

AQUILA[®] DUCTILE IRON GROOVED FITTINGS



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DUCTILE IRON GROOVED FITTINGS



No. 1N
FLEXIBLE
COUPLING



No. 1NR
REDUCING
FLEXIBLE
COUPLING



No. 1NH
HEAVY DUTY
FLEXIBLE
COUPLING



No. 1G
RIGID COUPLING



No. 90
90° ELBOW



No. 90R
90° REDUCING
ELBOW



No. 105
11.25° ELBOW



No. 110
22.5° ELBOW



No. 120
45° ELBOW



No. 130
TEE



No. 130R
REDUCING TEE



No. 131R
REDUCING TEE
THREADED OUTLET



No. 180
CROSS



No. 180R
REDUCING CROSS



No. 181
REDUCING CROSS
THREADED OUTLET



No. 3G
MECHANICAL
TEE GROOVED
OUTLET



No. 3J
MECHANICAL
TEE THREADED
OUTLET



No. 3L
U-BOLT
MECHANICAL
TEE



No. 4G
MECHANICAL
CROSS GROOVED
OUTLET



No. 4J
MECHANICAL
CROSS THREADED
OUTLET



No. 230
GROOVED
ECCENTRIC
REDUCER



No. 230N
GROOVED
ECCENTRIC
REDUCER WITH
FEMALE THREAD



No. 240
GROOVED
CONCENTRIC
REDUCER



No. 240N
GROOVED
CONCENTRIC
REDUCER WITH
FEMALE THREAD



No. 240W
GROOVED
CONCENTRIC
REDUCER WITH
MALE THREAD



No. 300
CAP



No. 300
CAP



No. 321
GROOVED FLANGE



No. 321G
ADAPTOR FLANGE



No. 321GH
ADAPTOR
FLANGE - PN25



No. 1NS
LIGHT DUTY
FLEXIBLE
COUPLING



No. 1GS
LIGHT DUTY
RIGID COUPLING



No. 90S
90° LIGHT DUTY
ELBOW



No. 130S
LIGHT DUTY TEE



No. 3GS
LIGHT DUTY
MECHANICAL
TEE GROOVED
OUTLET



No. 3JS
LIGHT DUTY
MECHANICAL
TEE THREADED
OUTLET



No. 4GS
LIGHT DUTY
MECHANICAL
CROSS GROOVED
OUTLET



No. 4JS
LIGHT DUTY
MECHANICAL
CROSS THREADED
OUTLET

Coatings:

P - Painting

S - Epoxy

J - Galvanization + Epoxy

B - Black

E - Electroplate

G - Galvanization



BLUE



GALVANIZED



ORANGE



WHITE



RED

INTRODUCTION

“**AQUILA**” **Ductile Iron Grooved Fittings** is a fast, easy and economical connection system for joining roll-grooved piping.

Flexibility advantages

- ▶ “**AQUILA**” **Ductile Iron Grooved Fittings** unique flexible couplings provide linear movement that ensures a stress-free system
- ▶ This also allows for expansion and contraction movement, and eliminates the need for special expansion joints and loops

Rigidity when needed

- ▶ “**AQUILA**” **Ductile Iron Grooved Fittings** special coupling design adjusts to standard pipe tolerances
- ▶ This positive clamping pressure ensures rigid pipe installation when necessary

Vibration and noise transmission reduced

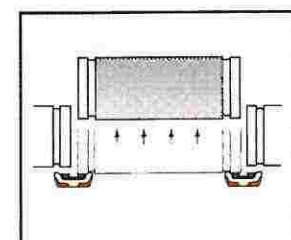
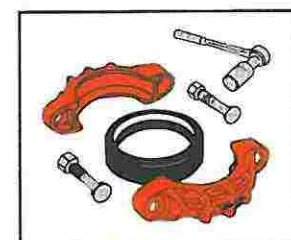
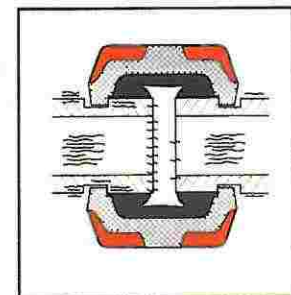
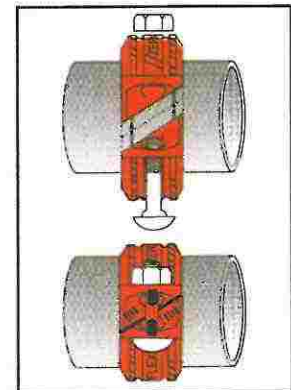
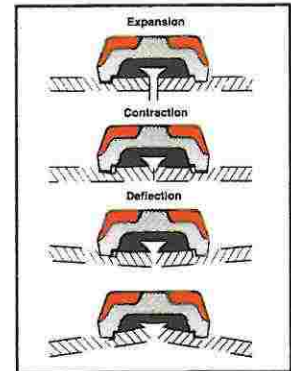
- ▶ “**AQUILA**” **Ductile Iron Grooved Fittings** special Connection diaphragms ensure a reduction in vibration and noise transmission

Installation cost savings of up to 30%

- ▶ No special tools required
- ▶ Simple to install in difficult places
- ▶ Costs estimates easy to control

Pipe sections are demountable

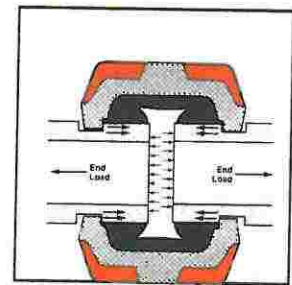
- ▶ “**AQUILA**” **Ductile Iron Grooved Fittings** couplings are easily removed allowing sections of the pipe system to be altered, or disengaged for cleaning or servicing



INTRODUCTION

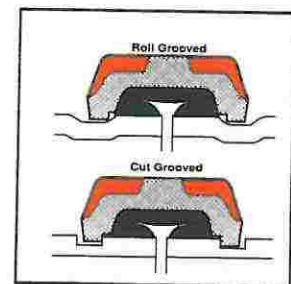
Confidence in Joint System

- ▶ The system uses a proven pressure responsive elastomeric seal to facilitate water tightness
- ▶ Couplings are available for working pressures up to 17200kPa



Specially designed for roll groove or cut grooved pipe

- ▶ **“AQUILA” Ductile Iron Grooved Fittings** components are suitable for all types of cut and roll grooved pipe
- ▶ **“AQUILA”** tools can roll groove standard steel pipe up to 600mm and 9.5mm wall thickness



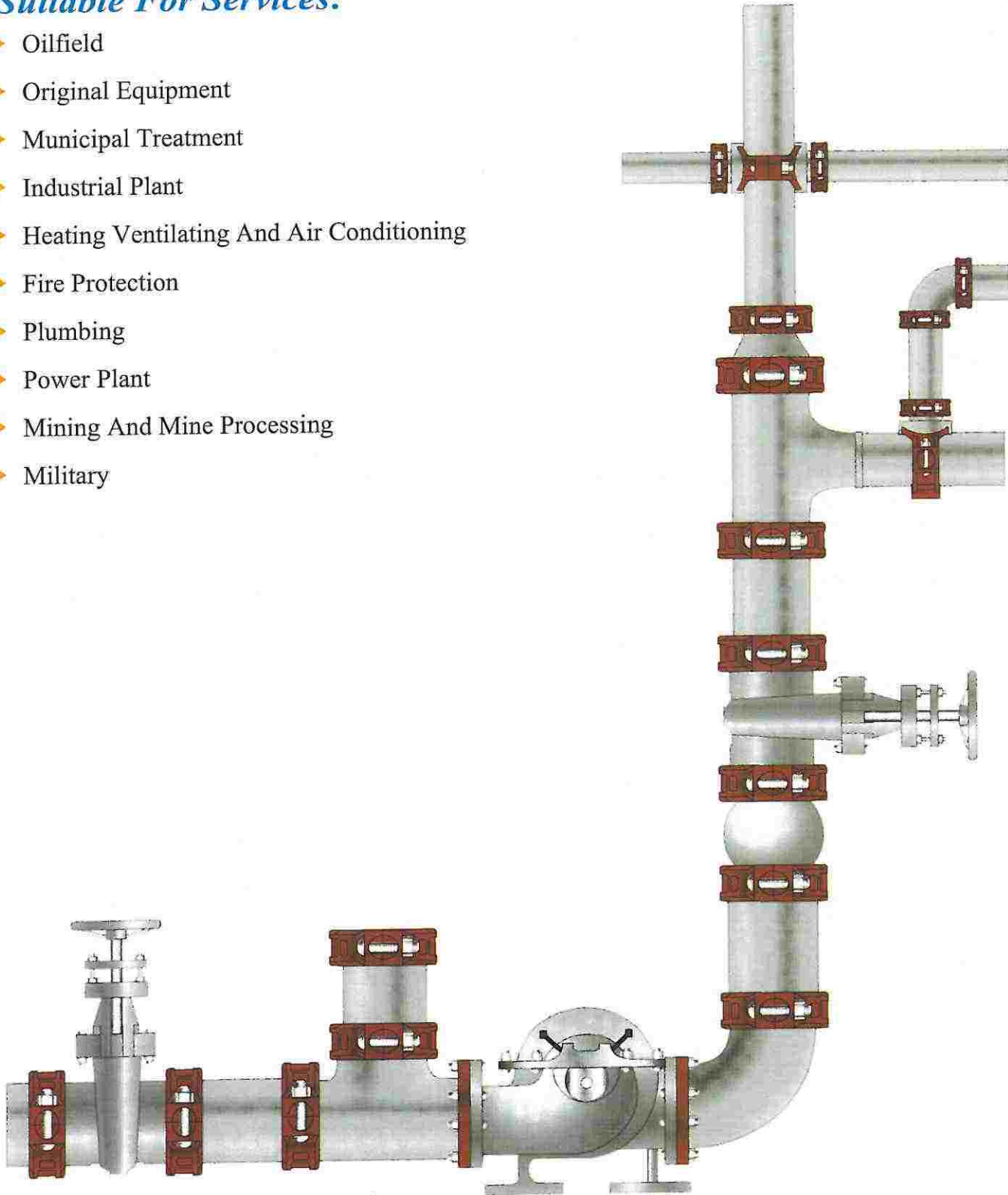
Comparison of Advantages

FEATURES	TYPE OF FITTINGS			
	Threaded	Flanged	Welded	“AQUILA” Jointing System
Allows angular deflection-misalignment				▲
Expansion, contraction no need for expansion joint				▲
Reclaimable, no need for union				▲
Allows fast connection with valves				▲
Allows rotation of pipe to distribute				▲
No special skills required	▲			▲
No welding slags	▲			▲
No weakening of pipe at joints		▲	▲	▲
No fire hazard during installation	▲	▲		▲
Speed of installation	▲			▲
Allows prefabrication	▲	▲		▲
Low installation cost	▲			▲

ASSEMBLY SYSTEM

Suitable For Services:

- ▶ Oilfield
- ▶ Original Equipment
- ▶ Municipal Treatment
- ▶ Industrial Plant
- ▶ Heating Ventilating And Air Conditioning
- ▶ Fire Protection
- ▶ Plumbing
- ▶ Power Plant
- ▶ Mining And Mine Processing
- ▶ Military

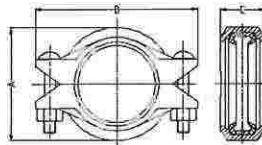




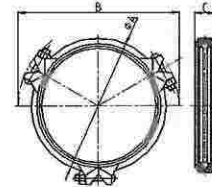
FLEXIBLE COUPLING



NO.1N



Pipe O.D.:
33.7 - 323.9 mm



Pipe O.D.:
377.0 - 426.0 mm

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions			Bolt Size
			A mm / in	B mm / in	C mm / in	
25 1	33.7 1.327	500 3.45	55 2.16	92 3.62	42 1.65	3/8x55
32 1¼	42.4 1.669	500 3.45	65 2.56	104 4.14	44 1.74	3/8x55
40 1½	48.3 1.900	500 3.45	70 2.75	110 4.33	44 1.74	3/8x55
50 2	60.3 2.375	500 3.45	83 3.27	124 4.88	44 1.74	3/8x55
65 2½	73.0 2.875	500 3.45	96 3.78	143 5.63	45 1.78	3/8x55
65 2½	76.1 3.000	500 3.45	100 3.94	145 5.71	45 1.78	3/8x55
80 3	88.9 3.500	500 3.45	115 4.53	160 6.30	45 1.78	1/2x70
100 4	108.0 4.250	500 3.45	138 5.43	190 7.48	50 1.97	1/2x70
100 4	114.3 4.500	500 3.45	145 5.71	198 7.80	50 1.97	1/2x70
125 5	133 5.250	450 3.10	162 6.38	225 8.86	51.0 2.01	5/8x80
125 5	139.7 5.500	450 3.10	169 6.65	230 9.06	52 2.05	5/8x80
125 5	141.3 5.563	450 3.10	170 6.69	232 9.13	51 2.01	5/8x80
150 6	159.0 6.250	450 3.10	190 7.48	254 10.00	52 2.05	5/8x85
150 6	165.1 6.500	450 3.10	196 7.72	260 10.24	52 2.05	5/8x85
150 6	168.3 6.625	450 3.10	200 7.87	265 10.43	52 2.05	5/8x85
200 8	219.1 8.625	450 3.10	258 10.24	350 13.78	60 2.37	3/4x115
250 10	273.0 10.750	300 2.07	337 13.27	406 16.00	65 2.56	7/8x140
300 12	323.9 12.750	300 2.07	372 14.65	460 18.11	64 2.52	7/8x140
350 14	377.0 14.842	225 1.6	3428 16.85	520 20.45	72 2.85	7/8x140
400 16	426.0 16.772	225 1.6	476 18.74	570 22.45	73 2.87	7/8x140

MATERIAL SPECIFICATIONS

Housing And Fittings:

Ductile iron

Coatings:

- Painting
- Epoxy
- Galvanization + Epoxy
- Black
- Electroplate
- Galvanization

Gaskets:

EPDM

Applications: 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/NSF 61 or cold + 86°F (+30°C) and hot + 180°F (+82°C) potable water service. Not for use with petroleum services.



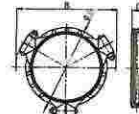
RIGID COUPLING



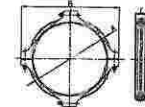
NO.1G



Pipe O.D.:
33.7 - 323.9 mm



Pipe O.D.:
355.6 - 406.4 mm



Pipe O.D.:
426.0 - 529.0 mm

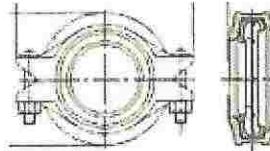
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions			Bolt Size
			A mm / in	B mm / in	C mm / in	
25	33.7	500	59	100	44	3/8x55
1	1.327	3.45	2.33	3.94	1.74	
32	42.4	500	66	105	45	3/8x55
1¼	1.669	3.45	2.60	4.13	1.78	
40	48.3	500	72	112	45	3/8x55
1½	1.900	3.45	2.84	4.41	1.78	
50	60.3	500	85	130	45	3/8x55
2	2.375	3.45	3.35	5.12	1.78	
65	73.0	500	98	140	45	3/8x55
2½	2.875	3.45	3.86	5.52	1.78	
65	76.1	500	101	145	45	3/8x55
2½	3.000	3.45	3.98	5.71	1.77	
80	88.9	500	115.0	168	46	1/2x70
3	3.500	3.45	4.53	6.62	1.82	
100	108.0	500	140	197	52	1/2x70
4	4.250	3.45	5.51	7.76	2.05	
100	114.3	500	146	200	52	1/2x70
4	4.500	3.45	5.75	7.88	2.05	
125	133	450	165	226	52	5/8x85
5	5.250	3.10	6.50	8.90	2.05	
125	139.7	450	170	235	52	5/8x85
5	5.500	3.10	6.69	9.25	2.05	
125	141.3	450	172	235	52	5/8x85
5	5.563	3.10	6.77	9.25	2.05	
150	159.0	450	190	267	52	5/8x85
6	6.250	3.10	7.48	10.51	2.05	
150	165.1	450	198	262	52	5/8x85
6	6.500	3.10	7.80	10.32	2.05	
150	168.3	450	202.0	265	52	5/8x85
6	6.625	3.10	7.95	10.43	2.05	
200	219.1	450	260.0	342	62	3/4x115
8	8.625	3.10	10.24	13.45	2.44	
250A	267.4	300	318	396	63	3/4x120
10	10.528	2.07	12.52	15.60	2.48	
250	273.0	300	327	420	63	7/8x125
10	10.750	2.07	12.88	16.54	2.48	
300A	318.5	300	364	456	63	7/8x140
12	12.539	2.07	14.33	17.95	2.48	
300	323.9	300	370	465	63	7/8x140
12	12.750	2.07	14.57	18.30	2.48	
350	355.6	300	415	510	72	7/8x140
14	14.000	2.07	16.34	20.08	2.84	
350	377.0	225	435	535	72	7/8x140
14	14.842	1.6	17.13	21.05	2.84	
400	406.4	300	468	575	72	7/8x140
16	16.000	2.07	18.43	22.64	2.84	
400	426.0	225	490	592	72	7/8x140
16	16.772	1.6	19.29	23.30	2.84	
500	529.0	225	595	700	76	7/8x140
20	20.827	1.6	23.43	27.56	3.00	



REDUCING FLEXIBLE COUPLING



NO.1NR



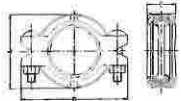
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions			Bolt Size
			A mm / in	B mm / in	C mm / in	
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	300 2.07	86 3.39	125 4.93	44 1.74	3/8x55
65 x 25 2½ x 1	73.0 x 33.7 2.875 x 1.327	300 2.07	100 3.94	138 5.44	45 1.78	3/8x55
65 x 50 2½ x 2	73.0 x 60.3 2.875 x 2.375	300 2.07	100 3.94	138 5.43	45 1.78	3/8x55
65 x 25 2½ x 1	76.1 x 33.7 3.000 x 1.327	300 2.07	102 4.02	140 5.51	45 1.78	3/8x55
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	102 4.02	140 5.51	45 1.78	3/8x55
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	300 2.07	102 4.02	140 5.51	45 1.78	3/8x55
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.327	300 2.07	115 4.53	168 6.61	46 1.81	1/2x70
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	115 4.53	168 6.61	46 1.81	1/2x70
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	300 2.07	115 4.53	168 6.61	46 1.81	1/2x70
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	300 2.07	115 4.53	168 6.61	46 1.81	1/2x70
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.327	300 2.07	144 5.67	198 7.80	50 1.97	1/2x70
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	144 5.67	198 7.80	50 1.97	1/2x70
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	300 2.07	144 5.67	198 7.80	50 1.97	1/2x70
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	300 2.07	144 5.67	198 7.80	50 1.97	1/2x70
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	148 5.83	198 7.80	50 1.97	1/2x70
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	197 7.75	260 10.24	51 2.01	5/8x85
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	200 7.87	268 10.55	51 2.01	5/8x85
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	202.5 7.97	268 10.55	52.5 2.07	5/8x85
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	300 2.07	257 10.12	335 13.19	60 2.36	3/4x115
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	300 2.07	257 10.12	335 13.19	60 2.36	3/4x115



HEAVY DUTY FLEXIBLE COUPLING



NO.1NH

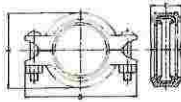


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions			Bolt Size
			A mm / in	B mm / in	C mm / in	
50 2	60.3 2.375	750 5.18	90 3.54	134 5.28	45 1.77	1/2x75
65 2½	73.0 2.875	750 5.18	100 3.94	150 5.91	45 1.77	1/2x75
65 2½	76.1 3.000	750 5.18	102 4.02	154 6.06	45 1.77	1/2x75
80 3	88.9 3.500	750 5.18	121 4.76	172 6.78	45 1.77	1/2x75
100 4	114.3 4.500	750 5.18	151 5.95	214 8.43	50 1.97	5/8x85
125 5	141.3 5.563	700 4.83	180 7.09	248 9.76	51 2.00	3/4x115
150 6	165.1 6.500	700 4.83	205 8.07	278 10.95	51 2.00	3/4x115
150 6	168.3 6.625	700 4.83	208 8.20	284 11.18	51 2.00	3/4x115
200 8	219.1 8.625	600 4.14	268 10.56	354 13.94	61 2.40	7/8x140

LIGHT DUTY RIGID COUPLING



NO.1GS



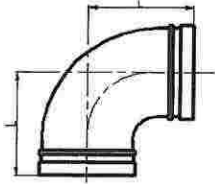
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			A mm / in	B mm / in	C mm / in	
65 2½	76.1 3.000	300 2.07	100 3.94	140 5.52	45 1.77	3/8x55
80 3	88.9 3.500	300 2.07	114 4.50	160 6.30	45 1.78	3/8x55
100 4	108.0 4.250	300 2.07	135 5.30	185 7.28	50 1.97	1/2x70
100 4	114.3 4.500	300 2.07	140 5.51	187 7.36	50 1.97	1/2x70
125 5	139.7 5.500	300 2.07	168 6.62	225 8.86	50 1.97	1/2x75
125 5	141.3 5.563	300 2.07	170 6.69	225 8.86	50 1.97	1/2x75
150 6	159.0 6.250	300 2.07	190 7.48	252 9.92	50 1.97	5/8x80
150 6	165.1 6.500	300 2.07	195 7.68	250 9.84	50 1.97	1/2x75
150 6	168.3 6.625	300 2.07	200 7.87	255 10.04	50 1.97	1/2x75
200A 8	216.3 8.516	300 2.07	255 10.04	320 12.60	58 2.28	5/8x85
200 8	219.1 8.625	300 2.07	255 10.05	322 12.68	58 2.28	5/8x85



90° ELBOW



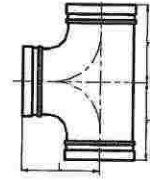
NO.90



TEE



NO.130

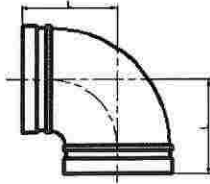


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	90 (90° Elbow) Dimensions L mm / in	130 (Tee) Dimensions L mm / in
25	33.7	500	57	57
1	1.315	3.45	2.24	2.24
32	42.4	500	70	70
1¼	1.660	3.45	2.75	2.75
40	48.3	500	70	70
1½	1.900	3.45	2.75	2.75
50	60.3	500	82.5	82.5
2	2.375	3.45	3.25	3.25
65	73.0	500	95	95
2½	2.875	3.45	3.74	3.74
65	76.1	500	95	95
2½	3.000	3.45	3.74	3.74
80	88.9	500	108	108
3	3.500	3.45	4.25	4.25
100	114.3	500	127	127
4	4.500	3.45	5.00	5.00
125	133.0	500	122	122
5	5.250	3.45	4.80	4.80
125	139.7	500	140	140
5	5.500	3.45	5.50	5.50
125	141.3	500	140	140
5	5.563	3.45	5.50	5.50
150	165.1	500	165	165
6	6.500	3.45	6.50	6.50
150	168.3	500	165	165
6	6.625	3.45	6.50	6.50
200	219.1	500	197	197
8	8.625	3.45	7.75	7.75
250	267.4	500	229	229
10	10.528	3.45	9.00	9.00
250	273.0	500	229	229
10	10.750	3.45	9.00	9.00
300	318.5	500	254	254
12	12.539	3.45	10.00	10.00
300	323.9	500	254	254
12	12.750	3.45	10.00	10.00
350	377.0	300	279	279
14	14.84	2.07	10.98	10.98
400	426.0	300	305	305
16	16.77	2.07	12.00	12.00

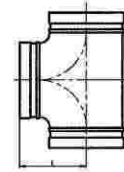


90° LIGHT DUTY ELBOW

LIGHT DUTY TEE



NO.90S



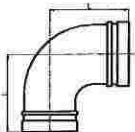
NO.130S

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	90S (Light-duty 90° Elbow) L	130S (Light-duty Tee) L
50 2	60.3 2.375	300 2.07	70 2.75	70 2.75
65 2½	73.0 2.875	300 2.07	76 3.00	76 3.00
65 2½	76.1 3.000	300 2.07	76 3.00	76 3.00
80 3	88.9 3.500	300 2.07	85.5 3.37	85.5 3.37
100 4	108.0 4.500	300 2.07	101 3.98	101 3.98
100 4	114.3 4.500	300 2.07	101 3.98	101 3.98
125 5	139.7 5.500	300 2.07	124 4.88	124 4.88
150 6	159.0 6.500	300 2.07	140 5.50	140 5.50
150 6	165.1 6.500	300 2.07	140 5.50	140 5.50
150 6	168.3 6.625	500 3.45	140 5.50	140 5.50
200 8	216.3 8.625	300 2.07	175 6.89	175 6.89
200 8	219.1 8.625	300 2.07	175 6.89	175 6.89

90° REDUCING ELBOW



NO.90R



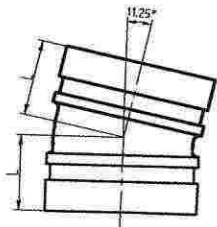
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	500 3.45	108 4.25
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	500 3.45	127 5.00
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	127 5.00
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	500 3.45	165 6.50
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	500 3.45	165 6.50



11.25° ELBOW



NO.105

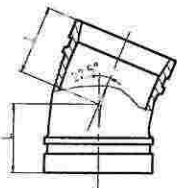


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
32	42.4	500	35
¼	1.660	3.45	1.38
40	48.3	500	35
½	1.900	3.45	1.38
50	60.3	500	35
2	2.375	3.45	1.38
65	76.1	500	38
2½	3.000	3.45	1.506
80	88.9	500	38
3	3.500	3.45	1.50
100	108.0	500	44
4	4.250	3.45	1.73
100	114.3	500	44
4	4.500	3.45	1.73
125	139.7	500	51
5	5.500	3.45	2.00
150	159.0	500	51
6	6.250	3.45	2.00
150	165.1	500	51
6	6.500	3.45	2.00
150	168.3	500	51
6	6.625	3.45	2.00
200	219.1	500	51
8	8.625	3.45	2.00

22.5° ELBOW



NO.110



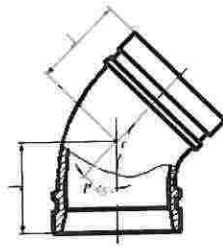
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
32	42.4	500	45
¼	1.660	3.45	1.77
40	48.3	500	45
½	1.900	3.45	1.77
50	60.3	500	48
2	2.375	3.45	1.89
65	73.0	500	51
2½	2.875	3.45	2.00
65	76.1	500	51
2½	3.000	3.45	2.00
80	88.9	500	57
3	3.500	3.45	2.24
100	108.0	500	73
4	4.250	3.45	2.87
100	114.3	500	73
4	4.500	3.45	2.87
125	139.7	500	73
5	5.500	3.45	2.87
150	159.0	500	79
6	6.250	3.45	3.11
150	165.1	500	79
6	6.500	3.45	3.11
150	168.3	500	79
6	6.625	3.45	3.11
200	219.1	500	98
8	8.625	3.45	3.86



45° ELBOW



NO.120



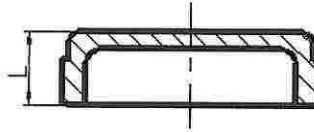
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
25	33.7	500	44.5
1	1.315	3.45	1.75
32	42.4	500	44.5
1¼	1.660	3.45	1.75
40	48.3	500	44.5
1½	1.900	3.45	1.75
50	60.3	500	51
2	2.375	3.45	2.00
65	73.0	500	57
2½	2.875	3.45	2.24
65	76.1	500	57
2½	3.000	3.45	2.24
80	88.9	500	63.5
3	3.500	3.45	2.50
100	108.0	500	76
4	4.250	3.45	3.00
100	114.3	500	76
4	4.500	3.45	3.00
125	133.0	500	82.5
5	5.250	3.45	3.25
125	139.7	500	82.5
5	5.500	3.45	3.25
125	141.3	500	82.5
5	5.563	3.45	3.25
150	159.0	500	89
6	6.250	3.45	3.50
150	165.1	500	89
6	6.500	3.45	3.50
150	168.3	500	89
6	6.625	3.45	3.50
200	216.3	500	108
8	8.516	3.45	4.25
200	219.1	500	108
8	8.625	3.45	4.25
250	267.4	500	120.5
10	10.528	3.45	4.75
250	273.0	500	120.5
10	10.750	3.45	4.75
300	318.5	500	133
12	12.750	3.45	5.25
300	323.9	500	133
12	12.750	3.45	5.25
300	377	300	122
12	12.750	2.07	4.80



CAP



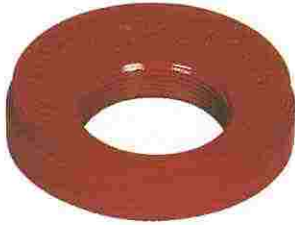
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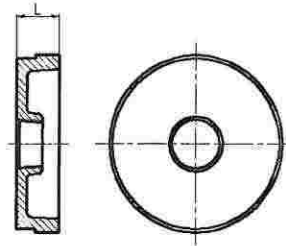
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
25	33.7	500	22.1
1	1.315	3.45	0.87
32	42.4	500	23.5
1¼	1.660	3.45	0.93
40	48.3	500	23.5
1½	1.900	3.45	0.93
50	60.3	500	23.5
2	2.375	3.45	0.93
65	73.0	500	23.5
2½	2.875	3.45	0.93
65	76.1	500	25.5
2½	3.000	3.45	1.00
80	88.9	500	25.5
3	3.500	3.45	1.00
100	108.0	500	27
4	4.250	3.45	1.06
100	114.3	500	27
4	4.500	3.45	1.06
25	133.0	500	27
5	5.250	3.45	1.06
125	139.7	500	27
5	5.500	3.45	1.06
125	141.3	500	27
5	5.563	3.45	1.06
150	159.0	500	27
6	6.250	3.45	1.06
150	165.1	300	27
6	6.500	2.07	1.06
150	168.3	300	24.5
6	6.625	2.07	0.97
200	216.3	300	30.2
8	8.516	2.07	1.19
200	219.1	300	30.5
8	8.625	2.07	1.20
250	273.0	300	32
10	10.750	2.07	1.26
300	323.9	300	32
12	12.750	2.07	1.26



CAP



NO.300



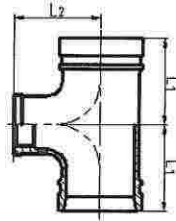
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	500 3.45	23.5 0.925
80 x 15 3 x ½	88.9 x 21.3 3.500 x 0.825	500 3.45	25.4 1.00
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	25.4 1.00
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	500 3.45	23.5 0.925
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	23.5 0.925
100 x 15 4 x ½	114.3 x 21.3 4.500 x 0.825	500 3.45	27.0 1.06
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	500 3.45	27.0 1.06
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	500 3.45	25.4 1.00
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	500 3.45	25.4 1.00
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	500 3.45	27 1.06
150 x 15 6 x ½	165.1 x 21.3 6.500 x 0.825	300 2.07	27 1.06
150 x 25 6 x 1	165.1 x 33.7 6.500 x 1.315	300 2.07	27 1.06
150 x 40 6 x 1½	165.1 x 48.3 6.500 x 1.900	300 2.07	25.4 1.00
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	27 1.06
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	27 1.06



REDUCING TEE THREADED OUTLET



NO.131R



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	300 2.07	70 2.75	70 2.75
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.660	300 2.07	70 2.75	70 2.75
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	300 2.07	70 2.75	70 2.75
65 x 25 2½ x 1	73.0 x 33.7 2.875 x 1.315	300 2.07	76 3.00	76 3.00
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.660	300 2.07	76 3.00	76 3.00
65 x 25 2½ x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	76 3.00	76 3.00
65 x 32 2½ x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	76 3.00	76 3.00
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	76 3.00	76 3.00
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	300 2.07	76 3.00	76 3.00
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	85.5 3.37	85.5 3.37
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	85.5 3.37	85.5 3.37
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	85.5 3.37	85.5 3.37
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	85.5 3.37	85.5 3.37
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	300 2.07	85.5 3.37	85.5 3.37
100 x 65 4 x 2½	108.0 x 76.1 4.250 x 3.000	300 2.07	100 3.94	96 3.78
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	300 2.07	100 3.94	96 3.78
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	300 2.07	100 3.94	96 3.78
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	100 3.94	96 3.78
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	175 6.89	175 6.89
200 x 65 8 x 2½	219.1 x 76.1 8.625 x 3.000	300 2.07	175 6.89	175 6.89
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	175 6.89	175 6.89



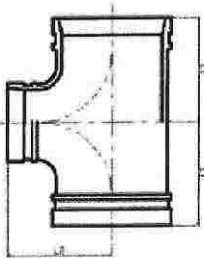
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	76 2.99	88 3.47
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	300 2.07	76 2.99	88 3.47
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	85 3.35	91 3.58
100 x 50 4 x 2	108.0 x 60.3 4.250 x 2.375	300 2.07	85 3.35	91 3.58
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	85 3.35	91 3.58
125 x 50 5 x 2	133.0 x 60.3 5.250 x 2.375	300 2.07	86 3.39	106 4.17
125 x 65 5 x 2½	133.0 x 76.1 5.250 x 3.000	300 2.07	102 4.02	111 4.37
125 x 80 5 x 3	133.0 x 88.9 5.250 x 3.500	300 2.07	102 4.02	111 4.37
125 x 25 5 x 1	139.7 x 33.7 5.500 x 1.315	300 2.07	78 3.07	103 4.06
125 x 32 5 x 1¼	139.7 x 42.4 5.500 x 1.660	300 2.07	78 3.07	103 4.06
125 x 40 5 x 1½	139.7 x 48.3 5.500 x 1.900	300 2.07	86 3.39	106 4.17
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	86 3.39	106 4.17
125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	300 2.07	102 4.02	111 4.37
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	102 4.02	111 4.37
150 x 60 6 x 2	159.0 x 60.3 6.250 x 2.375	300 2.07	92 3.62	124 4.88
150 x 65 6 x 2½	159.0 x 76.1 6.250 x 3.000	300 2.07	107 4.21	129 5.08
150 x 80 6 x 3	159.0 x 88.9 6.25 x 3.500	300 2.07	107 4.21	129 5.08
150 x 25 6 x 1	165.1 x 33.7 6.500 x 1.315	300 2.07	83 3.27	121 4.76
150 x 32 6 x 1¼	165.1 x 42.4 6.500 x 1.660	300 2.07	83 3.27	121 4.76
150 x 40 6 x 1½	165.1 x 48.3 6.500 x 1.900	300 2.07	92 3.62	124 4.88
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	92 3.62	124 4.88
150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	300 2.07	107 4.21	129 5.08
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	107 4.21	129 5.08
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	121 4.76	132 5.20
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	92 3.62	124 4.88
150 x 65 6 x 2½	168.3 x 76.1 6.625 x 3.000	300 2.07	107 4.21	129 5.08



REDUCING TEE



NO.130R



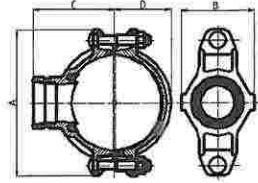
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	500 3.45	70 2.75	70 2.75
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	500 3.45	70 2.75	70 2.75
65 x 40 2½ x 1½	73.0 x 48.3 2.875 x 1.900	500 3.45	76 3.00	76 3.00
65 x 50 2½ x 2	73.0 x 60.3 3.000 x 2.375	500 3.45	76 3.00	76 3.00
65 x 32 2½ x 1¼	76.1 x 42.4 3.000 x 1.660	500 3.45	76 3.00	76 3.00
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	500 3.45	76 3.00	76 3.00
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	76 3.00	76 3.00
80 x 32 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	108 4.25	108 4.25
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	500 3.45	85.5 3.37	85.5 3.37
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	500 3.45	85.5 3.37	85.5 3.37
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	85.5 3.37	85.5 3.37
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	500 3.45	85.5 3.37	85.5 3.37
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	500 3.45	85.5 3.37	85.5 3.37
100 x 50 4 x 2	108.0 x 60.3 4.250 x 2.375	500 3.45	101 3.98	101 3.98
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	500 3.45	101 3.98	101 3.98
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	500 3.45	101 3.98	101 3.98
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	500 3.45	101 3.98	101 3.98
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	500 3.45	101 3.98	101 3.98
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	500 3.45	101 3.98	101 3.98
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	500 3.45	101 3.98	101 3.98
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	101 3.98	101 3.98
125 x 50 5 x 2	133.0 x 60.3 5.250 x 2.375	500 3.45	124 4.88	124 4.88
125 x 65 5 x 2½	133.0 x 76.1 5.250 x 3.000	500 3.45	124 4.88	124 4.88
125 x 100 5 x 4	133.0 x 108.0 5.250 x 4.250	500 3.45	124 4.88	124 4.88
125 x 100 5 x 4	133.0 x 114.3 5.250 x 4.500	500 3.45	124 4.88	124 4.88
125 x 40 5 x 1½	139.7 x 48.3 5.500 x 1.900	500 3.45	140 5.50	140 5.50
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	500 3.45	124 4.88	124 4.88
125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	500 3.45	124 4.88	124 4.88
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	500 3.45	124 4.88	124 4.88
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	500 3.45	124 4.88	124 4.88
150 x 60 6 x 2	159.0 x 60.3 6.250 x 2.375	500 3.45	140 5.50	140 5.50
150 x 65 6 x 2½	159.0 x 76.1 6.250 x 3.000	500 3.45	140 5.50	140 5.50



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
150 x 80 6 x 3	159.0 x 88.9 6.250 x 3.500	500 3.45	140 5.50	140 5.50
150 x 100 6 x 4	159.0 x 108.0 6.250 x 4.250	500 3.45	140 5.50	140 5.50
150 x 100 6 x 4	159.0 x 114.3 6.250 x 4.500	500 3.45	140 5.50	140 5.50
150 x 125 6 x 5	159.0 x 133.0 6.250 x 5.250	500 3.45	140 5.50	140 5.50
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	500 3.45	140 5.50	140 5.50
150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	500 3.45	140 5.50	140 5.50
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	500 3.45	140 5.50	140 5.50
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	500 3.45	140 5.50	140 5.50
150 x 125 6 x 5	165.1 x 139.7 6.500 x 5.500	500 3.45	140 5.50	140 5.50
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	500 3.45	140 5.50	140 5.50
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	500 3.45	140 5.50	140 5.50
150 x 65 6 x 2½	168.3 x 76.1 6.625 x 3.000	500 3.45	140 5.50	140 5.50
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	500 3.45	140 5.50	140 5.50
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	500 3.45	140 5.50	140 5.50
150 x 125 6 x 5	168.3 x 141.3 6.625 x 5.563	500 3.45	140 5.50	140 5.50
200 x 150 8 x 6	216.3 x 165.1 8.516 x 6.500	500 3.45	175 6.89	175 6.89
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	500 3.45	175 6.89	175 6.89
200 x 65 8 x 2½	219.1 x 76.1 8.625 x 3.000	500 3.45	175 6.89	175 6.89
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	500 3.45	175 6.89	175 6.89
200 x 100 8 x 4	219.1 x 108.0 8.625 x 4.250	500 3.45	175 6.89	175 6.89
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	500 3.45	175 6.89	175 6.89
200 x 125 8 x 5	219.1 x 133.0 8.625 x 5.250	500 3.45	175 6.89	175 6.89
200 x 125 8 x 5	219.1 x 139.7 8.625 x 5.500	500 3.45	175 6.89	175 6.89
200 x 150 8 x 6	219.1 x 159.0 8.625 x 6.250	500 3.45	175 6.89	175 6.89
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	500 3.45	175 6.89	175 6.89
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	500 3.45	175 6.89	175 6.89
250 x 150 10 x 6	273.0 x 159.0 10.750 x 6.250	500 3.45	229 9.00	229 9.00
250 x 150 10 x 6	273.0 x 165.1 10.750 x 6.500	500 3.45	229 9.00	229 9.00
250 x 200 10 x 8	273.0 x 219.1 10.750 x 8.625	500 3.45	229 9.00	229 9.00
300 x 150 12 x 6	323.9 x 165.1 12.750 x 6.500	500 3.45	254 10	254 10
300 x 200 12 x 8	323.9 x 219.1 12.750 x 8.625	500 3.45	254 10	254 10
300 x 250 12 x 10	323.9 x 273.0 12.750 x 10.750	500 3.45	254 10	254 10



MECHANICAL TEE THREADED OUTLET



NO.3J

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
50 x 15 2 x 1/2	60.3 x 21.3 2.375 x 0.825	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 20 2 x 3/4	60.3 x 26.9 2.375 x 1.050	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 32 2 x 1 1/4	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8x55
50 x 40 2 x 1 1/2	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8x55
65 x 20 2 1/2 x 3/4	79.0 x 26.9 2.875 x 1.050	300 2.07	38 1.50	144 5.67	71 2.76	75 2.72	49 1.93	1/2x70
65 x 25 2 1/2 x 1	73.0 x 33.7 2.875 x 1.315	300 2.07	38 1.50	144 5.67	70 2.76	69 2.72	49 1.93	1/2x70
65 x 32 2 1/2 x 1 1/4	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2x70
65 x 40 2 1/2 x 1 1/2	73.0 x 48.3 2.875 x 1.900	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2x70
65 x 15 76.1 x 1/2	76.1 x 21.3 3.000 x 0.825	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 20 76.1 x 3/4	76.1 x 26.9 3.000 x 1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 32 76.1 x 1 1/4	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2x70
65 x 40 76.1 x 1 1/2	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2x70
80 x 25 3 x 1/2	88.9 x 21.3 3.500 x 0.825	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2x75
3 x 3/4	88.9 x 26.9 3.500 x 1.050	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2x75
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2x75
80 x 32 3 x 1 1/4	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2x75
80 x 40 3 x 1 1/2	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	152 5.98	98 3.86	80 3.15	56.5 2.22	1/2x75
100 x 25 108.0 x 1	108.1 x 33.7 4.250 x 1.315	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	64.5 2.54	1/2x75



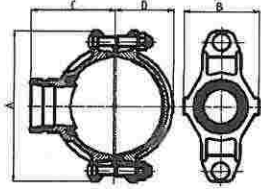
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
100 x 32	108.1 x 42.4	300	51	172	89	87	64.5	1/2x75
108.0 x 1 1/4	4.250 x 1.660	2.07	2.00	6.77	3.50	3.43	2.54	
100 x 40	108.0 x 48.3	300	51	172	89	87	64.5	1/2x75
108.0 x 1 1/2	4.250 x 1.900	2.07	2.00	6.77	3.50	3.43	2.54	
100 x 50	114.3 x 60.3	300	64	188	104.5	100	70	1/2x75
4 x 2	4.500 x 2.375	2.07	2.50	7.40	4.11	3.94	2.76	
100 x 65	108.0 x 76.1	300	70	172	106.5	100	64.5	1/2x75
108.0 x 76.1	4.250 x 3.000	2.07	2.75	6.77	4.19	3.94	2.54	
100 x 15	114.3 x 21.3	300	38	188	78.5	90	70	1/2x75
4 x 1/2	4.500 x 0.825	2.07	1.50	7.40	3.09	3.54	2.76	
100 x 20	114.3 x 26.9	300	38	188	78.5	90	70	1/2x75
4 x 3/4	4.500 x 1.050	2.07	1.50	7.40	3.09	3.54	2.76	
100 x 25	114.3 x 33.7	300	38	188	78.5	93	70	1/2x75
4 x 1	4.500 x 1.315	2.07	1.50	7.40	3.09	3.66	2.76	
100 x 32	114.3 x 42.4	300	51	188	89	95	70	1/2x75
4 x 1 1/4	4.500 x 1.660	2.07	2.00	7.40	3.50	3.74	2.76	
100 x 40	114.3 x 48.3	300	51	188	89	97	70	1/2x75
4 x 1 1/2	4.500 x 1.900	2.07	2.00	7.40	3.50	3.82	2.76	
100 x 50	108.0 x 60.3	300	64	172	106.5	92	64.5	1/2x75
4 x 2	4.250 x 2.375	2.07	2.50	6.77	4.19	3.62	2.54	
100 x 65	114.3 x 73.0	300	70	188	104.5	102	70	1/2x75
4 x 2 1/2	4.500 x 2.875	2.07	2.75	7.40	4.11	4.02	2.76	
100 x 65	114.3 x 76.1	300	70	188	104.5	102	70	1/2x75
4 x 76.1	4.500 x 3.000	2.07	2.75	7.40	4.11	4.02	2.76	
100 x 80	114.3 x 88.9	300	89	188	124	102	70	1/2x75
4 x 3	4.500 x 3.500	2.07	3.50	7.40	4.88	4.02	2.76	
125 x 25	133.0 x 33.7	300	38	209	78	105	77	5/8x85
133.0 x 1	5.250 x 1.315	2.07	1.50	8.23	3.07	4.13	3.03	
125 x 32	133.0 x 42.4	300	51	209	93	105	77	5/8x85
133.0 x 1.25	5.250 x 4.660	2.07	2.00	8.23	3.66	4.13	3.03	
125 x 40	133.0 x 48.3	300	51	209	93	105	77	5/8x85
133.0 x 1 1/2	5.250 x 1.900	2.07	2.00	8.23	3.66	4.13	3.03	
125 x 50	133.0 x 60.3	300	64	209	112.5	110	77	5/8x85
133.0 x 2	5.250 x 2.375	2.07	2.50	8.23	4.43	4.33	3.03	
125 x 65	133.0 x 76.1	300	70	209	112.5	115	77	5/8x85
133.0 x 76.1	5.250 x 3.000	2.07	2.75	8.23	4.43	4.53	3.03	
125 x 80	133.0 x 88.9	300	89	209	132	118	77	5/8x85
133.0 x 3	5.250 x 3.500	2.07	3.50	8.23	5.20	4.65	3.03	
125 x 25	139.7 x 33.7	300	38	221.5	78	110	84	5/8x85
139.7 x 1	5.500 x 1.315	2.07	1.50	8.72	3.07	4.33	3.31	
125 x 32	139.7 x 42.4	300	51	221.5	93	112	84	5/8x85
139.7 x 1 1/4	5.500 x 1.660	2.07	2.00	8.72	3.66	4.41	3.31	
125 x 40	139.7 x 48.3	300	51	221.5	93	112	84	5/8x85
139.7 x 1 1/2	5.500 x 1.900	2.07	2.00	8.72	3.66	4.41	3.31	
125 x 50	139.7 x 60.3	300	64	221.5	112.5	115	84	5/8x85
139.7 x 2	5.500 x 2.375	2.07	2.50	8.72	4.43	4.53	3.31	
125 x 65	139.7 x 76.1	300	70	221.5	112.5	115	84	5/8x85
139.7 x 76.1	5.500 x 3.000	2.07	2.75	8.72	4.43	4.53	3.31	
125 x 80	139.7 x 88.9	300	89	221.5	132	120	84	5/8x85
139.7 x 3	5.500 x 3.500	2.07	3.50	8.72	5.20	4.72	3.31	
125 x 100	139.7 x 114.3	300	114	221.5	156	125	84	5/8x85
139.7 x 4	5.500 x 4.500	2.07	4.50	8.72	6.30	4.92	3.31	
150 x 25	159.0 x 33.7	300	38	244	78	116	94	5/8x105
159.0 x 1	6.250 x 1.315	2.07	1.50	9.60	3.07	4.57	3.70	
150 x 32	159.0 x 42.4	300	51	244	93	118	94	5/8x105
159.0 x 1 1/4	6.250 x 1.660	2.07	2.00	9.60	3.66	4.65	3.70	
150 x 40	159.0 x 48.3	300	51	244	93	118	94	5/8x105
159.0 x 1 1/2	6.250 x 1.900	2.07	2.00	9.60	3.66	4.65	3.70	
150 x 50	159.0 x 60.3	300	64	244	112.5	115	94	5/8x105
159.0 x 2	6.250 x 2.375	2.07	2.50	9.60	4.43	4.92	3.70	



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
150 x 65 159.0 x 76.1	159.0 x 76.1 6.250 x 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	125 4.92	94 3.70	5/8x105
150 x 80 159.0 x 3	159.0 x 88.9 6.250 x 3.500	300 2.07	89 3.50	244 9.60	133 5.20	125 4.92	94 3.70	5/8x105
150 x 100 159.0 x 4	159.1 x 114.3 6.250 x 4.500	300 2.07	114 4.50	244 9.60	156.5 6.16	130 5.12	94 3.70	5/8x105
150 x 15 165.1 x 1½	165.1 x 21.3 6.500 x 0.825	300 2.07	38 1.50	244 9.60	78 3.07	115 4.53	97.5 3.84	5/8x105
125 x 20 165.1 x ¾	165.1 x 26.9 6.500 x 1.050	300 2.07	38 1.50	244 9.60	78 3.07	115 4.53	97.5 3.84	5/8x105
150 x 25 165.1 x 1	165.1 x 33.7 6.500 x 1.315	300 2.07	38 1.50	244 9.60	78 3.07	118 4.65	97.5 3.84	5/8x105
150 x 32 165.1 x 1¼	165.1 x 42.4 6.500 x 1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8x105
150 x 40 165.1 x 1½	165.1 x 48.3 6.500 x 1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8x105
150 x 80 165.1 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	244 9.60	132 5.20	128.5 5.06	97.5 3.84	5/8x105
150 x 100 165.1 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	244 9.60	154 6.18	135 5.32	97.5 3.84	5/8x105
150 x 32 6 x 1¼	168.3 x 42.4 6.500 x 1.660	300 2.07	51 2.00	247 9.72	95 3.74	130 5.12	98.5 3.88	5/8x105
150 x 40 6 x 1½	168.3 x 48.3 6.500 x 1.900	300 2.07	51 2.00	247 9.72	95 3.74	122 4.80	98.5 3.88	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	247 9.72	112.5 4.43	132 5.20	98.5 3.88	5/8x105
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	247 9.72	112.5 4.43	132 5.20	98.5 3.88	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	247 9.72	132 5.20	140 5.51	98.5 3.88	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	247 9.72	156.5 6.16	140 5.51	98.5 3.88	5/8x105
200 x 25 8 x 1	219.0 x 33.7 8.625 x 1.315	300 2.07	38 1.50	322 12.68	79.5 3.13	150 5.91	125 4.92	3/4x115
200 x 32 8 x 1¼	219.1 x 42.4 8.625 x 1.660	300 2.07	51 2.00	322 12.68	96.5 3.80	150 5.91	125 4.92	3/4x115
200 x 40 8 x 1½	219.1 x 48.3 8.625 x 1.900	300 2.07	51 2.00	322 12.68	96.5 3.80	150 5.91	125 4.92	3/4x115
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	322 12.68	117 4.61	160 6.30	125 4.92	3/4x115
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	322 12.68	118 4.65	158.5 6.24	125 4.92	3/4x115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	322 12.68	136.5 5.37	160 6.30	125 4.92	3/4x115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	322 12.68	164 6.46	160 6.30	125 4.92	3/4x115
250 x 40 10 x 1½	273.0 x 48.3 10.750 x 1.900	300 2.07	51 2.00	376 14.80	95.5 3.76	180 7.09	155 6.10	3/4x120
250 x 50 10 x 2	273.0 x 60.3 10.750 x 2.375	300 2.07	64 2.50	376 14.80	118 4.65	185 7.28	155 6.10	3/4x120
250 x 65 10 x 76.1	273.0 x 76.1 10.750 x 3.000	300 2.07	70 2.75	376 14.80	118 4.65	190 7.48	155 6.10	3/4x120
250 x 80 10 x 3	273.0 x 88.9 10.750 x 3.500	300 2.07	89 3.50	376 14.80	136.5 5.37	190 7.48	155 6.10	3/4x120
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	300 2.07	114 4.50	376 14.80	164 6.46	190 7.48	155 6.10	3/4x120



MECHANICAL TEE GROOVED OUTLET



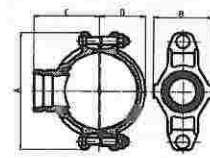
NO.3G

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0/ +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8x55
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8x55
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	75 2.95	49 1.93	1/2x70
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	49.5 1.95	1/2x70
65 x 32 76.1 x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2x70
65 x 40 76.1 x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2x70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	84.5 3.33	56.5 2.22	1/2x75
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	84.5 3.33	56.5 2.22	1/2x75
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	84.5 3.33	56.5 2.22	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	152 5.98	98 3.86	84.5 3.33	56.5 2.22	1/2x75
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	38 1.50	188 7.40	78.4 3.09	102 4.02	70 2.76	1/2x75
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	51 2.00	188 7.40	89 3.50	102 4.02	70 2.76	1/2x75
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	64 2.50	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2x75
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2x75
100 x 65 4 x 76.1	114.3 x 76.1 4.500 x 3.000	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2x75
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	89 3.50	188 7.40	124 4.88	102 4.02	70 2.76	1/2x75
125 x 80 133.0 x 3	133.0 x 88.9 5.250 x 3.500	300 2.07	89 3.50	209 8.23	132 5.20	109.5 4.31	77 3.03	5/8x85
125 x 50 139.7 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	64 2.50	221.5 8.72	112.5 4.43	118 4.65	84 3.31	5/8x85
125 x 65 139.7 x 76.1	139.7 x 76.1 5.500 x 3.000	300 2.07	70 2.75	221.5 8.72	104.5 4.11	118 4.65	84 3.31	5/8x85
125 x 80 139.7 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	89 3.50	221.5 8.720	136 5.35	122 4.80	84 3.31	5/8x85
125 x 100 139.7 x 4	139.7 x 114.3 5.500 x 4.500	300 2.07	114 4.50	221.5 8.720	160 6.30	125 4.92	84 3.31	5/8x85
150 x 100 159.0 x 108.0	159.1 x 108.0 6.250 x 4.250	300 2.07	114 4.50	244 9.60	154 6.06	133 5.24	94 3.70	5/8x105



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
150 x 100 159.0 x 4	159.1 x 114.3 6.250 x 4.500	300 2.07	114 4.50	244 9.60	159 6.26	125 4.92	94 3.70	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 3.500 x 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	127 5.00	97.5 3.84	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	127 5.00	97.5 3.84	5/8x105
150 x 80 6½ O.D x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	244 9.60	132 5.20	141 5.55	97.5 3.84	5/8x105
150 x 100 6½ O.D x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	244 9.60	154 6.06	135 5.32	97.5 3.84	5/8x105
150 x 40 6 x 1½	168.3 x 48.3 6.500 x 1.900	300 2.07	51 2.00	247 9.72	95 3.74	128 5.04	98.5 3.88	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	247 9.72	114 4.49	134 5.28	98.5 3.88	5/8x105
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	247 9.72	115 4.53	134 5.28	98.5 3.88	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	247 9.72	132 5.20	141 5.55	98.5 3.88	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	247 9.72	156.5 6.16	138 5.43	98.5 3.88	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	322 12.68	118 4.65	158 6.22	125 4.92	3/4x115
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	322 12.68	118 4.65	158 6.22	125 4.92	3/4x115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	322 12.68	136.5 5.37	161 6.34	125 4.92	3/4x115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	322 12.68	164 6.46	161 6.34	125 4.92	3/4x115
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	300 2.07	114 4.50	376 14.80	164 6.46	189 7.44	155 6.10	3/4x120

LIGHT DUTY MECHANICAL TEE GROOVED OUTLET



NO.3GS

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8x55
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8x55
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	75 2.95	49 1.93	1/2x70
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	49.5 1.95	1/2x70
65 x 32 76.1 x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2x70
65 x 40 76.1 x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2x70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	150 5.91	71 2.80	84 3.31	55.5 2.19	1/2x75
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	55.5 2.19	1/2x75



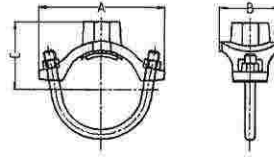
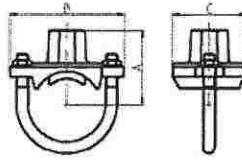
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	55.5 2.19	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	150 5.91	98 3.86	84 3.31	55.5 2.19	1/2x75
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	98 3.86	67.5 2.66	1/2x75
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	51 2.00	178 7.01	88 3.46	98 3.86	67.5 2.66	1/2x75
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	64 2.50	178 7.01	88 3.46	98 3.86	67.5 2.66	1/2x75
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2x75
100 x 65 4 x 76.1	114.3 x 76.1 4.500 x 3.000	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2x75
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	89 3.50	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2x75
125 x 80 133.0 x 3	133.0 x 88.9 5.250 x 3.500	300 2.07	89 3.50	203 7.99	132 5.12	110 4.33	77.5 3.05	5/8x85
125 x 50 139.7 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	64 2.50	210 8.27	110 4.33	113 4.45	82 3.23	5/8x85
125 x 65 139.7 x 76.1	139.7 x 76.1 5.500 x 3.000	300 2.07	70 2.75	210 8.27	110 4.33	113 4.45	82 3.23	5/8x85
125 x 80 139.7 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	89 3.50	210 8.27	130 5.12	113 4.45	82 3.23	5/8x85
125 x 100 139.7 x 4	139.7 x 114.3 5.500 x 4.500	300 2.07	114 4.50	210 8.27	153 6.02	115 4.52	82 3.23	5/8x85
150 x 100 159.0 x 108.0	159.1 x 108.0 6.250 x 4.250	300 2.07	114 4.50	227 8.94	155 6.10	122.5 4.83	91 3.58	5/8x105
150 x 100 159.0 x 4	159.1 x 114.3 6.250 x 4.500	300 2.07	114 4.50	227 8.94	155 6.10	122.5 4.83	91 3.58	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	64 2.50	235 9.25	110 4.33	124.5 4.90	94.5 3.72	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	235 9.25	110 4.33	124.5 4.90	94.5 3.72	5/8x105
150 x 80 165.1 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	235 9.25	130 5.12	124.5 4.90	94.5 3.72	5/8x105
150 x 100 165.1 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	235 9.25	155 6.10	126 4.96	94.5 3.72	5/8x105
150 x 32 6 x 1¼	168.3 x 42.4 6.500 x 1.660	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	96.5 3.80	5/8x105
150 x 40 6 x 1½	168.3 x 48.3 6.500 x 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	96.5 3.80	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	240 9.45	110 4.33	126 4.96	96.5 3.80	5/8x105
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	240 9.45	110 4.33	126 4.96	96.5 3.80	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	240 9.45	130 5.12	126 4.96	96.5 3.80	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	240 9.45	155 6.10	128 5.04	96.5 3.80	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	300 11.81	115 4.53	155 6.10	123 4.84	5/8x105
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	123 4.84	5/8x105
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	123 4.84	5/8x105
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	300 11.81	159.5 6.29	160 6.30	123 4.84	5/8x105



U-BOLT MECHANICAL TEE



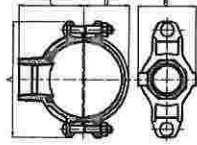
NO.3L



Nominal Size mm / in	Hole Dia +1.6,0 / +0.063,0 mm / in	Working Pressure PSI/MPa	Dimensions mm / in			U Bolt Size in
			A	B	C	
32 x 15 1¼ x ½	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	3/8x73
32 x 20 1¼ x ¾	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	3/8x73
32 x 25 1¼ x 1	30 1.18	300 2.07	57.7 2.27	88.9 3.50	57.2 2.25	3/8x73
40 x 15 1½ x ½	30 1.18	300 2.07	57.4 2.26	88.9 3.50	57.2 2.25	3/8x73
40 x 20 1½ x ¾	30 1.18	300 2.07	57.4 2.26	88.9 3.50	57.2 2.25	3/8x73
40 x 25 1½ x 1	30 1.18	300 2.07	60.8 2.39	88.9 3.50	57.2 2.25	3/8x73
50 x 15 2 x ½	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	3/8x90
50 x 20 2 x ¾	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	3/8x90
50 x 25 2 x 1	30 1.18	300 2.07	66.6 2.62	95.3 3.75	57.2 2.25	3/8x90
65 x 15 2½ x ½	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8x105
65 x 20 2½ x ¾	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8x105
65 x 25 2½ x 1	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	3/8x105
65 x 15 76.1 x ½	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8x105
65 x 20 76.1 x ¾	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8x105
65 x 25 76.1 x 1	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	3/8x105
80 x 25 3 x 1	38 1.5	300 2.07	145 5.71	73 2.87	79 3.11	1/2x105
100 x 25 4 x 1	38 1.5	300 2.07	185 7.28	72 2.83	89 3.50	1/2x125
100 x 32 4 x 1¼	51 2.0	300 2.07	185 7.28	85 3.35	95 3.74	1/2x125
100 x 40 4 x 1½	51 2.0	300 2.07	185 7.28	85 3.35	95 3.74	1/2x125
150 x 25 6 x 1	38 1.5	300 2.07	254 10.00	75 2.95	120 4.72	5/8x173
150 x 32 6 x 1¼	51 2.0	300 2.07	254 10.00	88 3.46	120 4.72	5/8x173
150 x 40 6 x 1½	51 2.0	300 2.07	254 10.00	88 3.46	120 4.72	5/8x173



LIGHT DUTY MECHANICAL TEE THREADED OUTLET

**NO.3JS**

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
50 x 15 2 x 1/2	60.3 x 21.3 2.375 x 0.825	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 20 2 x 3/4	60.3 x 26.9 2.375 x 1.050	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8x55
50 x 32 2 x 1 1/4	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8x55
50 x 40 2 x 1 1/2	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8x55
65 x 20 2 1/2 x 3/4	73.0 x 26.9 2.875 x 1.050	300 2.07	38 1.50	144 5.67	71 2.80	75 2.72	49 1.93	1/2x70
65 x 25 2 1/2 x 1	73.0 x 33.7 2.875 x 1.315	300 2.07	38 1.50	144 5.67	70 2.76	69 2.72	49 1.93	1/2x70
65 x 32 2 1/2 x 1 1/4	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2x70
65 x 40 2 1/2 x 1 1/2	73.0 x 48.3 2.875 x 1.900	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2x70
65 x 15 2 1/2 x 1/2	76.1 x 21.3 3.000 x 0.825	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 20 2 1/2 x 3/4	76.1 x 26.9 3.000 x 1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 25 2 1/2 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2x70
65 x 32 2 1/2 x 1 1/4	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2x70
65 x 40 2 1/2 x 1 1/2	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2x70
80 x 15 3 x 1/2	88.9 x 21.3 3.500 x 0.825	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	55.5 2.19	1/2x75
80 x 20 3 x 3/4	88.9 x 26.9 3.500 x 1.050	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	55.5 2.19	1/2x75
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	55.5 2.19	1/2x75
80 x 32 3 x 1 1/4	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	55.5 2.19	1/2x75
80 x 40 3 x 1 1/2	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	55.5 2.19	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	150 5.91	98 3.86	77 3.03	55.5 2.19	1/2x75
100 x 25 108.0 x 1	108.1 x 33.7 4.250 x 1.315	300 2.07	38 1.50	172 6.77	77.5 3.05	85 3.35	64.5 2.54	1/2x75
100 x 32 108.0 x 1 1/4	108.1 x 42.4 4.250 x 1.660	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	64.5 2.54	1/2x75
100 x 40 108.0 x 1 1/2	108.0 x 48.3 4.250 x 1.900	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	64.5 2.54	1/2x75
100 x 20 108.0 x 2	108.0 x 60.3 4.250 x 2.375	300 2.07	64 2.50	172 6.77	103.5 4.19	89 3.50	64.5 2.54	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0/ +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
100 x 65	108.0 x 76.1	300	70	172	103.5	96	64.5	1/2x75
108.0 x 76.1	4.250 x 3.000	2.07	2.75	6.77	4.07	3.78	2.54	
100 x 15	114.3 x 21.3	300	38	178	77.5	82	67.5	1/2x75
4 x 1/2	4.500 x 0.825	2.07	1.50	7.01	3.05	3.23	2.66	
100 x 20	114.3 x 26.9	300	38	178	77.5	82	67.5	1/2x75
4 x 3/4	4.500 x 1.050	2.07	1.50	7.01	3.05	3.23	2.66	
100 x 25	114.3 x 33.7	300	38	178	77.5	82	67.5	1/2x75
4 x 1	4.500 x 1.315	2.07	1.50	7.01	3.05	3.23	2.66	
100 x 32	114.3 x 42.4	300	51	178	88	89.5	67.5	1/2x75
4 x 1 1/4	4.500 x 1.660	2.07	2.00	7.01	3.46	3.53	2.66	
100 x 40	114.3 x 48.3	300	51	178	88	89.5	67.5	1/2x75
4 x 1 1/2	4.500 x 1.900	2.07	2.00	7.01	3.46	3.53	2.66	
100 x 50	114.3 x 60.3	300	64	178	103.5	92	67.5	1/2x75
4 x 2	4.500 x 2.375	2.07	2.50	7.01	4.07	3.62	2.66	
100 x 65	114.3 x 73.0	300	70	178	103.5	98	67.5	1/2x75
4 x 2 1/2	4.500 x 2.875	2.07	2.75	7.01	4.07	3.86	2.66	
100 x 65	114.3 x 76.1	300	70	178	103.5	98	67.5	1/2x75
4 x 76.1	4.500 x 3.000	2.07	2.75	7.01	4.07	3.86	2.66	
100 x 80	114.3 x 88.9	300	89	178	124	100	67.5	1/2x75
4 x 3	4.500 x 3.500	2.07	3.50	7.01	4.88	3.94	2.66	
125 x 25	133.0 x 33.7	300	38	203	77	98	77.5	5/8x85
133.0 x 1	5.250 x 1.315	2.07	1.50	7.99	3.03	3.86	3.05	
125 x 32	133.0 x 42.4	300	51	203	91	102	77.5	5/8x85
133.0 x 1.25	5.250 x 1.660	2.07	2.00	7.99	3.58	4.01	3.05	
125 x 40	133.0 x 48.3	300	51	203	91	102	77.5	5/8x85
133.0 x 1 1/2	5.250 x 1.900	2.07	2.00	7.99	3.58	4.01	3.05	
125 x 50	133.0 x 60.3	300	64	203	110	105	77.5	5/8x85
133.0 x 2	5.250 x 2.375	2.07	2.50	7.99	4.33	4.13	3.05	
125 x 65	133.0 x 76.1	300	70	203	110	110	77.5	5/8x85
133.0 x 76.1	5.250 x 3.000	2.07	2.75	7.99	4.33	4.33	3.05	
125 x 80	133.0 x 88.9	300	89	203	132	110	77.5	5/8x85
133.0 x 3	5.250 x 3.500	2.07	3.50	7.99	5.12	4.33	3.05	
125 x 25	139.7 x 33.7	300	38	210	77	100	82	5/8x85
139.7 x 1	5.500 x 1.315	2.07	1.50	8.27	3.03	3.94	3.23	
125 x 32	139.7 x 42.4	300	51	210	91	105	82	5/8x85
139.7 x 1 1/4	5.500 x 1.660	2.07	2.00	8.27	3.58	4.13	3.23	
125 x 40	139.7 x 48.3	300	51	210	91	105	82	5/8x85
139.7 x 1 1/2	5.500 x 1.900	2.07	2.00	8.27	3.58	4.13	3.23	
125 x 50	139.7 x 60.3	300	64	210	110	108	82	5/8x85
139.7 x 2	5.500 x 2.375	2.07	2.50	8.27	4.33	4.25	3.23	
125 x 65	139.7 x 76.1	300	70	210	110	115	82	5/8x85
139.7 x 76.1	5.500 x 3.000	2.07	2.75	8.27	4.33	4.53	3.23	
125 x 80	139.7 x 88.9	300	89	210	130	115	82	5/8x85
139.7 x 3	5.500 x 3.500	2.07	3.50	8.27	5.12	4.53	3.23	
125 x 100	139.7 x 114.3	300	114	210	153	118	82	5/8x85
139.7 x 4	5.500 x 4.500	2.07	4.50	8.27	6.02	4.65	3.23	
150 x 25	159.0 x 33.7	300	38	227	77	110	91	5/8x105
159.0 x 1	6.250 x 1.315	2.07	1.50	8.94	3.03	4.33	3.58	
150 x 32	159.0 x 42.4	300	51	227	92.5	112	91	5/8x105
159.0 x 1 1/4	6.250 x 1.660	2.07	2.00	8.94	3.64	4.41	3.58	
150 x 40	159.0 x 48.3	300	51	227	92.5	112	91	5/8x105
159.0 x 1 1/2	6.250 x 1.900	2.07	2.00	8.94	3.64	4.41	3.58	
150 x 50	159.0 x 60.3	300	64	227	110	116.5	91	5/8x105
159.0 x 2	6.250 x 2.375	2.07	2.50	8.94	4.33	4.59	3.58	
150 x 65	159.0 x 76.1	300	70	227	110	121.5	91	5/8x105
159.0 x 76.1	6.250 x 3.000	2.07	2.75	8.94	4.33	4.78	3.58	
150 x 80	159.0 x 88.9	300	89	227	130	123.5	91	5/8x105
159.0 x 3	6.250 x 3.500	2.07	3.50	8.94	5.12	4.86	3.58	



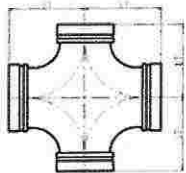
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
150 x 100 159.0 x 4	159.0 x 114.3 6.250 x 4.500	300 2.07	114 4.50	227 8.94	155 6.10	127 5.00	91 3.58	5/8x105
150 x 15 165.1 x 1/2	165.1 x 21.3 6.500 x 0.825	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8x105
125 x 20 165.1 x 3/4	165.1 x 26.9 6.500 x 1.050	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8x105
150 x 25 165.1 x 1	165.1 x 33.7 6.500 x 1.315	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8x105
150 x 32 165.1 x 1 1/4	165.1 x 42.4 6.500 x 1.660	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	94.5 3.72	5/8x105
150 x 40 165.1 x 1 1/2	165.1 x 48.3 6.500 x 1.900	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	94.5 3.72	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	64 2.50	235 9.25	110 4.33	120 4.72	94.5 3.72	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	235 9.25	110 4.33	125 4.92	94.5 3.72	5/8x105
150 x 80 165.1 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	235 9.25	130 5.12	125 4.92	94.5 3.72	5/8x105
150 x 100 165.1 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	240 9.45	155 6.10	130 5.12	94.5 3.72	5/8x105
150 x 25 6 x 1	168.3 x 33.7 6.500 x 1.315	300 2.07	38 1.50	240 9.45	77 3.03	115 4.53	96.5 3.80	5/8x105
125 x 32 6 x 1 1/4	168.3 x 33.7 6.500 x 1.660	300 2.07	51 2.00	240 9.45	92.5 3.64	115 4.53	96.5 3.80	5/8x105
150 x 40 6 x 1 1/2	168.3 x 48.3 6.500 x 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	115 4.53	96.5 3.80	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	240 9.45	110 4.33	121 4.76	96.5 3.80	5/8x105
150 x 65 6 x 2 1/2	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	240 9.45	110 4.33	127 5.00	96.5 3.80	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	240 9.45	130 5.12	127 5.00	96.5 3.80	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	240 9.45	155 6.10	143 5.12	96.5 3.80	5/8x105
200 x 25 8 x 1	219.0 x 33.7 8.625 x 1.315	300 2.07	38 1.50	300 11.81	78 3.07	140 5.51	123 4.84	5/8x105
200 x 32 8 x 1 1/4	219.1 x 42.4 8.625 x 1.660	300 2.07	51 2.00	300 11.81	93 3.66	140 5.51	123 4.84	5/8x105
200 x 40 8 x 1 1/2	219.1 x 48.3 8.625 x 1.900	300 2.07	51 2.00	300 11.81	93 3.66	143 5.63	123 4.84	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	300 11.81	115 4.53	149 5.87	123 4.84	5/8x105
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	123 4.84	5/8x105
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	123 4.84	5/8x105
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	300 11.81	159.5 6.29	160 6.30	123 4.84	5/8x105
250 x 40 10 x 1 1/2	273.0 x 48.3 10.750 x 1.900	300 2.07	51 2.00	376 14.80	95.5 3.76	180 7.09	155 6.10	3/4x120
250 x 50 10 x 2	273.0 x 60.3 10.750 x 2.375	300 2.07	64 2.50	376 14.80	118 4.65	185 7.28	155 6.10	3/4x120
250 x 65 10 x 76.1	273.0 x 76.1 10.750 x 3.000	300 2.07	70 2.75	376 14.80	118 4.65	190 7.48	155 6.10	3/4x120
250 x 80 10 x 3	273.0 x 88.9 10.750 x 3.500	300 2.07	89 3.50	376 14.80	136.5 5.37	190 7.48	155 6.10	3/4x120
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	300 2.07	114 4.50	376 14.80	164 6.46	190 7.48	155 6.10	3/4x120



REDUCING CROSS



NO.180R

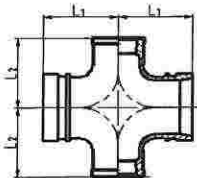


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	76 3.00	76 3.00
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	108 4.25	108 4.25
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	500 3.45	101 3.98	101 3.98
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	127 5.00	127 5.00
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	500 3.45	124 4.88	124 4.88
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	500 3.45	140 5.50	140 5.50
150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	500 3.45	165 6.50	165 6.50
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	500 3.45	140 5.50	140 5.50
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	500 3.45	140 5.50	140 5.50
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	500 3.45	197 7.75	197 7.75
200 x 50 8 x 4	219.1 x 114.3 8.625 x 4.500	500 3.45	175 6.89	175 6.89
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	500 3.45	175 6.89	175 6.89
200 x 125 8 x 5	219.1 x 139.7 8.625 x 5.500	500 3.45	175 6.89	175 6.89
200 x 150 8 x 6	219.1 x 159.0 8.625 x 6.250	500 3.45	175 6.89	175 6.89
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	500 3.45	175 6.89	175 6.89

REDUCING CROSS THREADED OUTLET



NO.181



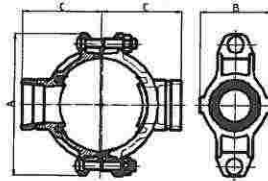
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L1 mm / in	Dimensions L2 mm / in
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	300 2.07	76 3.00	76 3.00
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	108 4.25	108 4.25
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	108 4.25	108 4.25
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	85.5 3.37	85.5 3.37
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	76 2.99	88 3.47
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	300 2.07	76 2.99	88 3.47
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	85 3.35	91 3.58
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	85 3.35	91 3.58
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	300 2.07	101 3.98	101 3.98
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	101 3.98	101 3.98
150 x 32 6 x 1¼	165.1 x 42.4 6.500 x 1.660	300 2.07	142 5.59	142 5.59
150 x 40 6 x 1½	165.1 x 48.3 6.500 x 1.900	300 2.07	142 5.59	142 5.59
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	142 5.59	142 5.59
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	140 5.50	140 5.50



MECHANICAL CROSS GROOVED OUTLET



NO.4G



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
65 x 25	76.1 x 33.7	300	38	137	71	78	1/2x70
76.1 x 1	3.000 x 1.315	2.07	1.50	5.39	2.80	3.07	
65 x 32	76.1 x 42.4	300	51	137	84.5	78	1/2x70
76.1 x 1¼	3.000 x 1.660	2.07	2.00	5.39	3.33	3.07	
65 x 40	76.1 x 48.3	300	51	137	84.5	78	1/2x70
76.1 x 1½	3.000 x 1.900	2.07	2.00	5.39	3.33	3.07	
80 x 25	88.9 x 33.7	300	38	152	72.5	84.5	1/2x75
3 x 1	3.500 x 1.315	2.07	1.50	5.98	2.85	3.33	
80 x 32	88.9 x 42.4	300	51	152	85.5	84.5	1/2x75
3 x 1¼	3.500 x 1.660	2.07	2.00	5.98	3.37	3.33	
80 x 40	88.9 x 48.3	300	51	152	85.5	84.5	1/2x75
3 x 1½	3.500 x 1.900	2.07	2.00	5.98	3.37	3.33	
80 x 50	88.9 x 60.3	300	64	152	98	84.5	1/2x75
3 x 2	3.500 x 2.375	2.07	2.50	5.98	3.86	3.33	
100 x 25	114.3 x 33.7	300	38	188	78.5	101.5	1/2x75
4 x 1	4.500 x 1.315	2.07	1.50	7.40	3.09	4.00	
100 x 32	114.3 x 42.4	300	51	188	89	101.5	1/2x75
4 x 1¼	4.500 x 1.660	2.07	2.00	7.40	3.50	4.00	
100 x 40	114.3 x 48.3	300	51	188	89	101.5	1/2x75
4 x 1½	4.500 x 1.900	2.07	2.00	7.40	3.50	4.00	
100 x 50	114.3 x 60.3	300	64	188	104.5	101.5	1/2x75
4 x 2	4.500 x 2.375	2.07	2.50	7.40	4.11	4.00	
100 x 65	114.3 x 73.0	300	70	188	104.5	101.5	1/2x75
4 x 2½	4.500 x 2.875	2.07	2.75	7.40	4.11	4.00	
100 x 65	114.3 x 76.1	300	70	188	104.5	101.5	1/2x75
4 x 76.1	4.500 x 3.000	2.07	2.75	7.40	4.11	4.00	
125 x 80	133.0 x 88.9	300	89	209	132	109.5	5/8x85
133.0 x 3	5.250 x 3.500	2.07	3.50	8.23	5.20	4.31	
125 x 50	139.7 x 60.3	300	64	221.5	112.5	118	5/8x85
139.7 x 2	5.500 x 2.375	2.07	2.50	8.70	4.43	4.65	
125 x 65	139.7 x 76.1	300	70	221.5	112.5	118	5/8x85
139.7 x 76.1	5.500 x 3.000	2.07	2.75	8.70	4.43	4.65	
125 x 80	139.7 x 88.9	300	89	221.5	136	122	5/8x85
139.7 x 3	5.500 x 3.500	2.07	3.50	8.70	5.35	4.80	
150 x 100	159.1 x 108.0	300	114	244	154	133	5/8x105
159.0 x 108.0	6.250 x 4.250	2.07	4.50	9.60	6.06	5.24	
150 x 100	159.1 x 114.3	300	114	244	159	125	5/8x105
159.0 x 4	6.250 x 4.500	2.07	4.50	9.60	6.26	4.92	
150 x 50	165.1 x 60.3	300	64	244	112.5	128	5/8x105
165.1 x 2	6.500 x 2.375	2.07	2.50	9.60	4.43	5.04	
150 x 65	165.1 x 76.1	300	70	244	112.5	128	5/8x105
165.1 x 76.1	6.500 x 3.000	2.07	2.75	9.60	4.43	5.04	
150 x 80	165.1 x 88.9	300	89	244	132	141	5/8x105
6½O.D x 3	6.500 x 3.500	2.07	3.50	9.60	5.20	5.55	
150 x 100	165.1 x 114.3	300	114	244	154	135	5/8x105
6½O.D x 4	6.500 x 4.500	2.07	4.50	9.60	6.06	5.32	
150 x 40	168.3 x 48.3	300	51	247	95	128	5/8x105
6 x 1½	6.500 x 1.900	2.07	2.00	9.72	3.74	5.04	

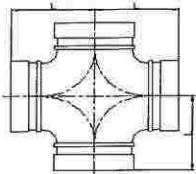


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	247 9.72	114 4.49	134 5.28	5/8x105
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	247 9.72	115 4.53	134 5.28	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	247 9.72	132 5.20	141 5.55	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	247 9.72	156.5 6.16	138 5.43	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	322 12.68	118 4.65	158 6.22	3/4x115
200 x 65 8 x 2½	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	322 12.68	118 4.65	158 6.22	3/4x115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	322 12.68	136.5 5.37	161 6.34	3/4x115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	322 12.68	164 6.46	161 6.34	3/4x115
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	300 2.07	114 4.50	376 14.80	164 6.46	189 7.44	3/4x120

CROSS



NO.180



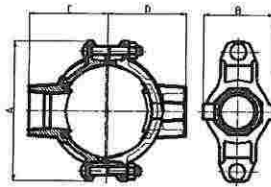
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
32 1¼	42.4 1.660	500 3.45	70 2.75
40 1½	48.3 1.900	500 3.45	70 2.75
50 2	60.3 2.375	500 3.45	70 2.75
65 2½	73.0 2.875	500 3.45	76 3.00
65 2½	76.1 3.000	500 3.45	76 3.00
80 3	88.9 3.500	500 3.45	85.5 3.37
100 4	108.0 4.250	500 3.45	101 3.98
100 4	114.3 4.500	500 3.45	101 3.98
125 5	139.7 5.500	500 3.45	124 4.88
125 5	141.3 5.563	500 3.45	124 4.88
150 6	159.0 6.250	500 3.45	140 5.50
150 6	165.1 6.500	500 3.45	140 5.50
150 6	168.3 6.625	500 3.45	140 5.50
200 8	219.1 8.625	500 3.45	175 6.89
250 10	273.0 10.750	500 3.45	229 9.00
300 12	323.9 12.750	500 3.45	254 10.00



MECHANICAL CROSS THREADED OUTLET



NO.4J



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	3/8x55
50 x 32 2 x 1 1/4	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	3/8x55
50 x 32 x 25 2 x 1 1/4 x 1	60.3 x 42.4 x 33.7 2.375 x 1.660 x 1.315	300 2.07	45/38 1.75/1.50	116 4.57	76 2.99	65 2.56	3/8x55
50 x 40 2 x 1 1/2	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	3/8x55
50 x 40 x 25 2 x 1 1/2 x 1	60.3 x 48.3 x 33.7 2.375 x 1.900 x 1.315	300 2.07	45/38 1.75/1.50	116 4.57	76 2.99	65 2.56	3/8x55
65 x 25 2 1/2 x 1	73.0 x 33.7 2.875 x 1.315	300 2.07	38 1.50	144 5.67	70 2.76	69 2.72	1/2x70
65 x 32 2 1/2 x 1 1/4	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	1/2x70
65 x 40 2 1/2 x 1 1/2	73.0 x 48.3 2.875 x 1.900	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	1/2x70
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	1/2x70
65 x 32 76.1 x 1 1/4	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	1/2x70
65 x 32 76.1 x 1 1/4	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	1/2x70
65 x 32 x 25 76.1 x 1 1/4 x 1	76.1 x 42.4 x 33.7 3.000 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	137 5.39	84.5 3.33	75 3.05	1/2x70
65 x 40 76.1 x 1 1/2	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	1/2x70
65 x 40 x 25 76.1 x 1 1/2 x 1	76.1 x 48.3 x 33.7 3.000 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	137 5.39	84.5 3.33	75 3.05	1/2x70
65 x 40 x 25 x 32 76.1 x 1 1/2 x 1 1/4	76.1 x 48.3 x 42.4 3.000 x 1.900 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	1/2x70
3 x 3/4	88.9 x 26.9 3.500 x 1.050	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	1/2x70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	1/2x75
80 x 32 3 x 1 1/4	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	1/2x75
80 x 32 x 25 3 x 1 1/4 x 1	88.9 x 42.4 x 33.7 3.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	152 5.98	85.5 3.37	80 3.15	1/2x75
80 x 40 3 x 1 1/2	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	1/2x75
80 x 40 x 25 3 x 1 1/2 x 1	88.9 x 48.3 x 33.7 3.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	152 5.98	85.5 3.37	80 3.15	1/2x75
80 x 40 x 32 3 x 1 1/2 x 1 1/4	88.9 x 48.3 x 42.4 3.500 x 1.900 x 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	152 5.98	98 3.86	80 3.15	1/2x75
80 x 50 x 25 3 x 2 x 1	88.9 x 60.3 x 33.7 3.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	152 5.98	98 3.86	80 3.15	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
80 x 50 x 32 3 x 2 x 1¼	88.9 x 60.3 x 42.4 3.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	152 5.98	98 3.86	80 3.15	1/2x75
80 x 50 x 40 3 x 2 x 1½	88.9 x 60.3 x 48.3 3.500 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	152 5.98	98 3.86	80 3.15	1/2x75
100 x 25 108.0 x 1	108.1 x 33.7 4.250 x 1.315	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	1/2x75
100 x 32 108.0 x 1¼	108.1 x 42.4 4.250 x 1.660	300 2.07	51 2.00	172 6.77	85.4 3.36	87 3.43	1/2x75
100 x 32 x 25 108.0 x 1¼ x 1	108.1 x 42.4 x 33.7 4.250 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	172 6.77	85.4 3.36	87 3.43	1/2x75
100 x 40 108.0 x 1½	108.0 x 48.3 4.250 x 1.900	300 2.07	51 2.00	172 6.77	85.4 3.36	89 3.50	1/2x75
100 x 40 x 25 108.0 x 1½ x 1	108.0 x 48.3 x 33.7 4.250 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	172 6.77	85.4 3.36	89 3.50	1/2x75
100 x 40 x 32 108.0 x 1½ x 1¼	139.7 x 33.7 x 42.4 5.500 x 1.315 x 1.660	300 2.07	51 2.00	172 6.77	85.4 3.36	89 3.50	1/2x75
100 x 50 108.0 x 2	108.0 x 60.3 4.250 x 2.375	300 2.07	64 2.50	172 6.77	106.5 4.19	92 3.62	1/2x75
100 x 50 x 25 108.0 x 2 x 1	108.0 x 60.3 x 33.7 4.250 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	172 6.77	106.5 4.19	92 3.62	1/2x75
100 x 50 x 32 108.0 x 2 x 1¼	108.0 x 60.3 x 42.4 4.250 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	172 6.77	106.5 4.19	92 3.62	1/2x75
100 x 50 x 40 108.0 x 2 x 1½	108.0 x 60.3 x 48.3 4.250 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	172 6.77	106.5 4.19	92 3.62	1/2x75
100 x 65 108.0 x 76.1	108.0 x 76.1 4.250 x 3.000	300 2.07	70 2.75	172 6.77	106.5 4.19	100 3.94	1/2x75
100 x 15 4 x ½	114.3 x 21.3 4.500 x 0.825	300 2.07	38 1.50	188 7.40	78.4 3.09	90 3.54	1/2x75
100 x 20 4 x ¾	114.3 x 26.9 4.500 x 1.050	300 2.07	38 1.50	188 7.40	78.4 3.09	90 3.54	1/2x75
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	38 1.50	188 7.40	78.4 3.09	93 3.66	1/2x75
100 x 32 4 x ¼	114.3 x 42.4 4.500 x 1.660	300 2.07	51 2.00	188 7.40	89 3.50	95 3.74	1/2x75
100 x 32 x 25 4 x ¼ x 1	114.3 x 42.4 x 33.7 4.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	188 7.40	89 3.50	95 3.74	1/2x75
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	51 2.00	188 7.40	89 3.50	97 3.82	1/2x75
100 x 40 x 25 4 x 1½ x 1	114.3 x 48.3 x 33.7 4.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	188 7.40	89 3.50	97 3.82	1/2x75
100 x 40 x 32 4 x 1½ x 1¼	114.3 x 48.3 x 42.4 4.500 x 1.900 x 1.660	300 2.07	51 2.00	188 7.40	89 3.50	97 3.82	1/2x75
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	64 2.50	188 7.40	104.5 4.11	100 3.94	1/2x75
100 x 50 x 25 4 x 2 x 1	114.3 x 60.3 x 33.7 4.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	188 7.40	104.5 4.11	100 3.94	1/2x75
100 x 50 x 32 4 x 2 x 1¼	114.3 x 60.3 x 42.4 4.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	188 7.40	104.5 4.11	100 3.94	1/2x75
100 x 65 4 x 76.1	114.3 x 76.1 4.500 x 3.000	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	1/2x75
100 x 65 x 32 4 x 76.1 x 1¼	114.3 x 76.1 x 42.4 4.500 x 3.000 x 1.660	300 2.07	70/51 2.75/2.00	188 7.40	104.5 4.11	102 4.02	1/2x75
100 x 65 x 40 4 x 76.1 x 1½	114.3 x 76.1 x 48.3 4.500 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	188 7.40	104.5 4.11	102 4.02	1/2x75
100 x 65 x 50 4 x 76.1 x 2	114.3 x 76.1 x 60.3 4.500 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	188 7.40	104.5 4.11	102 4.02	1/2x75
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	89 3.50	188 7.40	124 4.88	102 4.02	1/2x75
100 x 80 x 32 4 x 3 x 1½	114.3 x 88.9 x 42.4 4.500 x 3.500 x 1.660	300 2.07	89/51 3.50/2.00	188 7.40	124 4.88	102 4.02	1/2x75
100 x 80 x 40 4 x 3 x 1½	114.3 x 88.9 x 48.3 4.500 x 3.500 x 1.900	300 2.07	89/51 3.50/2.00	188 7.40	124 4.88	102 4.02	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
100 x 80 x 50 4 x 3 x 2	114.3 x 88.9 x 60.3 4.500 x 3.500 x 2.375	300 2.07	89/64 3.50/2.50	188 7.40	124 4.88	102 4.02	1/2x75
100 x 80 x 65 4 x 3 x 76.1	114.3 x 88.9 x 76.1 4.500 x 3.500 x 3.000	300 2.07	89/70 3.50/3.75	188 7.40	124 4.88	102 4.02	1/2x75
125 x 15 133.0 x 1/2	133.0 x 21.3 5.250 x 0.825	300 2.07	38 1.50	209 8.23	96.5 3.80	103 4.06	5/8x85
125 x 20 133.0 x 3/4	133.0 x 26.9 5.250 x 1.050	300 2.07	38 1.50	209 8.23	96.5 3.80	103 4.06	5/8x85
125 x 25 133.0 x 1	133.0 x 33.7 5.250 x 1.315	300 2.07	38 1.50	209 8.23	96.5 3.80	103 4.06	5/8x85
125 x 32 133.0 x 1.25	133.0 x 42.4 5.250 x 1.660	300 2.07	51 2.00	209 8.23	96.5 3.80	106 4.17	5/8x85
125 x 50 133.0 x 2	133.0 x 60.3 5.250 x 2.375	300 2.07	64 2.50	209 8.23	112.5 4.43	110 4.33	5/8x85
125 x 25 139.7 x 1	139.7 x 33.7 5.500 x 1.315	300 2.07	38 1.50	221.5 8.72	78 3.07	110 4.33	5/8x85
125 x 32 139.7 x 1 1/4	139.7 x 42.4 5.500 x 1.660	300 2.07	51 2.00	221.5 8.72	94.5 3.72	112 4.41	5/8x85
125 x 32 x 25 139.7 x 1 1/4 x 1	139.7 x 42.4 x 33.7 5.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	221.5 8.72	94.5 3.72	112 4.41	5/8x85
125 x 40 139.7 x 1 1/2	139.7 x 48.3 5.500 x 1.900	300 2.07	51 2.00	221.5 8.72	94.5 3.72	112 4.41	5/8x85
125 x 40 x 25 139.7 x 1 1/2 x 1	139.7 x 48.3 x 33.7 5.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	221.5 8.72	94.5 3.72	112 4.41	5/8x85
125 x 40 x 32 139.7 x 1 1/2 x 1 1/4	139.7 x 48.3 x 42.4 5.500 x 1.900 x 1.660	300 2.07	51 2.00	221.5 8.72	94.5 3.72	112 4.41	5/8x85
125 x 50 139.7 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	64 2.50	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 50 x 25 139.7 x 2 x 1	139.7 x 60.3 x 33.7 5.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 50 x 32 139.7 x 2 x 1 1/4	139.7 x 60.3 x 42.4 5.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 50 x 40 139.7 x 2 x 1 1/2	139.7 x 60.3 x 48.3 5.500 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 65 139.7 x 76.1	139.7 x 76.1 5.500 x 3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 65 x 32 139.7 x 76.1 x 1 1/4	139.7 x 76.1 x 42.4 5.500 x 3.000 x 1.660	300 2.07	70/51 2.75/2.00	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 65 x 40 139.7 x 76.1 x 1 1/2	139.7 x 76.1 x 48.3 5.500 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 65 x 50 139.7 x 76.1 x 2	139.7 x 76.1 x 60.3 5.500 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	221.5 8.72	112.5 4.43	115 4.53	5/8x85
125 x 80 139.7 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	89 3.50	221.5 8.72	136 5.35	120 4.72	5/8x85
125 x 100 139.7 x 4	139.7 x 114.3 5.500 x 4.500	300 2.07	114 4.50	221.5 8.72	156 6.30	125 4.92	5/8x85
150 x 25 159.0 x 1	159.0 x 33.7 6.250 x 1.315	300 2.07	38 1.50	244 9.60	78 3.07	116 4.57	5/8x105
150 x 32 159.0 x 1 1/4	159.0 x 42.4 6.250 x 1.660	300 2.07	51 2.00	244 9.60	92 3.62	118 4.65	5/8x105
150 x 32 x 25 159.0 x 1 1/4 x 1	159.0 x 42.4 x 33.7 6.250 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	244 9.60	92 3.62	118 4.65	5/8x105
150 x 40 159.0 x 1 1/2	159.0 x 48.3 6.250 x 1.900	300 2.07	51 2.00	244 9.60	92 3.62	118 4.65	5/8x105
150 x 40 x 25 159.0 x 1 1/2 x 1	159.0 x 48.3 x 33.7 6.250 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	244 9.60	92 3.62	118 4.65	5/8x105
150 x 40 x 32 159.0 x 1 1/2 x 1 1/4	159.0 x 48.3 x 42.4 6.250 x 1.900 x 1.660	300 2.07	51 2.00	244 9.60	92 3.62	118 4.65	5/8x105
150 x 50 159.0 x 2	159.0 x 60.3 6.250 x 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	125 4.92	5/8x105
150 x 50 x 25 159.0 x 2 x 1	159.0 x 60.3 x 33.7 6.250 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	244 9.60	112.5 4.43	125 4.92	5/8x105

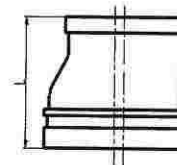


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
150 x 50 x 32	159.0 x 60.3 x 42.4	300	64/51	244	112.5	125	5/8x105
159.0 x 2 x 1¼	6.250 x 2.375 x 1.660	2.07	2.50/2.00	9.60	4.43	4.92	
150 x 50 x 40	159.0 x 60.3 x 48.3	300	64/51	244	112.5	125	5/8x105
159.0 x 2 x 1½	6.250 x 2.375 x 2.375	2.07	2.50/2.00	9.60	4.43	4.92	
150 x 65	159.0 x 76.1	300	70	244	112	125	5/8x105
159.0 x 76.1	6.250 x 3.000	2.07	2.75	9.60	4.41	4.92	
150 x 80	159.0 x 88.9	300	89	244	136	125	5/8x105
159.0 x 3	6.250 x 3.500	2.07	3.50	9.60	5.35	4.92	
150 x 80 x 40	159.0 x 88.9 x 48.3	300	89/51	244	136	125	5/8x105
159.0 x 3 x 1½	6.250 x 3.500 x 2.375	2.07	3.50/2.00	9.60	5.35	4.92	
150 x 15	165.1 x 21.3	300	38	244	78	115	5/8x105
165.1 x ½	6.500 x 0.825	2.07	1.50	9.60	3.07	4.53	
125 x 20	165.1 x 26.9	300	38	244	78	115	5/8x105
165.1 x ¾	6.500 x 1.050	2.07	1.50	9.60	3.07	4.53	
150 x 25	165.1 x 33.7	300	38	244	78	118	5/8x105
165.1 x 1	6.500 x 1.315	2.07	1.50	9.60	3.07	4.65	
150 x 32	165.1 x 42.4	300	51	244	93	118	5/8x105
165.1 x 1¼	6.500 x 1.660	2.07	2.00	9.60	3.66	4.65	
150 x 32 x 25	165.1 x 42.4 x 33.7	300	51/38	244	93	118	5/8x105
165.1 x 1¼ x 1	6.500 x 1.660 x 1.315	2.07	2.00/1.50	9.60	3.66	4.65	
150 x 40	165.1 x 48.3	300	51	244	93	118	5/8x105
165.1 x 1½	6.500 x 1.900	2.07	2.00	9.60	3.66	4.65	
150 x 40 x 25	165.1 x 48.3 x 33.7	300	51/38	244	93	118	5/8x105
165.1 x 1½ x 1	6.500 x 1.900 x 1.315	2.07	2.00/1.50	9.60	3.66	4.65	
150 x 40 x 32	165.1 x 48.3 x 42.4	300	51	244	93	118	5/8x105
165.1 x 1½ x 1¼	6.500 x 1.900 x 1.660	2.07	2.00	9.60	3.66	4.65	
150 x 50	165.1 x 60.3	300	64	244	112.5	130	5/8x105
165.1 x 2	6.500 x 2.375	2.07	2.50	9.60	4.43	5.12	
150 x 50 x 25	165.1 x 60.3 x 33.7	300	64/38	244	112.5	130	5/8x105
165.1 x 2 x 1	6.500 x 2.375 x 1.315	2.07	2.50/1.50	9.60	4.43	5.12	
150 x 50 x 32	165.1 x 60.3 x 42.4	300	64/51	244	112.5	130	5/8x105
165.1 x 2 x 1¼	6.500 x 2.375 x 1.660	2.07	2.50/2.00	9.60	4.43	5.12	
150 x 50 x 40	165.1 x 60.3 x 48.3	300	64/51	244	112.5	130	5/8x105
165.1 x 2 x 1½	6.500 x 2.375 x 1.900	2.07	2.50/2.00	9.60	4.43	5.12	
150 x 65	165.1 x 76.1	300	70	244	112.5	130	5/8x105
165.1 x 76.1	6.500 x 3.000	2.07	2.75	9.60	4.43	5.12	
150 x 65 x 25	165.1 x 76.1 x 33.7	300	70/38	244	112.5	130	5/8x105
165.1 x 76.1 x 1	6.500 x 3.000 x 1.315	2.07	2.75/1.50	9.60	4.43	5.12	
150 x 65 x 32	165.1 x 76.1 x 42.4	300	70/51	244	112.5	130	5/8x105
165.1 x 76.1 x 1¼	6.500 x 3.000 x 1.660	2.07	2.75/2.00	9.60	4.43	5.12	
150 x 65 x 40	165.1 x 76.1 x 48.3	300	70/51	244	112.5	130	5/8x105
165.1 x 76.1 x 1½	6.500 x 3.000 x 1.900	2.07	2.75/2.00	9.60	4.43	5.12	
150 x 65 x 50	165.1 x 76.1 x 60.3	300	70/64	244	112.5	130	5/8x105
165.1 x 76.1 x 2	6.500 x 3.000 x 2.375	2.07	2.75/2.50	9.60	4.43	5.12	
150 x 80	165.1 x 88.9	300	89	244	132	128.5	5/8x105
165.1 x 3	6.500 x 3.500	2.07	3.50	9.60	5.20	5.06	
150 x 80 x 25	165.1 x 88.9 x 33.7	300	89/38	244	132	128.5	5/8x105
165.1 x 3 x 1	6.500 x 3.500 x 1.315	2.07	3.50/1.50	9.60	5.20	5.06	
150 x 80 x 32	165.1 x 88.9 x 42.4	300	89/51	244	132	128.5	5/8x105
165.1 x 3 x 1¼	6.500 x 3.500 x 1.660	2.07	3.50/2.00	9.60	5.20	5.06	
150 x 80 x 40	165.1 x 88.9 x 48.3	300	89/51	244	132	128.5	5/8x105
165.1 x 3 x 1½	6.500 x 3.500 x 1.900	2.07	3.50/2.00	9.60	5.20	5.06	
150 x 80 x 50	165.1 x 88.9 x 60.3	300	89/64	244	132	128.5	5/8x105
165.1 x 3 x 2	6.500 x 3.500 x 2.375	2.07	3.50/2.50	9.60	5.20	5.06	
150 x 80 x 65	165.1 x 88.9 x 76.1	300	89/70	244	132	128.5	5/8x105
165.1 x 3 x 76.1	6.500 x 3.500 x 3.000	2.07	3.50/2.75	9.60	5.20	5.06	
150 x 100	165.1 x 114.3	300	114	244	154	135	5/8x105
165.1 x 4	6.500 x 4.500	2.07	4.50	9.60	6.06	5.52	
150 x 100 x 32	165.1 x 114.3 x 42.4	300	114/51	244	154	135	5/8x105
165.1 x 4 x 1¼	6.500 x 4.500 x 1.660	2.07	4.50/2.00	9.60	6.06	5.52	
150 x 100 x 40	165.1 x 114.3 x 48.3	300	114/51	244	154	135	5/8x105
165.1 x 4 x 1½	6.500 x 4.500 x 1.900	2.07	4.50/2.00	9.60	6.06	5.52	



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
100 x 80 x 50 4 x 3 x 2	165.1 x 114.3 x 60.3 6.500 x 4.500 x 2.375	300 2.07	114/64 4.50/2.50	244 9.60	154 6.06	135 5.52	5/8x105
150x100x65 165.1x4x76.1	114.3 x 88.9 x 76.1 4.500 x 3.500 x 3.000	300 2.07	114/70 4.50/2.75	244 9.60	154 6.06	135 5.52	5/8x105
150 x 100 x 80 165.1 x 4 x 3	165.1 x 114.3 x 88.9 6.500 x 4.500 x 3.500	300 2.07	114/89 4.50/3.50	244 9.60	154 6.06	135 5.52	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	247 9.72	114 4.49	135 5.52	5/8x105
150 x 65 6 x 76.1	168.3 x 76.1 6.625 x 3.000	300 2.07	70 2.75	247 9.72	115 4.53	134 5.28	5/8x105
200 x 40 8 x 1/2	219.1 x 48.3 8.625 x 1.900	300 2.07	51 2.00	322 12.68	96.5 3.80	150 5.91	3/4x115
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	322 12.68	117 4.61	160 6.30	3/4x115
200 x 50 x 25 8 x 2 x 1	219.1 x 60.3 x 33.7 8.625 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	322 12.68	117 4.61	160 6.30	3/4x115
200 x 50 x 32 8 x 2 x 1 1/4	219.1 x 60.3 x 42.4 8.625 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	322 12.68	117 4.61	160 6.30	3/4x115
200 x 50 x 40 8 x 2 x 1 1/2	219.1 x 60.3 x 48.3 8.625 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	322 12.68	117 4.61	160 6.30	3/4x115
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	322 12.68	118 4.65	158.5 6.24	3/4x115
200 x 65 x 40 8 x 76.1 x 1 1/2	219.1 x 76.1 x 48.3 8.625 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	322 12.68	118 4.65	158.5 6.24	3/4x115
200 x 65 x 50 8 x 76.1 x 2	219.1 x 76.1 x 60.3 8.625 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	322 12.68	118 4.65	158.5 6.24	3/4x115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	322 12.68	142 5.59	160 6.30	3/4x115
200 x 80 x 65 8 x 3 x 76.1	219.1 x 88.9 x 76.1 8.625 x 3.500 x 3.000	300 2.07	89/70 3.50/2.75	322 12.68	142 5.59	160 6.30	3/4x115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	322 12.68	170 6.70	170 6.70	3/4x115
200 x 100 x 65 8 x 4 x 76.1	219.1 x 114.3 x 76.1 8.625 x 4.500 x 3.000	300 2.07	114/70 4.50/2.75	322 12.68	170 6.70	170 6.70	3/4x115
200 x 100 x 80 8 x 4 x 3	219.1 x 114.3 x 88.9 8.625 x 4.500 x 3.500	300 2.07	114/89 4.50/3.50	322 12.68	170 6.70	170 6.70	5/8x85

GROOVED ECCENTRIC REDUCER WITH FEMALE THREAD



NO.230N

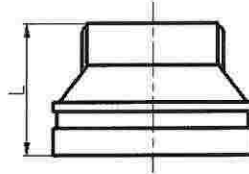
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
100 x 65 108.0 x 2 1/2	108.0 x 76.1 4.250 x 3.000	500 3.45	102 4.00
100 x 65 4 x 2 1/2	114.3 x 76.1 4.500 x 3.000	500 3.45	102 4.00
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	500 3.45	127 5.00
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	500 3.45	140 5.50



GROOVED CONCENTRIC REDUCER WITH FEMALE THREAD



NO.240N



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
50 x 15 2 x 1/2	60.3 x 21.3 2.375 x 0.825	500 3.45	64 2.50
50 x 20 2 x 3/4	60.3 x 26.9 2.375 x 1.05	500 3.45	64 2.50
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	500 3.45	64 2.50
50 x 32 2 x 1 1/4	60.3 x 42.4 2.375 x 1.660	500 3.45	64 2.50
50 x 40 2 x 1 1/2	60.3 x 48.3 2.375 x 1.900	500 3.45	64 2.50
65 x 25 2 1/2 x 1	73.0 x 33.7 2.875 x 1.315	500 3.45	64 2.50
65 x 25 2 1/2 x 1 1/4	73.0 x 42.4 2.875 x 1.660	500 3.45	64 2.50
65 x 40 2 1/2 x 1 1/2	73.0 x 48.3 2.875 x 1.900	500 3.45	64 2.50
65 x 50 2 1/2 x 2	73.0 x 60.3 2.875 x 2.375	500 3.45	64 2.50
65 x 15 2 1/2 x 1/2	76.1 x 21.3 3.000 x 0.825	500 3.45	64 2.50
65 x 20 2 1/2 x 3/4	76.1 x 26.9 3.000 x 1.05	500 3.45	64 2.50
65 x 25 2 1/2 x 1	76.1 x 33.7 3.000 x 1.315	500 3.45	64 2.50
65 x 32 2 1/2 x 1 1/4	76.1 x 42.4 3.000 x 1.660	500 3.45	64 2.50
65 x 40 2 1/2 x 1 1/2	76.1 x 48.3 3.000 x 1.900	500 3.45	64 2.50
65 x 50 2 1/2 x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	64 2.50
80 x 15 3 x 1/2	88.9 x 21.3 3.500 x 0.825	500 3.45	64 2.50
80 x 20 3 x 3/4	88.9 x 26.9 3.500 x 1.05	500 3.45	64 2.50
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	64 2.50
80 x 32 3 x 1 1/4	88.9 x 42.4 3.500 x 1.660	500 3.45	64 2.50
80 x 40 3 x 1 1/2	88.9 x 48.3 3.500 x 1.900	500 3.45	64 2.50
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	64 2.50



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
80 x 65	88.9 x 73.0	500	64
3 x 2½	3.500 x 2.875	3.45	2.50
80 x 65	88.9 x 76.1	500	64
3 x 2½	3.500 x 3.000	3.45	2.50
100 x 25	108.0 x 33.7	500	76
4 x 1	4.250 x 1.315	3.45	3.00
100 x 32	108.0 x 42.4	500	76
4 x 1¼	4.250 x 1.660	3.45	3.00
100 x 40	108.0 x 48.3	500	76
4 x 1½	4.250 x 1.900	3.45	3.00
100 x 50	108.0 x 60.3	500	76
4 x 2	4.250 x 2.375	3.45	3.00
100 x 65	108.0 x 76.1	500	76
4 x 2½	4.250 x 3.000	3.45	3.00
100 x 80	108.0 x 88.9	500	76
4 x 3	4.250 x 3.500	3.45	3.00
100 x 15	114.3 x 21.3	500	76
4 x ½	4.500 x 0.825	3.45	3.00
100 x 20	114.3 x 26.9	500	76
4 x ¾	4.500 x 1.05	3.45	3.00
100 x 25	114.3 x 33.7	500	76
4 x 1	4.500 x 1.315	3.45	3.00
100 x 32	114.3 x 42.4	500	76
4 x 1¼	4.500 x 1.660	3.45	3.00
100 x 40	114.3 x 48.3	500	76
4 x ½	4.500 x 1.900	3.45	3.00
100 x 50	114.3 x 60.3	500	76
4 x 2	4.500 x 2.375	3.45	3.00
100 x 65	114.3 x 73.0	500	76
4 x 2½	4.500 x 2.875	3.45	3.00
100 x 65	114.3 x 76.1	500	76
4 x 2½	4.500 x 3.000	3.45	3.00
100 x 80	114.3 x 88.9	500	76
4 x 3	4.500 x 3.500	3.45	3.00
125 x 40	133.0 x 48.3	500	89
5 x 1½	5.250 x 1.900	3.45	3.50
125 x 40	133.0 x 60.3	500	89
5 x 2	5.250 x 2.375	3.45	3.50
125 x 65	133.0 x 76.1	500	89
5 x 2½	5.250 x 3.000	3.45	3.50
125 x 65	133.0 x 88.9	500	89
5 x 3	5.250 x 3.500	3.45	3.50
125 x 25	139.7 x 33.7	500	89
5 x 1	5.500 x 1.315	3.45	3.50
125 x 32	139.7 x 42.4	500	89
5 x 1¼	5.500 x 1.660	3.45	3.50
125 x 40	139.7 x 48.3	500	89
5 x 1½	5.500 x 1.900	3.45	3.50
125 x 50	139.7 x 60.3	500	89
5 x 2	5.500 x 2.375	3.45	3.50
125 x 65	139.7 x 76.1	500	89
5 x 2½	5.500 x 3.000	3.45	3.50
125 x 80	139.7 x 88.9	500	89
5 x 3	5.500 x 3.500	3.45	3.50
125 x 100	139.7 x 114.3	500	89
5 x 4	5.500 x 4.500	3.45	3.50



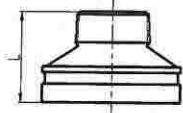
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
125 x 100	141.3 x 114.3	500	89
5 x 4	5.563 x 4.500	3.45	3.50
150 x 20	159.0 x 26.9	500	102
6 x ¾	6.250 x 1.05	3.45	4.00
150 x 25	159.0 x 33.7	500	102
6 x 1	6.250 x 1.315	3.45	4.00
150 x 32	159.0 x 42.4	500	102
6 x 1¼	6.250 x 1.660	3.45	4.00
150 x 40	159.0 x 48.3	500	102
6 x 1½	6.250 x 1.900	3.45	4.00
150 x 50	159.0 x 60.3	500	102
6 x 2	6.250 x 2.375	3.45	4.00
150 x 65	159.0 x 76.1	500	102
6 x 2½	6.250 x 3.000	3.45	4.00
150 x 80	159.0 x 88.9	500	102
6 x 3	6.250 x 3.500	3.45	4.00
150 x 100	159.0 x 114.3	500	102
6 x 4	6.250 x 4.500	3.45	4.00
150 x 15	165.1 x 21.3	500	102
6 x ½	6.500 x 0.825	3.45	4.00
150 x 20	165.1 x 26.9	500	102
6 x ¾	6.500 x 1.05	3.45	4.00
150 x 25	165.1 x 33.7	500	102
6 x 1	6.500 x 1.315	3.45	4.00
150 x 32	165.1 x 42.4	500	102
6 x 1¼	6.500 x 1.660	3.45	4.00
150 x 40	165.1 x 48.3	500	102
6 x 1½	6.500 x 1.900	3.45	4.00
150 x 50	165.1 x 60.3	500	102
6 x 2	6.500 x 2.375	3.45	4.00
150 x 65	165.1 x 76.1	500	102
6 x 2½	6.500 x 3.000	3.45	4.00
150 x 80	165.1 x 88.9	500	102
6 x 3	6.500 x 3.500	3.45	4.00
150 x 100	165.1 x 114.3	500	102
6 x 4	6.500 x 4.500	3.45	4.00
150 x 25	168.3 x 33.7	500	102
6 x 1	6.625 x 1.315	3.45	4.00
150 x 50	168.3 x 60.3	500	102
6 x 2	6.625 x 2.375	3.45	4.00
150 x 125	168.3 x 141.3	500	102
6 x 5	6.625 x 5.563	3.45	4.00
200 x 40	219.1 x 48.3	500	127
8 x 1½	8.625 x 1.900	3.45	5.00
200 x 50	219.1 x 60.3	500	127
8 x 2	8.625 x 2.375	3.45	5.00
200 x 65	219.1 x 73.0	500	127
8 x 2½	8.625 x 2.875	3.45	5.00
200 x 65	219.1 x 76.1	500	127
8 x 2½	8.625 x 3.000	3.45	5.00
200 x 80	219.1 x 88.9	500	127
8 x 3	8.625 x 3.500	3.45	5.00
200 x 100	219.1 x 114.3	500	127
8 x 4	8.625 x 4.500	3.45	5.00
200 x 100	219.1 x 168.3	500	127
8 x 6	8.625 x 6.625	3.45	5.00



GROOVED CONCENTRIC REDUCER WITH MALE THREAD



NO.240W

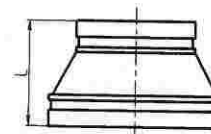


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
65 x 50 2½ x 2	73.0 x 60.3 2.875 x 2.375	500 3.45	64 2.50
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	64 2.50
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	64 2.50
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	500 3.45	76 3.00
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	500 3.45	127 5.00

GROOVED CONCENTRIC REDUCER



NO.240



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
32 x 25 1¼ x 1	42.4 x 33.7 1.660 x 1.315	500 3.45	64 2.50
40 x 32 1½ x 1¼	48.3 x 42.4 1.900 x 1.660	500 3.45	64 2.50
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.660	500 3.45	64 2.50
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	500 3.45	64 2.50
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.660	500 3.45	64 2.50
65 x 40 2½ x 1½	73.0 x 48.3 2.875 x 1.900	500 3.45	64 2.50
65 x 50 2½ x 2	73.0 x 60.3 2.875 x 2.375	500 3.45	64 2.50
65 x 50 2½ x 1¼	76.1 x 42.4 3.000 x 1.660	500 3.45	64 2.50
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	500 3.45	64 2.50
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	64 2.50
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	64 2.50
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	500 3.45	64 2.50
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	64 2.50
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	500 3.45	64 2.50



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	500 3.45	64 2.50
100 x 50 4 x 2	108.0 x 60.3 4.250 x 2.375	500 3.45	76 3.00
100 x 65 4 x 2½	108.0 x 73.0 4.250 x 2.875	500 3.45	76 3.00
100 x 65 4 x 2½	108.0 x 76.1 4.250 x 3.000	500 3.45	76 3.00
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	500 3.45	76 3.00
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	500 3.45	76 3.00
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	500 3.45	76 3.00
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	500 3.45	76 3.00
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	500 3.45	76 3.00
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	500 3.45	76 3.00
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	76 3.00
125 x 100 5 x 4	133.0 x 108.0 5.250 x 4.250	500 3.45	89 3.50
125 x 100 5 x 4	133.0 x 114.3 5.250 x 4.500	500 3.45	89 3.50
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	500 3.45	89 3.50
125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	500 3.45	89 3.50
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	500 3.45	89 3.50
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	500 3.45	89 3.50
125 x 65 5 x 2½	141.3 x 73.0 5.563 x 2.875	500 3.45	89 3.50
125 x 80 5 x 3	141.3 x 88.9 5.563 x 3.500	500 3.45	89 3.50
125 x 100 5 x 4	141.3 x 114.3 5.563 x 4.500	500 3.45	89 3.50
150 x 50 6 x 2	159.0 x 60.3 6.250 x 2.375	500 3.45	102 4.00
150 x 65 159.0 x 2½	159.0 x 76.1 6.250 x 3.000	500 3.45	102 4.00
150 x 80 6 x 3	159.0 x 88.9 6.250 x 3.500	500 3.45	102 4.00
150 x 100 6 x 4	159.0 x 108 6.250 x 4.250	500 3.45	102 4.00
150 x 100 6 x 4	159.0 x 114.3 6.250 x 4.500	500 3.45	102 4.00
150 x 125 6 x 5	159.0 x 133.0 6.25 x 5.250	500 3.45	102 4.00
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	500 3.45	102 4.00
150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	500 3.45	102 4.00



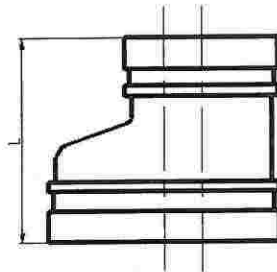
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	500 3.45	102 4.00
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	500 3.45	102 4.00
150 x 125 6 x 5	165.1 x 139.7 6.500 x 5.500	500 3.45	102 4.00
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	500 3.45	102 4.00
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	500 3.45	102 4.00
150 x 65 6 x 2½	168.3 x 76.1 6.625 x 3.000	500 3.45	102 4.00
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	500 3.45	102 4.00
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	500 3.45	102 4.00
150 x 125 6 x 5	168.3 x 139.7 6.625 x 5.500	500 3.45	102 4.00
150 x 125 6 x 5	168.3 x 141.3 6.625 x 5.563	500 3.45	102 4.00
200 x 100 8 x 4	216.3 x 114.3 8.516 x 4.500	500 3.45	127 5.00
200 x 150 8 x 6	216.3 x 165.1 8.516 x 6.500	500 3.45	127 5.00
200 x 65 8 x 2½	219.1 x 73.0 8.625 x 2.875	500 3.45	127 5.00
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	500 3.45	127 5.00
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	500 3.45	127 5.00
200 x 125 8 x 5	219.1 x 139.7 8.625 x 5.500	500 3.45	127 5.00
200 x 125 8 x 5	219.1 x 141.3 8.625 x 5.563	500 3.45	127 5.00
200 x 150 8 x 6	219.1 x 159.0 8.625 x 6.250	500 3.45	127 5.00
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	500 3.45	127 5.00
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	500 3.45	127 5.00
250 x 150 10 x 6	273.0 x 159.0 10.750 x 6.250	500 3.45	127 5.00
250 x 150 10 x 6	273.0 x 165.1 10.750 x 6.500	500 3.45	152 6.00
250 x 150 10 x 6	273.0 x 168.3 10.750 x 6.625	500 3.45	152 6.00
250 x 200 10 x 8	273.0 x 219.1 10.750 x 8.625	500 3.45	152 6.00
300 x 200 12 x 8	323.9 x 219.1 12.750 x 8.625	500 3.45	178 7.00
300 x 250 12 x 10	323.9 x 273.0 12.750 x 10.750	500 3.45	178 7.00
350 x 300 14 x 12	377.0 x 323.9 14.850 x 12.750	300 2.07	127 5.00
400 x 350 16 x 14	426.0 x 377.0 16.770 x 14.850	300 2.07	127 5.00



GROOVED ECCENTRIC REDUCER



NO.230



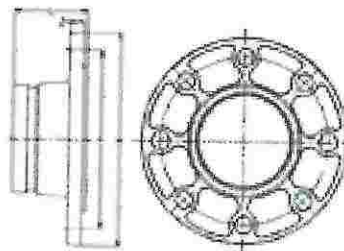
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions L mm / in
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	89 3.50
100 x 65 4 x 2½	108.0 x 76.1 4.250 x 3.000	500 3.45	102 4.00
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	500 3.45	102 4.00
100 x 65 4 x 2½	114.3 x 60.3 4.500 x 2.000	500 3.45	102 4.00
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	500 3.45	102 4.00
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	102 4.00
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	500 3.45	127 5.00
150 x 100 6 x 4	159.0 x 108.0 6.250 x 4.250	500 3.45	140 5.50
150 x 100 6 x 4	159.0 x 114.3 6.250 x 4.500	500 3.45	140 5.50
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	500 3.45	140 5.50
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	500 3.45	140 5.50
150 x 125 6 x 5	165.1 x 139.7 6.500 x 5.500	500 3.45	140 5.50
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	500 3.45	140 5.50
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	500 3.45	140 5.50
150 x 125 6 x 5	168.3 x 139.7 6.625 x 5.500	500 3.45	140 5.50
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	500 3.45	215 8.50
200 x 100 8 x 6	219.1 x 165.1 8.625 x 6.500	500 3.45	215 8.50
200 x 100 8 x 6	219.1 x 168.3 8.625 x 6.625	500 3.45	215 8.50
200 x 100 10 x 8	273.0 x 219.1 10.750 x 8.625	500 3.45	330 13.0



ADAPTOR FLANGE



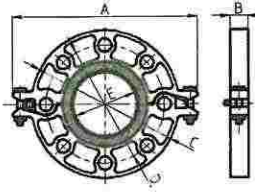
NO.321G-PN16



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions				Bolt / Nut No.-SIZE mm
			A mm/in	B mm/in	C mm/in	D mm/in	
25 1	33.7 1.327	225 1.6	60.5 2.382	115 4.53	80 3.15	16 0.63	4-M12
32 1¼	42.4 1.669	225 1.6	60.5 2.382	140 5.51	100 3.94	16 0.63	4-M16
40 1½	48.3 1.902	225 1.6	60.5 2.382	150 6.91	110 4.33	16 0.63	4-M16
50 2	60.3 2.375	225 1.6	65 2.559	165 6.50	125 4.92	16 0.63	4-M16
65 76.1	76.1 3.000	225 1.6	65 2.559	185 7.28	145 5.70	16 0.63	4-M16
80 3	88.9 3.500	225 1.6	65 2.559	200 7.87	160 6.30	16 0.63	8-M16
100 108.0	108.0 4.250	225 1.6	70 2.756	220 8.66	180 7.09	16 0.63	8-M16
100 4	114.3 4.500	225 1.6	70 2.756	220 8.66	180 7.09	16 0.63	8-M16
125 133.0	133 5.250	225 1.6	70 2.756	250 9.84	210 8.27	18 0.71	8-M16
125 139.7	139.7 5.500	225 1.6	70 2.756	250 9.84	210 8.27	18 0.71	8-M16
150 159.1	159.0 6.250	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20
150 165.1	165.1 6.500	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20
150 6	168.3 6.625	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20
200 8	219.1 8.625	225 1.6	80 3.150	340 13.39	295 11.61	19 0.75	12-M20
250 10	273.0 10.750	225 1.6	85 3.346	405 15.94	355 13.98	21 0.83	12-M24
300 12	323.9 12.750	225 1.6	90 3.543	460 18.11	410 16.14	24 0.94	12-M24
350 14	377.0 12.843	225 1.6	100 3.937	520 20.47	470 18.50	25 1.00	16-M24
400 16	426.0 16.772	225 1.6	110 4.331	580 22.83	525 20.67	27 1.06	16-M27



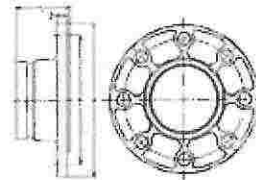
GROOVED FLANGE



NO.321

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions					Bolt / Nut	
			A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	No.-SIZE mm	
40 1½	48.3 1.900	225 1.6	195 7.68	19 0.75	150 5.91	110 4.33	45.4 1.78	2-M10 x 50	4-M16
50 2	60.3 2.375	225 1.6	220 8.66	19 0.75	166 6.54	125 4.92	57.5 2.26	2-M10 x 50	4-M16
65 76.1	76.1 3.000	225 1.6	235 9.25	19 0.75	185 7.28	145 5.71	72.7 2.86	2-M10 x 50	4-M16
80 3	88.9 3.500	225 1.6	252 9.72	19 0.75	192 7.56	160 6.30	85.5 3.37	2-M10 x 50	8-M16
100 108.0	108.0 4.250	225 1.6	277 10.91	19 0.75	220 8.66	180 7.09	104.5 4.11	2-M12 x 55	8-M16
100 4	114.3 4.500	225 1.6	277 10.91	19 0.75	224 8.83	180 7.09	110.5 4.35	2-M12 x 55	8-M16
125 133.0	133.0 5.250	225 1.6	312 12.28	22 0.87	246 9.68	210 8.27	129.2 5.08	2-M12 x 65	8-M16
125 139.7	139.7 5.500	225 1.6	318 12.52	23 0.87	242 9.84	210 8.27	135.5 5.33	2-M12 x 65	8-M16
150 159.0	159.0 6.250	225 1.6	346 13.62	22 0.87	280 11.00	240 9.45	160.8 6.33	2-M12 x 65	8-M20
150 165.1	165.1 6.500	225 1.6	346 13.62	23 0.91	280 11.00	240 9.45	160.8 6.33	2-M12 x 65	8-M20
165 6	168.3 6.625	225 1.6	346 13.62	23 0.87	285 11.22	240 9.45	164.3 6.47	2-M12 x 65	8-M20

ADAPTOR FLANGE



NO.321GH-PN25

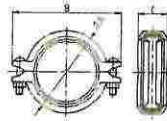
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions				Bolt / Nut	
			L mm/in	X mm	Y mm	Z mm	No.-SIZE mm	
100 108.0	108.0 4.250	362 2.5	70 2.756	230 9.05	190 7.48	18 0.71	8-M20	
100 4	114.3 4.500	362 2.5	70 2.756	235 9.25	190 7.48	16 0.63	8-M20	
150 159.0	159.0 6.250	362 2.5	70 2.756	300 11.80	250 9.85	20 0.79	8-M24	
150 165.1	165.1 6.500	362 2.5	70 2.756	300 11.80	250 9.84	18 0.71	8-M24	
200 8	219.1 8.625	362 2.5	80 3.150	360 14.17	310 12.20	19 0.75	12-M24	



LIGHT DUTY FLEXIBLE COUPLING



NO.1NS

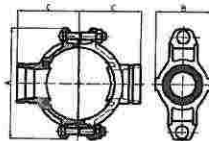


Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Dimensions			Bolt Size
			A mm / in	B mm / in	C mm / in	
65 2½	76.1 3.000	500 3.45	100 3.94	145 5.71	45 1.78	3/8X55
80 3	88.9 3.500	500 3.45	115 4.53	160 6.30	45 1.78	1/2x70
100 4	108.0 4.250	500 3.45	138 5.43	190 7.48	50 1.97	1/2x70
100 4	114.3 4.500	300 2.07	140 5.51	183 7.20	50 1.97	3/8X55
125 5	139.7 5.500	450 3.10	168 6.61	228 8.98	51 2.00	5/8x80
125 5	141.3 5.563	450 3.10	170 6.69	232 9.13	51 2.00	5/8x80
150 6	159.0 6.250	450 3.10	190 7.48	254 10.00	52 2.05	5/8x85
150 6	165.1 6.500	300 2.07	193 7.60	245 9.65	51 2.00	1/2X75
150 6	168.3 6.625	450 3.10	200 7.87	265 10.43	52 2.05	5/8x85
200 8	219.1 8.625	450 3.10	258 10.24	350 13.78	60 2.37	3/4X115

LIGHT DUTY MECHANICAL CROSS GROOVED OUTLET



NO.4GS



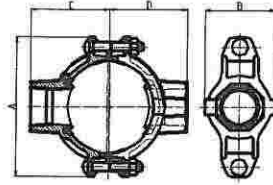
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0/ +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	1/2x70
65 x 32 76.1 x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	1/2x70
65 x 40 76.1 x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	1/2x70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	84 3.31	1/2x75
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in			Bolt Size
				A	B	C	
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	150 5.91	98 3.86	84 3.31	1/2x75
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	98 3.86	1/2x75
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	300 2.07	51 2.00	178 7.01	88 3.46	98 3.86	1/2x75
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	300 2.07	51 2.00	178 7.01	88 3.46	98 3.86	1/2x75
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	64 2.50	178 7.01	88 3.46	98 3.86	1/2x75
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	1/2x75
100 x 65 4 x 76.1	114.3 x 76.1 4.500 x 3.000	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	1/2x75
125 x 80 133.0 x 3	133.0 x 88.9 5.250 x 3.500	300 2.07	89 3.50	203 7.99	132 5.12	110 4.33	5/8x85
125 x 50 139.7 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	64 2.50	210 8.27	110 4.33	113 4.45	5/8x85
125 x 65 139.7 x 76.1	139.7 x 76.1 5.500 x 3.000	300 2.07	70 2.75	210 8.27	110 4.33	113 4.45	5/8x85
125 x 80 139.7 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	89 3.50	210 8.27	130 5.12	113 4.45	5/8x85
150 x 100 159.0 x 108.0	159.1 x 108.0 6.250 x 4.250	300 2.07	114 4.50	227 8.84	155 6.10	122.5 4.83	5/8x105
150 x 100 159.0 x 4	159.1 x 114.3 6.250 x 4.500	300 2.07	114 4.50	227 8.84	155 6.10	122.5 4.83	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	64 2.50	235 9.25	110 4.33	124.5 4.90	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	235 9.25	110 4.33	124.5 4.90	5/8x105
150 x 80 165.1 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	235 9.25	130 5.12	124.5 4.90	5/8x105
150 x 100 165.1 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	235 9.25	155 6.10	126 4.96	5/8x105
150 x 40 6 x 1½	168.3 x 48.3 6.500 x 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	240 9.45	110 4.33	126 4.96	5/8x105
150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	300 2.07	70 2.75	240 9.45	110 4.33	126 4.96	5/8x105
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	300 2.07	89 3.50	240 9.45	130 5.12	126 4.96	5/8x105
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	300 2.07	114 4.50	240 9.45	155 6.10	128 5.04	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	300 11.81	115 4.53	155 6.10	3/4x115
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	3/4x115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	3/4x115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	300 11.81	159.5 6.29	160 6.30	3/4x115
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	300 2.07	114 4.50	376 14.80	164 6.46	189 7.44	3/4x120



LIGHT DUTY MECHANICAL CROSS THREADED OUTLET

**NO.4JS**

Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0/ +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	60 2.36	3/8x55
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	65 2.56	3/8x55
50 x 32 x 25 2 x 1¼ x 1	60.3 x 42.4 x 33.7 2.375 x 1.660 x 1.315	300 2.07	45/38 1.75/1.50	116 4.57	76 2.99	65 2.56	60 2.36	3/8x55
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	65 2.56	3/8x55
50 x 40 x 25 2 x 1½ x 1	60.3 x 48.3 x 33.7 2.375 x 1.900 x 1.315	300 2.07	45/38 1.75/1.50	116 4.57	76 2.99	65 2.56	60 2.36	3/8x55
65 x 25 2½ x 1	73.0 x 33.7 2.875 x 1.315	300 2.07	38 1.50	144 5.67	70 2.76	69 2.72	69 2.72	1/2x70
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	73 2.87	1/2x70
65 x 40 2½ x 1½	73.0 x 48.3 2.875 x 1.900	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	73 2.87	1/2x70
65 x 25 76.1 x 1	76.1 x 33.7 3.000 x 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	75 3.05	1/2x70
65 x 32 76.1 x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
65 x 32 76.1 x 1¼	76.1 x 42.4 3.000 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
65 x 32 x 25 76.1 x 1¼ x 1	76.1 x 42.4 x 33.7 3.000 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
65 x 40 76.1 x 1½	76.1 x 48.3 3.000 x 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
65 x 40 x 25 76.1 x 1½ x 1	76.1 x 48.3 x 33.7 3.000 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
65 x 40 x 25 x 32 76.1 x 1½ x 1¼	76.1 x 48.3 x 42.4 3.000 x 1.900 x 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2x70
3 x ¾	88.9 x 26.9 3.500 x 1.050	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	68 2.68	1/2x70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	68 2.68	1/2x75
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	74 2.91	1/2x75
80 x 32 x 25 3 x 1¼ x 1	88.9 x 42.4 x 33.7 3.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	150 5.91	84.5 3.33	74 2.91	68 2.68	1/2x75
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	74 2.91	1/2x75
80 x 40 x 25 3 x 1½ x 1	88.9 x 48.3 x 33.7 3.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	150 5.91	84.5 3.33	74 2.91	68 2.68	1/2x75
80 x 40 x 32 3 x 1½ x 1¼	88.9 x 48.3 x 42.4 3.500 x 1.900 x 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	74 2.91	1/2x75
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	300 2.07	64 2.50	150 5.91	98 3.86	77 3.03	77 3.03	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
80 x 50 x 25 3 x 2 x 1	88.9 x 60.3 x 33.7 3.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	150 5.91	98 3.86	77 3.03	68 2.68	1/2x75
80 x 50 x 32 3 x 2 x 1 1/4	88.9 x 60.3 x 42.4 3.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	150 5.91	98 3.86	77 3.03	74 2.91	1/2x75
80 x 50 x 40 3 x 2 x 1 1/2	88.9 x 60.3 x 48.3 3.500 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	150 5.91	98 3.86	77 3.03	74 2.91	1/2x75
100 x 25 108.0 x 1	108.1 x 33.7 4.250 x 1.315	300 2.07	38 1.50	172 6.77	77.5 3.05	85 3.35	85 3.35	1/2x75
100 x 32 108.0 x 1 1/4	108.1 x 42.4 4.250 x 1.660	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	85 3.35	1/2x75
100 x 32 x 25 108.0 x 1 1/4 x 1	108.1 x 42.4 x 33.7 4.250 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	172 6.77	88 3.46	85 3.35	85 3.35	1/2x75
100 x 40 108.0 x 1 1/2	108.0 x 48.3 4.250 x 1.900	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	85 3.35	1/2x75
100 x 40 x 25 108.0 x 1 1/2 x 1	108.0 x 48.3 x 33.7 4.250 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	172 6.77	88 3.46	85 3.35	85 3.35	1/2x75
100x40x32 108.0x1 1/2x1 1/4	139.7 x 33.7 x 42.4 5.500 x 1.315 x 1.660	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	85 3.35	1/2x75
100 x 50 108.0 x 2	108.0 x 60.3 4.250 x 2.375	300 2.07	64 2.50	172 6.77	103.5 4.19	89 3.50	89 3.50	1/2x75
100 x 50 x 25 108.0 x 2 x 1	108.0 x 60.3 x 33.7 4.250 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	172 6.77	103.5 4.19	89 3.50	85 3.35	1/2x75
100 x 50 x 32 108.0 x 2 x 1 1/4	108.0 x 60.3 x 42.4 4.250 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	172 6.77	103.5 4.19	89 3.50	85 3.35	1/2x75
100 x 50 x 40 108.0 x 2 x 1 1/2	108.0 x 60.3 x 48.3 4.250 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	172 6.77	103.5 4.19	89 3.50	85 3.35	1/2x75
100 x 65 108.0 x 76.1	108.0 x 76.1 4.250 x 3.000	300 2.07	70 2.75	172 6.77	103.5 4.19	96 3.78	96 3.78	1/2x75
100 x 15 4 x 1/2	114.3 x 21.3 4.500 x 0.825	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2x75
100 x 20 4 x 3/4	114.3 x 26.9 4.500 x 1.050	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2x75
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2x75
100 x 32 4 x 1/4	114.3 x 42.4 4.500 x 1.660	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	89.5 3.53	1/2x75
100 x 32 x 25 4 x 1/4 x 1	114.3 x 42.4 x 33.7 4.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	178 7.01	88 3.46	89.5 3.53	82 3.23	1/2x75
100 x 40 4 x 1 1/2	114.3 x 48.3 4.500 x 1.900	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	82 3.23	1/2x75
100 x 40 x 25 4 x 1 1/2 x 1	114.3 x 48.3 x 33.7 4.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	178 7.01	88 3.46	89.5 3.53	82 3.23	1/2x75
100 x 40 x 32 4 x 1 1/2 x 1 1/4	114.3 x 48.3 x 42.4 4.500 x 1.900 x 1.660	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	89.5 3.53	1/2x75
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	300 2.07	64 2.50	178 7.01	103.5 4.07	92 3.62	92 3.62	1/2x75
100 x 50 x 25 4 x 2 x 1	114.3 x 60.3 x 33.7 4.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	178 7.01	103.5 4.07	92 3.62	82 3.23	1/2x75
100 x 50 x 32 4 x 2 x 1 1/4	114.3 x 60.3 x 42.4 4.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	178 7.01	103.5 4.07	92 3.62	89.5 3.53	1/2x75
100 x 65 4 x 76.1	114.3 x 76.1 4.500 x 3.000	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	98 3.86	1/2x75
100 x 65 x 32 4 x 76.1 x 1 1/4	114.3 x 76.1 x 42.4 4.500 x 3.000 x 1.660	300 2.07	70/51 2.75/2.00	178 7.01	103.5 4.07	98 3.86	89.5 3.53	1/2x75
100 x 65 x 40 4 x 76.1 x 1 1/2	114.3 x 76.1 x 48.3 4.500 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	178 7.01	103.5 4.07	98 3.86	89.5 3.53	1/2x75



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
100 x 65 x 50 4 x 76.1 x 2	114.3 x 76.1 x 60.3 4.500 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	178 7.01	103.5 4.07	98 3.86	92 3.62	1/2x75
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	300 2.07	89 3.50	178 7.01	124 4.88	100 3.94	100 3.94	1/2x75
100 x 80 x 32 4 x 3 x 1½	114.3 x 88.9 x 42.4 4.500 x 3.500 x 1.660	300 2.07	89/51 3.50/2.00	178 7.01	124 4.88	100 3.94	89.5 3.53	1/2x75
100 x 80 x 40 4 x 3 x 1½	114.3 x 88.9 x 48.3 4.500 x 3.500 x 1.900	300 2.07	89/51 3.50/2.00	178 7.01	124 4.88	100 3.94	89.5 3.53	1/2x75
100 x 80 x 50 4 x 3 x 2	114.3 x 88.9 x 60.3 4.500 x 3.500 x 2.375	300 2.07	89/64 3.50/2.50	178 7.01	124 4.88	100 3.94	92 3.62	1/2x75
100 x 80 x 65 4 x 3 x 76.1	114.3 x 88.9 x 76.1 4.500 x 3.500 x 3.000	300 2.07	89/70 3.50/3.75	178 7.01	124 4.88	100 3.94	98 3.86	1/2x75
125 x 15 133.0 x ½	133.0 x 21.3 5.250 x 0.825	300 2.07	38 1.50	203 7.99	77 3.03	98 3.86	98 3.86	5/8x85
125 x 20 133.0 x ¾	133.0 x 26.9 5.250 x 1.050	300 2.07	38 1.50	203 7.99	77 3.03	98 3.86	98 3.86	5/8x85
125 x 25 133.0 x 1	133.0 x 33.7 5.250 x 1.315	300 2.07	38 1.50	203 7.99	77 3.03	98 3.86	98 3.86	5/8x85
125 x 32 133.0 x 1.25	133.0 x 42.4 5.250 x 1.660	300 2.07	51 2.00	203 7.99	91 3.58	102 4.01	102 4.01	5/8x85
125 x 50 133.0 x 2	133.0 x 60.3 5.250 x 2.375	300 2.07	64 2.50	203 7.99	110 4.33	105 4.13	105 4.13	5/8x85
125 x 25 139.7 x 1	139.7 x 33.7 5.500 x 1.315	300 2.07	38 1.50	210 8.27	77 3.03	100 3.94	100 3.94	5/8x85
125 x 32 139.7 x 1¼	139.7 x 42.4 5.500 x 1.660	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	105 4.13	5/8x85
125 x 32 x 25 139.7 x 1¼ x 1	139.7 x 42.4 x 33.7 5.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	210 8.27	91 3.58	105 4.13	100 3.94	5/8x85
125 x 40 139.7 x 1½	139.7 x 48.3 5.500 x 1.900	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	105 4.13	5/8x85
125 x 40 x 25 139.7 x 1½ x 1	139.7 x 48.3 x 33.7 5.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	210 8.27	91 3.58	105 4.13	100 3.94	5/8x85
125 x 40 x 32 139.7 x 1½ x 1¼	139.7 x 48.3 x 42.4 5.500 x 1.900 x 1.660	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	105 4.13	5/8x85
125 x 50 139.7 x 2	139.7 x 60.3 5.500 x 2.375	300 2.07	64 2.50	210 8.27	110 4.33	108 4.25	108 4.25	5/8x85
125 x 50 x 25 139.7 x 2 x 1	139.7 x 60.3 x 33.7 5.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	210 8.27	110 4.33	108 4.25	100 3.94	5/8x85
125 x 50 x 32 139.7 x 2 x 1¼	139.7 x 60.3 x 42.4 5.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	210 8.27	110 4.33	108 4.25	105 4.13	5/8x85
125 x 50 x 40 139.7 x 2 x 1½	139.7 x 60.3 x 48.3 5.500 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	210 8.27	110 4.33	108 4.25	105 4.13	5/8x85
125 x 65 139.7 x 76.1	139.7 x 76.1 5.500 x 3.000	300 2.07	70 2.75	210 8.27	110 4.33	115 4.53	115 4.53	5/8x85
125 x 65 x 32 139.7 x 76.1 x 1¼	139.7 x 76.1 x 42.4 5.500 x 3.000 x 1.660	300 2.07	70/51 2.75/2.00	210 8.27	110 4.33	115 4.53	109 4.13	5/8x85
125 x 65 x 40 139.7 x 76.1 x 1½	139.7 x 76.1 x 48.3 5.500 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	210 8.27	110 4.33	115 4.53	105 4.13	5/8x85
125 x 65 x 50 139.7 x 76.1 x 2	139.7 x 76.1 x 60.3 5.500 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	210 8.27	110 4.33	115 4.53	108 4.25	5/8x85
125 x 80 139.7 x 3	139.7 x 88.9 5.500 x 3.500	300 2.07	89 3.50	210 8.27	130 5.12	115 4.53	115 4.53	5/8x85
125 x 100 139.7 x 4	139.7 x 114.3 5.500 x 4.500	300 2.07	114 4.50	210 8.27	153 6.02	118 4.65	118 4.65	5/8x85
150 x 25 159.0 x 1	159.0 x 33.7 6.250 x 1.315	300 2.07	38 1.50	227 8.94	77 3.03	110 4.33	110 4.33	5/8x105



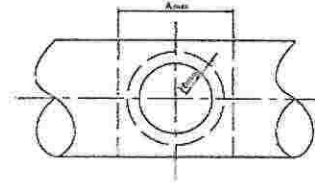
Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0 / +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
150 x 32 159.0 x 1¼	159.0 x 42.4 6.250 x 1.660	300 2.07	51 2.00	227 8.94	92.5 3.64	112 4.41	112 4.41	5/8x105
150 x 32 x 25 159.0 x 1¼ x 1	159.0 x 42.4 x 33.7 6.250 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	227 8.94	77 3.03	110 4.33	110 4.33	5/8x105
150 x 40 159.0 x 1½	159.0 x 48.3 6.250 x 1.900	300 2.07	51 2.00	227 8.94	92.5 3.64	112 4.41	112 4.41	5/8x105
150 x 40 x 25 159.0 x 1½ x 1	159.0 x 48.3 x 33.7 6.250 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	227 8.94	92.5 3.64	112 4.41	110 4.33	5/8x105
150 x 40 x 32 159.0 x 1½ x 1¼	159.0 x 48.3 x 42.4 6.250 x 1.900 x 1.660	300 2.07	51 2.00	227 8.94	92.5 3.64	112 4.41	112 4.41	5/8x105
150 x 50 159.0 x 2	159.0 x 60.3 6.250 x 2.375	300 2.07	64 2.50	227 8.94	110 4.33	116.5 4.59	116.5 4.59	5/8x105
150 x 50 x 25 159.0 x 2 x 1	159.0 x 60.3 x 33.7 6.250 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	227 8.94	110 4.33	116.5 4.59	110 4.33	5/8x105
150 x 50 x 32 159.0 x 2 x 1¼	159.0 x 60.3 x 42.4 6.250 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	227 8.94	110 4.33	116.5 4.59	112 4.41	5/8x105
150 x 50 x 40 159.0 x 2 x 1½	159.0 x 60.3 x 48.3 6.250 x 2.375 x 2.375	300 2.07	64/51 2.50/2.00	227 8.94	110 4.33	116.5 4.59	112 4.41	5/8x105
150 x 65 159.0 x 76.1	159.0 x 76.1 6.250 x 3.000	300 2.07	70 2.75	227 8.94	110 4.33	121.5 4.78	121.5 4.78	5/8x105
150 x 80 159.0 x 3	159.0 x 88.9 6.250 x 3.500	300 2.07	89 3.50	227 8.94	130 5.12	123.5 4.86	123.5 4.86	5/8x105
150 x 80 x 40 159.0 x 3 x 1½	159.0 x 88.9 x 48.3 6.250 x 3.500 x 2.375	300 2.07	89/51 3.50/2.00	227 8.94	130 5.12	123.5 4.86	112 4.41	5/8x105
150 x 15 165.1 x ½	165.1 x 21.3 6.500 x 0.825	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8x105
125 x 20 165.1 x ¾	165.1 x 26.9 6.500 x 1.050	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8x105
150 x 25 165.1 x 1	165.1 x 33.7 6.500 x 1.315	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8x105
150 x 32 165.1 x 1¼	165.1 x 42.4 6.500 x 1.660	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	115 4.53	5/8x105
150 x 32 x 25 165.1 x 1¼ x 1	165.1 x 42.4 x 33.7 6.500 x 1.660 x 1.315	300 2.07	51/38 2.00/1.50	235 9.25	92.5 3.64	115 4.53	115 4.53	5/8x105
150 x 40 165.1 x 1½	165.1 x 48.3 6.500 x 1.900	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	115 4.53	5/8x105
150 x 40 x 25 165.1 x 1½ x 1	165.1 x 48.3 x 33.7 6.500 x 1.900 x 1.315	300 2.07	51/38 2.00/1.50	235 9.25	92.5 3.64	115 4.53	115 4.53	5/8x105
150 x 40 x 32 165.1 x 1½ x 1¼	165.1 x 48.3 x 42.4 6.500 x 1.900 x 1.660	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	115 4.53	5/8x105
150 x 50 165.1 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	64 2.50	235 9.25	110 4.33	120 4.72	120 4.72	5/8x105
150 x 50 x 25 165.1 x 2 x 1	165.1 x 60.3 x 33.7 6.500 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	235 9.25	110 4.33	120 4.72	115 4.53	5/8x105
150 x 50 x 32 165.1 x 2 x 1¼	165.1 x 60.3 x 42.4 6.500 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	235 9.25	110 4.33	120 4.72	115 4.53	5/8x105
150 x 50 x 40 165.1 x 2 x 1½	165.1 x 60.3 x 48.3 6.500 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	235 9.25	110 4.33	120 4.72	115 4.53	5/8x105
150 x 65 165.1 x 76.1	165.1 x 76.1 6.500 x 3.000	300 2.07	70 2.75	235 9.25	110 4.33	125 4.92	125 4.92	5/8x105
150 x 65 x 25 165.1 x 76.1 x 1	165.1 x 76.1 x 33.7 6.500 x 3.000 x 1.315	300 2.07	70/38 2.75/1.50	235 9.25	110 4.33	125 4.92	115 4.53	5/8x105
150 x 65 x 32 165.1 x 76.1 x 1¼	165.1 x 76.1 x 42.4 6.500 x 3.000 x 1.660	300 2.07	70/51 2.75/2.00	235 9.25	110 4.33	125 4.92	115 4.53	5/8x105
150 x 65 x 40 165.1 x 76.1 x 1½	165.1 x 76.1 x 48.3 6.500 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	235 9.25	110 4.33	125 4.92	115 4.53	5/8x105



Nominal Size mm / in	Pipe O.D. mm / in	Working Pressure PSI/MPa	Hole Dia mm / in +1.6,0/ +0.063,0	Dimensions mm / in				Bolt Size
				A	B	C	D	
150 x 65 x 50 165.1 x 76.1 x 2	165.1 x 76.1 x 60.3 6.500 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	235 9.25	110 4.33	125 4.92	120 4.72	5/8x105
150 x 80 165.1 x 3	165.1 x 88.9 6.500 x 3.500	300 2.07	89 3.50	235 9.25	130 5.12	125 4.92	125 4.92	
150 x 80 x 25 165.1 x 3 x 1	165.1 x 88.9 x 33.7 6.500 x 3.500 x 1.315	300 2.07	89/38 3.50/1.50	235 9.25	130 5.12	125 4.92	115 4.53	5/8x105
150 x 80 x 32 165.1 x 3 x 1 1/4	165.1 x 88.9 x 42.4 6.500 x 3.500 x 1.660	300 2.07	89/51 3.50/2.00	235 9.25	130 5.12	125 4.92	115 4.53	5/8x105
150 x 80 x 40 165.1 x 3 x 1 1/2	165.1 x 88.9 x 48.3 6.500 x 3.500 x 1.900	300 2.07	89/51 3.50/2.00	235 9.25	130 5.12	125 4.92	115 4.53	5/8x105
150 x 80 x 50 165.1 x 3 x 2	165.1 x 88.9 x 60.3 6.500 x 3.500 x 2.375	300 2.07	89/64 3.50/2.50	235 9.25	130 5.12	125 4.92	120 4.72	5/8x105
150x80x65 165.1x3x76.1	165.1 x 88.9 x 76.1 6.500 x 3.500 x 3.000	300 2.07	89/70 3.50/2.75	235 9.25	130 5.12	125 4.92	125 4.92	5/8x105
150 x 100 165.1 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	114 4.50	240 9.45	155 6.10	130 5.12	130 5.12	5/8x105
150 x 100 x 32 165.1 x 4 x 1 1/4	165.1 x 114.3 x 42.4 6.500 x 4.500 x 1.660	300 2.07	114/51 4.50/2.00	240 9.45	155 6.10	130 5.12	115 4.53	5/8x105
150 x 100 x 40 165.1 x 4 x 1 1/2	165.1 x 114.3 x 48.3 6.500 x 4.500 x 1.900	300 2.07	114/51 4.50/2.00	240 9.45	155 6.10	130 5.12	115 4.53	5/8x105
100 x 80 x 50 4 x 3 x 2	165.1 x 114.3 x 60.3 6.500 x 4.500 x 2.375	300 2.07	114/64 4.50/2.50	240 9.45	155 6.10	130 5.12	120 4.72	5/8x105
150x100x65 165.1x4x76.1	114.3 x 88.9 x 76.1 4.500 x 3.500 x 3.000	300 2.07	114/70 4.50/2.75	240 9.45	155 6.10	130 5.12	125 4.92	5/8x105
150 x 100 x 80 165.1 x 4 x 3	165.1 x 114.3 x 88.9 6.500 x 4.500 x 3.500	300 2.07	114/89 4.50/3.50	240 9.45	155 6.10	130 5.12	115 4.53	5/8x105
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	300 2.07	64 2.50	240 9.45	110 4.33	121 4.76	121 4.76	5/8x105
150 x 65 6 x 76.1	168.3 x 76.1 6.625 x 3.000	300 2.07	70 2.75	240 9.45	110 4.33	127 5.00	127 5.00	5/8x105
200 x 40 8 x 1/2	219.1 x 48.3 8.625 x 1.900	300 2.07	51 2.00	300 11.81	93 3.66	143 5.63	143 5.63	5/8x105
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	300 2.07	64 2.50	300 11.81	115 4.53	149 5.87	149 5.87	5/8x105
200 x 50 x 25 8 x 2 x 1	219.1 x 60.3 x 33.7 8.625 x 2.375 x 1.315	300 2.07	64/38 2.50/1.50	300 11.81	115 4.53	149 5.87	140 5.51	5/8x105
200 x 50 x 32 8 x 2 x 1 1/4	219.1 x 60.3 x 42.4 8.625 x 2.375 x 1.660	300 2.07	64/51 2.50/2.00	300 11.81	115 4.53	149 5.87	143 5.63	5/8x105
200 x 50 x 40 8 x 2 x 1 1/2	219.1 x 60.3 x 48.3 8.625 x 2.375 x 1.900	300 2.07	64/51 2.50/2.00	300 11.81	115 4.53	149 5.87	149 5.87	5/8x105
200 x 65 8 x 76.1	219.1 x 76.1 8.625 x 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	155 6.10	5/8x105
200 x 65 x 40 8 x 76.1 x 1 1/2	219.1 x 76.1 x 48.3 8.625 x 3.000 x 1.900	300 2.07	70/51 2.75/2.00	300 11.81	115 4.53	155 6.10	149 5.87	5/8x105
200 x 65 x 50 8 x 76.1 x 2	219.1 x 76.1 x 60.3 8.625 x 3.000 x 2.375	300 2.07	70/64 2.75/2.50	300 11.81	115 4.53	155 6.10	149 5.87	5/8x105
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	155 6.10	5/8x105
200 x 80 x 65 8 x 3 x 76.1	219.1 x 88.9 x 76.1 8.625 x 3.500 x 3.000	300 2.07	89/70 3.50/2.75	300 11.81	133.5 5.25	155 6.10	155 6.10	5/8x105
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	300 2.07	114 4.50	300 11.81	159.5 6.29	160 6.30	160 6.30	5/8x105
200 x 100 x 65 8 x 4 x 76.1	219.1 x 114.3 x 76.1 8.625 x 4.500 x 3.000	300 2.07	114/70 4.50/2.75	300 11.81	159.5 6.29	160 6.30	155 6.10	5/8x105
200 x 100 x 80 8 x 4 x 3	219.1 x 114.3 x 88.9 8.625 x 4.500 x 3.500	300 2.07	114/89 4.50/3.50	300 11.81	159.5 6.29	160 6.30	155 6.10	5/8x105

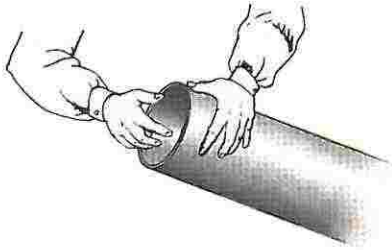


HOLE DIAMETER OF PIPE

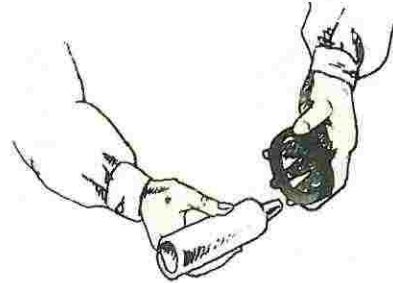


Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0 +0.13,0 mm/in	Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0 +0.13,0 mm/in	Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0 +0.13,0 mm/in	
50 2"/60.3	15 1/2	38 1.50 A89	100 108.0 4"/114.3	15 1/2	38 1.50 A89	150 159.0 165.1 6"/168.3	15 1/2	38 1.50 A89	
	20 3/4			20 3/4			20 3/4		
	25 1			25 1			25 1		
	32 1 1/4	32 1 1/4		32 1 1/4	45 1.75 A102				
	40 1 1/2	40 1 1/2		40 1 1/2	21 2.00 A102				
65 2 1/2"/73.0 76.1	15 1/2	38 1.50 A89	125 133.0 139.7 5"/141.3	50 2	64 2.50 A114	200 219.1 8"/219.1	50 2	64 2.50 A114	
	20 3/4			65 2 1/2"/76.1	70 2.75 A120		65 2 1/2"/76.1	70 2.75 A120	
	25 1			80 3	89 3.50 A140		80 3	89 3.50 A140	
	32 1 1/4	51 2.00 A102		15 1/2	38 1.50 A89		100 108.0/4	114 4.50 A165	
	40 1 1/2			20 3/4			25 1	25 1	38 1.50 A89
80 3"/88.9	15 1/2	38 1.50 A89	125 133.0 139.7 5"/141.3	32 1 1/4	51 2.00 A102	200 219.1 8"/219.1	32 1 1/4	51 2.00 A102	
	20 3/4			40 1 1/2			40 1 1/2		51 2.00 A102
	25 1			50 2			64 2.50 A114		40 1 1/2
	32 1 1/4	51 2.00 A102		65 2 1/2"/76.1	70 2.75 A120		50 2	64 2.50 A114	
	40 1 1/2			80 3	89 3.50 A140		65 2 1/2"/76.1	70 2.75 A120	
	50 2	80 3					89 3.50 A140	80 3	89 3.50 A140
							100 108.0/4	114 4.50 A165	

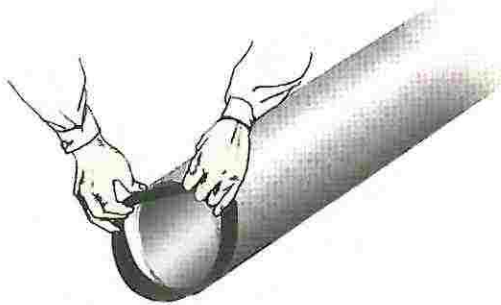
INSTALLTION OF COUPLING



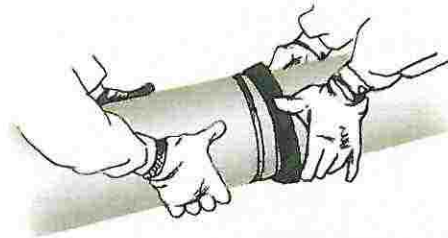
1. Prior to following application, be sure that both pipe ends are grooved in accordance with the specifications, improper grooving can result in ineffective sealing of couplings.



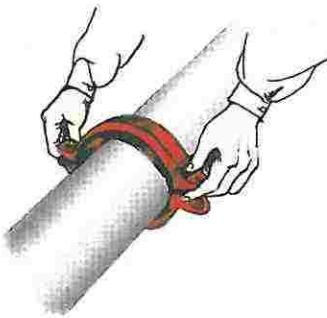
2. Brush lubricant on pipe ends around entire pipe circumference, and brush lubricant on rubber gasket lips and exterior of gasket.



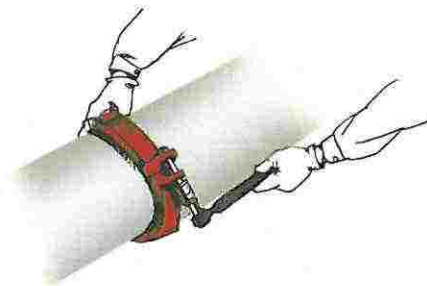
3. Slip the gasket completely over one pipe end.



4. Align and bring the two pipe ends together and slide the gasket into position centered between the groove on each pipe end.



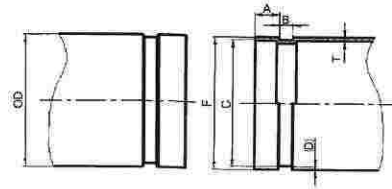
5. Assemble the housing, being sure the keys drop securely into the grooves. Squeeze housing tight with hands to center the gasket and seat the housing.



6. Insert the bolts and run the nuts up finger tight. Take up on the nut uniformly until housing bolt pads are firmly together-metal to metal.

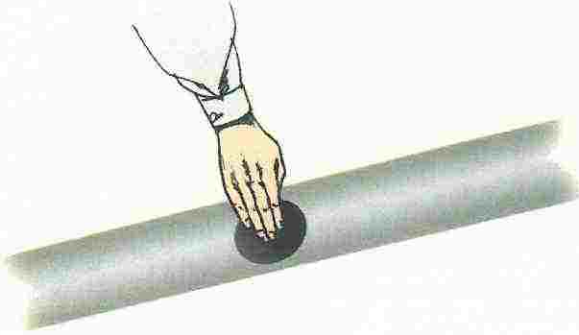


ROLL GROOVE DIMENSIONS

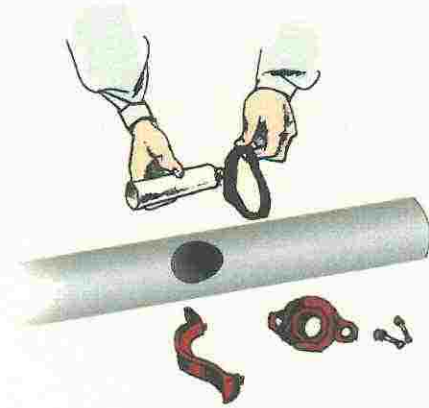


Nominal Size mm/in	Pipe O.D.			Gasket seat A ±0.76/±0.03 mm/in	Groove Width B ±0.76/±0.03 mm/in	Groove Dia C		Groove Depth D(ref) mm/in	Max Allow Flare Dia F mm/in	Min. Allow wall thickness T mm/in
	Basic mm/in	Tolerance mm/in				Basic mm/in	Tolerance mm/in			
25	33.7	+0.41	-0.68	15.88	7.14	30.23	-0.38	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	-0.60	15.88	7.14	38.99	-0.38	1.60	43.3	1.8
1¼	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
1½	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
2½	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
2½	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

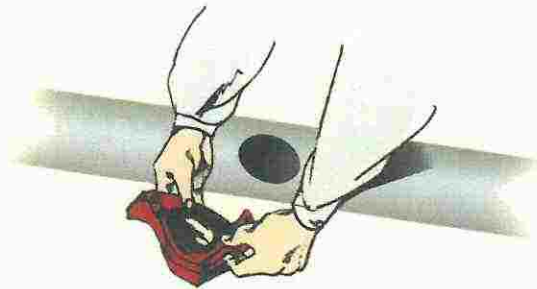
INSTALLTION OF MECHANICAL TEE



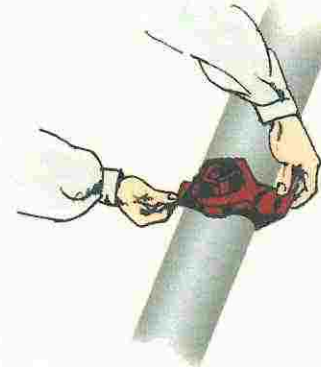
1. Check burr on the hole of pipe.



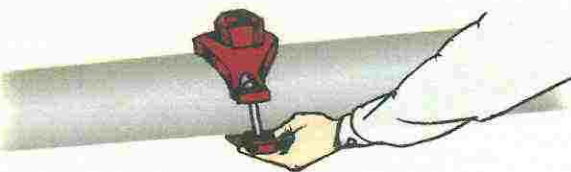
2. Brush lubricant on rubber gasket.



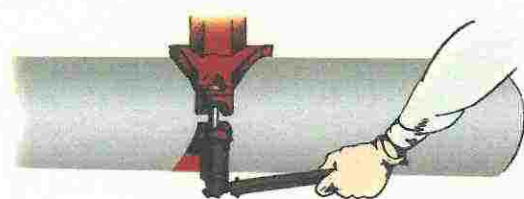
3. Put rubber gasket into groove of the mechanical tee.



4. Make sure the fitting is properly located about the hole.



5. Align the other part of the fitting.



6. Fasten the nuts tight.



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