

# GR8LOK Couplings & Fittings



**GR8LOK**  
An ASC Engineered Solution

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## Flexible Coupling Fig. 8000



### Description

The 8000 Coupling is a flexible light weight style which is ideal for fire protection services and other services where low pressure and ambient temperature conditions are expected.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.

#### GASKET TYPE:

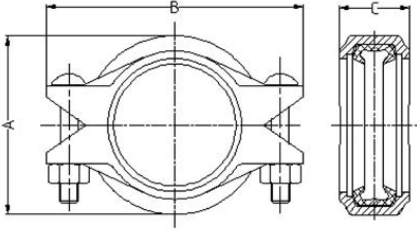
Standard C Style

EPDM F



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## Flexible Coupling Fig. 8000



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Dimensions			Bolt Size No.-Size mm	Approx. Wt. Ea. Kg/lbs
			A mm/in	B mm/in	C mm/in		
25 1	33.7 1.327	3.45 500	55 2.17	92 3.62	42 1.65	2 - M10 x 57	0.40 0.88
32 1¼	42.4 1.669	3.45 500	65 2.56	104 4.14	44 1.74	2 - M10 x 57	0.45 1.00
40 1½	48.3 1.900	3.45 500	70 2.75	110 4.33	44 1.74	2 - M10 x 57	0.56 1.24
50 2	60.3 2.375	3.45 500	83 3.27	124 4.88	44 1.74	2 - M10 x 57	0.60 1.33
65 2½	70.3 2.875	3.45 500	96 3.78	143 5.63	45 1.78	2 - M10 x 57	0.65 1.44
65 2½	76.1 3.000	3.45 500	100 3.94	145 5.71	45 1.78	2 - M10 x 57	0.84 1.85
80 3	88.9 3.500	3.45 500	115 4.53	160 6.30	45 1.78	2 - M12 x 70	0.86 1.89
100 4	108.0 4.250	3.45 500	138 5.43	190 7.48	50 1.97	2 - M12 x 70	1.21 2.66
100 4	114.3 4.500	3.45 500	145 5.71	198 7.80	50 1.97	2 - M12 x 70	1.69 3.73
125 5	133 5.250	3.10 450	162 6.38	225 8.86	51 2.01	2 - M16 x 85	1.75 3.87
125 5	139.7 5.500	3.10 450	169 6.65	230 9.06	52 2.05	2 - M16 x 85	2.37 5.22
125 5	141.3 5.563	3.10 450	170 6.69	232 9.13	51 2.01	2 - M16 x 85	2.52 5.56
150 6	159.0 6.250	3.10 450	190 7.48	254 10.00	52 2.05	2 - M16 x 85	2.27 5.01
150 6	165.1 6.500	3.10 450	196 7.72	260 10.24	52 2.05	2 - M16 x 85	2.64 5.82
150 6	168.3 6.625	3.10 450	200 7.87	265 10.43	52 2.05	2 - M16 x 85	2.65 5.85
200 8	219.1 8.625	3.10 450	262 10.31	340 13.39	60 2.37	2 - M20 x 115	3.09 6.81
250 10	273.0 10.750	2.07 300	327 12.87	420 16.54	63.5 2.50	2 - M22 x 140	5.44 11.98
300 12	323.9 12.750	2.07 300	378 14.88	462.5 18.21	65 2.56	2 - M22 x 140	10.79 23.78

### Notes:

1. Working pressure and/or end load are total allowable, based on standard weight steel pipe, roll or cut grooved.
2. One time field test pressure may be increased to 1.5 times the figures listed above.

Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please contact your local ASC Engineered Solutions™ Representative.



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## Fig.8000 Flexible Coupling

### 1 Check & Lubricate Gasket

Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok lubricant to the exterior surface and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.



### 2 Gasket Installation

Slip the gasket over the pipe end, making sure the gasket lip does not overhang the pipe end.



### 3 Alignment

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



### 4 Housings

With one nut unthreaded to the end of the bolt, unthread the other nut completely and swing the coupling housing halves over the gasket, making sure the housing keys engage the grooves. Insert the bolt and turn the nuts finger tight.



### 5 Tighten Nuts

Tighten the nuts alternately and equally to the specified bolt torque. The housing bolt pads must make metal-to-metal contact.

**Caution:** Uneven tightening may cause gasket to pinch.



### 6 Assembly is Complete

Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.



#### ANSI Specified Bolt Torque

Bolt Size	Specified Bolt Torque		
	inch	ft-lb	N-M
3/8 or M10	30-45	40-60	
1/2 or M12	80-100	110-135	
5/8 or M16	100-130	135-175	
3/4 or M20	130-180	175-245	
7/8 or M22	180-220	245-300	

#### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Reducing Coupling Fig. 8010



### Material Specifications

**Housing**

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

**ANSI Bolts & Heavy Hex Nuts**

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

**Metric Bolts & Heavy Hex Nuts**

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

**Coatings**

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

**Grade “E” EPDM (Green Stripe)**

Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.

### Description

The Model 8010 Reducing Coupling makes it possible to directly connect two different pipe sizes, eliminating the need for two couplings and a reducing fitting.

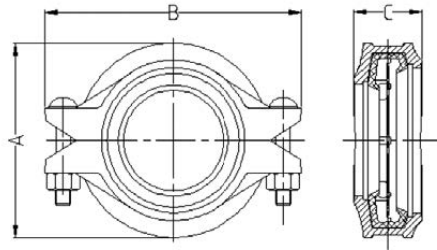
Working pressure ratings shown are for reference only and are based on schedule 40 pipe.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.



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## Reducing Coupling Fig. 8010



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Dimensions			Bolt Size No.-Size mm
			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	2.07 300	86 3.39	125 4.92	44 1.73	2 - M10 x 57
65 x 25 2½ x 1	73.0 x 33.7 2.875 x 1.327	2.07 300	100 3.94	138 5.43	45 1.77	2 - M10 x 57
65 x 50 2½ x 2	73.0 x 60.3 2.875 x 2.375	2.07 300	100 3.94	138 5.43	45 1.77	2 - M10 x 57
65 x 25 2½ x 1	76.1 x 33.7 3.000 x 1.327	2.07 300	102 4.02	140 5.51	45 1.77	2 - M10 x 57
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	2.07 300	102 4.02	140 5.51	45 1.77	2 - M10 x 57
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	2.07 300	102 4.02	140 5.51	45 1.77	2 - M10 x 57
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.327	2.07 300	115 4.53	168 6.61	46 1.81	2 - M12 x 70
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	2.07 300	115 4.53	168 6.61	46 1.81	2 - M12 x 70
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	2.07 300	115 4.53	168 6.61	46 1.81	2 - M12 x 70
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	2.07 300	115 4.53	168 6.61	46 1.81	2 - M12 x 70
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.327	2.07 300	144 5.67	198 7.80	50 1.97	2 - M12 x 70
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	2.07 300	144 5.67	198 7.80	50 1.97	2 - M12 x 70
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	2.07 300	144 5.67	198 7.80	50 1.97	2 - M12 x 70
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	2.07 300	144 5.67	198 7.80	50 1.97	2 - M12 x 70
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	2.07 300	148 5.83	198 7.80	50 1.97	2 - M12 x 70
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	2.07 300	197 7.76	260 10.24	51 2.01	2 - M16 x 85
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	2.07 300	200 7.87	268 10.55	51 2.01	2 - M16 x 85
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	2.07 300	200 7.87	268 10.55	51 2.01	2 - M16 x 85
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	2.07 300	255 10.04	337 13.27	59 2.32	2 - M20 x 115
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	2.07 300	262 10.31	333 13.11	60 2.36	2 - M20 x 115

**Notes:**

1. Working pressure and/or end load are total allowable, based on standard weight steel pipe, roll or cut grooved.
2. One time field test pressure may be increased to 1.5 times the figures listed above.

Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please contact your local ASC Engineered Solutions™ Representative.



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## Fig.8010 Reducing Coupling

### 1 Check & Lubricate Gasket

Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok lubricant to the exterior surface and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.



### 2 Gasket Installation

Place the smaller opening of the gasket over the smaller pipe. Angle the gasket over the pipe end and pull the gasket lip open around the circumference of the pipe. The center leg of the gasket should make flush contact with the pipe end and will prevent telescoping of the smaller pipe inside the larger.



### 3 Alignment

Align the adjoining pipe center lines, and insert the larger pipe end into the gasket. Angle the pipe end slightly to the face of the gasket and tilt the pipe into the gasket to ease assembly.



### 4 Housings

Place the coupling housing halves over the gasket making sure the housing keys engage the grooves. Insert bolts and turn nuts finger tight.



### 5 Tighten Nuts

Tighten the nuts alternately and equally to the specified bolt torque. The housing bolt pads must make metal-to-metal contact.

**Caution:** Uneven tightening may cause gasket to pinch.



### 6 Assembly is Complete

Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.



ANSI Specified Bolt Torque

Bolt Size	Specified Bolt Torque		
	inch	ft-lb	N-M
3/8 or M10	30-45	40-60	
1/2 or M12	80-100	110-135	
5/8 or M16	100-130	135-175	
3/4 or M20	130-180	175-245	
7/8 or M22	180-220	245-300	

### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Grooved Flange Fig. 8012



### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalis solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.

### Description

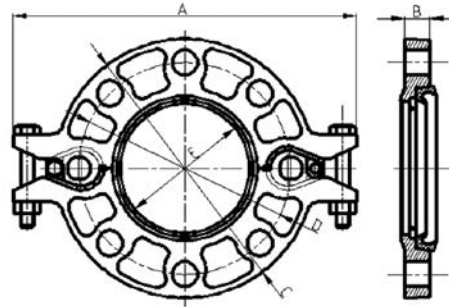
The Model 8012 Grooved Flange makes it possible for a direct connection of flanged components to a grooved piping system. The two interlocking halves of the Gr8LOK Grooved Flange are hinged for ease of handling, and are drawn together by a latch bolt which eases assembly on the pipe.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.



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## Grooved Flange Fig. 8012



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Dimensions					Latch Bolt No.-Size mm	Mating Flange Bolt No.-Size mm
			A mm/in	B mm/in	C mm/in	D mm/in	E mm/in		
40 1½	48.3 1.900	1.6 225	195.0 7.68	18.5 0.73	150.0 5.91	110.0 4.33	45.4 1.79	2 - M10 x 50	4 - M16
50 2	60.3 2.375	1.6 225	220.0 8.66	18.5 0.73	165.0 6.50	125.0 4.92	57.5 2.26	2 - M10 x 50	4 - M16
65 2½	76.1 3.000	1.6 225	235.0 9.25	18.5 0.73	185.0 7.28	145.0 5.71	72.7 2.86	2 - M10 x 50	4 - M16
80 3	88.9 3.500	1.6 225	255.0 10.04	18.5 0.73	195.0 7.68	160.0 6.30	85.5 3.37	2 - M10 x 50	8 - M16
100 4	108.0 4.250	1.6 225	279.0 10.98	18.5 0.73	220.0 8.66	180.0 7.09	104.5 4.11	2 - M10 x 50	8 - M16
100 4	114.3 4.500	1.6 225	279.0 10.98	18.5 0.73	224.0 8.82	180.0 7.09	110.5 4.35	2 - M10 x 50	8 - M16
125 5	139.7 5.500	1.6 225	320.0 12.60	23.0 0.91	250.0 9.84	210.0 8.27	135.5 5.33	2 - M12 x 65	8 - M16
150 6	165.1 6.500	1.6 225	346.0 13.62	21.5 0.85	280.0 11.02	240.0 9.45	160.8 6.33	2 - M12 x 65	8 - M20
150 6	168.3 6.625	1.6 225	346.0 13.62	24.0 0.94	280.0 11.02	240.0 9.45	164.3 6.47	2 - M12 x 65	8 - M20
200 8	219.1 8.625	1.6 225	414.3 16.31	30.0 1.18	340.0 13.39	295.0 11.61	214.9 8.46	2 - M10 x 70	12 - M20
250 10	273.0 10.750	1.6 225	480.0 18.90	25.5 1.00	405.0 15.94	355.0 13.98	268.9 10.59	2 - M10 x 70	12 - M24
300 12	323.9 12.750	1.6 225	530.5 20.89	25.5 1.00	460.0 18.11	410.0 16.14	318.9 12.56	2 - M10 x 70	12 - M24



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## Fig.8012 Grooved Flange

### 1 Pipe Preparation

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



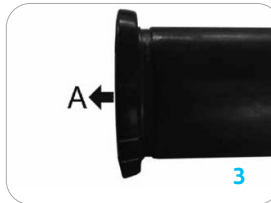
### 2 Lubricate Gasket

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



### 3 Gasket Installation

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



### 4 Housing Installation

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



### 5 Tighten Nuts

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



### 6 Connect Mating Flange

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



#### Specified Bolt Torque

Bolt Size	Specified Bolt Torque		
	inch	ft-lb	N-M
M10	30-45	40-60	
M12	80-100	110-135	
M16	100-130	135-175	
M20	130-180	175-245	
M24	300-400	400-550	

### Caution

Proper torquing of bolts is required to obtain specified performance.

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



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## Mechanical Tee with U-Bolt Fig. 8043



### Material Specifications

**Housing**

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

**U-BOLT & NUTS**

U-bolt is carbon steel SAE J429 Gr. 2, zinc plated complete with hex flanged lock nuts conforming to ASTM A-563 Gr. A or B, or SAE J995 Gr. 2.

**Coatings**

Zinc Electroplated

Other available options: Example: RAL 3000

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

**Grade "E" EPDM (Green Stripe)**

Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.

### Description

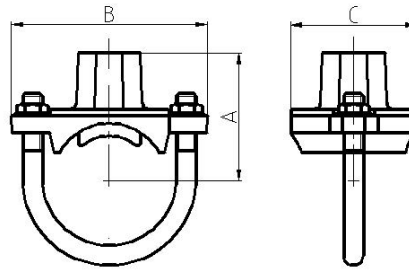
The 8043 mechanical tee serves the same function as the 8045, but uses a steel electroplated u-bolt to save space and for easier installation in tight places. The 8043 is ideal for direct connections with sprinkler heads and drop nipples.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.



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## Mechanical Tee with U-Bolt Fig. 8043



Nominal Size mm/in	Pipe O.D. mm/in	Hole Dia. +1.6, 0/+0.063, 0 mm/in	Working Pressure MPa/PSI	Dimensions			U-Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	
32 x 15 1 1/4 x 1/2	42.4 x 21.3 1.669 x 0.825	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	M10 x 73
32 x 20 1 1/4 x 3/4	42.4 x 26.9 1.669 x 1.059	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	M10 x 73
32 x 25 1 1/4 x 1	42.4 x 33.7 1.669 x 1.327	30 1.18	300 2.07	57.7 2.27	88.9 3.50	57.2 2.25	M10 x 73
40 x 15 1 1/2 x 1/2	48.3 x 21.3 1.900 x 0.825	30 1.18	300 2.07	57.4 2.26	88.9 3.50	57.2 2.25	M10 x 73
40 x 20 1 1/2 x 3/4	48.3 x 26.9 1.900 x 1.059	30 1.18	300 2.07	57.4 2.26	88.9 3.50	57.2 2.25	M10 x 73
40 x 25 1 1/2 x 1	48.3 x 33.7 1.900 x 1.327	30 1.18	300 2.07	60.8 2.39	88.9 3.50	57.2 2.25	M10 x 73
50 x 15 2 x 1/2	60.3 x 21.3 2.375 x 0.825	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	M10 x 90
50 x 20 2 x 3/4	60.3 x 26.9 2.375 x 1.059	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	M10 x 90
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.327	30 1.18	300 2.07	66.6 2.62	95.3 3.75	57.2 2.25	M10 x 90
65 x 15 2 1/2 x 1/2	73.0 x 21.3 2.875 x 0.825	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.25	M10 x 105
65 x 20 2 1/2 x 3/4	73.0 x 26.9 2.875 x 1.059	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.25	M10 x 105
65 x 25 2 1/2 x 1	73.0 x 33.7 2.875 x 1.327	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	M10 x 105
65 x 15 2 1/2 x 1/2	76.1 x 21.3 3.000 x 0.825	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.25	M10 x 105
65 x 20 2 1/2 x 3/4	76.1 x 26.9 3.000 x 1.059	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.25	M10 x 105
65 x 25 2 1/2 x 1	76.1 x 33.7 3.000 x 1.327	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	M10 x 105

Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please contact your local ASC Engineered Solutions™ Representative.

Note: Tighten nuts alternately to a recommended torque of 18–22 ft.-lbs. (25–30 Nm) on pipe wall less than schedule 10 (Din 2440) or 23–27 ft.-lbs. (31–37 Nm) on pipe walls schedule 10 (DIN 2440) and above.



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## Fig. 8043 Mechanical Tee with U-Bolt

### 1 Pipe Preparation

Drill the appropriate size hole in the pipe and remove burrs. Clean the gasket sealing surface within 16 mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.



### 2 Check & Lubricate Gasket

Check the gasket to be sure it is compatible for the intended service. Lubricate one side of the gasket with Gruvlok lubricant and place in the fitting. Be careful that foreign particles do not adhere to the lubricated surfaces.



### 3 Gasket Installation

Lubricate the exposed surface of the gasket with Gruvlok lubricant.



### 4 Alignment

Align the gasket and fitting above the pipe hole. Attach the U-bolt from the other side and fasten the nuts finger tight.



### 5 Tighten Nuts

Making sure the fitting is properly located over the pipe hole, tighten the nuts alternately and evenly to the specified bolt torque.



### 6 Assembly Completed



Specified Bolt Torque  
ANSI Bolts

Bolt Size inch	Specified Bolt Torque	
	ft-lb	N-M
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	—	—
7/8	—	—

### Caution

Proper torquing of bolts is required to obtain specified performance.

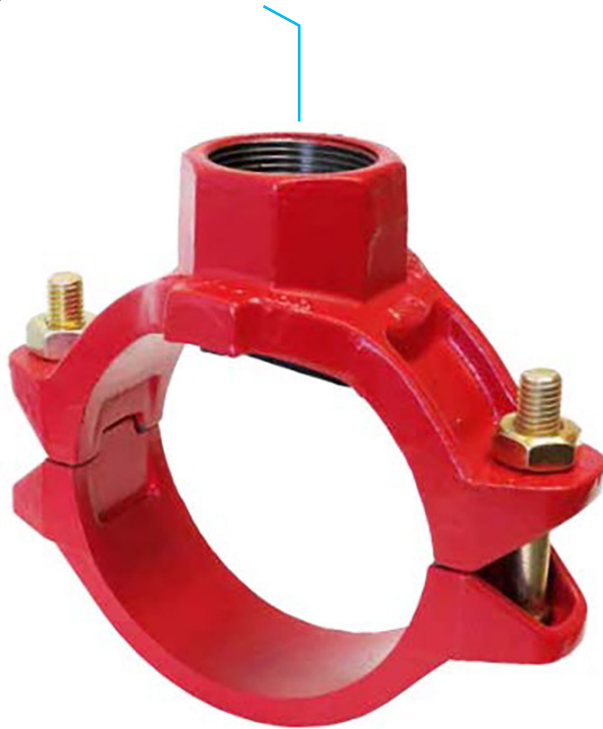
- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Threaded Mechanical Branch Tee Fig. 8045



### Description

Mechanical branch connections for reducing branch outlets without welding. The 8045 is a bolted saddle type fitting with BSP female threaded outlets. Design assures superior sealing, full pipe support, excellent stability and easy installation.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

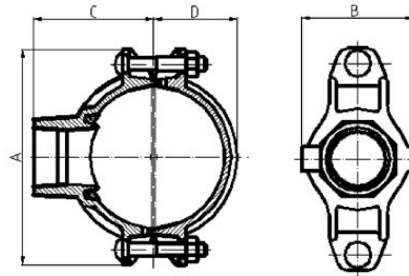
Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Threaded Mechanical Branch Tee Fig. 8045



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
50 x 15 2 x 1/2	60.3 x 21.3 2.375 x 0.825	1.6 231.88	38 1.5	116 4.57	68 2.68	60 2.36	39 1.54	M10 x 57
50 x 20 2 x 3/4	60.3 x 26.9 2.375 x 1.059	1.6 231.88	38 1.5	116 4.57	68 2.68	60 2.36	39 1.54	M10 x 57
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.327	1.6 231.88	38 1.5	116 4.57	68 2.68	60 2.36	39 1.54	M10 x 57
50 x 32 2 x 1 1/4	60.3 x 42.4 2.375 x 1.669	1.6 231.88	45 1.77	116 4.57	76 2.99	65 2.56	39 1.54	M10 x 57
50 x 40 2 x 1 1/2	60.3 x 48.3 2.375 x 1.900	1.6 231.88	45 1.77	116 4.57	76 2.99	65 2.56	39 1.54	M10 x 57
65 x 15 2 1/2 x 1/2	76.1 x 21.3 3.000 x 0.825	1.6 231.88	38 1.5	137 5.39	71 2.8	75.5 2.97	49.5 1.95	M12 x 70
65 x 20 2 1/2 x 3/4	76.1 x 26.9 3.000 x 1.059	1.6 231.88	38 1.5	137 5.39	71 2.8	75.5 2.97	49.5 1.95	M12 x 70
65 x 25 2 1/2 x 1	76.1 x 33.7 3.000 x 1.327	1.6 231.88	38 1.5	137 5.39	71 2.8	75.5 2.97	49.5 1.95	M12 x 70
65 x 32 2 1/2 x 1 1/4	76.1 x 42.4 3.000 x 1.669	1.6 231.88	51 2	137 5.39	84.5 3.33	75.5 2.97	49.5 1.95	M12 x 70
65 x 40 2 1/2 x 1 1/2	76.1 x 48.3 3.000 x 1.900	1.6 231.88	51 2	137 5.39	84.5 3.33	75.5 2.97	49.5 1.95	M12 x 70
80 x 15 3 x 1/2	88.9 x 21.3 3.500 x 0.825	1.6 231.88	38 1.5	152 5.98	72.5 2.85	80 3.15	55.5 2.18	M12 x 76
80 x 20 3 x 3/4	88.9 x 26.9 3.500 x 1.059	1.6 231.88	38 1.5	152 5.98	72.5 2.85	80 3.15	55.5 2.18	M12 x 76
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.327	1.6 231.88	38 1.5	152 5.98	72.5 2.85	80 3.15	55.5 2.18	M12 x 76
80 x 32 3 x 1 1/4	88.9 x 42.4 3.500 x 1.669	1.6 231.88	51 2	152 5.98	85.5 3.37	80 3.15	55.5 2.18	M12 x 76
80 x 40 3 x 1 1/2	88.9 x 48.3 3.500 x 1.900	1.6 231.88	51 2	152 5.98	85.5 3.37	80 3.15	55.5 2.18	M12 x 76
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	1.6 231.88	64 2.5	152 5.98	98 3.86	80 3.15	55.5 2.18	M12 x 76

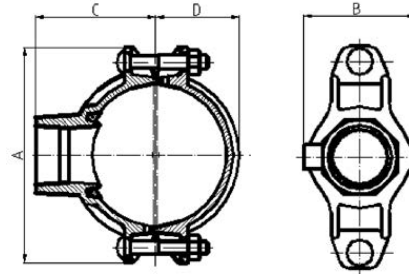


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## Threaded Mechanical Branch Tee Fig. 8045



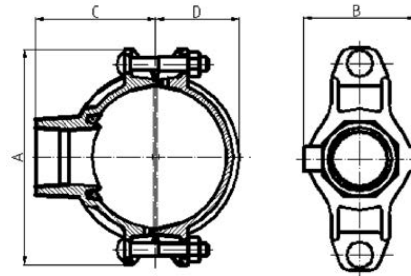
Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
100 x 15 4 x 1/2	114.3 x 21.3 4.500 x 0.825	1.6 231.88	38 1.5	188 7.4	78.5 3.09	90 3.54	68 2.68	M12 x 76
100 x 20 4 x 3/4	114.3 x 26.9 4.500 x 1.059	1.6 231.88	38 1.5	188 7.4	78.5 3.09	90 3.54	68 2.68	M12 x 76
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.327	1.6 231.88	38 1.5	188 7.4	78.5 3.09	93 3.66	68 2.68	M12 x 76
100 x 32 4 x 1 1/4	114.3 x 42.4 4.500 x 1.669	1.6 231.88	51 2	188 7.4	89 3.5	95 3.74	68 2.68	M12 x 76
100 x 40 4 x 1 1/2	114.3 x 48.3 4.500 x 1.900	1.6 231.88	51 2	188 7.4	89 3.5	97 3.82	68 2.68	M12 x 76
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	1.6 231.88	64 2.5	188 7.4	104.5 4.11	100 3.94	68 2.68	M12 x 76
100 x 65 4 x 2 1/2	114.3 x 73.0 4.500 x 2.875	1.6 231.88	70 2.75	188 7.4	104.5 4.11	102 4.02	68 2.68	M12 x 76
100 x 65 4 x 2 1/2	114.3 x 76.1 4.500 x 3.000	1.6 231.88	70 2.75	188 7.4	104.5 4.11	102 4.02	68 2.68	M12 x 76
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	1.6 231.88	89 3.5	188 7.4	124 4.88	102 4.02	68 2.68	M12 x 76
125 x 25 5 x 1	139.7 x 33.7 5.500 x 1.327	1.6 231.88	38 1.5	221.5 8.72	78 3.07	110 4.33	81.5 3.21	M16 x 85
125 x 32 5 x 1 1/4	139.7 x 42.4 5.500 x 1.669	1.6 231.88	51 2	221.5 8.72	95 3.74	112 4.41	81.5 3.21	M16 x 85
125 x 40 5 x 1 1/2	139.7 x 48.3 5.500 x 1.900	1.6 231.88	51 2	221.5 8.72	95 3.74	112 4.41	81.5 3.21	M16 x 85
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	1.6 231.88	64 2.5	221.5 8.72	112.5 4.43	115 4.53	81.5 3.21	M16 x 85
125 x 65 5 x 2 1/2	139.7 x 76.1 5.500 x 3.000	1.6 231.88	70 2.75	221.5 8.72	112.5 4.43	115 4.53	81.5 3.21	M16 x 85
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	1.6 231.88	89 3.5	221.5 8.72	132 5.2	120 4.72	81.5 3.21	M16 x 85
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	1.6 231.88	114 4.5	221.5 8.72	156 6.14	125 4.92	81.5 3.21	M16 x 85



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## Threaded Mechanical Branch Tee Fig. 8045



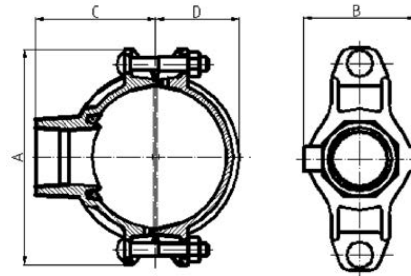
Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
150 x 15 6 x 1/2	165.1 x 21.3 6.500 x 0.825	1.6 231.88	38 1.5	244 9.6	78 3.07	115 4.53	94.5 3.72	M16 x 108
150 x 20 6 x 3/4	165.1 x 26.9 6.500 x 1.059	1.6 231.88	38 1.5	244 9.6	78 3.07	115 4.53	94.5 3.72	M16 x 108
150 x 25 6 x 1	165.1 x 33.7 6.500 x 1.327	1.6 231.88	38 1.5	244 9.6	78 3.07	118 4.65	94.5 3.72	M16 x 108
150 x 32 6 x 1 1/4	165.1 x 42.4 6.500 x 1.669	1.6 231.88	51 2	244 9.6	93 3.66	119 4.69	94.5 3.72	M16 x 108
150 x 40 6 x 1 1/2	165.1 x 48.3 6.500 x 1.900	1.6 231.88	51 2	244 9.6	93 3.66	119 4.69	94.5 3.72	M16 x 108
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	1.6 231.88	64 2.5	244 9.6	112.5 4.43	127.5 5.02	94.5 3.72	M16 x 108
150 x 65 6 x 2 1/2	165.1 x 76.1 6.500 x 3.000	1.6 231.88	70 2.75	244 9.6	112.5 4.43	129 5.08	94.5 3.72	M16 x 108
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	1.6 231.88	89 3.5	244 9.6	132 5.2	129 5.08	94.5 3.72	M16 x 108
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	1.6 231.88	114 4.5	244 9.6	154 6.06	135 5.32	94.5 3.72	M16 x 108
150 x 32 6 x 1 1/4	168.3 x 42.4 6.500 x 1.669	1.6 231.88	51 2	247 9.72	95 3.74	122 4.8	98 3.86	M16 x 108
150 x 40 6 x 1 1/2	168.3 x 48.3 6.500 x 1.900	1.6 231.88	51 2	247 9.72	95 3.74	122 4.8	98 3.86	M16 x 108
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	1.6 231.88	64 2.5	247 9.72	112.5 4.43	132 5.2	98 3.86	M16 x 108
150 x 65 6 x 2 1/2	168.3 x 73.0 6.625 x 2.875	1.6 231.88	70 2.75	247 9.72	112.5 4.43	132 5.2	98 3.86	M16 x 108
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	2.07 300	89 3.5	247 9.72	132 5.2	140 5.51	98 3.88	M16 x 108
150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	1.6 231.88	114 4.5	247 9.72	160 6.3	140 5.51	98 3.86	M16 x 108



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## Threaded Mechanical Branch Tee Fig. 8045



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
200 x 25 8 x 1	219.0 x 33.7 8.625 x 1.327	1.6 231.88	38 1.5	320 12.6	79.5 3.13	150 5.91	124 4.88	M20 x 115
200 x 32 8 x 1¼	219.1 x 42.4 8.625 x 1.669	1.6 231.88	51 2	322 12.68	96.5 3.8	150 5.91	124 4.88	M20 x 115
200 x 40 8 x 1½	219.1 x 48.3 8.625 x 1.900	1.6 231.88	51 2	322 12.68	96.5 3.8	150 5.91	124 4.88	M20 x 115
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	1.6 231.88	64 2.5	320 12.6	117 4.61	160 6.3	124 4.88	M20 x 115
200 x 65 8 x 2½	219.1 x 76.1 8.625 x 3.000	1.6 231.88	70 2.75	320 12.6	118 4.65	158.5 6.24	124 4.88	M20 x 115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	1.6 231.88	89 3.5	320 12.6	136.5 5.37	160 6.3	124 4.88	M20 x 115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	1.6 231.88	114 4.5	320 12.6	164 6.46	160 6.3	124 4.88	M20 x 115
250 x 40 10 x 1½	273.0 x 48.3 10.750 x 1.900	1.6 231.88	51 2	375 14.76	95.5 3.76	180 7.09	154.5 6.08	M20 x 115
250 x 50 10 x 2	273.0 x 60.3 10.750 x 2.375	1.6 231.88	64 2.5	375 14.76	118 4.65	185 7.28	154.5 6.08	M20 x 115
250 x 65 10 x 2½	273.0 x 76.1 10.750 x 3.000	1.6 231.88	70 2.75	375 14.76	118 4.65	190 7.48	154.5 6.08	M20 x 115
250 x 80 10 x 3	273.0 x 88.9 10.750 x 3.500	1.6 231.88	89 3.5	375 14.76	136.5 5.37	190 7.48	154.5 6.08	M20 x 115
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	1.6 231.88	114 4.5	375 14.76	165 6.5	190 7.48	154.5 6.08	M20 x 115



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**Fig. 8045 Threaded Mechanical Branch Tee**

## 1 Pipe Preparation

Cut the appropriate size hole in the pipe and remove any burrs. Be sure to remove the slug from inside the pipe. Clean the gasket sealing surface within 16 mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.



## 2 Check & Lubricate Gasket

Check the gasket to be sure it is compatible for the intended service. Apply a thin layer of Gruklok lubricant to the back surface of the gasket. Be careful that foreign particles do not adhere to the lubricated surfaces. Insert the gasket back into the outlet housing making sure the tabs in the gasket line up with the tab recesses in the housing.



## 3 Gasket Installation

Lubricate the exposed surface of the gasket. Align the outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



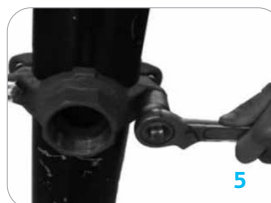
## 4 Alignment

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



## 5 Tighten Nuts

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



## 6 Assembly Completed

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



Specified Bolt Torque  
ANSI Bolts

Bolt Size inch	Specified Bolt Torque	
	ft-lb	N-M
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	—	—
7/8	—	—

### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Mechanical Tee with Grooved Outlet Fig. 8046



### Description

Mechanical branch connections for reducing branch outlets without welding. The 8046 is a bolted saddle type fitting with grooved outlets. Design assures superior sealing, full pipe support, excellent stability and easy installation.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or Grade B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized (optional)  
For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

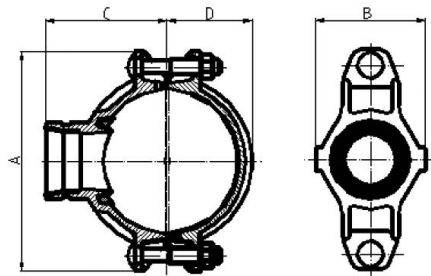
Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Mechanical Tee with Grooved Outlet Fig. 8046



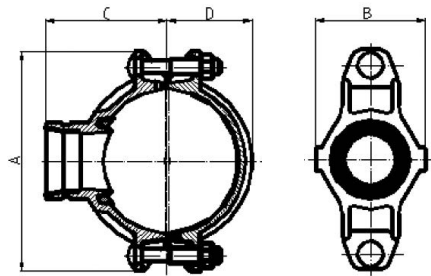
Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.669	1.6 231.88	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	M10 x 57
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	1.6 231.88	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	M10 x 57
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.669	1.6 231.88	51 2	137 5.39	84.5 3.33	75 2.95	46.5 1.83	M12 x 70
65 x 25 2½ x 1	76.1 x 33.7 3.000 x 1.327	1.6 231.88	38 1.5	137 5.39	71 2.8	78 3.07	49.5 1.95	M12 x 70
65 x 32 2½ x 1¼	76.1 x 42.4 3.000 x 1.669	1.6 231.88	51 2	137 5.39	84.5 3.33	78 3.07	49.5 1.95	M12 x 70
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	1.6 231.88	51 2	137 5.39	84.5 3.33	78 3.07	49.5 1.95	M12 x 70
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.327	1.6 231.88	38 1.5	152 5.98	72.5 2.85	84.5 3.33	55.5 2.18	M12 x 76
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.669	1.6 231.88	51 2	152 5.98	85.5 3.37	84.5 3.33	55.5 2.18	M12 x 76
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	1.6 231.88	51 2	152 5.98	85.5 3.37	84.5 3.33	55.5 2.18	M12 x 76
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	1.6 231.88	64 2.5	152 5.98	98 3.86	84.5 3.33	55.5 2.18	M12 x 76
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.327	1.6 231.88	38 1.5	188 7.4	78.5 3.09	102 4.02	68 2.68	M12 x 76
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.669	1.6 231.88	51 2	188 7.4	89 3.5	102 4.02	70.5 2.78	M12 x 76
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	1.6 231.88	51 2	188 7.4	89 3.5	102 4.02	68 2.68	M12 x 76
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	1.6 231.88	64 2.5	188 7.4	104.5 4.11	102 4.02	68 2.68	M12 x 76
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	1.6 231.88	70 2.75	188 7.4	104.5 4.11	100 3.94	68 2.68	M12 x 76
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	1.6 231.88	70 2.75	188 7.4	104.5 4.11	102 4.02	68 2.68	M12 x 76



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## Mechanical Tee with Grooved Outlet Fig. 8046



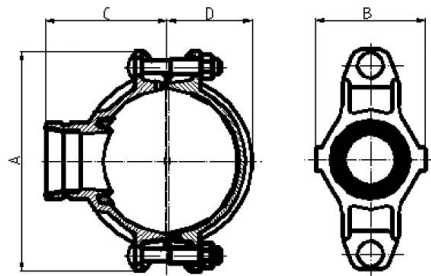
Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	1.6 231.88	89 3.5	188 7.4	124 4.88	102 4.02	68 2.68	M12 x 76
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	1.6 231.88	64 2.5	221.5 8.72	112.5 4.43	118 4.65	81.5 3.2	M16 x 85
125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	1.6 231.88	70 2.75	221.5 8.72	112.5 4.43	118 4.65	81.5 3.2	M16 x 85
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	1.6 231.88	89 3.5	221.5 8.72	132 5.2	118 4.646	81.5 3.2	M16 x 85
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	1.6 231.88	114 4.5	221.5 8.72	156 6.142	120 4.724	81.5 3.2	M16 x 85
150 x 100 6 x 4	159.1 x 108.0 6.250 x 4.250	1.6 231.88	114 4.5	244 9.6	156.5 6.161	130 5.118	91.5 3.602	M16 x 108
150 x 100 6 x 4	159.1 x 114.3 6.250 x 4.500	1.6 231.88	114 4.5	244 9.6	156.5 6.161	130 5.118	91.5 3.602	M16 x 108
150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	1.6 231.88	64 2.5	244 9.6	112.5 4.43	127 5	94.5 3.7	M16 x 108
150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	1.6 231.88	70 2.75	244 9.6	112.5 4.43	129 5.079	94.5 3.7	M16 x 108
150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	1.6 231.88	89 3.5	244 9.6	132 5.2	129 5.079	94.5 3.7	M16 x 108
150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	1.6 231.88	114 4.5	244 9.6	154 6.06	135 5.32	94.5 3.7	M16 x 108
150 x 40 6 x 1½	168.3 x 48.3 6.625 x 1.900	1.6 231.88	51 2	247 9.72	95 3.74	128 5.04	98 3.858	M16 x 108
150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	1.6 231.88	64 2.5	247 9.72	112.5 4.429	134 5.28	98 3.858	M16 x 108
150 x 65 6 x 2½	168.3 x 76.1 6.625 x 3.000	1.6 231.88	70 2.75	247 9.722	112.5 4.429	134 5.28	98 3.858	M16 x 108
150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	1.6 231.88	89 3.5	247 9.72	132 5.2	134 5.276	98 3.858	M16 x 108
150 x 100 6 x 4	168.3 x 114.3 6.6250 x 4.500	1.6 231.88	114 4.5	247 9.72	160 6.3	138 5.43	98 3.858	M16 x 108



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## Mechanical Tee with Grooved Outlet Fig. 8046



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Hole Dia. mm/in +1.6,0/+0.063,0	Dimensions				Bolt Size mm
				A mm/in	B mm/in	C mm/in	D mm/in	
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	1.6 231.88	64 2.5	320 12.598	117 4.61	156 6.142	124 4.882	M20 x 115
200 x 65 8 x 2½	219.1 x 76.1 8.625 x 3.000	1.6 231.88	70 2.75	320 12.598	117 4.61	156 6.142	124 4.882	M20 x 115
200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	1.6 231.88	89 3.5	320 12.598	136.5 5.37	161 6.34	124 4.882	M20 x 115
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	1.6 231.88	114 4.5	320 12.598	164 6.46	160 6.299	124 4.882	M20 x 115
250 x 100 10 x 4	273.0 x 114.3 10.750 x 4.500	1.6 231.88	114 4.5	375 14.76	165 6.5	188 7.402	154.5 6.083	M20 x 115



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**Fig. 8046 Mechanical Tee with Grooved Outlet**

## 1 Pipe Preparation

Cut the appropriate size hole in the pipe and remove any burrs. Be sure to remove the slug from inside the pipe. Clean the gasket sealing surface within 16 mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.



## 2 Check & Lubricate Gasket

Check the gasket to be sure it is compatible for the intended service. Apply a thin layer of Gruklok lubricant to the back surface of the gasket. Be careful that foreign particles do not adhere to the lubricated surfaces. Insert the gasket back into the outlet housing making sure the tabs in the gasket line up with the tab recesses in the housing.



## 3 Gasket Installation

Lubricate the exposed surface of the gasket. Align the outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



## 4 Alignment

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



## 5 Tighten Nuts

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



## 6 Assembly Completed

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



Specified Bolt Torque  
ANSI Bolts

Bolt Size inch	Specified Bolt Torque	
	ft-lb	N-M
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	—	—
7/8	—	—

### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## 90° Elbow Fig. 8050



### Material Specifications

#### Cast Fittings

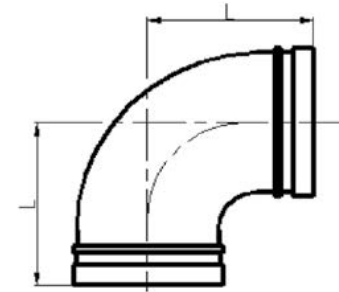
Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Center to End mm/in	Approx. Wt. Ea. Kg/lbs
25 1	33.7 1.327	3.45 500	57 2.24	0.24 0.52
32 1¼	42.4 1.669	3.45 500	70 2.75	0.41 0.91
40 1½	48.3 1.900	3.45 500	70 2.75	0.48 1.06
50 2	60.3 2.375	3.45 500	82.5 3.25	0.65 1.44
65 2½	73.0 2.875	3.45 500	95 3.74	1.10 2.42
65 2½	76.1 3.000	3.45 500	95 3.74	1.15 2.54
80 3	88.9 3.500	3.45 500	108 4.25	1.61 3.54
100 4	114.3 4.500	3.45 500	127 5.00	2.66 5.87
125 5	139.7 5.500	3.45 500	140 5.50	4.09 9.02
125 5	141.3 5.563	3.45 500	140 5.50	4.23 9.33
150 6	165.1 6.500	3.45 500	165 6.50	5.99 13.21
150 6	168.3 6.625	3.45 500	165 6.50	6.07 13.38
200 8	219.1 8.625	3.45 500	197 7.75	11.12 24.51
250 10	273.0 10.750	3.45 500	229 9.00	24.58 54.19
300 12	323.9 12.750	3.45 500	254 10.00	35.52 78.31



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## 45° Elbow Fig. 8051



### Material Specifications

#### Cast Fittings

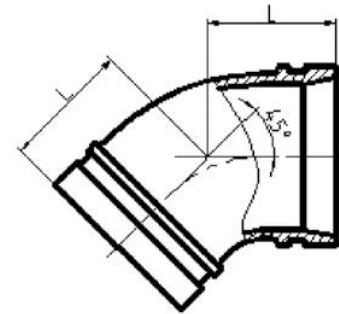
Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

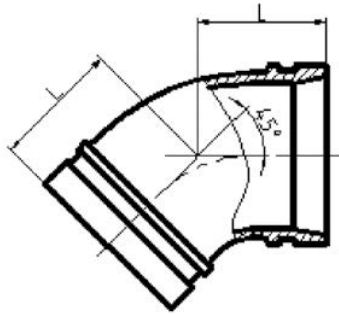
For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
25 1	33.7 1.327	3.45 500	44.5 1.75
32 1 ¼	42.4 1.669	3.45 500	44.5 1.75
40 1 ½	48.3 1.900	3.45 500	44.5 1.75
50 2	60.3 2.375	3.45 500	51.0 2.00
65 2 ½	73.0 2.875	3.45 500	57.0 2.42
65 2 ½	76.1 3.000	3.45 500	57.0 2.42
80 3	88.9 3.500	3.45 500	63.5 2.50
100 4	108.0 4.250	3.45 500	76.0 3.00
100 4	114.3 4.500	3.45 500	76.0 3.00
125 5	133.0 5.250	3.45 500	82.5 3.25
125 5	139.7 5.500	3.45 500	82.5 3.25
125 5	141.3 5.563	3.45 500	82.5 3.25
150 6	159.0 6.250	3.45 500	89.0 3.50
150 6	165.1 6.500	3.45 500	89.0 3.50
150 6	168.3 6.625	3.45 500	89.0 3.50



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## 45° Elbow Fig. 8051



Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
200 8	216.3 8.516	3.45 500	108.0 4.25
200 8	219.1 8.625	3.45 500	108.0 4.25
250 10	273.0 10.750	3.45 500	120.5 4.75
300 12	318.5 12.750	3.45 500	133.0 5.25
300 12	323.9 12.750	3.45 500	133.0 5.25
350 14	377.0 14.840	2.07 300	122.0 4.80



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## 22½° Elbow Fig. 8052



### Material Specifications

#### Cast Fittings

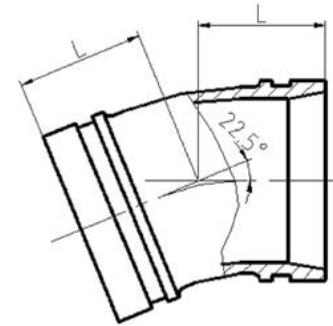
Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
32 1¼	42.4 1.669	3.45 500	45 1.77
40 1½	48.3 1.900	3.45 500	45 1.77
50 2	60.3 2.375	3.45 500	48 1.89
65 2½	73.0 2.875	3.45 500	51 2.00
65 2½	76.1 3.000	3.45 500	51 2.00
80 3	88.9 3.500	3.45 500	57 2.24
100 4	108.0 4.250	3.45 500	73 2.87
100 4	114.3 4.500	3.45 500	73 2.87
125 5	139.7 5.500	3.45 500	73 2.87
150 6	159.0 6.250	3.45 500	79 3.11
150 6	165.1 6.500	3.45 500	79 3.11
150 6	168.3 6.625	3.45 500	79 3.11
200 8	219.1 8.625	3.45 500	98 3.86



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Reducing Tee Fig. 8061



### Material Specifications

#### Cast Fittings

Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Size L1 mm/in	Size 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 1 1/2	60.3 x 48.3 2.375 x 1.900	500 3.45	70 2.75	70 2.75
65 x 40 2 1/2 x 1 1/2	73.0 x 48.3 2.875 x 1.900	500 3.45	76 3.00	76 3.00
65 x 50 2 1/2 x 2	73.0 x 60.3 2.875 x 2.375	500 3.45	69 2.72	76 3.00
65 x 32 2 1/2 x 1 1/4	76.1 x 42.4 3.000 x 1.660	500 3.45	76 3.00	76 3.00
65 x 40 2 1/2 x 1 1/2	76.1 x 48.3 3.000 x 1.900	500 3.45	76 3.00	76 3.00
65 x 50 2 1/2 x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	69 2.72	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 1 1/4	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 1 1/2	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 2 1/2	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 2 1/2	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	85.5 3.37
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



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Reducing Tee Fig. 8061

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Size L1 mm/in	Size L2 mm/in	Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Size L1 mm/in	Size L2 mm/in
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	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
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	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
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	150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	300 2.07	140 5.50	140 5.50
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	150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	300 2.07	140 5.50	140 5.50
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	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
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	150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	300 2.07	140 5.50	140 5.50
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	150 x 125 6 x 5	165.1 x 139.7 6.500 x 5.500	300 2.07	140 5.50	140 5.50
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	165 x 133 6 x 5	165.1 x 133.0 6.500 x 5.500	300 2.07	140 5.50	140 5.50
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	165 x 159 6 x 6	165.1 x 159.0 6.500 x 6.250	500 3.45	140 5.50	140 5.50
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	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
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	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
125 x 40 5 x 1½	139.7 x 48.3 5.500 x 1.900	500 3.45	124 4.88	124 4.88	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
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	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
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	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
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	150 x 125 6 x 5	168.3 x 139.7 6.625 x 5.500	300 2.07	140 5.50	140 5.50
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 125 6 x 5	168.3 x 141.3 6.625 x 5.563	300 2.07	140 5.50	140 5.50
125 x 50 5 x 2	141.3 x 60.3 5.563 x 2.375	500 3.45	124 4.88	124 4.88	200 x 150 8 x 6	216.3 x 165.1 8.516 x 6.500	300 2.07	175 6.89	175 6.89
125 x 80 5 x 3	141.3 x 88.9 5.563 x 3.500	500 3.45	124 4.88	124 4.88	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
125 x 100 5 x 4	141.3 x 114.3 5.563 x 4.500	500 3.45	124 4.88	124 4.88	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
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	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
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	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
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	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
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	200 x 125 8 x 5	219.1 x 133.0 8.625 x 5.250	300 2.07	175 6.89	175 6.89



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## Reducing Tee Fig. 8061

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Size L1 mm/in	Size L2 mm/in	Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Size L1 mm/in	Size L2 mm/in
200 x 125 8 x 5	219.1 x 139.7 8.625 x 5.500	300 2.07	175 6.89	175 6.89	350 x 200 14 x 8	355.6 x 219.1 14.00 x 8.625	300 2.07	280 11.02	280 11.02
200 x 150 8 x 6	219.1 x 159.0 8.625 x 6.250	300 2.07	175 6.89	175 6.89	350 x 125 14 x 5	377.0 x 133.0 14.840 x 5.250	300 2.07	240 9.45	265 10.43
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	300 2.07	175 6.89	175 6.89	350 x 150 14 x 6	377.0 x 159.0 14.840 x 6.250	300 2.07	240 9.45	265 10.43
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	350 x 200 14 x 8	377.0 x 219.1 14.840 x 8.625	300 2.07	240 9.45	265 10.43
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	350 x 250 14 x 10	377.0 x 273.0 14.840 x 10.750	500 3.45	240 9.45	265 10.43
250 x 150 10 x 6	273.0 x 165.1 10.750 x 6.500	300 2.07	229 9.00	229 9.00	350 x 300 14 x 12	377.0 x 323.9 14.840 x 12.750	300 2.07	240 9.45	265 10.43
250 x 150 10 x 6	273.0 x 168.3 10.750 x 6.625	300 2.07	229 9.00	229 9.00	400 x 125 16 x 5	426.0 x 133.0 16.772 x 5.250	500 3.45	260 10.24	285 11.22
250 x 200 10 x 8	273.0 x 219.1 10.750 x 8.625	300 2.07	229 9.00	229 9.00	400 x 150 16 x 6	426.0 x 159.0 16.772 x 6.250	500 3.45	260 10.24	285 11.22
300 x 150 12 x 6	323.9 x 165.1 12.750 x 6.500	300 3.45	254 10	254 10	400 x 200 16 x 8	426.0 x 219.1 16.772 x 8.625	500 3.45	260 10.24	285 11.22
300 x 200 12 x 8	323.9 x 219.1 12.750 x 8.625	300 2.07	254 10	254 10	400 x 250 16 x 10	426.0 x 273.0 16.772 x 10.750	300 2.07	260 10.24	285 11.22
300 x 250 12 x 10	323.9 x 273.0 12.750 x 10.750	300 2.07	254 10	254 10	400 x 300 16 x 12	426.0 x 323.9 16.772 x 12.750	300 2.07	260 10.24	285 11.22



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Cross  
Fig. 8068



## Material Specifications

### Cast Fittings

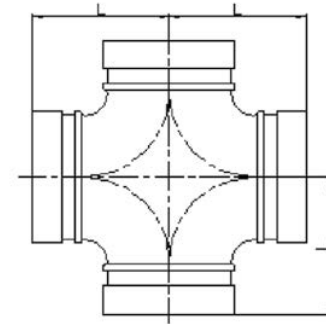
Ductile Iron conforming to ASTM A-536

### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
32 1¼	42.4 1.669	3.45 500	70.0 2.75
40 1½	48.3 1.900	3.45 500	70.0 2.75
50 2	60.3 2.375	3.45 500	70.0 2.75
65 2½	73.0 2.875	3.45 500	76.0 3.00
65 2½	76.1 3.000	3.45 500	76.0 3.00
80 3	88.9 3.500	3.45 500	85.5 3.37
100 4	108.0 4.250	3.45 500	101.0 3.98
100 4	114.3 4.500	3.45 500	101.0 3.98
125 5	139.7 5.500	3.45 500	124.0 4.88
125 5	141.3 5.563	3.45 500	124.0 4.88
150 6	159.0 6.250	3.45 500	140.0 5.50
150 6	165.1 6.500	3.45 500	140.0 5.50
150 6	168.3 6.625	3.45 500	140.0 5.50
200 8	219.1 8.625	3.45 500	175.0 6.89
250 10	273.0 10.750	3.45 500	229.0 9.00
300 12	323.9 12.750	3.45 500	254.0 10.00



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Grooved Concentric Reducer Fig. 8072



### Material Specifications

#### Cast Fittings

Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max Working Pressure MPa/PSI	Dimension L mm/in
32 x 25 1¼ x 1	42.4 x 33.7 1.669 x 1.327	3.45 500	64 2.50
40 x 25 1½ x 1	48.3 x 33.7 1.900 x 1.327	3.45 500	64 2.50
40 x 32 1½ x 1¼	48.3 x 42.4 1.900 x 1.669	3.45 500	64 2.50
50 x 25 2 x 1	60.3 x 33.7 2.375 x 1.327	3.45 500	64 2.50
50 x 32 2 x 1¼	60.3 x 42.4 2.375 x 1.669	3.45 500	64 2.50
50 x 40 2 x 1½	60.3 x 48.3 2.375 x 1.900	3.45 500	64 2.50
65 x 32 2½ x 1¼	73.0 x 42.4 2.875 x 1.669	3.45 500	64 2.50
65 x 40 2½ x 1½	73.0 x 48.3 2.875 x 1.900	3.45 500	64 2.50
65 x 50 2½ x 2	73.0 x 60.3 2.875 x 2.375	3.45 500	64 2.50
65 x 25 2½ x 1	76.1 x 33.7 3.000 x 1.327	3.45 500	64 2.50
65 x 32 2½ x 1¼	76.1 x 42.4 3.000 x 1.669	3.45 500	64 2.50
65 x 40 2½ x 1½	76.1 x 48.3 3.000 x 1.900	3.45 500	64 2.50
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	3.45 500	64 2.50
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.327	3.45 500	64 2.50



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
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Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Grooved Concentric Reducer Fig. 8072

Nominal Size mm/in	Pipe O.D. mm/in	Max Working Pressure MPa/PSI	Dimension L mm/in	Nominal Size mm/in	Pipe O.D. mm/in	Max Working Pressure MPa/PSI	Dimension L mm/in
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	3.45 500	64 2.50	150 x 50 6 x 2	159.0 x 60.3 6.250 x 2.375	3.45 500	102 4.00
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	3.45 500	64 2.50	150 x 65 6 x 2½	159.0 x 76.1 6.250 x 3.000	3.45 500	102 4.00
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	3.45 500	64 2.50	150 x 80 6 x 3	159.0 x 88.9 6.250 x 3.500	3.45 500	102 4.00
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	3.45 500	64 2.50	150 x 100 6 x 4	159.0 x 108.0 6.250 x 4.250	3.45 500	102 4.00
100 x 50 4 x 2	108.0 x 60.3 4.250 x 2.375	3.45 500	76 3.00	150 x 100 6 x 4	159.0 x 114.3 6.250 x 4.500	3.45 500	102 4.00
100 x 65 4 x 2½	108.0 x 73.0 4.250 x 2.875	3.45 500	76 3.00	150 x 125 6 x 5	159.0 x 133.0 6.250 x 5.250	3.45 500	102 4.00
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	3.45 500	76 3.00	150 x 50 6 x 2	165.1 x 60.3 6.500 x 2.375	3.45 500	102 4.00
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	3.45 500	76 3.00	150 x 65 6 x 2½	165.1 x 76.1 6.500 x 3.000	3.45 500	102 4.00
100 x 40 4 x 1½	114.3 x 48.3 4.500 x 1.900	3.45 500	76 3.00	150 x 80 6 x 3	165.1 x 88.9 6.500 x 3.500	3.45 500	102 4.00
100 x 50 4 x 2	114.3 x 60.3 4.500 x 2.375	3.45 500	76 3.00	150 x 100 6 x 4	165.1 x 114.3 6.500 x 4.500	3.45 500	102 4.00
100 x 65 4 x 2½	114.3 x 73.0 4.500 x 2.875	3.45 500	76 3.00	150 x 125 6 x 5	165.1 x 139.7 6.500 x 5.500	3.45 500	102 4.00
100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	3.45 500	76 3.00	150 x 50 6 x 2	168.3 x 60.3 6.625 x 2.375	3.45 500	102 4.00
100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	3.45 500	76 3.00	150 x 65 6 x 2½	168.3 x 73.0 6.625 x 2.875	3.45 500	102 4.00
125 x 100 5 x 4	133.0 x 108.0 5.250 x 4.250	3.45 500	89 3.50	150 x 65 6 x 2½	168.3 x 76.1 6.625 x 3.000	3.45 500	102 4.00
125 x 100 5 x 4	133.0 x 114.3 5.250 x 4.500	3.45 500	89 3.50	150 x 80 6 x 3	168.3 x 88.9 6.625 x 3.500	3.45 500	102 4.00
125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	3.45 500	89 3.50	150 x 100 6 x 4	168.3 x 114.3 6.625 x 4.500	3.45 500	102 4.00
125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	3.45 500	89 3.50	150 x 125 6 x 5	168.3 x 139.7 6.625 x 5.500	3.45 500	102 4.00
125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	3.45 500	89 3.50	150 x 125 6 x 5	168.3 x 141.3 6.625 x 5.563	3.45 500	102 4.00
125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	3.45 500	89 3.50	200 x 100 8 x 4	216.3 x 114.3 8.516 x 4.500	3.45 500	127 5.00
125 x 65 5 x 2½	141.3 x 73.0 5.563 x 2.875	3.45 500	89 3.50	200 x 150 8 x 6	216.3 x 165.1 8.516 x 6.500	3.45 500	127 5.00
125 x 80 5 x 3	141.3 x 88.9 5.563 x 3.500	3.45 500	89 3.50	200 x 65 8 x 2½	219.1 x 73.0 8.625 x 2.875	3.45 500	127 5.00
125 x 100 5 x 4	141.3 x 114.3 5.563 x 4.500	3.45 500	89 3.50	200 x 80 8 x 3	219.1 x 88.9 8.625 x 3.500	3.45 500	127 5.00



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## Grooved Concentric Reducer Fig. 8072

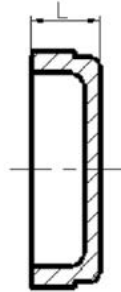
Nominal Size mm/in	Pipe O.D. mm/in	Max Working Pressure MPa/PSI	Dimension L mm/in
200 x 100 8 x 4	219.1 x 114.3 8.625 x 4.500	3.45 500	127 5.00
200 x 125 8 x 5	219.1 x 139.7 8.625 x 5.500	3.45 500	127 5.00
200 x 125 8 x 5	219.1 x 141.3 8.625 x 5.563	3.45 500	127 5.00
200 x 150 8 x 6	219.1 x 159.0 8.625 x 6.250	3.45 500	127 5.00
200 x 150 8 x 6	219.1 x 165.1 8.625 x 6.500	3.45 500	127 5.00
200 x 150 8 x 6	219.1 x 168.3 8.625 x 6.625	3.45 500	127 5.00
250 x 150 10 x 6	273.0 x 159.0 10.750 x 6.250	3.45 500	127 5.00
250 x 150 10 x 6	273.0 x 165.1 10.750 x 6.500	3.45 500	152 6.00
250 x 150 10 x 6	273.0 x 168.3 10.750 x 6.625	3.45 500	152 6.00
250 x 200 10 x 8	273.0 x 219.1 10.750 x 8.625	3.45 500	152 6.00
300 x 200 12 x 8	323.9 x 219.1 12.750 x 8.625	3.45 500	178 7.00
300 x 250 12 x 10	323.9 x 273.0 12.750 x 10.750	3.45 500	178 7.00



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## Grooved Cap Fig. 8074



### Material Specifications

#### Cast Fittings

Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimension L mm/in
25 1	33.7 1.327	3.45 500	22.5 0.88
32 1¼	42.4 1.669	3.45 500	23.5 0.93
40 1½	48.3 1.900	3.45 500	23.5 0.93
50 2	60.3 2.375	3.45 500	23.5 0.93
65 2½	73.0 2.875	3.45 500	23.5 0.93
65 2½	76.1 3.000	3.45 500	24.0 0.94
80 3	88.9 3.500	3.45 500	24.0 0.94
100 4	108.0 4.250	3.45 500	27.0 1.06
100 4	114.3 4.500	3.45 500	27.0 1.06

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimension L mm/in
125 5	133.0 5.250	3.45 500	25.5 1.00
125 5	139.7 5.500	3.45 500	25.5 1.00
125 5	141.3 5.563	3.45 500	25.5 1.00
150 6	159.0 6.250	2.07 300	25.5 1.00
150 6	165.1 6.500	2.07 300	26.0 1.02
150 6	168.3 6.625	2.07 300	24.5 0.97
200 8	219.1 8.625	2.07 300	30.0 1.18
250 10	273.0 10.750	2.07 300	32 1.26
300 12	323.9 12.750	2.07 300	32 1.26



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Grooved Flange Adapter Fig. 8084



Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions				Bolt/Nut No.-Size mm
			L mm/in	X mm/in	Y mm/in	Z mm/in	
25 1	33.7 1.327	1.6 225	60.5 2.382	115 4.53	85 3.35	16 0.63	4 - M12
32 1¼	42.4 1.669	1.6 225	60.5 2.382	140 5.51	100 3.94	16 0.63	4 - M16
40 1½	48.3 1.900	1.6 225	60.5 2.382	150 5.91	110 4.33	16 0.63	4 - M16
50 2	60.3 2.375	1.6 225	64.0 2.52	165 6.50	125 4.92	15 0.59	4 - M16
65 2½	76.1 3.000	1.6 225	65.0 2.56	185 7.28	145 5.71	15 0.59	4 - M16
80 3	88.9 3.500	1.6 225	65.0 2.56	200 7.87	160 6.30	15 0.59	8 - M16
100 4	108.0 4.250	1.6 225	70.0 2.76	220 8.66	180 7.09	15 0.59	8 - M16
100 4	114.3 4.500	1.6 225	70.0 2.76	220 8.66	180 7.09	15 0.59	8 - M16
125 5	133.0 5.250	1.6 225	70.0 2.76	250 9.84	210 8.27	17 0.70	8 - M16
125 5	139.7 5.500	1.6 225	69.0 2.71	250 9.84	210 8.27	17 0.70	8 - M16
150 6	159.0 6.250	1.6 225	70.0 2.76	282 11.10	240 9.45	17 0.70	8 - M20
150 6	165.1 6.500	1.6 225	70.0 2.76	282 11.10	240 9.45	17 0.70	8 - M20
150 6	168.3 6.625	1.6 225	70.0 2.76	284 11.18	240 9.45	17 0.70	8 - M20
200 8	219.1 8.625	1.6 225	80.0 3.150	340 13.39	295 11.61	18 0.71	12 - M20

### Material Specifications

#### Cast Fittings

Ductile Iron conforming to ASTM A-536

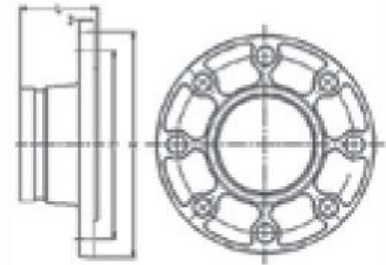
#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

#### Specified Bolt Torque Metric Bolts

Bolt Size inch	Specified Bolt Torque	
	ft-lb	N-M
M10	30-45	40-60
M12	80-100	110-135
M16	100-130	135-175
M20	130-180	175-245
M24	300-400	400-550



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
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Notes 1:	
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## Grooved Flange Adapter Fig. 8084

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions				Bolt/Nut No.-Size mm
			L mm/in	X mm/in	Y mm/in	Z mm/in	
250 10	273.0 10.750	1.6 225	85.0 3.350	403 15.87	355 13.98	21 0.83	12 - M24
300 12	323.9 12.750	1.6 225	90.0 3.54	458 18.03	410 16.14	23 0.91	12 - M24
350 14	377.0 12.843	1.6 225	100.0 3.937	520 20.47	470 18.50	25 1.00	16 - M24
400 16	426.0 16.772	1.6 225	110.0 4.331	580 22.83	525 20.67	27 1.06	16 - M27



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## Cone Red Fig. 8087



### Material Specifications

#### Cast Fittings

Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimension 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



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



## Cone Red Fig. 8087

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimension L mm/in	Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimension L mm/in
65 x 50 2½ x 2	76.1 x 60.3 3.000 x 2.375	500 3.45	64 2.50	100 x 65 4 x 2½	114.3 x 76.1 4.500 x 3.000	500 3.45	76 3.00
80 x 15 3 x ½	88.9 x 21.3 3.500 x 0.825	500 3.45	64 2.50	100 x 80 4 x 3	114.3 x 88.9 4.500 x 3.500	500 3.45	76 3.00
80 x 20 3 x ¾	88.9 x 26.9 3.500 x 1.05	500 3.45	64 2.50	125 x 40 5 x 1½	133.0 x 48.3 5.250 x 1.900	500 3.45	89 3.50
80 x 25 3 x 1	88.9 x 33.7 3.500 x 1.315	500 3.45	64 2.50	125 x 40 5 x 2	133.0 x 60.3 5.250 x 2.375	500 3.45	89 3.50
80 x 32 3 x 1¼	88.9 x 42.4 3.500 x 1.660	500 3.45	64 2.50	125 x 65 5 x 2½	133.0 x 76.1 5.250 x 3.000	500 3.45	89 3.50
80 x 40 3 x 1½	88.9 x 48.3 3.500 x 1.900	500 3.45	64 2.50	125 x 65 5 x 3	133.0 x 88.9 5.250 x 3.500	500 3.45	89 3.50
80 x 50 3 x 2	88.9 x 60.3 3.500 x 2.375	500 3.45	64 2.50	125 x 25 5 x 1	139.7 x 33.7 5.500 x 1.315	500 3.45	89 3.50
80 x 65 3 x 2½	88.9 x 73.0 3.500 x 2.875	500 3.45	64 2.50	125 x 32 5 x 1¼	139.7 x 42.4 5.500 x 1.660	500 3.45	89 3.50
80 x 65 3 x 2½	88.9 x 76.1 3.500 x 3.000	500 3.45	64 2.50	125 x 40 5 x 1½	139.7 x 48.3 5.500 x 1.900	500 3.45	89 3.50
100 x 25 4 x 1	108.0 x 33.7 4.250 x 1.315	500 3.45	76 3.00	125 x 50 5 x 2	139.7 x 60.3 5.500 x 2.375	500 3.45	89 3.50
100 x 32 4 x 1¼	108.0 x 42.4 4.250 x 1.660	500 3.45	76 3.00	125 x 65 5 x 2½	139.7 x 76.1 5.500 x 3.000	500 3.45	89 3.50
100 x 40 4 x 1½	108.0 x 48.3 4.250 x 1.900	500 3.45	76 3.00	125 x 80 5 x 3	139.7 x 88.9 5.500 x 3.500	500 3.45	89 3.50
100 x 50 4 x 2	108.0 x 60.3 4.250 x 2.375	500 3.45	76 3.00	125 x 100 5 x 4	139.7 x 114.3 5.500 x 4.500	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	76 3.00	125 x 100 5 x 4	141.3 x 114.3 5.563 x 4.500	500 3.45	89 3.50
100 x 80 4 x 3	108.0 x 88.9 4.250 x 3.500	500 3.45	76 3.00	150 x 20 6 x ¾	159.0 x 26.9 6.250 x 1.05	500 3.45	102 4.00
100 x 15 4 x ½	114.3 x 21.3 4.500 x 0.825	500 3.45	76 3.00	150 x 25 6 x 1	159.0 x 33.7 6.250 x 1.315	500 3.45	102 4.00
100 x 20 4 x ¾	114.3 x 26.9 4.500 x 1.05	500 3.45	76 2.50	150 x 32 6 x 1¼	159.0 x 42.4 6.250 x 1.660	500 3.45	102 4.00
100 x 25 4 x 1	114.3 x 33.7 4.500 x 1.315	500 3.45	76 3.00	150 x 40 6 x 1½	159.0 x 48.3 6.250 x 1.900	500 3.45	102 4.00
100 x 32 4 x 1¼	114.3 x 42.4 4.500 x 1.660	500 3.45	76 3.00	150 x 50 6 x 2	159.0 x 60.3 6.250 x 2.375	500 3.45	102 4.00
100 x 40 4 x 1½	141.3 x 48.3 4.500 x 1.900	500 3.45	76 3.00	150 x 65 6 x 2½	159.0 x 76.1 6.250 x 3.000	500 3.45	102 4.00
100 x 50 4 x 2	141.3 x 60.3 4.500 x 2.375	500 3.45	76 3.00	150 x 80 6 x 3	159.0 x 88.9 6.250 x 3.500	500 3.45	102 4.00
100 x 65 4 x 2½	141.3 x 73.0 4.500 x 2.875	500 3.45	76 3.00	150 x 100 6 x 4	159.0 x 114.3 6.250 x 4.500	500 3.45	102 4.00



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## Cone Red Fig. 8087

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimension L mm/in
150 x 15 6 x 1/2	165.1 x 21.3 6.500 x 0.825	500 3.45	102 4.00
150 x 20 6 x 3/4	165.1 x 26.9 6.500 x 1.05	500 3.45	102 4.00
150 x 25 6 x 1	165.1 x 33.7 6.500 x 1.315	500 3.45	102 4.00
150 x 32 6 x 1 1/4	165.1 x 42.4 6.500 x 1.660	500 3.45	102 4.00
150 x 40 6 x 1 1/2	165.1 x 48.3 6.500 x 1.900	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 2 1/2	165.1 x 76.1 6.500 x 3.000	500 3.45	102 4.00
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 25 6 x 1	168.3 x 33.7 6.625 x 1.315	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 125 6 x 5	168.3 x 141.3 6.625 x 5.563	500 3.45	102 4.00
200 x 40 8 x 1 1/2	219.1 x 48.3 8.625 x 1.900	500 3.45	127 5.00
200 x 50 8 x 2	219.1 x 60.3 8.625 x 2.375	500 3.45	127 5.00
200 x 65 8 x 2 1/2	219.1 x 73.0 8.625 x 2.875	500 3.45	127 5.00
200 x 65 8 x 2 1/2	219.1 x 76.1 8.625 x 3.000	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



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## Rigid Coupling Fig. 8400



### Description

The 8400 Coupling is our standard coupling and is designed for rigid piping applications. The 8400 is specially designed to provide a rigid, locked-in pipe connection to meet the specific demands of rigid design steel pipe.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

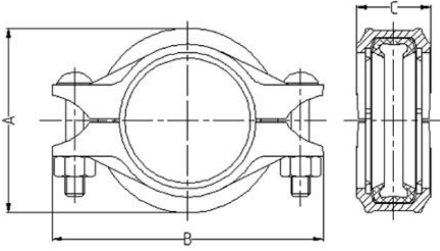
Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.



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Project:	Approved
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## Rigid Coupling Fig. 8400



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Dimensions			Bolt Size No.-Size mm
			A mm/in	B mm/in	C mm/in	
25 1	33.7 1.327	3.45 500	59 2.32	100 3.94	44 1.73	2 - M10 x 57
32 1¼	42.4 1.669	3.45 500	66 2.60	105 4.13	45 1.77	2 - M10 x 57
40 1½	48.3 1.900	3.45 500	72 2.83	112 4.41	45 1.77	2 - M10 x 57
50 2	60.3 2.375	3.45 500	85 3.35	130 5.12	45 1.77	2 - M10 x 57
65 2½	73.0 2.875	3.45 500	98 3.86	140 5.51	45 1.77	2 - M10 x 57
65 2½	76.1 3.000	3.45 500	101 3.98	145 5.71	45 1.77	2 - M10 x 57
80 3	88.9 3.500	3.45 500	115 4.53	168 6.61	46 1.81	2 - M12 x 70
100 4	108.0 4.250	3.45 500	140 5.51	197 7.76	52 2.05	2 - M12 x 70
100 4	114.3 4.500	3.45 500	146 5.75	200 7.87	52 2.05	2 - M12 x 70
125 5	133.0 5.250	3.10 450	165 6.50	226 8.90	52 2.05	2 - M16 x 85
125 5	139.7 5.500	3.10 450	170 6.69	235 9.25	52 2.05	2 - M16 x 85
125 5	141.3 5.563	3.10 450	172 6.77	233 9.17	52 2.05	2 - M16 x 85
150 6	159.0 6.250	3.10 450	190 7.48	254 10.00	52 2.05	2 - M16 x 85
150 6	165.1 6.500	3.10 450	198 7.80	263.5 10.37	52 2.05	2 - M16 x 85
150 6	168.3 6.625	3.10 450	202 7.95	265 10.43	52 2.05	2 - M16 x 85
200 8	219.1 8.625	3.10 450	260 10.24	342 13.46	62 2.44	2 - M20 x 115
250 10	273.0 10.750	2.07 300	327 12.87	420 16.54	63 2.48	2 - M22 x 125
300 12	323.9 12.750	2.07 300	378 14.88	466.5 18.37	63 2.48	2 - M22 x 140

**Notes:**

1. Working pressure and/or end load are total allowable, based on standard weight steel pipe, roll or cut grooved.
2. One time field test pressure may be increased to 1.5 times the figures listed above.

Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please contact your local ASC Engineered Solutions™ Representative.



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**Fig. 8400 Rigid Coupling**

## 1 Check & Lubricate Gasket

Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok lubricant to the exterior surface and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.

## 2 Gasket Installation

Slip the gasket over the pipe end, making sure the gasket lip does not overhang the pipe end.

## 3 Alignment

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

## 4 Housings

With one nut unthreaded to the end of the bolt, unthread the other nut completely and swing the coupling housing halves over the gasket, making sure the housing keys engage the grooves. Insert the bolt and turn the nuts finger tight.

## 5 Tighten Nuts

Tighten the nuts alternately and equally to the specified bolt torque keeping the gaps of the bolt pads evenly spaced.

**Caution:** Uneven tightening may cause gasket to pinch.

## 6 Assembly is Complete

Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.



Specified Bolt Torque  
ANSI Bolts

Bolt Size	Specified Bolt Torque	
	ft-lb	N-M
3/8 or M10	30-45	40-60
1/2 or M12	80-100	110-135
5/8 or M16	100-130	135-175
3/4 or M20	130-180	175-245
7/8 or M22	180-220	245-300

### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Light-Duty Rigid Coupling Fig. 8400S



### Description

The 8400S Coupling is specially designed to provide a rigid, locked-in pipe connection to meet the specific demands of rigid design steel pipe systems. Fast and easy swing-over installation of the rugged lightweight housing produces a secure, rigid pipe joint.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, contact your local ASC Engineered Solutions™ Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### ANSI Bolts & Heavy Hex Nuts

Heat treated, oval-neck track head bolts conforming to SAE J429 Grade 5 with a minimum tensile strength of 120,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

#### Metric Bolts & Heavy Hex Nuts

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

#### Coatings

Rust inhibiting paint – Color: Red (standard)

Hot Dipped Zinc Galvanized (optional)

For other coating requirements contact an ASC Engineered Solutions Representative.

**Gaskets** (Properties as designated in accordance with ASTM D-2000)

#### Grade “E” EPDM (Green Stripe)

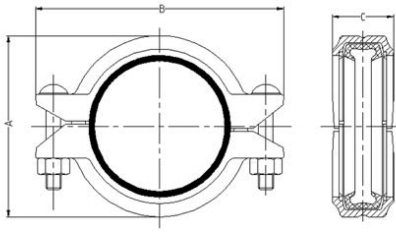
Working Temperature Range is -30°F to 230°F (-34°C to 110°C) Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS OR WITH HYDROCARBONS.



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## Light-Duty Rigid Coupling Fig. 8400S



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure MPa/PSI	Dimensions			Bolt Size No.-Size mm
			A mm/in	B mm/in	C mm/in	
80 3	88.9 3.500	2.07 300	114 4.49	160 6.30	45 1.77	2 - M10 x 57
100 4	108.0 4.250	2.07 300	135 5.31	185 7.28	50 1.97	2 - M12 x 70
100 4	114.3 4.500	2.07 300	140 5.51	192 7.56	50 1.97	2 - M12 x 70
125 5	139.7 5.500	2.07 300	168 6.61	225 8.86	50 1.97	2 - M12 x 76
125 5	141.3 5.563	2.07 300	170 6.69	225 8.86	50 1.97	2 - M12 x 76
150 6	159.0 6.250	2.07 300	190 7.48	250 9.84	50 1.97	2 - M16 x 85
150 6	165.1 6.500	2.07 300	195 7.68	250 9.84	50 1.97	2 - M12 x 76
150 6	168.3 6.625	2.07 300	200 7.87	255 10.04	50 1.97	2 - M12 x 76
200 8	219.1 8.625	2.07 300	255 10.04	323 12.72	58 2.28	2 - M16 x 85

**Notes:**

1. Working pressure and/or end load are total allowable, based on standard weight steel pipe, roll or cut grooved.
2. One time field test pressure may be increased to 1.5 times the figures listed above.

Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please contact your local ASC Engineered Solutions™ Representative.



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## Fig. 8400S Light-Duty Rigid Coupling

### 1 Check & Lubricate Gasket

Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok lubricant to the exterior surface and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.



### 2 Gasket Installation

Slip the gasket over the pipe end, making sure the gasket lip does not overhang the pipe end.



### 3 Alignment

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



### 4 Housings

With one nut unthreaded to the end of the bolt, unthread the other nut completely and swing the coupling housing halves over the gasket, making sure the housing keys engage the grooves. Insert the bolt and turn the nuts finger tight.



### 5 Tighten Nuts

Tighten the nuts alternately and equally to the specified bolt torque keeping the gaps of the bolt pads evenly spaced.

**Caution:** Uneven tightening may cause gasket to pinch.



### 6 Assembly is Complete

Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.



Specified Bolt Torque  
ANSI Bolts

Bolt Size	Specified Bolt Torque		
	inch	ft-lb	N-M
3/8 or M10	30-45	40-60	
1/2 or M12	80-100	110-135	
5/8 or M16	100-130	135-175	
3/4 or M20	130-180	175-245	
7/8 or M22	180-220	245-300	

### Caution

Proper torquing of bolts is required to obtain specified performance.

- Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure supply, battery strength and operational variations.
- Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.
- Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.



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## Short Style 90° Elbow Fig. 8450



### Material Specifications

#### Cast Fittings

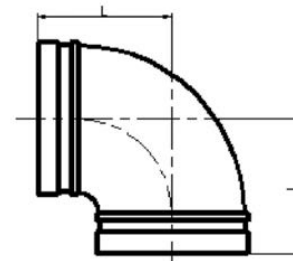
Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
50 2	60.3 2.375	2.07 300	70.0 2.76
65 2½	73.0 2.875	2.07 300	76.0 2.99
65 2½	76.1 3.000	2.07 300	76.0 2.99
80 3	88.9 3.500	2.07 300	85.5 3.37
100 4	108.0 4.250	2.07 300	101.0 3.98
100 4	114.3 4.500	2.07 300	101.0 3.98
125 5	139.7 5.500	2.07 300	124.0 4.88
150 6	159.0 6.250	2.07 300	140.0 5.51
150 6	165.1 6.500	2.07 300	140.0 5.51
150 6	168.3 6.625	2.07 300	140.0 5.51
200 8	216.3 8.516	2.07 300	175.0 6.89
200 8	219.1 8.625	2.07 300	165.0 6.50



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## Short Style Tee Fig. 8460



### Material Specifications

#### Cast Fittings

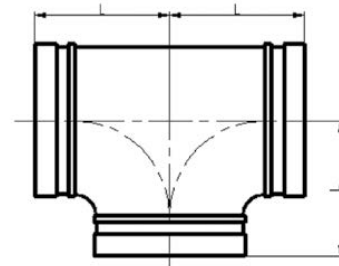
Ductile Iron conforming to ASTM A-536

#### Finish

Rust inhibiting paint – Color: Red (standard)  
Hot Dipped Zinc Galvanized conforming to ASTM A-153 (optional)

For other coating requirements contact an ASC Engineered Solutions™ Representative.

Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure MPa/PSI	Dimensions L mm/in
50 2	60.3 2.375	2.07 300	70.0 2.75
65 2½	73.0 2.875	2.07 300	76.0 3.00
65 2½	76.1 3.000	2.07 300	76.0 3.00
80 3	88.9 3.500	2.07 300	85.5 3.37
100 4	108.0 4.250	2.07 300	101.0 3.98
100 4	114.3 4.500	2.07 300	101.0 3.98
125 5	139.7 5.500	2.07 300	124.0 4.88
150 6	159.0 6.250	2.07 300	140.0 5.50
150 6	165.1 6.500	2.07 300	140.0 5.50
150 6	168.3 6.625	2.07 300	140.0 5.51
200 8	216.3 8.516	2.07 300	175.0 6.89
200 8	219.1 8.625	2.07 300	175.0 6.89



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### **About ASC Engineered Solutions**

ASC Engineered Solutions is defined by quality—in its products, services and support. With more than 1,400 employees, the company’s portfolio of precision-engineered piping support, valves and connections provides products to more than 4,000 customers across industries, such as mechanical, industrial, fire protection, oil and gas, and commercial and residential construction. Its portfolio of leading brands includes ABZ Valve®, AFCON®, Anvil®, Anvil EPS, Anvil Services, Basic-PSA, Beck®, Catawissa, Cooplet®, FlexHead®, FPPI®, Gruvlok®, J.B. Smith, Merit®, North Alabama Pipe, Quadrant®, SCI®, Sharpe®, SlideLOK®, SPF® and SprinkFLEX®. With headquarters in Commerce, CA, and Exeter, NH, ASC also has ISO 9001:2015 certified production facilities in PA, TN, IL, TX, AL, LA, KS, and RI.



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