

COUPLINGS

STAINLESS STEEL SYSTEM

The Grinnell® Stainless Steel System is designed for joining 2" to 12" (54,0mm to 206,4mm) stainless steel piping, schedules 5, 10, and 40.

The Figure 472 coupling patented Universal Tongue and Groove design makes for a trouble free installation and allows the coupling housing to grip along the full 360° of circumference of the pipe. This results in a more rigid and stronger connection. Coupling housings have gripping teeth in sizes 2" to 4" (54,0mm to 101,6 mm) that makes the Figure 472 perfectly suited for installations where the likelihood of rotation is greatest.

The Grinnell Stainless Steel Couplings are made of 316L and are generally compatible with grade 304 stainless steel material.

MATERIAL SPECIFICATIONS

Stainless Steel Housing Specifications

- Type 316L, ASTM A-743/A-743M – Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion resistant, for General Application Grade CR-8M
- Tensile Strength, minimum psi – 70,000 (Mpa-485)
- Yield Strength, minimum psi – 30,000 (Mpa-205)
- Elongation in 2" minimum 30%

Bolt / Nut Specifications

Stainless Steel bolts are metric track head bolts conforming to ASTM A-193M Class 2, Type 316 Grade B8M.

Class 2 Stainless Steel nuts are heavy hex nuts conforming to ASTM A-194M, Type 316, Grade 8M.

Gasket Specifications

Grade "E" EPDM gaskets have a green color code identification and conform to ASTM D-2000 for service temperatures from -30°F (-34°C) to 230°F (110°C). They are recommended for hot water not to exceed 230°F (110°C) plus a variety of dilute acids, oil free air and many chemical services. They are not recommended for petroleum services.

Grade "T" Nitrile gaskets have an orange color code identification and conform to ASTM D-2000 for service temperatures from -20°F (-29°C) to 180°F (82°C). They are recommended for petroleum products, vegetable oils, mineral oils and air with oil vapors.

Grade "O" Fluoroelastomer gaskets have a blue color code and conform to ASTM D-2000. They are recommended for oxidizing acids, petroleum products, hydraulic fluids, lubricants, halogenated hydrocarbons.

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Figure 472 Stainless Steel Rigid Coupling



Tech Data: G560

Nominal Size Inches mm	Pipe OD Inches mm	Max. Pressures			Max. End Load Lbs. kN	Max. End Gap Inches mm	Nominal Dimension			Coupling Bolts		Approx. Weight Lbs. Kg
		Sch 5 psi Bar	Sch 10 psi Bar	Sch 40 psi Bar			A Inches mm	B Inches mm	C Inches mm	Qty.	Size mm	
1 1/4 32	1.660 42.4	200 14	300 21	600 41	649.7 2.89	0.06 1.5	2.76 70	4.37 111	1.81 46	2	M10 x 57	1.1 0.5
1 1/2 40	1.900 48.3	200 14	300 21	600 41	852.0 3.79	0.08 2.0	2.99 76	4.61 117	1.81 46	2	M10 x 57	1.1 0.5
2 50	2.375 60.3	200 14	300 21	600 41	1,328.6 5.91	0.13 3.3	3.43 87	5.12 130	1.89 48	2	M10 x 57	1.5 0.7
2 1/2 65	2.875 73.0	200 14	300 21	600 41	1,949.0 8.67	0.13 3.3	3.90 99	5.63 143	1.89 48	2	M10 x 57	2.4 1.1
3 80	3.500 88.9	200 14	300 21	600 41	2,886.4 12.84	0.13 3.3	4.65 118	6.26 159	1.89 48	2	M12 x 76	2.6 1.2
4 100	4.500 114.3	200 14	300 21	600 41	4,772.5 21.23	0.19 4.8	5.83 148	7.52 191	1.97 50	2	M12 x 76	3.5 1.6
5 125	5.563 141.3	200 14	300 21	600 41	7,292.5 32.44	0.19 4.8	7.09 180	9.72 247	2.05 52	2	M16 x 83	7.5 3.4
6 150	6.625 168.3	200 14	300 21	600 41	10,340.8 46.00	0.19 4.8	8.11 206	10.55 268	2.13 54	2	M16 x 83	7.5 3.4
8 200	8.625 219.1	200 14	300 21	600 41	17,527.7 77.97	0.19 4.8	10.55 268	13.54 344	2.64 67	2	M20 x 121	18.1 8.2
10 250	10.750 273.0	200 14	300 21	600 41	27,227.8 121.12	0.13 3.3	12.83 326	16.42 417	2.64 67	2	M24 x 165	24.7 11.2
12 300	12.750 323.9	— —	— —	— —	43,696.6 194.38	0.13 3.3	15.39 391	18.86 479	2.64 67	2	M24 x 165	42.1 19.1

The Fig. 472 Stainless Steel heavy Duty Rigid Coupling does not provide compensation for pipe system expansion and/or contraction associated with pipe system changes.

Maximum pressure and end load are total from all loads based on standard weight steel pipe. Pressure ratings and end loads may differ on pipe materials and/or wall thickness. Contact Tyco Fire and Building Products for details.

Maximum end gap and deflection is for cut grooved standard weight pipe. Values for roll grooved will be 1/2 that of cut grooved.

Please refer to general Notes on page 14.

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Figure 405 Stainless Steel Flexible Coupling



Tech Data: G565

Nominal Size Inches mm	Pipe OD Inches mm	Max. Pressures			Max. End Load Lbs. kN	Max. End Gap Inches mm	Deflection		Nominal Dimension			Coupling Bolts		Approx. Weight Lbs. Kg
		Sch. 5 psi Bar	Sch. 10 psi Bar	Sch. 40 psi Bar			Degrees per Coupling	Inches/ Foot mm/m	A Inches mm	B Inches mm	C Inches mm	Qty.	Size mm	
1 1/4 32	1.660 42.4	325 22	500 34	750 52	658.7 2.93	0.13 3.3	4...19'	0.90 75.0	2.56 65	4.17 106	1.81 46	2	M10 x 57	1.5 0.7
1 1/2 40	1.900 48.3	325 22	500 34	750 52	849.7 3.78	0.13 3.3	3...46'	0.79 65.8	2.76 70	4.45 113	1.81 46	2	M10 x 57	1.5 0.7
2 50	2.375 60.3	225 16	350 24	500 34	1,328.6 5.91	0.13 3.3	3...01'	0.63 52.5	3.27 83	4.88 124	1.89 48	2	M10 x 57	1.8 0.8
2 1/2 65	2.875 73.0	225 16.0	350 24	500 34	1,946.8 8.66	0.13 3.3	2...29'	0.52 43.3	3.70 94	5.51 140	1.89 48	2	M10 x 57	2.0 0.9
3 80	3.500 88.9	225 16	350 24	500 34	2,884.2 12.83	0.13 3.3	2...03'	0.43 35.8	4.37 111	6.50 165	1.89 48	2	M12 x 76	3.1 1.4
4 100	4.500 114.3	200 14	300 21	325 22	4,768.0 21.21	0.25 6.4	3...11'	0.67 55.8	5.71 145	7.76 197	2.05 52	2	M12 x 76	4.0 1.8
5 125	5.563 141.3	125 9	200 14	200 14	7,737.6 34.42	0.25 6.4	2...35'	0.54 45.0	6.89 175	9.76 248	2.05 52	2	M16 x 83	7.1 3.2
6 150	6.625 168.3	125 9	200 14	200 14	10,336.3 45.98	0.25 6.4	2...10'	0.45 37.5	7.95 202	10.67 271	2.05 52	2	M16 x 83	7.1 3.2
8 200	8.625 219.1	50 3	75 5	200 14	17,516.4 77.92	0.25 6.4	1...40'	0.35 29.2	10.20 259	13.54 344	2.52 64	2	M20 x 121	14.6 6.6

Maximum pressure and end load are total from all loads based on standard weight steel pipe. Pressure ratings and end loads may differ on pipe materials and/or wall thickness. Contact Tyco Fire and Building Products for details.

Maximum available gap between pipe ends, minimum gap = 0.

Maximum end gap is for cut grooved standard weight pipe. Values for roll grooved will be 1/2 that of cut grooved.

Please refer to general Notes on page 14.

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Figure 410 & 401 Stainless Steel Elbow

Nominal Size Inches <i>mm</i>	Pipe O.D. Inches <i>mm</i>	Fig. 410 90... Elbow		Fig. 401 45... Elbow	
		C to E Inches <i>mm</i>	Approx. Weight Lbs. <i>Kg.</i>	C to E Inches <i>mm</i>	Approx. Weight Lbs. <i>Kg.</i>
1 25	1.315 33.4	3.50 88.9	— —	2.50 63.5	.6 .3
1¼ 32	1.660 42.4	3.88 98.4	.9 .4	2.50 63.5	.6 .3
1½ 40	1.900 48.3	4.25 108.0	1.3 .6	2.50 63.5	.8 .4
2 50	2.375 60.3	4.38 111.1	2.0 .9	2.75 69.9	.9 .4
2½ 65	2.875 73.0	5.75 146.1	2.8 1.3	3.0 76.2	1.0 .5
3 80	3.500 88.9	5.88 149.2	3.8 1.7	3.38 85.7	2.1 1.0
4 100	4.500 114.3	7.50 190.5	5.7 2.6	4.00 101.6	3.6 1.6
6 150	6.625 168.3	10.75 273.1	14.4 6.5	5.50 139.7	8.4 3.8
8 200	8.625 219.1	15.00 381.0	29.3 13.3	7.25 184.2	16.5 7.5
10 250	10.750 273.0	18.00 457.2	41.8 19.0	8.50 215.9	21.0 9.5
12 300	12.750 323.9	21.00 533.4	46.5 21.1	10.00 254.0	23.0 10.4

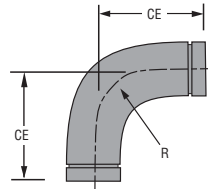


FIGURE 410
90... ELBOW
FABRICATED,
LONG RADIUS
FULL FLOW FITTINGS

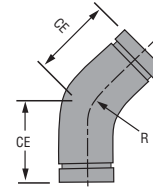


FIGURE 401
45... ELBOW
FABRICATED,
LONG RADIUS
FULL FLOW FITTINGS

Figure 419 Tee

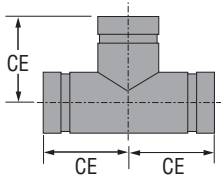


FIGURE 419 TEE
SEGMENT WELDED, FULL FLOW

Nominal Size Inches <i>mm</i>	Pipe O.D. Inches <i>mm</i>	C to E Inches <i>mm</i>	Approx. Weight Lbs. <i>Kg.</i>
1 25	1.315 33.4	2.75 69.8	1.3 0.6
1¼ 32	1.660 42.4	2.75 69.8	1.5 0.7
1½ 40	1.900 48.3	3.25 82.5	2.1 .9
2 50	2.375 60.3	3.75 95.2	2.8 1.3
2½ 65	2.875 73.0	4.25 107.9	3.9 1.8
3 80	3.500 88.9	5.00 127.0	7.8 3.2
4 100	4.500 114.3	6.50 165.1	15.2 6.9
6 150	6.625 168.3	7.75 196.8	18.1 8.2
8 200	8.625 219.1	9.00 228.6	35.6 16.2
10 250	10.750 273.0	10.00 254.0	51.4 23.4

Figure 460 End Cap



FIGURE 460
END CAP

Nominal Size Inches <i>mm</i>	Pipe O.D. Inches <i>mm</i>	E to E Inches <i>mm</i>	Approx. Weight Lbs. <i>Kg.</i>
1 25	1.315 33.4	1.63 41.3	0.23 0.1
1¼ 32	1.660 42.4	1.63 41.3	0.3 0.1
1½ 40	1.900 48.3	1.63 41.3	0.4 0.2
2 50	2.375 60.3	1.63 41.3	0.5 0.2
2½ 65	2.875 73.0	1.75 44.5	0.7 0.3
3 80	3.500 88.9	1.75 44.5	1.0 0.4
4 100	4.500 114.3	1.75 44.5	1.6 0.7
6 150	6.625 168.3	1.88 47.6	3.7 1.7
8 200	8.625 219.1	4.00 101.6	8.0 3.6
10 250	10.750 273.0	4.00 101.6	11.5 5.2
12 300	12.750 323.9	4.00 101.6	15.1 6.8

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Figure 450 Concentric Reducer

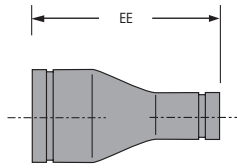


FIGURE 450
CONCENTRIC REDUCER
FABRICATED FULL FLOW

Nominal Size Inches mm	Pipe O.D. Inches mm	E to E Inches mm	Approx. Weight Lbs. Kg.
1½ x 1¼ 40 x 32	1.900 x 1.660 48.3 x 42.4	3.38 85.9	.55 .25
2 x 1 50 x 25	2.375 x 1.315 60.33 x 33.7	3.38 85.9	.57 .25
2 x 1½ 50 x 40	2.375 x 1.900 60.3 x 48.3	3.38 85.9	.66 .28
2½ x 2 65 x 50	2.875 x 2.375 73.0 x 60.3	5.00 127.0	1.28 .58
3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	5.00 127.0	1.28 .58
3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	5.00 127.0	1.45 .65
3 x 2½ 80 x 65	3.500 x 2.875 88.9 x 73.0	5.00 127.0	1.64 .74
4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	6.00 152.4	2.67 1.21
4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	6.00 152.4	2.78 1.26
4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	6.00 152.4	2.92 1.33
5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	7.00 177.8	4.17 1.89
5 x 4 125 x 100	5.563 x 4.500 141.3 x 114.3	7.00 177.8	4.26 1.94
6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	9.00 228.6	4.92 2.24
6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	9.00 228.6	5.06 2.3
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	9.00 228.6	5.72 2.6
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	9.00 228.6	6.07 2.76
8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	9.50 241.3	9.98 4.54
8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	9.50 241.3	10.30 4.68
8 x 6 200 x 150	8.625 x 6.625 219.1 x 168.3	9.50 241.3	10.64 4.84
10 x 4 250 x 100	10.750 x 4.500 273.0 x 114.3	10.00 254.0	15.14 6.88
10 x 6 250 x 150	10.750 x 6.625 273.0 x 168.3	10.00 254.0	15.75 7.15
10 x 8 250 x 200	10.750 x 8.625 273.0 x 219.1	10.00 254.0	15.77 7.17
12 x 6 300 x 150	12.750 x 6.625 323.9 x 168.3	10.50 266.7	22.38 10.17
12 x 8 300 x 200	12.750 x 8.625 323.9 x 219.1	10.50 266.7	23.00 10.45
12 x 10 300 x 250	12.750 x 10.750 323.9 x 273.0	10.50 266.7	23.69 10.77

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Figure 451 Eccentric Reducer

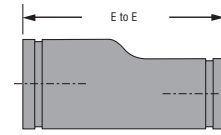


FIGURE 451
ECCENTRIC REDUCER
FABRICATED FULL FLOW

Nominal Size Inches mm	Pipe O.D. Inches mm	E to E Inches mm	Approx. Weight Lbs. Kg.
1½ x 1¼ 40 x 32	1.900 x 1.660 48.3 x 42.4	8.50 215.9	1.5 .7
2 x 1 50 x 25	2.375 x 1.315 60.33 x 33.7	9.00 228.6	2.0 .9
2 x 1½ 50 x 40	2.375 x 1.900 60.3 x 48.3	9.00 228.6	2.0 .9
2½ x 2 65 x 50	2.875 x 2.375 73.0 x 60.3	9.50 241.3	2.8 1.3
3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	9.50 241.3	3.2 1.5
3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	9.50 241.3	3.4 1.5
3 x 2½ 80 x 65	3.500 x 2.875 88.9 x 73.0	9.50 241.3	3.5 1.6
4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	10.00 254	4.6 2.7
4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	10.00 254	4.7 2.1
4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	10.00 254	4.7 2.1
5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	11.00 279.4	6.1 2.8
5 x 4 125 x 100	5.563 x 4.500 141.3 x 114.3	11.00 279.4	6.1 2.8
6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	11.50 292.1	8.0 3.6
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	11.50 292.1	8.7 4.0
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	11.50 292.1	9.1 4.2
8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	12.00 304.8	13.2 6.0
8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	12.00 304.8	13.4 6.1
8 x 6 200 x 150	8.625 x 6.625 219.1 x 168.3	12.00 304.8	13.6 6.2
10 x 6 250 x 150	10.750 x 6.625 273.0 x 168.3	13.00 330.2	20.4 9.3
10 x 8 250 x 200	10.750 x 8.625 273.0 x 219.1	13.00 330.2	20.9 9.5
12 x 6 300 x 150	12.750 x 6.625 323.9 x 168.3	14.00 355.6	20.6 9.3
12 x 8 300 x 200	12.750 x 8.625 323.9 x 219.1	14.00 355.6	29.1 13.2
12 x 10 300 x 250	12.750 x 10.750 323.9 x 273.0	14.00 355.6	29.9 13.6

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Figure 421 Stainless Steel Reducing Tee

Nominal Size Inches mm	Pipe O.D. Inches mm	C to E Inches mm	Approx. Weight Lbs. Kg.
1½ x 1½ x ¾ 40 x 40 x 20	1.900 x 1.900 x 1.050 48.3 x 48.3 x 26.7	2.75 69.9	1.3 0.6
1½ x 1½ x 1 40 x 40 x 25	1.900 x 1.900 x 1.315 48.3 x 48.3 x 33.4	2.75 69.9	1.3 0.6
1½ x 1½ x 1¼ 40 x 40 x 32	1.900 x 1.900 x 1.660 48.3 x 48.3 x 42.4	2.75 69.9	1.3 0.6
2 x 2 x ¾ 50 x 50 x 20	2.375 x 2.375 x 1.050 60.3 x 60.3 x 26.7	3.25 82.6	1.8 0.8
2 x 2 x 1 50 x 50 x 25	2.375 x 2.375 x 1.315 60.3 x 60.3 x 33.4	3.25 82.6	1.8 0.8
2 x 2 x 1¼ 50 x 50 x 32	2.375 x 2.375 x 1.660 60.3 x 60.3 x 42.4	3.25 82.6	1.8 0.8
2 x 2 x 1½ 50 x 50 x 40	2.375 x 2.375 x 1.900 60.3 x 60.3 x 48.3	3.25 82.6	1.9 0.9
2½ x 2½ x 1 65 x 65 x 25	2.875 x 2.875 x 1.660 73.0 x 73.0 x 42.4	3.75 95.3	2.3 1.0
2½ x 2½ x 1½ 65 x 65 x 40	2.875 x 2.875 x 1.900 73.0 x 73.0 x 48.3	3.75 95.3	2.4 1.1
2½ x 2½ x 2 65 x 65 x 50	2.875 x 2.875 x 2.375 73.0 x 73.0 x 60.3	3.75 95.3	2.4 1.1
3 x 3 x ¾ 80 x 80 x 20	3.500 x 3.500 x 1.050 88.9 x 88.9 x 26.7	4.25 108.0	3.2 1.5
3 x 3 x 1 80 x 80 x 25	3.500 x 3.500 x 1.315 88.9 x 88.9 x 33.4	4.25 108.0	3.2 1.5
3 x 3 x 1¼ 80 x 80 x 32	3.500 x 3.500 x 1.660 88.9 x 88.9 x 42.2	4.25 108.0	3.2 1.5
3 x 3 x 1½ 80 x 80 x 40	3.500 x 3.500 x 1.900 88.9 x 88.9 x 48.3	4.25 108.0	3.2 1.5
3 x 3 x 2 80 x 80 x 50	3.500 x 3.500 x 2.375 88.9 x 88.9 x 60.3	4.25 108.0	3.3 1.5
3 x 3 x 2½ 80 x 80 x 65	3.500 x 3.500 x 2.875 88.9 x 88.9 x 73.0	4.25 108.0	3.5 1.6
4 x 4 x 2 100 x 100 x 50	4.500 x 4.500 x 2.375 114.3 x 114.3 x 60.3	5.00 127.0	5.6 2.5
4 x 4 x 2½ 100 x 100 x 65	4.500 x 4.500 x 2.875 114.3 x 114.3 x 73.0	5.00 127.0	6.2 2.8
4 x 4 x 3 100 x 100 x 80	4.500 x 4.500 x 3.500 114.3 x 114.3 x 88.9	5.00 127.0	6.3 2.9
6 x 6 x 3 150 x 150 x 80	6.625 x 6.625 x 3.500 168.3 x 168.3 x 88.9	6.50 165.1	12.7 5.8
6 x 6 x 4 150 x 150 x 100	6.625 x 6.625 x 4.500 168.3 x 168.3 x 114.3	6.50 165.1	12.7 5.8
8 x 8 x 4 200 x 200 x 100	8.625 x 8.625 x 4.500 219.1 x 219.1 x 114.1	7.75 196.9	15.7 7.1
8 x 8 x 6 200 x 200 x 150	8.625 x 8.625 x 6.625 219.1 x 219.1 x 168.3	7.75 196.9	16.5 7.5
10 x 10 x 6 250 x 250 x 150	10.750 x 10.750 x 6.625 273.0 x 273.0 x 168.3	9.00 228.6	24.8 11.2
10 x 10 x 8 250 x 250 x 200	10.750 x 10.750 x 8.625 273.0 x 273.0 x 219.1	9.00 228.6	29.1 13.2
12 x 12 x 8 300 x 300 x 200	12.750 x 12.750 x 8.625 323.9 x 323.9 x 219.1	10.00 254.0	52.6 23.9
12 x 12 x 10 300 x 300 x 250	12.750 x 12.750 x 10.750 323.9 x 323.9 x 273.0	10.00 254.0	55.8 25.3

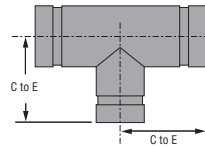


FIGURE 421
REDUCING TEE
SEGMENT WELDED

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Figure 441 Flange Adapter

Groove x Class 150 Flange			
Nominal Size Inches <i>mm</i>	Pipe O.D. Inches <i>mm</i>	E to E Inches <i>mm</i>	Approx. Weight Lbs. <i>Kg.</i>
1 25	1.315 33.4	3.00 76.2	2.5 1.1
1¼ 32	1.660 42.2	4.00 101.6	3.8 1.7
1½ 40	1.900 48.3	4.00 101.6	4.1 1.9
2 50	2.375 60.3	4.00 101.6	6.0 2.7
2½ 65	2.875 73.0	4.00 101.6	9.2 4.2
3 80	3.500 88.9	4.00 101.6	10.4 4.7
4 100	4.500 114.3	6.00 152.4	19.1 8.7
5 125	5.563 141.3	6.00 152.4	23.0 10.4
6 150	6.625 168.3	6.00 152.4	29.5 13.4
8 200	8.625 219.1	6.00 152.4	43.5 19.7
10 250	10.750 273.1	8.00 203.2	68.2 30.9
12 300	12.750 323.9	8.00 203.2	96.1 43.6

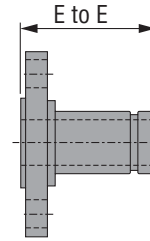


FIGURE 441
FLANGE ADAPTER

Tech Data: G568

STAINLESS
STEEL