
50*32	60.3*42.4	300		74	118	56	72	46
2*1 1/4	2.375*1.669	2.07		2.913	4.252	2.205	2.835	1.811
50*40	60.3*48.3	300		74	110	56	72	51
2*1 1/2	2.375*1.900	2.07		2.913	4.331	2.205	2.835	2.008
65*25	73*33.7	300		87	124	74	76	38
2 1/2*1	2.875*1.327	2.07		3.425	4.881	2.913	2.992	1.496
65*32	73*42.4	300		87	124	74	76	46
2 1/2*1 1/4	2.875*1.669	2.07		3.425	4.881	2.913	2.992	1.811
65*40	73*48.3	300	87	124	74	76	51	
2 1/2*1 1/2	2.875*1.900	2.07	3.425	4.881	2.913	2.992	2.007	
65*25	76.1*33.7	300	2-M10*55	96	126	65	76	38
2 1/2*1	2.996*1.327	2.07		3.78	4.961	2.559	2.992	1.496
65*32	76.1*42.4	300		96	126	65	83	46
2 1/2*1 1/4	2.996*1.669	2.07		3.78	4.961	2.559	3.268	1.811
65*40	76.1*48.3	300		102	144	70	83	51
2 1/2*1 1/2	2.996*1.900	2.07		4.016	5.669	2.756	3.268	2.008
80*25	88.9*33.7	300		106	138	73	79	38
3*1	3.500*1.327	2.07		4.173	5.433	2.874	3.11	1.496
80*32	88.9*42.4	300		106	138	73	83	46
3*1 1/4	3.500*1.669	2.07		4.173	5.433	2.874	3.268	1.811
80*40	88.9*48.3	300		106	138	73	94	51
3*1 1/2	3.500*1.900	2.07		4.173	5.433	2.874	3.701	2.008
80*50	88.9*60.3	300	106	138	73	100	61	
3*2	3.500*2.375	2.07	4.173	5.433	2.874	3.937	2.402	
100*25	114.3*33.7	300	2-M12*65	134	180	85	78	38
4*1	4.500*1.327	2.07		5.276	7.087	3.346	3.071	1.496
100*32	114.3*42.4	300		134	180	85	85	46
4*1 1/4	4.500*1.669	2.07		5.276	7.087	3.346	3.346	1.811
100*40	114.3*48.3	300		134	180	85	94	51
4*1 1/2	4.500*1.900	2.07		5.276	7.087	3.346	3.701	2.008
100*50	114.3*60.3	300		134	180	90	98	61
4*2	4.500*2.375	2.07		5.276	7.087	3.543	3.858	2.402
100*65	114.3*73	300		134	180	93	121	81
4*2 1/2	4.500*2.875	2.07		5.276	7.087	3.661	4.764	3.189
100*65	114.3*76.1	300		134	180	93	121	81
4*2 1/2	4.500*2.996	2.07		5.276	7.087	3.661	4.764	3.189
100*80	114.3*88.9	300	134	180	93	121	84	
4*3	4.500*3.500	2.07	5.276	7.087	3.661	4.764	3.307	
125*25	139.7*33.7	300	2-M12*75	168	220	107	77	38
5*1	5.500*1.327	2.07		6.614	8.661	4.213	3.031	1.496
125*32	139.7*42.4	300		168	220	107	83	46
5*1 1/4	5.500*1.669	2.07		6.614	8.661	4.213	3.268	1.811
125*40	139.7*48.3	300		168	220	107	92	51
5*1 1/2	5.500*1.900	2.07		6.614	8.661	4.213	3.622	2.008
125*50	139.7*60.3	300		168	220	107	97	61
5*2	5.500*2.375	2.07		6.614	8.661	4.213	3.819	2.402
125*65	139.7*76.1	300		168	220	107	112	81
5*2 1/2	5.500*2.996	2.07		6.614	8.661	4.213	4.409	3.189
125*80	139.7*88.9	300		168	220	107	122	86
5*3	5.500*3.500	2.07		6.614	8.661	4.213	4.803	3.386

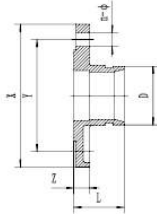
Mechanical Tee Threaded



- Finish:
- ① Epoxy
 - ② Painted
 - ③ Galvanized

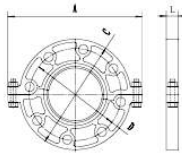
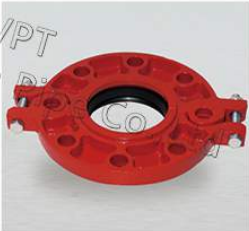
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Bolt Size	Dimensions mm/in				Hole cutting dimensions mm/in	
				No.-Size mm	Ø	L	K		H
150*25	165.1*33.7	300	2-M12*75	194	247	125	77	38	
6*1	6.500*1.327	2.07		7.638	9.724	4.921	3.031	1.496	
150*32	165.1*42.4	300		194	247	125	83	46	
6*1 1/4	6.500*1.669	2.07		7.638	9.724	4.921	3.268	1.811	
150*40	165.1*48.3	300		194	247	125	92	51	
6*1 1/2	6.500*1.900	2.07		7.638	9.724	4.921	3.622	2.008	
150*50	165.1*60.3	300		194	247	125	97	61	
6*2	6.500*2.375	2.07		7.638	9.724	4.921	3.819	2.402	
150*65	165.1*76.1	300		194	247	125	112	81	
6*2 1/2	6.500*2.996	2.07		7.638	9.724	4.921	4.409	3.189	
150*80	165.1*88.9	300		194	247	125	122	86	
6*3	6.500*3.500	2.07		7.638	9.724	4.921	4.803	3.386	
150*100	165.1*114.3	300		194	247	125	134	114	
6*4	6.500*4.500	2.07		7.638	9.724	4.921	5.276	4.488	
150*25	168.3*33.7	300		2-M16*100	198	247	120	77	38
6*1	6.625*1.327	2.07			7.795	9.724	4.724	3.031	1.496
150*32	168.3*42.4	300			198	247	120	82	46
6*1 1/4	6.625*1.669	2.07			7.795	9.724	4.724	3.228	1.811
150*40	168.3*48.3	300	198		247	120	92	51	
6*1 1/2	6.625*1.900	2.07	7.795		9.724	4.724	3.622	2.007	
150*50	168.3*60.3	300	198		247	120	98	61	
6*2	6.625*2.375	2.07	7.795		9.724	4.724	3.858	2.401	
150*65	168.3*76.1	300	198		247	120	121	81	
6*2 1/2	6.625*2.996	2.07	7.795		9.724	4.724	4.763	3.228	
150*80	168.3*88.9	300	198		247	120	134	86	
6*3	6.625*3.500	2.07	7.795		9.724	4.724	5.275	3.385	
200*25	219.1*33.7	225	2-M16*100		250	310	146	77	46
8*1	8.625*1.327	1.55			9.843	12.205	5.748	3.031	1.811
200*32	219.1*42.4	225			250	310	146	83	46
8*1 1/4	8.625*1.669	1.55			9.843	12.205	5.748	3.268	1.811
200*40	219.1*48.3	225			250	310	146	92	51
8*1 1/2	8.625*1.900	1.55			9.843	12.205	5.748	3.622	2.008
200*50	219.1*60.3	225		250	310	155	97	61	
8*2	8.625*2.375	1.55		9.843	12.205	6.102	3.819	2.402	
200*65	219.1*76.1	225		250	321	155	112	81	
8*2 1/2	8.625*2.996	1.55		9.843	12.638	6.102	4.409	3.189	
200*80	219.1*88.9	225		250	321	146	122	86	
8*3	8.625*3.500	1.55		9.843	12.638	5.748	4.803	3.386	
200*100	219.1*114.3	225		250	310	146	134	114	
8*4	8.625*4.500	1.55		9.843	12.205	5.748	5.276	4.488	
250*40	273.0*48.3	225		2-M22*130	309	376	174	92	51
10*1 1/2	10.748*1.900	1.55			9.843	14.803	5.748	3.622	2.008
250*50	273.0*60.3	225			309	376	174	97	61
10*2	10.748*2.375	1.55			9.843	14.803	5.748	3.819	2.402
250*65	273.0*76.1	225	309		376	174	112	81	
10*2 1/2	10.748*2.996	1.55	9.843		14.803	5.748	4.409	3.189	
250*80	273.0*88.9	225	309		376	174	122	86	
10*3	10.748*3.500	1.55	9.843		14.803	5.748	4.803	3.386	
250*100	273.0*114.3	225	309		376	174	134	114	
10*4	10.748*4.500	1.55	9.843		14.803	5.748	5.276	4.488	
250*125	273.0*139.7	225	309		376	174	186	135	
8*6	10*748*5.500	1.55	9.843		14.803	5.748	7.323	5.315	

Flange Adaptor (PN16)



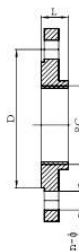
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			Y	L	n-ø
50	60.3	300	125	65	4-ø18
2	2.375	2.07	4.921	2.559	0.157-ø0.709
65	76.1	300	145	65	4-ø18
2.5	2.996	2.07	5.709	2.559	0.157-ø0.709
80	88.9	300	160	65	8-ø18
3	3.5	2.07	6.299	2.559	0.315-ø0.709
100	114.3	300	180	70	8-ø18
4	4.5	2.07	7.087	2.756	0.315-ø0.709
125	139.7	300	210	70	8-ø18
5	5.5	2.07	8.268	2.756	0.315-ø0.709
125	141.3	300	210	70	8-ø18
5	5.563	2.07	8.268	2.756	0.315-ø0.709
150	165.1	300	240	70	8-ø18
6	6.5	2.07	9.449	2.756	0.315-ø0.709
150	168.3	300	240	70	8-ø18
6	6.626	2.07	9.449	2.756	0.315-ø0.709
200	219.1	225	295	80	12-ø22
8	8.626	1.55	11.614	3.15	0.315-ø0.866

Flange Grooved (PN16)



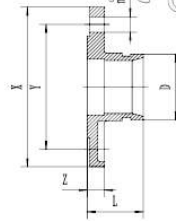
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			D	L	n-ø
50	60.3	300	125	20	4-ø18
2	2.375	2.07	4.921	0.787	0.157-ø0.709
65	76.1	300	145	20	4-ø18
2.5	2.996	2.07	5.709	0.787	0.157-ø0.709
80	88.9	300	160	20	8-ø18
3	3.5	2.07	6.299	0.787	0.315-ø0.709
100	114.3	300	180	22	8-ø18
4	4.5	2.07	7.087	0.866	0.315-ø0.709
125	139.7	300	210	22	8-ø18
5	5.5	2.07	8.268	0.866	0.315-ø0.709
125	141.3	300	210	22	8-ø18
5	5.563	2.07	8.268	0.866	0.315-ø0.709
150	165.1	300	240	24	8-ø18
6	6.5	2.07	9.449	0.945	0.315-ø0.709
200	219.1	225	295	26	12-ø22
8	8.626	1.55	11.614	1.024	0.472-ø0.866

Flange Adaptor Threaded



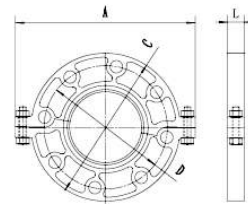
Nominal Size mm/in	Pipe screw measurement Rc mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			D	L	n-ø
50	60.3	300	125	65	4-ø18
2	2.375	2.07	4.921	2.559	0.157-ø0.709
65	76.1	300	145	65	4-ø18
2 1/2	2.996	2.07	5.709	2.559	0.157-ø0.709
80	88.9	300	160	65	8-ø18
3	3.5	2.07	6.299	2.559	0.315-ø0.709
100	114.3	300	180	70	8-ø18
4	4.5	2.07	7.087	2.756	0.315-ø0.709

Flange Adaptor (class 150)



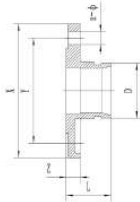
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			Y	L	n-φ
50	60.3	300	121	65	4-φ18
2	2.375	2.07	4.76	2.559	0.157-φ0.709
65	73	300	140	65	4-φ18
2.5	2.875	2.07	5.511	2.559	0.157-φ0.709
80	88.9	300	152	65	8-φ18
3	3.5	2.07	5.984	2.559	0.315-φ0.709
100	114.3	300	191	70	8-φ18
4	4.5	2.07	7.52	2.756	0.315-φ0.709
125	141.3	300	216	70	8-φ22
5	5.563	2.07	8.5	2.756	0.315-φ0.866
150	168.3	300	241.3	70	8-φ22
6	6.626	2.07	9.5	2.756	0.315-φ0.866
200	219.1	225	298.5	80	8-φ22
8	8.626	1.55	11.75	3.15	0.315-φ0.866

Flange Grooved (class 150)



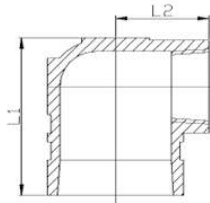
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			D	L	n-φ
50	60.3	300	121	20	4-φ18
2	2.375	2.07	4.76	0.787	0.157-φ0.709
65	73	300	140	20	4-φ18
2.5	2.875	2.07	5.511	0.787	0.157-φ0.709
80	88.9	300	152	20	4-φ18
3	3.5	2.07	5.984	0.787	0.315-φ0.709
100	114.3	300	191	21	8-φ18
4	4.5	2.07	7.52	0.827	0.315-φ0.709
125	141.3	300	216	21	8-φ22
5	5.563	2.07	8.5	0.827	0.315-φ0.866
150	168.3	300	241.3	21	8-φ22
6	6.626	2.07	9.5	0.827	0.315-φ0.866
200	219.1	225	298.5	24	8-φ22
8	8.626	1.55	11.75	0.945	0.315-φ0.866

Flange Adaptor (PN10)



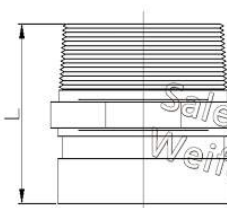
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/Mpa	Dimensions (mm/in)		
			Y	L	n-ø
50	60.3	300	120	65	4-ø19
2	2.375	2.07	4.724	2.559	0.157-ø0.748
65	76.3	300	140	65	4-ø19
2.5	3.004	2.07	5.511	2.559	0.157-ø0.748
80	89.1	300	150	65	8-ø19
3	3.508	2.07	5.906	2.559	0.315-ø0.748
100	114.3	300	175	70	8-ø19
4	4.5	2.07	6.89	2.756	0.315-ø0.748
125	139.8	300	210	70	8-ø23
5	5.504	2.07	8.268	2.756	0.315-ø0.906
150	165.2	300	240	70	8-ø23
6	6.504	2.07	9.449	2.756	0.315-ø0.906
200	216.3	225	293	80	12-ø23
8	8.516	1.55	11.535	3.15	0.472-ø0.906
250	267.4	225	355	85	12-ø25
10	10.528	1.55	13.976	3.346	0.472-ø0.984
300	318.5	225	400	90	16-ø25
12	12.539	1.55	15.748	6.543	0.630-ø0.984

End-all Fitting



Nominal Size mm/in	Pipe O.D mm/in	Working Pressure	Dimensions (mm/in)	
			L1	L2
40*15	48.3*21.3	300	70	35
1 1/2*1/2	1.900*0.839	2.07	2.756	1.378
40*25	48.3*33.7	300	70	35
1 1/2*1	1.900*1.327	2.07	2.756	1.378
50*15	60.3*21.3	300	70	42
2*1/2	2.375*0.839	2.07	2.756	1.654
50*20	60.3*26.9	300	70	42
2*3/4	2.375*1.059	2.07	2.756	1.654
50*25	60.3*33.7	300	70	42
2*1	2.375*1.327	2.07	2.756	1.654

Nipple Adaptor

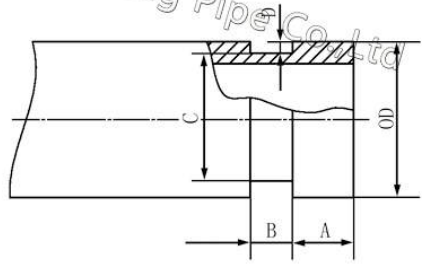


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure	L mm/in
40	48.3	300	64
1.5	1.9	2.07	2.52
50	60.3	300	64
2	2.375	2.07	2.52

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WPT Roll Groove Dimensions



Nominal Size mm/in	Pipe OD		Gasket seat A ± 0.76/ ± 0.03 mm/in	Groove Width B ± 0.76/ ± 0.03 mm/in	Groove Dia C		Groove Depth D(ref) mm/in	Max Allow Flare Dia F mm/in	Min. Allow wall thickness T mm/in	
	Basic mm/in	Tolerance mm/in			Basic mm/in	Tolerance mm/in				
25	33.7	+0.41	-0.68	15.88	7.14	30.23	-0.38	1.60	34.5	1.8
1	1.327	+0.016	-0.026	0.625	0.281	1.190	-0.015	0.063	1.358	0.071
32	42.4	+0.50	-0.6	15.88	7.14	38.99	-0.38	1.60	43.3	1.8
1 1/4	1.669	+0.020	-0.023	0.625	0.281	1.535	-0.015	0.063	1.705	0.071
40	48.3	+0.44	-0.52	15.88	7.14	45.09	-0.38	1.60	49.4	1.8
1 1/2	1.900	+0.017	-0.020	0.625	0.281	1.779	-0.015	0.063	1.945	0.071
50	60.3	+0.61	-0.61	15.88	8.74	57.15	-0.38	1.60	62.2	1.8
2	2.375	+0.024	-0.024	0.625	0.344	2.250	-0.015	0.063	2.449	0.071
65	73.0	+0.74	-0.74	15.88	8.74	69.09	-0.46	1.98	75.2	2.3
2 1/2	2.875	+0.029	-0.029	0.625	0.344	2.720	-0.018	0.078	2.961	0.091
65	76.1	+0.76	-0.76	15.88	8.74	72.26	-0.46	1.99	77.7	2.3
2 1/2	3.000	+0.030	-0.030	0.625	0.344	2.845	-0.018	0.078	3.059	0.091
80	88.9	+0.89	-0.79	15.88	8.74	84.94	-0.46	1.98	90.6	2.3
3	3.500	+0.035	-0.031	0.625	0.344	3.344	-0.018	0.078	3.567	0.091
100	108.0	+1.07	-0.79	15.88	8.74	103.73	-0.51	2.11	109.7	2.3
4	4.250	+0.042	-0.031	0.625	0.344	4.084	-0.020	0.083	4.319	0.091
100	114.3	+1.14	-0.79	15.88	8.74	110.08	-0.51	2.11	116.2	2.3
4	4.500	+0.045	-0.031	0.625	0.344	4.334	-0.020	0.083	4.575	0.091
125	133.0	+1.32	-0.79	15.88	8.74	129.13	-0.51	2.11	134.9	2.9
5	5.250	+0.052	-0.031	0.625	0.344	5.084	-0.020	0.083	5.311	0.114
125	139.7	+1.40	-0.79	15.88	8.74	135.48	-0.51	2.11	141.7	2.9
5	5.500	+0.055	-0.031	0.625	0.344	5.334	-0.020	0.083	5.579	0.114
125	141.3	+1.42	-0.79	15.88	8.74	137.03	-0.56	2.13	143.5	2.9
5	5.563	+0.056	-0.031	0.625	0.344	5.395	-0.022	0.084	5.650	0.114
150	159.0	+1.60	-0.79	15.88	8.74	154.50	-0.56	2.16	161.0	2.9
6	6.250	+0.063	-0.031	0.625	0.344	6.083	-0.022	0.085	6.339	0.114
150	165.1	+1.60	-0.79	15.88	8.74	160.8	-0.56	2.16	167.1	2.9
6	6.500	+0.063	-0.031	0.625	0.344	6.330	-0.022	0.085	6.579	0.114
150	168.3	+1.60	-0.79	15.88	8.74	163.96	-0.56	2.16	170.7	2.9
6	6.625	+0.063	-0.031	0.625	0.344	6.455	-0.022	0.085	6.720	0.114
200A	216.3	+1.60	-0.79	19.05	11.91	211.60	-0.64	2.35	219.8	2.9
8	8.516	+0.063	-0.031	0.750	0.469	8.331	-0.025	0.093	8.653	0.114
200	219.1	+1.60	-0.79	19.05	11.91	214.40	-0.64	2.34	221.5	2.9
8	8.625	+0.063	-0.031	0.750	0.469	8.441	-0.025	0.092	8.720	0.114
250A	267.4	+1.60	-0.79	19.05	11.91	262.60	-0.69	2.40	270.9	3.6
10	10.528	+0.063	-0.031	0.750	0.469	10.339	-0.027	0.095	10.665	0.142
250	273.0	+1.60	-0.79	19.05	11.91	268.28	-0.69	2.39	275.4	3.6
10	10.750	+0.063	-0.031	0.750	0.469	10.562	-0.027	0.094	10.842	0.142
300A	318.5	+1.60	-0.79	19.05	11.91	312.90	-0.76	2.77	322.0	4.0
12	12.539	+0.063	-0.031	0.750	0.469	12.319	-0.030	0.109	12.677	0.158
300	323.9	+1.60	-0.79	19.05	11.91	318.29	-0.76	2.77	326.2	4.0
12	12.750	+0.063	-0.031	0.750	0.469	12.531	-0.030	0.109	12.842	0.158
350	377.0	+1.60	-0.79	23.83	11.91	371.44	-0.76	2.77	379.5	4.5
14	14.842	+0.063	-0.031	0.938	0.469	14.623	-0.030	0.109	14.941	0.177
400	426.0	+1.60	-0.79	23.83	11.91	420.46	-0.76	2.77	428.5	4.5
16	16.772	+0.063	-0.031	0.938	0.469	16.553	-0.030	0.109	16.870	0.177
500	529.0	+1.60	-0.79	25.40	11.91	523.46	-0.76	2.77	533.0	5.0
20	20.827	+0.063	-0.031	1.000	0.469	20.608	-0.030	0.109	20.984	0.197

WPT Gasket Ring



Gasket	Name	Temperature Range	General Service Recommendations	Color Mark
E	EPDM	-34°C~+110°C (-30~+230° F)	Recommended for hot water service within the specified temperature range plus a variety of dilute acids,oil-free air and many chemical services.UL classified in accordance with ANSI/NSF61 or cold+86° F(+30°)and hot+180° F(+82°C)potable water service.Not recommended for petroleum service.	Green Strip
D	NBR	-29~+82°C (-20~+180° F)	(Recommended for petroleum products,air with oil vapors,vegetable and mineral oils within the specified temperature range.Not recommended for hot water services.)	Orange Strip
S	Silicon Rubber	-40~+177°C (-40~+350° F)	(Recommended for high temperature dry air and some high temperature chemical products.)	White

Installation Instruction For Rigid&Flexible Coupling



Pipe preparation

Check pipe end for proper groove dimensions and to assure that pipe end is free of indentations and projections that would prevent proper sealing.



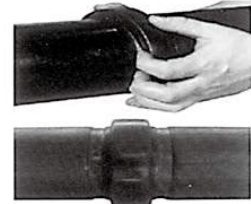
Lubricate gasket

Check gasket to be sure it's compatible for the intended service. Apply thin lubricant to the outside and sealing lips of the gasket.



Gasket installation

Slip the gasket over one pipe, making sure the gasket lip does not over-hang the pipe end.



Alignment

After aligning two pipe ends together, pull the gasket into position, centering between the grooves on each pipe. The gasket should not extend into the groove on either pipe.



Housing installation

Remove one bolt & nut and loosen the other nut. Place one housing over the gasket, making sure the housing keys fit into the pipe grooves. Swing the other housing over the gasket and into the grooves on both pipes. Re-insert the bolt and connect two housings.



Tighten nuts

Firstly hand tighten nuts and make sure oval neck bolt completely fits into bolt hole. Then securely tighten nuts alternatively and equally to the specified bolt torque by using spanner.



Assembly completed-Rigid Coupling

For Rigid Coupling, keep the gaps at bolt pads evenly spaced. Gaskets can't be seen visually.



Assembly completed-Flexible Coupling

For Flexible Coupling, two housings should be iron to iron connected. Gaskets can't be seen visually.

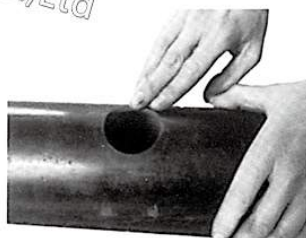
Caution

Proper torquing of bolts is required to obtain specified performance.
 -Over torquing the bolts may result in damage to the bolt and /or casting which could result in pipe joint separation.
 -Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque

ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	130-180	175-245
7/8	180-240	245-325

Installation Instruction For Threaded & Grooved Mechanical Tee



Pipe preparation

Clean the gasket sealing surface within 16mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket. Don't drill the hole on weld line.



Remove burrs

If any burrs or slug exists at the pipe hole, please remove them before assembly, to protect the gasket and avoid leakage.



Gasket installation

Insert the gasket into outlet housing making sure the tab in the gasket line up with the tab recesses in the housing. Align outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



Alignment

Align the strap around the pipe, insert the bolts and tighten the nuts finger tight.



Tighten nuts

Alternatively and evenly tighten the nuts to the specified bolt torque.



Assembly completed

There should be even gaps on two sides between upper and lower housings.

Caution

Proper torquing of bolts is required to obtain specified performance.
 -Over torquing the bolts may result in damage to the bolt and /or casting which could result in pipe joint separation.
 -Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque

ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	-	-
7/8	-	-

Installation Instruction For U-Bolt Mechanical Tee



Pipe preparation

Clean the gasket sealing surface within 16mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket. Don't drill the hole on weld line.



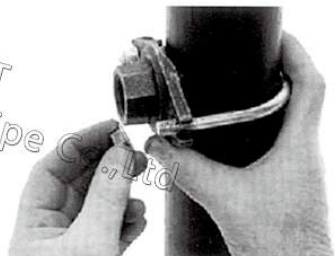
Remove burrs

If any burrs or slug exists at the pipe hole, please remove them before assembly, to protect the gasket and avoid leakage.



Gasket installation

Insert the gasket into outlet housing properly. Align outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



Alignment

Attach the U-bolt from the other side and tighten the nuts finger tight.



Tighten nuts

Alternatively and evenly tighten the nuts to the specified bolt torque.



Assembly completed

Assembly completed.

Caution

Proper torquing of bolts is required to obtain specified performance.

- Over torquing the bolts may result in damage to the bolt and /or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque

ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	-	-
7/8	-	-

Installation Instruction For Grooved Flange



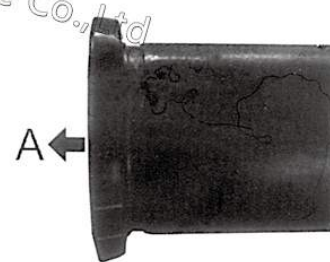
Pipe preparation

Check pipe end for proper groove dimensions and to assure that pipe end is free of indentations and projections that would prevent proper sealing.



Lubricate gasket

Check gasket to be sure it's compatible for the intended service. Apply thin lubricant to the outside and sealing lips of the gasket.



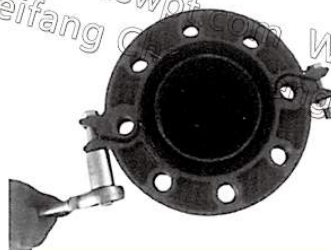
Gasket installation

Slip the gasket over pipe end, with the gasket opening side towards "A". Make sure the gasket sealing lip is even with pipe end.



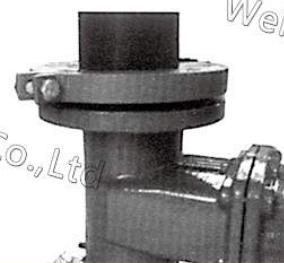
Housing installation

Remove bolts and nuts, place two housings over the gasket, making sure the housing keys fit into the pipe grooves. Re-insert the bolts and hand tighten the nuts.



Tighten nuts

Securely tighten nuts alternatively and equally to the specified bolt torque by using spanner.



Connect mating flange

Align flange bolt holes with mating flange (or valve) bolt holes. Insert a standard flange bolt through bolt hole and hand tighten a nut. Insert another bolt opposite the first and hand tighten a nut. Continue this until all bolt holes are fitted. Tighten nuts evenly to specified bolt torque, so flange faces remain parallel. Assembly completed.

Caution

Proper torquing of bolts is required to obtain specified performance.

- Over torquing the bolts may result in damage to the bolt and /or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

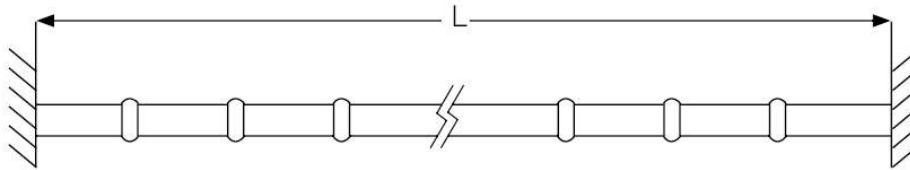
Specified Bolt Torque

ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
	Lbs-Ft.	N.m
M10	30-45	40-60
M12	80-100	110-135
M16	-	-
M20	-	-
M22	-	-
M24	-	-

Movement-Application

Thermal stress

Thermal stress is caused by changes in temperature, resulting in either expansion or contraction. When designing a system you must allow for this thermal movement. To determine the appropriate number of flexible couplings to allow for this thermal movement please refer to the following.



Example:

- 4" straight steel pipe, 30m long
- Anchored on both ends
- Minimum temperature (during installation) = 5°C
- Maximum working temperature = 55°C

From the thermal expansion table, we know the overall pipeline length will increase by 18mm (0.71"). You can also use Formula 1 or Table 3 to find the amount of thermal expansion. We want to know the number of couplings that are required to address this thermal movement problem.

The allowed movement of a 4" flexible coupling is:
Movement range × Adjustment = Allowed movement

$$4.3\text{mm} \times 75\% = 3.2\text{mm}$$

The appropriate number of coupling is:

$$\text{Thermal expansion} / \text{Allowed movement} = \text{Number of couplings}$$

$$18\text{mm} / 3.2\text{mm} = 5.6$$

Conclusion:

The appropriate number of coupling is 6.

Thermal Expansion

Temperature difference (°C)	Pipe length (m)					
	1	5	10	20	30	40
1	0.012	0.06	0.12	0.24	0.36	0.48
5	0.06	0.3	0.6	1.2	1.8	2.4
10	0.12	0.6	1.2	2.4	3.6	4.8
20	0.24	1.2	2.4	4.8	7.2	9.6
30	0.36	1.8	3.6	7.2	11	15
40	0.48	2.4	4.8	9.6	14	20
50	0.6	3	6	12	18	24
60	0.72	3.6	7.2	14	22	29
70	0.84	4.2	8.4	17	25	34
80	0.96	4.8	9.6	19	29	39

Thermal Expansion Formula 1

$$\lambda = \alpha \times L \times T$$

λ : Thermal Expansion

α : Linear Expansion

coefficient for steel

L: Pipe length

T: Temperature difference

Anchoring and Supports

When designing the hangers, supports and anchors for a grooved end pipe system, the piping designer must consider certain unique characteristics of the grooved type coupling in addition to many universal pipe hanger and support design factors. As with any pipe system, the hanger or support system must provide for

- 1) the weight of the pipe, couplings, fluid and pipe system components;
- 2) reduce stresses at pipe joints; and
- 3) permit required pipe system movement to relieve stress.

The following chart shows the maximum span between pipe hangers, supports and anchors.

Max.Span between Supports(steel pipe)

Nominal Size(mm)		15	20	25	32	40	50	70	80	100	125	150	200	250	300
Max.Span Between Supports (mm)	Insulating Pipe	2	2.5	2.5	2.5	3	3	4	4	4.5	6	7	7	8	8.5
	Non-insulating Pipe	2.5	3	3.5	4	4.5	5	6	6	6.5	7	8	9.5	11	12

Flexible Couplings/Linear Movement and Angular Movement

Dimensions		Linear Movement	Angular Movement	
Nominal Size	Pipe O.D.		(°)	mm/in in/ft
25	33.7	2.0	2° -45'	48
1	1.315	0.0787		0.58
32	42.4	2.0	2° -10'	38
1¼	1.660	0.0787		0.45
40	48.3	3.2	1° -54'	33
1½	1.900	0.125		0.40
50	60.3	3.2	1° -31'	26
2	2.375	0.125		0.32
65	73.0	3.2	1° -27'	25
2½	2.875	0.125		0.30
65	76.1	3.2	1° -12'	21
2½	3.000	0.125		0.25
80	88.9	3.2	1° -02'	18
3	3.500	0.125		0.22
100	108.0	3.2	1° -51'	32
4	4.250	0.125		0.39
100	114.3	3.2	1° -36'	28
4	4.500	0.125		0.34

Dimensions		Linear Movement	Angular Movement	
Nominal Size	Pipe O.D.		(°)	mm/in in/ft
125	133.0	3.2	1° -41'	30
5	5.250	0.125		0.36
125	139.7	3.2	1° -19'	23
5	5.500	0.125		0.28
125	141.3	3.2	1° -03'	18
5	5.563	0.125		0.22
150	159.0	3.2	1° -18'	23
6	6.250	0.125		0.27
150	165.1	3.2	1° -05'	20
6	6.500	0.125		0.24
150	168.3	3.2	1° -05'	19
6	6.625	0.125		0.23
200	219.1	3.2	0° -50'	15
8	8.625	0.125		0.17
250	273	3.2	0° -40'	12
10	10.750	0.125		0.14
300	323.9	3.2	0° -34'	10
12	12.750	0.125		0.12

ot.com WPT
angsheng Pipe Co.,Ltd

NOTES

Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng

ot.com WPT
angsheng Pipe Co.,Ltd

Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng

ot.com WPT
angsheng Pipe Co.,Ltd

Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng

.com WPT
gsheng Pipe Co.,Ltd

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Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changsheng

.com WPT
gsheng Pipe Co.,Ltd

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Weifang Changsheng

.com WPT
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Weifang Changsheng

.com WPT
gsheng Pipe Co.,Ltd

Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changshei

.com WPT
gsheng Pipe Co.,Ltd

Sales@cswwpt.com WPT
Weifang Changsheng Pipe Co.,Ltd

Sales@cswwpt.com
Weifang Changshei

WPT[®]

WEIFANG CHANGSHENG PIPE CO.,LTD

Add: No.8159 Muxiang Road, Weifang High&New
Technology Development Zone, Weifang City, Shandong
261201, China.

Tel: +86-536-7675088

Fax: +86-536-7676677

Web: www.cswpt.com

E-mail: sales@cswwpt.com

Sales@cswwpt.com WPT
Weifang Changsheng Pipe

Sales@cswwpt.com
Weifang Changshei

