



J&D SPRINKLER CO., INC.
Fire Protection - Est. 1986

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AMPLE STORAGE

APARTMENT

JACKSON BLVD/US HWY 421

ERWIN

NORTH CAROLINA

SUBMITTAL DATA



VALVES

FireLock® Butterfly Valve

Series 705 with Weatherproof Actuator



1.0 PRODUCT DESCRIPTION

- Available Sizes: 2 – 12”/50 – 300 mm
- cULus Listed, LPCB Listed, FM and VdS Approved for service up to 300 psi/2068 kPa /20 bar.
- Designed for fire protection services only.
- Features a weatherproof actuator housing Approved for indoor and outdoor use.
- Actuation options: Hand wheel (2 – 12”/50 – 300 mm)
- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials).

2.0 CERTIFICATION/LISTINGS



NOTES

- Refer to Victaulic [submittal publication 10.01](#) for details

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

2.1 CERTIFICATION/LISTINGS

Size	Approval/Listing Service Pressures			
	Series 705 Butterfly Valve			
	cULus	FM	Vds	LPCB
2 50	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa	up to 300psi/2068kPa
2½ 65	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
76.1 mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
3 80	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
4 100	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
5 125	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
139.7 mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
6 150	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
165.1 mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
8 200	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
10 250	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
12 300	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa

3.0 SPECIFICATIONS – MATERIAL

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

End Face, 2 – 6”/50 – 150 mm: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Seal Retainer, 8 – 12”/200 – 300 mm: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Body Coating: Black alkyd enamel

Disc: Ductile Iron conforming to ASTM A-536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B-733

Seat: Grade “E” EPDM

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

Stem Seals: EPDM

Stem Retaining Ring: Carbon steel

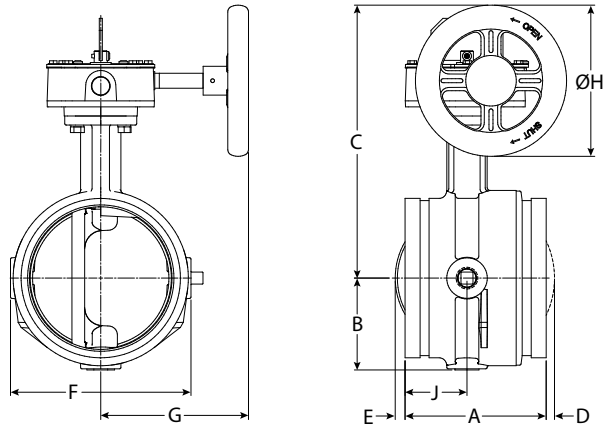
Actuator:

2 – 8”/50 – 200 mm: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing

10 – 12”/250 – 300 mm: Steel worm and cast iron quadrant gear, in a cast iron housing

4.0 DIMENSIONS

Series 705



Size		Dimensions								
Nominal inches mm	Actual Outside Diameter inches mm	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	DIA H inches mm	J inches mm
2 60.3	2.375 60.3	4.25 108.0	2.28 57.9	6.41 162.8	-	-	4.00 101.6	4.22 107.2	4.50 114.3	2.12 53.8
2½ 73	2.875 73.0	3.77 95.8	2.28 57.9	7.54 191.5	-	-	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
76.1 mm	3.000 76.1	3.77 95.8	2.28 57.9	7.54 191.5	-	-	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
3 88.9	3.500 88.9	3.77 95.8	2.53 64.3	7.79 197.9	-	-	4.50 114.3	4.22 107.2	4.50 114.3	1.77 45.0
108 mm	4.250 108.0	4.63 117.6	2.88 73.2	8.81 223.8	-	-	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
4 114.3	4.500 114.3	4.63 117.6	2.88 73.2	8.81 223.8	-	-	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
133 mm	5.250 133.0	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
139.7 mm	5.500 139.7	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.6
5 141.3	5.563 141.3	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
159 mm	6.250 159.0	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
165.1 mm	6.500 165.1	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
6 168.3	6.625 168.3	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	1.90 48.3
8 219.1	8.625 219.1	5.33 135.4	5.07 128.8	13.53 343.6	0.80 20.3	1.47 37.3	10.00 254.0	6.19 157.2	8.10 205.7	2.33 59.2
10 273	10.750 273.0	6.40 162.6	6.37 161.8	15.64 397.3	1.41 35.8	1.81 46.0	12.25 311.2	8.10 205.7	9.00 228.6	-
12 323.9	12.750 323.9	6.50 165.1	7.36 186.9	16.64 422.7	2.30 58.4	2.80 71.1	14.25 362.0	8.10 205.7	9.00 228.6	-

NOTE

- Optional ½"/15 mm tap available. Contact Victaulic for details.

5.0 PERFORMANCE

Series 705

The chart expresses the frictional resistance of Victaulic Series 705 Butterfly Valve in equivalent feet/meters of straight pipe.

Nominal Size mm inches	Outside Diameter mm inches	Equivalent
		Feet/m of pipe
2 50	2.375 60.3	6 1.8
2½ 65	2.875 73.0	6 1.8
76.1 mm	3.000 76.1	6 1.8
3 80	3.500 88.9	7 2.1
4 100	4.500 114.3	8 2.4
108 mm	108 mm	8 2.4
5 125	5.563 141.3	12 3.7
133 mm	133 mm	12 3.7
139.7 mm	5.500 139.7	12 3.7
6 150	6.625 168.3	14 4.2
159 mm	159 mm	14 4.3
165.1 mm	6.500 165.1	14 4.2
8 200	8.625 219.1	16 4.9
10 250	10.750 273.0	18 5.5
12 300	12.750 323.9	19 5.8

5.1 PERFORMANCE

Series 705

C_v values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below. For additional details, contact Victaulic.

Formulas for C_v values

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)
 ΔP = Pressure Drop (psi)
 C_v = Flow Coefficient

Formulas for K_v values

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (m³/hr)
 ΔP = Pressure Drop (Bar)
 K_v = Flow Coefficient

Valve Size		Full Open
Nominal Size inches mm	Actual Outside Diameter inches mm	Flow Coefficient C_v
2 50	2.375 60.3	170
2½ 65	2.875 73.0	260
76.1 mm	3.000 76.1	260
3 80	3.500 88.9	440
4 100	4.500 114.3	820
108 mm	108 mm	820
5 125	5.563 141.3	1200
133 mm	133 mm	1200
139.7 mm	5.500 139.7	1200
6 150	6.625 168.3	1800
159 mm	159 mm	1800
165.1 mm	6.500 165.1	1800
8 200	8.625 219.1	3400
10 250	10.750 273.0	5800
12 300	12.750 323.9	9000

Valve Size		Full Open
Nominal Size inches mm	Actual Outside Diameter inches mm	Flow Coefficient K_v
2 50	2.375 60.3	147
2½ 65	2.875 73.0	225
76.1 mm	3.000 76.1	225
3 80	3.500 88.9	380
4 100	4.500 114.3	710
108 mm	108 mm	710
5 125	5.563 141.3	1040
133 mm	133 mm	1040
139.7 mm	5.500 139.7	1040
6 150	6.625 168.3	1560
159 mm	159 mm	1560
165.1 mm	6.500 165.1	1560
8 200	8.625 219.1	2940
10 250	10.750 273.0	5020
12 300	12.750 323.9	7790

6.0 NOTIFICATIONS

WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

Switch and Wiring

1. The supervisory switch contains two single pole, double throw, pre-wired switches.
2. Switches are rated:
 - 10 amps @ 125 or 250 VAC/60 Hz
 - 0.50 amps @ 125 VDC
 - 0.25 amps @ 250 VDC
3. Switches supervise the valve in the “OPEN” position.
5. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
6. A #14 insulated ground lead (green) is provided.

Switch #1 = S1

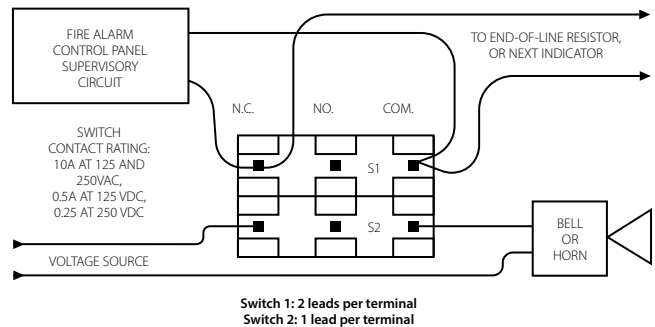
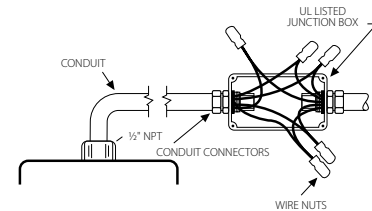
For connection to the supervisory circuit of a UL Listed alarm control panel

Switch #2 = S2

Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

S1 { Normally Closed: (2) Blue
Common: (2) Yellow

S2 { Normally Closed: Blue with Orange Stripe
Normally Open: Brown with Orange Stripe
Common: Yellow with Orange Stripe



NOTES

- The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully open. When the valve is fully open, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).
- Only S1 (two leads per terminal) may be connected to the fire alarm control panel.
- The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

7.1 REFERENCE MATERIALS

[10.01: Regulatory Approval Reference Guide](#)

[29.01: Terms and Conditions/Warranty](#)

[I-100: Field Installation Handbook](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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TECHNICAL DATA

EASY RISER® SWING CHECK VALVE MODELS E-1 & F-1

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

1. DESCRIPTION

The Viking Easy Riser® Swing Check Valve is a general purpose rubber-faced check valve approved for use in fire service systems. The valve is for use in wet system risers, preaction system risers and wherever a check valve with a drain connection and gauge connections can be utilized. When used with a flow switch on wet pipe systems not requiring a mechanical alarm, the Easy Riser® Swing Check Valve may replace an alarm check valve.

1-A Features

1. Ductile iron body for less weight and extra strength.
2. Rated to 300 psi (20.7 bar) water working pressure.
3. Rubber-faced clapper hinged to access cover for quick removal and easy servicing. All moving parts can be serviced without removing the valve from the installed position.
4. With the cover/clapper assembly removed, clapper rubber replacement requires removal of only one screw.
5. Valve housing tapped for inlet and outlet pressure gauges, and system main drain.

1-B Accessories

300 PSI (20.7 bar) Trim Package including:

- A. All necessary nipples and fittings
- B. Main Drain Ball Valve
- C. Necessary gauges



2. LISTINGS AND APPROVALS:

cULus Listed: HMER

FM Approved: Single Check Valves

NYC Department of Buildings: MEA 89-92-E, Vol. XI

VNIPO (250 psi (17.2 bar) MWP)

CE: Pressure Equipment Directive 97/23/EC (250 psi (17.2 bar) MWP)

3. TECHNICAL DATA

Specifications:

Standard Flanged Connections: ANSI B16.42 Class 150 (mates with ANSI Class 125 and Class 150 flanges).

Standard Grooved Connections: ANSI/AWWA C606

Drain outlet: 2-1/2" and 3" valves - one 1-1/4" (32 mm) NPT; 4", 6" & 8" valves - 2" (50 mm) NPT

Gauge Outlets: two 1/4" (8 mm) NPT

Other Outlets: two 1/2" (15 mm) NPT

Systems with water working pressures above 175 psi (12 bar) may require extra-heavy pattern fittings. Viking Easy Riser® Swing Check Valve flanges are Ductile Iron ANSI B16.42, Class 150, with a maximum water working pressure of 300 psi (20.7 bar). ANSI B16.42, Class 150 flanges are NOT compatible with ANSI Class 250 or Class 300 flanges. To mate the Easy Riser® Swing Check Valve with ANSI Class 250 or Class 300 flanges, use the grooved-inlet/grooved-outlet style installed with listed grooved/flanged adapters of the appropriate pressure rating. For piping with grooved connections, the grooved-inlet and/or grooved-outlet style Easy Riser® Swing Check Valve may be installed with listed grooved couplings of the appropriate pressure rating.

Material Standards:

Refer to Figure 1.

Ordering Information:

See Table 1 for part numbers and shipping weights.



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4. INSTALLATION

The Easy Riser® Swing Check Valve must be installed in an area not subject to freezing temperatures or physical damage. When corrosive atmospheres and/or contaminated water supplies are present, it is the owner's responsibility to verify compatibility with the Easy Riser® Swing Check Valve, trim, and associated equipment.

Prior to installing the valve, thoroughly flush the water supply piping to verify that no foreign matter is present.

The Easy Riser® Swing Check Valve may be installed in the vertical position with direction of flow up, or in the horizontal position with the access cover up.

1. Remove all plastic thread protectors from the openings of the Easy Riser® Swing Check Valve.
2. Apply a small amount of pipe-joint compound or tape to the external threads of all pipe connections required. Take care not to allow any compound, tape, or other foreign matter inside any of the nipples or openings of the valve or trim components.
3. Easy Riser® Swing Check Valve Trim Charts are provided with Trim Packages and on the Viking website.
4. Verify that all system components are rated for the water working pressure of the system.

Hydrostatic Test:

The Easy Riser® Swing Check Valve is manufactured and listed for use at a maximum water working pressure of 300 psi (20.7 bar). The valve is factory tested at 600 psi (41.4 bar). Easy Riser® Swing Check Valves may be hydrostatically tested at 350 psi (24.1 bar) and/or 50 psi (3.5 bar) above the normal water working pressure for limited periods of time (two hours) for the purpose of acceptance by the Authority Having Jurisdiction. If air testing is required, DO NOT exceed 40 psi (2.8 bar) air pressure.

5. OPERATION (Refer to Figure 1.)

Water flowing through the Viking Easy Riser® Swing Check Valve lifts the rubber-gasketed clapper (8 and 9) off the seat (12) and flows into the sprinkler piping. When flow through the valve stops, the clapper (8) closes quickly. The rubber gasket (9) forms a tight seal against the brass water seat (12), trapping pressurized water above the clapper and preventing reverse flow from the sprinkler piping.

6. INSPECTIONS, TESTS, AND MAINTENANCE

NOTICE

The owner is responsible for maintaining the fire protection system and devices in proper operating condition.

The Viking Easy Riser® Swing Check Valve and trim must be kept free of foreign matter, freezing conditions, corrosive atmospheres, contaminated water supplies, and any condition that could impair its operation or damage the device.

It is imperative that the system be inspected and tested on a regular basis. The frequency of the inspections may vary due to contaminated water supplies, corrosive water supplies, and corrosive atmospheres. For minimum maintenance and inspection requirements, refer to NFPA 25. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

WARNING

Any system maintenance that involves placing a control valve or detection system out of service may eliminate the fire protection capabilities of that system. Prior to proceeding, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

6-A. Five-Year Internal Inspection

Internal inspection of check valves is recommended every five years unless inspections and tests indicate more frequent inspections are required. (Refer to Figure 1.)

1. Notify the Authority Having Jurisdiction, remote station alarm monitors, and those in the area affected that the system will be taken out of service. Consideration should be given to employment of a fire patrol in the affected areas.
2. Close the water supply main control valve, placing the system out of service.
3. Open the main drain. If necessary, open the system test valve to vent and completely drain the system.
4. Use the appropriate wrench to loosen and remove cover screws (14), and remove cover and clapper assembly (2-11).
5. Inspect water seat (12). Wipe away all contaminants, dirt, and mineral deposits. DO NOT use solvents or abrasives.
6. Inspect cover and clapper assembly (2-11) and cover gasket (13). Test the hinged clapper (8) for freedom of movement. Renew or replace damaged or worn parts as required.



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CAUTION

NEVER apply any lubricant to seats, gaskets, or any internal operating parts of the valve. Petroleum-based grease or oil will damage rubber components and may prevent proper operation.

7. When internal inspection of the Easy Riser® Swing Check Valve is complete, perform step 6 of paragraph 11. MAINTENANCE to re-install cover and clapper assembly (2-11).

6-B. Maintenance (Refer to Figure 1.)

1. Perform steps 1 through 5 of paragraph 6-A, FIVE-YEAR INTERNAL INSPECTION.
2. To replace clapper assembly (3, 6-11):
 - a. Remove the cover screws (14) from the cover (2) using a Socket Wrench with a 9/16" socket.
 - b. Remove the cover and clapper assembly (2-11) from the valve.
 - c. Remove the cover gasket (13) by sliding it over the clapper assembly.
 - d. Remove the existing clapper assembly (3, 6-11) from the cover assembly (2):
 - i. Remove one of the retaining rings (5) from the clapper hinge pin (4) using a flat head screwdriver.
 - ii. Remove the clapper hinge pin (4) from the cover and clapper assembly. This will allow the clapper assembly (3, 6-11) to be removed from the cover assembly (2).
 - e. Install the new clapper assembly (3, 6-11) onto the cover assembly (2):
 - i. Make sure the clapper rubber (9) is facing opposite the direction of the flow arrow on the inside of the cover (2).
 - ii. Line up the holes of the cover assembly (2) and the clapper assembly (3, 6-11) and insert the hinge pin (4).
 - iii. Install the retaining ring (5) onto the hinge pin (4).
 - iv. Install the cover gasket (13) onto the new cover and clapper assembly (2-11) by sliding the cover gasket (13) over the clapper assembly (3, 6-11) and lining up the holes with the cover (2).
 - v. To install the new cover and clapper assembly (2-11) into the valve, slide the clapper assembly into the valve with the clapper rubber (9) lined up with the water seat (12). Ensure the rubber retainer (10) fits inside the seat of the valve (pull back slightly and there should be some resistance).
 - vi. Line up the holes of the cover (2) and cover gasket (13) with the valve body (1) and replace the cover screws (14) using a Socket Wrench with a 9/16" socket.
3. To replace the clapper rubber (9):
 - i. Remove the cover screws (14) from the cover (2) using a Socket Wrench with a 9/16" socket.
 - ii. Remove the cover and clapper assembly (2-11) from the valve.
 - iii. Remove the cover gasket (13) by sliding it over the clapper assembly (3, 6-11).
 - iv. Use a 7/32" Allen wrench to hold the button head socket screw (11) in place and remove the jam nut (6) from the clapper rubber (9) using a Socket Wrench with a 9/16" socket.
 - v. Remove the button head socket screw (11) and sealing washer (7) from the clapper assembly (3, 6-11).
 - vi. Remove the clapper rubber retainer (10) from the clapper (8) to free the clapper rubber (9).
 - vii. To install the new clapper rubber (9), position the clapper rubber (9) on the clapper assembly so the grooved edge is facing down. This will allow the clapper rubber retainer (10) to fit up into the grooved edge of the clapper rubber (9).
 - viii. Install the button head socket screw (11) and sealing washer assembly (7) and the jam nut (6) using a 7/32" Allen wrench and a Socket Wrench with a 9/16" socket.
 - ix. Install the cover gasket (13) onto the cover (2) by sliding it over the clapper assembly (3, 6-11).
 - x. Re-install the cover and clapper assembly (2-11) back into the valve, with the clapper rubber (9) lined up with the water seat (12). Ensure the clapper rubber retainer (10) fits inside the seat of the valve (pull back slightly and there should be some resistance).
 - xi. Line up the holes of the cover (2) and cover gasket (13) with the valve body (1) and replace the cover screws (14) using a Socket Wrench with a 9/16" socket.
4. To replace the cover gasket (13):
 - i. Remove the cover screws (14) from the cover (2) using a Socket Wrench with a 9/16" socket.
 - ii. Remove the cover and clapper assembly (2-11) from the valve.
 - iii. Remove the cover gasket (13) by sliding it over the clapper assembly (3, 6-11).
 - iv. Install the new cover gasket (13) by sliding it over the clapper assembly (3, 6-11), onto the cover (2).
5. Reinstall the cover and clapper assembly (2-11) into the valve:
 - i. Line up the clapper rubber (9) with the water seat (12). Ensure the clapper rubber retainer (10) fits inside the seat of the valve (pull back slightly and there should be some resistance).
 - ii. Line up the holes of the cover (2) and cover gasket (13) with the valve body (1) and replace the cover screws (14) using a Socket Wrench with a 9/16" socket.



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Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

7. AVAILABILITY

The Viking Easy Riser® Swing Check Valve is available through a network of domestic and international distributors. See the Viking Corp. Web site for closest distributor or contact The Viking Corporation.

8. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

Table 1 - Valve Part Numbers and Specifications

Description	Nominal Size	Part Number	Friction Loss*	Shipping Weight
Flange/Flange				
Flange Drilling	Model F-1			
ANSI	3"	08505	10 ft. (3.1 m)	35 lbs. (16 kg)
ANSI	4"	08508	13 ft. (4.0 m)	44 lbs. (20 kg)
ANSI	6"	08511	20 ft. (6.0 m)	75 lbs. (34 kg)
ANSI/Japan	DN100	09039	13 ft. (4.0 m)	44 lbs. (20 kg)
ANSI/Japan	DN150	09385	20 ft. (6.0 m)	75 lbs. (34 kg)
ANSI/Japan	DN200	14023	23 ft. (7.0 m)	119 lbs. (54 kg)
PN10/16	DN80	08796	10 ft. (3.1 m)	35 lbs. (16 kg)
PN10/16	DN100	08797	13 ft. (4.0 m)	44 lbs. (20 kg)
PN10/16	DN150	08835	20 ft. (6.0 m)	75 lbs. (34 kg)
PN10	DN200	08836	23 ft. (7.0 m)	119 lbs. (54 kg)
PN16	DN200	12355	23 ft. (7.0 m)	119 lbs. (54 kg)
Flange/Groove				
Flange Drilling / Pipe O.D.	Model F-1			
ANSI / 89mm	3"	08506	10 ft. (3.1 m)	27 lbs. (12 kg)
ANSI / 114mm	4"	08509	13 ft. (4.0 m)	37 lbs. (17 kg)
ANSI / 168mm	6"	08512	20 ft. (6.0 m)	64 lbs. (29 kg)
ANSI / 219mm	8"	08515	23 ft. (7.0 m)	119 lbs. (54 kg)
PN10/16 / 89mm	DN80	12648	10 ft. (3.1 m)	27 lbs. (12 kg)
PN10/16 / 114mm	DN100	12649	13 ft. (4.0 m)	37 lbs. (17 kg)
PN10/16 / 165mm	DN150	12652	20 ft. (6.0 m)	64 lbs. (29 kg)
PN10/16 / 168mm	DN150	08512	20 ft. (6.0 m)	64 lbs. (29 kg)
PN10 / 219mm	DN200	12651	23 ft. (7.0 m)	119 lbs. (54 kg)
PN16 / 219mm	DN200	12650	23 ft. (7.0 m)	119 lbs. (54 kg)
Groove/Groove				
Pipe O.D.	Model E-1			
73mm	2½" / DN65	07929	6 ft. (1.8 m)	16 lbs. (7 kg)
76 mm	2½" / DN65	13516	6 ft. (1.8 m)	16 lbs. (7 kg)
	Model F-1			
89mm	3" / DN80	08507	10 ft. (3.1 m)	20 lbs. (9 kg)
114mm	4" / DN100	08510	13 ft. (4.0 m)	27 lbs. (12 kg)
165mm	DN150	12356	20 ft. (6.0 m)	51 lbs. (23 kg)
168mm	6" / DN150	08513	20 ft. (6.0 m)	51 lbs. (23 kg)
219mm	8" / DN200	08516	23 ft. (7.0 m)	106 lbs. (48 kg)

*Expressed in equivalent length of Schedule 40 pipe based on Hazen & Williams formula: C = 120.

Table 2 - Torque Values for Easy Riser Swing Check Valve Cover Screws

Valve Size	Screw Size	Torque Value
2-1/2" (DN65)	3/8"-16 H.H.C.	19 ft-lb (2.63 kg-m)
3" (DN80)	3/8"-16 H.H.C.	19 ft-lb (2.63 kg-m)
4" (DN100)	3/8"-16 H.H.C.	19 ft-lb (2.63 kg-m)
6" (DN150)	½"-13 H.H.C.	45 ft-lb (6.23 kg-m)
8" (DN200)	5/8"-11 H.H.C.	93 ft-lb (12.9 kg-m)

Table 3 - Trim Package Part Numbers

Valve Size	Part Number
Wet System Trim Packages	
2-1/2", 3" (DN65), (DN80)	07236
4", 6", 8", (DN100), (DN150), (DN200)	07237
Preaction System Trim Packages	
2-1/2", 3" (DN65)	13776
4", 6", 8", (DN80), (DN100), (DN150), (DN200)	13777

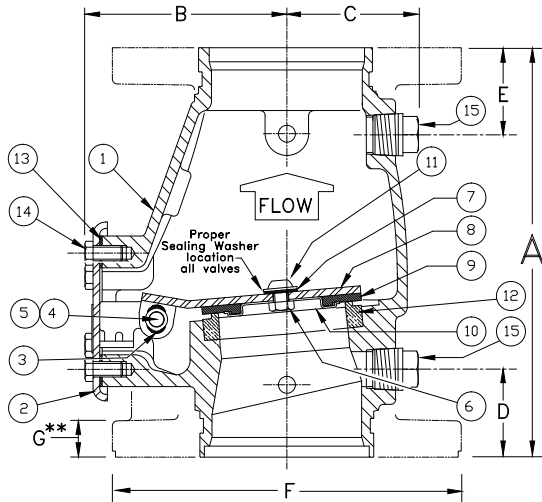


TECHNICAL DATA

EASY RISER® SWING CHECK VALVE MODELS E-1 & F-1

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SIZE	A	B	C	D	E	F	G**
2-1/2" (65mm)	9" (228,6)	4-1/2" (114,3)	2-5/8" (66,7)	2" (50,8)	2" (50,8)	Flg-Flg Not Available	
3" (80mm)	10-1/8" (257)	4-13/16" (122,2)	2-11/16" (68,3)	2-9/32" (58,1)	2-9/32" (58,1)	7-7/8" (200)	25/32" (20)
4" (100mm)	10-5/8" (269,9)	5-3/16" (131,8)	3-1/8" (79,4)	2-1/4" (57,2)	2-1/4" (57,2)	9" (228,6)	15/16" (25,81)
6" (150mm)	13-3/8" (340)	6-13/16" (173,3)	4-1/16" (103,2)	2-1/4" (57,2)	2-1/4" (57,2)	11" (279,4)	1" (25,4)
8" (200mm)	17" (431,8)	8-13/16" (223,4)	5" (127)	2-1/2" (63,4)	2-7/8" (73,0)	13-1/2" (342,9)	1-1/8" (28,58)

Dimensions shown in parentheses are millimeter.

* For availability of Flg X Flg, Flg X Grv, or Grv X Grv options refer to Table 1.

** 4", 6", and 8" valves are manufactured with sculptured flanges. Dimension indicates thickness of flange at bolt holes.

Figure 1 - Replacement Parts

ITEM NO.	PART NUMBER					DESCRIPTION	MATERIAL	NO. REQ'D				
	E-1	F-1	F-1	F-1	F-1							
	2-1/2" (DN65)	3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)			2-1/2"	3"	4"	6"	8"
1	--	--	--	--	--	Body	Ductile Iron, ASTM A536 (65-45-12)	1	1	1	1	1
2	--	--	--	--	--	Cover Assembly	E-Coated HSLA Steel, A715 and Stainless Steel, UNS-S30400	1	1	1	1	1
3	07576	07576	07576	07576	None	Bushing	Lubricomp 189 Ryton	2	2	2	2	0
4	05355A	05355A	04900A	04991A	05334A	Clapper Hinge Pin	Stainless Steel, UNS-S30400	1	1	1	1	1
5	05445A	05445A	05445A	05445A	05369A	Hinge Pin Retaining Ring	Stainless Steel, UNS-S15700	2	2	2	2	2
6	01755A					Clapper Hex Jam Nut #10-24 UNC	Stainless Steel, UNS-S30400	1	0	0	0	0
		08159	08159			Clapper Hex Jam Nut 3/8"-24 UNF	Stainless Steel, UNS-S30400	0	1	1	0	0
				08144	08144	Clapper Hex Jam Nut 1/2"-20 UNF	Stainless Steel, UNS-S30400	0	0	0	1	1
7	--	08158	08158	08143	08143	Sealing Washer	EPDM and Stainless Steel	1	1	1	1	1
8	*	*	*	*	*	Clapper	PTFE Coated HR Steel UNS-G10180	1	1	1	1	1
9	*	*	*	*	*	Clapper Rubber	EPDM, ASTM D2000	1	1	1	1	1
10	*	*	*	*	*	Clapper Rubber Retainer	Stainless Steel, UNS-S30400	1	1	1	1	1
	06595A					H.H.C. Screw, #10-24 UNC x 1/2" (12.7 mm) lg.	Stainless Steel, UNS-S30400	1	0	0	0	0
		10194	10194			Screw, Button Head, Socket, 3/8" - 24 UNF x 1/2 (12.7 mm) lg.	Stainless Steel, UNS-S30400	0	1	1	0	0
				10308		Screw, Button Head, Socket, 1/2" - 20 UNF x 3/4 (19.1 mm) lg.	Stainless Steel, UNS-S30400	0	0	0	1	0
					10686	Screw, Button Head, Socket, 1/2" - 20 UNF x 7/8 (22.2 mm) lg.	Stainless Steel, UNS-S30400	0	0	0	0	1
12	--	--	--	--	--	Seat	Brass, UNS-C84400	1	1	1	1	1
13	05354B	05354B	04649B	04992B	05339C	Cover Gasket	EPDM, ASTM D2000	1	1	1	1	1
	01517A	01517A	01517A			Screw, Hex Head Cap, 3/8" - 16 UNC x 3/4 (19.1 mm) lg.	Steel, Zinc Plated	4	4	6	0	0
				04993A		Screw, Hex Head Cap, 1/2" - 13 x 7/8 (22.2 mm) lg.	Steel, Zinc Plated	0	0	0	6	0
					01922A	Screw, Hex Head Cap, 5/8" - 11 UNC x 1-1/4" (31.8 mm) lg.	Steel, Zinc Plated	0	0	0	0	6
15	--	--	--	--	--	1/2" (15 mm) NPT Pipe Plug	Steel	2	2	2	2	2

-- Indicates replacement part is not available

* Indicates replacement part only available in a Sub-Assembly listed below.

Sub-Assemblies

3, 6-11	05499B	08518	08519	08520	08521	Clapper Assembly
6, 7, 9, 11, 13	06343A	08522	08523	08524	08525	Replacement Rubber Kit

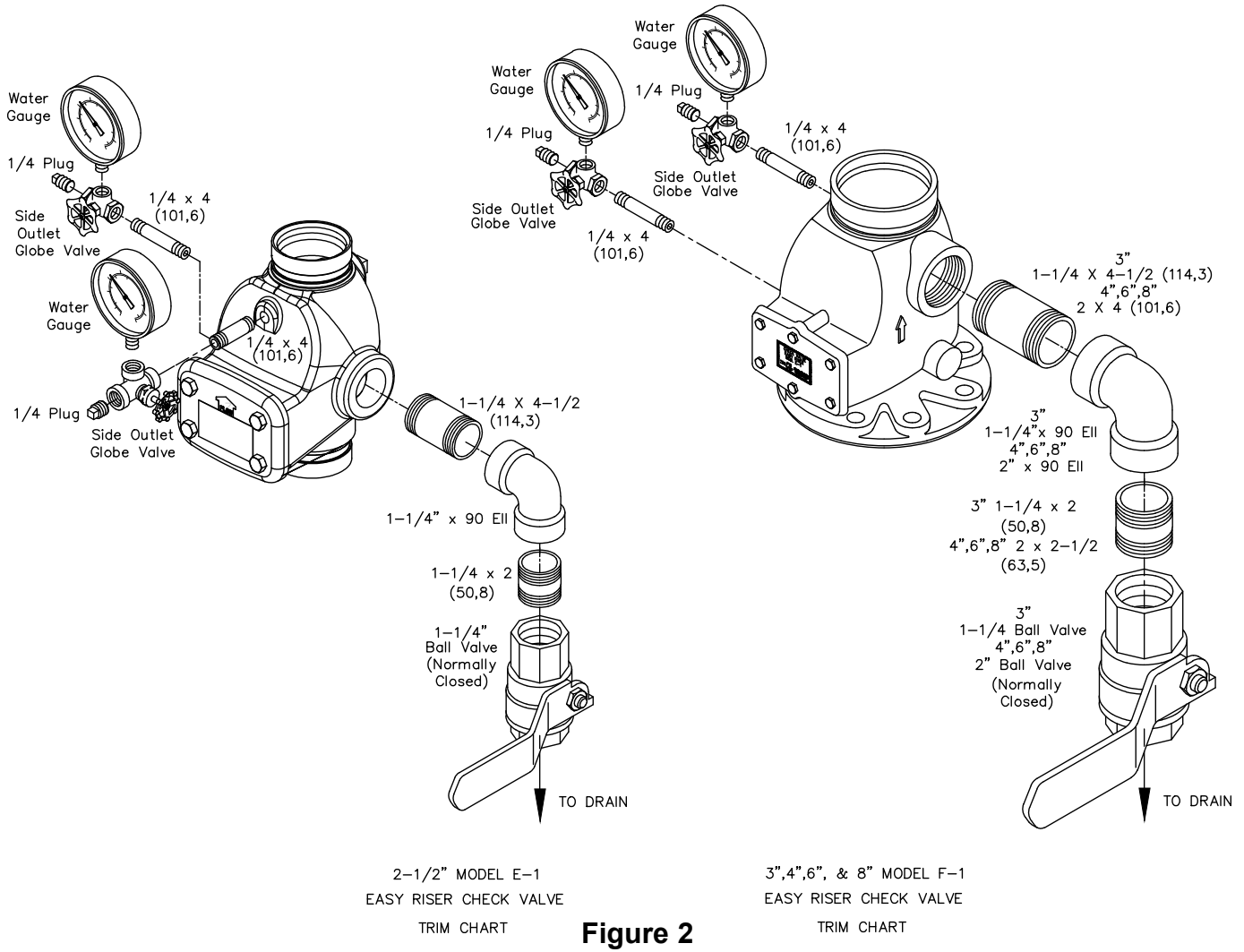


TECHNICAL DATA

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Note 1: 300 psi (20.7 bar) water pressure gauges are provided with trim. 600 psi (41.4 bar) water pressure gauges are available. Order separately when needed*. Refer to Viking's current price schedule.

* NFPA 13 requires gauges to have a minimum limit not less than twice the normal water working pressure at the point where the gauges are installed. When normal water working pressure exceeds 150 psi (10.3 bar), order 600 psi (41.4 bar) water pressure gauges separately.

Note 2: System Drain Ball Valve is UL Listed and FM Approved for 300 psi (20.7 bar) water working pressure.

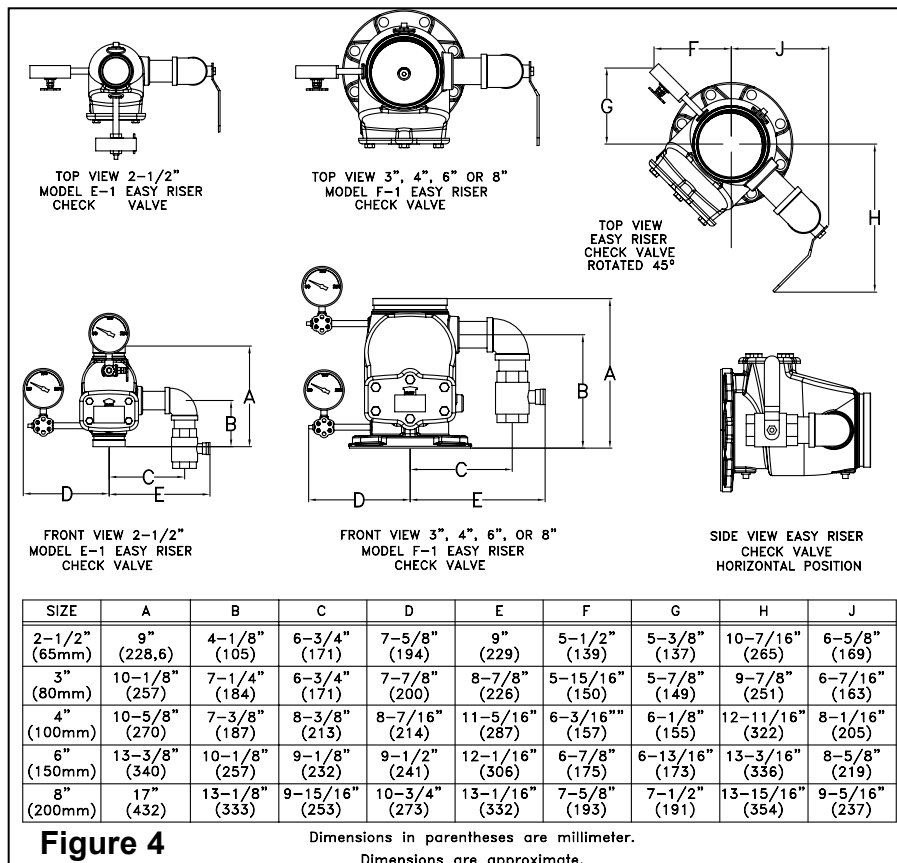
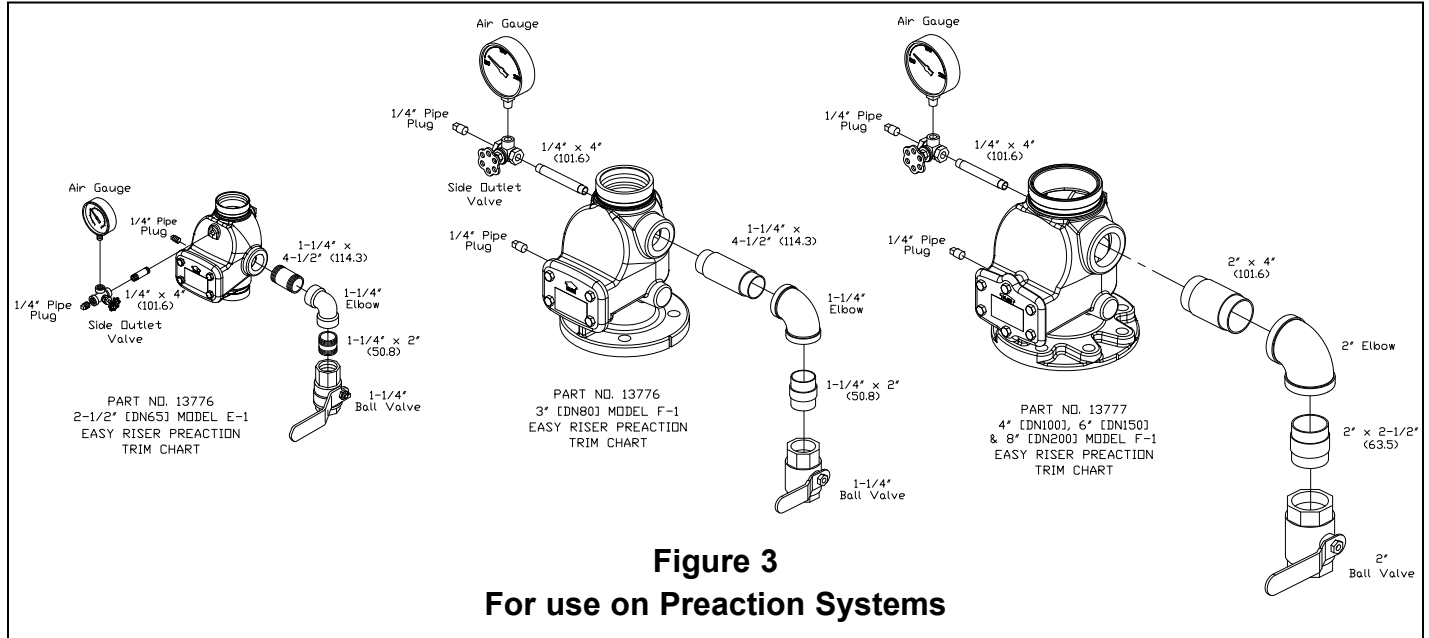


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FireLock® Check Valves

Series 717 Check Valve

Series 717H High Pressure Check Valve



Series 717
(2½ – 3"/65 – 80 mm)



Series 717
(4 – 12"/100 – 300 mm)



Series 717H
High Pressure Check Valve
(2 – 3"/50 – 80 mm)

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 3"/DN50 – DN80 (Series 717H)
- 2½ – 12"/DN50 – DN300 (Series 717)

Pressure Class

- Up to 365 psi/2517 kPa/25 bar
- Working pressure dependent on size of pipe, valve size and approval requirements.

Application

- Designed for use in Fire Protection systems.
- Prevents back flow.
- Single-disc mechanism incorporates a spring-assisted feature for non-slamming operation.
- Can be installed either vertically (flow upwards only) or horizontally.
- Valve body cast with arrow indicator to assist with proper valve orientation.
- Optional upstream and downstream pressure taps included on select sizes. See Section 3.0.
- Provided with grooved ends.
- Rated for ambient temperature use in fire protection systems.

2.0 CERTIFICATION/LISTINGS



NOTE

- Refer to Victaulic [submittal publication 10.01](#) for details

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

2.0 CERTIFICATION/LISTINGS (Continued)

Approvals/Listings

Size	Approval/Listing Service Pressures			
	Series 717H			
	cULus	FM	LPCB	Vds
2"/50 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa
2½"/65 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa
76.1 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa
3"/80 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa

Size	Approval/Listing Service Pressures			
	Series 717			
	cULus	FM	LPCB	Vds
2½"/65 mm	250 psi/1725 kPa	n/a	365 psi/2517 kPa	n/a
76.1 mm	250 psi/1725 kPa	n/a	365 psi/2517 kPa	16bar/232 psi
3"/80 mm	250 psi/1725 kPa	n/a	365 psi/2517 kPa	16bar/232 psi
4"/100 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	16bar/232 psi
5"/125 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	n/a
139.7 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	16bar/232 psi
6"/150 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	16bar/232 psi
165.1 mm	365 psi/2517 kPa	365 psi/2517 kPa	365 psi/2517 kPa	n/a
8"/200 mm	365 psi/2517 kPa	365 psi/2517 kPa	348 psi/2400 kPa	16bar/232 psi
10"/250 mm	250 psi/1725 kPa	250 psi/1725 kPa	1725 kPa/250 psi	n/a
12"/300 mm	250 psi/1725 kPa	250 psi/1725 kPa	1725 kPa/250 psi	n/a

3.0 SPECIFICATIONS – MATERIAL

Body:

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

Body Coating:

Series 717H Body: Black Paint

Series 717H Endface: Electroless Nickel conforming to ASTM B-733

Series 717 (2 ½ – 3"/DN65 – DN80): PPS Coating

Series 717 (4 – 12"/DN100 – DN300): Black Paint

Body Seat:

Series 717H: Nitrile O-ring installed into an Electroless Nickel plating conforming to ASTM B-733

Series 717 (2 ½" – 3"/DN65 – DN80): PPS Coated Ductile Iron

Series 717 (4 – 12"/DN100 – DN300): Ductile Iron with Electroless Nickel plating conforming to ASTM B-733

Disc Seal or Coating: (specify choice¹)

Nitrile (Series 717H only)

EPDM

NOT COMPATIBLE FOR PETROLEUM SERVICES.

Discs:

Series 717H: CF8M Cast Stainless Steel

Series 717 (2 ½ – 3"/DN65 – DN80): Aluminum bronze with elastomer seal

Series 717 (4 – 12"/DN100 – DN300): Elastomer encapsulated disc.

Shaft:

Series 717H: Brass

Series 717 (2 ½ – 3"/DN65 – DN80): Type 416 Stainless Steel

Series 717 (4 – 12"/DN100 – DN300): Type 316 Stainless Steel

Spring:

Type 302/304 Stainless Steel

Shaft Plug:

Series 717H: Carbon Steel Zinc Plated

Series 717: Carbon Steel Zinc Plated

Pipe Plug:

Series 717H: Carbon Steel Zinc Plated

Series 717: Carbon Steel Zinc Plated

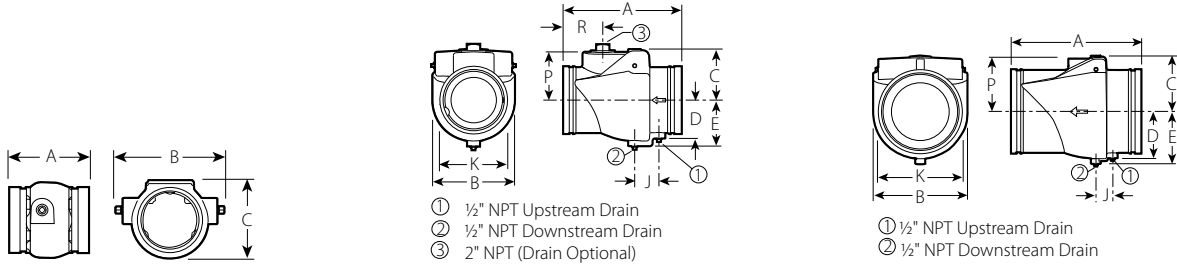
Optional Pressure Taps:

Series 717H: Available on all sizes

Series 717: Available on sizes 4 – 12"/DN100 – DN300

4.0 DIMENSIONS

Series 717



Typical 2 1/2 – 3/65 – 80 mm

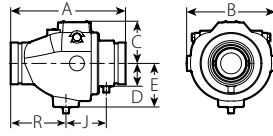
Typical 4 – 8/100 – 200 mm

Typical 10 – 12/250 – 300 mm

Size		Dimensions									Weight
Nominal inches mm	Actual Outside Diameter inches mm	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	J inches mm	K inches mm	P inches mm	R inches mm	Approximate (Each) lb kg
2 1/2 65	2.875 73.0	3.88 99	4.26 108	3.57 91	-	-	-	-	-	-	3.6 1.6
76.1 mm	3.000 76.1	3.88 99	4.26 108	3.57 91	-	-	-	-	-	-	3.6 1.6
3 80	3.500 88.9	4.25 108	5.06 129	4.17 106	-	-	-	-	-	-	4.5 2.0
4 100	4.500 114.3	9.63 245	6.00 152	3.88 99	2.75 70	3.50 89	2.00 51	4.50 114	3.50 89	3.35 85	20.0 9.1
5 125	5.563 141.3	10.50 267	6.80 173	4.50 114	-	4.17 106	2.15 55	5.88 149	4.08 104	3.98 101	27.0 12.3
139.7 mm	5.500 139.7	10.50 267	6.80 173	4.50 114	-	4.17 106	2.15 55	5.88 149	4.08 104	3.98 101	27.0 12.3
6 150	6.625 168.3	11.50 292	8.00 203	5.00 127	-	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	38.0 17.2
165.1 mm	6.500 165.1	11.50 292	8.00 203	5.00 127	-	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	38.0 17.2
8 200	8.625 219.1	14.00 356	9.88 251	6.06 154	5.05 128	5.65 144	2.15 55	8.85 225	5.65 144	5.75 146	64.0 29.0
10 250	10.750 273.0	17.00 432	12.00 305	7.09 180	5.96 151	6.69 170	2.15 55	10.92 277	6.73 171	-	100.0 45.4
12 300	12.750 323.9	19.50 495	14.00 356	8.06 205	6.91 176	7.64 194	2.51 64	12.81 925	7.73 196	-	140.0 63.5

4.1 DIMENSIONS

Series 717H



Typical 2¹/₅₀ mm – 3¹/₈₀ mm

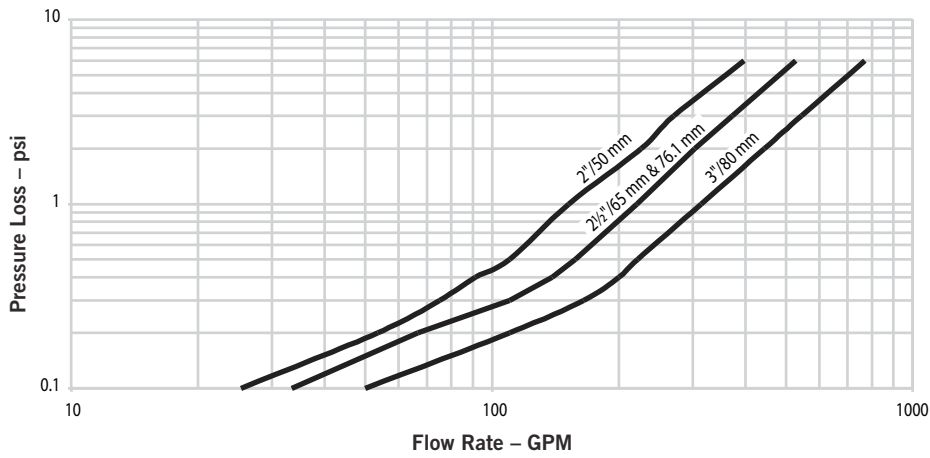
Size	Dimensions									Weight Approximate (Each) lb kg
	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	J inches mm	K inches mm	P inches mm	R inches mm	
2 50	8.66 219.8	6.46 164.1	3.23 82.1	1.48 37.5	3.02 76.7	2.80 71.0	-	-	4.25 108.0	10.7 4.9
2½ 65	9.37 238.0	6.94 176.3	3.31 84.1	1.66 42.2	3.40 86.4	3.38 85.9	-	-	4.38 111.3	13.8 6.3
76.1 mm	9.37 238.0	6.94 176.3	3.31 84.1	1.66 42.2	3.40 86.4	3.38 85.9	-	-	4.38 111.3	13.8 6.3
3 80	9.62 244.3	7.44 189.0	3.53 89.7	1.91 48.5	3.65 92.7	3.38 85.9	-	-	4.63 117.6	20.0 9.1

5.0 PERFORMANCE

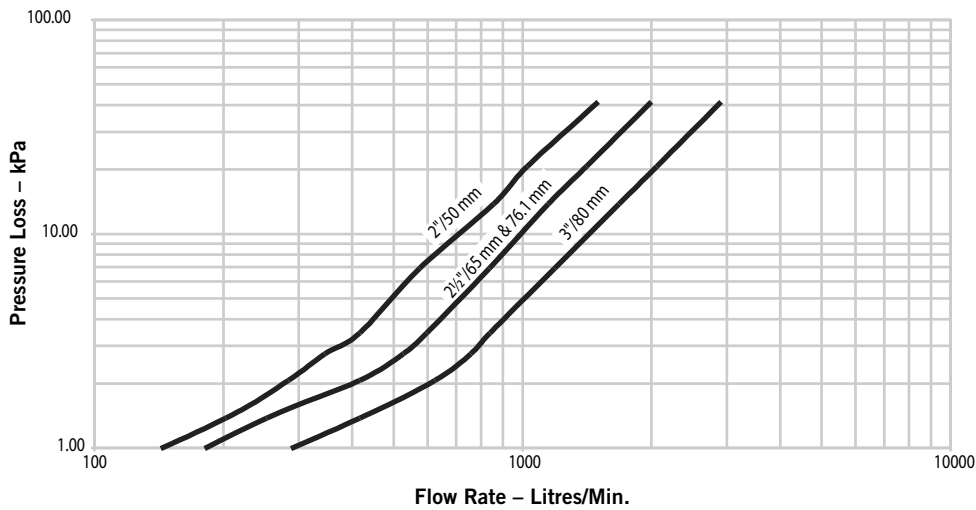
Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

S717H / 717HR



S717H / 717HR

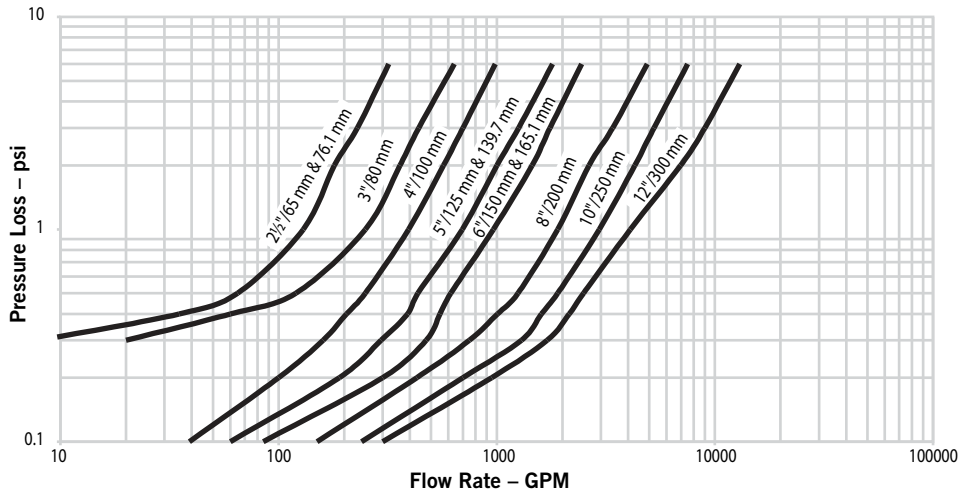


5.1 PERFORMANCE

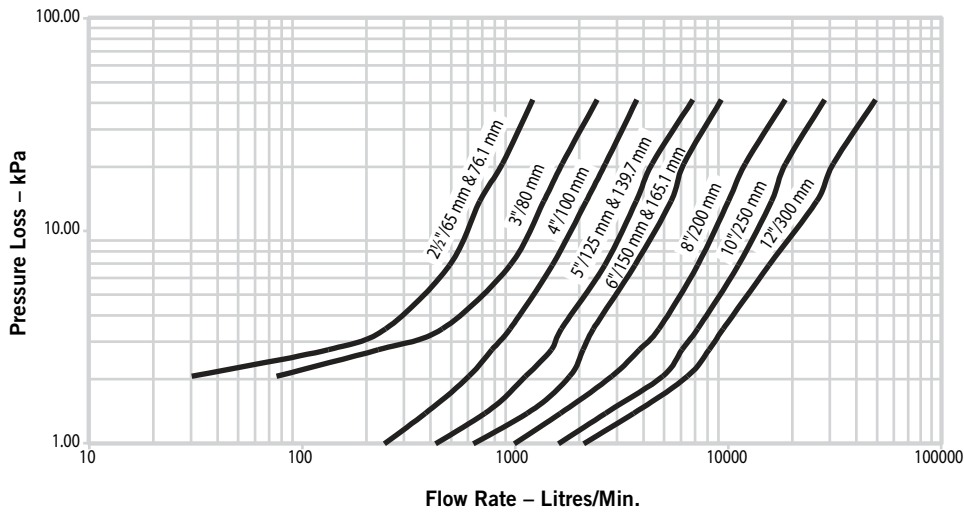
Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

S717 / 717R

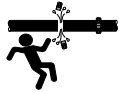


S717 / 717R



6.0 NOTIFICATIONS

WARNING



- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.

7.0 REFERENCE MATERIALS

[05.01: Seal Selection Guide](#)

[10.01: Regulatory Approval Reference Guide](#)

[29.01: Terms and Conditions/Warranty](#)

[I-100: Field Installation Handbook](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

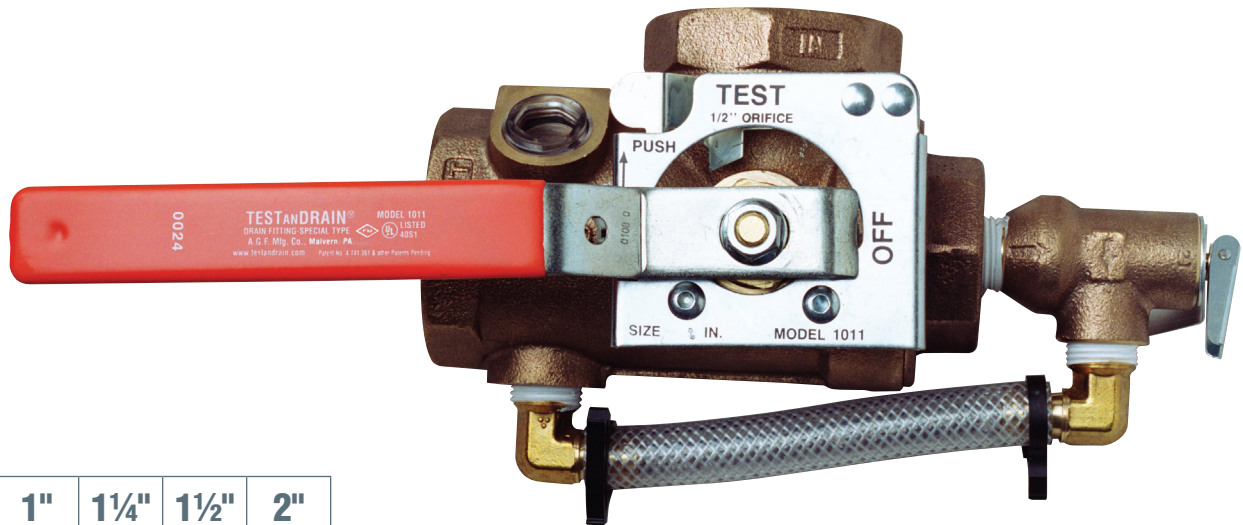
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Model 1011A **TEST_{AND}DRAIN[®]**

Sectional Floor Control Test and Drain Valve
for Systems Requiring Pressure Relief Valve



Sizes:

3/4"	1"	1 1/4"	1 1/2"	2"
------	----	--------	--------	----

The AGF **Model 1011A TEST_{AND}DRAIN[®]** provides the test and express drain functions for wet fire sprinkler systems on multi-story installations requiring pressure relief (NFPA 13 and NFPA 13R). The **Model 1011A** features a **Model 7000 Pressure Relief Valve** with drain pipe.

The **Model 1011A** is available in a full range of sizes (3/4" to 2") with NPT connections (BSPT available). The **Model 7000 Pressure Relief Valve** (UL/FM) features a flushing handle and a 175 PSI factory rating (other pressure ratings available).

- Complies with NFPA 13 and NFPA 13R Requirements
- Compact, Single-Handle Ball Valve
- Tamper-Resistant Test Orifice and Sight Glasses
- 300 PSI rated.
- Specifiable orifice sizes: 3/8" (2.8K), 7/16" (4.2K), 1/2" (5.6K), 17/32" (8.0K), 5/8" (11.2K, ELO), 3/4" (14.0K, ESFR), and K25
- Relieves Excess System Pressure caused by Surges or Temperature Changes
- Shipped with Relief Valve and Bypass Drain Ports Plugged to Expedite Pressure Testing
- Locking Kit Available

Repair kits are available for all **TEST_{AND}DRAIN[®]** valves. Kit includes: Adapter Gasket (1), Ball (1), Valve Seats (2), Stem Packing (1), and Stem Washer (1). *Valve and orifice size must be specified when ordering.*

NOTE: It is important to note that the pressure rating of the relief valve indicates an operating range of pressure for both opening and closing of the valve. Standard relief valves are required to OPEN in a range of pressure between 90% and 105% of their rating. The valves are required to CLOSE at a pressure above 80% of that rating. The relief valve should be installed where it is easily accessible for maintenance. Care should be taken that the relief valve CANNOT be isolated from the system when the system is operational. A relief valve should NEVER have a shutoff valve or a plug downstream of its outlet.

Reliability, Versatility, Code Compatibility



Model 1011A TEST AND DRAIN®

Model 1011A 300 PSI Bronze Ball Valve, Model 7000 Pressure Relief Valve
Factory Rated at 175 PSI with other setting available

Dimensions

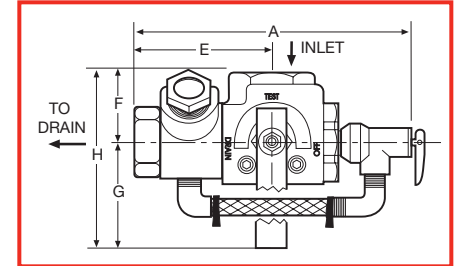
SIZE	A	B	C	D	E	F	G	H
3/4"	7 9/16" (191 mm)	1 1/2" (37.5 mm)	2 3/16" (57 mm)	3 5/8" (93 mm)	3 3/8" (86 mm)	1 13/16" (46 mm)	4 9/16" (117 mm)	6 3/8" (162.5 mm)
1"	7 9/16" (191 mm)	1 1/2" (37.5 mm)	2 3/16" (57 mm)	3 5/8" (93 mm)	3 3/8" (86 mm)	1 13/16" (46 mm)	4 9/16" (117 mm)	6 3/8" (162.5 mm)
1 1/4"	7 15/16" (201 mm)	1 11/16" (43 mm)	2 9/16" (65 mm)	4 1/4" (108 mm)	3 5/8" (91 mm)	1 15/16" (51 mm)	5 9/16" (141 mm)	7 1/2" (192 mm)
1 1/2"	8 15/16" (227 mm)	1 13/16" (45 mm)	3 1/4" (81.5 mm)	5 1/16" (127 mm)	3 7/8" (99 mm)	2 5/8" (67 mm)	8 1/4" (207 mm)	10 7/8" (274 mm)
2"	8 15/16" (227 mm)	1 13/16" (45 mm)	3 1/4" (81.5 mm)	5 1/16" (127 mm)	3 7/8" (99 mm)	2 5/8" (67 mm)	8 1/4" (207 mm)	10 7/8" (274 mm)

The Model 1011A provides the following...

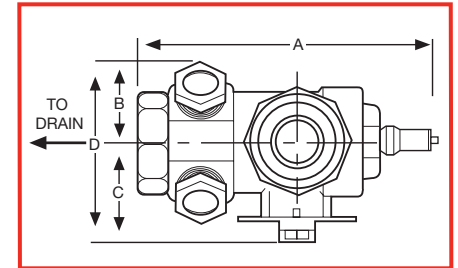
From the 2013 Edition of NFPA 13

- Chapter 8.16.2.4.1* Provisions shall be made to properly drain all parts of the system.
- Chapter 8.16.2.4.2 Drain connections, interior sectional or floor control valve(s) – & 8.16.2.4.3 shall be provided with a drain connection having a minimum size as shown in Table 8.16.2.4.2.
- Chapter 8.16.2.4.4 Drains shall discharge outside or to a drain capable of handling the flow of the drain.
- Chapter A.8.17.4.2 (Wet Pipe System) test connection is permitted to terminate into a drain capable of accepting full flow... using an approved sight test connection containing a smooth bore corrosion-resistant orifice giving a flow equivalent to one sprinkler...
- Chapter 8.17.4.2.2 The test connection valve shall be accessible.
- Chapter 8.17.4.2.4 shall be permitted to be installed in any location... downstream of the waterflow alarm.
- Chapter 8.17.4.3.1 (Dry Pipe System) a trip test connection not less than 1" in diameter, terminating in a smooth bore corrosion-resistant orifice, to provide a flow equivalent to one sprinkler...
- Chapter 8.17.4.3.2 The trip test connection... with a shutoff valve and plug not less than 1", at least one of which shall be brass.
- Chapter 7.1.2 - a wet pipe system shall be provided with a listed relief valve set to operate at 175 PSI or 10 PSI in excess of the maximum system pressure, whichever is greater.
- Chapter 8.16.1.2.3* A listed relief valve of not less than 1/2" in size shall be provided on the discharge side of the pressure-reducing valve set to operate at a pressure not exceeding rated pressure of the system.
- Chapter A.8.16.1.2.3 - consideration should be given to piping the discharge from the (pressure relief) valve

Model 1011A - Front View



Model 1011A - Plan View



Orifice Sizes

3/8", 7/16", 1/2", 17/32", 5/8" ELO*,
3/4" ESFR*, and K25**

Materials

- Handle Steel
- Stem Rod Brass
- Ball C.P. Brass
- Body Bronze
- Valve Seat Impregnated Teflon®
- Indicator Plate Steel
- Relief Valve Bronze
- Bypass Fittings... Brass
- Bypass Tubing.... Nylobraid

Approvals

UL and ULC Listed:
(EX4019 & EX4533)
FM Approved
NYC-BSA No. 720-87-SM



USA Patent # 4741361 and Other Patents Pending



AGF Manufacturing Inc.
100 Quaker Lane, Malvern, PA 19355
Phone: 610-240-4900
Fax: 610-240-4906
www.testandrain.com

Job Name: _____
Architect: _____
Engineer: _____
Contractor: _____

*Available on 1 1/4" to 2" size units only • **Available on 1 1/2" and 2" size units only



Specifications subject to change without notice.

Ordering Information			
Nominal Pipe Size		Model	Part Number
2"	DN50	VSR-2	1144402
2 1/2"	DN65	VSR-2 1/2	1144425
3"	DN80	VSR-3	1144403
3 1/2"	-	VSR-3 1/2	1144435
4"	DN100	VSR-4	1144404
5"	-	VSR-5	1144405
6"	DN150	VSR-6	1144406
8"	DN200	VSR-8	1144408

Optional: Cover Tamper Switch Kit, stock no. 0090148

Replaceable Components: Retard/Switch Assembly, stock no. 1029030

UL, CUL and CSFM Listed, FM Approved, LPCB Approved, For CE Marked (EN12259-5) / VdS Approved model use VSR-EU

Service Pressure: 450 PSI (31 BAR) - UL

Flow Sensitivity Range for Signal:

4-10 GPM (15-38 LPM) - UL

Maximum Surge: 18 FPS (5.5 m/s)

Contact Ratings: Two sets of SPDT (Form C)

10.0 Amps at 125/250VAC

2.0 Amps at 30VDC Resistive

10 mAmps min. at 24VDC

Conduit Entrances: Two knockouts provided for 1/2" conduit.

Individual switch compartments suitable for dissimilar voltages.

Environmental Specifications:

- NEMA 4/IP54 Rated Enclosure suitable for indoor or outdoor use with factory installed gasket and die-cast housing when used with appropriate conduit fitting.
- Temperature Range: 40°F - 120°F, (4.5°C - 49°C) - UL
- Non-corrosive sleeve factory installed in saddle.

Service Use:

Automatic Sprinkler

NFPA-13

One or two family dwelling

NFPA-13D

Residential occupancy up to four stories

NFPA-13R

National Fire Alarm Code

NFPA-72

WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

CAUTION

Waterflow switches that are monitoring wet pipe sprinkler systems shall not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems. Waterflow switches used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.

Important: This document contains important information on the installation and operation of the VSR waterflow switches. Please read all instructions carefully before beginning installation. A copy of this document is required by NFPA 72 to be maintained on site.

General Information

The Model VSR is a vane type waterflow switch for use on wet sprinkler systems. It is UL Listed for use on a steel pipe; schedules 5 through 40, sizes 2" - 6" and is UL Listed and FM Approved for use on steel pipe; schedules 10 through 40, sizes 2" thru 8" (50 mm thru 200 mm). LPC approved sizes are 2" thru 8" (50 mm thru 200 mm). See Ordering Information chart.

The VSR may also be used as a sectional waterflow detector on large systems. The VSR contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 GPM (38 LPM) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

Enclosure

The VSR switches and retard device are enclosed in a general purpose, die-cast housing. The cover is held in place with two tamper resistant screws which require a special key for removal. A field installable cover tamper switch is available as an option which may be used to indicate unauthorized removal of the cover. See bulletin number 5401103 for installation instructions of this switch.

Potter Electric Signal Company, LLC • St. Louis, MO • Phone: 866-956-1211/Canada 888-882-1833 • www.pottersignal.com

Installation (see Fig. 1)

These devices may be mounted on horizontal or vertical pipe. On horizontal pipe they shall be installed on the top side of the pipe where they will be accessible. The device should not be installed within 6" (15 cm) of a fitting which changes the direction of the waterflow or within 24" (60 cm) of a valve or drain.

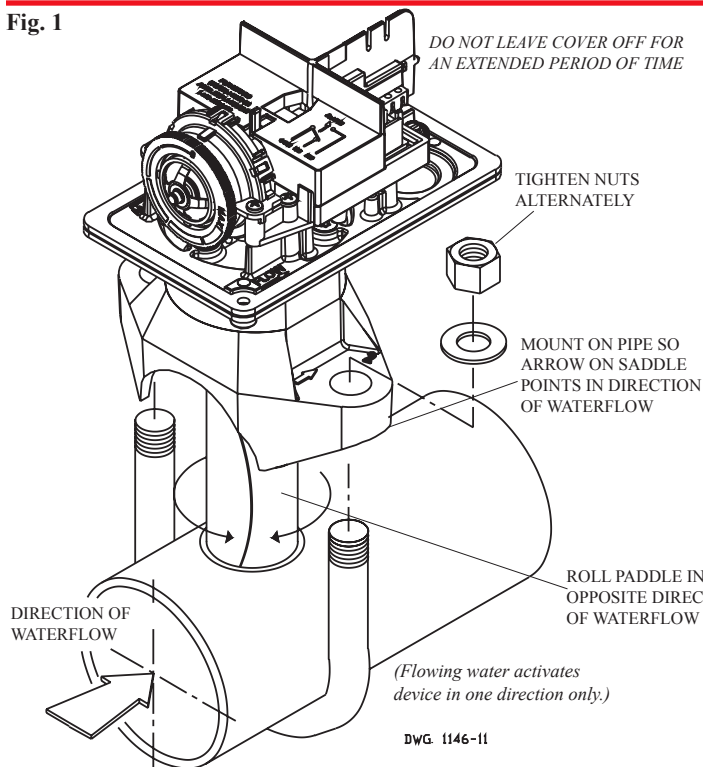
NOTE: Do not leave cover off for an extended period of time.

Drain the system and drill a hole in the pipe using a hole saw in a slow speed drill (see Fig. 1). Clean the inside pipe of all growth or other material for a distance equal to the pipe diameter on either side of the hole. Roll the vane so that it may be inserted into the hole; do not bend or crease it. Insert the vane so that the arrow on the saddle points in the direction of the waterflow. Take care not to damage the non-corrosive bushing in the saddle. The bushing should fit inside the hole in the pipe. Install the saddle strap and tighten nuts alternately to required torque (see the chart in Fig. 1). The vane must not rub the inside of the pipe or bind in any way.

CAUTION

Do not trim the paddle. Failure to follow these instructions may prevent the device from operating and will void the warranty. Do not obstruct or otherwise prevent the trip stem of the flow switch from moving when water flows as this could damage the flow switch and prevent an alarm. If an alarm is not desired, a qualified technician should disable the alarm system.

Fig. 1

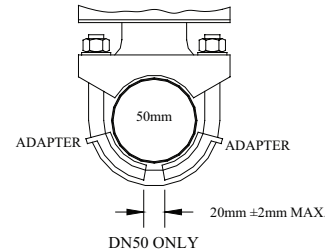
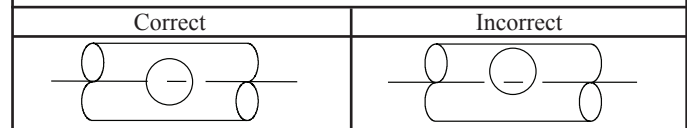


Retard Adjustment

The delay can be adjusted by rotating the retard adjustment knob from 0 to the max setting (60-90 seconds). The time delay should be set at the minimum required to prevent false alarms

CAUTION

Hole must be drilled perpendicular to the pipe and vertically centered. Refer to the Compatible Pipe/Installation Requirements chart for size.



DWG# 1146-1F

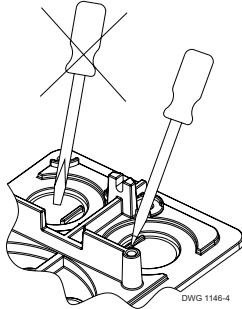
Compatible Pipe/ Installation Requirements

Model	Nominal Pipe Size		Nominal Pipe O.D.		Pipe Wall Thickness										Hole Size		U-Bolt Nuts Torque	
	inch	mm	inch	mm	Lightwall		Schedule 10 (UL)		Schedule 40 (UL)		BS-1387 (LPC)		DN (VDS)		inch	mm	ft-lb	n-m
VSR-2	2	DN50	2.375	60.3	.065	1.651	0.109	2.77	0.154	3.91	0.142	3.6	0.091	2.3	1.25 ± .125/ .062	33.0 ± 2.0	20	27
VSR-2 1/2	2.5	-	2.875	73.0	.084	2.134	0.120	3.05	0.203	5.16	-	-	-	-				
VSR-2 1/2	-	DN65	3.000	76.1	-	-	-	-	-	-	0.142	3.6	0.102	2.6				
VSR-3	3	DN80	3.500	88.9	.083	2.108	0.120	3.05	0.216	5.49	0.157	4.0	0.114	2.9	2.00 ± .125	50.8 ± 2.0	20	27
VSR-3 1/2	3.5	-	4.000	101.6	-	-	0.120	3.05	0.226	5.74	-	-	-	-				
VSR-4	4	DN100	4.500	114.3	.084	2.134	0.120	3.05	0.237	6.02	0.177	4.5	0.126	3.2				
VSR-5	5	-	5.563	141.3	-	-	0.134	3.40	0.258	6.55	-	-	-	-				
VSR-6	6	DN150	6.625	168.3	.115	2.921	0.134	3.40	0.280	7.11	0.197	5.0	0.157	4.0				
VSR-8	8	DN200	8.625	219.1	-	-	0.148	3.76	0.322	8.18	0.248	6.3	0.177	4.5				

NOTE: For copper or plastic pipe use Model VSR-CF.

Fig. 2

To remove knockouts: Place screwdriver at inside edge of knockouts, not in the center.



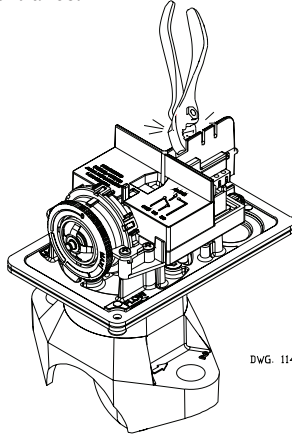
DWG 1146-4

NOTICE

Do not drill into the base as this creates metal shavings which can create electrical hazards and damage the device. Drilling voids the warranty.

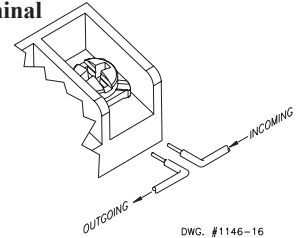
Fig. 3

Break out thin section of cover when wiring both switches from one conduit entrance.



DWG 1146-13

Fig. 4 Switch Terminal Connections Clamping Plate Terminal



DWG. #1146-16

WARNING

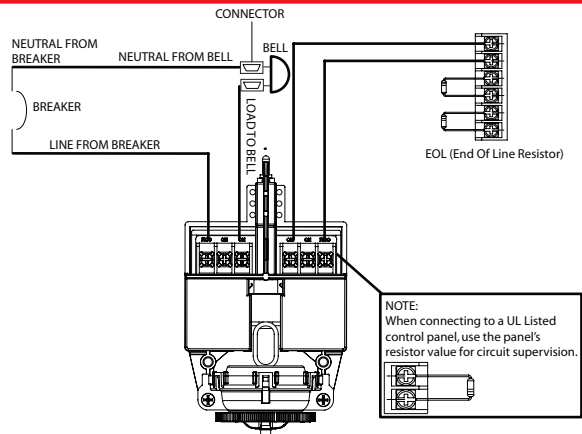
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life.

Do not strip wire beyond 3/8" or length or expose an uninsulated conductor beyond the edge of the terminal block. When using stranded wire, capture all strands under the clamping plate.

Fig. 5 Typical Electrical Connections

Notes:

1. The Model VSR has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audible or visual annunciator.
2. For supervised circuits, see "Switch Terminal Connections" drawing and warning note (Fig. 4).



NOTE: When connecting to a UL Listed control panel, use the panel's resistor value for circuit supervision.

Testing

The frequency of inspection and testing for the Model VSR and its associated protective monitoring system shall be in accordance with applicable NFPA Codes and Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

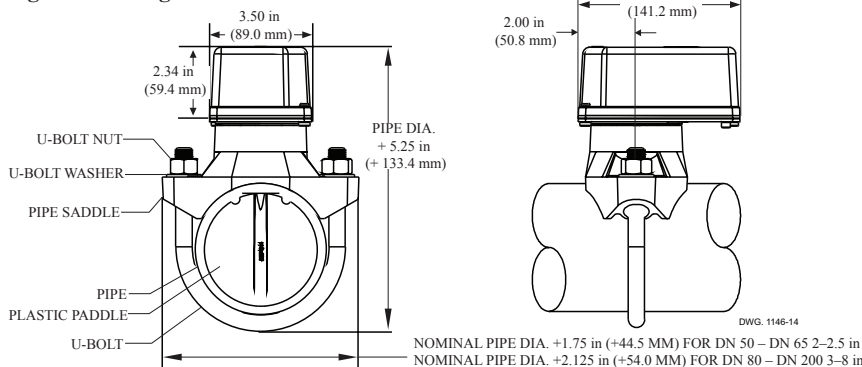
If provided, the inspector's test valve shall always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR is not recommended or advisable.

A minimum flow of 10 GPM (38 LPM) is required to activate this device.

NOTICE

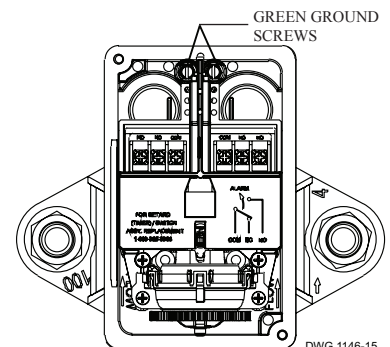
Advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.

Fig. 6 Mounting Dimensions



DWG. 1146-14

Fig. 7



DWG 1146-15

Maintenance

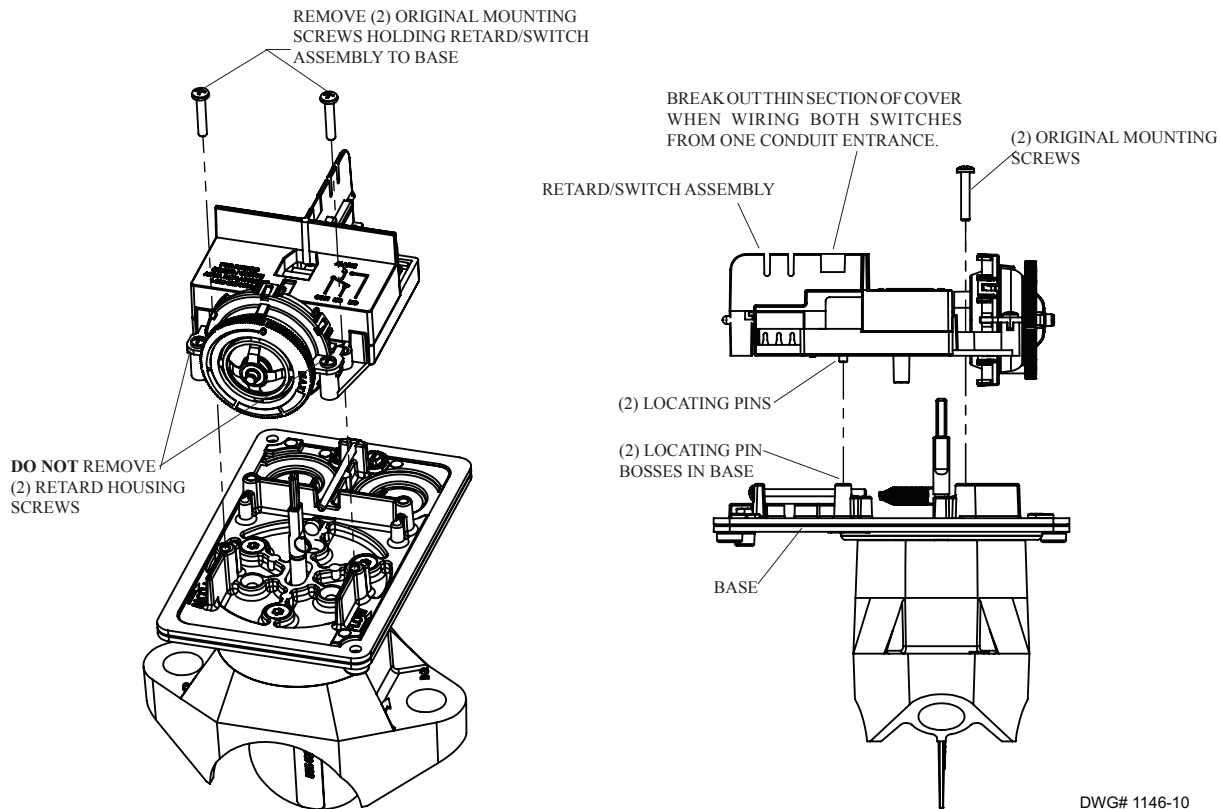
Inspect detectors monthly. If leaks are found, replace the detector. The VSR waterflow switch should provide years of trouble-free service. The retard and switch assembly are easily field replaceable. In the unlikely event that either component does not perform properly, please order replacement retard switch assembly stock #1029030 (see Fig. 8). There is no maintenance required, only periodic testing and inspection.

Retard/Switch Assembly Replacement (See Fig. 8)

NOTICE The Retard/Switch Assembly is field-replaceable without draining the system or removing the waterflow switch from the pipe

1. Make sure the fire alarm zone or circuit connected to the waterflow switch is bypassed or otherwise taken out of service.
2. Disconnect the power source for local bell (if applicable).
3. Identify and remove all wires from the waterflow switch.
4. Remove the (2) mounting screws holding retard/switch assembly to the base. **Do not** remove the (2) retard housing screws.
5. Remove the retard assembly by lifting it straight up over the tripstem.
6. Install the new retard assembly. Make sure the locating pins on the retard/switch assembly fit into the locating pin bosses on the base.
7. Re-install the (2) original mounting screws.
8. Reconnect all wires. Perform a flow test and place the system back in service.

Fig. 8



Removal of Waterflow Switch

- To prevent accidental water damage, all control valves should be shut tight and the system completely drained before waterflow detectors are removed or replaced.
- Turn off electrical power to the detector, then disconnect wiring.
- Loosen nuts and remove U-bolts.
- Gently lift the saddle far enough to get your fingers under it. With your fingers, roll the vane so it will fit through the hole while continuing to lift the waterflow detector saddle.
- Lift detector clear of pipe.



PIPE & FITTINGS

SCHEDULE 10 & 40



Always ready to protect your most valuable assets.

As the leading supplier of steel sprinkler pipe, we understand that there are no second chances in fire suppression. You need products of enduring quality and exceptional strength—plus reliable service. You need Bull Moose.

Bull Moose Fire Sprinkler Pipe Product Information

Nominal Pipe Size (Inches)		1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"			NPS (In.)	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
SCHEDULE 10	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625	8.625				1.315	1.660	1.900	2.375	2.875	3.500	4.500
	I.D. (in)	1.097	1.442	1.682	2.157	2.635	3.260	4.260	6.357	8.249				1.049	1.380	1.610	2.067	2.469	3.068	4.026
	Empty Weight (lb/ft)	1.410	1.810	2.090	2.640	3.530	4.340	5.620	9.290	16.940				1.680	2.270	2.720	3.660	5.800	7.580	10.800
	Water Filled Weight (lb/ft)	1.820	2.518	3.053	4.223	5.893	7.957	11.796	23.038	40.086				2.055	2.918	3.602	5.114	7.875	10.783	16.316
	C.R.R.	15.27	9.91	7.76	6.27	4.92	3.54	2.50	1.158	1.805				1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Pieces per Lift	91	61	61	37	30	19	19	10	7				70	51	44	30	30	19	19
	Lift Weight (lbs) 21' lengths	2,695	2,319	2,677	2,051	2,224	1,732	2,242	1,951	2,490				2,470	2,431	2,513	2,306	3,654	3,024	4,309
	Lift Weight (lbs) 24' lengths	3,079	2,650	3,060	2,344	2,542	1,979	2,563	2,230	2,848				2,822	2,778	2,872	2,635	4,176	3,456	4,925
	Lift Weight (lbs) 25' lengths	3,208	2,760	3,187	2,442	2,648	2,062	2,670						2,940	2,894	2,992	2,745	4,350	3,601	5,130
	SCHEDULE 40																			

SCHEDULE 10 & 40 ADVANTAGES:

- UL listed (US & Canada) and FM approved
- ASTM A135 and A795 Type E, Grade A Certified
- Complies with NFPA-13, 13R and 14
- Industry-leading hydraulic characteristics
- CRR of 1.0 and greater
- All pipe NDT weld tested

OTHER BENEFITS/SERVICES:

- We have the most stocking locations in the industry, for best delivery and availability
- Plain end or roll groove
- Eddy Guard II™ bacterial-resistant internal coating
- Custom length options
- Hot dipped galvanization
- Reddi-Pipe® red or black pipe eliminates field painting
- Compatible for use in wet, dry, preaction and deluge sprinkler systems
- The only maker with EPDs (to help earn LEED points).

Exclusive maker of Reddi-Pipe®
RED OR BLACK PAINTED PIPE.



cULUS LISTED



BULL MOOSE
TUBE

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sales@BullMooseIndustries.com
BullMooseTube.com

Victaulic® FireLock™ Rigid Coupling

Style 009N



Patented

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 12"/32 – 300 mm

Pipe Material

- Carbon steel, Schedule 10, Schedule 40. For use with alternative materials and wall thicknesses please contact Victaulic.

Maximum Working Pressure

- Up to 365 psi/2517 kPa.

Function

- Joins carbon steel pipe.
- Provides a rigid pipe joint designed to restrict axial or angular movement.

2.0 CERTIFICATION/LISTINGS



C104-1a/36

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

3.0 SPECIFICATIONS – MATERIAL

Housing: Ductile iron conforming to ASTM A 536, Grade 65-45-12. Ductile iron conforming to ASTM A 395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

- Orange enamel (North America, Asia Pacific)
- Red enamel (Europe)
- Hot dipped galvanized

Gasket: (specify choice¹)

Grade “E” EPDM (Type A)

FireLock EZ products have been Listed by Underwriters Laboratories Inc., Underwriters Laboratories of Canada Limited, and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services within the rated working pressure.

¹ Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest [Victaulic Gasket Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts: (specify choice²)

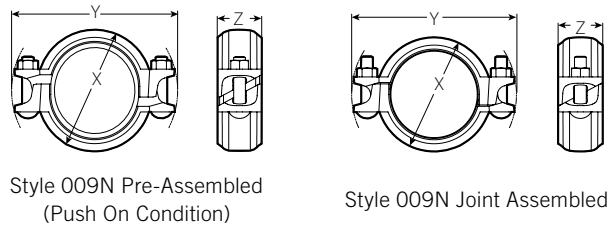
Standard: Carbon steel oval neck track bolts meeting the physical and chemical requirements of ASTM A449 (imperial) and ISO 898-1 Class 9.8 (metric). Carbon steel hex nuts meeting the physical and chemical requirements of ASTM A563 Grade B (imperial - heavy hex nuts) and ASTM A563M Class 9 (metric - hex nuts). Track bolts and hex nuts are zinc electroplated per ASTM B633 ZN/FE5, finish Type III (imperial) or Type II (metric).

Optional: Stainless steel oval neck track bolts meeting the requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel heavy hex nuts meeting the requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling-resistant coating.²

² Optional bolts/nuts are available in imperial size only.

4.0 DIMENSIONS

Style 009N



Nominal Size	Actual Outside Diameter	Maximum Working Pressure ³	Maximum End Load ³	Allow. Pipe End Separation ⁴	Qty.	Bolt/Nut Size	Dimensions					Weight Approx. (Each)
							Pre-assembled (Push On Condition)		Joint Assembled			
							X	Y	X	Y	Z	
1 ¼ 32	1.660 42.4	365 2517	790 3514	0.10 2.54	2	¾ × 2 M10 × 51	3.13 79	5.00 127	2.75 70	5.00 127	2.00 51	1.4 0.6
1 ½ 40	1.900 48.3	365 2517	1035 4604	0.10 2.54	2	¾ × 2 M10 × 51	3.38 86	5.13 130	3.00 76	5.13 130	2.00 51	1.5 0.7
2 50	2.375 60.3	365 2517	1616 7193	0.12 3.05	2	¾ × 2 ½ M10 × 63	4.00 102	5.63 143	3.50 89	5.63 143	2.00 51	1.9 0.9
2 ½ 65	2.875 73.0	365 2517	2370 10542	0.12 3.05	2	¾ × 2 ½ M10 × 63	4.50 114	6.13 156	4.00 102	6.13 156	2.00 51	2.1 1.0
76.1 mm	3.000 76.1	365 2517	2580 11476	0.12 3.05	2	¾ × 2 ½ M10 × 63	4.63 118	6.00 152	4.13 105	6.13 156	2.00 51	2.1 1.0
3 80	3.500 88.9	365 2517	3512 15622	0.12 3.05	2	¾ × 2 ½ M10 × 63	5.13 130	6.75 171	4.63 117	6.75 171	2.00 51	2.3 1.0
4 100	4.500 114.3	365 2517	5805 25822	0.17 4.32	2	¾ × 2 ½ M10 × 63	6.00 152	7.88 200	5.63 143	7.50 191	2.13 54	2.9 1.3
108.0 mm	4.250 108.0	365 2517	5175 23020	0.17 4.32	2	¾ × 2 ½ M10 × 63	5.63 152	7.38 187	5.38 137	7.38 187	2.13 54	3.1 1.4
5 125	5.563 141.3	365 2000	8870 39456	0.17 4.32	2	½ × 3 M12 × 76	7.25 184	9.25 235	6.75 171	9.13 232	2.25 57	5.0 2.3
133.0 mm	5.250 133.0	365 2517	7897 35106	0.17 4.32	2	½ × 3 M12 × 76	6.63 168	9.00 229	6.38 162	9.00 229	2.25 57	4.8 2.2
139.7 mm	5.500 139.7	365 2517	8667 38529	0.17 4.32	2	½ × 3 M12 × 76	6.88 175	9.25 235	6.75 171	9.13 232	2.25 57	4.9 2.2
159.0 mm	6.250 159.0	365 2517	11192 49753	0.17 4.32	2	½ × 3 ¼ M12 × 83	7.88 200	10.00 254	7.38 187	9.88 251	2.25 57	5.6 2.5
165.1 mm	6.500 165.1	365 2517	12105 53813	0.17 4.32	2	½ × 3 ¼ M12 × 83	8.00 203	10.25 260	7.75 197	10.13 257	2.25 57	6.0 2.7
6 150	6.625 168.3	365 2000	12582 44469	0.17 4.32	2	½ × 3 ¼ M12 × 83	8.38 213	10.38 264	7.88 200	10.13 257	2.25 57	6.0 2.7
216.0 mm	8.500 216.0	365 2517	20712 59968	0.17 4.32	2	¾ × 4 M16 × 101	10.63 270	13.25 337	10.25 260	10.13 257	2.63 67	11.4 5.2
8 200	8.625 219.1	365 1620	21326 94863	0.17 4.32	2	¾ × 4 M16 × 101	10.88 276	13.38 340	10.25 260	13.13 333	2.50 64	11.4 5.2
10 250	10.750 273.0	300 2068	27229 121121	0.25 6.4	2	7/8 × 6 ½ M22 × 165	13.75 349	17.00 432	13.25 337	17.13 435	2.75 70	22.6 10.3
12 300	12.750 323.9	300 2068	38303 170380	0.25 6.4	2	7/8 × 6 ½ M22 × 165	16.00 406	19.00 483	15.50 394	19.13 486	2.75 70	27.6 12.5

³ Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard roll or cut grooved in accordance with Victaulic specifications. See the Listings/Approvals section of this publication for ratings on other pipe.

⁴ The allowable pipe separation dimension shown is for system layout purposes only. FireLock EZ™ couplings are considered rigid connections and will not accommodate expansion or contraction of the piping system.

NOTES

- When assembling FireLock EZ™ couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket end stop. For FireLock EZ™ Style 009N couplings, use FireLock No. 006 end caps containing the “EZ” marking on the inside face or No. 60 end caps containing the “QV EZ” marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009N couplings. IMPORTANT: Gaskets intended for the Style 009 or Style 009V couplings cannot be used with the Style 009N coupling. There is no interchanging of gaskets or housings between coupling styles.
- Use Of Flushseal Gaskets For Dry Pipe Systems** FireLock EZ™ couplings are supplied with FireLock EZ™ Grade “E” Type A gaskets. These gaskets include an integral pipe stop, that once installed provides the similar benefits as a FlushSeal gasket for dry pipe systems. It should be noted that standard Victaulic Flush-Seal™ gaskets are not compatible and cannot be used with the FireLock EZ™ couplings.

5.0 PERFORMANCE⁶

Listings/Approval

The information provided below is based on the latest listing and approval data at the time of publication. Listings/Approvals are subject to change and/or additions by the approvals agencies. Contact Victaulic for performance on other pipe and the latest listings and approvals.

Nominal Size inches mm	cULus ¹¹			FM			Vds	LPCB
	Sch. 5 psi kPa	Sch. 10 psi kPa	Sch. 40 psi kPa	Sch. 5 psi kPa	Sch. 10 psi kPa	Sch. 40 psi kPa	psi kPa	psi kPa
1 ¼ 32	232 1600	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
1 ½ 40	232 1600	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
2 50	363 2502	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
2 ½ 65	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
76.1 mm	N/A	365 ⁶ 2517 ⁶	N/A	N/A	363 ⁷ 2502 ⁷	N/A	363 2500	363 2500
3 80	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
4 100	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
108.0 mm	N/A	N/A	N/A	175 1205	363 2502	363 2502	N/A	N/A
5 125	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
133.0 mm	N/A	N/A	N/A	N/A	363 ⁷ 2502 ⁷	N/A	N/A	N/A
139.7 mm	N/A	290 ⁸ 2000 ⁸	N/A	N/A	363 ⁷ 2502 ⁷	N/A	232 1600	N/A
159.0 mm	N/A	N/A	N/A	N/A	363 ⁷ 2502 ⁷	N/A	N/A	N/A
165.1 mm	N/A	290 ⁹ 2000 ⁹	N/A	N/A	363 ⁷ 2502 ⁷	N/A	N/A	N/A
6 150	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
216.0 mm	N/A	N/A	N/A	N/A	363 ⁷ 2502 ⁷	N/A	N/A	N/A
8 200	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
216.0 mm	N/A	N/A	N/A	N/A	363 ⁷ 2502 ⁷	N/A	N/A	N/A
8 200	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
10 250	N/A	300 2068	300 2068	N/A	300 2068	300 2068	N/A	N/A
12 300	N/A	300 ¹⁰ 2068 ¹⁰	300 2068	N/A	250 1724	300 2068	N/A	N/A

⁵ Listed/Approved for wet and dry pipe systems (> -40°F/-40°C) for continuous use in freezing conditions, use of Style 005H Coupling with Silicone Gasket is recommended. Please see the Victaulic [Installation Manual I-009N/009H](#) for details concerning when supplemental lubrication is required.

⁶ cULus listed for DIN 2458 2.6 mm pipe wall.

⁷ FM approved for BS 1387 Medium 3.6 mm pipe wall.

⁸ cULus listed for EN 10220 4.0 mm pipe wall.

⁹ cULus listed for EN 10255 4.5 mm pipe wall.

¹⁰ cUL listed to 250 psi.

¹¹ With optional stainless steel fasteners, cULus Listed to 175psi. The stainless steel fasteners have a marking designation of "316" on the end face of the bolt.

5.1 PERFORMANCE²

Listings/Approval Speciality Pipe

Pipe	Size inches	Pressure Rating		Pipe	Size inches	Pressure Rating		Pipe	Size inches	Pressure Rating	
		cULus psi kPa	FM psi kPa			cULus psi kPa	FM psi kPa			cULus psi kPa	FM psi kPa
BLT	1 ¼ – 2	300 2068	365 2517	EZT	1 ¼ – 2	300 2068	365 2517	MT	1 ¼ – 2	300 2068	365 2517
DF	1 ¼ – 4	300 2068	365 2517	FF	1 ¼ – 4	300 2068	365 2517	MLT	1 ¼ – 2	N/A	365 2517
DT	1 ¼ – 2	300 2068	365 2517	FLF	1 ¼ – 4	N/A	365 2517	ST	1 ¼ – 2	N/A	365 2517
EF	1 ¼ – 4	175 1206	175 1206	FLT	1 ¼ – 2	N/A	365 2517	STF	1 ¼ – 4	N/A	365 2517
EL	1 ¼ – 2	300 2068	365 2517	FLTL	1 ¼ – 2	N/A	365 2517	TF	2 ¼ – 4	N/A	365 2517
ET40	1 ¼ – 2	300 2068	365 2517	GL	1 ¼ – 2	300 2068	365 2517	WLS	1 ¼ – 2	300 2068	365 2517
EZF	3 – 4	300 2068	365 2517	MF	1 ¼ – 4	300 2068	365 2517	WST	1 ¼ – 2	N/A	365 2517
								XL	1 ¼ – 2	300 2068	365 2517

NOTES

- BLT = BLT steel pipe manufactured by Allied Tube & Conduit Corp.
- DF = DYNA-FLOW steel pipe manufactured by Allied Tube & Conduit Corp.
- DT = DYNA-FLOW steel pipe manufactured by Allied Tube & Conduit Corp.
- EF = EDDY FLOW steel pipe manufactured by Bull Moose Tube Co.
- EL = EDDYLITE steel pipe manufactured by Bull Moose Tube Co.
- ET40 = Eddythread 40 steel pipe manufactured by Bull Moose Tube Co.
- EZF = EZ-Flow steel pipe manufactured by Northwest Pipe Co.
- EZT = EZ-Thread steel pipe manufactured by Youngstown Tube Co.
- FF = Fire-Flo steel pipe manufactured by Youngstown Tube Co.
- FLF = Fire-Line Flow steel pipe manufactured by Western International Forest Products Inc.
- FLT = Fire-Line Threadable steel pipe manufactured by Western International Forest Products Inc.
- FLTL = Fire-Line Threadable Light steel pipe manufactured by Western International Forest Products Inc.
- GL = GL steel pipe manufactured by Wheatland Tube Co.
- MF = Mega-Flow steel pipe manufactured by Wheatland Tube Co.
- MT = Mega-Thread steel pipe manufactured by Wheatland Tube Co.
- MLT = MLT steel pipe manufactured by Wheatland Tube Co.
- ST = STD wall pipe in accordance with ASTM A53.
- STF = Steady Flow steel pipe manufactured by AMS Tube Corp.
- TF = Tex-Flow steel pipe manufactured by Tex-Tube Co.
- WLS = WLS steel pipe manufactured by Wheatland Tube Co.
- WST = WST steel pipe manufactured by Wheatland Tube Company.
- XL = XL steel pipe manufactured by Allied Tube & Conduit Corp.

6.0 NOTIFICATIONS

Not applicable – contact Victaulic with any questions.

7.0 REFERENCE MATERIALS

[05.01: Seal Selection Guide](#)

[I-009N/009H](#): Installation Instructions FireLock EZ™ Rigid Coupling

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.



No. 20 Tee



No. 10 Elbow

1.0 PRODUCT DESCRIPTION

Available Sizes

- ¾ – 60"/DN20 – DN1500

Maximum Working Pressure

- Pressure ratings for Victaulic standard fittings conform to the ratings of Victaulic Style 177N couplings (refer to [publication 06.24](#) for more information).

Application

- Connects pipe, provides change in direction and adapts sizes or components
- Supplied with Victaulic OGS grooves
- Exclusively for use with Victaulic couplings, valves, accessories and pipe which feature ends formed with the Victaulic OGS groove profile

Pipe Materials

- Carbon steel or stainless steel

NOTE

- These fittings are not intended for use with Victaulic plain end couplings. Intended for use only in grooved piping systems. When connecting wafer or lug type butterfly valves directly to Victaulic fittings using Style 741 or Style 743 flange adapters, be sure to check disc clearance dimensions with I.D. dimension of fitting.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

1.0 PRODUCT DESCRIPTION (Continued)

Other Fitting Styles



AGS - Advanced Groove System
from 14 – 60"/DN350 – DN1500
[Publication 20.05](#)



Ductile Iron for AWWA size pipe
[Publication 23.05](#)



Stainless Steel
[Publication 17.16](#)



XL fittings for abrasive services
[Publication 07.07](#)



Galvanized
[Publication 07.01](#) for Original Groove Fittings
[Publication 20.05](#) for AGS Fittings



Aluminum
[Publication 21.03](#)



Extra Heavy EndSeal "ES"
[Publication 07.03](#)



Shouldered Ends
[Publication 07.06](#)



Copper
[Publication 22.04](#)



Plain End
[Publication 14.04](#)

2.0 CERTIFICATION/LISTINGS



NOTES

- When supplied as “hot dip galvanized” the following fittings are UL Classified in accordance with ANSI/NSF 61 and for use on cold +86°F/+30°C potable water service and ANSI/NSF 372: No. 10 90° Elbow, No. 11 45° Elbow, No. 12 22 ½° Elbow, No. 13 11 ¼° Elbow, No. 100 90° Long Radius Elbow, No. 110 45° Long Radius Elbow, No. 20 Tee, No. 25 Tee with Grooved Branch, No. 30 45° Lateral, No. 60 Cap, No. 50 Concentric Reducers, No. 51 Eccentric Reducers.
- The following Victaulic fittings are VdS approved: No.10 90° Elbow, No.11 45° Elbow, No.20 Tee and No.60 Cap.
- The following Victaulic fittings are LPCB approved: No.10 90° Elbow, No.11 45° Elbow, No.12 22 ½° Elbow, No.13 11 ¼° Elbow, No.30 45° Lateral, No.30-R Reducing Lateral, No.100 Long Radius Elbow, No.110 Long Radius Elbow, No.20 Tee, No.35 Cross, No.60 Cap, No.25 Reducing Tee, No.33 True Wye, No.50 Concentric Reducer, No.51 Eccentric Reducer and No.29M Tee with Threaded Branch.
- The following Victaulic fittings are FM approved: No.10 90° Elbow, No.11 45° Elbow, No.12 22 ½° Elbow, No.13 11 ¼° Elbow, No.30 45° Lateral, No.100 Long Radius Elbow, No.20 Tee, No.35 Cross, No.60 Cap, No.25 Reducing Tee and No.50 Concentric Reducer.

3.0 SPECIFICATIONS - MATERIAL

Fitting: (specify choice)

Standard: Ductile iron conforming to ASTM A536, Grade 65-45-12.

Optional: Segmentally welded steel as shown under nipples

Nipples: (specify choice)

¾ – 4"/DN20 – DN100: Carbon steel, Schedule 40, conforming to ASTM A53, Type F

5 – 6"/DN125 – DN150: Carbon steel, Schedule 40, conforming to ASTM A53, Type E or S, Gr. B

8 – 12"/DN200 – DN300: Carbon steel, Schedule 30 or 40, conforming to ASTM A53, Type E or S, Gr. B

Flanged Adapter Nipples: (specify choice)

Class 125 Flange: Cast iron conforming to ANSI B16.1

Class 150 Flange: Carbon steel conforming to ANSI B16.5, raised or flat face

Class 300 Flange: Carbon steel conforming to ANSI B16.5, raised or flat face

Fitting Coating: (specify choice)

Standard: Orange enamel

Optional: Hot dip galvanized and others. Some fittings supplied electroplated as standard – see product specifications

Flanged Adapter Nipple Coating: (specify choice)

Standard: None (Unfinished)

Optional: Orange enamel, hot dip galvanized and others

4.0 DIMENSIONS

Elbows

No. 10 90° Elbow

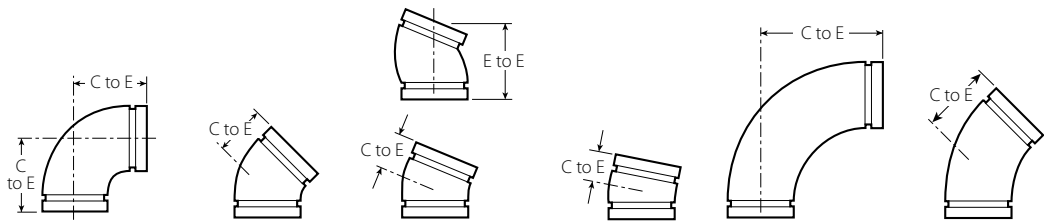
No. 11 45° Elbow

No. 12 22½° Elbow

No. 13 11¼° Elbow

No. 100 90° Long Radius Elbow

No. 110 45° Long Radius Elbow



Standard and GSNK

Size		No. 10 90° Elbow		No. 11 45° Elbow		No. 12 22½° Elbow		No. 13 11¼° Elbow		No. 100 90° Long Radius Elbow		No. 110 45° Long Radius Elbow	
Nominal	Actual Outside Diameter	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)
inches DN	inches mm	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg
¾ DN20	1.050 26.9	2.25 57	0.5 0.2	1.50 38	0.5 0.2	1.63 (sw) 41	—	1.38 (sw) 35	—	2.50 (sw) 64	0.4 0.2	1.88 (sw) 48	0.3 0.1
1 DN25	1.315 33.7	2.25 57	0.6 0.3	1.75 44	0.6 0.3	3.25 ¹ 83	0.6 0.3	1.38 (sw) 35	0.3 0.1	2.88 (sw) 73	0.6 0.3	2.25 (sw) 57	0.5 0.2
1¼ DN32	1.660 42.4	2.75 70	1.0 0.5	1.75 44	0.9 0.4	1.75 44	0.8 0.4	1.38 (sw) 35	0.5 0.2	3.25 (sw) 83	1.1 0.5	2.38 (sw) 60	0.7 0.3
1½ DN40	1.900 48.3	2.75 70	1.2 0.5	1.75 44	0.9 0.4	1.75 44	0.8 0.4	1.38 (sw) 35	0.5 0.2	3.63 (sw) 92	2.2 1.0	2.50 (sw) 64	1.3 0.6
2 DN50	2.375 60.3	3.25 83	1.8 0.8	2.00 51	1.3 0.6	1.88 48	1.2 0.5	1.38 35	1.0 0.5	4.38 111	2.5 1.1	2.75 70	1.8 0.8
2½ DN65	2.875 73.0	3.75 95	3.2 1.5	2.25 57	2.2 1.0	4.00 ¹ 102	2.3 1.0	1.50 38	1.1 0.5	5.13 130	3.4 1.5	3.00 76	2.8 1.3
3 DN80	3.000 76.1	3.75 95	3.7 1.7	2.25 57	3.4 1.5	2.25 57	—	1.50 38	—	—	—	—	—
3½ DN90	3.500 88.9	4.25 108	4.5 2.0	2.50 64	3.1 1.4	4.50 ¹ 114	3.1 1.4	1.50 38	2.1 1.0	5.88 149	6.0 2.7	3.38 86	4.9 2.2
4 DN100	4.000 101.6	4.50 114	5.6 2.5	2.75 70	4.3 2.0	2.50 (sw) 64	4.0 1.8	1.75 (sw) 44	2.7 1.2	—	—	—	—
	4.500 114.3	5.00 127	7.1 3.2	3.00 76	5.6 2.5	2.88 73	5.6 2.5	1.75 44	3.6 1.6	7.50 191	12.3 5.6	4.00 102	7.3 3.3
	4.250 108.0	5.00 127	11.0 5.0	3.00 76	5.6 2.5	—	—	—	—	—	—	—	—
	5.000 127.0	5.25 (sw) 133	10.0 4.5	3.13 (sw) 79	6.0 2.7	3.50 (sw) 89	6.6 3.0	1.88 (sw) 48	4.2 1.9	—	—	—	—
5	5.563 141.3	5.50 140	11.7 5.3	3.25 83	8.3 3.8	2.88 (sw) 73	7.8 3.5	2.00 (sw) 51	5.0 2.2	9.25 (sw) 235	18.0 8.2	4.88 (sw) 124	14.8 6.7
	5.250 133.0	5.50 140	11.7 5.3	3.25 83	8.3 3.8	—	—	—	—	—	—	—	—
DN125	5.500 139.7	5.50 140	11.7 5.3	3.25 83	8.3 3.8	2.88 73	—	2.00 51	—	—	—	—	—
6 DN150	6.625 168.3	6.50 165	17.2 7.8	3.50 89	10.8 4.9	6.25 ¹ 159	12.2 5.5	2.00 51	7.0 3.2	10.75 273	30.4 13.8	5.50 140	17.4 7.9
	6.250 159.0	6.50 165	18.6 8.4	3.50 89	10.8 4.9	—	—	—	—	—	—	—	—
	6.500 165.1	6.50 165	15.5 7.0	3.50 89	9.8 4.4	3.13 79	11.4 5.2	2.00 51	7.4 3.4	10.75 (sw) 273	29.0 13.2	5.50 (sw) 140	19.0 8.6

¹ Gooseneck design, end-to-end dimension fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

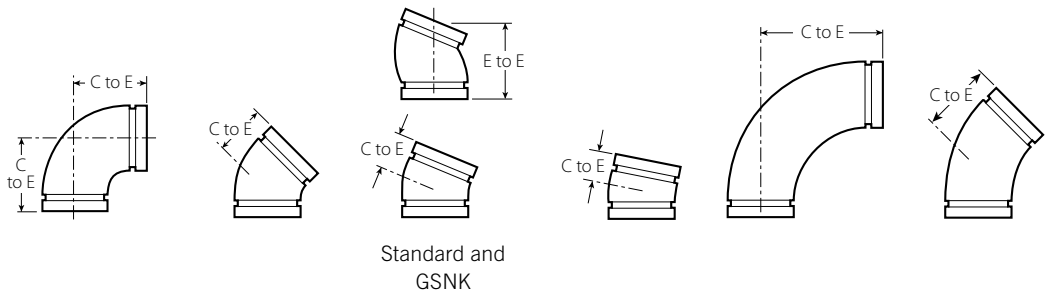
NOTE

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.0 DIMENSIONS (Continued)

Elbows

- No. 10 90° Elbow
- No. 11 45° Elbow
- No. 12 22 1/2° Elbow
- No. 13 11 1/4° Elbow
- No. 100 90° Long Radius Elbow
- No. 110 45° Long Radius Elbow



Size		No. 10 90° Elbow		No. 11 45° Elbow		No. 12 22 1/2° Elbow		No. 13 11 1/4° Elbow		No. 100 90° Long Radius Elbow		No. 110 45° Long Radius Elbow	
Nominal	Actual Outside Diameter	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)	C to E	Approx. Wgt. (Each)
inches DN	inches mm	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg	inches mm	lb kg
8 DN200	8.625 219.1	7.75 197	29.9 13.6	4.25 108	20.4 9.3	7.75 ¹ 197	20.0 9.1	2.00 51	10.1 4.6	14.25 362	66.0 30.0	7.25 184	36.0 16.3
10 DN250	10.750 273.0	9.00 229	63.3 28.7	4.75 121	37.5 17.0	4.38 (sw) 111	30.0 13.6	2.13 54	11.8 5.3	15.00 381	107.0 48.5	6.25 159	57.0 25.9
12 DN300	12.750 323.9	10.00 254	74.0 33.6	5.25 133	66.7 30.3	4.88 (sw) 124	40.0 18.1	2.25 57	29.3 13.3	18.00 457	156.0 70.8	7.50 191	90.0 40.8
14 ² DN350	14.000 355.6	14.00 356	136.0 61.7	5.75 146	65.0 29.5	5.00 (sw) 127	46.0 20.9	3.50 (sw) 89	32.0 14.5	21.00 (s) 533	164.0 74.4	8.75 222	82.0 37.2
	14.843 377.0	14.84 377	149.3 67.7	6.13 156	82.0 37.2	—	—	—	—	—	—	—	—
16 ² DN400	16.000 406.5	16.00 406	171.0 77.6	6.63 168	88.0 39.3	5.00 (sw) 127	58.0 26.3	4.00 (sw) 102	42.0 19.1	24.00 (s) 610	210.0 95.3	10.00 (s) 254	100.0 45.4
	16.773 426.0	16.75 425	198.6 90.1	7.00 178	101.3 45.9	—	—	—	—	—	—	—	—
18 ² DN450	18.000 457.2	18.00 457	228.0 103.4	7.50 190	108.0 50.0	5.50 (sw) 140	65.0 29.5	4.50 (sw) 144	53.2 24.1	27.00 (s) 686	273.0 123.8	11.25 (s) 286	135.0 61.2
	18.898 480.0	18.88 480	291.0 132.0	7.83 200	141.7 64.3	—	—	—	—	—	—	—	—
20 ² DN500	20.000 508.0	20.00 508	298.0 135.2	8.25 210	138.0 62.6	6.00 (sw) 152	78.6 36.0	5.00 (sw) 127	65.0 29.5	30.00 (s) 762	343.0 155.6	12.50 (s) 318	174.0 78.9
	20.866 530.0	20.88 530	355.0 161.0	8.63 219	179.0 81.2	—	—	—	—	—	—	—	—
24 ² DN600	24.000 609.6	24.00 610	438.0 198.7	10.00 254	221.0 100.2	7.00 (sw) 178	140.0 63.5	6.00 (sw) 152	60.0 27.2	36.00 (s) 914	516.0 234.1	15.00 (s) 381	251.0 113.9
	24.803 630.0	24.80 630	545.0 247.2	10.25 261	255.2 115.7	—	—	—	—	—	—	—	—
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05												

¹ Gooseneck design, end-to-end dimension fittings in this size, contact your nearest Victaulic sales representative.
² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.
(s) = Carbon Steel Direct Roll Groove (OGS)
(sw) = Carbon Steel Segmentally Welded

NOTE

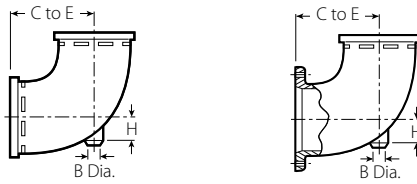
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.1 DIMENSIONS

Reducing Base Support Elbow

No. R-10G Grv. x Grv.

No. R-10F Grv. x Flange



Size		No. R-10 Reducing Base Support Elbow			Approx. Weight Each	
Nominal inches DN		C to E inches mm	H inches mm	B Diameter inches mm	Grv. x Grv. lb kg	Grv. x Flange lb kg
6 DN150	x 4 DN100	9.00 229	1.25 32	1.50 38	19.0 8.6	33.0 15.0
	x 5	9.00 229	1.50 38	1.50 38	23.0 10.4	38.0 17.2
8 DN200	x 6 DN150	10.50 267	2.13 24	1.50 38	33.0 15.0	52.0 23.6
	x 8 DN200	12.00 305	2.40 61	1.50 38	61.0 27.7	88.0 39.9

4.2 DIMENSIONS

Adapter Elbow

No. 18 90° Adapter Elbow

No. 19 45° Adapter Elbow



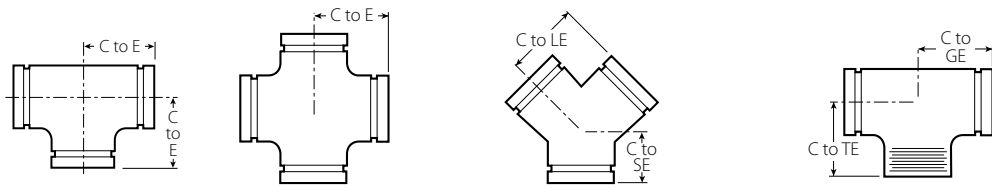
Size		No. 18 90° Adapter Elbow			No. 19 45° Adapter Elbow		
Nominal inches DN	Actual Outside Diameter inches mm	C to GE inches mm	C to TE inches mm	Approximate Weight (Each) lb kg	C to GE inches mm	C to TE inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	2.25 57	2.25 57	0.5 0.2	1.50 38	1.50 38	0.5 0.2
1 DN25	1.315 33.7	2.25 57	2.25 57	0.5 0.2	—	—	—
1¼ DN32	1.660 42.4	2.75 70	2.75 70	0.9 0.4	—	—	—
1½ DN40	1.900 48.3	2.75 70	2.75 70	1.1 0.5	1.75 44	1.75 44	0.9 0.4
2 DN50	2.375 60.3	3.25 83	4.25 108	2.5 1.1	—	—	—
2½	2.875 73.0	3.75 95	3.75 95	3.0 1.4	2.25 57	2.25 57	2.3 1.0
3 DN80	3.500 88.9	4.25 108	6.00 152	5.8 2.6	2.50 64	4.25 108	5.0 2.3
3½ DN90	4.000 101.6	4.50 114	6.25 159	8.0 3.6	5.25 133	5.25 133	8.8 4.0
6 DN150	6.625 168.3	6.50 165	6.50 165	17.6 8.0	3.50 89	3.50 89	12.7 5.8

NOTE

- Available with British Standard Pipe Threads, specify "BSP" clearly on order.

4.3 DIMENSIONS

Tees, Crosses and True Wyes



Size		No. 20 Tee		No. 35 Cross (sw)		No. 33 True Wye (sw)			No. 29M Tee with Threaded Branch		
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg	C to GE inches mm	C to TE inches mm	Approx. Weight (Each) lb kg
3/4 DN20	1.050 26.9	2.25 57	0.6 0.3	2.25 57	0.9 0.4	2.25 57	2.00 51	0.7 0.3	2.25 57	2.25 (sw) 57	0.6 0.3
1 DN25	1.315 33.7	2.25 57	1.0 0.5	2.25 57	1.3 0.6	2.25 57	2.25 57	1.1 0.5	2.25 57	2.25 57	1.0 0.5
1 1/4 DN32	1.660 42.4	2.75 70	1.5 0.7	2.75 70	2.1 1.0	2.75 70	2.50 64	1.5 0.7	2.75 70	2.75 70	1.5 0.7
1 1/2 DN40	1.900 48.3	2.75 70	2.0 0.9	2.75 70	2.5 1.1	2.75 70	2.75 70	1.8 0.8	2.75 70	2.75 70	2.0 0.9
2 DN50	2.375 60.3	3.25 83	3.0 1.4	3.25 83	3.8 1.7	3.25 83	2.75 70	2.5 1.1	3.25 83	4.25 108	3.0 1.4
2 1/2 DN65	2.875 73.0	3.75 95	4.3 2.0	3.75 95	6.1 2.8	3.75 95	3.00 76	4.3 2.0	3.75 95	3.75 95	4.3 2.0
3 DN80	3.500 88.9	4.25 108	6.8 3.0	4.25 108	10.5 4.8	4.25 108	3.25 83	6.1 2.8	4.25 108	6.00 152	6.8 3.1
3 1/2 DN90	4.000 101.6	4.50 (sw) 114	7.9 3.6	4.50 114	11.5 5.2	4.50 114	3.50 89	9.6 4.4	4.50 114	4.50 (sw) 114	7.9 3.6
4 DN100	4.250 108.0	5.00 127	15.5 7.0	—	—	—	—	—	5.00 127	5.00 (sw) 127	15.5 7.0
4 DN100	4.500 114.3	5.00 127	11.9 5.4	5.00 127	15.8 7.2	5.00 127	3.75 95	9.8 4.4	5.00 127	7.25 184	11.9 5.4
5 DN125	5.000 127.0	5.25 (sw) 133	15.0 6.8	5.25 133	18.5 8.4	—	—	—	5.25 133	5.25 (sw) 133	15.0 6.8
5 DN125	5.250 133.0	5.50 140	17.8 8.1	—	—	—	—	—	5.50 140	5.50 (sw) 140	17.8 8.1
5 DN125	5.500 139.7	5.50 140	17.8 8.1	—	—	—	—	—	5.50 140	5.50 (sw) 140	17.8 8.1
5 DN125	5.563 141.3	5.50 140	17.8 8.1	5.50 140	20.0 9.1	5.50 140	4.00 102	15.0 6.8	5.50 140	5.50 (sw) 140	17.8 8.1
6 DN150	6.250 159.0	6.50 165	27.1 12.3	—	—	—	—	—	6.50 165	6.50 (sw) 165	27.1 12.3
6 DN150	6.500 165.1	6.50 165	22.0 10.0	6.50 165	28.0 12.7	—	—	—	6.50 165	6.50 (sw) 165	22.0 10.0
6 DN150	6.625 168.3	6.50 165	25.7 11.7	6.50 165	28.0 12.7	6.50 165	4.50 114	22.3 10.1	6.50 165	6.50 (sw) 165	25.7 11.7
8 DN200	8.625 219.1	7.75 197	47.6 21.6	7.75 197	48.0 21.8	7.75 197	6.00 152	36.0 16.3	7.75 197	7.75 197	47.6 21.6
10 DN250	10.750 273.0	9.00 229	99.0 44.9	9.00 229	121.5 55.1	9.00 229	6.50 155	69.9 31.7	9.00 229	9.00 229	99.0 44.9
12 DN300	12.750 323.9	10.00 254	133.0 60.3	10.00 254	110.0 49.9	10.00 254	7.00 178	80.0 36.3	10.00 254	10.00 254	133.0 60.3

(s) = Carbon Steel Direct Roll Groove (OGS)

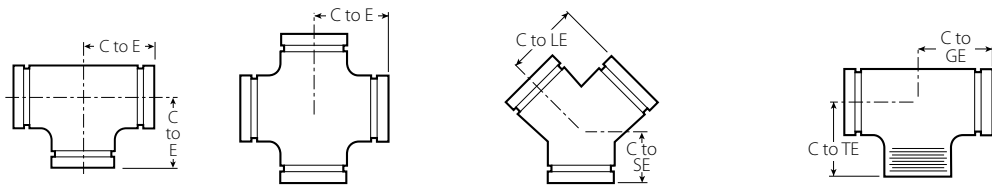
(sw) = Carbon Steel Segmentally Welded


NOTE

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.3 DIMENSIONS (Continued)

Tees, Crosses and True Wyes



Size		No. 20 Tee		No. 35 Cross (sw)		No. 33 True Wye (sw)			No. 29M Tee with Threaded Branch		
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg	C to GE inches mm	C to TE inches mm	Approx. Weight (Each) lb kg
14 ² DN350	14.000 355.6	11.00 (sw) 279	145.0 65.8	11.00 279	198.0 89.8	11.00 279	7.50 191	134.2 60.8	—	—	—
	377.0	11.50 292	145.0 65.8	—	—	—	—	—	—	—	—
16 ² DN400	16.000 406.4	12.00 (sw) 305	186.0 84.4	12.00 305	250.0 113.4	12.00 305	8.00 203	167.0 75.7	—	—	—
	426.0	13.00 300	186.0 84.4	—	—	—	—	—	—	—	—
18 ² DN450	18.000 457.0	15.50 (sw) 394	260.0 117.9	15.50 394	350.0 158.8	15.50 394	8.50 216	234.0 106.1	—	—	—
	480.0	14.63 372	256.0 116.1	—	—	—	—	—	—	—	—
20 ² DN500	20.000 508.0	17.25 (sw) 438	336.0 152.4	17.25 438	452.0 205.0	17.25 438	9.00 229	281.0 127.5	—	—	—
	530.0	15.38 (sw) 391	339.0 153.8	—	—	—	—	—	—	—	—
24 ² DN600	24.000 610.0	20.00 (sw) 508	592.0 268.5	20.00 508	795.0 360.6	20.00 508	10.00 254	523.0 237.2	—	—	—
	630.0	17.38 (sw) 441	473.0 214.5	—	—	—	—	—	—	—	—
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 										

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

NOTE

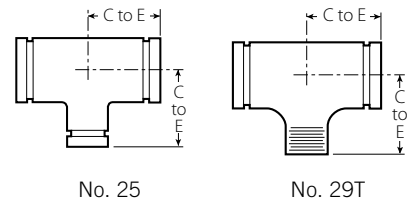
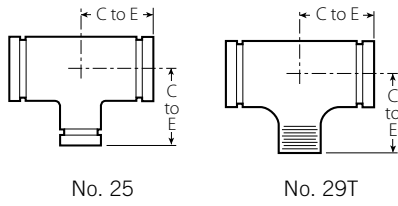
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.4 DIMENSIONS

Reducing Tee

No. 25 Grooved Branch

No. 29T Threaded Branch



Size			No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each) lb kg	
Nominal inches DN			C to E inches mm	C to E inches mm		
1 DN25	x	1 DN25	2.25 (sw) 57	2.25 (sw) 57	1.0 0.5	
1 1/4 DN32	x	1 1/4 DN32	2.75 (sw) 70	2.75 (sw) 70	1.3 0.6	
1 1/2 DN40	x	1 1/2 DN40	3/4 DN20	2.75 (sw) 70	2.75 (sw) 70	1.5 0.7
			1 DN25	2.75 (sw) 70	2.75 (sw) 70	1.5 0.7
			1 1/4 DN32	2.75 (sw) 70	2.75 (sw) 70	1.7 0.8
2 DN50	x	2 DN50	3/4 DN20	3.25 83	3.25 83	2.5 1.1
			1 DN25	3.25 83	3.25 83	2.7 1.2
			1 1/4 DN32	3.25 (sw) 83	3.25 (sw) 83	1.8 0.8
			1 1/2 DN40	3.25 83	3.25 (sw) 83	3.0 1.4
2 1/2	x	2 1/2	3/4 DN20	3.75 (sw) 95	3.75 (sw) 95	3.9 1.8
			1 DN25	3.75 95	3.75 (sw) 95	3.8 1.7
			1 1/4 DN32	3.75 95	3.75 95	4.2 1.7
			1 1/2 DN40	3.75 95	3.75 95	3.9 1.8
			2 DN50	3.75 95	3.75 (sw) 95	4.5 2.0
3 DN80	x	3 DN80	3/4 DN20	4.25 (sw) 108	4.25 (sw) 108	5.7 2.6
			1 DN25	4.25 108	4.25 108	6.1 2.8
			1 1/4 DN32	4.25 108	4.25 108	8.0 3.6
			1 1/2 DN40	4.25 108	4.25 (sw) 108	6.5 2.9
			2 DN50	4.25 108	4.25 (sw) 108	6.2 2.8
			2 1/2	4.25 108	4.25 (sw) 108	6.4 2.9

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

NOTE

- Cast fitting available. Contact Victaulic for details.

Size			No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each) lb kg				
Nominal inches DN			C to E inches mm	C to E inches mm					
4 DN100	x	4 DN100	3/4 DN20	5.00 (sw) 127	5.00 (sw) 127	8.0 3.6			
			1 DN25	5.00 127	5.00 127	7.8 3.5			
			1 1/4 DN32	5.00 (sw) 127	5.00 (sw) 127	9.6 4.4			
			1 1/2 DN40	5.00 127	5.00 127	10.2 4.6			
			2 DN50	5.00 127	5.00 127	11.2 5.1			
			2 1/2	5.00 127	5.00 127	11.4 5.2			
			3 DN80	5.00 127	5.00 127	11.6 5.3			
			5	x	5	1 DN25	5.50 (sw) 140	5.50 (sw) 140	14.0 6.4
						1 1/2 DN40	5.50 (sw) 140	5.50 (sw) 140	14.3 6.5
						2 DN50	5.50 (sw) 140	5.50 (sw) 140	14.5 6.6
2 1/2	5.50 140	5.50 (sw) 140				15.2 6.9			
3 DN80	5.50 140	5.50 (sw) 140				16.6 7.5			
4 DN100	5.50 140	5.50 (sw) 140				16.7 7.6			
6 DN150	x	6 DN150	1 DN25	6.50 (sw) 165	6.50 (sw) 165	23.0 10.4			
			1 1/2 DN40	6.50 (sw) 165	6.50 (sw) 165	24.0 10.9			
			2 DN50	6.50 165	6.50 165	21.6 9.8			
			2 1/2	6.50 165	6.50 165	21.4 11.7			
			3 DN80	6.50 165	6.50 165	26.5 12.0			
			4 DN100	6.50 165	6.50 165	25.0 11.3			
6 1/2	x	6 1/2	3 DN80	6.50 165	6.50 (sw) 165	24.0 10.9			
			4 DN100	6.50 165	6.50 (sw) 165	25.0 11.3			

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

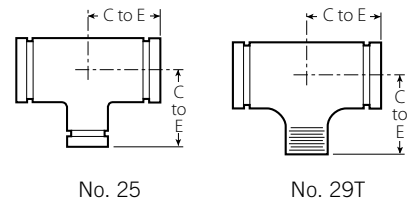
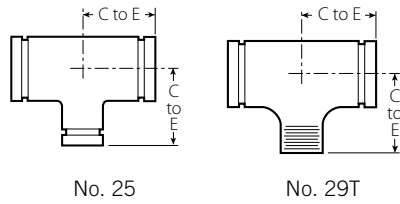
NOTE

- Cast fitting available. Contact Victaulic for details.

4.4 DIMENSIONS (Continued)

Reducing Tee

No. 25 Grooved Branch
 No. 29T Threaded Branch



Size		No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)	
Nominal inches DN		C to E inches mm	C to E inches mm	lb kg	
8 DN200 x 8 DN200	1 1/2 DN40	7.75 (sw) 197	7.75 (sw) 197	33.0 15.0	
	2 DN50	7.75 (sw) 197	7.75 (sw) 197	33.5 15.2	
	2 1/2	7.75 (sw) 197	7.75 (sw) 197	39.0 17.7	
	3 DN80	7.75 (sw) 197	7.75 (sw) 197	33.6 15.2	
	4 DN100	7.75 197	7.75 197	41.8 19.0	
	5	7.75 (sw) 197	7.75 (sw) 197	34.0 15.4	
	6 DN150	7.75 197	7.75 197	42.3 19.2	
	165.1mm	7.75 (sw) 197	7.75 (sw) 197	48.0 21.8	
	10 DN250 x 10 DN250	1 1/2 DN40	9.00 229	9.00 229	62.0 28.1
		2 DN50	9.00 (sw) 229	9.00 (sw) 229	62.0 28.1
2 1/2		9.00 (sw) 229	9.00 (sw) 229	62.4 28.3	
3 DN80		9.00 (sw) 229	9.00 (sw) 229	60.0 27.2	
4 DN100		9.00 (sw) 229	9.00 (sw) 229	61.0 27.7	
5		9.00 (sw) 229	9.00 (sw) 229	52.0 23.6	
6 DN150		9.00 (sw) 229	9.00 (sw) 229	59.0 26.8	
8 DN200		9.00 (sw) 229	9.00 (sw) 229	64.7 29.3	

(s) = Carbon Steel Direct Roll Groove (OGS)
 (sw) = Carbon Steel Segmentally Welded

NOTE

- Cast fitting available. Contact Victaulic for details.

Size		No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)	
Nominal inches DN		C to E inches mm	C to E inches mm	lb kg	
12 DN300 x 12 DN300	1 DN25	10.00 (sw) 254	10.00 (sw) 254	77.0 34.9	
	2 DN50	10.00 (sw) 254	10.00 (sw) 254	80.0 36.3	
	2 1/2	10.00 (sw) 254	10.00 (sw) 254	78.0 35.4	
	3 DN80	10.00 (sw) 254	10.00 (sw) 254	82.0 37.2	
	4 DN100	10.00 (sw) 254	10.00 (sw) 254	80.0 36.3	
	5	10.00 (sw) 254	10.00 (sw) 254	75.0 34.0	
	6 DN150	10.00 (sw) 254	10.00 (sw) 254	75.0 34.0	
	8 DN200	10.00 (sw) 254	10.00 (sw) 254	80.0 36.3	
	10 DN250	10.00 (sw) 254	10.00 (sw) 254	84.0 38.1	
	14 ² DN350 x 14 DN350	4 DN100	11.00 (sw) 279	11.00 (sw) 279	102.0 46.3
6 DN150		11.00 (sw) 279	11.00 (sw) 279	108.2 49.1	
8 DN200		11.00 279	11.00 279	112.0 50.8	
10 DN250		11.00 279	11.00 279	120.0 54.4	
12 DN300		11.00 279	11.00 279	129.1 58.6	
16 ² DN400 x 16 DN400		4 DN100	12.00 305	12.00 305	130.0 59.0
		6 DN150	12.00 (sw) 305	12.00 (sw) 305	133.5 60.6
	8 DN200	12.00 305	12.00 305	145.0 65.8	
	10 DN250	12.00 305	12.00 305	149.5 67.8	
	12 DN300	12.00 305	12.00 305	154.0 69.9	
	14 DN350	12.00 (sw) 305	—	167.0 75.8	

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)
 (sw) = Carbon Steel Segmentally Welded

NOTE

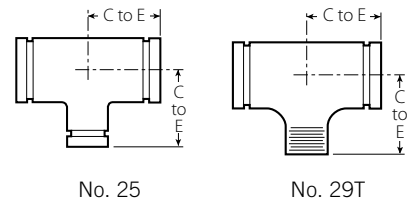
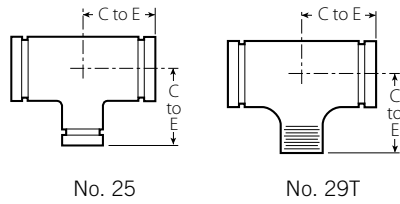
- Cast fitting available. Contact Victaulic for details.

4.4 DIMENSIONS (Continued)

Reducing Tee

No. 25 Grooved Branch

No. 29T Threaded Branch



Size		No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)		
Nominal inches	DN	C to E inches	C to E inches	lb kg		
18 ² DN450	18 DN450	4 DN100	15.50 (sw) 394	194.0 88.0		
		6 DN150	15.50 (sw) 394	200.0 90.7		
		8 DN200	15.50 (sw) 394	202.0 91.6		
		10 DN250	15.50 394	212.0 96.2		
		12 DN300	15.50 394	222.6 101.0		
		14 DN350	15.50 394	230.1 104.4		
		16 DN400	15.50 394	247.6 112.3		
		20 ² DN500	20 DN500	6 DN150	17.25 438	240.0 108.9
				8 DN200	17.25 438	244.0 110.7
				10 DN250	17.25 438	256.0 116.1
12 DN300	17.25 438			264.0 119.8		
14 DN350	17.25 438			275.0 124.7		
16 DN400	17.25 438			288.6 130.9		
18 DN450	17.25 438			297.0 134.7		

Size	No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)		
Nominal inches	C to E inches	C to E inches	lb kg		
24 ² DN600	24 DN600	8 DN200	340.0		
		10 DN250	343.9		
		12 DN300	352.8		
		14 DN350	360.0		
		16 DN400	378.0		
		18 DN450	380.0		
		20 DN500	373.0		
		20.00 508	169.2		
		14 – 60 DN350 – 1500			For AGS fitting information, see publication 20.05

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)
(sw) = Carbon Steel Segmentally Welded

NOTES

- No. 29T Threaded Outlet Reducing Tees are supplied NPT and are available with British Standard threads. For British Standard specify "BSP" clearly on order.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).
- Cast fitting available. Contact Victaulic for details.

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)
(sw) = Carbon Steel Segmentally Welded

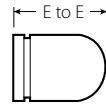
NOTE

- Cast fitting available. Contact Victaulic for details.

4.5 DIMENSIONS

Bull Plug

No. 61



No. 61

Size		No. 61 Bull Plug (s)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg
2 DN50	2.375 60.3	4.00 102	2.5 1.1
2 ½	2.875 73.0	5.00 127	3.0 1.4
3 DN80	3.500 88.9	6.00 152	4.5 2.0
4 DN100	4.500 114.3	7.00 178	7.5 3.4
5	5.563 141.3	8.00 203	12.0 5.4
6 DN150	6.625 168.5	10.00 254	17.0 7.7

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

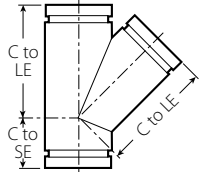
NOTES

- Steel dish caps available through 24"/DN600, contact Victaulic.
- No. 61 Bull Plugs should be used in vacuum service with Style 72 or 750 couplings.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

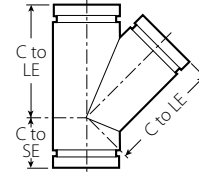
4.6 DIMENSIONS

45° Lateral

No. 30



No. 30



No. 30

Size		No. 30 45° Lateral		Weight
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. (Each) lb kg
¾ DN20	1.050 26.9	4.50 (sw) 114	2.00 (sw) 51	1.0 0.5
1 DN25	1.315 33.7	5.00 (sw) 127	2.25 (sw) 57	1.7 0.8
1¼ DN32	1.660 42.4	5.75 146	2.50 64	2.5 (d) 1.1
1½ DN40	1.900 48.3	6.25 (sw) 159	2.75 (sw) 70	3.5 1.6
2 DN50	2.375 60.3	7.00 (sw) 178	2.75 (sw) 70	5.0 2.3
2½	2.875 73.0	7.75 (sw) 197	3.00 (sw) 76	9.0 4.1
DN65	3.000 76.1	8.50 (sw) 216	3.25 (sw) 83	11.0 5.0
3 DN80	3.500 88.9	8.50 216	3.25 83	11.7 (d) 5.4
3½ DN90	4.000 101.6	10.00 (sw) 254	3.50 (sw) 89	17.8 8.1
4 DN100	4.500 114.3	10.50 267	3.75 95	22.2 (d) 10.1
5	5.563 141.3	12.50 (sw) 318	4.00 (sw) 102	21.8 9.9

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

Size		No. 30 45° Lateral		Weight
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. (Each) lb kg
	6.500 165.1	14.00 (sw) 356	4.50 (sw) 114	43.6 19.8
6 DN150	6.625 168.3	14.00 (sw) 356	4.50 (sw) 114	43.6 19.8
8 DN200	8.625 219.1	18.00 (sw) 457	6.00 (sw) 152	72.0 32.7
10 DN250	10.750 273.0	20.50 (sw) 521	6.50 (sw) 165	105.0 47.6
12 DN300	12.750 323.9	23.00 (sw) 584	7.00 (sw) 178	165.0 74.8
14² DN350	14.000 355.6	26.50 (sw) 673	7.50 (sw) 191	276.0 125.2
16² DN400	16.000 406.4	29.00 (sw) 737	8.00 (sw) 203	344.2 156.1
18² DN450	18.000 457.0	32.00 (sw) 813	8.50 (sw) 216	429.0 194.6
20² DN500	20.000 508.0	35.00 (sw) 889	9.00 (sw) 229	500.0 226.8
24² DN600	24.000 610.0	40.00 (sw) 1016	10.00 (sw) 254	715.0 324.3
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05			



² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

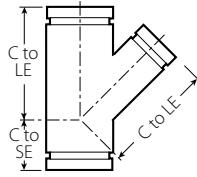
NOTE

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

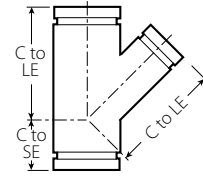
4.7 DIMENSIONS

45° Reducing Lateral

No. 30-R




No. 30-R



No. 30-R

Size			No 30-R 45° Reducing Lateral				
Nominal inches DN	x	Nominal inches DN	x	C to LE inches mm	C to SE inches mm	Approx. Weight (Each)	
						lb kg	
3 DN80	x	3 DN80	x	2 DN50	8.50 216	3.25 83	9.8 4.4
					2½	8.50 216	3.25 83
4 DN100	x	4 DN100	x	2 DN50	10.50 267	3.75 95	10.0 4.5
					2½	10.50 267	3.75 95
				3 DN80	10.50 267	3.75 95	18.3 8.3
5	x	5	x	2 DN50	12.50 318	4.00 102	24.0 10.9
				3 DN80	12.50 318	4.00 102	27.0 12.2
				4 DN100	12.50 318	4.00 102	26.5 12.0
6 DN150	x	6 DN150	x	3 DN80	14.00 356	4.50 114	37.0 16.8
				4 DN100	14.00 356	4.50 114	36.0 16.3
				5	14.00 356	4.50 114	44.7 20.3
8 DN200	x	8 DN200	x	4 DN100	18.00 457	6.00 152	62.0 28.1
				5	18.00 457	6.00 152	75.5 34.2
				6 DN150	18.00 457	6.00 152	82.0 37.2
10 DN250	x	10 DN250	x	4 DN100	20.50 521	6.50 165	104.8 47.5
				5	20.50 521	6.50 165	99.0 44.9
				6 DN150	20.50 521	6.50 165	105.8 48.0
				8 DN200	20.50 521	6.50 165	118.0 53.5
12 DN300	x	12 DN300	x	5	23.00 584	7.00 178	122.0 55.3
				6 DN150	23.00 584	7.00 178	137.0 62.1
				8 DN200	23.00 584	7.00 178	147.0 66.7
				10 DN250	23.00 584	7.00 178	167.0 75.8

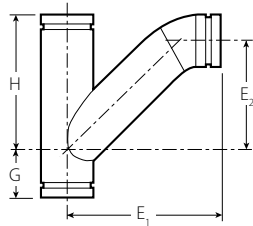
Size			No 30-R 45° Reducing Lateral					
Nominal inches DN	x	Nominal inches DN	x	C to LE inches mm	C to SE inches mm	Approx. Weight (Each)		
						lb kg		
14 ² DN350	x	14 DN350	x	4 DN100	26.50 673	7.50 191	172.0 78.0	
					6 DN150	26.50 673	7.50 191	187.0 84.8
					8 DN200	26.50 673	7.50 191	205.8 93.4
					10 DN250	26.20 673	7.50 191	235.0 106.6
					12 DN300	26.50 673	7.50 191	250.0 113.4
16 ² DN400	x	16 DN400	x	6 DN150	29.00 737	8.00 203	215.0 97.5	
					8 DN200	29.00 737	8.00 203	252.5 114.5
					10 DN250	29.00 737	8.00 203	265.0 120.2
					12 DN300	29.00 737	8.00 203	295.0 133.8
					14 DN350	29.00 737	8.00 203	305.0 138.3
18 ² DN450	x	18 DN450	x	6 DN150	32.00 813	8.50 216	274.0 124.3	
					8 DN200	32.00 813	8.50 216	275.0 124.7
					12 DN300	32.00 813	8.50 216	347.0 157.4
					14 DN350	32.00 813	8.50 216	350.0 158.8
					16 DN400	32.00 813	8.50 216	362.0 164.2
20 ² DN500	x	20 DN500	x	12 DN300	35.00 889	9.00 229	415.0 188.2	
					14 DN350	35.00 889	9.00 229	420.0 190.5
					16 DN400	35.00 899	10.00 229	425.0 192.8
					20 DN600	40.00 1016	10.00 254	425.0 192.8
24 ² DN600	x	24 DN600	x	16 DN400	40.00 1016	10.00 254	425.0 192.8	
					20 DN600	40.00 1016	10.00 254	570.0 258.6
14 – 60 DN350 – DN1500				For AGS fitting information, see publication 20.05 				

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

4.8 DIMENSIONS

Tee Wye

No. 32



No. 32

Size			No. 32 Tee Wye (sw)				Approx. Weight (Each)
Nominal inches DN			G inches mm	H inches mm	E ₁ inches mm	E ₂ inches mm	
2 DN50	x	2 DN50	2.75 70	7.00 178	9.00 229	4.63 118	6.4 2.9
2½	x	2½	3.00 76	7.75 197	10.50 267	5.75 146	11.5 5.2
3 DN80	x	3 DN80	3.25 83	8.50 216	11.50 292	6.50 165	14.3 6.5
3½ DN90	x	3½ DN90	3.25 89	10.00 254	13.00 330	7.75 197	22.9 10.4
4 100	x	4 DN100	3.75 95	10.50 267	13.63 346	8.13 207	26.0 11.8
5	x	5	4.00 102	12.50 318	16.13 410	10.00 254	48.0 21.8
6 DN150	x	6 DN150	4.50 114	14.00 356	18.25 464	11.50 292	60.5 27.4
8 DN200	x	8 DN200	6.00 152	18.00 457	23.25 591	15.25 387	127.1 57.7
10 DN250	x	10 DN250	6.50 165	20.50 521	27.25 692	18.00 457	190.0 86.2
12 DN300	x	12 DN300	7.00 178	23.00 584	31.00 787	20.50 521	240.0 108.9

(s) = Carbon Steel Direct Roll Groove (OGS)
 (sw) = Carbon Steel Segmentally Welded

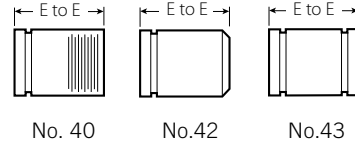
4.9 DIMENSIONS

Adapter Nipple

No. 40¹² Grv. x Thd.

No. 42 Grv. x Bev.

No. 43 Grv. x Grv.



Size		No. 40, 42, 43 Adapter Nipple (s)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	3.00 76	0.3 0.1
1 25	1.315 33.7	3.00 76	0.4 0.2
1¼ DN32	1.660 42.4	4.00 102	0.8 0.4
1½ 40	1.900 48.3	4.00 102	0.9 0.4
2 DN50	2.375 60.3	4.00 102	1.2 0.5
2½	2.875 73.0	4.00 102	1.9 0.9
3 DN80	3.500 88.9	4.00 102	2.5 1.1
3½ DN90	4.000 101.6	4.00 102	2.1 0.9
4 DN100	4.500 114.3	6.00 152	5.5 2.5
5	5.563 141.3	6.00 152	7.4 3.4
6 DN150	6.625 168.3	6.00 152	9.5 4.3
8 DN200	8.625 219.1	6.00 152	14.2 6.4
10 DN250	10.750 273.0	8.00 203	27.0 12.2
12 DN300	12.750 323.9	8.00 203	33.0 15.0

(s) = Carbon Steel Direct Roll Groove (OGS)
 (sw) = Carbon Steel Segmentally Welded

NOTES

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).
- For pump package nipples with 1 ½"/40 mm hole cut to receive Style 923 Vic-Let or Style 924 Vic-O-Well request special No. 40, 42 or 43 nipples and specify No. 40-H, 42-H or 43-H on order. NOTE: 4 – 12"/DN100 – DN300 diameter — 8"/200mm minimum length required.
- For roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.
- Available with British Standard Pipe Threads, specify "BSP" clearly on order.

4.10 DIMENSIONS

Cap

No. 60



No. 60



No. 60

Size		No. 60 Cap	
Nominal	Actual Outside Diameter	"T" Thickness	Approx. Weight (Each)
inches DN	inches mm	inches mm	lb kg
¾	1.050	0.88	0.2
DN20	26.9	22	0.1
1	1.315	0.88	0.3
25	33.7	22	0.1
1¼	1.660	0.88	0.3
DN32	42.4	22	0.1
1½	1.900	0.88	0.5
DN40	48.3	22	0.2
2	2.375	0.88	0.6
DN50	60.3	22	0.3
2½	2.875	0.88	1.0
	73.0	22	0.5
DN65	3.000	0.88	1.2
	76.1	22	0.5
3	3.500	0.88	1.2
DN80	88.9	22	0.5
3½	4.000	0.88	2.5
DN90	101.6	22	1.1
	4.250	1.00	2.3
	108.0	25	1.0
4	4.500	1.00	2.5
DN100	114.3	25	1.1
	5.250	1.00	4.5
	133.0	25	2.0
DN125	5.500	1.00	4.5
	139.7	25	2.0
5	5.563	1.00	4.6
	141.3	25	2.1

Size		No. 60 Cap	
Nominal	Actual Outside Diameter	"T" Thickness	Approx. Weight (Each)
inches DN	inches mm	inches mm	lb kg
	6.250	1.00	6.8
	159.0	25	3.1
	6.500	1.00	7.3
	165.1	25	3.3
6	6.625	1.00	6.1
DN150	168.3	25	2.8
8	8.625	1.19	13.1
DN200	219.1	30	5.9
10	10.750	1.25	21.0
DN250	273.0	32	9.5
12	12.750	1.25	35.6
DN300	323.9	32	16.2
14 ²	14.000	9.50 (s)	+
DN350	355.6	241	
16 ²	16.000	10.00 (s)	+
DN400	406.4	254	
18 ²	18.000	11.00 (s)	+
DN450	457.0	279	
20 ²	20.000	12.00 (s)	+
DN500	508.0	305	
24 ²	24.000	13.50 (s)	+
DN600	610.0	343	
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05		



² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details.

NOTES

- No. 60 cap is not suitable for use in vacuum service with Style 72 or 750 couplings. No. 61 bull plugs should be used.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.11 DIMENSIONS

Flanged Adapter Nipple

No. 41 ANSI Class 125

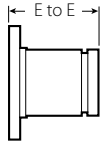
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No. 45R ANSI Class 150 Raised Face

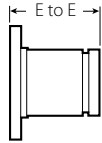
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No. 46R ANSI Class 300 Raised Face

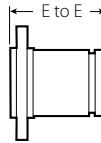
No. 45RE PN10/PN16 Raised Face



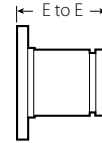
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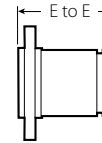
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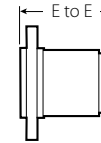
No. 45R



No. 46F



No. 46R



No. 45RE

Size		No. 41 ANSI 125 Flange Adapter Nipple		No. 45F and No. 45R ANSI 150 Flanged Adapter Nipple (s)		No. 46F and No. 46R ANSI 300 Flanged Adapter Nipple (s)		No. 45RE Flanged Adapter Nipple	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	3.00 76	—	3.00 76	2.3 1.0	3.00 76	3.3 1.5	—	—
1 DN25	1.315 33.7	3.00 76	2.5 1.1	3.00 76	2.7 1.2	3.00 76	3.9 1.8	—	—
1¼ DN32	1.660 42.4	4.00 102	3.0 1.4	4.00 102	3.3 1.5	4.00 102	4.8 2.2	—	—
1½ DN40	1.900 48.3	4.00 102	3.5 1.6	4.00 102	3.9 1.8	4.00 102	6.9 3.1	—	—
2 DN50	2.375 60.3	4.00 102	5.5 2.5	4.00 102	6.0 2.7	4.00 102	8.2 3.7	2.50 64	5.3 2.4
2½	2.875 73.0	4.00 102	8.0 3.6	4.00 102	9.9 4.5	4.00 102	11.9 5.4	—	—
DN65	3.000 76.1	—	—	—	—	—	—	2.50 64	6.5 2.9
3 DN80	3.500 88.9	4.00 102	9.5 4.3	4.00 102	11.7 5.3	4.00 102	16.5 7.5	2.50 64	8.2 3.7
3½ DN90	4.000 101.6	4.00 102	12.0 5.4	4.00 102	15.1 6.8	4.00 102	20.1 9.1	—	—
4 DN100	4.500 114.3	6.00 152	16.7 7.6	6.00 152	18.5 8.4	6.00 152	27.4 12.4	2.75 70	10.0 45
5	5.563 141.3	6.00 152	21.5 9.8	6.00 152	21.3 9.7	6.00 152	35.3 16.0	—	—
DN125	5.500 139.7	—	—	—	—	—	—	2.75 70	16.3 7.4
6 DN150	6.625 168.3	6.00 152	26.5 12.0	6.00 152	27.5 12.5	6.00 152	47.5 21.5	2.75 70	16.3 7.4
	6.500 165.1	—	—	—	—	—	—	—	—
8 DN200	8.625 219.1	6.00 152	39.0 17.7	6.00 152	41.3 18.8	6.00 152	70.3 31.9	—	—
10 DN250	10.750 273.0	8.00 203	57.0 25.9	8.00 203	59.3 27.1	8.00 203	100.8 45.7	—	—
12 DN300	12.750 323.9	8.00 203	41.0 18.6	8.00 203	40.0 40.0	8.00 203	146.2 66.3	—	—
14 ² DN350	14.000 355.6	8.00 203	—	8.00 203	+	8.00 203	+	—	—
16 ² DN400	16.000 406.4	8.00 203	—	8.00 203	+	8.00 203	+	—	—
18 ² DN450	18.000 457.0	8.00 203	—	8.00 203	+	8.00 203	+	—	—

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

4.11 DIMENSIONS (Continued)

Flanged Adapter Nipple

No. 41 ANSI Class 125

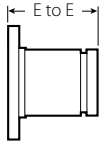
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No. 45R ANSI Class 150 Raised Face

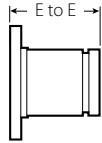
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No. 46R ANSI Class 300 Raised Face

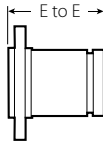
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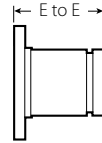
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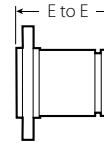
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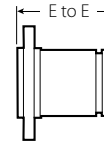
No. 45R




No. 46F



No. 46R



No. 45RE

Size		No. 41 ANSI 125 Flange Adapter Nipple		No. 45F and No. 45R ANSI 150 Flanged Adapter Nipple (s)		No. 46F and No. 46R ANSI 300 Flanged Adapter Nipple (s)		No. 45RE Flanged Adapter Nipple (s)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
20 ² DN500	20.000 508.0	8.00 203	—	8.00 203	+	8.00 203	+	—	—
24 ² DN600	24.000 610.0	8.00 203	—	8.00 203	+	8.00 203	+	—	—
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 								

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details

NOTE

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

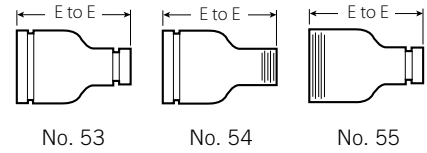
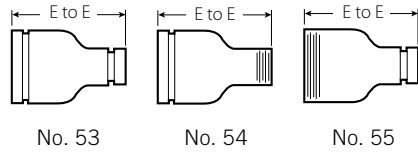
4.12 DIMENSIONS

Swaged Nipple

No. 53 Grv. x Grv.

No. 54 Grv. x Thd.

No. 55 Thd. x Grv.



Size			No. 53, 54, and 55 Swaged Nipples (s)	
Nominal inches DN			E to E inches mm	Approx. Weight (Each) lb kg
2 DN50	x	1 DN25	6.50 165	2.0 0.9
		1¼ DN32	6.50 165	2.0 0.9
		1½ DN40	6.50 165	2.0 0.9
2½	x	1 DN25	7.00 178	3.0 1.4
		1¼ DN32	7.00 178	3.0 1.4
		1½ DN40	7.00 178	3.0 1.4
		2 DN50	7.00 178	3.0 1.4
3 DN80	x	1 DN25	8.00 203	4.5 2.0
		1¼ DN32	8.00 203	4.5 2.0
		1½ DN40	8.00 203	4.5 2.0
		2 DN50	8.00 203	4.5 2.0
		2½	8.00 203	4.5 2.0
3½ DN90	x	3 DN80	8.00 203	6.8 3.1
4 DN100	x	1 DN25	9.00 229	7.5 3.4
		1¼ DN32	9.00 229	7.5 3.4
		1½ DN40	9.00 229	7.5 3.4
		2 DN50	9.00 229	7.5 3.4
		2½	9.00 229	7.5 3.4
		3 DN80	9.00 229	7.5 3.4
		3½ DN90	9.00 229	7.5 3.4

Size			No. 53, 54, and 55 Swaged Nipples (s)	
Nominal inches DN			E to E inches mm	Approx. Weight (Each) lb kg
5	x	2 DN50	11.00 279	11.5 5.2
		3 DN80	11.00 279	11.3 5.1
		4 DN100	11.00 279	11.5 5.2
6 DN150	x	1 DN25	12.00 305	17.0 7.7
		1¼ DN32	12.00 305	17.0 7.7
		1½ DN40	12.00 305	17.2 7.8
		2 DN50	12.00 305	17.4 7.9
		2½	12.00 305	17.4 7.9
		3 DN80	12.00 305	17.4 7.9
		3½ DN90	12.00 305	17.4 7.9
		4 DN100	12.00 305	17.5 7.9
		4½	12.00 305	17.5 7.9
		5	12.00 305	17.5 7.9
		8 DN200	x	6 DN150

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details

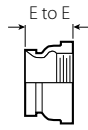
NOTE

- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.13 DIMENSIONS

Female Threaded Adapter

No. 80



No. 80

Size		No. 80 Female Threaded Adapter	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	2.00 51	1.0 0.5
1 DN25	1.315 33.7	2.06 52	1.0 0.5
1¼ DN32	1.660 42.4	2.31 (sw) 59	1.5 0.7
1½ DN40	1.900 48.3	2.31 (sw) 59	1.5 0.7
2 DN50	2.375 60.3	2.50 64	1.4 0.6
2½	2.875 73.0	2.75 70	1.5 0.7
3 DN80	3.500 88.9	2.75 70	2.9 1.3
4 DN100	4.500 114.3	3.25 83	4.5 2.0

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

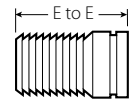
NOTES

- Available with British Standard Pipe Threads, specify "BSP" clearly on order.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.14 DIMENSIONS

Hose Nipple

No. 48



No. 48

Size		No. 48 Hose Nipple (s)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	3.12 79	0.3 0.1
1 DN25	1.315 33.7	3.38 86	0.4 0.2
1¼ DN32	1.660 42.4	3.88 98	0.6 0.3
1½ DN40	1.900 48.3	3.88 98	0.8 0.4
2 DN50	2.375 60.3	4.50 114	1.1 0.5
2½	2.875 73.0	5.38 137	2.0 0.9
3 DN80	3.500 88.9	5.75 146	3.2 1.5
4 DN100	4.500 114.3	7.00 178	4.9 2.2
5	5.563 141.3	8.75 222	8.0 3.6
6 DN150	6.625 168.3	10.13 257	14.3 6.5
8 DN200	8.625 219.1	11.88 302	24.7 11.2
10 DN250	10.750 273.0	12.50 318	40.1 18.2
12 DN300	12.750 323.9	14.50 368	62.0 28.1

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

NOTE

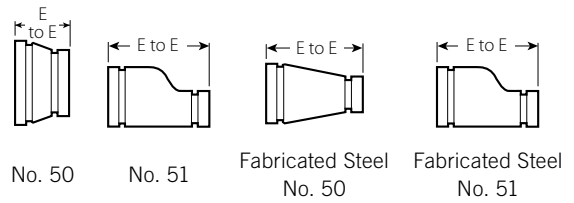
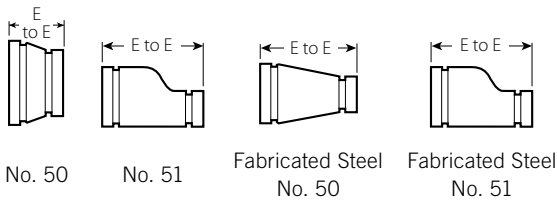
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.15 DIMENSIONS

Concentric/Eccentric Reducer

No. 50 Concentric

No. 51 Eccentric



Size	No. 50 Concentric Reducer			No. 51 Eccentric Reducer	
	Nominal inches DN	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
1 1/4 DN32 x 3/4 DN20	+	1.9 0.9	—	—	
	1 DN25	+	1.9 0.9	—	—
1 1/2 DN40 x 3/4 DN20	+	1.4 0.6	—	—	
	1 DN25	2.50 64	0.8 0.4	8.50 (sw) 216	4.5 2.0
	1 1/4 DN32	2.50 64	1.0 0.5	—	—
2 DN50 x 3/4 DN20	2.50 64	0.9 0.3	9.00 (sw) 229	2.0 0.9	
	1 DN25	2.50 64	0.7 0.3	9.00 (sw) 229	2.3 1.0
	1 1/4 DN32	2.50 64	1.2 0.5	9.00 (sw) 229	4.6 2.1
	1 1/2 DN40	2.50 64	1.0 0.5	3.50 89	1.1 0.5
2 1/2 x 3/4 DN20	+	1.3 0.6	+	3.3 1.5	
	1 DN25	2.50 64	1.1 0.5	9.50 241	3.5 1.6
	1 1/4 DN32	3.50 89	3.3 1.5	3.50 89	1.4 0.6
	1 1/2 DN40	2.50 64	3.6 1.6	9.50 (sw) 241	3.7 1.7
	2 DN50	2.50 64	3.9 1.8	3.50 89	4.3 2.0
3 DN80 x 3/4 DN20	+	1.5 0.7	+	4.5 2.0	
	1 DN25	2.50 64	1.3 0.6	9.50 (sw) 241	4.8 2.2
	1 1/4 DN32	2.50 64	1.4 0.6	+	4.8 2.2
	1 1/2 DN40	2.50 64	5.1 2.3	9.50 (sw) 241	5.1 2.3
	2 DN50	2.50 64	1.6 0.7	3.50 89	6.0 2.7
	2 1/2	2.50 64	1.8 0.8	3.50 89	7.0 3.2
3 1/2 DN90 x 3 DN80	2.50 64	2.0 0.9	9.50 (sw) 241	7.0 3.2	
	4 DN100 x 1 DN25	3.00 76	3.0 1.4	13.00 (sw) 330	6.5 2.9

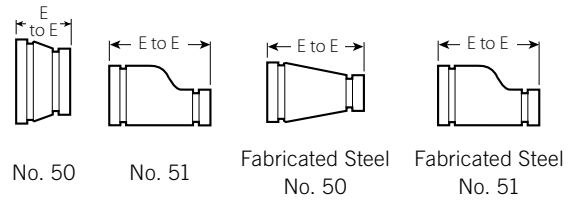
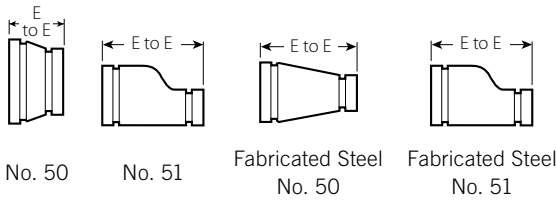
Size	No. 50 Concentric Reducer			No. 51 Eccentric Reducer	
	Nominal inches DN	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
5	1 1/4 DN32	+	4.6 2.1	—	—
	1 1/2 DN40	3.00 (sw) 76	2.6 1.2	10.00 (sw) 254	8.1 3.7
	2 DN50	3.00 76	2.4 1.1	4.00 102	3.3 1.5
	2 1/2	3.00 76	2.7 1.2	4.00 102	3.4 1.5
	3 DN80	3.00 76	3.2 1.4	4.00 102	3.5 1.6
	3 1/2 DN90	3.00 76	2.9 1.3	10.00 (sw) 254	8.0 3.6
	5 x 2 DN50	2 DN50	11.00 (sw) 279	9.0 4.1	11.00 (sw) 279
2 1/2		4.00 102	4.3 2.0	11.00 (sw) 279	10.8 4.9
3 DN80		4.00 102	5.5 2.5	11.00 (sw) 279	11.1 5.0
4 DN100		3.50 89	4.3 1.9	5.00 127	12.0 5.4
6 DN150 x 1 DN25	1 DN25	4.00 102	5.0 2.3	11.50 (sw) 292	14.5 6.6
	1 1/2 DN40	+	5.5 2.5	+	+
	2 DN50	4.00 102	6.6 3.0	11.50 (sw) 292	14.5 6.6
	2 1/2	4.00 102	6.4 2.9	11.50 (sw) 292	14.2 6.4
	3 DN80	4.00 102	6.4 2.9	5.50 140	15.0 6.8
	4 DN100	4.00 102	6.5 2.9	5.50 140	17.0 7.7
	5	4.00 102	6.4 2.9	5.50 140	17.0 7.7
8 DN200 x 2 1/2 DN80	2 1/2 DN80	16.00 406	7.9 3.6	12.00 (sw) 305	26.1 11.8
	3 DN80	5.00 127	9.3 4.2	12.00 (sw) 305	22.0 10.0
	4 DN100	5.00 127	10.4 4.8	12.00 (sw) 305	23.0 10.4
	5	5.00 127	11.6 5.2	12.00 (sw) 305	23.0 10.4
	6 DN150	5.00 127	11.9 5.4	6.00 152	24.0 10.9

4.15 DIMENSIONS (Continued)

Concentric/Eccentric Reducer

No. 50 Concentric

No. 51 Eccentric



Size		No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
Nominal inches DN	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	
10 DN250 x	4 DN100	19.7 8.9	13.00 (sw) 330	32.0 14.5	
	5	33.0 15.0	+	34.6 15.7	
	6 DN150	20.0 9.1	13.00 (sw) 330	36.9 16.7	
	8 DN200	22.0 10.0	7.00 178	21.6 9.8	
12 DN300 x	4 DN100	44.0 20.0	14.00 (sw) 356	48.0 21.8	
	6 DN150	24.6 11.2	14.00 (sw) 356	50.0 22.7	
	8 DN200	52.0 23.6	14.00 (sw) 356	53.5 24.3	
	10 DN250	39.0 17.7	14.00 (sw) 356	57.0 25.9	
14 ² DN350 x	6 DN150	65.0 29.5	13.00 330	60.0 27.2	
	8 DN200	65.0 29.5	13.00 330	60.0 27.2	
	10 DN250	66.0 29.9	13.00 330	65.0 29.5	
	12 DN300	68.0 30.8	13.00 330	66.0 29.9	
	14 DN350	73.0 33.1	14.00 355	73.0 33.1	
16 ² DN400 x	8 DN200	73.0 33.1	14.00 355	73.0 33.1	
	10 DN250	73.0 33.1	14.00 355	73.0 33.1	
	12 DN300	73.0 33.1	14.00 355	73.0 33.1	
	14 DN350	73.0 33.1	14.00 355	73.0 33.1	
18 ² DN450 x	10 DN250	91.0 41.3	15.00 381	91.0 41.3	
	12 DN300	91.0 41.3	15.00 381	91.0 41.3	
	14 DN350	91.0 41.3	15.00 381	91.0 41.3	
	16 DN400	91.0 41.3	15.00 381	91.0 41.3	

² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

Size		No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
Nominal inches DN	E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	
20 ² DN500 x	10 DN250	110.0 49.9	20.00 508	20.00 508	177.0 80.3
	12 DN300	120.0 54.4	20.00 508	20.00 508	120.0 54.4
	14 DN350	149.0 67.9	20.00 508	20.00 508	149.0 67.9
	16 DN400	120.0 54.4	20.00 508	20.00 508	120.0 54.4
	18 DN450	136.0 61.7	20.00 508	20.00 508	136.0 61.7
24 ² DN600 x	10 DN250	142.0 64.4	20.00 508	20.00 508	142.0 64.4
	12 DN300	150.0 68.0	20.00 508	20.00 508	150.0 68.0
	14 DN350	162.0 73.5	20.00 508	20.00 508	162.0 73.5
	16 DN400	162.0 73.5	20.00 508	20.00 508	162.0 73.5
	18 DN450	162.0 73.5	20.00 508	20.00 508	162.0 73.5
	20 DN500	151.0 68.5	20.00 508	20.00 508	190.0 86.2
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05				



² For 14"/DN350 and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details.

NOTES

- Available with male threaded small end No. 52.
- Cast fitting available for JIS size. Contact Victaulic for details.
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.16 DIMENSIONS

Small Threaded Reducer

No. 52

No. 52F



No. 52



No. 52F



No. 52



No. 52F

Size		No. 52 Small Threader Reducer		No. 52F Concentric Reducer with BSPT Female Threaded End	
Nominal inches DN		E to E inches mm	Approx. Weight (Each) lb kg	E to E mm	Approx. Weight (Each) kg
1½ DN40	x 1 DN25	2.50 64	0.8 0.4	—	—
	x 1¼ DN32	2.50 64	0.9 0.4	—	—
2 DN50	x ¾ DN20	2.50 64	0.9 0.4	—	—
	x 1 DN25	2.50 64	0.7 0.3	—	—
	x 1¼ DN32	2.50 64	1.2 0.5	—	—
	x 1½ DN40	2.50 64	1.0 0.5	—	—
2½	x 1 DN25	2.50 64	1.1 0.5	—	—
	x 1¼ DN32	2.50 (sw) 64	1.2 0.5	—	—
	x 1½ DN40	2.50 (sw) 64	1.3 0.6	—	—
	x 2 DN50	2.50 64	1.4 0.6	—	—
DN65	x 1½ DN40	64	0.8	64	0.8
	x 2 DN50	—	—	64	0.9
3 DN80	x ¾ DN20	+(sw)	1.5 0.7	—	—
	x 1 DN25	2.50 64	1.3 0.6	—	—
	x 1¼ DN32	2.50 64	1.5 0.7	—	—
	x 1½ DN40	2.50 (sw) 64	1.5 0.7	—	—
	x 2 DN50	2.50 64	1.5 0.7	—	—
	x 2½	2.50 64	2.4 1.1	—	—
88.9mm	x 42.4mm	64	0.9	64	0.8
	x 48.3mm	64	0.9	64	0.9
	x 60mm	—	—	64	0.9

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details.

Size		No. 52 Small Threader Reducer		No. 52F Concentric Reducer with BSPT Female Threaded End	
Nominal inches DN		E to E inches mm	Approx. Weight (Each) lb kg	E to E mm	Approx. Weight (Each) kg
4 DN100	x 1 DN25	3.00 76	2.3 1.0	—	—
	x 1½ DN40	3.00 76	2.7 1.2	—	—
	x 2 DN50	3.00 76	2.6 1.2	—	—
	x 2½	3.00 76	2.6 1.2	—	—
	x 3 DN80	3.00 76	2.5 1.1	—	—
108.0mm	x 42.4mm	76	1.3	76	1.3
	x 48.3mm	76	1.3	76	1.4
	x 60mm	—	—	76	1.4
114.3mm	x 42.4mm	76	1.3	76	1.3
	x 48.3mm	76	1.3	76	1.3
	x 60mm	76	1.3	76	1.4
5	x 4 DN100	+	4.5 2.0	—	—
	x 60mm	—	—	114	2.2
139.0mm	x 60mm	—	—	114	2.3
6 DN150	x 1 DN25	4.00 102	5.5 2.5	—	—
	x 2 DN50	4.00 102	5.7 2.6	—	—
	x 2½	4.00 102	5.8 2.6	—	—
	x 3 DN80	4.00 102	5.8 2.6	—	—
	x 4 DN100	+(sw)	6.5 2.9	—	—
159.0mm	x 42.4mm	114	2.2	144	2.5
	x 48.3mm	114	2.2	114	2.5
	x 60mm	—	—	114	2.6

4.16 DIMENSIONS (Continued)

Small Threaded Reducer

No. 52

No. 52F



No. 52



No 52F

Size	No. 52 Small Threader Reducer		No. 52F Concentric Reducer with BSPT Female Threaded End		
	Nominal inches DN	E to E inches mm	Approx. Weight (Each) lb kg	E to E mm	Approx. Weight (Each) kg
165.1mm x 42.4mm	48.3mm	102mm	2.4	102	2.9
	60mm	—	—	102	3.0
	8 DN200 x 2 DN50	16.00 406	1.5 0.7	—	—
	2 1/2	16.00 406	1.7 0.8	—	—

(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

NOTES

- Available with British Standard Pipe Threads, specify “BSP” clearly on order.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

5.0 PERFORMANCE

Flow Data

(Frictional Resistance)

The chart expresses the frictional resistance of various Victaulic fittings as equivalent feet of straight pipe. Fittings not listed can be estimated from the data given, for example, a 22½° elbow is approximately one-half the resistance of a 45° elbow. Values of mid-sizes can be interpolated.

Size		Dimensions					
Nominal inches DN	Actual Outside Diameter inches mm	90° Elbows		45° Elbows		Tees	
		No. 10 Std. Radius feet meters	No. 100 1 ½ D Long Radius feet meters	No. 11 Std. Radius feet meters	No. 110 1 ½ D Long Radius feet meters	Branch feet meters	Run feet meters
1 DN25	1.315 33.7	1.7 0.5	—	0.8 0.2	—	4.2 1.3	1.7 0.5
2 DN50	2.375 60.3	3.5 1.1	2.5 0.8	1.8 0.5	1.1 0.3	8.5 2.6	3.5 1.1
DN65	3.000 76.1	4.3 1.3	—	2.1 0.7	—	10.8 3.3	4.3 1.3
3 DN80	3.500 88.9	5.0 1.5	3.8 1.2	2.6 0.8	1.6 0.5	13.0 4.0	5.0 1.5
	4.250 108.0	6.4 2.0	—	3.2 0.9	—	15.3 4.7	6.4 2.0
4 DN100	4.500 114.3	6.8 2.1	5.0 1.5	3.4 1.0	2.1 0.6	16.0 4.9	6.8 2.1
	5.250 133.0	8.1 2.5	—	4.1 1.2	—	20.0 6.2	8.1 2.5
DN125	5.500 139.7	8.5 2.6	—	4.2 1.3	—	21.0 6.4	8.5 2.6
5	5.563 141.3	8.5 2.6	—	4.2 1.3	—	21.0 6.4	8.5 2.6
	6.250 159.0	9.4 2.9	—	4.9 1.5	—	25.0 7.6	9.6 2.9
	6.500 165.1	9.6 2.9	—	5.0 1.5	—	25.0 7.6	10.0 3.0
6 DN150	6.625 168.3	10.0 3.0	7.5 2.3	5.0 1.5	3.0 0.9	25.0 7.6	10.0 3.0
8 DN200	8.625 219.1	13.0 4.0	9.8 3.0	6.5 2.0	4.0 1.2	33.0 10.1	13.0 4.0
10 DN250	10.750 273.0	17.0 5.2	12.0 3.7	8.3 2.5	5.0 1.5	41.0 12.5	17.0 5.2
12 DN300	12.750 323.9	20.0 6.1	14.5 4.4	10.0 3.0	6.0 1.8	50.0 15.2	20.0 6.1
14 DN350	14.000 355.6	24.5 ⁴ 7.5	15.8 4.8	18.5 ⁴ 5.6	11.0 3.4	70.0 21.3	23.0 7.0
16 DN400	16.000 406.4	28.0 ⁴ 8.5	18.0 5.5	21.0 ⁴ 6.4	13.0 4.0	80.0 24.4	27.0 8.2
18 DN450	18.000 457.0	31.0 ⁴ 9.5	20.0 6.1	23.5 ⁴ 7.2	14.0 4.3	90.0 27.4	30.0 9.1
20 DN800	20.000 508.0	34.0 ⁴ 10.4	22.5 6.9	25.5 ⁴ 7.8	16.0 4.9	100.0 30.5	33.0 10.1
24 DN600	24.000 610.0	42.0 ⁴ 12.8	27.0 8.2	29.5 ⁴ 9.0	19.0 5.8	120.0 36.6	40.0 12.2

AGS fittings available up to 60"/DN1500. Contact Victaulic for details.



⁴ Fitting flow data for 14-24"/DN350-DN600 size No. 10 and No. 11 Elbows is based on fittings for Style 07 and 77 couplings. For flow data on AGS fittings (No. W10 and No. W11 Elbows), refer to [publication 20.05](#).

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

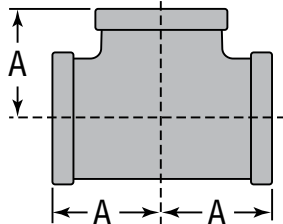
Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

FIG. 3205

Straight Tee



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3205 - STRAIGHT TEE

Nominal Size	Maximum Working Pressure [▲]	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 <i>25</i>	500 <i>3450</i>	1.50 <i>38.10</i>	0.85 <i>0.39</i>
1¼ <i>32</i>	500 <i>3450</i>	1.75 <i>44.45</i>	1.22 <i>0.55</i>
1½ <i>40</i>	500 <i>3450</i>	1.94 <i>49.27</i>	1.55 <i>0.70</i>
2 <i>50</i>	500 <i>3450</i>	2.25 <i>57.15</i>	2.45 <i>1.11</i>

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit [anvilintl.com](http://www.anvilintl.com) or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

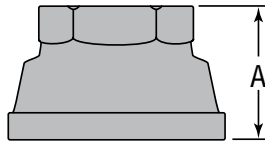
PROJECT INFORMATION

APPROVAL STAMP

Project:	<input type="checkbox"/> Approved
Address:	<input type="checkbox"/> Approved as noted
Contractor:	<input type="checkbox"/> Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

FIG. 3221R

Reducing Coupling



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3221R - REDUCING COUPLING			
Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 x 1/2 25 x 15	500 3450	1.69 42.92	0.39 0.18
1 x 3/4 25 x 20	500 3450	1.69 42.92	0.53 0.24

▲ - Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

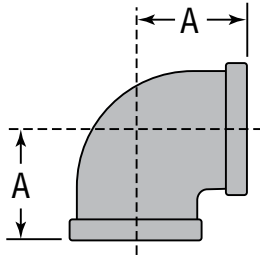
Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		<input type="checkbox"/> Approved	
Address:		<input type="checkbox"/> Approved as noted	
Contractor:		<input type="checkbox"/> Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

FIG. 3201

90° Elbow



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

FIGURE 3201 - 90° ELBOW

Nominal Size	Maximum Working Pressure▲	Dimension A	Approx. Wt. Each
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 20	500 3450	1.50 38.10	0.62 0.28
1¼ 32	500 3450	1.75 44.45	0.90 0.41
1½ 40	500 3450	1.94 49.276	1.20 0.54
2 50	500 3450	2.25 57.15	1.85 0.84

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

MATERIAL SPECIFICATIONS

Dimensions: ASME B16.3

Material: ASTM A536 Grade 65-45-12

Finish: Black

Threads: NPT per ASME B1.20.1

Agency Approvals: All ductile iron threaded fittings are UL/ULC Listed and FM Approved.

NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened approximately three turns beyond hand tight, but no more than four turns.

PROJECT INFORMATION

APPROVAL STAMP

Project:	<input type="checkbox"/> Approved
Address:	<input type="checkbox"/> Approved as noted
Contractor:	<input type="checkbox"/> Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Features

- **Sizes Available (Nominal):** 3/4" (DN20) through 3" (DN80) pipe diameters, with a Standard Dimension Ratio (SDR) of 13.5 as specified in ASTM F442.
- **Environmental Specifications:** Indoor use only.
Maximum Ambient Temperature: 150°F (65°C)
- **Hazen-Williams C Value:** 150
- **Pressure Data: Working Pressure:** 175 PSI (12.1 bar) at 150°F (65°C)
- **Specifications:**
 - Meets NFPA 13R and 13D standards for residential occupancies as well as NFPA 13 standards for light hazard occupancies.
 - Pipe meets or exceeds ASTM F442.
 - Certified by NSF International for potable water services.
 - CPVC pipe from Viking Plastics use compound cell class 23547 (demonstrated highest structural properties).
 - cULus Listed, FM Approved, New York City (MEA) Approved, LPCB Approved.



CPVC PIPE PHYSICAL DATA

Nominal Pipe Size		Actual Outside Diameter		Average Inside Diameter		*Weight per 15' (4,6 m) length		Length		Approvals	Part Number
Inch	DN	Inch	mm	Inch	mm	Lb.	Kg.	Feet	M		
3/4"	DN20	1.050	26,670	0.874	22,199	2.52	1,14	15	4.6	cULus, FM, NSF	34PIPE
1"	DN25	1.315	33,401	1.101	27,965	3.93	1,78	15	4.6		1PIPE
1 1/4"	DN32	1.660	42,164	1.394	35,408	6.27	2,84	15	4.6		114PIPE
1 1/2"	DN40	1.900	48,260	1.598	40,589	8.22	3,73	15	4.6		112PIPE
2"	DN50	2.375	60,325	2.003	50,876	12.89	5,85	15	4.6		2PIPE
2 1/2"	DN65	2.875	73,000	2.423	61,500	18.86	8,55	15	4.6		212PIPE
3"	DN80	3.500	88,900	2.950	74,900	28.01	12,71	15	4.6		3PIPE
Nominal Pipe Size		Actual Outside Diameter		Average Inside Diameter		*Weight per 10' (3,05 m) length		Length		Approvals	Part Number
Inch	DN	Inch	mm	Inch	mm	Lb.	Kg.	Feet	M		
3/4"	DN20	1.050	26,670	0.874	22,199	1.68	0,76	10	3,05	cULus, FM, NSF	34PIPE10
1"	DN25	1.315	33,401	1.101	27,965	2.62	1,19	10	3,05		1PIPE10
1 1/4"	DN32	1.660	42,164	1.394	35,408	4.18	1,90	10	3,05		114PIPE10
1 1/2"	DN40	1.900	48,260	1.598	40,589	5.48	2,49	10	3,05		112PIPE10
2"	DN50	2.375	60,325	2.003	50,876	8.59	3,90	10	3,05		2PIPE10
2 1/2"	DN65	2.875	73,000	2.423	61,500	12.57	5,70	10	3,05		212PIPE10
3"	DN80	3.500	88,900	2.950	74,900	18.67	8,47	10	3,05		3PIPE10

NOTE: CPVC Pipe is produced in SDR 13.5 Dimensions in accordance with ASTM F442. Standard Dimension Ratio is the ratio of the outside pipe diameter to the wall thickness of the pipe.

Blazemaster® is a registered trademark of Lubrizol.

Specifications subject to change without notice

*Empty pipe weights

IMPORTANT: Installers should receive thorough hands-on training in the proper methods of assembly and installation of CPVC products.

CPVC Pipe Product Specifications

Corrosion resistant CPVC fire sprinkler pipe, when installed in strict accordance with the manufacturer's design and installation instructions, is UL and c-UL Listed by Underwriters Laboratories for use in the following:

- Meets NFPA 13R and 13D standards for residential occupancies as well as NFPA 13 standards for light hazard occupancies.
- Residential occupancies up to and including four stories in height as defined by NFPA 13R.
- Residential occupancies as defined in the Standard for Sprinkler Systems in One and Two Family Dwellings, NFPA 13D.
- Installation of private fire service mains and their appurtenances, NFPA 24.

CPVC fire sprinkler pipe from Viking Plastics shall be employed in wet pipe systems only and are not listed for outdoor use. CPVC pipe must never be used in a system using compressed air or other gases.

CPVC pipe from Viking Plastics also carries the following enhanced listings and approvals:

- According to UL Listing
 - Can be flush at return air plenums
 - Exposed system risers NFPA 13D, 13R
 - Exposed basement NFPA 13D (solid wood joist)
 - Extended coverage (exposed)
 - 20' spacing on pendent in lieu of 15'
 - 18' spacing on sidewall in lieu of 14'
 - Use with combustible concealed sprinklers
 - Tyco attic sprinkler head (to protect the floor below)
 - Tyco attic sprinkler head with wet system piping (feed main and ridge installation)
- Exposed sidewall sprinkler listing for exposed pipe & fittings
 - 24' extended coverage sidewall sprinkler, 12" drop, 155°F sprinkler head
 - 18' extended coverage sidewall sprinkler, 12" drop, 165°F sprinkler head
 - 16' extended coverage sidewall sprinkler, 12" drop, 175°F sprinkler head
 - 14' standard coverage sidewall sprinkler, 12" drop, 200°F sprinkler head
- Factory Mutual Approved*
 - Factory Mutual Approval exposed
 - Factory Mutual Approval above drop-in ceilings
 - Factory Mutual Approval exposed w/Soffi-Steel soffit covering system

New and enhanced listings and approvals are being pursued. Always check with the appropriate Listing and Approval agency for details on current listing parameters.

CPVC pipe meets all applicable standards for pressure rated application as required in ANSI-NSF Standard 14 and complies with ANSI-NSF Standard 61 for health effects and are marked with the NSF-pw end use marking.

All CPVC fire sprinkler pipe shall be Listed by Underwriters Laboratories for wet pipe systems, and shall carry a rated working pressure of 175 psi @ 150°F (12 bar @ 65.5°C). *The FM Approval is limited to use in wet pipe fire protection sprinkler systems for light hazard occupancies in both concealed and exposed applications with certain restrictions.

Piping must always be installed in strict accordance to the manufacturer's DESIGN AND INSTALLATION GUIDE, including product storage and handling, joining methods, supporting and bracing, expansion and contraction allowance and testing, etc. National Fire Protection Association (NFPA) Standards 13, 13D, and 13R must be referenced for design and installation requirements in conjunction with the installation instructions.

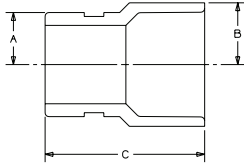
All CPVC fire sprinkler pipe from Viking Plastics is manufactured in the USA. All CPVC pipe shall be packaged immediately after its manufacture to prevent damage and shall be stored indoors after production, at the manufacturing site, until shipped from the factory. The pipe shall bear the logo of the listing agencies, and shall carry the National Sanitation Foundation (NSF) seal of approval for potable water applications.

CPVC products are intended for use in areas where the maximum ambient temperature does not exceed 150°F (65.5°C). If the ambient temperature is expected to exceed this limitation, refer to the manufacturer's DESIGN AND INSTALLATION GUIDE for additional information on methods to reduce the pipe exposure temperatures. CPVC pipe is not intended to be installed in outdoor applications. CPVC pipe is intended to be used in wet pipe systems only and have not been investigated for use in dry pipe systems. Special installation and design criteria relative to pipe hanger spacings, piping and sprinkler restraint, sprinkler temperature rating, piping locations, testing procedures and friction loss characteristics are specified in the manufacturer's installation instructions provided with the pipe. The manufacturer's installation instructions should be reviewed and the Authority Having Jurisdiction consulted before installation.

BlazeMaster® Fire Protection Fittings – STANDARD

ADAPTERS

5001-G

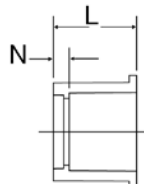


Grooved Coupling Adapters (G x S)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	JOINT
5001-G	1-1/4"	0.17	0.83	1.04	2.98	GXS
5001-G	1-1/2"	0.20	0.95	1.17	3.15	GXS
5001-G	2"	0.30	1.18	1.43	3.37	GXS
5001-G	2-1/2"	0.52	1.43	1.74	3.66	GXS
5001-G	3"	0.72	3.50	—	—	GXS

BUSHINGS

5018



Bushings

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. L INCHES	DIM. N INCHES	JOINT
5018	1"x3/4"	0.04	1.28	0.29	SPGXS
5018	1-1/4"x1"	0.08	1.41	0.29	SPGXS
5018	1-1/4"x3/4"	0.10	1.41	0.41	SPGXS
5018	1-1/2"x1-1/4"	0.07	1.54	0.27	SPGXS
5018	1-1/2"x1"	0.12	1.54	0.39	SPGXS
5018	1-1/2"x3/4"	0.16	1.54	0.53	SPGXS
5018	2"x1-1/2"	0.16	1.66	0.27	SPGXS
5018	2"x1-1/4"	0.20	1.66	0.40	SPGXS
5018	2"x1"	0.22	1.66	0.52	SPGXS
5018	2"x3/4"	0.22	1.66	0.64	SPGXS
5018	2-1/2"x2"	0.24	1.94	0.44	SPGXS
5018	2-1/2"x1-1/2"	0.36	1.94	0.57	SPGXS
5018	2-1/2"x1-1/4"	0.37	1.94	0.68	SPGXS
5018	2-1/2"x1"	0.36	1.94	0.81	SPGXS
5018	3"x2-1/2"	0.47	2.42	0.60	SPGXS
5018	3"x2"	0.66	2.42	0.93	SPGXS
5018	3"x1-1/2"	0.73	2.42	1.03	SPGXS

Review – Do's & Don'ts

Do's

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and follow the installation instructions.
- Follow recommended safe work practices.
- Make certain that thread sealants, gasket lubricants, or firestop materials are compatible with CPVC.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Follow proper handling procedures.
- Use tools specifically designed for use with plastic pipe and fittings.
- Use the proper solvent cement and follow application instructions.
- Use a drop cloth to protect interior finishes.
- Cut the pipe ends square.
- Deburr and bevel the pipe end with a chamfering tool.
- Rotate the pipe 1/4 turn when bottoming pipe in fitting socket.
- Make certain no solvent cement is on sprinkler head and adapter threads.
- Make certain that solvent cement does not run and plug the sprinkler head orifice.
- Follow the manufacturer's recommended cure times prior to pressure testing.
- Fill lines slowly and only at a proper pressure.
- Bleed the air from the system prior to pressure testing.
- Support sprinkler head properly to prevent lift up of the head through the ceiling when activated.
- Keep threaded rod within 1/16" of the pipe or use a surge arrestor.
- Install NIBCO® **BlazeMaster**® CPVC Fire Sprinkler Products in wet systems only.
- Use only insulation and/or glycerin and water solutions for freeze protection.
- Allow for movement due to expansion and contraction.
- Ensure installers have been properly trained per the NIBCO **BlazeMaster**® CPVC Fire Sprinkler System Installation and Design Manual and renew your training every three years at a minimum.

Don'ts

- Do not use edible oils as a gasket lubricant.
- Do not use petroleum or solvent-based sealants, lubricants, or fire stop materials.
- Do not use any glycol-based solutions as an anti-freeze.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not mix glycerin and water solutions in contaminated containers.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not allow solvent cement to plug the sprinkler head orifice.
- Do not connect rigid metal couplers to CPVC grooved adapters.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not pressure test with air.
- Do not pressure test until recommended cure times are met.
- Do not exceed proper pressure for testing.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with the pipe.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in cold weather without allowing for expansion.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in dry systems.
- Do not allow puddling of cement in fittings and pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

BlazeMaster®
FIRE SPRINKLER FITTINGS

BlazeMaster® is a registered trademark of The Lubrizol Corporation.

CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.	
ADAPTER	5001-G	1-1/4"	4233-012	80160	
	5001-G	1-1/2"	4233-015	80161	
	5001-G	2"	4233-020	80162	
	5001-G	2-1/2"	4233-025	80163	
	5001-G	3"	4233-030	80164	
BUSHINGS	5018	1"x3/4"	4237-131	80200	
	5018	1-1/4"x1"	4237-168	80202	
	5018	1-1/4"x3/4"	4237-167	80201	
	5018	1-1/2"x1-1/4"	4237-212	80205	
	5018	1-1/2"x1"	4237-211	80204	
	5018	1-1/2"x3/4"	4237-210	80203	
	5018	2"x1-1/2"	4237-251	80209	
	5018	2"x1-1/4"	4237-250	80208	
	5018	2"x1"	4237-249	80207	
	5018	2"x3/4"	4237-248	80206	
	5018	2-1/2"x2"	4237-292	80211	
	5018	2-1/2"x1-1/2"	4237-291	80213	
	5018	2-1/2"x1-1/4"	4237-290	80214	
	5018	2-1/2"x1"	N/A	80215	
	5018	3"x2-1/2"	4237-339	80212	
	5018	3"x2"	4237-338	80210	
	5018	3"x1-1/2"	N/A	N/A	
	CAPS	5017	3/4"	4247-007	80100
		5017	1"	4247-010	80101
		5017	1-1/4"	4247-012	80102
5017		1-1/2"	4247-015	80103	
5017		2"	4247-020	80104	
5017		2-1/2"	4247-025	80105	
5017		3"	4247-030	80106	
COUPLINGS		5001	3/4"	4229-007	80075
	5001	1"	4229-010	80076	
	5001	1-1/4"	4229-012	80077	
	5001	1-1/2"	4229-015	80078	
	5001	2"	4229-020	80079	
	5001	2-1/2"	4229-025	80080	
	5001	3"	4229-030	80081	
	5001-R	1"x3/4"	4229-131	80220	
	5001-R	1-1/4"x1"	4229-168	N/A	
	5001-R	1-1/2"x3/4"	4229-210	N/A	
	5001-R	1-1/2"x1"	4229-211	N/A	
	5001-R	1-1/2"x1-1/4"	4229-212	N/A	
5001-R	2"x1"	4229-249	N/A		
5001-R	2"x1-1/2"	4229-251	N/A		
CROSSES	5035	3/4"	4220-007	80009	
	5035	1"	4220-010	80010	
	5035	1-1/4"	4220-012	80011	
	5035	1-1/2"	4220-015	80012	

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
CROSSES	5035	2"	4220-020	80013
	5035	2-1/2"	4220-025	80014
	5035	3"	4220-030	80008
	5035-R	1"x3/4"x1"x3/4"	4220-131	80015
	5006	3/4"	4217-007	80050
	5006	1"	4217-010	80051
	5006	1-1/4"	4217-012	80052
	5006	1-1/2"	4217-015	80053
	5006	2"	4217-020	80054
	5006	2-1/2"	4217-025	80055
ELBOWS	5006	3"	4217-030	80056
	5007	3/4"	4206-007	80025
	5007	1"	4206-010	80026
	5007	1-1/4"	4206-012	80027
	5007	1-1/2"	4206-015	80028
	5007	2"	4206-020	80039
	5007	2-1/2"	4206-025	80030
	5007	3"	4206-030	80031
	5007-R	1"x3/4"	4206-131	80032
	5019-H	3/4"	4253-007	N/A
5019-H	1"	4253-010	N/A	
5019-H	1-1/4"	4253-012	N/A	
5019-H	1-1/2"	4253-015	N/A	
5019-H	2"	4253-020	N/A	
5019-H	2-1/2"	4253-025	N/A	
5019-H	3"	4253-030	N/A	
FLANGES	5051-A	3"	4254-030	N/A
	5051-2-A	3"	4256-030	N/A
	5051-H	3/4"	4251-007	N/A
	5051-H	1"	4251-010	N/A
	5051-H	1-1/4"	4251-012	N/A
	5051-H	1-1/2"	4251-015	N/A
	5051-H	2"	4251-020	N/A
	5051-H	2-1/2"	4251-025	N/A
	5051-H	3"	N/A	N/A
	5011	3/4"	4201-007	8000
5011	1"	4201-010	8001	
5011	1-1/4"	4201-012	8002	
5011	1-1/2"	4201-015	8003	
5011	2"	4201-020	80004	
5011	2-1/2"	4201-025	8005	
5011	3"	4201-030	80006	
5011-R	3/4"x3/4"x1"	4201-102	80132	
5011-R	1"x1"x3/4"	4201-131	80260	
5011-R	1"x3/4"x1"	4201-126	80134	

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FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
TEES	5011-R	1"x3/4"x3/4"	4201-125	80133
	5011-R	1-1/4"x1-1/4"x1"	4201-168	80262
	5011-R	1-1/4"x1-1/4"x3/4"	4201-167	80261
	5011-R	1-1/4"x1"x1-1/4"	4201-159	80137
	5011-R	1-1/4"x1"x1"	4201-158	80136
	5011-R	1-1/4"x1"x3/4"	4201-157	80135
	5011-R	1-1/4"x1-1/4"x1-1/2"	4201-169	80138
	5011-R	1-1/2"x1-1/2"x1-1/4"	4201-212	80275
	5011-R	1-1/2"x1-1/2"x1"	4201-211	80264
	5011-R	1-1/2"x1-1/2"x3/4"	4201-210	80263
	5011-R	1-1/2"x1-1/4"x1"	4201-202	80140
	5011-R	1-1/2"x1-1/4"x3/4"	4201-201	80140
	5011-R	1-1/2"x1-1/2"x2"	4201-213	N/A
	5011-R	2"x2"x1-1/2"	4201-251	80274
	5011-R	2"x2"x1-1/4"	4201-250	80267
	5011-R	2"x2"x1"	4201-249	80266
	5011-R	2"x2"x3/4"	4201-248	80265
	5011-R	2-1/2"x2-1/2"x2"	4201-292	80276
	5011-R	2-1/2"x2-1/2"x1-1/2"	4201-291	80273
	5011-R	2-1/2"x2-1/2"x1-1/4"	4201-290	80272
	5011-R	2-1/2"x2-1/2"x1"	4201-289	80271
	5011-R	3"x3"x2-1/2"	4201-339	80269
	5011-R	3"x3"x2"	4201-338	80268
	5011-R	3"x3"x1-1/2"	4201-337	80270
UNIONS	5033-E	3/4"	4257-007	N/A
	5033-E	1"	4257-010	N/A
	5033-E	1-1/4"	4257-012	N/A
	5033-E	1-1/2"	4257-015	N/A
	5033-E	2"	4257-020	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-BI	3/4"	4235-007	80142
	5003-BI	1"	4235-010	80145
	5003-BI	1-1/4"	4235-012	80146
	5003-BI	1-1/2"	4235-015	80147
	5003-BI	2"	4235-020	80148
	5003-2-BI	3/4"	4278-007	N/A
	5003-2-BI	1"	4278-010	N/A
	5003-S-BI	3/4"x1/2"	4235-101	80175E or 80175W
	5003-S-BI	1"x1/2"	4235-130	80176E or 80175W
	5003-S-BI	1"x3/4"	4235-131	80179
	5003-2-S-BI	3/4"x1/2"	4238-101	N/A
	5003-2-S-BI	1"x1/2"	4238-130	N/A
	5003-S-BT	3/4"x1/2"	N/A	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-S-BT	1"x1/2"	N/A	N/A
	5003-BI-BSP	1"	N/A	N/A
	5003-BI-BSP	1-1/4"	N/A	N/A
	5003-BI-BSP	1-1/2"	N/A	N/A
	5003-BI-BSP	2"	N/A	N/A
	5004-BI	3/4"	N/A	80157
	5004-BI	1"	N/A	80158
	5004-BI	1-1/4"	N/A	N/A
	5004-BI	1-1/2"	N/A	N/A
	5004-BI	2"	N/A	N/A
5018-S-BI	1"x1/2"	4238-130BR	N/A	
CROSSES	5035-3-S-BI-S	1"x1"x1/2"x1/2"	N/A	80462
	5035-3-S-BI-L	1"x1"x1/2"x1/2"	N/A	80463
ELBOWS	5007-3-S-BI	3/4"x1/2"	4207-101	80199
	5007-3-S-BI	1"x1/2"	4207-130	80198
	5007-3-S-BI	1"x3/4"	4207-131	N/A
	5007-3-S-BI	1-1/4"x1/2"	4207-166	N/A
TEES	5011-3-3-S-BI-S	1/2"x1/2"x1"	N/A	80460
	5011-3-3-S-BI-L	1/2"x1/2"x1"	N/A	80459
	5012-S-BI	1"	4202-010	N/A
	5012-S-BI	3/4"x3/4"x1/2"	4202-101	80250
	5012-R-S-BI	1"x3/4"x1/2"	4202-124	N/A
	5012-S-BI	1"x1"x1/2"	4202-130	80251
	5012-R-S-BI	1"x1/2"x1"	4203-122	N/A
	5012-R-S-BI	1-1/4"x1"x1/2"	4202-156	80256
	5012-S-BI	1-1/4"x1-1/4"x1/2"	4202-166	80252
	5012-R-S-BI	1-1/2"x1-1/4"x1/2"	4202-199	80257
TEST PLUG	5012-S-BI	1-1/2"x1-1/2"x1/2"	4202-209	80254
	5012-S-BI	2"x2"x1/2"	4202-247	80253
	5012-R-S-BI	2"x1-1/2"x1/2"	4202-237	80258
	450-005	1/2"	4250-005	N/A

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NIBCO® BlazeMaster® Warranty

NIBCO INC. LIMITED WARRANTY

Applicable to NIBCO INC. CPVC Fire Protection Plastic Fittings

NIBCO INC. warrants each NIBCO® BlazeMaster® Fire Protection CPVC plastic fitting to be free from defects in materials and workmanship under normal use and service for a period of ten (10) years from date of purchase.

In the event any defect occurs which the owner believes is covered by this warranty, the owner should immediately contact NIBCO Technical Services, either in writing or by telephone at 1.888.446.4226 or 1.574.295.3000. The owner will be instructed to return said product, at the owner's expense, to NIBCO INC., or an authorized representative for inspection. In the event said inspection discloses to the satisfaction of NIBCO INC. that said fitting or valve is defective, a replacement shall be mailed free of charge to the owner, and NIBCO INC. shall further pay the installing contractor the sum of ten (\$10.00) dollars to apply on the cost of installation of said replacement fitting.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES.

Some states or countries do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply to you.

TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



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How to Order

State quantity, figure number and size for each valve or fitting you wish to order. See individual catalog pages for specific or special product designations.

HOW MANY TO ORDER

NIBCO® valves and fittings are decimal packed for your convenience in handling, shipping and stock-keeping. Number in master carton varies with item.

POLICY ON RETURNS TO FACTORY

No NIBCO valves and fittings are to be returned without prior written agreement. Transportation must be prepaid. A 20% charge will be made to cover cost of rehandling and reinspection.

TECHNICAL ASSISTANCE

Engineers, contractors, wholesalers or manufacturers may obtain special or technical assistance from any factory representative of NIBCO. Write, fax or phone.

NIBCO INC.
World Headquarters
1516 Middlebury Street
Elkhart, IN 46516-4740
USA

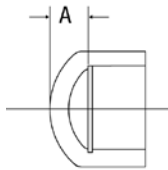
PH: 1.574.295.3000 or 1.888.446.4226
FAX: 1.574.295.3307 or 1.888.336.4226

To the best of our knowledge, the information contained in this publication is accurate. However, NIBCO does not assume any liability whatsoever for the accuracy or completeness of such information. Final determinations of the suitability of any information or product for the use to be contemplated is the sole responsibility of the user. The manner of that use, and whether there is any infringement of patents, is also the sole responsibility of the user.

BlazeMaster® Fire Protection Fittings – STANDARD

CAPS

5017

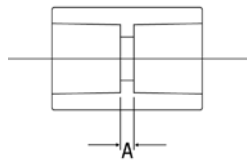


Caps

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5017	3/4"	0.04	0.31	S
5017	1"	0.06	0.39	S
5017	1-1/4"	0.22	0.56	S
5017	1-1/2"	0.30	0.68	S
5017	2"	0.42	0.68	S
5017	2-1/2"	0.62	1.20	S
5017	3"	0.96	1.26	S

COUPLINGS

5001
5001-R

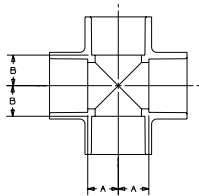


Couplings

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5001	3/4"	0.06	0.12	SXS
5001	1"	0.08	0.09	SXS
5001	1-1/4"	0.12	0.08	SXS
5001	1-1/2"	0.30	0.27	SXS
5001	2"	0.44	0.28	SXS
5001	2-1/2"	0.72	0.20	SXS
5001	3"	1.10	0.22	SXS
5001-R	1"x3/4"	0.08	0.29	SXS
5001-R	1-1/4"x1"	0.12	0.35	SXS
5001-R	1-1/2"x1-1/4"	0.38	0.51	SXS
5001-R	1-1/2"x1"	0.36	0.67	SXS
5001-R	1-1/2"x3/4"	0.34	0.80	SXS
5001-R	2"x1-1/2"	0.52	0.51	SXS
5001-R	2"x1"	0.48	0.75	SXS

CROSSES

5035
5035-R



Crosses

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	JOINT
5035	3/4"	0.12	0.61	0.61	SXSXSXS
5035	1"	0.24	0.75	0.75	SXSXSXS
5035	1-1/4"	0.34	0.90	0.90	SXSXSXS
5035	1-1/2"	0.69	1.23	1.23	SXSXSXS
5035	2"	1.02	1.53	1.53	SXSXSXS
5035	2-1/2"	1.70	1.75	1.75	SXSXSXS
5035	3"	3.12	1.89	1.89	SXSXSXS
5035-R	1"x1"x3/4"x3/4"	0.18	0.61	0.73	SXSXSXS

BlazeMaster®
FIRE SPRINKLER FITTINGS

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Review – Do's & Don'ts

Do's

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and follow the installation instructions.
- Follow recommended safe work practices.
- Make certain that thread sealants, gasket lubricants, or firestop materials are compatible with CPVC.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Follow proper handling procedures.
- Use tools specifically designed for use with plastic pipe and fittings.
- Use the proper solvent cement and follow application instructions.
- Use a drop cloth to protect interior finishes.
- Cut the pipe ends square.
- Deburr and bevel the pipe end with a chamfering tool.
- Rotate the pipe 1/4 turn when bottoming pipe in fitting socket.
- Make certain no solvent cement is on sprinkler head and adapter threads.
- Make certain that solvent cement does not run and plug the sprinkler head orifice.
- Follow the manufacturer's recommended cure times prior to pressure testing.
- Fill lines slowly and only at a proper pressure.
- Bleed the air from the system prior to pressure testing.
- Support sprinkler head properly to prevent lift up of the head through the ceiling when activated.
- Keep threaded rod within 1/16" of the pipe or use a surge arrestor.
- Install NIBCO® **BlazeMaster**® CPVC Fire Sprinkler Products in wet systems only.
- Use only insulation and/or glycerin and water solutions for freeze protection.
- Allow for movement due to expansion and contraction.
- Ensure installers have been properly trained per the NIBCO **BlazeMaster**® CPVC Fire Sprinkler System Installation and Design Manual and renew your training every three years at a minimum.

Don'ts

- Do not use edible oils as a gasket lubricant.
- Do not use petroleum or solvent-based sealants, lubricants, or fire stop materials.
- Do not use any glycol-based solutions as an anti-freeze.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not mix glycerin and water solutions in contaminated containers.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not allow solvent cement to plug the sprinkler head orifice.
- Do not connect rigid metal couplers to CPVC grooved adapters.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not pressure test with air.
- Do not pressure test until recommended cure times are met.
- Do not exceed proper pressure for testing.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with the pipe.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in cold weather without allowing for expansion.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in dry systems.
- Do not allow puddling of cement in fittings and pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

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FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.	
ADAPTER	5001-G	1-1/4"	4233-012	80160	
	5001-G	1-1/2"	4233-015	80161	
	5001-G	2"	4233-020	80162	
	5001-G	2-1/2"	4233-025	80163	
	5001-G	3"	4233-030	80164	
BUSHINGS	5018	1"x3/4"	4237-131	80200	
	5018	1-1/4"x1"	4237-168	80202	
	5018	1-1/4"x3/4"	4237-167	80201	
	5018	1-1/2"x1-1/4"	4237-212	80205	
	5018	1-1/2"x1"	4237-211	80204	
	5018	1-1/2"x3/4"	4237-210	80203	
	5018	2"x1-1/2"	4237-251	80209	
	5018	2"x1-1/4"	4237-250	80208	
	5018	2"x1"	4237-249	80207	
	5018	2"x3/4"	4237-248	80206	
	5018	2-1/2"x2"	4237-292	80211	
	5018	2-1/2"x1-1/2"	4237-291	80213	
	5018	2-1/2"x1-1/4"	4237-290	80214	
	5018	2-1/2"x1"	N/A	80215	
	5018	3"x2-1/2"	4237-339	80212	
	5018	3"x2"	4237-338	80210	
	5018	3"x1-1/2"	N/A	N/A	
	CAPS	5017	3/4"	4247-007	80100
		5017	1"	4247-010	80101
		5017	1-1/4"	4247-012	80102
5017		1-1/2"	4247-015	80103	
5017		2"	4247-020	80104	
5017		2-1/2"	4247-025	80105	
5017		3"	4247-030	80106	
COUPLINGS	5001	3/4"	4229-007	80075	
	5001	1"	4229-010	80076	
	5001	1-1/4"	4229-012	80077	
	5001	1-1/2"	4229-015	80078	
	5001	2"	4229-020	80079	
	5001	2-1/2"	4229-025	80080	
	5001	3"	4229-030	80081	
	5001-R	1"x3/4"	4229-131	80220	
	5001-R	1-1/4"x1"	4229-168	N/A	
	5001-R	1-1/2"x3/4"	4229-210	N/A	
	5001-R	1-1/2"x1"	4229-211	N/A	
5001-R	1-1/2"x1-1/4"	4229-212	N/A		
5001-R	2"x1"	4229-249	N/A		
5001-R	2"x1-1/2"	4229-251	N/A		
CROSSES	5035	3/4"	4220-007	80009	
	5035	1"	4220-010	80010	
	5035	1-1/4"	4220-012	80011	
	5035	1-1/2"	4220-015	80012	

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
CROSSES	5035	2"	4220-020	80013
	5035	2-1/2"	4220-025	80014
	5035	3"	4220-030	80008
	5035-R	1"x3/4"x1"x3/4"	4220-131	80015
	5006	3/4"	4217-007	80050
	5006	1"	4217-010	80051
	5006	1-1/4"	4217-012	80052
	5006	1-1/2"	4217-015	80053
	5006	2"	4217-020	80054
	5006	2-1/2"	4217-025	80055
ELBOWS	5006	3"	4217-030	80056
	5007	3/4"	4206-007	80025
	5007	1"	4206-010	80026
	5007	1-1/4"	4206-012	80027
	5007	1-1/2"	4206-015	80028
	5007	2"	4206-020	80039
	5007	2-1/2"	4206-025	80030
	5007	3"	4206-030	80031
	5007-R	1"x3/4"	4206-131	80032
	5019-H	3/4"	4253-007	N/A
	5019-H	1"	4253-010	N/A
	5019-H	1-1/4"	4253-012	N/A
	5019-H	1-1/2"	4253-015	N/A
5019-H	2"	4253-020	N/A	
5019-H	2-1/2"	4253-025	N/A	
5019-H	3"	4253-030	N/A	
FLANGES	5051-A	3"	4254-030	N/A
	5051-2-A	3"	4256-030	N/A
	5051-H	3/4"	4251-007	N/A
	5051-H	1"	4251-010	N/A
	5051-H	1-1/4"	4251-012	N/A
	5051-H	1-1/2"	4251-015	N/A
	5051-H	2"	4251-020	N/A
	5051-H	2-1/2"	4251-025	N/A
	5051-H	3"	N/A	N/A
	5011	3/4"	4201-007	8000
	5011	1"	4201-010	8001
5011	1-1/4"	4201-012	8002	
5011	1-1/2"	4201-015	8003	
5011	2"	4201-020	80004	
5011	2-1/2"	4201-025	8005	
5011	3"	4201-030	80006	
5011-R	3/4"x3/4"x1"	4201-102	80132	
5011-R	1"x1"x3/4"	4201-131	80260	
5011-R	1"x3/4"x1"	4201-126	80134	

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FIRE SPRINKLER FITTINGS

CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
TEES	5011-R	1"x3/4"x3/4"	4201-125	80133
	5011-R	1-1/4"x1-1/4"x1"	4201-168	80262
	5011-R	1-1/4"x1-1/4"x3/4"	4201-167	80261
	5011-R	1-1/4"x1"x1-1/4"	4201-159	80137
	5011-R	1-1/4"x1"x1"	4201-158	80136
	5011-R	1-1/4"x1"x3/4"	4201-157	80135
	5011-R	1-1/4"x1-1/4"x1-1/2"	4201-169	80138
	5011-R	1-1/2"x1-1/2"x1-1/4"	4201-212	80275
	5011-R	1-1/2"x1-1/2"x1"	4201-211	80264
	5011-R	1-1/2"x1-1/2"x3/4"	4201-210	80263
	5011-R	1-1/2"x1-1/4"x1"	4201-202	80140
	5011-R	1-1/2"x1-1/4"x3/4"	4201-201	80140
	5011-R	1-1/2"x1-1/2"x2"	4201-213	N/A
	5011-R	2"x2"x1-1/2"	4201-251	80274
	5011-R	2"x2"x1-1/4"	4201-250	80267
	5011-R	2"x2"x1"	4201-249	80266
	5011-R	2"x2"x3/4"	4201-248	80265
	5011-R	2-1/2"x2-1/2"x2"	4201-292	80276
	5011-R	2-1/2"x2-1/2"x1-1/2"	4201-291	80273
	5011-R	2-1/2"x2-1/2"x1-1/4"	4201-290	80272
	5011-R	2-1/2"x2-1/2"x1"	4201-289	80271
	5011-R	3"x3"x2-1/2"	4201-339	80269
	5011-R	3"x3"x2"	4201-338	80268
	5011-R	3"x3"x1-1/2"	4201-337	80270
UNIONS	5033-E	3/4"	4257-007	N/A
	5033-E	1"	4257-010	N/A
	5033-E	1-1/4"	4257-012	N/A
	5033-E	1-1/2"	4257-015	N/A
	5033-E	2"	4257-020	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-BI	3/4"	4235-007	80142
	5003-BI	1"	4235-010	80145
	5003-BI	1-1/4"	4235-012	80146
	5003-BI	1-1/2"	4235-015	80147
	5003-BI	2"	4235-020	80148
	5003-2-BI	3/4"	4278-007	N/A
	5003-2-BI	1"	4278-010	N/A
	5003-S-BI	3/4"x1/2"	4235-101	80175E or 80175W
	5003-S-BI	1"x1/2"	4235-130	80176E or 80175W
	5003-S-BI	1"x3/4"	4235-131	80179
	5003-2-S-BI	3/4"x1/2"	4238-101	N/A
	5003-2-S-BI	1"x1/2"	4238-130	N/A
	5003-S-BT	3/4"x1/2"	N/A	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-S-BT	1"x1/2"	N/A	N/A
	5003-BI-BSP	1"	N/A	N/A
	5003-BI-BSP	1-1/4"	N/A	N/A
	5003-BI-BSP	1-1/2"	N/A	N/A
	5003-BI-BSP	2"	N/A	N/A
	5004-BI	3/4"	N/A	80157
	5004-BI	1"	N/A	80158
	5004-BI	1-1/4"	N/A	N/A
	5004-BI	1-1/2"	N/A	N/A
	5004-BI	2"	N/A	N/A
5018-S-BI	1"x1/2"	4238-130BR	N/A	
CROSSES	5035-3-S-BI-S	1"x1"x1/2"x1/2"	N/A	80462
	5035-3-S-BI-L	1"x1"x1/2"x1/2"	N/A	80463
ELBOWS	5007-3-S-BI	3/4"x1/2"	4207-101	80199
	5007-3-S-BI	1"x1/2"	4207-130	80198
	5007-3-S-BI	1"x3/4"	4207-131	N/A
	5007-3-S-BI	1-1/4"x1/2"	4207-166	N/A
TEES	5011-3-3-S-BI-S	1/2"x1/2"x1"	N/A	80460
	5011-3-3-S-BI-L	1/2"x1/2"x1"	N/A	80459
	5012-S-BI	1"	4202-010	N/A
	5012-S-BI	3/4"x3/4"x1/2"	4202-101	80250
	5012-R-S-BI	1"x3/4"x1/2"	4202-124	N/A
	5012-S-BI	1"x1"x1/2"	4202-130	80251
	5012-R-S-BI	1"x1/2"x1"	4203-122	N/A
	5012-R-S-BI	1-1/4"x1"x1/2"	4202-156	80256
	5012-S-BI	1-1/4"x1-1/4"x1/2"	4202-166	80252
	5012-R-S-BI	1-1/2"x1-1/4"x1/2"	4202-199	80257
TEST PLUG	5012-S-BI	1-1/2"x1-1/2"x1/2"	4202-209	80254
	5012-S-BI	2"x2"x1/2"	4202-247	80253
	5012-R-S-BI	2"x1-1/2"x1/2"	4202-237	80258
	450-005	1/2"	4250-005	N/A

BlazeMaster®
FIRE SPRINKLER FITTINGS

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NIBCO® BlazeMaster® Warranty

NIBCO INC. LIMITED WARRANTY

Applicable to NIBCO INC. CPVC Fire Protection Plastic Fittings

NIBCO INC. warrants each NIBCO® BlazeMaster® Fire Protection CPVC plastic fitting to be free from defects in materials and workmanship under normal use and service for a period of ten (10) years from date of purchase.

In the event any defect occurs which the owner believes is covered by this warranty, the owner should immediately contact NIBCO Technical Services, either in writing or by telephone at 1.888.446.4226 or 1.574.295.3000. The owner will be instructed to return said product, at the owner's expense, to NIBCO INC., or an authorized representative for inspection. In the event said inspection discloses to the satisfaction of NIBCO INC. that said fitting or valve is defective, a replacement shall be mailed free of charge to the owner, and NIBCO INC. shall further pay the installing contractor the sum of ten (\$10.00) dollars to apply on the cost of installation of said replacement fitting.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES.

Some states or countries do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply to you.

TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



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How to Order

State quantity, figure number and size for each valve or fitting you wish to order. See individual catalog pages for specific or special product designations.

HOW MANY TO ORDER

NIBCO® valves and fittings are decimal packed for your convenience in handling, shipping and stock-keeping. Number in master carton varies with item.

POLICY ON RETURNS TO FACTORY

No NIBCO valves and fittings are to be returned without prior written agreement. Transportation must be prepaid. A 20% charge will be made to cover cost of rehandling and reinspection.

TECHNICAL ASSISTANCE

Engineers, contractors, wholesalers or manufacturers may obtain special or technical assistance from any factory representative of NIBCO. Write, fax or phone.

NIBCO INC.
World Headquarters
1516 Middlebury Street
Elkhart, IN 46516-4740
USA

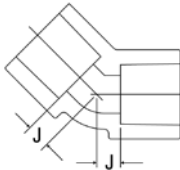
PH: 1.574.295.3000 or 1.888.446.4226
FAX: 1.574.295.3307 or 1.888.336.4226

To the best of our knowledge, the information contained in this publication is accurate. However, NIBCO does not assume any liability whatsoever for the accuracy or completeness of such information. Final determinations of the suitability of any information or product for the use to be contemplated is the sole responsibility of the user. The manner of that use, and whether there is any infringement of patents, is also the sole responsibility of the user.

BlazeMaster® Fire Protection Fittings – STANDARD

ELBOWS

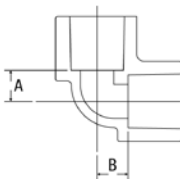
5006



45° Elbows

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. J INCHES	JOINT
5006	3/4"	0.06	0.32	SXS
5006	1"	0.12	0.39	SXS
5006	1-1/4"	0.18	0.48	SXS
5006	1-1/2"	0.36	0.47	SXS
5006	2"	0.54	0.58	SXS
5006	2-1/2"	1.00	0.65	SXS
5006	3"	1.28	0.76	SXS

5007 5007-R



90° Elbows

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	JOINT
5007	3/4"	0.08	0.56	0.56	SXS
5007	1"	0.14	0.69	0.69	SXS
5007	1-1/4"	0.22	0.91	0.91	SXS
5007	1-1/2"	0.41	1.06	1.06	SXS
5007	2"	0.60	1.24	1.24	SXS
5007	2-1/2"	1.16	1.50	1.50	SXS
5007	3"	1.66	1.81	1.81	SXS
5007-R	1"x3/4"	0.12	0.61	0.75	SXS

Review – Do's & Don'ts

Do's

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and follow the installation instructions.
- Follow recommended safe work practices.
- Make certain that thread sealants, gasket lubricants, or firestop materials are compatible with CPVC.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Follow proper handling procedures.
- Use tools specifically designed for use with plastic pipe and fittings.
- Use the proper solvent cement and follow application instructions.
- Use a drop cloth to protect interior finishes.
- Cut the pipe ends square.
- Deburr and bevel the pipe end with a chamfering tool.
- Rotate the pipe 1/4 turn when bottoming pipe in fitting socket.
- Make certain no solvent cement is on sprinkler head and adapter threads.
- Make certain that solvent cement does not run and plug the sprinkler head orifice.
- Follow the manufacturer's recommended cure times prior to pressure testing.
- Fill lines slowly and only at a proper pressure.
- Bleed the air from the system prior to pressure testing.
- Support sprinkler head properly to prevent lift up of the head through the ceiling when activated.
- Keep threaded rod within 1/16" of the pipe or use a surge arrestor.
- Install NIBCO® **BlazeMaster**® CPVC Fire Sprinkler Products in wet systems only.
- Use only insulation and/or glycerin and water solutions for freeze protection.
- Allow for movement due to expansion and contraction.
- Ensure installers have been properly trained per the NIBCO **BlazeMaster**® CPVC Fire Sprinkler System Installation and Design Manual and renew your training every three years at a minimum.

Don'ts

- Do not use edible oils as a gasket lubricant.
- Do not use petroleum or solvent-based sealants, lubricants, or fire stop materials.
- Do not use any glycol-based solutions as an anti-freeze.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not mix glycerin and water solutions in contaminated containers.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not allow solvent cement to plug the sprinkler head orifice.
- Do not connect rigid metal couplers to CPVC grooved adapters.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not pressure test with air.
- Do not pressure test until recommended cure times are met.
- Do not exceed proper pressure for testing.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with the pipe.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in cold weather without allowing for expansion.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in dry systems.
- Do not allow puddling of cement in fittings and pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

BlazeMaster®
FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.	
ADAPTER	5001-G	1-1/4"	4233-012	80160	
	5001-G	1-1/2"	4233-015	80161	
	5001-G	2"	4233-020	80162	
	5001-G	2-1/2"	4233-025	80163	
	5001-G	3"	4233-030	80164	
BUSHINGS	5018	1"x3/4"	4237-131	80200	
	5018	1-1/4"x1"	4237-168	80202	
	5018	1-1/4"x3/4"	4237-167	80201	
	5018	1-1/2"x1-1/4"	4237-212	80205	
	5018	1-1/2"x1"	4237-211	80204	
	5018	1-1/2"x3/4"	4237-210	80203	
	5018	2"x1-1/2"	4237-251	80209	
	5018	2"x1-1/4"	4237-250	80208	
	5018	2"x1"	4237-249	80207	
	5018	2"x3/4"	4237-248	80206	
	5018	2-1/2"x2"	4237-292	80211	
	5018	2-1/2"x1-1/2"	4237-291	80213	
	5018	2-1/2"x1-1/4"	4237-290	80214	
	5018	2-1/2"x1"	N/A	80215	
	5018	3"x2-1/2"	4237-339	80212	
	5018	3"x2"	4237-338	80210	
	5018	3"x1-1/2"	N/A	N/A	
	CAPS	5017	3/4"	4247-007	80100
		5017	1"	4247-010	80101
		5017	1-1/4"	4247-012	80102
5017		1-1/2"	4247-015	80103	
5017		2"	4247-020	80104	
5017		2-1/2"	4247-025	80105	
5017		3"	4247-030	80106	
COUPLINGS		5001	3/4"	4229-007	80075
	5001	1"	4229-010	80076	
	5001	1-1/4"	4229-012	80077	
	5001	1-1/2"	4229-015	80078	
	5001	2"	4229-020	80079	
	5001	2-1/2"	4229-025	80080	
	5001	3"	4229-030	80081	
	5001-R	1"x3/4"	4229-131	80220	
	5001-R	1-1/4"x1"	4229-168	N/A	
	5001-R	1-1/2"x3/4"	4229-210	N/A	
	5001-R	1-1/2"x1"	4229-211	N/A	
	5001-R	1-1/2"x1-1/4"	4229-212	N/A	
5001-R	2"x1"	4229-249	N/A		
5001-R	2"x1-1/2"	4229-251	N/A		
CROSSES	5035	3/4"	4220-007	80009	
	5035	1"	4220-010	80010	
	5035	1-1/4"	4220-012	80011	
	5035	1-1/2"	4220-015	80012	

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
CROSSES	5035	2"	4220-020	80013
	5035	2-1/2"	4220-025	80014
	5035	3"	4220-030	80008
	5035-R	1"x3/4"x1"x3/4"	4220-131	80015
	5006	3/4"	4217-007	80050
	5006	1"	4217-010	80051
	5006	1-1/4"	4217-012	80052
	5006	1-1/2"	4217-015	80053
	5006	2"	4217-020	80054
	5006	2-1/2"	4217-025	80055
ELBOWS	5006	3"	4217-030	80056
	5007	3/4"	4206-007	80025
	5007	1"	4206-010	80026
	5007	1-1/4"	4206-012	80027
	5007	1-1/2"	4206-015	80028
	5007	2"	4206-020	80039
	5007	2-1/2"	4206-025	80030
	5007	3"	4206-030	80031
	5007-R	1"x3/4"	4206-131	80032
	5019-H	3/4"	4253-007	N/A
5019-H	1"	4253-010	N/A	
5019-H	1-1/4"	4253-012	N/A	
5019-H	1-1/2"	4253-015	N/A	
5019-H	2"	4253-020	N/A	
5019-H	2-1/2"	4253-025	N/A	
5019-H	3"	4253-030	N/A	
FLANGES	5051-A	3"	4254-030	N/A
	5051-2-A	3"	4256-030	N/A
	5051-H	3/4"	4251-007	N/A
	5051-H	1"	4251-010	N/A
	5051-H	1-1/4"	4251-012	N/A
	5051-H	1-1/2"	4251-015	N/A
	5051-H	2"	4251-020	N/A
	5051-H	2-1/2"	4251-025	N/A
	5051-H	3"	N/A	N/A
	5011	3/4"	4201-007	8000
5011	1"	4201-010	8001	
5011	1-1/4"	4201-012	8002	
5011	1-1/2"	4201-015	8003	
5011	2"	4201-020	80004	
5011	2-1/2"	4201-025	8005	
5011	3"	4201-030	80006	
5011-R	3/4"x3/4"x1"	4201-102	80132	
5011-R	1"x1"x3/4"	4201-131	80260	
5011-R	1"x3/4"x1"	4201-126	80134	

BlazeMaster®
FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
TEES	5011-R	1"x3/4"x3/4"	4201-125	80133
	5011-R	1-1/4"x1-1/4"x1"	4201-168	80262
	5011-R	1-1/4"x1-1/4"x3/4"	4201-167	80261
	5011-R	1-1/4"x1"x1-1/4"	4201-159	80137
	5011-R	1-1/4"x1"x1"	4201-158	80136
	5011-R	1-1/4"x1"x3/4"	4201-157	80135
	5011-R	1-1/4"x1-1/4"x1-1/2"	4201-169	80138
	5011-R	1-1/2"x1-1/2"x1-1/4"	4201-212	80275
	5011-R	1-1/2"x1-1/2"x1"	4201-211	80264
	5011-R	1-1/2"x1-1/2"x3/4"	4201-210	80263
	5011-R	1-1/2"x1-1/4"x1"	4201-202	80140
	5011-R	1-1/2"x1-1/4"x3/4"	4201-201	80140
	5011-R	1-1/2"x1-1/2"x2"	4201-213	N/A
	5011-R	2"x2"x1-1/2"	4201-251	80274
	5011-R	2"x2"x1-1/4"	4201-250	80267
	5011-R	2"x2"x1"	4201-249	80266
	5011-R	2"x2"x3/4"	4201-248	80265
	5011-R	2-1/2"x2-1/2"x2"	4201-292	80276
	5011-R	2-1/2"x2-1/2"x1-1/2"	4201-291	80273
	5011-R	2-1/2"x2-1/2"x1-1/4"	4201-290	80272
	5011-R	2-1/2"x2-1/2"x1"	4201-289	80271
	5011-R	3"x3"x2-1/2"	4201-339	80269
	5011-R	3"x3"x2"	4201-338	80268
	5011-R	3"x3"x1-1/2"	4201-337	80270
UNIONS	5033-E	3/4"	4257-007	N/A
	5033-E	1"	4257-010	N/A
	5033-E	1-1/4"	4257-012	N/A
	5033-E	1-1/2"	4257-015	N/A
	5033-E	2"	4257-020	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-BI	3/4"	4235-007	80142
	5003-BI	1"	4235-010	80145
	5003-BI	1-1/4"	4235-012	80146
	5003-BI	1-1/2"	4235-015	80147
	5003-BI	2"	4235-020	80148
	5003-2-BI	3/4"	4278-007	N/A
	5003-2-BI	1"	4278-010	N/A
	5003-S-BI	3/4"x1/2"	4235-101	80175E or 80175W
	5003-S-BI	1"x1/2"	4235-130	80176E or 80175W
	5003-S-BI	1"x3/4"	4235-131	80179
	5003-2-S-BI	3/4"x1/2"	4238-101	N/A
	5003-2-S-BI	1"x1/2"	4238-130	N/A
	5003-S-BT	3/4"x1/2"	N/A	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-S-BT	1"x1/2"	N/A	N/A
	5003-BI-BSP	1"	N/A	N/A
	5003-BI-BSP	1-1/4"	N/A	N/A
	5003-BI-BSP	1-1/2"	N/A	N/A
	5003-BI-BSP	2"	N/A	N/A
	5004-BI	3/4"	N/A	80157
	5004-BI	1"	N/A	80158
	5004-BI	1-1/4"	N/A	N/A
	5004-BI	1-1/2"	N/A	N/A
	5004-BI	2"	N/A	N/A
5018-S-BI	1"x1/2"	4238-130BR	N/A	
CROSSES	5035-3-S-BI-S	1"x1"x1/2"x1/2"	N/A	80462
	5035-3-S-BI-L	1"x1"x1/2"x1/2"	N/A	80463
ELBOWS	5007-3-S-BI	3/4"x1/2"	4207-101	80199
	5007-3-S-BI	1"x1/2"	4207-130	80198
	5007-3-S-BI	1"x3/4"	4207-131	N/A
	5007-3-S-BI	1-1/4"x1/2"	4207-166	N/A
TEES	5011-3-3-S-BI-S	1/2"x1/2"x1"	N/A	80460
	5011-3-3-S-BI-L	1/2"x1/2"x1"	N/A	80459
	5012-S-BI	1"	4202-010	N/A
	5012-S-BI	3/4"x3/4"x1/2"	4202-101	80250
	5012-R-S-BI	1"x3/4"x1/2"	4202-124	N/A
	5012-S-BI	1"x1"x1/2"	4202-130	80251
	5012-R-S-BI	1"x1/2"x1"	4203-122	N/A
	5012-R-S-BI	1-1/4"x1"x1/2"	4202-156	80256
	5012-S-BI	1-1/4"x1-1/4"x1/2"	4202-166	80252
	5012-R-S-BI	1-1/2"x1-1/4"x1/2"	4202-199	80257
TEST PLUG	5012-S-BI	1-1/2"x1-1/2"x1/2"	4202-209	80254
	5012-S-BI	2"x2"x1/2"	4202-247	80253
	5012-R-S-BI	2"x1-1/2"x1/2"	4202-237	80258
	450-005	1/2"	4250-005	N/A

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NIBCO® BlazeMaster® Warranty

NIBCO INC. LIMITED WARRANTY

Applicable to NIBCO INC. CPVC Fire Protection Plastic Fittings

NIBCO INC. warrants each NIBCO® BlazeMaster® Fire Protection CPVC plastic fitting to be free from defects in materials and workmanship under normal use and service for a period of ten (10) years from date of purchase.

In the event any defect occurs which the owner believes is covered by this warranty, the owner should immediately contact NIBCO Technical Services, either in writing or by telephone at 1.888.446.4226 or 1.574.295.3000. The owner will be instructed to return said product, at the owner's expense, to NIBCO INC., or an authorized representative for inspection. In the event said inspection discloses to the satisfaction of NIBCO INC. that said fitting or valve is defective, a replacement shall be mailed free of charge to the owner, and NIBCO INC. shall further pay the installing contractor the sum of ten (\$10.00) dollars to apply on the cost of installation of said replacement fitting.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES.

Some states or countries do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply to you.

TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



BlazeMaster® is a registered trademark of The Lubrizol Corporation.

How to Order

State quantity, figure number and size for each valve or fitting you wish to order. See individual catalog pages for specific or special product designations.

HOW MANY TO ORDER

NIBCO® valves and fittings are decimal packed for your convenience in handling, shipping and stock-keeping. Number in master carton varies with item.

POLICY ON RETURNS TO FACTORY

No NIBCO valves and fittings are to be returned without prior written agreement. Transportation must be prepaid. A 20% charge will be made to cover cost of rehandling and reinspection.

TECHNICAL ASSISTANCE

Engineers, contractors, wholesalers or manufacturers may obtain special or technical assistance from any factory representative of NIBCO. Write, fax or phone.

NIBCO INC.
World Headquarters
1516 Middlebury Street
Elkhart, IN 46516-4740
USA

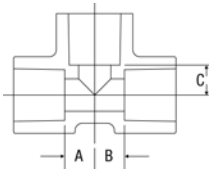
PH: 1.574.295.3000 or 1.888.446.4226
FAX: 1.574.295.3307 or 1.888.336.4226

To the best of our knowledge, the information contained in this publication is accurate. However, NIBCO does not assume any liability whatsoever for the accuracy or completeness of such information. Final determinations of the suitability of any information or product for the use to be contemplated is the sole responsibility of the user. The manner of that use, and whether there is any infringement of patents, is also the sole responsibility of the user.

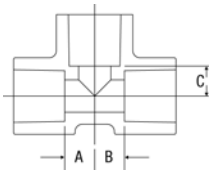
BlazeMaster® Fire Protection Fittings – STANDARD

TEES

5011



5011-R



Tees

UNIV. FIG. NO.	NOM. NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	JOINT
5011	3/4"	0.10	0.57	0.57	0.57	SXSXS
5011	1"	0.17	0.69	0.69	0.69	SXSXS
5011	1-1/4"	0.28	0.89	0.89	0.89	SXSXS
5011	1-1/2"	0.58	1.05	1.05	1.05	SXSXS
5011	2"	0.82	1.25	1.25	1.25	SXSXS
5011	2-1/2"	1.58	1.53	1.53	1.53	SXSXS
5011	3"	2.14	1.84	1.84	1.84	SXSXS
5011-R	3/4"x3/4"x1"	0.14	0.70	0.70	0.73	SXSXS
5011-R	1"x1"x3/4"	0.16	0.61	0.61	0.94	SXSXS
5011-R	1"x3/4"x1"	0.20	0.76	0.99	0.78	SXSXS
5011-R	1"x3/4"x3/4"	0.16	0.60	0.87	0.77	SXSXS
5011-R	1-1/4"x1-1/4"x1"	0.24	0.73	0.73	0.89	SXSXS
5011-R	1-1/4"x1-1/4"x3/4"	0.20	0.60	0.60	0.89	SXSXS
5011-R	1-1/4"x1"x1-1/4"	0.28	0.88	1.03	0.87	SXSXS
5011-R	1-1/4"x1"x1"	0.24	0.71	0.90	0.89	SXSXS
5011-R	1-1/4"x1"x3/4"	0.20	0.61	0.76	0.89	SXSXS
5011-R	1-1/4"x1-1/4"x1-1/2"	0.44	1.01	1.01	0.88	SXSXS
5011-R	1-1/2"x1-1/2"x1-1/4"	0.46	0.89	0.89	1.04	SXSXS
5011-R	1-1/2"x1-1/2"x1"	0.54	0.77	0.77	0.96	SXSXS
5011-R	1-1/2"x1-1/2"x3/4"	0.50	0.67	0.67	1.04	SXSXS
5011-R	1-1/2"x1-1/4"x1"	0.40	0.72	0.91	1.01	SXSXS
5011-R	1-1/2"x1-1/4"x3/4"	0.36	0.60	0.78	1.02	SXSXS
5011-R	1-1/2"x1-1/2"x2"	0.88	1.30	1.30	1.14	SXSXS
5011-R	2"x2"x1-1/2"	0.86	1.06	1.06	1.37	SXSXS
5011-R	2"x2"x1-1/4"	0.67	1.00	1.00	1.28	SXSXS
5011-R	2"x2"x1"	0.72	0.80	0.80	1.25	SXSXS
5011-R	2"x2"x3/4"	0.68	0.70	0.70	1.25	SXSXS
5011-R	2-1/2"x2-1/2"x2"	1.32	1.26	1.26	1.53	SXSXS
5011-R	2-1/2"x2-1/2"x1-1/2"	1.21	1.06	1.06	1.53	SXSXS
5011-R	2-1/2"x2-1/2"x1-1/4"	1.12	0.91	0.91	1.53	SXSXS
5011-R	2-1/2"x2-1/2"x1"	1.05	0.74	0.74	1.53	SXSXS
5011-R	3"x3"x2-1/2"	1.71	1.53	1.53	1.84	SXSXS
5011-R	3"x3"x2"	1.56	1.26	1.26	1.84	SXSXS
5011-R	3"x3"x1-1/2"	1.39	1.06	1.06	1.82	SXSXS

Note: All NIBCO reducing tees are molded to size, not fabricated.

Review – Do's & Don'ts

Do's

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and follow the installation instructions.
- Follow recommended safe work practices.
- Make certain that thread sealants, gasket lubricants, or firestop materials are compatible with CPVC.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Follow proper handling procedures.
- Use tools specifically designed for use with plastic pipe and fittings.
- Use the proper solvent cement and follow application instructions.
- Use a drop cloth to protect interior finishes.
- Cut the pipe ends square.
- Deburr and bevel the pipe end with a chamfering tool.
- Rotate the pipe 1/4 turn when bottoming pipe in fitting socket.
- Make certain no solvent cement is on sprinkler head and adapter threads.
- Make certain that solvent cement does not run and plug the sprinkler head orifice.
- Follow the manufacturer's recommended cure times prior to pressure testing.
- Fill lines slowly and only at a proper pressure.
- Bleed the air from the system prior to pressure testing.
- Support sprinkler head properly to prevent lift up of the head through the ceiling when activated.
- Keep threaded rod within 1/16" of the pipe or use a surge arrestor.
- Install NIBCO® **BlazeMaster**® CPVC Fire Sprinkler Products in wet systems only.
- Use only insulation and/or glycerin and water solutions for freeze protection.
- Allow for movement due to expansion and contraction.
- Ensure installers have been properly trained per the NIBCO **BlazeMaster**® CPVC Fire Sprinkler System Installation and Design Manual and renew your training every three years at a minimum.

Don'ts

- Do not use edible oils as a gasket lubricant.
- Do not use petroleum or solvent-based sealants, lubricants, or fire stop materials.
- Do not use any glycol-based solutions as an anti-freeze.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not mix glycerin and water solutions in contaminated containers.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not allow solvent cement to plug the sprinkler head orifice.
- Do not connect rigid metal couplers to CPVC grooved adapters.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not pressure test with air.
- Do not pressure test until recommended cure times are met.
- Do not exceed proper pressure for testing.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with the pipe.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in cold weather without allowing for expansion.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in dry systems.
- Do not allow puddling of cement in fittings and pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

BlazeMaster®
FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.	
ADAPTER	5001-G	1-1/4"	4233-012	80160	
	5001-G	1-1/2"	4233-015	80161	
	5001-G	2"	4233-020	80162	
	5001-G	2-1/2"	4233-025	80163	
	5001-G	3"	4233-030	80164	
BUSHINGS	5018	1"x3/4"	4237-131	80200	
	5018	1-1/4"x1"	4237-168	80202	
	5018	1-1/4"x3/4"	4237-167	80201	
	5018	1-1/2"x1-1/4"	4237-212	80205	
	5018	1-1/2"x1"	4237-211	80204	
	5018	1-1/2"x3/4"	4237-210	80203	
	5018	2"x1-1/2"	4237-251	80209	
	5018	2"x1-1/4"	4237-250	80208	
	5018	2"x1"	4237-249	80207	
	5018	2"x3/4"	4237-248	80206	
	5018	2-1/2"x2"	4237-292	80211	
	5018	2-1/2"x1-1/2"	4237-291	80213	
	5018	2-1/2"x1-1/4"	4237-290	80214	
	5018	2-1/2"x1"	N/A	80215	
	5018	3"x2-1/2"	4237-339	80212	
	5018	3"x2"	4237-338	80210	
	5018	3"x1-1/2"	N/A	N/A	
	CAPS	5017	3/4"	4247-007	80100
		5017	1"	4247-010	80101
		5017	1-1/4"	4247-012	80102
5017		1-1/2"	4247-015	80103	
5017		2"	4247-020	80104	
5017		2-1/2"	4247-025	80105	
5017		3"	4247-030	80106	
COUPLINGS		5001	3/4"	4229-007	80075
	5001	1"	4229-010	80076	
	5001	1-1/4"	4229-012	80077	
	5001	1-1/2"	4229-015	80078	
	5001	2"	4229-020	80079	
	5001	2-1/2"	4229-025	80080	
	5001	3"	4229-030	80081	
	5001-R	1"x3/4"	4229-131	80220	
	5001-R	1-1/4"x1"	4229-168	N/A	
	5001-R	1-1/2"x3/4"	4229-210	N/A	
	5001-R	1-1/2"x1"	4229-211	N/A	
	5001-R	1-1/2"x1-1/4"	4229-212	N/A	
5001-R	2"x1"	4229-249	N/A		
5001-R	2"x1-1/2"	4229-251	N/A		
CROSSES	5035	3/4"	4220-007	80009	
	5035	1"	4220-010	80010	
	5035	1-1/4"	4220-012	80011	
	5035	1-1/2"	4220-015	80012	

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
CROSSES	5035	2"	4220-020	80013
	5035	2-1/2"	4220-025	80014
	5035	3"	4220-030	80008
	5035-R	1"x3/4"x1"x3/4"	4220-131	80015
	5006	3/4"	4217-007	80050
	5006	1"	4217-010	80051
	5006	1-1/4"	4217-012	80052
	5006	1-1/2"	4217-015	80053
	5006	2"	4217-020	80054
	5006	2-1/2"	4217-025	80055
ELBOWS	5006	3"	4217-030	80056
	5007	3/4"	4206-007	80025
	5007	1"	4206-010	80026
	5007	1-1/4"	4206-012	80027
	5007	1-1/2"	4206-015	80028
	5007	2"	4206-020	80039
	5007	2-1/2"	4206-025	80030
	5007	3"	4206-030	80031
	5007-R	1"x3/4"	4206-131	80032
	5019-H	3/4"	4253-007	N/A
5019-H	1"	4253-010	N/A	
5019-H	1-1/4"	4253-012	N/A	
5019-H	1-1/2"	4253-015	N/A	
5019-H	2"	4253-020	N/A	
5019-H	2-1/2"	4253-025	N/A	
5019-H	3"	4253-030	N/A	
FLANGES	5051-A	3"	4254-030	N/A
	5051-2-A	3"	4256-030	N/A
	5051-H	3/4"	4251-007	N/A
	5051-H	1"	4251-010	N/A
	5051-H	1-1/4"	4251-012	N/A
	5051-H	1-1/2"	4251-015	N/A
	5051-H	2"	4251-020	N/A
	5051-H	2-1/2"	4251-025	N/A
	5051-H	3"	N/A	N/A
	5011	3/4"	4201-007	8000
TEES	5011	1"	4201-010	8001
	5011	1-1/4"	4201-012	8002
	5011	1-1/2"	4201-015	8003
	5011	2"	4201-020	80004
	5011	2-1/2"	4201-025	8005
	5011	3"	4201-030	80006
	5011-R	3/4"x3/4"x1"	4201-102	80132
	5011-R	1"x1"x3/4"	4201-131	80260
	5011-R	1"x3/4"x1"	4201-126	80134

BlazeMaster®
FIRE SPRINKLER FITTINGS

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
TEES	5011-R	1"x3/4"x3/4"	4201-125	80133
	5011-R	1-1/4"x1-1/4"x1"	4201-168	80262
	5011-R	1-1/4"x1-1/4"x3/4"	4201-167	80261
	5011-R	1-1/4"x1"x1-1/4"	4201-159	80137
	5011-R	1-1/4"x1"x1"	4201-158	80136
	5011-R	1-1/4"x1"x3/4"	4201-157	80135
	5011-R	1-1/4"x1-1/4"x1-1/2"	4201-169	80138
	5011-R	1-1/2"x1-1/2"x1-1/4"	4201-212	80275
	5011-R	1-1/2"x1-1/2"x1"	4201-211	80264
	5011-R	1-1/2"x1-1/2"x3/4"	4201-210	80263
	5011-R	1-1/2"x1-1/4"x1"	4201-202	80140
	5011-R	1-1/2"x1-1/4"x3/4"	4201-201	80140
	5011-R	1-1/2"x1-1/2"x2"	4201-213	N/A
	5011-R	2"x2"x1-1/2"	4201-251	80274
	5011-R	2"x2"x1-1/4"	4201-250	80267
	5011-R	2"x2"x1"	4201-249	80266
	5011-R	2"x2"x3/4"	4201-248	80265
	5011-R	2-1/2"x2-1/2"x2"	4201-292	80276
	5011-R	2-1/2"x2-1/2"x1-1/2"	4201-291	80273
	5011-R	2-1/2"x2-1/2"x1-1/4"	4201-290	80272
	5011-R	2-1/2"x2-1/2"x1"	4201-289	80271
	5011-R	3"x3"x2-1/2"	4201-339	80269
	5011-R	3"x3"x2"	4201-338	80268
	5011-R	3"x3"x1-1/2"	4201-337	80270
UNIONS	5033-E	3/4"	4257-007	N/A
	5033-E	1"	4257-010	N/A
	5033-E	1-1/4"	4257-012	N/A
	5033-E	1-1/2"	4257-015	N/A
	5033-E	2"	4257-020	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-BI	3/4"	4235-007	80142
	5003-BI	1"	4235-010	80145
	5003-BI	1-1/4"	4235-012	80146
	5003-BI	1-1/2"	4235-015	80147
	5003-BI	2"	4235-020	80148
	5003-2-BI	3/4"	4278-007	N/A
	5003-2-BI	1"	4278-010	N/A
	5003-S-BI	3/4"x1/2"	4235-101	80175E or 80175W
	5003-S-BI	1"x1/2"	4235-130	80176E or 80175W
	5003-S-BI	1"x3/4"	4235-131	80179
	5003-2-S-BI	3/4"x1/2"	4238-101	N/A
	5003-2-S-BI	1"x1/2"	4238-130	N/A
	5003-S-BT	3/4"x1/2"	N/A	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-S-BT	1"x1/2"	N/A	N/A
	5003-BI-BSP	1"	N/A	N/A
	5003-BI-BSP	1-1/4"	N/A	N/A
	5003-BI-BSP	1-1/2"	N/A	N/A
	5003-BI-BSP	2"	N/A	N/A
	5004-BI	3/4"	N/A	80157
	5004-BI	1"	N/A	80158
	5004-BI	1-1/4"	N/A	N/A
	5004-BI	1-1/2"	N/A	N/A
	5004-BI	2"	N/A	N/A
5018-S-BI	1"x1/2"	4238-130BR	N/A	
CROSSES	5035-3-S-BI-S	1"x1"x1/2"x1/2"	N/A	80462
	5035-3-S-BI-L	1"x1"x1/2"x1/2"	N/A	80463
ELBOWS	5007-3-S-BI	3/4"x1/2"	4207-101	80199
	5007-3-S-BI	1"x1/2"	4207-130	80198
	5007-3-S-BI	1"x3/4"	4207-131	N/A
	5007-3-S-BI	1-1/4"x1/2"	4207-166	N/A
TEES	5011-3-3-S-BI-S	1/2"x1/2"x1"	N/A	80460
	5011-3-3-S-BI-L	1/2"x1/2"x1"	N/A	80459
	5012-S-BI	1"	4202-010	N/A
	5012-S-BI	3/4"x3/4"x1/2"	4202-101	80250
	5012-R-S-BI	1"x3/4"x1/2"	4202-124	N/A
	5012-S-BI	1"x1"x1/2"	4202-130	80251
	5012-R-S-BI	1"x1/2"x1"	4203-122	N/A
	5012-R-S-BI	1-1/4"x1"x1/2"	4202-156	80256
	5012-S-BI	1-1/4"x1-1/4"x1/2"	4202-166	80252
	5012-R-S-BI	1-1/2"x1-1/4"x1/2"	4202-199	80257
TEST PLUG	5012-S-BI	1-1/2"x1-1/2"x1/2"	4202-209	80254
	5012-S-BI	2"x2"x1/2"	4202-247	80253
	5012-R-S-BI	2"x1-1/2"x1/2"	4202-237	80258
	450-005	1/2"	4250-005	N/A

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USA

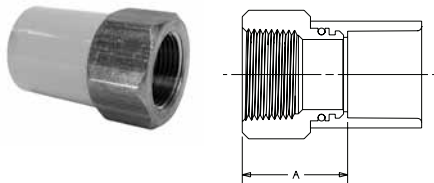
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BlazeMaster® Fire Protection Fittings – THREADED

ADAPTERS

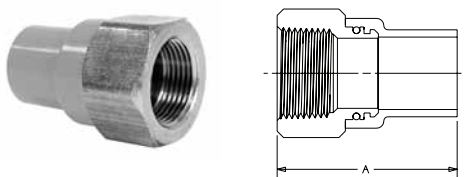
5003-BI



Female Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-BI	3/4"	0.28	1.19	SXFNPT
5003-BI	1"	0.63	1.59	SXFNPT
5003-BI	1-1/4"	1.02	1.96	SXFNPT
5003-BI	1-1/2"	1.26	1.98	SXFNPT
5003-BI	2"	1.98	1.99	SXFNPT

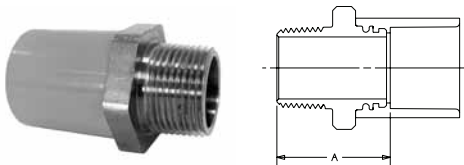
5003-2-BI



Spigot Female Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-2-BI	3/4"	0.28	2.00	SPGXFNPT
5003-2-BI	1"	0.61	2.72	SPGXFNPT

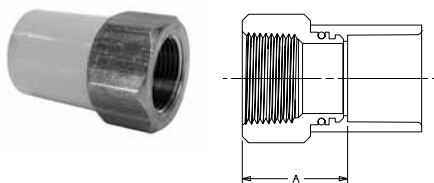
5004-BI



Male Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5004-BI	3/4"	0.22	1.35	SxMNPT
5004-BI	1"	0.46	1.82	SxMNPT
5004-BI	1-1/4"	0.74	2.05	SxMNPT
5004-BI	1-1/2"	1.06	2.14	SxMNPT
5004-BI	2"	1.80	2.31	SxMNPT

5003-BI-BSP



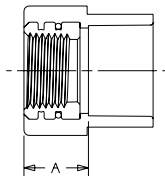
Female Adapters with Metal BSP Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-BI-BSP	1"	0.63	1.59	SXBSPT
5003-BI-BSP	1-1/4"	1.02	1.96	SXBSPT
5003-BI-BSP	1-1/2"	1.26	1.98	SXBSPT
5003-BI-BSP	2"	1.98	1.99	SXBSPT

BlazeMaster® Fire Protection Fittings – THREADED

ADAPTERS

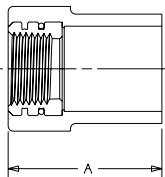
5003-S-BI



Female Sprinkler Head Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-S-BI	3/4"x1/2"	0.16	0.72	SXFNPT
5003-S-BI	1"x1/2"	0.18	0.73	SXFNPT
5003-S-BI	1"x3/4"	0.18	0.93	SXFNPT

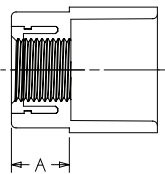
5003-2-S-BI



Spigot Female Sprinkler Head Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-2-S-BI	3/4"x1/2"	0.15	1.53	SPGXFNPT
5003-2-S-BI	1"x1/2"	0.16	1.84	SPGXFNPT

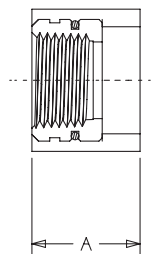
5003-S-BT



BRASTIC® Female Sprinkler Head Adapters with Metal Starter Thread

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5003-S-BT	3/4" x 1/2"	0.15	.75	SXFNPT
5003-S-BT	1" x 1/2"	0.17	.75	SXFNPT

5018-S-BI



Bushing Sprinkler Head Adapters with Metal Thread Insert

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	JOINT
5018-S-BI	1" x 1/2"	0.15	1.00	SPGXFNPT

BlazeMaster®
FIRE SPRINKLER FITTINGS

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Review – Do's & Don'ts

Do's

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and follow the installation instructions.
- Follow recommended safe work practices.
- Make certain that thread sealants, gasket lubricants, or firestop materials are compatible with CPVC.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Follow proper handling procedures.
- Use tools specifically designed for use with plastic pipe and fittings.
- Use the proper solvent cement and follow application instructions.
- Use a drop cloth to protect interior finishes.
- Cut the pipe ends square.
- Deburr and bevel the pipe end with a chamfering tool.
- Rotate the pipe 1/4 turn when bottoming pipe in fitting socket.
- Make certain no solvent cement is on sprinkler head and adapter threads.
- Make certain that solvent cement does not run and plug the sprinkler head orifice.
- Follow the manufacturer's recommended cure times prior to pressure testing.
- Fill lines slowly and only at a proper pressure.
- Bleed the air from the system prior to pressure testing.
- Support sprinkler head properly to prevent lift up of the head through the ceiling when activated.
- Keep threaded rod within 1/16" of the pipe or use a surge arrestor.
- Install NIBCO® **BlazeMaster**® CPVC Fire Sprinkler Products in wet systems only.
- Use only insulation and/or glycerin and water solutions for freeze protection.
- Allow for movement due to expansion and contraction.
- Ensure installers have been properly trained per the NIBCO **BlazeMaster**® CPVC Fire Sprinkler System Installation and Design Manual and renew your training every three years at a minimum.

Don'ts

- Do not use edible oils as a gasket lubricant.
- Do not use petroleum or solvent-based sealants, lubricants, or fire stop materials.
- Do not use any glycol-based solutions as an anti-freeze.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not mix glycerin and water solutions in contaminated containers.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not allow solvent cement to plug the sprinkler head orifice.
- Do not connect rigid metal couplers to CPVC grooved adapters.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not pressure test with air.
- Do not pressure test until recommended cure times are met.
- Do not exceed proper pressure for testing.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with the pipe.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in cold weather without allowing for expansion.
- Do not install NIBCO **BlazeMaster**® CPVC Fire Sprinkler Products in dry systems.
- Do not allow puddling of cement in fittings and pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.	
ADAPTER	5001-G	1-1/4"	4233-012	80160	
	5001-G	1-1/2"	4233-015	80161	
	5001-G	2"	4233-020	80162	
	5001-G	2-1/2"	4233-025	80163	
	5001-G	3"	4233-030	80164	
BUSHINGS	5018	1"x3/4"	4237-131	80200	
	5018	1-1/4"x1"	4237-168	80202	
	5018	1-1/4"x3/4"	4237-167	80201	
	5018	1-1/2"x1-1/4"	4237-212	80205	
	5018	1-1/2"x1"	4237-211	80204	
	5018	1-1/2"x3/4"	4237-210	80203	
	5018	2"x1-1/2"	4237-251	80209	
	5018	2"x1-1/4"	4237-250	80208	
	5018	2"x1"	4237-249	80207	
	5018	2"x3/4"	4237-248	80206	
	5018	2-1/2"x2"	4237-292	80211	
	5018	2-1/2"x1-1/2"	4237-291	80213	
	5018	2-1/2"x1-1/4"	4237-290	80214	
	5018	2-1/2"x1"	N/A	80215	
	5018	3"x2-1/2"	4237-339	80212	
	5018	3"x2"	4237-338	80210	
	5018	3"x1-1/2"	N/A	N/A	
	CAPS	5017	3/4"	4247-007	80100
		5017	1"	4247-010	80101
		5017	1-1/4"	4247-012	80102
5017		1-1/2"	4247-015	80103	
5017		2"	4247-020	80104	
5017		2-1/2"	4247-025	80105	
5017		3"	4247-030	80106	
COUPLINGS	5001	3/4"	4229-007	80075	
	5001	1"	4229-010	80076	
	5001	1-1/4"	4229-012	80077	
	5001	1-1/2"	4229-015	80078	
	5001	2"	4229-020	80079	
	5001	2-1/2"	4229-025	80080	
	5001	3"	4229-030	80081	
	5001-R	1"x3/4"	4229-131	80220	
	5001-R	1-1/4"x1"	4229-168	N/A	
	5001-R	1-1/2"x3/4"	4229-210	N/A	
	5001-R	1-1/2"x1"	4229-211	N/A	
5001-R	1-1/2"x1-1/4"	4229-212	N/A		
5001-R	2"x1"	4229-249	N/A		
5001-R	2"x1-1/2"	4229-251	N/A		
CROSSES	5035	3/4"	4220-007	80009	
	5035	1"	4220-010	80010	
	5035	1-1/4"	4220-012	80011	
	5035	1-1/2"	4220-015	80012	

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
CROSSES	5035	2"	4220-020	80013
	5035	2-1/2"	4220-025	80014
	5035	3"	4220-030	80008
	5035-R	1"x3/4"x1"x3/4"	4220-131	80015
	5006	3/4"	4217-007	80050
	5006	1"	4217-010	80051
	5006	1-1/4"	4217-012	80052
	5006	1-1/2"	4217-015	80053
	5006	2"	4217-020	80054
	5006	2-1/2"	4217-025	80055
ELBOWS	5006	3"	4217-030	80056
	5007	3/4"	4206-007	80025
	5007	1"	4206-010	80026
	5007	1-1/4"	4206-012	80027
	5007	1-1/2"	4206-015	80028
	5007	2"	4206-020	80039
	5007	2-1/2"	4206-025	80030
	5007	3"	4206-030	80031
	5007-R	1"x3/4"	4206-131	80032
	5019-H	3/4"	4253-007	N/A
5019-H	1"	4253-010	N/A	
5019-H	1-1/4"	4253-012	N/A	
5019-H	1-1/2"	4253-015	N/A	
5019-H	2"	4253-020	N/A	
5019-H	2-1/2"	4253-025	N/A	
5019-H	3"	4253-030	N/A	
FLANGES	5051-A	3"	4254-030	N/A
	5051-2-A	3"	4256-030	N/A
	5051-H	3/4"	4251-007	N/A
	5051-H	1"	4251-010	N/A
	5051-H	1-1/4"	4251-012	N/A
	5051-H	1-1/2"	4251-015	N/A
	5051-H	2"	4251-020	N/A
	5051-H	2-1/2"	4251-025	N/A
	5051-H	3"	N/A	N/A
	5011	3/4"	4201-007	8000
5011	1"	4201-010	8001	
5011	1-1/4"	4201-012	8002	
5011	1-1/2"	4201-015	8003	
5011	2"	4201-020	80004	
5011	2-1/2"	4201-025	8005	
5011	3"	4201-030	80006	
5011-R	3/4"x3/4"x1"	4201-102	80132	
5011-R	1"x1"x3/4"	4201-131	80260	
5011-R	1"x3/4"x1"	4201-126	80134	

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CPVC Cross Reference Sheet

STANDARD FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
TEES	5011-R	1"x3/4"x3/4"	4201-125	80133
	5011-R	1-1/4"x1-1/4"x1"	4201-168	80262
	5011-R	1-1/4"x1-1/4"x3/4"	4201-167	80261
	5011-R	1-1/4"x1"x1-1/4"	4201-159	80137
	5011-R	1-1/4"x1"x1"	4201-158	80136
	5011-R	1-1/4"x1"x3/4"	4201-157	80135
	5011-R	1-1/4"x1-1/4"x1-1/2"	4201-169	80138
	5011-R	1-1/2"x1-1/2"x1-1/4"	4201-212	80275
	5011-R	1-1/2"x1-1/2"x1"	4201-211	80264
	5011-R	1-1/2"x1-1/2"x3/4"	4201-210	80263
	5011-R	1-1/2"x1-1/4"x1"	4201-202	80140
	5011-R	1-1/2"x1-1/4"x3/4"	4201-201	80140
	5011-R	1-1/2"x1-1/2"x2"	4201-213	N/A
	5011-R	2"x2"x1-1/2"	4201-251	80274
	5011-R	2"x2"x1-1/4"	4201-250	80267
	5011-R	2"x2"x1"	4201-249	80266
	5011-R	2"x2"x3/4"	4201-248	80265
	5011-R	2-1/2"x2-1/2"x2"	4201-292	80276
	5011-R	2-1/2"x2-1/2"x1-1/2"	4201-291	80273
	5011-R	2-1/2"x2-1/2"x1-1/4"	4201-290	80272
	5011-R	2-1/2"x2-1/2"x1"	4201-289	80271
	5011-R	3"x3"x2-1/2"	4201-339	80269
	5011-R	3"x3"x2"	4201-338	80268
	5011-R	3"x3"x1-1/2"	4201-337	80270
UNIONS	5033-E	3/4"	4257-007	N/A
	5033-E	1"	4257-010	N/A
	5033-E	1-1/4"	4257-012	N/A
	5033-E	1-1/2"	4257-015	N/A
	5033-E	2"	4257-020	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-BI	3/4"	4235-007	80142
	5003-BI	1"	4235-010	80145
	5003-BI	1-1/4"	4235-012	80146
	5003-BI	1-1/2"	4235-015	80147
	5003-BI	2"	4235-020	80148
	5003-2-BI	3/4"	4278-007	N/A
	5003-2-BI	1"	4278-010	N/A
	5003-S-BI	3/4"x1/2"	4235-101	80175E or 80175W
	5003-S-BI	1"x1/2"	4235-130	80176E or 80175W
	5003-S-BI	1"x3/4"	4235-131	80179
	5003-2-S-BI	3/4"x1/2"	4238-101	N/A
	5003-2-S-BI	1"x1/2"	4238-130	N/A
	5003-S-BT	3/4"x1/2"	N/A	N/A

THREADED FITTINGS

	NIBCO FIG. NO.	SIZE	SPEARS FIG. NO.	TYCO FIG. NO.
ADAPTERS	5003-S-BT	1"x1/2"	N/A	N/A
	5003-BI-BSP	1"	N/A	N/A
	5003-BI-BSP	1-1/4"	N/A	N/A
	5003-BI-BSP	1-1/2"	N/A	N/A
	5003-BI-BSP	2"	N/A	N/A
	5004-BI	3/4"	N/A	80157
	5004-BI	1"	N/A	80158
	5004-BI	1-1/4"	N/A	N/A
	5004-BI	1-1/2"	N/A	N/A
	5004-BI	2"	N/A	N/A
5018-S-BI	1"x1/2"	4238-130BR	N/A	
CROSSES	5035-3-S-BI-S	1"x1"x1/2"x1/2"	N/A	80462
	5035-3-S-BI-L	1"x1"x1/2"x1/2"	N/A	80463
ELBOWS	5007-3-S-BI	3/4"x1/2"	4207-101	80199
	5007-3-S-BI	1"x1/2"	4207-130	80198
	5007-3-S-BI	1"x3/4"	4207-131	N/A
	5007-3-S-BI	1-1/4"x1/2"	4207-166	N/A
TEES	5011-3-3-S-BI-S	1/2"x1/2"x1"	N/A	80460
	5011-3-3-S-BI-L	1/2"x1/2"x1"	N/A	80459
	5012-S-BI	1"	4202-010	N/A
	5012-S-BI	3/4"x3/4"x1/2"	4202-101	80250
	5012-R-S-BI	1"x3/4"x1/2"	4202-124	N/A
	5012-S-BI	1"x1"x1/2"	4202-130	80251
	5012-R-S-BI	1"x1/2"x1"	4203-122	N/A
	5012-R-S-BI	1-1/4"x1"x1/2"	4202-156	80256
	5012-S-BI	1-1/4"x1-1/4"x1/2"	4202-166	80252
	5012-R-S-BI	1-1/2"x1-1/4"x1/2"	4202-199	80257
TEST PLUG	5012-S-BI	1-1/2"x1-1/2"x1/2"	4202-209	80254
	5012-S-BI	2"x2"x1/2"	4202-247	80253
	5012-R-S-BI	2"x1-1/2"x1/2"	4202-237	80258
	450-005	1/2"	4250-005	N/A

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NIBCO® BlazeMaster® Warranty

NIBCO INC. LIMITED WARRANTY

Applicable to NIBCO INC. CPVC Fire Protection Plastic Fittings

NIBCO INC. warrants each NIBCO® BlazeMaster® Fire Protection CPVC plastic fitting to be free from defects in materials and workmanship under normal use and service for a period of ten (10) years from date of purchase.

In the event any defect occurs which the owner believes is covered by this warranty, the owner should immediately contact NIBCO Technical Services, either in writing or by telephone at 1.888.446.4226 or 1.574.295.3000. The owner will be instructed to return said product, at the owner's expense, to NIBCO INC., or an authorized representative for inspection. In the event said inspection discloses to the satisfaction of NIBCO INC. that said fitting or valve is defective, a replacement shall be mailed free of charge to the owner, and NIBCO INC. shall further pay the installing contractor the sum of ten (\$10.00) dollars to apply on the cost of installation of said replacement fitting.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES.

Some states or countries do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply to you.

TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



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How to Order

State quantity, figure number and size for each valve or fitting you wish to order. See individual catalog pages for specific or special product designations.

HOW MANY TO ORDER

NIBCO® valves and fittings are decimal packed for your convenience in handling, shipping and stock-keeping. Number in master carton varies with item.

POLICY ON RETURNS TO FACTORY

No NIBCO valves and fittings are to be returned without prior written agreement. Transportation must be prepaid. A 20% charge will be made to cover cost of rehandling and reinspection.

TECHNICAL ASSISTANCE

Engineers, contractors, wholesalers or manufacturers may obtain special or technical assistance from any factory representative of NIBCO. Write, fax or phone.

NIBCO INC.
World Headquarters
1516 Middlebury Street
Elkhart, IN 46516-4740
USA

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FAX: 1.574.295.3307 or 1.888.336.4226

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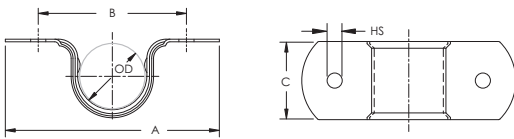


HANGER MATERIAL

108 Two Hole Strap for CPVC Pipe – 1080125EG



- Includes flared edges to protect piping
- Rated for use with CPVC fire sprinkler pipe
- Includes mounting screws



Part Number	1080125EG
Material	Steel
Finish	Pregalvanized
Pipe Size	1 1/4"
Outer Diameter (OD)	1.66"
Hole Size (HS)	7/32"
A	4 1/4"
B	3 1/4"
C	1 3/16"
Hanger Spacing	7" Max
Certifications	cULus
Standard Packaging Quantity	100 pc
UPC	78285636129
EAN-13	8711893044232

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WARNING

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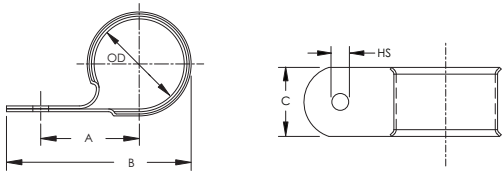
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107 Wraparound Strap for CPVC Pipe – 1070125EG



- Includes flared edges to protect piping
- Rated for use with CPVC fire sprinkler pipe
- Includes mounting screw



Part Number	1070125EG
Material	Steel
Finish	Pregalvanized
Pipe Size	1 1/4"
Outer Diameter (OD)	1.66"
Hole Size (HS)	7/32"
A	1 5/8"
B	3 1/16"
C	1 3/16"
Hanger Spacing	7" Max
Certifications	cULus
Standard Packaging Quantity	100 pc
UPC	78285636124
EAN-13	8711893044188

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WARNING

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SOSR

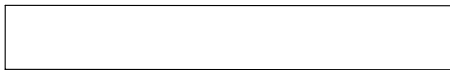
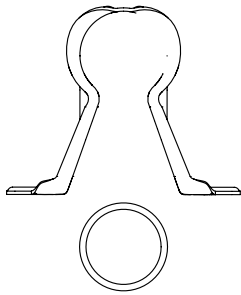
2- HOLE STAND-OFF AND SURGE RESTRAINT HANGER

Sizing Chart

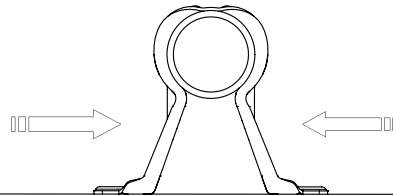
Part No.	Article No.	Description
SOSR075	597805	For 3/4" CPVC Piping
SOSR100	597806	For 1" CPVC Piping
SOSR125	597807	For 1-1/4" CPVC Piping
SOSR150	597808	For 1-1/2" CPVC Piping
SOSR200	597809	For 2" CPVC Piping



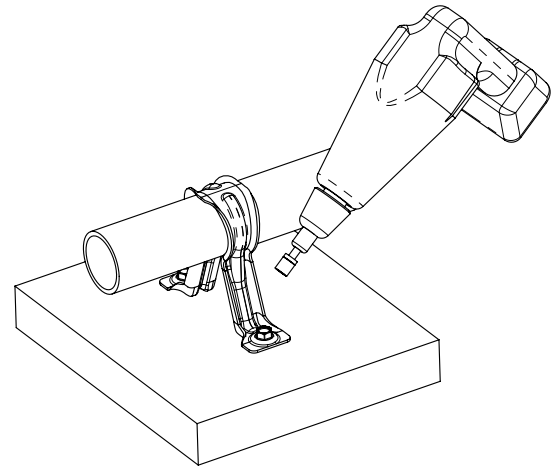
For mounting CPVC sprinkler pipe to the vertical or horizontal face of structural wood, metal, concrete, or composite wood joists with a minimum 3/8" web thickness.



1. Snap strap over CPVC pipe.



2. Squeeze strap back around pipe. Note: pipe must be allowed to slide freely.



3. Fasten the strap with appropriate hardware (chart below).

Mounting Hardware Table

Mounting Surface	Hardware
Structural Wood	#10 X 1" screws provided
Sheet Metal (min. 18 gauge)	1/4" x 1/2" long TEK type screws
Concrete	Per NFPA [®] : Min. load per fastener = $[5(wt) + 250 \text{ Lbs}]/2$
Composite Wood Joist	#10 X 1" screws provided with 3TW backing nuts (sold separately)

(wt) = weight of water filled pipe

WARNING:

- Pentair products shall be installed and used only as indicated in Pentair product instruction sheets and training materials. Instruction sheets are available at www.erico.pentair.com and from your Pentair customer service representative.
- PENTAIR products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specified load ratings.
- All instructions must be completely followed to ensure proper and safe installation and performance.
- Improper installation, misuse, misapplication or other failure to completely follow Pentair's instructions and warnings may cause product malfunction, property damage, serious bodily injury and/or death, and void your warranty.
- Products that are manufactured using spring steel components shall be used only in a non-corrosive indoor environment.
- All pipe supports, hangers, intermediate components and structural attachments must ONLY be used as described herein and are NEVER to be used for any other purpose.

NOTE: All load ratings are for static conditions and do not account for dynamic loading such as wind, water or seismic loads, unless otherwise noted.

The customer is responsible for:

- Conformance to all governing codes.
- The integrity of structures to which the products are attached, including their capability of safely accepting the loads imposed, as evaluated by a qualified engineer.
- Using appropriate industry standard hardware as noted above.

SAFETY INSTRUCTIONS:

All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment such as eye protection, hard hat, and gloves as appropriate to the application.



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SPRINKLER HEADS



TECHNICAL DATA

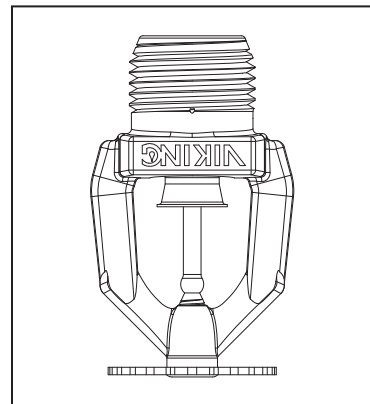
FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

Viking Freedom® Residential Pendent Sprinkler VK468 is a small, thermosensitive, glass-bulb residential sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The Electroless Nickel PTFE (ENT) coating has been investigated for installation in corrosive atmospheres and is C-UL-US-EU Listed as corrosion resistant as indicated in the Approval Chart. The orifice design, with a K-Factor of 4.9 (70.6 metric†), allows efficient use of available water supplies for the hydraulically designed fire-protection system. The glass bulb operating element and special deflector characteristics meet the challenges of residential sprinkler standards.



2. LISTINGS AND APPROVALS



UL Listed (C-UL-US-EU): Category VKKW



VdS Approved

NYC Approved: MEA 89-92-E, Volume 35

UL Classified to: NSF/ANSI Standard 61, Drinking Water System Components (MH48034). Refer to the Approval Chart and Design Criteria for C-UL-US-EU Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2006.

Minimum Operating Pressure: Refer to the Approval Chart.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

Thread size: 1/2" (15 mm) NPT

Nominal K-Factor: 4.9 U.S. (70.6 metric†)

†Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Overall Length: 2-1/4" (58 mm)

Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass

Deflector: Brass UNS-C23000, Phosphor Bronze UNS-C51000, or Brass UNS-C26000

Bulb: Glass, nominal 3 mm diameter

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Polytetrafluoroethylene (PTFE) Tape

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Compression Screw: Brass UNS-C36000

For ENT coated sprinklers: Belleville spring - Exposed. Screw and Pipcap - ENT plated.

Ordering Information: (Also refer to the current Viking price list.)

Sprinkler: Base Part No. 13637

Order Sprinkler VK468 by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, Black Polyester = M-/B, and ENT = JN

Temperature Suffix: 155 °F (68 °C) = B, 175 °F (79 °C) = D

For example, sprinkler VK468 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 13637AB.

Available Finishes And Temperature Ratings:

Refer to Table 1.

Accessories: (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

Sprinkler Wrenches:

A. Standard Wrench: Part No. 10896W/B (available since 2000)

B. Wrench for recessed sprinklers: Part No. 13577W/B* (available since 2006)

C. Optional Protective Sprinkler Cap Remover/Escutcheon Installer Tool** Part No. 15915 (available since 2010.)

*A 1/2" ratchet is required (not available from Viking).

**Allows use from the floor by attaching a length of 1" diameter CPVC tubing to the tool. Ideal for sprinkler cabinets. Refer to Bulletin F_051808.

Sprinkler Cabinets:

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.

(Added VdS Approval)

	TECHNICAL DATA	FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)
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The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

The Viking Model VK468 Sprinkler is available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Bulb Color
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow

Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and ENT

Corrosion Resistant Coatings³: ENT

Footnotes

- ¹ The sprinkler temperature rating is stamped on the deflector.
- ² Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- ³ The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with ENT coating.

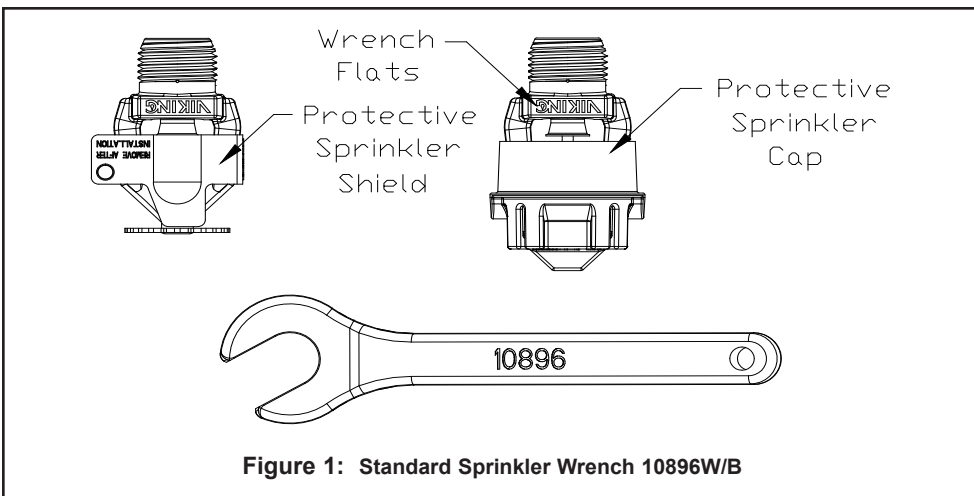


Figure 1: Standard Sprinkler Wrench 10896W/B



TECHNICAL DATA

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Approval Chart

Viking VK468, 4.9 K-Factor Residential Pendent Sprinkler

For systems designed to NFPA 13D or NFPA 13R. For systems designed to NFPA 13, refer to the design criteria. For Ceiling types refer to NFPA 13, 13R or 13D 2013 Editions

Sprinkler Base Part Number ¹	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length				
		Inches	mm	U.S.	metric ²		Inches	mm			
13637	VK468	1/2	15	4.9	70.6	175 psi (12 bar)	2-1/4	58			
Max. Coverage Area ⁴ Ft.X Ft. (m X m)	Ordinary Temp Rating (155 °F/68 °C)		Intermediate Temp Rating (175 °F/79 °C)		Deflector to Ceiling	Installation Type	Listings and Approvals ³				Minimum Spacing Ft. (m)
	Flow ⁴ GPM (L/min)	Pressure ⁴ PSI (bar)	Flow ⁴ GPM (L/min)	Pressure ⁴ PSI (bar)			C-UL-US-EU ⁵	VdS	NYC ⁶	NSF ⁸	
12 X 12 (3.7 X 3.7)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)	1-1/8 to 2 inch	Standard surface-mounted escutcheons, the Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon	See Footnotes 7 and 10.	See Footnotes 7 and 10.	See Footnote 7.	See Footnote 7.	8 (2.4)
14 X 14 (4.3 X 4.3)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)							
16 X 16 (4.9 X 4.9)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)							
18 X 18 (5.5 X 5.5)	17 (64.4)	12.0 (0.83)	17 (64.4)	12.0 (0.83)							
20 X 20 (6.1 X 6.1)	20 (75.7)	16.7 (1.15)	20 (75.7)	16.7 (1.15)							

Footnotes

¹ Part number shown is the base part number. For complete part number, refer to Viking's current price schedule.

² Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

³ This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals. Refer also to Design Criteria.

⁴ For areas of coverage smaller than shown, use the "Flow" and "Pressure" for the next larger area listed. Flows and pressures listed are per sprinkler. The distance from sprinklers to walls shall not exceed one-half the sprinkler spacing indicated for the minimum "Flow" and "Pressure" used.

⁵ Listed by Underwriter's Laboratories, Inc. for use in the U.S., Canada, and European Union.

⁶ Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 35.

⁷ Approved Finishes are: Brass, Chrome, White Polyester, and Black Polyester⁹

⁸ UL Classified to: NSF/ANSI Standard 61, Drinking Water System Components (MH48034).

⁹ Other paint colors are available on request with the same C-UL-US-EU listings as the standard finish colors.

¹⁰ Approved finish is Electroless Nickel PTFE (ENT). ENT is C-UL-US-EU Listed as corrosion resistant. ENT is available with standard surface-mounted escutcheons or the Micromatic Model E-1 Recessed Escutcheon.

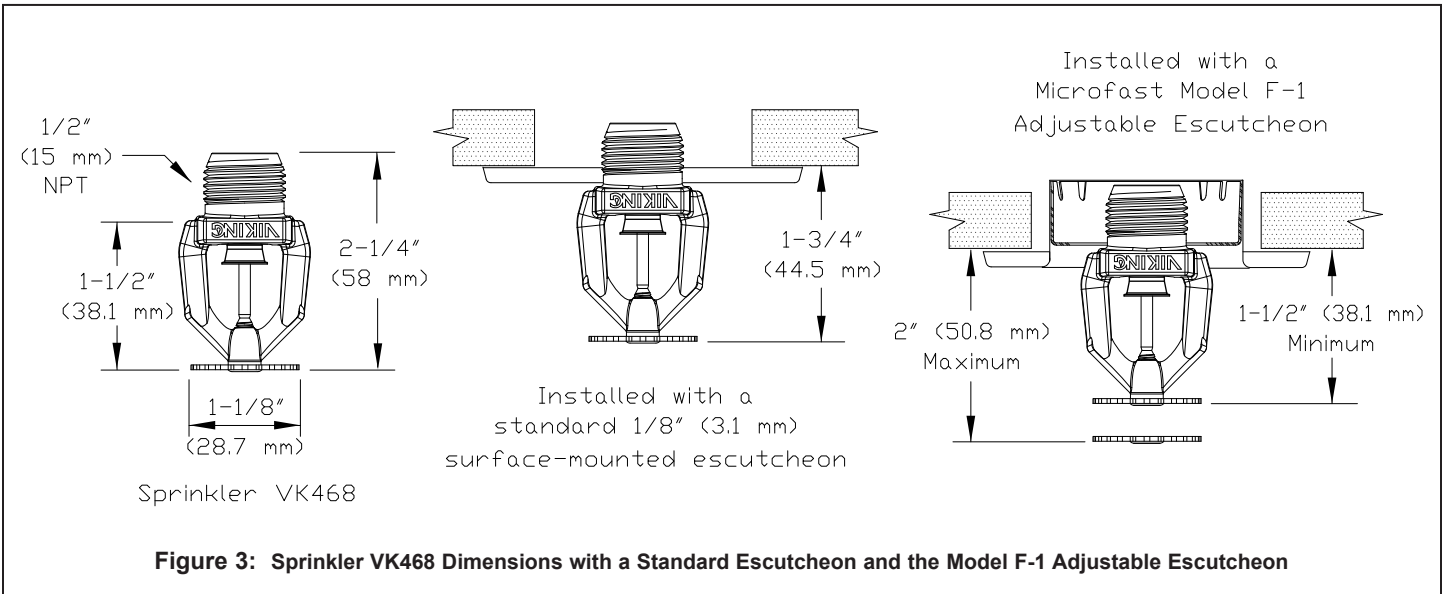
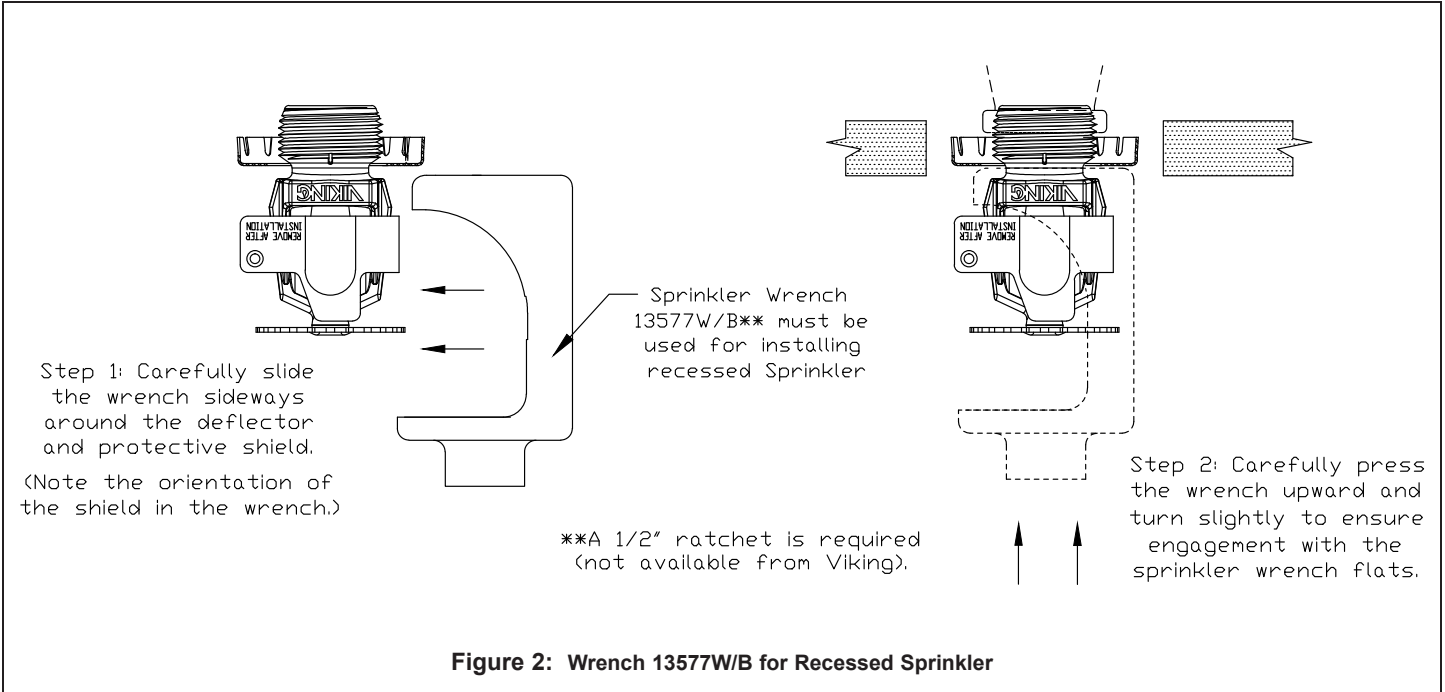


TECHNICAL DATA

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VK468 (K4.9)

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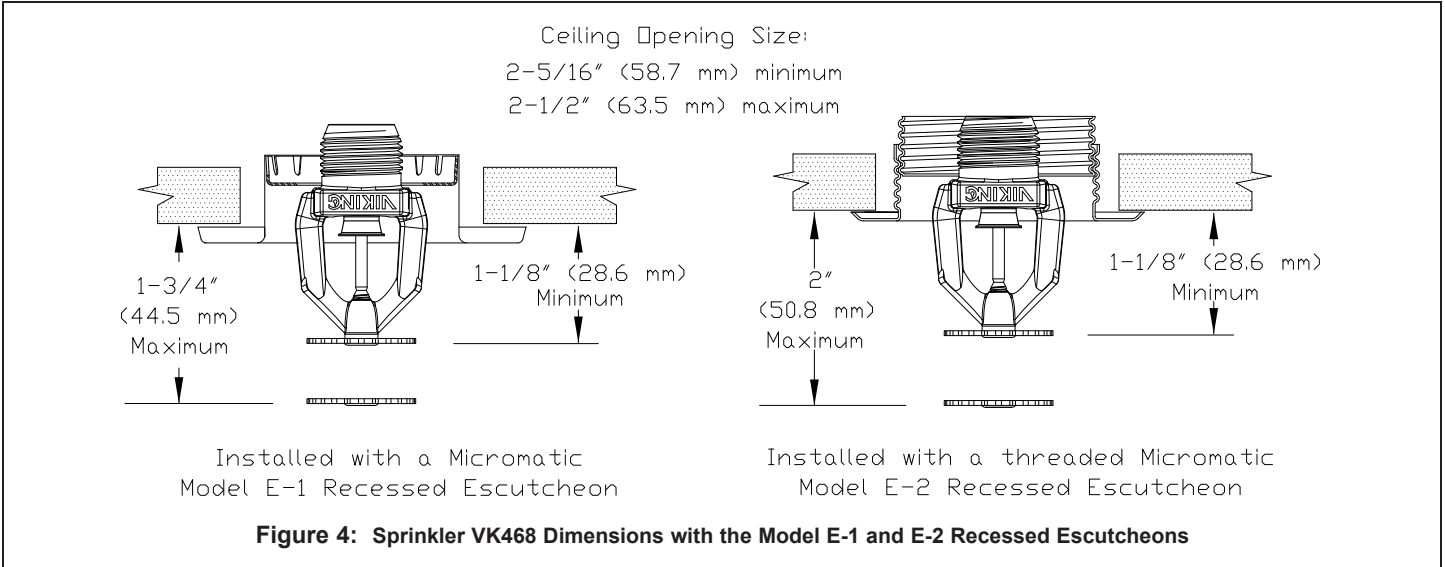


TECHNICAL DATA

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DESIGN CRITERIA

(Also refer to the Approval Chart.)

UL Listing Requirements (C-UL-US-EU):

When using Viking Residential Pendent Sprinkler VK468 for systems designed to NFPA 13D or NFPA 13R, apply the listed areas of coverage and minimum water supply requirements shown in the Approval Chart.

For systems designed to NFPA 13: The number of design sprinklers is to be the four contiguous most hydraulically demanding sprinklers. The minimum required discharge from each of the four sprinklers is to be the greater of the following:

- The flow rates given in the Approval Chart for NFPA 13D and NFPA13R applications for each listed area of coverage, **or**
- Calculated based on a minimum discharge of 0.1 gpm/sq. ft. over the "design area" in accordance with sections 8.5.2.1 or 8.6.2.1.2 of NFPA 13.
- Minimum distance between residential sprinklers: 8 ft. (2.4 m).

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages RES1-17 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, VdS, and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable. Final approval and acceptance of all residential sprinkler installations must be obtained from the Authorities Having Jurisdiction.



HYDRAULICS

Hydrant Flow Test Report

Test Date 11/25/2024

Test Time 11:45am

Location

404 E. Jackson Blvd.
Erwin, NC

Tested by

J&D Sprinkler Co.
315 W. Main St.
Clayton, NC 27520
919-553-2356

Notes

Test Performed by Brian Bennett and Matt Lucas utilizing a single 2.5" hose monster. Witnessed by the City of Dunn Water.

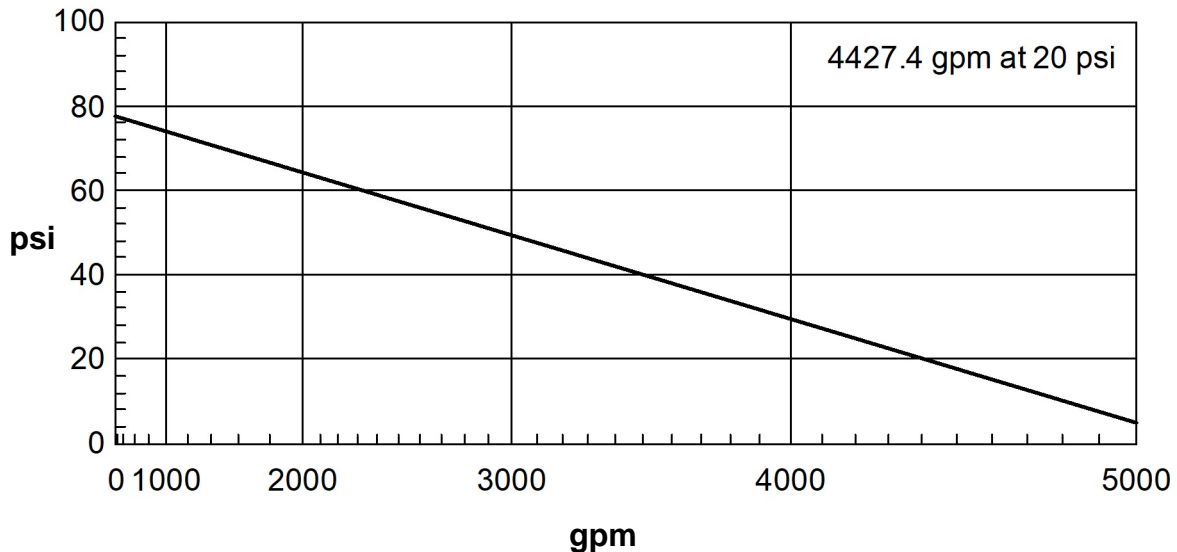
Read Hydrant

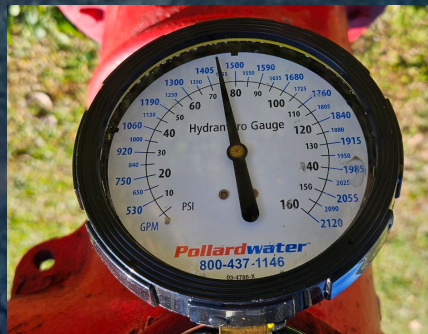
78 psi **static pressure**
75 psi **residual pressure**
hydrant elevation

Flow Hydrant(s)

Outlet	Elev	Size	C	Pitot Pressure	Flow
#1		2.5		28	893 gpm

Flow Graph





Test Hydrant
Static: 78psi
Residual 75psi

PROJECT SITE

55

US Hwy 421

JCI - Harnett County

US Hwy 421

E Jackson Blvd

Greenfield Housing Center

421



Flow Hydrant
Pitot: 28psi
Flow: 893gpm



THIS DEVICE IS FM APPROVED

The pressure vs. flow rate data developed within this flow chart is based on the average K-factor measured during laboratory testing. This data has been determined to be within the acceptable limitations for accuracy.

It is the user's responsibility to verify that the correct chart and column is being used.

2 1/2" Use this column if the Hose Monster® is used without a Nozzle Insert. The built-in pitot must be installed for accuracy.

1 3/4" Use this column if the Hose Monster® is used with a 1 3/4" Nozzle Insert installed (#HMNI1.75). The built-in pitot must be installed for accuracy.

1 1/8" Use this column if the Hose Monster® is used with a 1 1/8" Nozzle Insert installed (#HMNI1.125). The built-in pitot must be installed for accuracy.

GET THE MOST OUT OF YOUR HOSE MONSTER® HARDWARE

FIRE PUMP TESTING SOFTWARE

Professional-grade software that helps you work better! Keep your reports clean, your results accurate, and your process streamlined with Hose Monster's FPT Software.

LEARN MORE AT
[HOSEMONSTER.COM/RESOURCES](https://www.hosemonster.com/resources)

	2 1/2"	1 3/4"	1 1/8"		2 1/2"	1 3/4"	1 1/8"
PSI	GPM	GPM	GPM	PSI	GPM	GPM	GPM
10	533	282	118	41	1080	570	239
11	559	295	124	42	1093	577	242
12	584	308	129	43	1106	584	245
13	608	321	135	44	1119	591	248
14	631	333	140	45	1131	597	251
15	653	345	145	46	1144	604	253
16	675	356	149	47	1156	610	256
17	695	367	154	48	1169	617	259
18	716	378	159	49	1181	623	262
19	735	388	163	50	1193	630	264
20	754	398	167	51	1205	636	267
21	773	408	171	52	1216	642	269
22	791	418	175	53	1228	648	272
23	809	427	179	54	1239	654	275
24	826	436	183	55	1251	660	277
25	843	445	187	56	1262	666	280
26	860	454	190	57	1273	672	282
27	876	463	194	58	1285	678	285
28	893	471	198	59	1296	684	287
29	908	479	201	60	1307	690	289
30	924	488	205	61	1317	695	292
31	939	496	208	62	1328	701	294
32	954	504	211	63	1339	707	297
33	969	511	215	64	1349	712	299
34	984	519	218	65	1360	718	301
35	998	527	221	66	1370	723	304
36	1012	534	224	67	1381	729	306
37	1026	542	227	68	1391	734	308
38	1040	549	230	69	1401	740	310
39	1053	556	233	70	1411	745	313
40	1067	563	236				

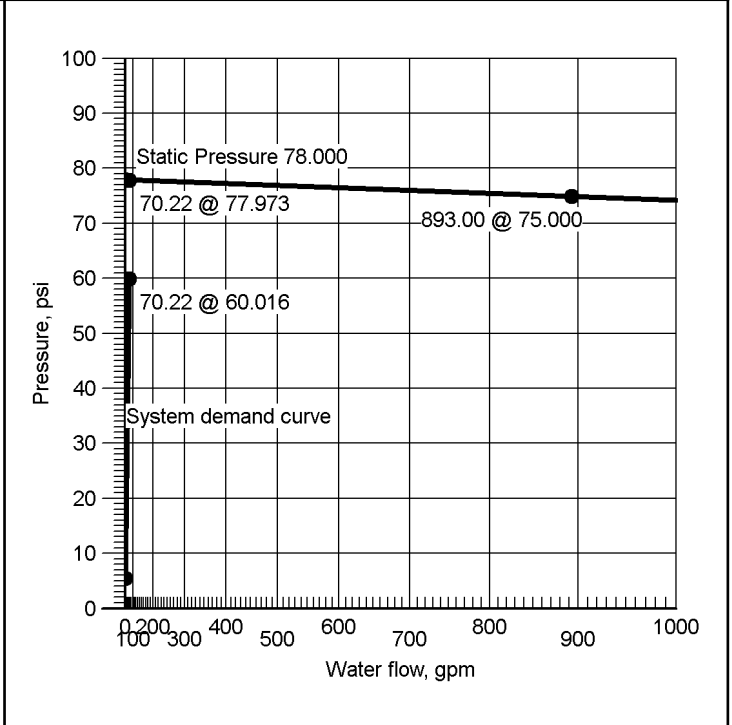
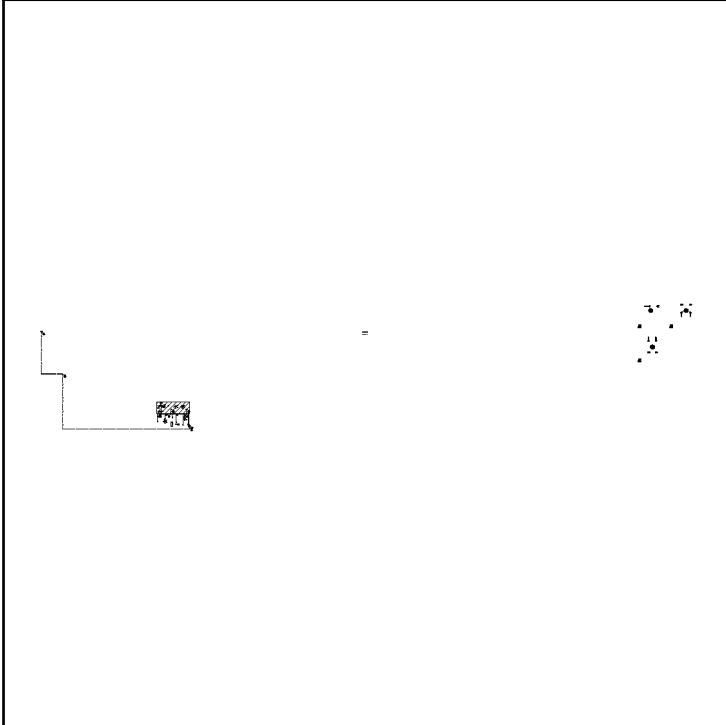


Job	
Job Number B24263	Designer MWL
Job Name: AMPLE STORAGE APT ERWIN	Phone 919-553-2356
Address 1 JACKSON BLVD-US HWY 421	State Certification/License Number 16269FS1
Address 2 ERWIN NC	AHJ
Address 3	Job Site/Building

System	
Density 0.05gpm/ft ²	Area of Application 900ft ² (Actual 554ft ²)
Most Demanding Sprinkler Data 4.9 K-Factor 16.97 at 12.000	Hose Streams 0.00
Coverage Per Sprinkler 324ft ²	Number Of Sprinklers Calculated 4
	Number Of Nozzles Calculated 0
System Pressure Demand 60.016	System Flow Demand 70.22
Total Demand 70.22 @ 60.016	Pressure Result +17.957 (23.0%)

Supplies						Check Point Gauges			
<u>Node</u>	<u>Name</u>	<u>Flow(gpm)</u>	<u>Hose Flow(gpm)</u>	<u>Static(psi)</u>	<u>Residual(psi)</u>	<u>Identifier</u>	<u>Pressure(psi)</u>	<u>K-Factor(K)</u>	<u>Flow(gpm)</u>
6	Water Supply	893.00		78.000	75.000	BOR (4)	21.254	15.23	70.22
						BOR (55)	0.000	0	0.00

ERWIN AMPLE FP SUBMITTAL Water Supply at Node 6 (893.00, 0.00, 78.000, 75.000)



Hydraulic Calculations

for

Project Name: AMPLE STORAGE APT ERWIN: (B24263)

Location: JACKSON BLVD-US HWY 421, ERWIN NC,

Drawing Name: ERWIN AMPLE FP SUBMITTAL

Calculation Date: 12/5/2024

Design

Remote Area Number:

Occupancy Classification: Residential

Density 0.05gpm/ft²
Area of Application: 900ft² (Actual 554ft²)
Coverage per Sprinkler: 324ft²
Type of sprinklers calculated: Pendent
No. of sprinklers calculated: 4
No. of nozzles calculated: 0

In-rack Demand: N/A gpm at Node: N/A
Hose Streams: 0.0 gpm at Node: 6 Type: Allowance at Source

Total Water Required (including Hose Streams where applicable):
From Water Supply at Node 6: 70.22 @ 60.016 (Safety Margin = 17.957)
Type of System:
Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

for Node: 6 Date: 11/25/2024
Location:
Source: J&D SPRINKLER CO

Name of Contractor:
Address: ,
Phone Number:
Name of designer: MWL
Authority Having Jurisdiction: :

Notes:

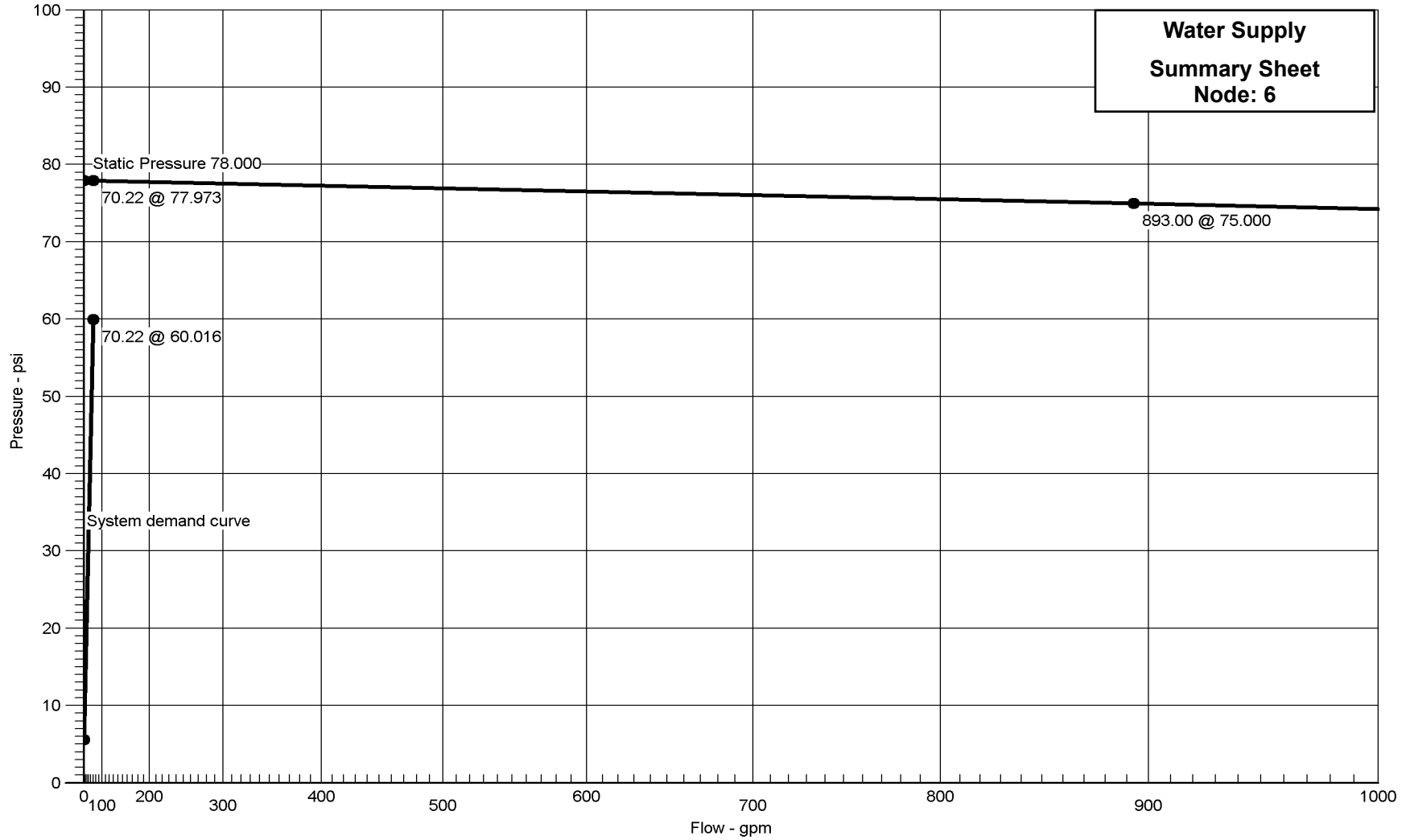
Automatic peaking results Left: N/A Right: N/A

Hydraulic Graph

Job Name: AMPLE STORAGE APT ERWIN
Remote Area Number:

N 1.85

Date: 12/5/2024



Supply:Static:78.000
Residual:75.000
Flowing:893.00
Available Flow @ 20 PSI:4420.35



Summary Of Outflowing Devices

Device	Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
⇒ Sprinkler 101	16.97	16.97	4.9	12.000			
Sprinkler 102	17.38	16.97	4.9	12.576			
Sprinkler 103	17.80	16.97	4.9	13.194			

⇒ Most Demanding Sprinkler Data

Supply Analysis

Node	Name	Static (psi)	Residual (psi) @	Flow (gpm)	Available (psi) @	Total Demand (gpm)	Required Pressure (psi)
6	Water Supply	78.000	75.000	893.00	77.973	70.22	60.016

Node Analysis

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
6	-3'-0½	Supply	60.016	70.22	
101	9'-10½	Sprinkler	12.000	16.97	
102	9'-11	Sprinkler	12.576	17.38	
103	8'-0½	Sprinkler	13.194	17.80	
104	8'-0½	Sprinkler	13.605	18.07	
1	8'-6		14.502		
2	8'-6		15.170		
3	8'-6		16.650		
4	1'-0	Gauge	21.254		
5	-3'-0		46.965		
7	8'-6		14.314		
8	8'-6		14.298		

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.	
										Node 2
101	9'-10½	4.9	16.97	1	(See Notes)	11'-9½	150	12.000		
1	8'-6		16.97	1.1010		26'-0	0.050231	0.604		
						37'-9½		1.898		
1	8'-6		35.87	2	(See Notes)	18'-0	150	14.502	Flow (q) from Route 3 6Tr(2'-0)	
2	8'-6		52.85	2.0030		12'-0	0.022272	0.668		
						30'-0				
2	8'-6		17.38	2	(See Notes)	17'-3½	150	15.170	Flow (q) from Route 2 2E(11'-0)	
3	8'-6		70.22	2.0030		22'-0	0.037685			
						39'-3½		1.480		
3	8'-6			2	(See Notes)	7'-1	120	16.650	E(6'-2), sCV(13'-6½), BV(7'-4½), BOR	
4	1'-0		70.22	2.1570		27'-1	0.039700	3.248		
						34'-2		1.356		
4	1'-0			2	(See Notes)	223'-0½	150	21.254	4E(2'-4½)	
5	-3'-0		70.22	1.6290		9'-5½	0.103109	1.739		
						232'-6		23.973		
5	-3'-0			6	(See Notes)	80'-4	140	46.965	5E(22'-1), BFP(-13.000), S	
6	-3'-0½		70.22	6.2800		110'-4	0.000164	0.020		
						190'-8		13.031		
			0.00					60.016	Hose Allowance At Source	
6			70.22						Total(Pt) Route 1	
102	9'-11	4.9	17.38	1	(See Notes)	11'-9	150	12.576	••••• Route 2 ••••• Sprinkler, 3E(7'-0), T(5'-0)	
2	8'-6		17.38	1.1010		26'-0	0.052458	0.613		
						37'-9		1.981		
								15.170	Total(Pt) Route 2	
103	8'-0½	4.9	17.80	1	(See Notes)	11'-10½	150	13.194	••••• Route 3 ••••• Sprinkler, E(7'-0), T(5'-0)	
7	8'-6		17.80	1.1010		12'-0	0.054837	-0.190		
						23'-10½		1.310		
7	8'-6		18.07	2	(See Notes)	11'-3	150	14.314	Flow (q) from Route 4 3Tr(2'-0)	
1	8'-6		35.87	2.0030		6'-0	0.010876	0.188		
						17'-3				
								14.502	Total(Pt) Route 3	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
104	8'-0½	4.9	18.07	1	(See Notes)	3'-8	150	13.605	••••• Route 4 ••••• Sprinkler, E(7'-0), T(5'-0)
8	8'-6		18.07	1.1010		12'-0	0.056414	-0.190	
						15'-8		0.883	
8	8'-6			2	(See Notes)	3'-2½	150	14.298	Tr(2'-0)
						2'-0	0.003060		
7	8'-6		18.07	2.0030		5'-2½		0.016	
								14.314	Total(Pt) Route 4

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

C Value Multiplier

$$\left(\frac{\text{Actual Inside Diameter}}{\text{Schedule 40 Steel Pipe Inside Diameter}} \right)^{4.87} = \text{Factor}$$

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV Alarm Valve	AngV Angle Valve	b Bushing
BaIV Ball Valve	BFP Backflow Preventer	BV Butterfly Valve
C Cross Flow Turn 90°	cplg Coupling	Cr Cross Run
CV Check Valve	DelV Deluge Valve	DPV Dry Pipe Valve
E 90° Elbow	EE 45° Elbow	Ee1 11¼° Elbow
Ee2 22½° Elbow	f Flow Device	fd Flex Drop
FDC Fire Department Connection	fE 90° FireLock(TM) Elbow	fEE 45° FireLock(TM) Elbow
flg Flange	FN Floating Node	fT FireLock(TM) Tee
g Gauge	GloV Globe Valve	GV Gate Valve
Ho Hose	Hose Hose	HV Hose Valve
Hyd Hydrant	LtE Long Turn Elbow	mecT Mechanical Tee
Noz Nozzle	P1 Pump In	P2 Pump Out
PIV Post Indicating Valve	PO Pipe Outlet	PrV Pressure Relief Valve
PRV Pressure Reducing Valve	red Reducer/Adapter	S Supply
sCV Swing Check Valve	SFx Seismic Flex	Spr Sprinkler
St Strainer	T Tee Flow Turn 90°	Tr Tee Run
U Union	WirF Wirsbo	WMV Water Meter Valve
Z Cap		