PRODUCT DATA BOOK

FOR

BOYD FUNERAL HOME
4800 DOWNMAN RD
NEW ORLEANS, LA 70126

CONTRACTOR: JEFFERSON SPRINKLER, INC
P.O. BOX 129
GRETNA, LA 70054
(504) 393-7699

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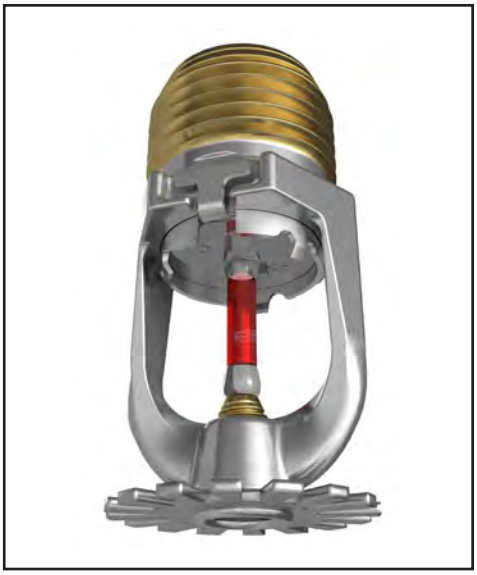
TECHNICAL DATA

VK3021 QUICK RESPONSE PENDENT SPRINKLER (K5.6)

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 VK3021 Quick Response Pendent Sprinkler is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are Listed and Approved as indicated in the Approval Chart.



WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

2. LISTINGS AND APPROVALS

c UL us — UL Listed: Category VNIV

FM APPROVED — FM Approved: Classes 2017, 2015, 2043
Approved for use in FM Approved vacuum dry sprinkler sytems with a maximum supervisory vacuum pressure of -3psi (-207mbar)

Refer to the Approval Chart and Design Criteria for requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Rated to: UL - 250 PSI (24 bar) WWP
FM - 175 PSI (12 bar) WWP
Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2" NPT (15 mm BSPT)
Nominal K-factor: 5.6 U.S. (80.6 metric*)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)

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

Material Standards:
Sprinkler Body: Brass CW602N, UNS-C84400 or QM Brass
Deflector: Stainless Steel UNS S30400
Pip Cap Shell - Stainless Steel UNS-S44400
Pip Cap Disc - Stainless Steel UNS-S30100
Belleville Spring - Nickel Alloy
Pip Cap Seal - Polytetrafluoroethylene (PTFE)
Compression Screw: Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
Shipping Cap: Polyethylene
Bulb: Glass, nominal 3 mm diameter

Finishes and Temperatures:

Finish	Brass	Chrome	White Polyester	Black Polyester	ENT	--
Suffix	A	F	M-/W	M-/B	JN	--
Temperature	135 °F (57 °C)	155 °F (68 °C)	175 °F (79 °C)	200 °F (93 °C)	286 °F (141 °C)	Open
Suffix	A	B	D	E	G	Z

Ordering Information: (Refer to Table 1 and the current Viking List Price Book.)

4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or any other applicable installation standards.

5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap 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

Viking Sprinkler Model VK3021 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.

TECHNICAL DATA

VK3021 QUICK RESPONSE PENDENT SPRINKLER (K5.6)

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
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TABLE 1: ORDERING INFORMATION

Instructions: Using the sprinkler base part number,
(1) add the suffix for the desired Finish
(2) add the suffix for the desired Temperature Rating.

Sprinkler Base Part No.	Size		1: Finishes		2: Temperature Ratings			
	NPT Inch	BSPT mm	Description	Suffix[1]	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature[3]	Suffix
19917	1/2	--	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
19929[7]	--	15	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
23101[7]	1/2		White Polyester [4,6]	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
			Black Polyester [4,6]	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
			ENT [4,5,6]	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
					Open	--	--	Z

Example: 19917MB/W = VK3021 with White Polyester Finish and 155 °F (68 °C) Nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C) meaning if the area will experience temperatures above the maximum ambient rating, you shall use a higher temperature-rated sprinkler.

Accessories

Sprinkler Wrenches (see Figure 1):

A. Installer Wrench: Part No. 22055 (available since 2017).
B. Cabinet Wrench: Part No. 20901M/B (available since 2017).
C. Recessed Socket Wrench: Part No. 20951M/B[2] (available since 2017).
D. Straight Wrench: Part No. 22940MB

Sprinkler Cabinet:

A. Up to 6 sprinklers: Part number 01724A (available since 1971).
B. 6-12 Sprinklers: Part number 01725A (available since 1971).

Footnotes

1. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
2. Requires a 1/2" ratchet which is not available from Viking.
3. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
4. UL Listed as corrosion resistant.
5. FM Approved as corrosion resistant.
6. 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 automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.
7. UL Listed for 250 PSI (17 bar) WWP.

Figure 1: Sprinkler Wrenches

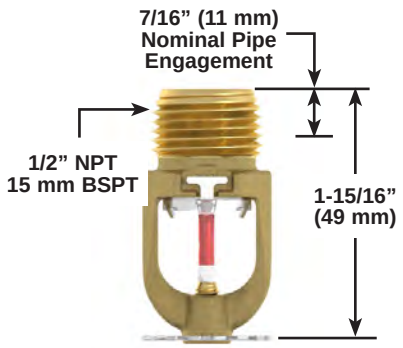

Figure 2: Sprinkler Dimensions

TECHNICAL DATA

VK3021 QUICK RESPONSE PENDENT SPRINKLER (K5.6)

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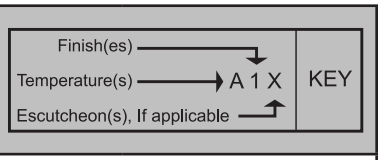
APPROVAL CHART

Viking Quick Response Pendent Sprinkler
VK3021 K5.6 (80.6 metric)



Sprinkler Base Part Number[1]	Thread Size		Listings and Approvals[2]			
	NPT	BSPT	cULus		FM	
	Inch	mm	Approval Code(s)	Maximum WWP	Approval Code(s)	Maximum WWP
19917	1/2	--	A1, B2X, B3Y	175 PSI (12 bar)	A1, B2X, B3Y	175 PSI (12 bar)
19929	--	15	A1, B2X, B3Y	250 PSI (17 bar)	A1, B2X, B3Y	175 PSI (12 bar)
23101	1/2	--	A1, B2X, B3Y	250 PSI (17 bar)	A1, B2X, B3Y	175 PSI (12 bar)

Approved Temperature Rating Codes:

A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)
B = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)

Approved Finish Codes:

1 = Brass, Chrome, White Polyester [3,4], Black Polyester [3,4], and ENT [4,5]
2 = Brass, Chrome, White Polyester [3,4], and Black Polyester [3,4]
3 = ENT [4,5]

Approved Escutcheon Code:

X = Installed with Viking Recessed Escutcheons Models NP-1, NP-2, and NP-3, or Viking Standard Surface Mounted Escutcheons
Y = Installed with Viking Model NP-1 Recessed Escutcheon OR Standard Surface Mounted Escutcheons

Footnotes

1 Base Part number is shown. For complete part number, refer to Viking's current price schedule.
2 This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.
3 Other colors are available upon request with the same Listings and Approvals as the standard colors.
4 cULus Listed as corrosion resistant.
5 FM Approved as corrosion resistant.

DESIGN CRITERIA - UL

cULus Listing Requirements:
The Viking VK3021 Quick Response Pendent Sprinkler is cULus Listed as indicated in Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

- Designed for use in Light and Ordinary occupancies.
- The sprinkler installation rules contained in NFPA 13 for standard spray Pendent sprinklers shall be followed.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

DESIGN CRITERIA - FM

FM Approval Requirements:
The Viking VK3021 Quick Response Pendent Sprinkler is FM Approved as quick response Non-Storage Pendent sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.
NOTE: The FM Installation guidelines may differ from UL and/or NFPA criteria.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

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1. Install the escutcheon inner ring onto the sprinkler threads.

2. Carefully slide the wrench** sideways around the protective cap then push upwards to engage with the sprinkler wrench flats.

3. Install the sprinkler and escutcheon assembly into the pipe fitting. Be sure the escutcheon outer ring contacts the surface of the finished ceiling.

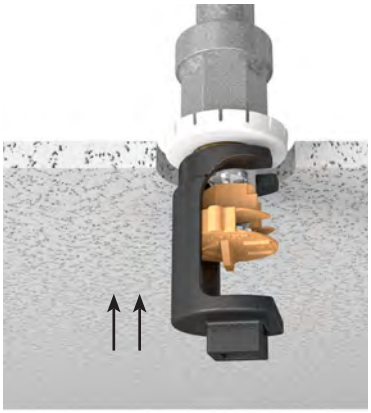

Figure 3: Recessed Installation (with Recessed Socket Wrench)

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

1. Install the escutcheon inner ring onto the sprinkler threads.

2. Carefully slide the wrench sideways around the protective cap then push upwards to engage with the sprinkler wrench flats.

3. Install the sprinkler and escutcheon assembly into the pipe fitting. Be sure the escutcheon outer ring contacts the surface of the finished ceiling.

Figure 4: Recessed Installation (with standard Installer's Wrench)

TECHNICAL DATA

VK3021 QUICK RESPONSE PENDENT SPRINKLER (K5.6)

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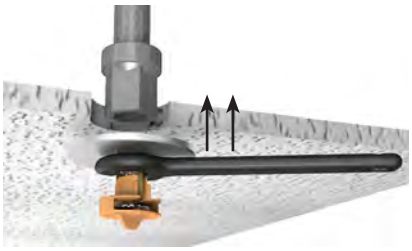
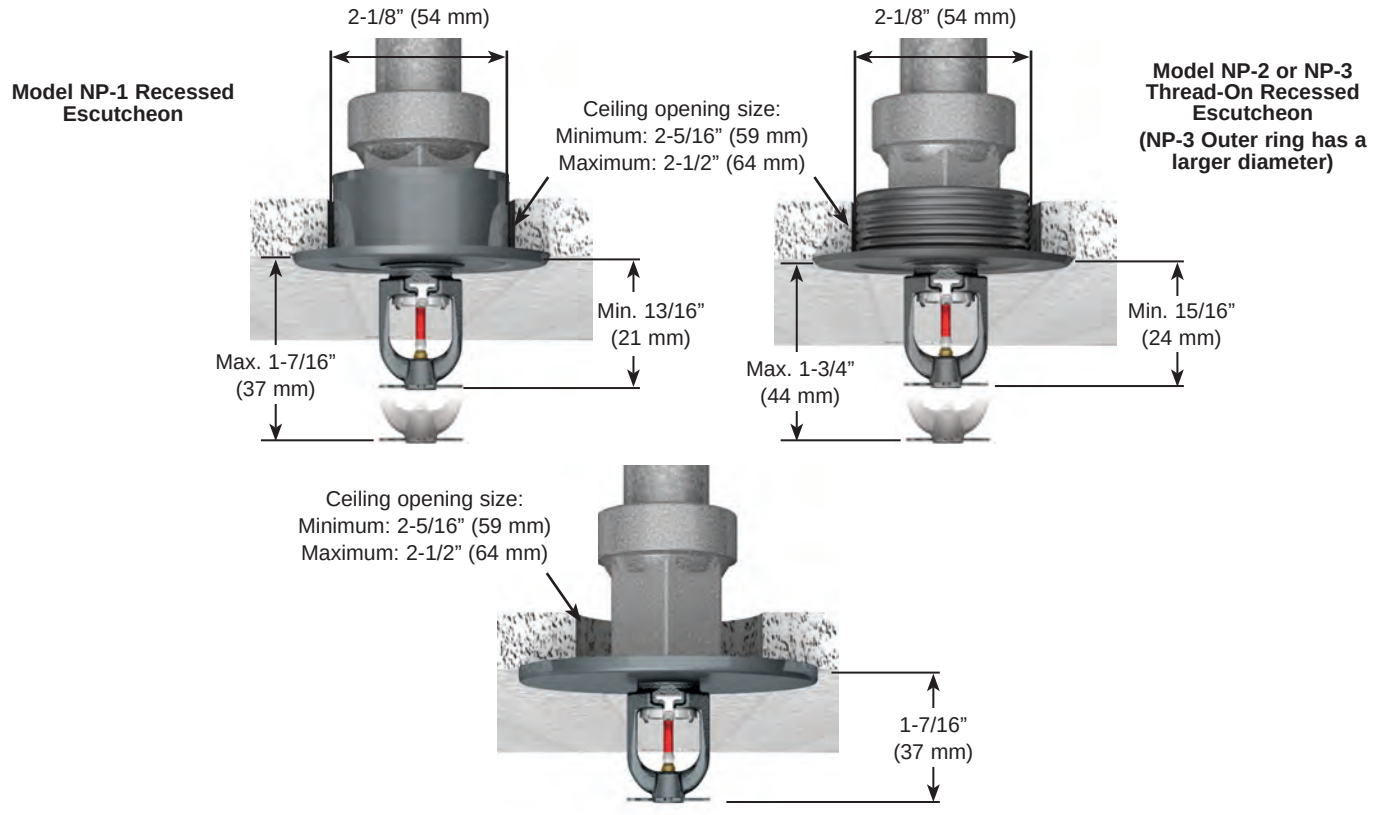
1. Install the escutcheon onto the sprinkler threads.

2. Carefully slide the wrench sideways around the protective cap then push upwards to engage with the sprinkler wrench flats.**



3. Install the sprinkler and escutcheon assembly into the pipe fitting. Be sure the escutcheon contacts the surface of the finished ceiling.

Figure 5: Installation (with Straight Wrench)



Standard Surface-Mounted Escutcheon

Figure 6: Installation Dimensions with Viking Escutcheons

TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (K5.6)

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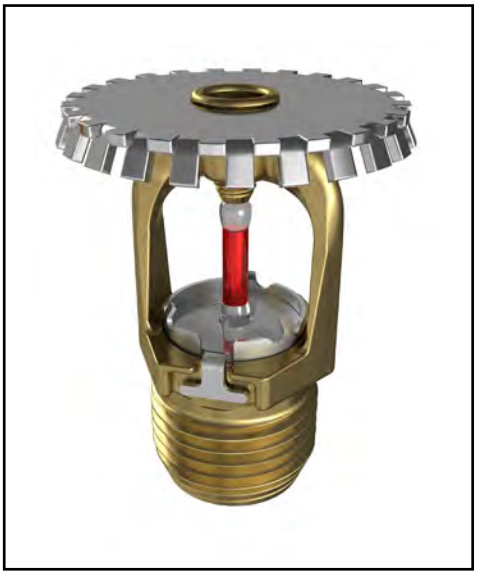
1. DESCRIPTION

The Viking VK3001 Quick Response Upright Sprinkler is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are Listed and Approved as indicated in the Approval Chart.



WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

2. LISTINGS AND APPROVALS

c UL us — UL Listed: Category VNIV

FM APPROVED — FM Approved: Classes 2016, 2043
Approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar).

Refer to the Approval Chart and Design Criteria for requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Rated to: UL - 250 PSI (24 bar) WWP
FM - 175 PSI (12 bar) WWP
Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2" NPT (15 mm BSPT)
Nominal K-factor: 5.6 U.S. (80.6 metric*)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)

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

Material Standards:
Sprinkler Body: Brass CW602N, UNS-C84400 or QM Brass
Deflector: Stainless Steel UNS S30400
Pip Cap Shell - Stainless Steel UNS-S44400
Pip Cap Disc - Stainless Steel UNS-S30100
Belleville Spring - Nickel Alloy
Pip Cap Seal - Polytetrafluoroethylene (PTFE)
Compression Screw: Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
Shipping Cap: Polyethylene
Bulb: Glass, nominal 3 mm diameter

Finishes and Temperatures:

Finish	Brass	Chrome	White Polyester	Black Polyester	ENT	--
Suffix	A	F	M-/W	M-/B	JN	--
Temperature	135 °F (57 °C)	155 °F (68 °C)	175 °F (79 °C)	200 °F (93 °C)	286 °F (141 °C)	Open
Suffix	A	B	D	E	G	Z

Ordering Information: (Refer to Table 1 and the current Viking List Price Book.)

4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or any other applicable installation standards.

5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap 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

Viking Sprinkler Model VK3001 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.

TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (K5.6)

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TABLE 1: ORDERING INFORMATION

Instructions: Using the sprinkler base part number,
(1) add the suffix for the desired Finish
(2) add the suffix for the desired Temperature Rating.

Sprinkler Base Part No.	Size		1: Finishes		2: Temperature Ratings			
	NPT Inch	BSPT mm	Description	Suffix[1]	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature[2]	Suffix
19916	1/2	--	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
19928	--	15	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
23100[6]	1/2		White Polyester [3,5]	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
			Black Polyester [3,5]	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
			ENT [3,4,5]	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
					OPEN	--	--	Z

Example: 19916MB/W = VK3001 with White Polyester Finish and 155 °F (68 °C) Nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C) meaning if the area will experience temperatures above the maximum ambient rating, you shall use a higher temperature-rated sprinkler.

Accessories

Sprinkler Wrenches (see Figure 1):

A. Installer Wrench: Part No. 22055.
B. Cabinet Wrench: Part No. 20901M/B.
C. Straight Wrench: Part No. 22940MB

Sprinkler Cabinet:

A. Up to 6 sprinklers: Part number 01724A.
B. 6-12 Sprinklers: Part number 01725A.

Footnotes

1. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
2. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. UL Listed as corrosion resistant.
4. FM Approved as a corrosion proofing coating for installation in corrosive environments.
5. The corrosion resistant and corrosion proofing 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 automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.
6. UL Listed for 250 PSI (17.2 bar) WWP.

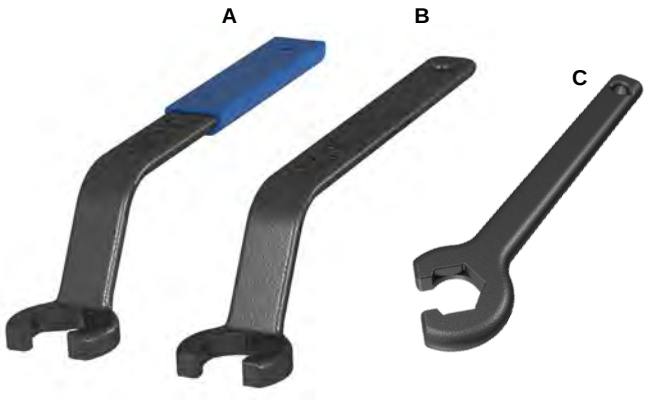

Figure 1: Sprinkler Wrenches

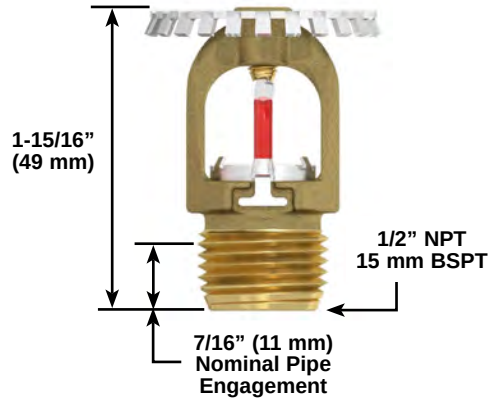

Figure 2: Sprinkler Dimensions

TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (K5.6)

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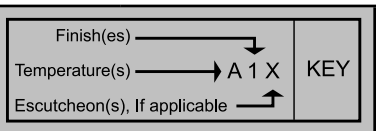
APPROVAL CHART

Viking Quick Response Upright Sprinkler
VK3001 K5.6 (80.6 metric



Sprinkler Base Part Number[1]	Thread Size		Listings and Approvals[2]			
	NPT	BSPT	cULus		FM	
	Inch	mm	Approval Code(s)	Maximum WWP	Approval Code(s)	Maximum WWP
19916	1/2	--	A1	175 PSI (12 bar)	A1	175 PSI (12 bar)
19928	--	15	A1	250 PSI (17.2 bar)	A1	175 PSI (12 bar)
23100	1/2	--	A1	250 PSI (17.2 bar)	A1	175 PSI (12 bar)

Approved Temperature Rating Codes:

A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)

Approved Finish Codes:e

1 = Brass, Chrome, White Polyester [3,4], Black Polyester [3,4], and ENT [4,5]

Footnotes

1 Base Part number is shown. For complete part number, refer to Viking's current price schedule.
2 This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.
3 Other colors are available upon request with the same Listings and Approvals as the standard colors.
4 cULus Listed as corrosion resistant.
5 FM Approved as corrosion-proofing for installation in corrosive environments.

DESIGN CRITERIA - UL

cULus Listing Requirements:

The Viking VK3001 Quick Response Upright Sprinkler is cULus Listed as indicated in Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- The sprinkler installation rules contained in NFPA 13 for standard spray upright sprinklers shall be followed.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

DESIGN CRITERIA - FM

FM Approval Requirements:

The Viking VK3001 Quick Response Upright Sprinkler is FM Approved as quick response Non-Storage upright sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

NOTE: The FM Installation guidelines may differ from UL and/or NFPA criteria.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

VIKING®

TECHNICAL DATA

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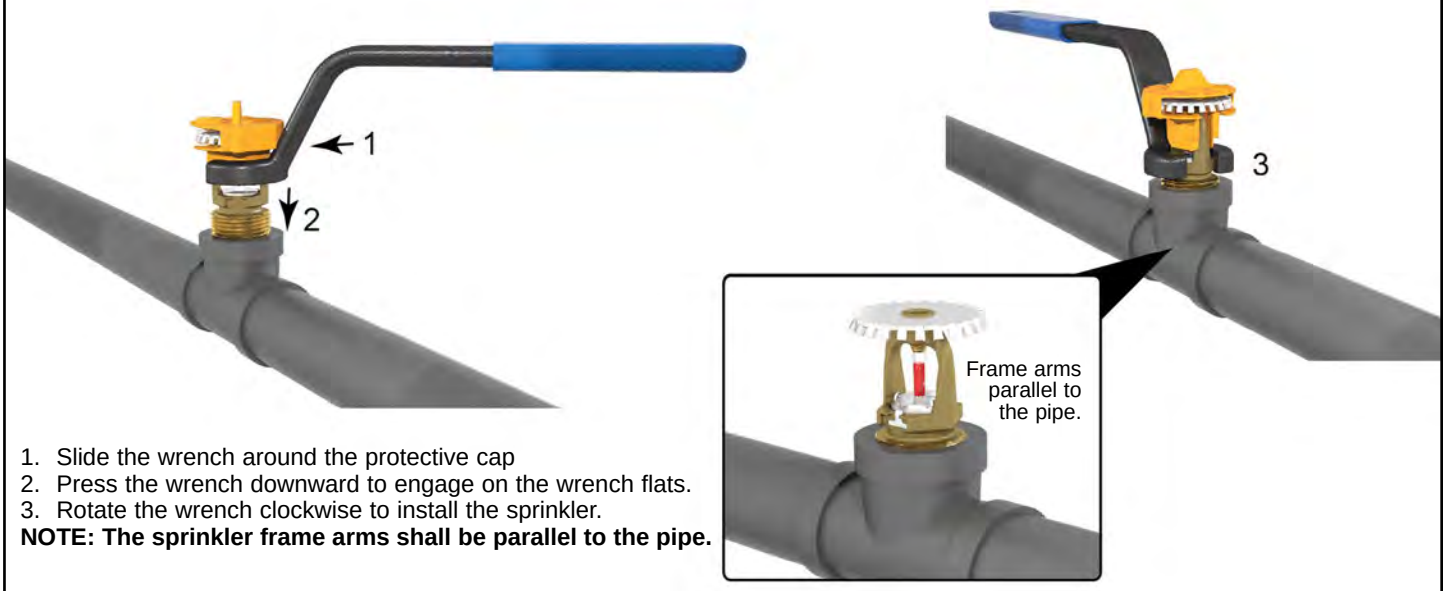
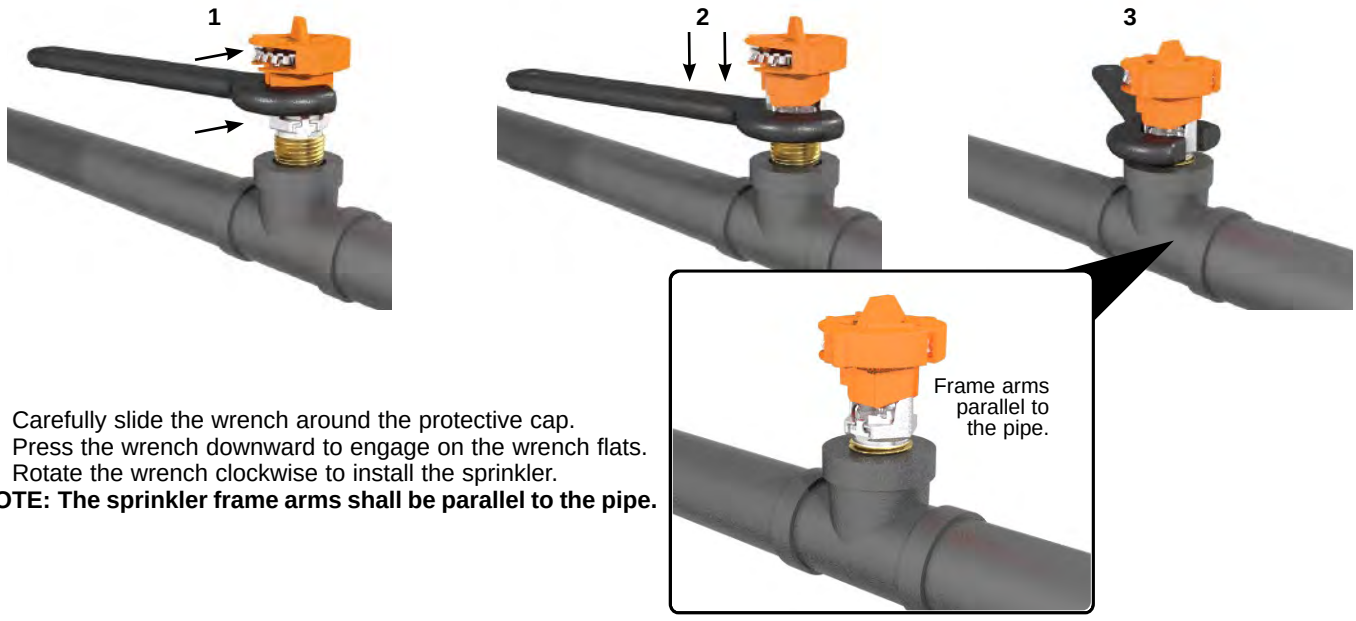


1. Slide the wrench around the protective cap
2. Press the wrench downward to engage on the wrench flats.
3. Rotate the wrench clockwise to install the sprinkler.

NOTE: The sprinkler frame arms shall be parallel to the pipe.

Figure 3: Installation



1. Carefully slide the wrench around the protective cap.
2. Press the wrench downward to engage on the wrench flats.
3. Rotate the wrench clockwise to install the sprinkler.

NOTE: The sprinkler frame arms shall be parallel to the pipe.

Figure 4: Installation (Straight Wrench)

TECHNICAL DATA

SPRINKLER ESCUTCH-EONS

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

Viking sprinkler escutcheons are ornamental plates used with 3/8" NPT (10 mm BSP)*, ½" NPT (15 mm BSP)*, and ¾" NPT (20 mm BSP)* frame-style pendent and sidewall* sprinklers. The escutcheons are installed between the sprinklers and the ceiling or wall for a pleasing appearance. They are available with several finish options to meet design requirements.

Viking recessed and adjustable escutcheons provide a low-profile decorative recessed sprinkler installation. The E-1 Recessed Escutcheon may be recessed up to 5/8" (16 mm). The Model G-1 Recessed Escutcheon allows horizontal sidewall sprinklers to be recessed up to 1/2" (13 mm).

The two-piece design of Viking's recessed and adjustable escutcheons allows installation and testing of the sprinklers prior to installing the ceiling or wall. Viking's Model E-1 and G-1 Escutcheons feature a slip-on design, while the Model E-2 and E-3 escutcheons are threaded (outer cup threads onto the adapter).

The Viking adjustable and recessed escutcheons are made to allow for minor adjustments due to pipe or ceiling pitch. These escutcheons can be removed and reinstalled, allowing access above removable ceiling panels for servicing building equipment without shutting down the sprinkler system and removing the sprinkler.

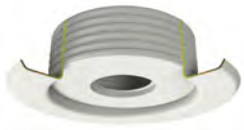
Viking standard 1/8" (3 mm) style flat and 1" (25 mm) style raised surface-mounted escutcheons have a one-piece design.

***Refer to the specific sprinkler technical data page for the escutcheon(s) listed and approved for use with the sprinkler.**

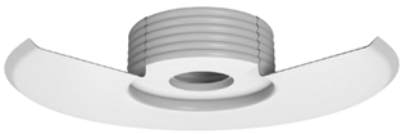
2. LISTINGS AND APPROVALS

Refer to the specific sprinkler technical data pages for sprinkler listings and approvals. Sprinklers must be specifically listed and/or approved for recessed installation. When using Viking Model E-1, E-2, E-3, and G-1 escutcheons for recessed applications, refer to technical data describing the sprinkler model to be used to verify whether the sprinkler is listed and/or approved for recessed installations. **NOTE**: Viking's thread-on style Model E-2 and E-3 Recessed Escutcheons carry the same listings and approvals as the slip-on style Model E-1 Recessed Escutcheons. **Model E-3 Recessed Escutcheon also meets IBC-ASCE/SEI 7 Codes for Seismic Areas C, D, and E.**

E-1 Escutcheon



E-2 Escutcheon



E-3 Escutcheon

Raised Surface Mount Escutcheon

Flat Surface Mount Escutcheon

Expansion Plate

G-1 Escutcheon

WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

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1. DESCRIPTION

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Viking recessed and adjustable escutcheons provide a low-profile decorative recessed sprinkler installation. The E-1 Recessed Escutcheon may be recessed up to 5/8" (16 mm). The Model G-1 Recessed Escutcheon allows horizontal sidewall sprinklers to be recessed up to 1/2" (13 mm).

The two-piece design of Viking's recessed and adjustable escutcheons allows installation and testing of the sprinklers prior to installing the ceiling or wall. Viking's Model E-1 and G-1 Escutcheons feature a slip-on design, while the Model E-2 and E-3 escutcheons are threaded (outer cup threads onto the adapter).

The Viking adjustable and recessed escutcheons are made to allow for minor adjustments due to pipe or ceiling pitch. These escutcheons can be removed and reinstalled, allowing access above removable ceiling panels for servicing building equipment without shutting down the sprinkler system and removing the sprinkler.

Viking standard 1/8" (3 mm) style flat and 1" (25 mm) style raised surface-mounted escutcheons have a one-piece design.

***Refer to the specific sprinkler technical data page for the escutcheon(s) listed and approved for use with the sprinkler.**

2. LISTINGS AND APPROVALS

Refer to the specific sprinkler technical data pages for sprinkler listings and approvals. Sprinklers must be specifically listed and/or approved for recessed installation. When using Viking Model E-1, E-2, E-3, and G-1 escutcheons for recessed applications, refer to technical data describing the sprinkler model to be used to verify whether the sprinkler is listed and/or approved for recessed installations. **NOTE**: Viking's thread-on style Model E-2 and E-3 Recessed Escutcheons carry the same listings and approvals as the slip-on style Model E-1 Recessed Escutcheons. **Model E-3 Recessed Escutcheon also meets IBC-ASCE/SEI 7 Codes for Seismic Areas C, D, and E.**

3. TECHNICAL DATA

Specifications:

A. Slip-on Style Model E-1 Recessed Escutcheons

Depth of Outer Cup: 1-1/16" (27 mm)
Outside Diameter of Outer Cup: 3-1/16" (78 mm)
Depth of Center Adapter Ring: 11/32" (9 mm) +/- 1/32" (1 mm)
Adjustment Range: Flush to 5/8" (16 mm) recessed
NOTE: Escutcheon adapter is stamped "Viking Model E-1".
Available since 1987.

B. Threaded Style Model E-2 Recessed Escutcheons

Depth of Outer Cup: 13/16" (21 mm)
Outside Diameter of Outer Cup: 3-1/8" (80 mm)
Depth of Center Adapter Ring: 21/32" (17 mm)
Adjustment Range: 27/32" (21 mm) total adjustment with ½" (13 mm) maximum recess available. **NOTE**: Face of escutcheon adapter may extend up to 11/32" (9 mm) beyond edge of escutcheon cup.
Available since 2000.

C. Threaded Style Model E-3 Recessed Escutcheons

Depth of Outer Cup: 13/16" (21 mm)
Outside Diameter of Outer Cup: 5-1/8" (130 mm).
Depth of Center Adapter Ring: 21/32" (17 mm)
Adjustment Range: 27/32" (22 mm) total adjustment with ½" (13 mm) maximum recess available. **Note**: Face of escutcheon adapter may extend up to 11/32" (9 mm) beyond edge of escutcheon cup.

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Available since 2012.

D. Slip-on Style Model G-1 Recessed Escutcheons (US Patent No. 8,376,060)

Depth of Outer Cup: 1-1/16" (27 mm)
Outside Diameter of Outer Cup: 4" (102 mm)
Depth of Center Adapter Ring: 1-7/16" (37 mm)
Adjustment Range: Up to 5/8" (16 mm) total adjustment available for use with ceilings sloped up to 8/12 (33.7°). May be recessed up to ½" (13 mm), depending on degree of slope. **NOTE**: The face of escutcheon adapter may extend up to 1/2" (13 mm) beyond the edge of the escutcheon cup.
NOTE: Escutcheon adapter is stamped "Viking Model G-1".
Available since 2007.

E. Expansion Plate (optional)

1. Base Part No. 12620 for use with Model E-1 and E-2 Escutcheons. May also be used with dry recessed sprinklers, dry standard adjustable sprinklers, and flat plate concealed sprinklers.
   Outside Diameter: 5" (127 mm)
   Inside Diameter: 2-3/16" (56 mm)
   Available since 2005.
2. Base Part No. 13128 for use with Domed Concealed Sprinklers.
   Outside Diameter: 5" (127 mm)
   Inside Diameter: 2-15/32" (63 mm) for Part No. 13128.
   Available since 2005.
3. Base Part No. 16340 for use with Concealed Sprinkler VK636.
   Outside Diameter: 5-5/16" (135 mm)
   Inside Diameter: 2-3/8" (61 mm)
   Available since 2010.

F. Standard Flat and Raised Surface-Mounted Escutcheons

Depth of Escutcheons: Flat: 1/8" (3 mm), Raised: 1" (25 mm)
Available since 1972.

Material Standards:

A. Slip-on Style Model E-1 Recessed Escutcheons:
Cold Rolled Steel UNS-G10080 or Stainless Steel UNS-S30400

B. Threaded Style Model E-2 and E-3 Recessed Escutcheons:
24 ga. (1 mm) thick 1010-1018 mild steel

C. Model G-1 Recessed Escutcheons
Adjustable Escutcheons: Cold Rolled Steel UNS-G10080

D. Expansion Plate (optional): Cold Rolled Steel UNS-G10080

E. Standard Flat and Raised Surface-Mounted Escutcheons:
Flat Style Part Numbers 01960A, 01015A, 02960A, and 05464A: Cold Rolled Steel UNS-G10080.
Flat Style Part Numbers 09488, 07526, and 09596*: Stainless Steel UNS-S43000
* These may also be special ordered and manufactured from Brass (nonmagnetic material). Contact the manufacturer for more information.
Raised Style Part Numbers 01961B and 01016A: Brass UNS-C26000 or UNS-C26800.

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

Viking recessed and adjustable escutcheons are available as escutcheon packages (includes outer cup and adapter). Order Viking escutcheons by adding the appropriate suffix for the finish to the base part number.

A. Model E-1, E-2, E-3, and G-1 Recessed Escutcheons: To order as an escutcheon package (includes outer cup and adapter), specify the appropriate package part number from Table 1.

B. Standard Flat and Raised Surface-Mounted Escutcheons: Specify the flat or raised escutcheon part number from Table 1. Finish Suffix: Bright Brass = B, Polished Chrome = F, White Polyester = M-/W, and Black Polyester = M-/B.

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For example, the Model E-1 Recessed Escutcheon for 1/2" NPT sprinkler, Brass finish = Part No. 06419AB. The 1/2" Model E-1 Recessed Escutcheon is also available in Antique Brass, Brushed Copper, Brushed Chrome, and Brushed Brass as standard finishes.

NOTE: Sprinklers are not included and must be ordered separately.

4. INSTALLATION

A. If the proposed installation of Model E-1, E-2, E-3, or G-1 Escutcheons requires recessing any of the heat-sensitive operating element, some Authorities Having Jurisdiction may limit the use, depending on the occupancy classification. Refer to the Authority Having Jurisdiction prior to installation. The use of quick response sprinklers may also be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

B. All escutcheon styles are made to thread onto the sprinkler head prior to installing the sprinkler into the fitting. The escutcheon must be attached to the sprinkler prior to applying pipe-joint compound or PTFE tape to the sprinkler threads. **NOTE**: Sprinklers with protective caps or bulb shields must be contained within the caps or shields before applying pipe-joint compound or tape.

C. Refer to the appropriate sprinkler technical data page for additional warnings and installation instructions and then install the escutcheons according to the following sequence.

D. Model E-1, E-2, E-3, and G-1 Recessed Escutcheons:

(Refer to Figures 1-5.)

Step 1: Install all piping and cut the sprinkler nipple so that the reducing coupling is at the desired location and centered in a minimum 2-5/16" (59 mm) to a maximum 2-1/2" (64 mm) diameter opening in the ceiling or wall for Model E-1 or E-2 Escutcheons, 2-5/16" (59 mm) to 4-1/2" (115mm) for Model E-3, or 2-5/8" (66 mm) to 3-3/4 (95 mm) for Model G-1 Escutcheons.

Step 2: Secure the escutcheon adapter onto the sprinkler by hand turning the adapter clockwise onto the sprinkler threads. The face of the adapter should rest on the shoulder of the sprinkler wrench boss.

Step 3: Apply a small amount of pipe-joint compound or PTFE tape to the external threads of the sprinkler only, taking care not to allow a build-up of compound in the sprinkler inlet. **NOTE**: Sprinklers with protective caps or bulb shields must be contained within the caps or shields before applying pipe-joint compound or tape.

Step 4: Install the sprinkler into the coupling using the special recessed sprinkler wrench only, taking care not to over-tighten or damage the sprinkler operating parts. DO NOT use the escutcheon, sprinkler deflector, or fusible element to start or thread the sprinkler into a fitting.

Step 5: Test the system as required and repair all leaks. If a thread leak occurs, normally the unit must be removed, new pipe-joint compound or PTFE tape applied, and then reinstalled. This is due to the fact that when the joint seal leaks, the sealing compound or tape is washed out of the joint.

Step 6: **Remove plastic protective sprinkler caps and bulb shields AFTER the wall or ceiling finish work is completed where the sprinkler is installed and there no longer is a potential for mechanical damage to the sprinkler operating elements.** To remove the bulb shields, simply pull the ends of the shields apart where they are snapped together. To remove caps from frame style sprinklers, turn the caps slightly and pull them off the sprinklers. **SPRINKLER CAPS AND BULB SHIELDS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!** Retain a protective cap in the spare sprinkler cabinet.

Step 7: After installing the ceiling or wall with the required opening size, press on or thread on (depends on the style of escutcheon used) the outer escutcheon cup until the flanges touch the surface of the ceiling or wall.

(**NOTE**: If the optional escutcheon expansion plate is used, first slide it onto the escutcheon cup. The flange on the expansion plate should touch the surface of the ceiling or wall.)

With the slip-on style Model E-1 Recessed Escutcheon, the maximum adapter recess is 5/8" (16 mm).

With the threaded style Model E-2 and E-3 Recessed Escutcheons, the maximum recess is ½" (13 mm). **Note**: The face of the escutcheon adapter may extend up to 11/32" (9 mm) beyond edge of escutcheon cup, resulting in 27/32" (21 mm) total adjustment range.

With the slip-on style Model G-1 Recessed Escutcheon, the maximum adapter recess is 1/2" (13 mm).

DO NOT modify the unit. If necessary, re-cut the sprinkler drop nipple as required.

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E. Standard Flat and Raised Surface-Mounted Escutcheons:

Step 1: Install all piping and cut the sprinkler nipple so that the reducing coupling is at the desired location and centered in a maximum 2-1/2" (64 mm) diameter opening in the ceiling or wall.

Step 2: Secure the escutcheon onto the sprinkler by hand turning the escutcheon clockwise onto the sprinkler threads. (The convex surface of the escutcheon must face toward the deflector of the sprinkler.)

Step 3: Apply a small amount of pipe-joint compound or PTFE tape to the external threads of the sprinkler only, taking care not to allow a build-up of compound in the sprinkler inlet. **NOTE**: Sprinklers with protective caps or bulb shields must be contained within the caps or shields before applying pipe-joint compound or tape.

Step 4: Install the sprinkler into the coupling using the special sprinkler wrench only, taking care not to over-tighten or damage the sprinkler operating parts. DO NOT use the escutcheon, sprinkler deflector, or fusible element to start or thread the sprinkler into a fitting.

Step 5: After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the installation standards. Make sure the sprinkler is properly tightened. If a thread leak occurs, normally the unit must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal leaks, the sealing compound or tape is washed out of the joint.

Step 6: **Remove plastic protective sprinkler caps and bulb shields AFTER the wall or ceiling finish work is completed where the sprinkler is installed and there no longer is a potential for mechanical damage to the sprinkler operating elements.** To remove the bulb shields, simply pull the ends of the shields apart where they are snapped together. To remove caps from frame style sprinklers, turn the caps slightly and pull them off the sprinklers. **SPRINKLER CAPS AND BULB SHIELDS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!** Retain a protective cap in the spare sprinkler cabinet.

DO NOT modify the unit. If necessary, re-cut the sprinkler drop nipple as required.

F. Disassembly:

The outer cups of Viking adjustable and recessed escutcheons can be removed and reinstalled without removing the sprinklers to allow access above the ceiling or to replace it, if necessary.

1. For slip-on style Model E-1 or G-1 Recessed Escutcheons, remove the outer cup simply by pulling it outward and away from the wall or ceiling.
2. To remove the outer cup of the threaded style Model E-2 and E-3 Recessed Escutcheons, turn it counterclockwise to unthread it from the adapter.

If it is necessary to remove the entire unit, the system must be removed from service. Refer to maintenance instructions on the appropriate sprinkler technical data page and follow all warnings and instructions.

5. OPERATION

Refer to the sprinkler technical data page for the sprinkler model used.

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

Viking sprinklers and escutcheons are 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.

VIKING®

TECHNICAL DATA

SPRINKLER ESCUTCH-EONS

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Base Part Number	Material	Style	Sprinkler Thread Size	Available Finishes	Outside Diameter
Standard Flat and Raised Surface-Mounted Escutcheons					
01960A	Steel	Flat	1/2” (15 mm)	B, F	3-5/16” (84 mm)
09488	Stainless Steel††	Flat	1/2” (15 mm)	F, JN	3-5/16” (84 mm)
01015A	Steel	Flat	3/4” (20 mm)	F	3-5/16” (84 mm)
02960A	Steel	Flat	1/2” (15 mm)	B, F, M/W, M/B	2-3/4” (70 mm)
07526	Stainless Steel††	Flat	1/2” (15 mm)	F, M/W, JN	2-3/4” (70 mm)
05464A	Steel	Flat	3/4” (20 mm)	B, F, M/W	2-3/4” (70 mm)
09596	Stainless Steel††	Flat	3/4” (20 mm)	F, JN	2-3/4” (70 mm)
01961B	Brass	Raised	1/2” (15 mm)	F	3-1/16” (78 mm)
01016A	Brass	Raised	3/4” (20 mm)	F	3-1/16” (78 mm)
E-1 Slip-on Style Recessed Escutcheon Packages (includes adapter and outer cup)					
11123	Steel	Recessed Slip-on	3/8” (10 mm)	F, M/W	3-1/16” (78 mm)
06419A	Steel	Recessed Slip-on	1/2” (15 mm)	B, F, M/W, M/B	3-1/16” (78 mm)
07902	Stainless Steel	Recessed Slip-on	1/2” (15 mm)	F, M/W, JN	3-1/16” (78 mm)
20123	Stainless Steel	Recessed Slip-on	3/4” (20 mm)	F, M/W, JN	3-1/16” (78 mm)
20369	Steel	Recessed Slip-on	3/4” (20 mm)	B, F, M/W, M/B	3-1/16” (78 mm)
E-2 Threaded Style Recessed Escutcheon Packages (includes adapter and outer cup)					
11038	Steel	Recessed Threaded	1/2” (15 mm)	F, M/W	3-1/8” (79 mm)
20130	Steel	Recessed Threaded	3/4” (20 mm)	F, M/W	3-1/8” (79 mm)
E-3 Threaded Style Recessed Escutcheon Packages (includes adapter and outer cup)					
18347	Steel	Recessed Threaded	1/2” (15 mm)	F, M/W	5 -1/8” (130mm)
20135	Steel	Recessed Threaded	3/4” (20 mm)	F, M/W	5 -1/8” (130mm)
G-1 Recessed Escutcheon Package (includes adapter and outer cup)					
14315	Steel	Recessed Slip-on	1/2” (15 mm)	B, F, M/W, M/B	4” (102 mm)
20133	Steel	Recessed Slip-on	3/4” (20 mm)	B, F, M/W, M/B	4” (102 mm)
Optional Expansion Plates Available Separately					
12620	Steel	E-1, E-2 Recessed	3/8”, 1/2”, & 3/4” (10, 15, & 20 mm)	B, F, M/W, M/B, M/SW1641, B/B, F/B, E/B	5” (127 mm)
13128	Steel	Domed Concealed	1/2” & 3/4” (15 & 20 mm)	F, M/W	5” (127 mm)
16340	Steel	Concealed (for Sprinkler VK636)	3/4” (20 mm)	F, M/W	5-5/16” (135 mm)

Escutcheon Finishes: B = Bright Brass, F = Polished Chrome, M/W = White Polyester, M/B = Black Polyester, JN = Electroless Nickel PTFE, M/SW1641 = Navajo White Paint, B/A = Antique Brass, B/B = Brushed Brass, F/B = Brushed Chrome, E/B = Brushed Copper. **Note**: Other colors are available on request with the same listings and approvals as the standard colors. See Sherwin-Williams® Color Answers™ Interior Color Selection color chart.

††Escutcheons 09488, 07526, and 09596 may also be special ordered and manufactured from Brass (non-magnetic material). Contact the manufacturer for more details.

Table 1

TECHNICAL DATA

SPRINKLER ESCUTCH-EONS

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IMPORTANT NOTES

Per the current edition of NFPA 13: "Escutcheons used with recessed, flush-type, or concealed sprinklers shall be part of a listed sprinkler assembly." The Viking Corporation will not authorize the sale of unlisted recessed sprinkler assemblies nor assume any liability involving recessed sprinkler assemblies that are not considered cULus Listed, FM Approved, or in full compliance with NFPA requirements".

Listings and approvals vary, depending on the sprinkler model, temperature rating, finish, and occupancy classification.

WARNING **Viking products are manufactured and tested to meet the rigid requirements of the approving agency. The sprinklers are designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the sprinkler after it leaves the factory including, but not limited to: painting , plating, coating, or modification, may render the sprinkler inoperative and will nullify the approval and any guarantee made by The Viking Corporation.**

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to the appropriate sprinkler data page. Viking sprinklers are designed to be installed in accordance with the latest edition of Viking technical data, the latest standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards whenever applicable. The use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

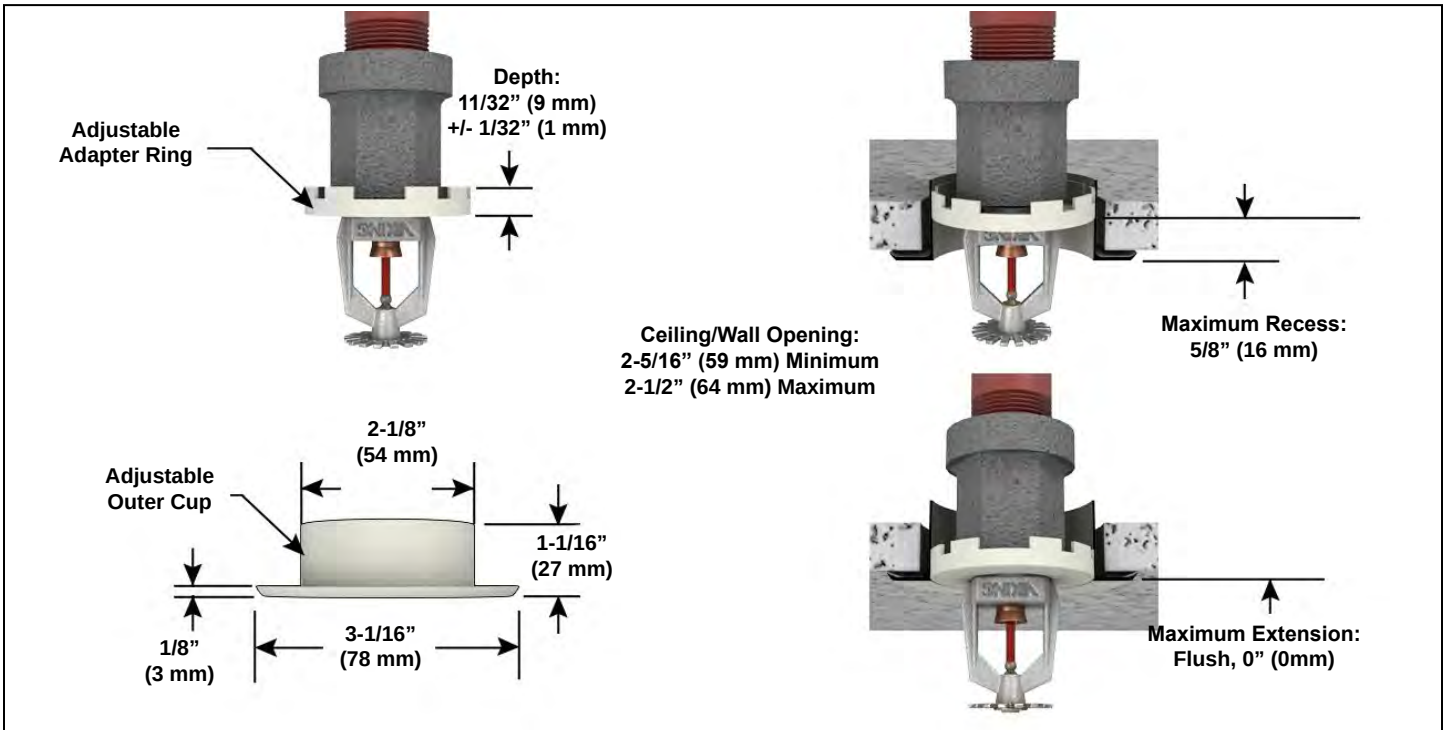

Figure 1: Installation of a Slip-on Style Model E-1 Recessed Escutcheon with 5/8" (16 mm) Maximum Recess.

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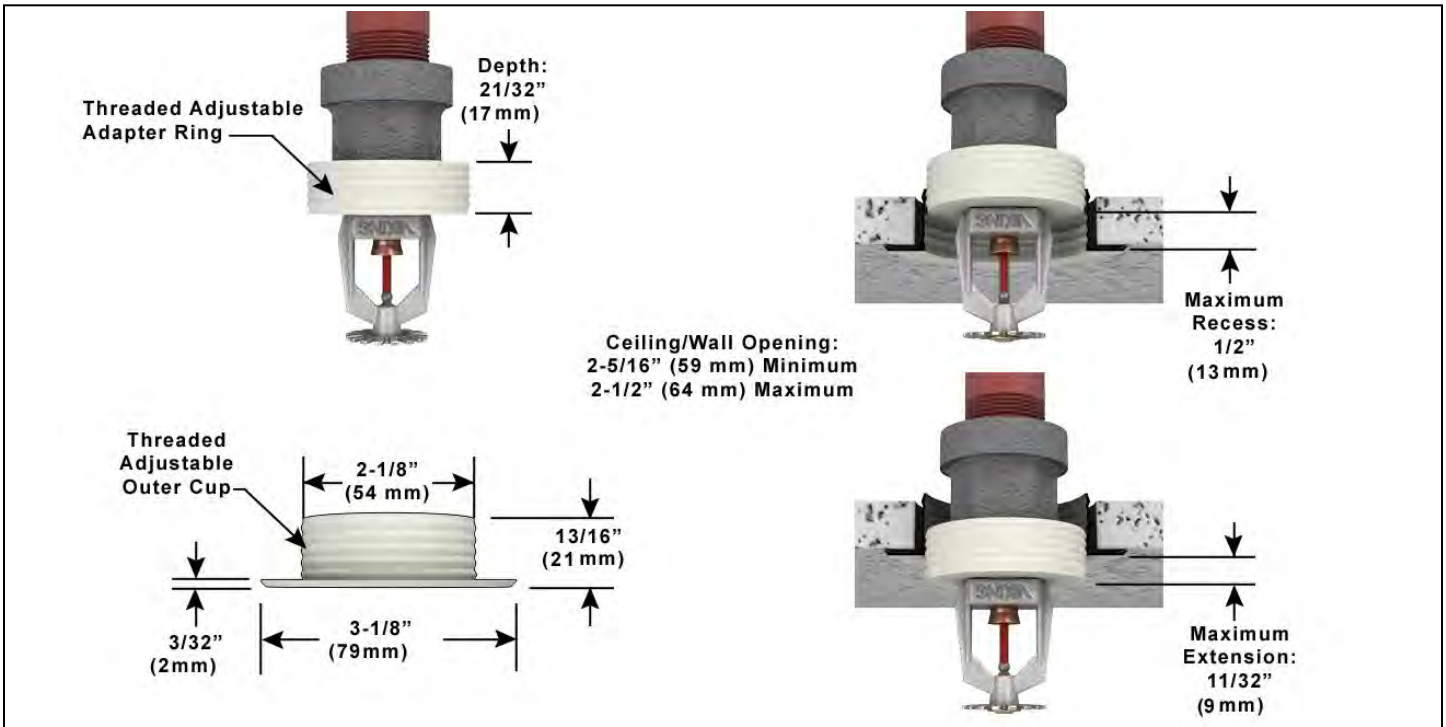

Figure 2: Installation of a Thread-on Style Model E-2 Recessed Escutcheon with 27/32" (21 mm) Total Adjustment.

Model E-3 Recessed Escutcheon meets IBC-ASCE/SEI 7 Codes for Seismic Areas C, D, and E

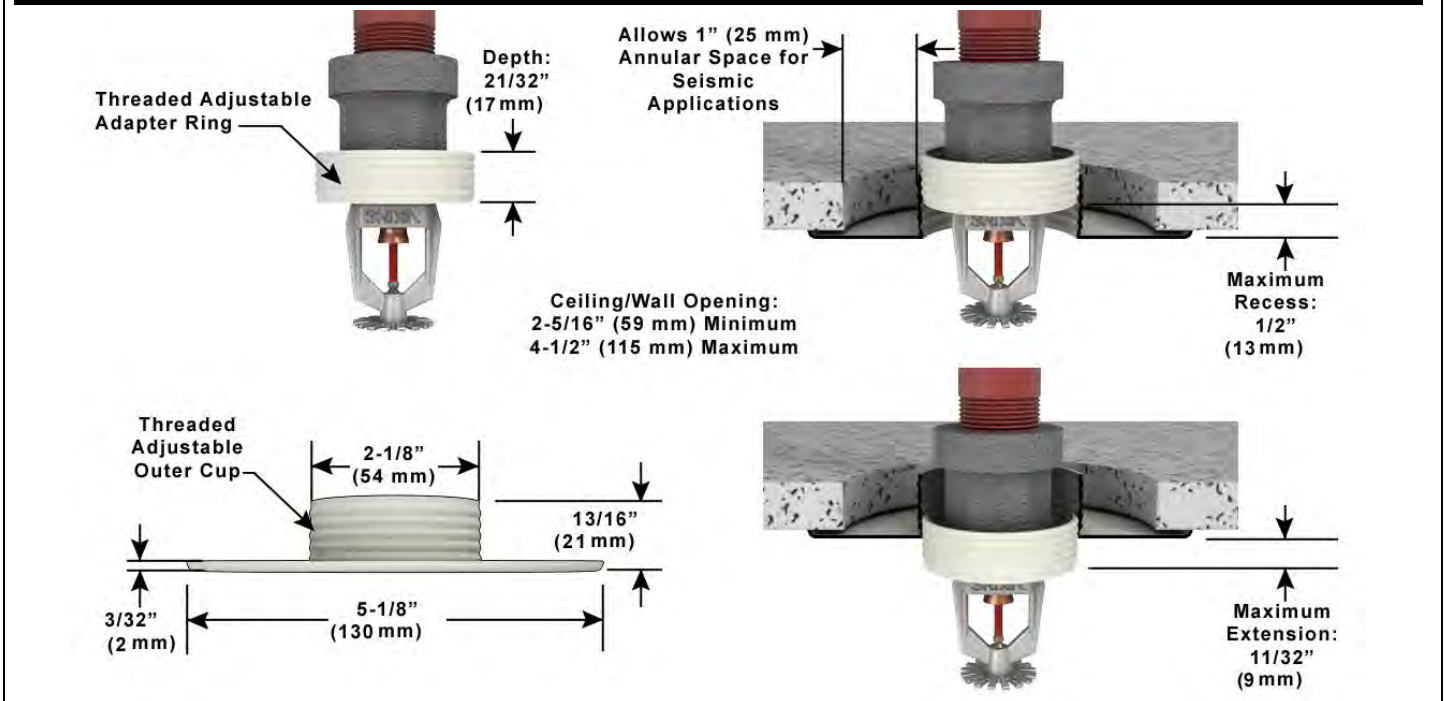

Figure 3: Installation of a Thread-on Style Model E-3 Recessed Escutcheon with 27/32" (21 mm) Total Adjustment.

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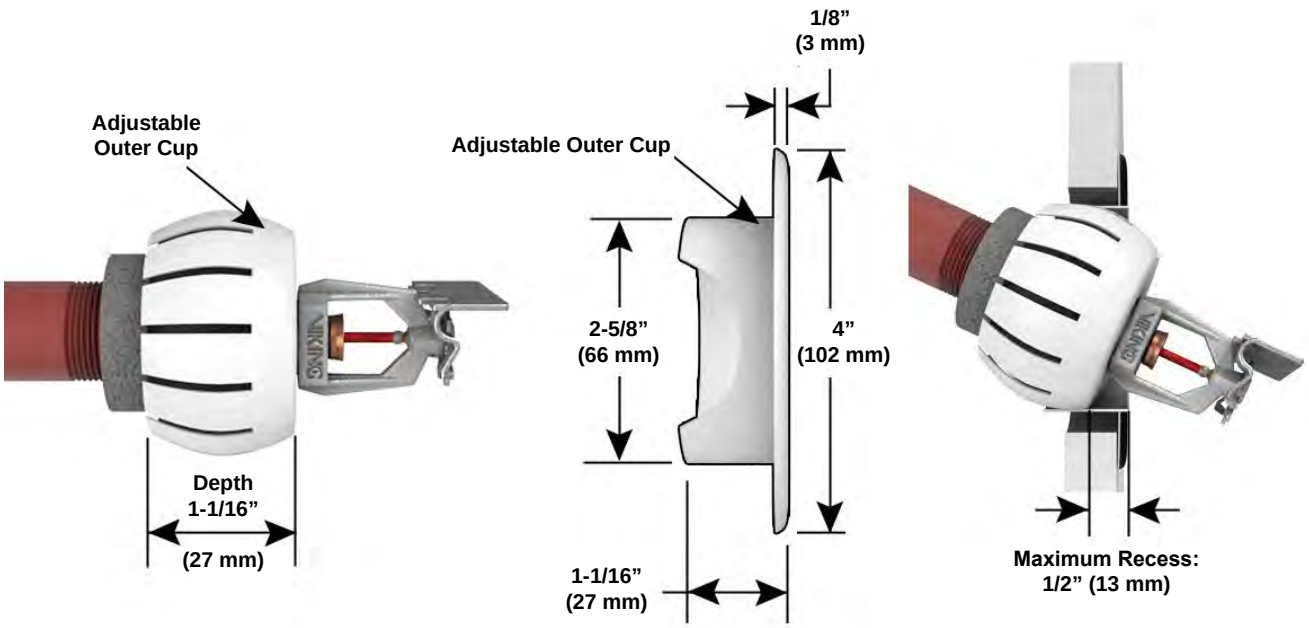

Figure 4: Installation of the Model G-1 Recessed Escutcheon with up to 1/2" (12.7 mm) Adjustment.

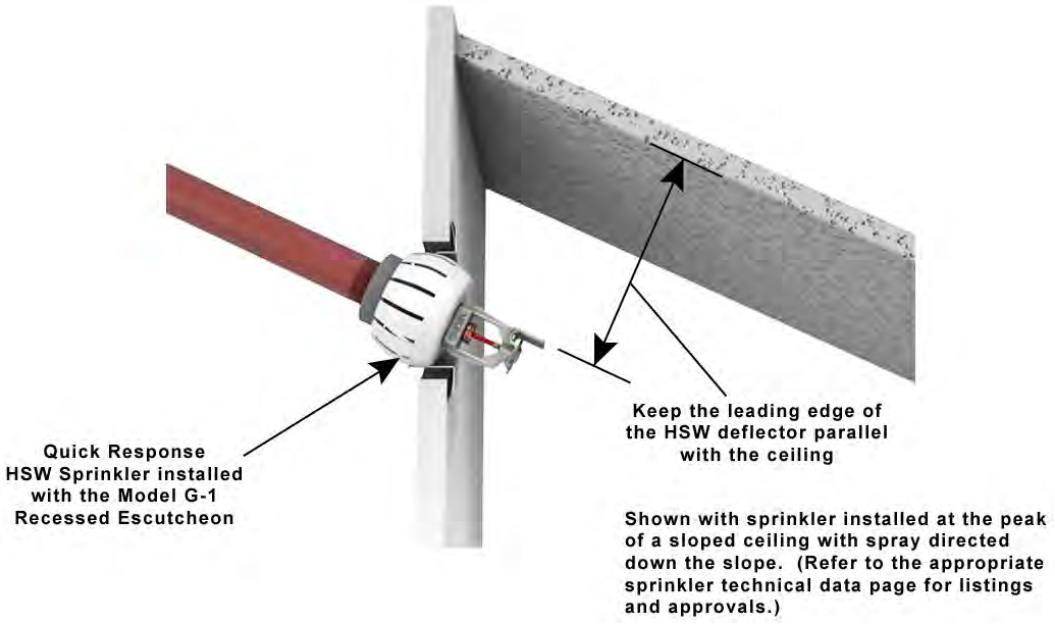

Figure 5: Model G-1 Recessed Escutcheon Installed with a Residential HSW Sprinkler below a sloped ceiling.

Fire Sprinkler Pipe

Schedule 10 and Schedule 40

Submittal Data Sheet

FM Approved and Fully Listed Sprinkler Pipe
Wheatland Tube's Schedule 10 and Schedule 40 steel fire sprinkler pipe is FM Approved and UL® and C-UL Listed.

Approvals and Specifications
Schedule 10 and Schedule 40 meet or exceed the following standards:

- ASTM A135, Type E, Grade A (Schedule 10, 1–8 NPS)
- ASTM A795, Type E, Grade A (Schedule 40, 1–2 NPS)
- ASTM A53, Type E, Grade B (Schedule 40, 2–8 NPS)
- ASTM A53, Type F, Grade A (Schedule 40, 1–4 NPS)
- NFPA® 13 and NFPA 14

Manufacturing Protocols
Schedule 10 and Schedule 40 are subjected to the toughest possible testing protocols to ensure the highest quality and long-lasting performance.

Finishes and Coatings
All Wheatland black steel fire sprinkler pipe receives a proprietary mill coating to ensure a clean, corrosion-resistant surface that outperforms and outlasts standard lacquer coatings. This coating allows the pipe to be easily painted, without special preparation. Schedule 10 and Schedule 40 can be ordered in black or hot-dip galvanized, to meet FM/UL requirements for dry systems that meet the zinc coating specifications of ASTM A795 or A53.

Product Marking
Each length of Wheatland fire sprinkler pipe is continuously stenciled to show the manufacturer, type of pipe, grade, size and length. Bar coding is acceptable as a supplementary identification method.

SUBMITTAL INFORMATION

PROJECT: _____ CONTRACTOR: _____ DATE: _____

ENGINEER: _____ SPECIFICATION REFERENCE: _____ SYSTEM TYPE: _____

LOCATIONS: _____ COMMENTS: _____

☐ BLACK ☐ HOT-DIP GALVANIZED

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Fire Sprinkler Pipe

Schedule 10 and Schedule 40

Submittal Data Sheet

SCHEDULE 10 WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.097	27.9	0.109	2.77	1.405	1.814	70	2065	2360	2459	11.4
1¼	1.660	42.2	1.442	36.6	0.109	2.77	1.807	2.514	61	2315	2645	2756	7.3
1½	1.900	48.3	1.682	42.7	0.109	2.77	2.087	3.049	61	2673	3055	3183	5.8
2	2.375	60.3	2.157	54.8	0.109	2.77	2.640	4.222	37	2051	2344	2442	4.7
2½	2.875	73.0	2.635	66.9	0.120	3.05	3.354	5.895	30	2226	2544	2651	3.5
3	3.500	88.9	3.260	82.8	0.120	3.05	4.336	7.949	19	1730	1977	2060	2.6
4	4.500	114.3	4.260	108.2	0.120	3.05	5.619	11.789	19	2242	2562	2669	1.6
5	5.563	141.3	5.295	134.5	0.134	3.40	7.780	17.309	13	2124	2427	2529	1.5
6	6.625	168.3	6.357	161.5	0.134	3.40	9.298	23.038	10	1953	2232	2325	1.0
8	8.625	219.1	8.249	209.5	0.188	4.78	16.960	40.086	7	2493	2849	2968	2.1

SCHEDULE 40 WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.049	26.6	0.133	3.38	1.68	2.055	70	2470	2822	2940	1.000
1¼	1.660	42.2	1.380	35.1	0.140	3.56	2.27	2.922	51	2431	2778	2894	1.000
1½	1.900	48.3	1.610	40.9	0.145	3.68	2.72	3.602	44	2513	2872	2992	1.000
2	2.375	60.3	2.067	52.5	0.154	3.91	3.66	5.109	24	1845	2108	2196	1.000
2½	2.875	73.0	2.469	62.7	0.203	5.16	5.80	7.871	20	2436	2784	2900	1.000
3	3.500	88.9	3.068	77.9	0.216	5.49	7.58	10.783	13	2069	2365	2464	1.000
3½	4.000	101.6	3.548	90.1	0.226	5.74	9.12	13.400	10	1915	2189	2280	1.000
4	4.500	114.3	4.026	102.3	0.237	6.02	10.80	16.311	10	2268	2592	2700	1.000
5	5.563	141.3	5.047	158.2	0.258	6.55	14.63	23.262	7	2151	2458	2560	1.000
6	6.625	168.3	6.065	154.1	0.280	7.11	18.99	31.498	5	1994	2279	2374	1.000
8**	8.625	219.1	7.981	202.7	0.322	8.18	28.58	50.240	5	3001	3430	3573	1.000

** Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY. The CRR is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).*

*** 8 NPS Schedule 40 is FM Approved but not UL Listed.*

WFS-060520

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SECTION 6 STANDARD CAST IRON PIPE FITTINGS CLASS 125, 250

The iron from which Class 125 cast iron fittings are made is held to strict formula by careful chemical analysis and control.

Tapping is done on the most modern machines. All tappings are to USA Standards for iron pipe threads. Straightness and correct depth of threads is assured through continuous capable inspection, by careful trained inspectors.

Every fitting is hand sorted and inspected to eliminate defective castings.

WARD fittings are made to specifications published as American National Standards for pipe fittings.

A chamfer is cut or cast in all openings, permitting easy entrance of pipe and preventing damage to the first thread in handling and threading.

Because of the close attention paid to formula control and the use of modern precision equipment we are able to produce castings of rugged strength and the ability to make a water tight seal.

NPS	O.D. of Band (min)	Thread Length (min)	Metal Thickness (min)
1/4	0.97	0.36	0.11
3/8	1.16	0.40	0.12
1/2	1.38	0.47	0.13
3/4	1.67	0.54	0.15
1	1.99	0.62	0.17
1 1/4	2.43	0.71	0.18
1 1/2	2.72	0.74	0.20
2	3.32	0.79	0.22
2 1/2	3.90	0.96	0.24
3	4.66	1.02	0.26
3 1/2	5.24	1.07	0.28
4	5.83	1.12	0.31

TEMPERATURE-PRESSURE RATING

	PSI	
Temp F°	CLASS 125	CLASS 250
-20 TO 150	175	400
200	165	370
250	150	340
300	140	310
350	125 (Note1)	300
400	—	250 (Note 2)

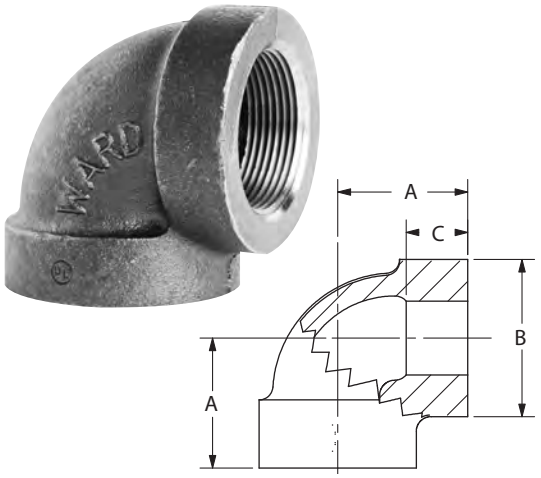
Notes:
1) Permissible for service temperature up to 360° F reflecting temperature of saturated steam at 125 psi.

2) Permissible for service temperature up to 406° F reflecting temperature of saturated steam at 250 psig.

Material:	**ASTM A126 Class A Minimum**
Dimensions:	**ANSI/ASME B16.4** **ANSI/ASME B1.20.1**
Pressure Ratings:	**ANSI/ASME B16.4**
Coatings:	**ASTM A153** **ASTM B633**
Additional Specifications:	**UL, ULC, FM, NSF 61 and NSF 61 Annex G where applicable**

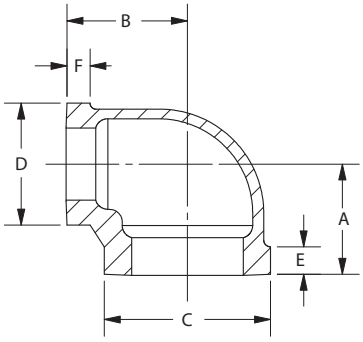
CAST IRON 90° STRAIGHT ELL CLASS 125

NPS	Center to End A	Outside Dia.of Band B (min)	Thread Length C (min)	Take Out
1/4	0.81	0.93	0.32	0.408
3/8	0.95	1.12	0.36	0.5
1/2	1.12	1.34	0.43	0.58
3/4	1.31	1.63	0.50	0.76
1	1.50	1.95	0.58	0.81
1 1/4	1.75	2.39	0.67	1.04
1 1/2	1.94	2.68	0.70	1.21
2	2.25	3.28	0.75	1.49
2 1/2	2.70	3.86	0.92	1.56
3	3.08	4.62	0.98	1.88
3 1/2	3.42	5.20	1.03	2.17
4	3.79	5.79	1.08	2.49
5	—	—	—	—
6	—	—	—	—
8	—	—	—	—



CAST IRON 90° REDUCING ELL CLASS 125

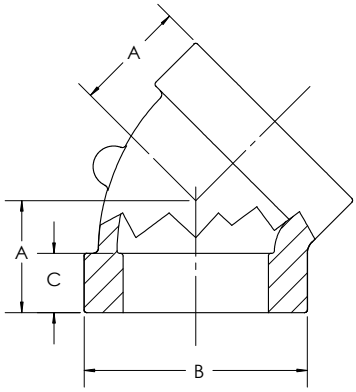
NPS	Center to End A	Center to End B	Outside Dia. of Band C (min)	Outside Dia. of Band D (min)	Length of Threads E (min)	Length of Threads F (min)	Take Out	Take Out
1/2 x 3/8	—	—	—	—	—	—	—	—
1/2 x 1/4	—	—	—	—	—	—	—	—
3/4 x 1/2	1.20	1.22	1.63	1.34	0.50	0.43	0.6	0.68
*3/4 x 3/8	1.20	1.22	1.63	1.12	0.50	0.36	0.6	0.81
1 x 3/4	1.37	1.45	1.95	1.63	0.58	0.50	0.6	0.90
1 x 1/2	1.26	1.36	1.95	1.34	0.58	0.43	0.5	0.82
1 1/4 x 1	1.58	1.67	2.39	1.95	0.67	0.58	0.8	0.98
1 1/4 x 3/4	1.45	1.62	2.39	1.63	0.67	0.50	0.7	1.07
1 1/4 x 1/2	1.34	1.53	2.39	1.34	0.67	0.43	0.6	0.99
1 1/2 x1 1/4	1.82	1.88	2.68	2.39	0.70	0.67	1.09	1.17
1 1/2 x 1	1.65	1.80	2.68	1.95	0.70	0.58	0.92	1.11
1 1/2 x 3/4	1.52	1.75	2.68	1.63	0.70	0.50	0.79	1.20
1 1/2 x 1/2	1.41	1.66	2.68	1.34	0.70	0.43	0.79	1.21
2 x 1 1/2	2.02	2.16	3.28	2.68	0.75	0.70	1.26	1.43
2 x 1 1/4	1.90	2.10	3.28	2.39	0.75	0.67	1.14	1.39
2 x 1	1.73	2.02	3.28	1.95	0.75	0.58	0.97	1.33
2 x 3/4	1.60	1.97	3.28	1.63	0.75	0.50	0.84	1.42
2 x 1/2	1.60	1.97	3.28	1.34	0.75	0.43	0.84	1.43
2 1/2 x 2	2.39	2.60	3.86	3.28	0.92	0.75	1.25	1.84
2 1/2 x 1 1/2	2.16	2.51	3.86	2.68	0.92	0.70	1.02	1.78
2 1/2 x 1 1/4	2.04	2.45	3.86	2.39	0.92	0.67	0.90	1.74
2 1/2 x 1	1.87	2.37	3.86	1.95	0.92	0.58	0.73	1.68
*2 1/2 x 3/4	1.87	2.37	3.86	1.63	0.92	0.50	0.73	1.82
3 x 2 1/2	2.83	2.99	4.62	3.86	0.98	0.92	1.63	1.85
3 x 2	2.52	2.89	4.62	3.28	0.98	0.75	1.32	2.13
3 x 1 1/2	2.29	2.80	4.62	2.68	0.98	0.70	1.32	2.16
3 x 1 1/4	2.17	2.74	4.62	2.39	0.98	0.67	0.97	2.03
*3 x 1	2.17	2.74	4.62	1.95	0.98	0.58	0.97	2.05
3 1/2 x 3	—	—	—	—	—	—	—	—
4 x 3 1/2	3.54	3.69	5.79	5.20	1.08	1.03	2.24	2.44
4 x 3	3.30	3.60	5.79	4.62	1.08	0.98	2.00	2.40
4 x 2 1/2	3.05	3.51	5.79	3.86	1.08	0.92	2.00	2.46
4 x 2	2.74	3.41	5.79	3.28	1.08	0.75	1.44	2.65
*4 x 1 1/2	2.74	3.41	5.79	2.68	1.08	0.70	1.44	2.68
5 x 4	—	—	—	—	—	—	—	—
6 x 4	—	—	—	—	—	—	—	—
6 x 3	—	—	—	—	—	—	—	—



*Manufactured to WARD specifications

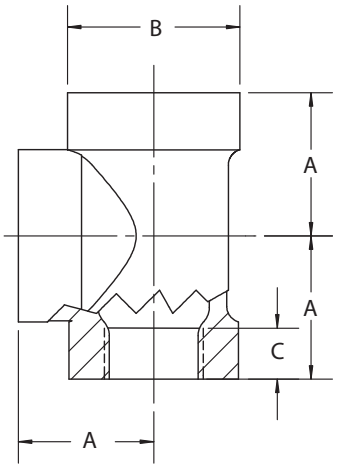
CAST IRON 45° ELL CLASS 125

NPS	Center to End A	Outside Dia. of Band B (min)	Length of Threads C (min)	Take Out
1/4	—	—	—	—
3/8	—	—	—	—
1/2	0.88	1.34	0.43	0.34
3/4	0.98	1.63	0.50	0.43
1	1.12	1.95	0.58	0.43
1 1/4	1.29	2.39	0.67	0.58
1 1/2	1.43	2.68	0.70	0.70
2	1.68	3.28	0.75	0.92
2 1/2	1.95	3.86	0.92	0.81
3	2.17	4.62	0.98	0.97
3 1/2	—	—	—	—
4	2.61	5.79	1.08	1.31
5	—	—	—	—
6	—	—	—	—

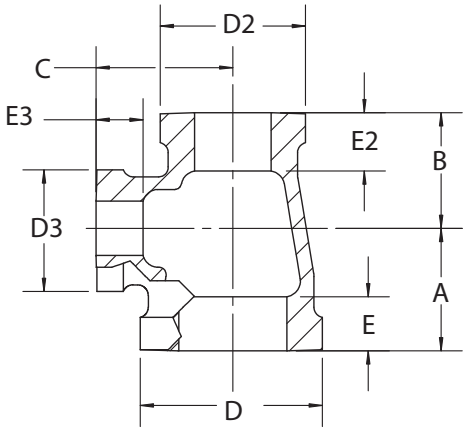


CAST IRON STRAIGHT TEE CLASS 125

NPS	Center to End A	Outside Dia. of Band B (min)	Length of Threads C (min)	Take Out
1/4	—	—	—	—
3/8	0.95	1.12	0.36	0.54
1/2	1.12	1.34	0.43	0.58
3/4	1.31	1.63	0.50	0.76
1	1.50	1.95	0.58	0.81
1 1/4	1.75	2.39	0.67	1.04
1 1/2	1.94	2.68	0.70	1.21
2	2.25	3.28	0.75	1.49
2 1/2	2.70	3.86	0.92	1.56
3	3.08	4.62	0.98	1.88
3 1/2	3.42	5.20	1.03	2.17
4	3.79	5.79	1.08	2.49
5	—	—	—	—
6	—	—	—	—



CAST IRON REDUCING TEES CLASS 125



NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min))	Length of Threads E3 (min)	Take Out	Take Out	Take Out
1/2 x 1/2 x 3/8	1.04	1.04	1.03	1.34	1.34	1.12	0.43	0.43	0.36	0.50	0.50	0.62
1/2 x 1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
*1/2 x 3/8 x 1/2	1.12	1.12	1.12	1.34	1.12	1.34	0.43	0.36	0.43	0.58	0.71	0.58
*1/2 x 3/8 x 3/8	1.12	1.12	1.12	1.34	1.12	1.12	0.43	0.36	0.36	0.58	0.71	0.71
*3/8 x 3/8 x 1/2	1.12	1.12	1.12	1.12	1.12	1.34	0.36	0.36	0.43	0.71	0.71	0.58
3/4 x 3/4 x 1/2	1.20	1.20	1.22	1.63	1.63	1.34	0.50	0.50	0.43	0.65	0.65	0.68
3/4 x 3/4 x 3/8	1.12	1.12	1.13	1.63	1.63	1.12	0.50	0.50	0.36	0.57	0.57	0.72
3/4 x 3/4 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
3/4 x 1/2 x 3/4	1.31	1.22	1.31	1.63	1.34	1.63	0.50	0.43	0.50	0.76	0.68	0.76
3/4 x 1/2 x 1/2	1.20	1.12	1.22	1.63	1.34	1.34	0.50	0.43	0.43	0.65	0.58	0.68
1/2 x 1/2 x 3/4	1.22	1.22	1.20	1.340	1.340	1.630	0.430	0.430	0.500	0.68	0.68	0.65
1 x 1 x 3/4	1.37	1.37	1.45	1.95	1.95	1.63	0.58	0.58	0.50	0.68	0.68	0.90
1 x 1 x 1/2	1.26	1.26	1.36	1.95	1.95	1.34	0.58	0.58	0.43	0.57	0.57	0.82
1 x 1 x 3/8	1.18	1.18	1.27	1.95	1.95	1.12	0.58	0.58	0.36	0.49	0.49	0.86
1 x 1 x 1/4	—	—	—	—	—	—	—	—	—	—	—	—
1 x 3/4 x 1	1.50	1.45	1.50	1.95	1.63	1.95	0.58	0.50	0.58	0.81	0.90	0.81
1 x 3/4 x 3/4	1.37	1.31	1.45	1.95	1.63	1.63	0.58	0.50	0.50	0.68	0.76	0.90
1 x 3/4 x 1/2	1.26	1.20	1.36	1.95	1.63	1.34	0.58	0.50	0.43	0.57	0.65	0.82
1 x 1/2 x 1	1.50	1.36	1.50	1.95	1.34	1.95	0.58	0.43	0.58	0.81	0.82	0.81
1 x 1/2 x 3/4	1.37	1.22	1.45	1.95	1.34	1.63	0.58	0.43	0.50	0.68	0.68	0.90
1 x 1/2 x 1/2	—	—	—	—	—	—	—	—	—	—	—	—
1 x 3/8 x 1	1.50	1.27	1.50	1.95	1.12	1.95	0.58	0.36	0.58	0.81	0.86	0.81
*1 x 1/4 x 1	1.50	1.20	1.50	1.95	0.93	1.95	0.58	0.32	0.58	0.81	0.79	0.81
3/4 x 3/4 x 1	1.45	1.45	1.37	1.63	1.63	1.95	0.50	0.50	0.58	0.90	0.90	0.68
*3/4 x 1/2 x 1	1.45	1.45	1.37	1.63	1.34	1.95	0.50	0.43	0.58	0.90	0.91	0.68
1/2 x 1/2 x 1	—	—	—	—	—	—	—	—	—	—	—	—
1 1/4 x 1 1/4 x 1	1.58	1.58	1.67	2.39	2.39	1.95	0.67	0.67	0.58	0.87	0.87	0.98
1 1/4 x 1 1/4 x 3/4	1.45	1.45	1.62	2.39	2.39	1.63	0.67	0.67	0.50	0.74	0.74	1.07
1 1/4 x 1 1/4 x 1/2	1.34	1.34	1.53	2.39	2.39	1.34	0.67	0.67	0.43	0.63	0.63	0.99
1 1/4 x 1 1/4 x 1/8	---	---	---	---	---	---	---	---	---	---	---	---
1 1/4 x 1 x 1 1/4	1.75	1.67	1.75	2.39	1.95	2.39	0.67	0.58	0.67	1.04	0.98	1.04
1 1/4 x 1 x 1	1.58	1.50	1.67	2.39	1.95	1.95	0.67	0.58	0.58	0.87	0.81	0.98
1 1/4 x 1 x 3/4	1.45	1.37	1.62	2.39	1.95	1.63	0.67	0.58	0.50	0.74	0.68	1.07

* Manufactured to WARD specifications

CAST IRON REDUCING TEE CLASS 125

NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min))	Length of Threads E3 (min)	Take Out	Take Out	Take Out
1 1/4 x 1 x 1/2	1.34	1.26	1.53	2.39	1.95	1.34	0.67	0.58	0.43	0.63	0.57	0.99
1 1/4 x 3/4 x 1 1/4	1.75	1.62	1.75	2.39	1.63	2.39	0.67	0.50	0.67	1.04	1.07	1.04
1 1/4 x 3/4 x 1	1.58	1.45	1.67	2.39	1.63	1.95	0.67	0.50	0.58	0.87	0.90	0.98
1 1/4 x 3/4 x 3/4	1.45	1.31	1.62	2.39	1.63	1.63	0.67	0.50	0.50	0.74	0.76	1.07
*1 1/4 x 3/4 x 1/2	1.45	1.31	1.62	2.39	1.63	1.34	0.67	0.50	0.43	0.74	0.76	1.08
1 1/4 x 1/2 x 1 1/4	1.75	1.53	1.75	2.39	1.34	2.39	0.67	0.43	0.67	1.04	0.99	1.04
1 1/4 x 1/2 x 1	1.58	1.36	1.67	2.39	1.34	1.95	0.67	0.43	0.58	0.87	0.82	0.98
*1 1/4 x 1/2 x 3/4	1.45	1.31	1.62	2.39	1.34	1.63	0.67	0.43	0.50	0.74	0.77	1.07
*1 1/4 x 1/2 x 1/2	1.34	1.12	1.53	2.39	1.34	1.34	0.67	0.43	0.43	0.63	0.58	0.99
*1 1/4 x 1/2 x 3/8	1.58	1.45	1.45	2.39	1.34	1.12	0.67	0.43	0.36	0.87	0.91	1.04
*1 1/4 x 1/4 x 1 1/4	1.75	1.53	1.75	2.39	0.93	2.39	0.67	0.32	0.67	1.04	1.12	1.04
*1 1/4 x 1/8 x 1 1/4	1.75	1.53	1.75	2.39	0.81	2.39	0.67	0.32	0.67	1.04	1.26	1.04
1 x 1 x 1 1/4	1.67	1.67	1.58	1.95	1.95	2.39	0.58	0.58	0.67	0.98	0.98	0.87
*1 x 3/4 x 1 1/4	1.75	1.62	1.75	1.95	1.63	2.39	0.58	0.50	0.67	1.06	1.07	1.04
*1 x 1/2 x 1 1/4	1.75	1.53	1.75	1.95	1.34	2.39	0.58	0.43	0.67	1.06	0.99	1.04
1 1/2 x 1 1/2 x 1 1/4	1.82	1.82	1.88	2.68	2.68	2.39	0.70	0.70	0.67	1.09	1.09	1.17
1 1/2 x 1 1/2 x 1	1.65	1.65	1.80	2.68	2.68	1.95	0.70	0.70	0.58	0.92	0.92	1.11
1 1/2 x 1 1/2 x 3/4	1.52	1.52	1.75	2.68	2.68	1.63	0.70	0.70	0.50	0.79	0.79	1.20
1 1/2 x 1 1/2 x 1/2	1.41	1.41	1.66	2.68	2.68	1.34	0.70	0.70	0.43	0.68	0.68	1.12
1 1/2 x 1 1/2 x 3/8	1.41	1.41	1.66	2.68	2.68	1.12	0.70	0.70	0.36	0.68	0.68	1.25
1 1/2 x 1 1/4 x 1 1/2	1.94	1.88	1.94	2.68	2.39	2.68	0.70	0.67	0.70	1.21	1.17	1.21
1 1/2 x 1 1/4 x 1 1/4	1.82	1.75	1.88	2.68	2.39	2.39	0.70	0.67	0.67	1.09	1.04	1.17
1 1/2 x 1 1/4 x 1	1.65	1.58	1.80	2.68	2.39	1.95	0.70	0.67	0.58	0.92	0.87	1.11
1 1/2 x 1 1/4 x 3/4	1.52	1.45	1.75	2.68	2.39	1.63	0.70	0.67	0.50	0.79	0.74	1.20
1 1/2 x 1 1/4 x 1/2	1.41	1.34	1.66	2.68	2.39	1.34	0.70	0.67	0.43	0.68	0.63	1.12
1 1/2 x 1 x 1 1/2	1.94	1.80	1.94	2.68	1.95	2.68	0.70	0.58	0.70	1.21	1.11	1.21
1 1/2 x 1 x 1 1/4	1.94	1.80	1.94	2.68	1.95	2.39	0.70	0.58	0.67	1.21	1.11	1.23
1 1/2 x 1 x 1	1.65	1.50	1.80	2.68	1.95	1.95	0.70	0.58	0.58	0.92	0.81	1.11
*1 1/2 x 1 x 3/4	1.65	1.50	1.80	2.68	1.95	1.63	0.70	0.58	0.50	0.92	0.81	1.25
*1 1/2 x 1 x 1/2	1.41	1.34	1.66	2.68	1.95	1.34	0.70	0.58	0.43	0.68	0.65	1.12
1 1/2 x 3/4 x 1 1/2	1.94	1.75	1.94	2.68	1.63	2.68	0.70	0.50	0.70	1.21	1.20	1.21
1 1/2 x 3/4 x 1 1/4	1.82	1.62	1.88	2.68	1.63	2.39	0.70	0.50	1.09	1.21	1.07	1.17
*1 1/2 x 3/4 x 1	1.65	1.50	1.80	2.68	1.63	1.95	0.70	0.50	0.58	0.92	0.95	1.11
*1 1/2 x 3/4 x 3/4	1.65	1.50	1.80	2.68	1.63	1.63	0.70	0.50	0.50	0.92	0.95	1.25
*1 1/2 x 3/4 x 1/2	1.52	1.37	1.80	2.68	1.63	1.34	0.70	0.50	0.43	0.80	0.82	1.26
1 1/2 x 1/2 x 1 1/2	1.94	1.66	1.94	2.68	1.34	2.68	0.70	0.43	0.70	1.21	1.12	1.21
*1 1/2 x 1/2 x 1 1/4	1.94	1.66	1.94	2.68	1.34	2.39	0.70	0.43	0.67	1.21	1.12	1.23
*1 1/2 x 1/2 x 3/4	1.52	1.37	1.80	2.68	1.34	1.63	0.70	0.43	0.50	0.80	0.84	1.25
*1 1/2 x 1/2 x 1/2	1.52	1.37	1.80	2.68	1.34	1.34	0.70	0.43	0.43	0.80	0.84	1.26
1 1/4 x 1 1/4 x 1 1/2	1.88	1.88	1.82	2.39	2.39	2.68	0.67	0.67	0.70	1.17	1.17	1.09
1 1/4 x 1 x 1 1/2	1.88	1.80	1.82	2.39	1.95	2.68	0.67	0.58	0.70	1.17	1.11	1.09
*1 1/4 x 3/4 x 1 1/2	1.94	1.75	1.94	2.39	1.63	2.68	0.67	0.50	0.70	1.23	1.20	1.21
*1 1/4 x 1/2 x 1 1/2	1.94	1.66	1.94	2.39	1.34	2.68	0.67	0.43	0.70	1.23	1.12	1.21

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CAST IRON REDUCING TEE CLASS 125

NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (Min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min)	Length of Threads E3 (min)	Take Out	Take Out	Take Out
1 x 1 x 1 1/2	1.80	1.80	1.65	1.95	1.95	2.68	0.58	0.58	0.70	1.11	1.11	0.92
2 x 2 x 1 1/2	2.02	2.02	2.16	3.28	3.28	2.68	0.75	0.75	0.70	1.26	1.26	1.43
2 x 2 x 1 1/4	1.90	1.90	2.10	3.28	3.28	2.39	0.75	0.75	0.67	1.14	1.14	1.39
2 x 2 x 1	1.73	1.73	2.02	3.28	3.28	1.95	0.75	0.75	0.58	0.97	0.97	1.33
2 x 2 x 3/4	1.60	1.60	1.97	3.28	3.28	1.63	0.75	0.75	0.50	0.84	0.84	1.42
2 x 2 x 1/2	1.49	1.49	1.88	3.28	3.28	1.34	0.75	0.75	0.43	0.73	0.73	1.34
2 x 1 1/2 x 2	2.25	2.16	2.25	3.28	2.68	3.28	0.75	0.70	0.75	1.49	1.43	1.49
2 x 1 1/2 x 1 1/2	2.02	1.94	2.16	3.28	2.68	2.68	0.75	0.70	0.70	1.26	1.21	1.43
2 x 1 1/2 x 1 1/4	2.02	1.94	2.16	3.28	2.68	2.39	0.75	0.70	0.67	1.26	1.21	1.45
2 x 1 1/2 x 1	1.73	1.65	2.02	3.28	2.68	1.95	0.75	0.70	0.58	0.97	0.92	1.33
2 x 1 1/2 x 3/4	1.60	1.52	1.97	3.28	2.68	1.63	0.75	0.70	0.50	0.84	0.79	1.42
2 x 1 1/2 x 1/2	1.49	1.41	1.88	3.28	2.68	1.34	0.75	0.70	0.43	0.73	0.68	1.34
2 x 1 1/4 x 2	2.25	2.10	2.25	3.28	2.39	3.28	0.75	0.67	0.75	1.49	1.39	1.49
2 x 1 1/4 x 1 1/2	1.02	1.88	2.16	3.28	2.39	2.68	0.75	0.67	0.70	0.26	1.17	1.43
2 x 1 1/4 x 1 1/4	1.90	1.75	2.10	3.28	2.39	2.39	0.75	0.67	0.67	1.14	1.04	1.39
2 x 1 1/4 x 1	1.73	1.58	2.02	3.28	2.39	1.95	0.75	0.67	0.58	0.97	0.87	1.33
2 x 1 1/4 x 3/4	—	—	—	—	—	—	—	—	—	—	—	—
*2 x 1 1/4 x 1/2	1.49	1.41	1.88	3.28	2.39	1.34	0.75	0.67	0.43	0.73	0.70	1.34
2 x 1 x 2	2.25	2.02	2.25	3.28	1.95	3.28	0.75	0.58	0.75	1.49	1.33	1.49
2 x 1 x 1 1/2	2.02	1.80	2.16	3.28	1.95	2.68	0.75	0.58	0.70	1.26	1.11	1.43
2 x 1 x 1 1/4	1.90	1.67	2.10	3.28	1.95	2.39	0.75	0.58	0.67	1.14	0.98	1.39
*2 x 1 x 1	1.73	1.94	2.02	3.28	1.95	1.95	0.75	0.58	0.58	0.97	1.25	1.33
*2 x 1 x 3/4	1.73	1.94	2.02	3.28	1.95	1.63	0.75	0.58	0.50	0.97	1.25	1.47
2 x 3/4 x 2	2.25	1.97	2.25	3.28	1.63	3.28	0.75	0.50	0.75	1.49	1.42	1.49
*2 x 3/4 x 1 1/2	2.25	1.97	2.25	3.28	1.63	2.68	0.75	0.50	0.70	1.49	1.42	1.52
*2 x 3/4 x 1 1/4	2.25	1.97	2.25	3.28	1.63	2.39	0.75	0.50	0.67	1.49	1.42	1.54
*2 x 3/4 x 1	1.73	1.94	2.02	3.28	1.63	1.95	0.75	0.50	0.58	0.97	1.39	1.33
*2 x 3/4 x 3/4	1.60	1.60	1.97	3.28	1.63	1.63	0.75	0.50	0.50	0.84	1.05	1.42
*2 x 3/4 x 1/2	1.60	1.60	1.97	3.28	1.63	1.34	0.75	0.50	0.43	0.84	1.05	1.43
2 x 1/2 x 2	2.25	1.88	2.25	3.28	1.34	3.280	0.75	0.43	0.75	1.49	1.34	1.49
*2 x 1/2 x 1 1/2	2.02	1.66	2.16	3.28	1.34	2.68	0.75	0.43	0.70	1.26	1.12	1.43
*2 x 1/2 x 1 1/4	2.02	1.66	2.16	3.28	1.34	2.39	0.75	0.43	0.67	1.26	1.12	1.45
*2 x 1/2 x 3/4	1.60	1.60	1.97	3.28	1.34	1.63	0.75	0.43	0.50	0.84	1.06	1.42
*2 x 1/2 x 1/2	1.60	1.60	1.97	3.28	1.34	1.34	0.75	0.43	0.43	0.84	1.06	1.43
1 1/2 x 1 1/2 x 2	2.16	2.16	2.02	2.68	2.68	3.28	0.70	0.70	0.75	1.43	1.43	1.26
1 1/2 x 1 1/4 x 2	2.16	2.10	2.02	2.68	2.39	3.28	0.70	0.67	0.75	1.43	1.39	1.26
1 1/2 x 1 x 2	2.16	2.02	2.02	2.68	1.95	3.28	0.70	0.58	0.75	1.43	1.33	1.26
1 1/4 x 1 1/4 x 2	—	—	—	—	—	—	—	—	—	—	—	—
1 1/4 x 1 x 2	—	—	—	—	—	—	—	—	—	—	—	—
1 x 1 x 2	—	—	—	—	—	—	—	—	—	—	—	—
2 1/2 x 2 1/2 x 2	2.39	2.39	2.60	3.86	3.86	3.28	0.92	0.92	0.75	1.25	1.25	1.84
2 1/2 x 2 1/2 x 1 1/2	2.16	2.16	2.51	3.86	3.86	2.68	0.92	0.92	0.70	1.02	1.02	1.78
2 1/2 x 2 1/2 x 1 1/4	2.04	2.04	2.45	3.86	3.86	2.39	0.92	0.92	0.67	0.90	0.90	1.74

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CAST IRON REDUCING TEE CLASS 125

NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (Min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min))	Length of Threads E3 (min)	Take Out	Take Out	Take Out
2 1/2 x 2 1/2 x 1	1.87	1.87	2.37	3.86	3.86	1.95	0.92	0.92	0.58	0.73	0.73	1.68
2 1/2 x 2 1/2 x 3/4	1.87	1.87	2.32	3.86	3.86	1.63	0.92	0.92	0.50	0.73	0.73	1.77
2 1/2 x 2 1/2 x 1/2	1.87	1.87	2.23	3.86	3.86	1.34	0.92	0.92	0.43	0.73	0.73	1.69
2 1/2 x 2 x 2 1/2	2.70	2.60	2.70	3.86	3.28	3.86	0.92	0.75	0.92	1.56	1.84	1.56
2 1/2 x 2 x 2	2.39	2.25	2.60	3.86	3.28	3.28	0.92	0.75	0.75	1.25	1.49	1.84
2 1/2 x 2 x 1 1/2	2.16	2.02	2.51	3.86	3.28	2.68	0.92	0.75	0.70	1.02	1.26	1.78
2 1/2 x 2 x 1 1/4	2.04	1.90	2.45	3.86	3.28	2.39	0.92	0.75	0.67	0.90	1.14	1.74
2 1/2 x 2 x 1	1.87	1.73	2.37	3.86	3.28	1.95	0.92	0.75	0.58	0.73	0.97	1.68
2 1/2 x 2 x 3/4	1.74	1.60	2.32	3.86	3.28	1.63	0.92	0.75	0.50	0.60	0.84	1.77
2 1/2 x 2 x 1/2	1.63	1.49	2.23	3.86	3.28	1.34	0.92	0.75	0.43	0.49	0.73	1.696
2 1/2 x 1 1/2 x 2 1/2	2.70	2.51	2.70	3.86	2.68	3.86	0.92	0.70	0.92	1.56	1.78	1.563
2 1/2 x 1 1/2 x 2	2.39	2.16	2.60	3.86	2.68	3.28	0.92	0.70	0.75	1.25	1.43	1.84
2 1/2 x 1 1/2 x 1 1/2	2.16	1.94	2.51	3.86	2.68	2.68	0.92	0.70	0.70	1.02	1.21	1.786
*2 1/2 x 1 1/2 x 1 1/4	2.04	1.90	2.45	3.86	2.68	2.39	0.92	0.70	0.67	0.90	1.17	1.743
*2 1/2 x 1 1/2 x 1/2	1.63	1.49	2.23	3.86	2.68	1.34	0.92	0.70	0.43	0.49	0.76	1.696
2 1/2 x 1 1/4 x 2 1/2	2.70	2.45	2.70	3.86	2.39	3.86	0.92	0.67	0.92	1.56	1.74	1.563
2 1/2 x 1 1/4 x 2	2.70	2.45	2.70	3.86	2.39	3.28	0.92	0.67	0.75	1.56	1.74	1.94
*2 1/2 x 1 1/4 x 1 1/2	2.16	1.94	2.51	3.86	2.39	2.68	0.92	0.67	0.70	1.02	1.23	1.78
*2 1/2 x 1 1/4 x 1 1/4	2.04	1.90	2.45	3.86	2.39	2.39	0.92	0.67	0.67	0.90	1.19	1.74
*2 1/2 x 1 1/4 x 1	2.14	2.12	2.51	3.86	2.39	1.95	0.92	0.67	0.58	1.00	1.41	1.82
2 1/2 x 1 x 2 1/2	2.70	2.37	2.70	3.86	1.95	3.86	0.92	0.58	0.92	1.56	1.68	1.56
2 1/2 x 1 x 2	2.39	2.02	2.60	3.86	1.95	3.28	0.92	0.58	0.75	1.25	1.33	1.84
*2 1/2 x 1 x 1 1/4	2.14	2.12	2.51	3.86	1.95	2.39	0.92	0.58	0.67	1.00	1.43	1.80
*2 1/2 x 1 x 1	1.94	1.75	2.37	3.86	1.95	1.95	0.92	0.58	0.58	0.80	1.06	1.68
*2 1/2 x 1 x 3/4	1.94	1.75	2.37	3.86	1.95	1.63	0.92	0.58	0.50	0.80	1.06	1.82
2 1/2 x 3/4 x 2 1/2	2.70	2.32	2.70	3.86	1.63	3.86	0.92	0.50	0.92	1.56	1.77	1.56
*2 1/2 x 3/4 x 2	2.70	2.32	2.70	3.86	1.63	3.28	0.92	0.50	0.75	1.56	1.77	1.94
*2 1/2 x 3/4 x 3/4	1.94	1.75	2.37	3.86	1.63	1.63	0.92	0.50	0.50	0.80	1.20	1.82
2 1/2 x 1/2 x 2 1/2	2.70	2.23	2.70	3.86	1.34	3.86	0.92	0.43	0.92	1.56	1.69	1.56
*2 1/2 x 1/2 X 2	2.70	2.60	2.70	3.86	1.34	3.28	0.92	0.43	0.75	1.56	2.06	1.94
2 x 2 x 2 1/2	2.60	2.60	2.39	3.28	3.28	3.86	0.75	0.75	0.92	1.84	1.46	1.25
2 x 1 1/2 x 2 1/2	2.60	2.51	2.39	3.28	2.68	3.86	0.75	0.70	0.92	1.84	1.78	1.25
2 x 1 1/4 x 2 1/2	2.60	2.45	2.39	3.28	2.39	3.86	0.75	0.67	0.92	1.84	1.74	1.25
*2 x 1 x 2 1/2	2.70	2.45	2.70	3.28	1.95	3.86	0.75	0.58	0.92	1.94	1.76	1.56
*2 x 3/4 x 2 1/2	2.70	2.32	2.70	3.28	1.63	3.86	0.75	0.50	0.92	1.94	1.77	1.56
1 1/2 x 1 1/2 x 2 1/2	2.51	2.51	2.16	2.68	2.68	3.86	0.70	0.70	0.92	1.78	1.78	1.02
3 x 3 x 2 1/2	2.83	2.83	2.99	4.62	4.62	3.86	0.98	0.98	0.92	1.63	1.63	1.85
3 x 3 x 2	2.52	2.52	2.89	4.62	4.62	3.28	0.98	0.98	0.75	1.32	1.32	2.13
3 x 3 x 1 1/2	2.29	2.29	2.80	4.62	4.62	2.68	0.98	0.98	0.70	1.09	1.09	2.07
3 x 3 x 1 1/4	2.17	2.17	2.74	4.62	4.62	2.39	0.98	0.98	0.67	0.97	0.97	2.03
3 x 3 x 1	2.00	2.00	2.66	4.62	4.62	1.95	0.98	0.98	0.58	0.80	0.80	1.97
3 x 3 x 3/4	—	—	—	—	—	—	—	—	—	—	—	—
3 x 3 x 1/2	—	—	—	—	—	—	—	—	—	—	—	—

Manufactured to WARD specifications

CAST IRON REDUCING TEE CLASS 125

NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (Min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min)	Length of Threads E3 (min)	Take Out	Take Out	Take Out
3 x 2 1/2 x 3	3.08	2.99	3.08	4.62	3.86	4.62	0.98	0.92	0.98	1.88	1.85	1.88
3 x 2 1/2 x 2 1/2	2.83	2.70	2.99	4.62	3.86	3.86	0.98	0.92	0.92	1.63	1.56	1.85
3 x 2 1/2 x 2	2.52	2.39	2.89	4.62	3.86	3.28	0.98	0.92	0.75	1.32	1.25	2.13
3 x 2 1/2 x 1 1/2	—	—	—	—	—	—	—	—	—	—	—	—
3 x 2 1/2 x 1 1/4	2.17	2.04	2.74	4.62	3.86	2.39	0.98	0.92	0.67	0.97	0.90	2.03
3 x 2 1/2 x 1	—	—	—	—	—	—	—	—	—	—	—	—
3 x 2 x 3	3.08	2.89	3.08	4.62	3.28	4.62	0.98	0.75	0.98	1.88	2.13	1.88
3 x 2 x 2 1/2	2.83	2.60	2.99	4.62	3.28	3.86	0.98	0.75	0.92	1.63	1.84	1.85
3 x 2 x 2	2.52	2.25	2.89	4.62	3.28	3.28	0.98	0.75	0.75	1.32	1.49	2.13
3 x 2 x 1 1/2	2.29	2.02	2.80	4.62	3.28	2.68	0.98	0.75	0.70	1.09	1.26	2.07
3 x 1 1/2 x 3	3.08	2.80	3.08	4.62	2.68	4.62	0.98	0.70	0.98	1.88	2.07	1.88
*3 x 1 1/2 x 2	2.52	2.25	2.89	4.62	2.68	3.28	0.98	0.70	0.75	1.32	1.52	2.13
*3 x 1 1/2 x 1 1/2	2.52	2.25	2.89	4.62	2.68	2.68	0.98	0.70	0.70	1.32	1.52	2.16
3 x 1 1/4 x 3	3.08	2.74	3.08	4.62	2.39	4.62	0.98	0.67	0.98	1.88	2.03	1.88
*3 x 1 1/4 x 2	2.52	2.70	2.89	4.62	2.39	3.28	0.98	0.67	0.75	1.32	1.99	2.13
3 x 1 x 3	3.08	2.66	3.08	4.62	1.95	4.62	0.98	0.58	0.98	1.88	1.97	1.88
*3 x 1 x 2	2.52	2.63	2.89	4.62	1.95	3.28	0.98	0.58	0.75	1.32	1.94	2.13
3 x 3/4 x 3	3.08	2.61	3.08	4.62	1.63	4.62	0.98	0.50	0.98	1.88	2.06	1.88
2 1/2 x 2 1/2 x 3	2.99	2.99	2.83	3.86	3.86	4.62	0.92	0.92	0.98	1.85	1.85	1.63
2 1/2 x 2 x 3	2.99	2.89	2.83	3.86	3.28	4.62	0.92	0.75	0.98	1.85	2.13	1.63
2 x 2 x 3	2.89	2.99	2.52	3.28	3.28	4.62	0.75	0.75	0.98	2.13	2.23	1.32
*1 1/2 x 1 1/2 x 3	2.83	2.83	2.27	2.68	2.68	4.62	0.70	0.70	0.98	2.10	2.10	1.07
3 1/2 x 3 1/2 x 3	3.18	3.18	3.33	5.20	5.20	4.62	1.03	1.03	0.98	1.93	1.93	2.13
3 1/2 x 3 1/2 x 2 1/2	2.93	2.93	3.24	5.20	5.20	3.86	1.03	1.03	0.92	1.68	1.68	2.10
3 1/2 x 3 1/2 x 2	2.62	2.62	3.14	5.20	5.20	3.28	1.03	1.03	0.75	1.37	1.37	2.38
3 1/2 x 3 1/2 x 1 1/2	2.39	2.39	3.05	5.20	5.20	2.68	1.03	1.03	0.70	1.14	1.14	2.32
3 1/2 x 3 1/2 x 1 1/4	2.27	2.27	2.99	5.20	5.20	2.39	1.03	1.03	0.67	1.02	1.02	2.28
3 1/2 x 3 1/2 x 1	2.10	2.10	2.91	5.20	5.20	1.95	1.03	1.03	0.58	0.85	0.85	2.22
*3 1/2 x 3 x 3 1/2	3.42	3.42	3.42	5.20	4.62	5.20	1.03	0.98	1.03	2.17	2.22	2.17
3 1/2 x 3 x 3	3.18	3.08	3.33	5.20	4.62	4.62	1.03	0.98	0.98	1.93	1.88	2.13
3 1/2 x 3 x 2 1/2	2.93	2.83	3.24	5.20	4.62	3.86	1.03	0.98	0.92	1.68	1.63	2.10
3 1/2 x 3 x 2	2.62	2.52	3.14	5.20	4.62	3.28	1.03	0.98	0.75	1.37	1.32	2.38
3 1/2 x 3 x 1 1/2	2.39	2.29	3.05	5.20	4.62	2.68	1.03	0.98	0.70	1.14	1.09	2.32
*3 1/2 x 3 x 1 1/4	2.39	2.29	3.05	5.20	4.62	2.39	1.03	0.98	0.67	1.14	1.09	2.34
*3 1/2 x 2 1/2 x 2	—	—	—	—	—	—	—	—	—	—	—	—
3 1/2 x 1 1/4 x 3 1/2	3.42	2.99	3.42	5.20	2.39	5.20	1.03	0.67	1.03	2.17	2.28	2.17
3 1/2 x 1 x 3 1/2	3.42	2.91	3.42	5.20	1.95	5.20	1.03	0.58	1.03	2.17	2.22	2.17
3 x 3 x 3 1/2	3.33	3.33	3.18	4.62	4.62	5.20	0.98	0.98	1.03	2.13	2.13	1.93
4 x 4 x 3 1/2	3.54	3.54	3.69	5.79	5.79	5.20	1.08	1.08	1.03	2.24	2.24	2.44
4 x 4 x 3	3.30	3.30	3.60	5.79	5.79	4.62	1.08	1.08	0.98	2.00	2.00	2.40
4 x 4 x 2 1/2	3.05	3.05	3.51	5.79	5.79	3.86	1.08	1.08	0.92	1.75	1.75	2.37
4 x 4 x 2	2.74	2.74	3.41	5.79	5.79	3.28	1.08	1.08	0.75	1.44	1.44	2.65

* Manufactured to WARD specifications

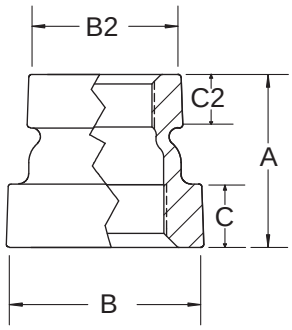
CAST IRON REDUCING TEE CLASS 125

NPS	Center to End A	Center to End B	Center to End C	Outside Dia. of Band D (min)	Outside Dia. of Band D2 (Min)	Outside Dia. of Band D3 (min)	Length of Threads E (min)	Length of Threads E2 (min)	Length of Threads E3 (min)	Take Out	Take Out	Take Out
4 x 4 x 1 1/2	2.51	2.51	3.32	5.79	5.79	2.68	1.08	1.08	0.70	1.21	1.21	2.59
4 x 4 x 1 1/4	—	—	—	—	—	—	—	—	—	—	—	—
4 x 4 x 1	—	—	—	—	—	—	—	—	—	—	—	—
4 x 4 x 3/4	—	—	—	—	—	—	—	—	—	—	—	—
4 x 3 1/2 x 4	3.79	3.69	3.79	5.79	5.20	5.79	1.08	1.03	1.08	2.49	2.44	2.49
4 x 3 1/2 x 3 1/2	3.54	3.42	3.69	5.79	5.20	5.20	1.08	1.03	1.03	2.24	2.17	2.44
4 x 3 1/2 x 3	3.30	3.18	3.60	5.79	5.20	4.62	1.08	1.03	0.98	2.00	1.93	2.40
4 x 3 1/2 x 2 1/2	3.05	2.93	3.51	5.79	5.20	3.86	1.08	1.03	0.92	1.75	1.68	2.37
4 x 3 1/2 x 2	2.74	2.62	3.41	5.79	5.20	3.28	1.08	1.03	0.75	1.44	1.37	2.65
4 x 3 1/2 x 1 1/2	2.51	2.39	3.32	5.79	5.20	2.68	1.08	1.03	0.70	1.21	1.14	2.59
4 x 3 x 4	3.79	3.60	3.79	5.79	4.62	5.79	1.08	0.98	1.08	2.49	2.40	2.49
*4 x 3 x 3 1/2	3.79	3.69	3.79	5.79	4.62	5.20	1.08	0.98	1.03	2.49	2.49	2.54
4 x 3 x 3	3.30	3.08	3.60	5.79	4.62	4.62	1.08	0.98	0.98	2.00	1.88	2.40
4 x 3 x 2 1/2	3.05	2.83	3.51	5.79	4.62	3.86	1.08	0.98	0.92	1.75	1.63	2.37
4 x 3 x 2	2.74	2.52	3.41	5.79	4.62	3.28	1.08	0.98	0.75	1.44	1.32	2.65
*4 x 3 x 1 1/2	2.51	2.39	3.32	5.79	4.62	2.68	1.08	0.98	0.70	1.21	1.19	2.59
4 x 2 1/2 x 4	3.79	3.51	3.79	5.79	3.86	5.79	1.08	0.92	1.08	2.49	2.37	2.49
4 x 2 1/2 x 3	3.30	2.99	3.60	5.79	3.86	4.62	1.08	0.92	0.98	2.00	1.85	2.40
4 x 2 1/2 x 2 1/2	3.05	2.70	3.51	5.79	3.86	3.86	1.08	0.92	0.92	1.75	1.56	2.37
*4 x 2 1/2 x 2	3.05	2.70	3.51	5.79	3.86	3.28	1.08	0.92	0.75	1.75	1.56	2.75
4 x 2 x 4	3.79	3.41	3.79	5.79	3.28	5.79	1.08	0.75	1.08	2.49	2.65	2.49
*4 x 2 x 2 1/2	3.05	2.70	3.51	5.79	3.28	3.86	1.08	0.75	0.92	1.75	1.94	2.37
4 x 2 x 2	2.74	2.25	3.41	5.79	3.28	3.28	1.08	0.75	0.75	1.44	1.49	2.65
*4 x 2 x 1 1/2	2.74	2.25	3.41	5.79	3.28	2.68	1.08	0.75	0.70	1.44	1.49	2.68
4 x 1 1/2 x 4	3.79	3.32	3.79	5.79	2.68	5.79	1.08	0.70	1.08	2.49	2.59	2.49
*4 x 1 1/2 x 2	2.74	2.25	3.41	5.79	2.68	3.28	1.08	0.70	0.75	1.44	1.52	2.65
*4 x 1 1/2 x 1 1/2	2.74	2.25	3.41	5.79	2.68	2.68	1.08	0.70	0.70	1.44	1.52	2.68
4 x 1 1/4 x 4	3.79	3.26	3.79	5.79	2.39	5.79	1.08	0.67	1.08	2.49	2.55	2.49
4 x 1 x 4	3.79	3.18	3.79	5.79	1.95	5.79	1.08	0.58	1.08	2.49	2.49	2.49
3 1/2 x 3 1/2 x 4	3.69	3.69	3.54	5.20	5.20	5.79	1.03	1.03	1.08	2.44	2.44	2.24
3 x 3 x 4	—	—	—	—	—	—	—	—	—	—	—	—
5 x 5 x 4	—	—	—	—	—	—	—	—	—	—	—	—
5 x 5 x 3	—	—	—	—	—	—	—	—	—	—	—	—
5 x 5 x 2 1/2	—	—	—	—	—	—	—	—	—	—	—	—
5 x 5 x 2	—	—	—	—	—	—	—	—	—	—	—	—
6 x 6 x 5	—	—	—	—	—	—	—	—	—	—	—	—
6 x 6 x 4	—	—	—	—	—	—	—	—	—	—	—	—
6 x 6 x 3	—	—	—	—	—	—	—	—	—	—	—	—

* Manufactured to WARD specifications

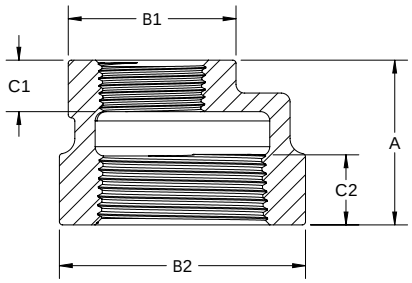
CAST IRON CONCENTRIC REDUCING COUPLING CLASS 125

NPS	Length of Coupling A	Outside Dia. of Band Small End B (min)	Outside Dia. of LargeEnd B2 (min)	Length of Threads Small End C (min)	Length of Threads Large End C2 (min)	Take Out	Take Out
3/4 x 1/2	1.50	1.31	1.62	0.43	0.50	0.20	0.22
1 x 1/2	1.70	1.31	1.99	0.43	0.58	0.85	0.85
1 x 3/4	1.70	1.63	1.99	0.50	0.58	0.85	0.85
1 1/4 x 1	2.130	1.95	2.39	0.58	0.67	0.17	0.30
1 1/4 x 3/4	2.13	1.95	2.39	0.50	0.67	0.17	0.32
1 1/4 x 1/2	—	—	—	—	—	—	—
1 1/2 x 1 1/4	2.25	2.39	2.68	0.67	0.70	0.36	0.52
1 1/2 x 1	2.25	2.39	2.68	0.58	0.70		
1 1/2 x 3/4	—	—	—	—	—	—	—
1 1/2 x 1/2	—	—	—	—	—	—	—
2 x 1 1/2	2.32	2.68	3.28	0.70	0.75	0.40	0.44
2 x 1 1/4	2.32	2.39	3.28	0.67	0.75	0.40	0.45
2 x 1	2.32	1.95	3.28	0.58	0.75	0.40	0.44
2 x 3/4	2.32	1.63	3.28	0.50	0.75	0.40	0.45
2 x 1/2	2.32	1.63	3.28	0.43	0.75	0.40	0.48
2 1/2 x 2	2.63	3.28	3.86	0.75	0.92	0.18	0.56
2 1/2 x 1 1/2	2.63	3.28	3.86	0.70	0.92	0.18	0.59
3 x 2 1/2	—	—	—	—	—	—	—
3 x 2	2.88	3.28	4.62	0.75	0.98	0.29	0.68
3 x 1 1/2	2.88	3.28	4.62	0.70	0.98	0.24	0.72
4 x 3	—	—	—	—	—	—	—
4 x 2 1/2	—	—	—	—	—	—	—
4 x 2	—	—	—	—	—	—	—
6 x 4	—	—	—	—	—	—	—



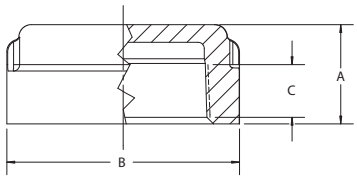
CAST IRON ECCENTRIC REDUCING COUPLING CLASS 125

NPS	Length of Coupling A	Outside Dia. of Band Small End B1 (min)	Outside Dia. of Large End B2 (min)	Length of Threads Small End C1 (min)	Length of Threads Large End C2 (min)	Take Out	Take Out
3/4 x 1/2	1.52	1.34	1.63	0.43	0.58	0.21	0.23
1 x 3/4	1.60	1.63	1.95	0.50	0.58	0.12	0.25
1 x 1/2	1.59	1.34	1.95	0.43	0.58	0.11	0.26
1 1/4 x 1	1.75	1.95	2.39	0.58	0.67	0.17	0.19
1 1/4 x 3/4	1.65	1.63	2.39	0.50	0.67	0.12	0.28
1 1/4 x 1/2	1.58	1.34	2.39	0.43	0.67	0.08	0.26
1 1/2 x 1 1/4	1.85	2.39	2.68	0.67	0.70	0.20	0.22
1 1/2 x 1	1.78	1.95	2.68	0.58	0.70	0.17	0.21
1 1/2 x 3/4	1.68	1.63	2.68	0.50	0.70	0.12	0.29
1 1/2 x 1/2	2.12	2.68	3.28	0.70	0.75	0.09	0.28
2 x 1 1/2	2.12	2.39	3.28	0.67	0.75	0.30	0.34
2 x 1 1/4	1.99	1.95	3.28	0.58	0.75	0.30	0.35
2 x 1	1.79	1.63	3.28	0.50	0.75	0.24	0.31
2 x 3/4	—	—	—	—	—	—	—
2 x 1/2	—	—	—	—	—	—	—
2 1/2 x 2	—	—	—	—	—	—	—
2 1/2 x 1 1/2	—	—	—	—	—	—	—
2 1/2 x 1 1/4	—	—	—	—	—	—	—
2 1/2 x 1	—	—	—	—	—	—	—
3 x 2 1/2	—	—	—	—	—	—	—
3 x 2	—	—	—	—	—	—	—
3 x 1 1/2	—	—	—	—	—	—	—
3 x 1 1/4	—	—	—	—	—	—	—
3 x 1	—	—	—	—	—	—	—
4 x 2 1/2	—	—	—	—	—	—	—
4 x 2	—	—	—	—	—	—	—
4 x 1 1/2	—	—	—	—	—	—	—
4 x 1 1/4	—	—	—	—	—	—	—



CAST IRON PIPE CAP CLASS 125

NPS	Overall Height A	Outside Dia. of Band B (min)	Length of Threads C (min)
2 1/2	1.810	3.860	0.920
3	1.910	4.620	0.980
3 1/2	2.030	5.200	1.030
4	2.220	5.790	1.080
5	2.380	7.050	1.180
6	2.630	8.280	1.280
8	2.880	10.630	1.470

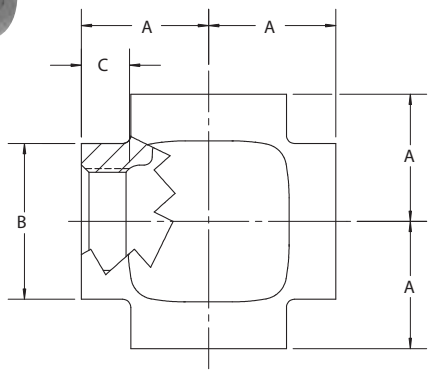


CAST IRON HEXAGON COUPLING

NPS	Width Across Flats A HEX.	Overall Length B	Thread Length C	Take Out	Take Out
1	1.94	1.69	0.58	0.16	0.16

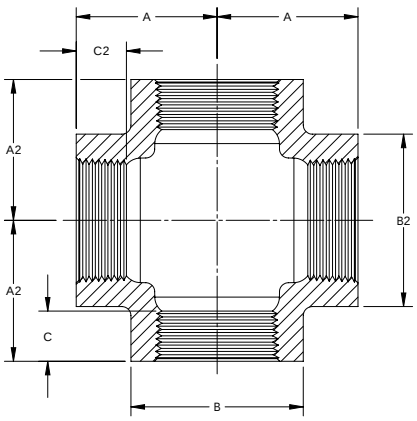
CAST IRON STRAIGHT CROSS CLASS 125

NPS	Center to End A	Outside Dia. Band B (min)	Length of Threads C (min)	Take Out
1/2	1.25	1.34	0.43	0.71
3/4	1.44	1.63	0.50	0.89
1	1.63	1.95	0.58	0.94
1 1/4	1.94	2.39	0.67	1.23
1 1/2	2.13	2.68	0.70	1.40
2	—	—	—	—
4	—	—	—	—



CAST IRON REDUCING CROSS CLASS 125

NPS	Center to End A	Center to End A2	Outside Dia. Band B (min)	Outside Dia. Band B2 (min)	Length of Threads C (min)	Length of Threads C2 (min)	Take Out	Take Out
1 1/4 x 1	1.67	1.58	2.39	1.95	0.67	0.58	0.96	0.89
1 1/2 x 1 1/4	—	—	—	—	—	—	—	—
1 1/2 x 1 1/4 x 1	—	—	—	—	—	—	—	—
1 1/2 x 1 1/4 x 1 x 1	—	—	—	—	—	—	—	—
1 1/2 x 1	1.80	1.65	2.68	1.95	0.70	0.58	1.07	0.96
1 1/2 x 1 x 1 x 1	—	—	—	—	—	—	—	—
2 x 1 1/2	—	—	—	—	—	—	—	—
2 x 1 1/4	—	—	—	—	—	—	—	—
2 x 1 1/2 x 1 x 1	—	—	—	—	—	—	—	—
2 x 1	2.02	1.73	3.28	1.95	0.75	0.58	1.26	1.04



Victaulic® Grooved End Fittings

No. 20 Tee

No. 10 Elbow

1.0 PRODUCT DESCRIPTION

Available Sizes

- ¾ – 60"/20 – 1500 mm

Maximum Working Pressure

- Fitting pressure ratings are equivalent to the pressure ratings of the coupling used to install them.

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"/350 – 1500 mm
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.

3.0 SPECIFICATIONS - MATERIAL

Fitting: (specify choice)

- ☐ Standard: Ductile iron conforming to ASTM A-536, Grade 65-45-12.
- ☐ Optional: Segmentally welded steel as shown under nipples

Nipples: (specify choice)

- ☐ ¾ – 4"/20 – 100 mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type F
- ☐ 5 – 6"/125 – 150 mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type E or S, Gr. B
- ☐ 8 – 12"/200 – 300 mm: Carbon steel, Schedule 30 or 40, conforming to ASTM A-53, Type E or S, Gr. B

Flanged Adapter Nipples: (specify choice)

- ☐ Class 125 Flange: Cast iron conforming to ANSI B-16.1
- ☐ Class 150 Flange: Carbon steel conforming to ANSI B-16.5, raised or flat face
- ☐ Class 300 Flange: Carbon steel conforming to ANSI B-16.5, 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

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.

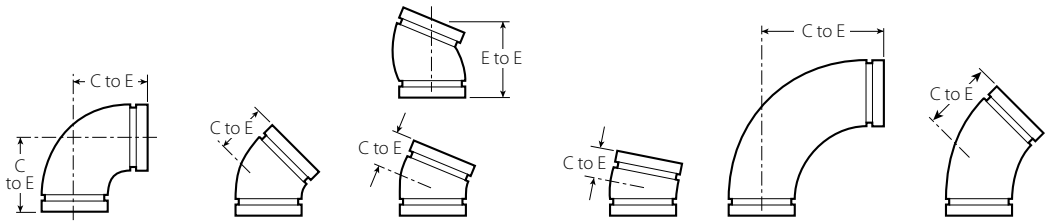
Size		Dimensions					
		90° Elbows		45° Elbows		Tees	
Nominal Size inches DN	Actual Outside Diameter inches mm	No. 10 Std. Radius feet meters	No. 100 1 ½ D Long Radius feet meters	No. 11 Std. Radius feet meters	No. 110 1 ½ D Long Radius feet meters	Branch feet meters	Run feet meters
1 DN25	1.315 33.7	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[1] 7.5	15.8 4.8	18.5[1] 5.6	11.0 3.4	70.0 21.3	23.0 7.0
16 DN400	16.000 406.4	28.0[1] 8.5	18.0 5.5	21.0[1] 6.4	13.0 4.0	80.0 24.4	27.0 8.2
18 DN450	18.000 457.0	31.0[1] 9.5	20.0 6.1	23.5[1] 7.2	14.0 4.3	90.0 27.4	30.0 9.1
20 DN800	20.000 508.0	34.0[1] 10.4	22.5 6.9	25.5[1] 7.8	16.0 4.9	100.0 30.5	33.0 10.1
24 DN600	24.000 610.0	42.0[1] 12.8	27.0 8.2	29.5[1] 9.0	19.0 5.8	120.0 36.6	40.0 12.2
AGS fittings available up to 60"/1500 mm. Contact Victaulic for details. AGS™							

[1] Fitting flow data for 14-24"/350-600 mm 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.

4.1 DIMENSIONS

Elbows

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



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 inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) 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[2] 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
1 ¼ 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
1 ½ 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
2 ½	2.875 73.0	3.75 95	3.2 1.5	2.25 57	2.2 1.0	4.00[2] 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
DN65	3.000 76.1	3.75 95	3.7 1.7	2.25 57	3.4 1.5	2.25 57	—	1.50 38	—	—	—	—	—
3 DN80	3.500 88.9	4.25 108	4.5 2.0	2.50 64	3.1 1.4	4.50[2] 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
3 ½ DN90	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 DN100	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	—	—	—	—	—	—	—	—
4 ½ DN120	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[2] 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

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

[3] For 14"/350 mm 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] Chinese standard sizes

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

(sw) = Carbon Steel Segmentally Welded

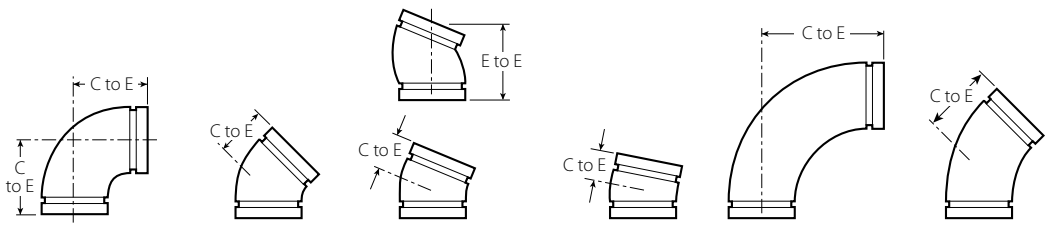
NOTE

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

4.1 DIMENSIONS (Continued)

Elbows

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



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 inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. Each lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg	C to E inches mm	Approx. Wgt. (Each) lb kg
8 DN200	8.625 219.1	7.75 197	29.9 13.6	4.25 108	20.4 9.3	7.75[2] 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[3] 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[3] 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[3] 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[3] 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[3] 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 – 60 350 – 1500	For AGS fitting information, see publication 20.05 AGS™												

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

[3] For 14"/350 mm 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

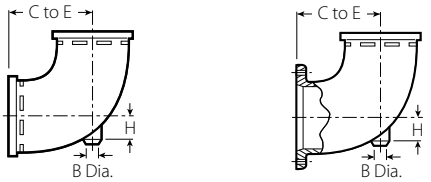
NOTE

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

4.2 DIMENSIONS

Reducing Base Support Elbow

No. R-10G Grv. × Grv.
No. R-10F Grv. × Flange



Size			No. R-10 Reducing Base Support Elbow			Approx. Weight Each	
Nominal Size 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
		5 DN125	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
10 DN250	x	8 DN200	12.00 305	2.40 61	1.50 38	61.0 27.7	88.0 39.9

4.3 DIMENSIONS

Adapter Elbow

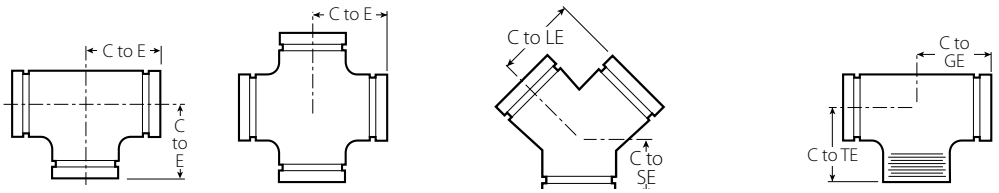
No. 18 90° Adapter Elbow
No. 19 45° Adapter Elbow

Size		No. 18 90° Adapter Elbow[5]			No. 19 45° Adapter Elbow[5]		
Nominal Size 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

[5] Available with British Standard Pipe Threads, specify "BSP" clearly on order.

4.4 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 Dimeter 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
¾ 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
1¼ 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
1½ 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
2½	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
DN65	3.000 76.1	3.75 95	5.2 2.4	—	—	—	—	—	3.75 95	3.75 (sw) 95	5.2 2.4
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
3½ 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
	4.250 108.0	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
4½ DN120	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
	5.250 133.0	5.50 140	17.8 8.1	—	—	—	—	—	5.50 140	5.50 (sw) 140	17.8 8.1
DN125	5.500 139.7	5.50 140	17.8 8.1	—	—	—	—	—	5.50 140	5.50 (sw) 140	17.8 8.1
5	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
	6.250 159.0	6.50 165	27.1 12.3	—	—	—	—	—	6.50 165	6.50 (sw) 165	27.1 12.3
	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

[6] For 14"/350 mm 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.

[7] Chinese standard sizes

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

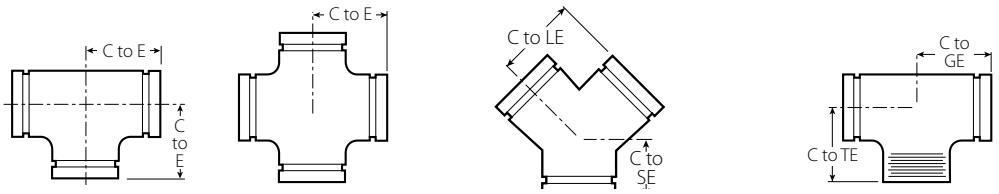
(sw) = Carbon Steel Segmentally Welded

NOTE

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

4.4 DIMENSIONS (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 Dimeter 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[6] 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[6] 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[6] 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[6] 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[6] 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 AGS™										

[6] For 14"/350 mm 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

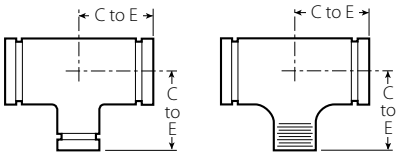
NOTE

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

4.5 DIMENSIONS

Reducing Tee

No. 25 Grooved Branch
No. 29T Threaded Branch



No. 25 No. 29T

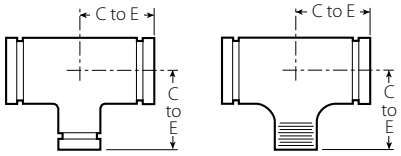
Size					No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN					C to E inches mm	C to E inches mm	lb kg
1 DN25	x	1 DN225	x	¾ DN20	2.25 (sw) 57	2.25 (sw) 57	1.0 0.5
1 ¼ DN32	x	1 ¼ DN32	x	1 DN25	2.75 (sw) 70	2.75 (sw) 70	1.3 0.6
1 ½ DN40	x	1 ½ DN40	x	¾ DN20	2.75 (sw) 70	2.75 (sw) 70	1.5 0.7
				1 DN25	2.75 (sw) 70	2.75 (sw) 70	1.5 0.7
				1 ¼ DN32	2.75 (sw) 70	2.75 (sw) 70	1.7 0.8
2 DN50	x	2 DN50	x	¾ DN20	3.25 83	3.25 83	2.5 1.1
				1 DN25	3.25 83	3.25 83	2.7 1.2
				1 ¼ DN32	3.25 (sw) 83	3.25 (sw) 83	1.8 0.8
				1 ½ DN40	3.25 83	3.25 (sw) 83	3.0 1.4
2 ½	x	2 ½	x	¾ 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 ¼ DN32	3.75 95	3.75 95	4.2 1.7
				1 ½ 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	x	¾ 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 ¼ DN32	4.25 108	4.25 108	8.0 3.6
				1 ½ 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 ½	4.25 108	4.25 (sw) 108	6.4 2.9

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

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

(sw) = Carbon Steel Segmentally Welded



No. 25 No. 29T

Size					No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN					C to E inches mm	C to E inches mm	lb kg
4 DN100	x	4 DN100	x	¾ 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 ¼ DN32	5.00 (sw) 127	5.00 (sw) 127	9.6 4.4
				1 ½ DN40	5.00 127	5.00 127	10.2 4.6
				2 DN50	5.00 127	5.00 127	11.2 5.1
				2 ½	5.00 127	5.00 127	11.4 5.2
				3 DN80	5.00 127	5.00 127	11.6 5.3
5 DN125	x	5 DN125	x	1 DN25	5.50 (sw) 140	5.50 (sw) 140	14.0 6.4
				1 ½ 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 ½	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	x	1 DN25	6.50 (sw) 165	6.50 (sw) 165	23.0 10.4
				1 ½ 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 ½	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
				5	6.50 165	6.50 165	23.2 10.5
6 ½ DN165.1	x	6 ½ DN165.1	x	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

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

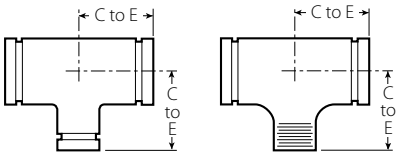
(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

4.5 DIMENSIONS (Continued)

Reducing Tee

No. 25 Grooved Branch
No. 29T Threaded Branch



No. 25 No. 29T

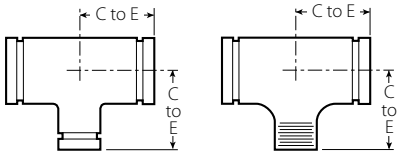
Size				No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN				C to E inches mm	C to E inches mm	lb kg
8 DN200	x	8 DN200	x 1 ½ DN40	7.75 (sw) 197	7.75 (sw) 197	33.0 15.0
			2 DN50	7.75 (sw) 197	7.75 (sw) 197	33.5 15.2
			2 ½	7.75 (sw) 197	7.75 (sw) 197	39.0 17.7
			3 DN80	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
			165.1	7.75 (sw) 197	7.75 (sw) 197	48.0 21.8
10 DN250	x	10 DN250	x 1 ½ 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 ½	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

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

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

(sw) = Carbon Steel Segmentally Welded



No. 25 No. 29T

Size				No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN				C to E inches mm	C to E inches mm	lb kg
12 DN300	x	12 DN300	x 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 ½	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[8] DN350	x	14 DN350	x 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[8] DN400	x	16 DN400	x 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

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

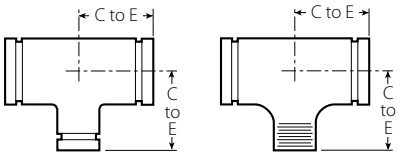
(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

4.5 DIMENSIONS (Continued)

Reducing Tee

No. 25 Grooved Branch
No. 29T Threaded Branch



No. 25 No. 29T

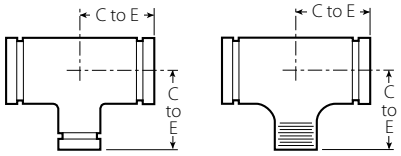
Size				No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN				C to E inches mm	C to E inches mm	lb kg
18[8] DN450	x	18 DN450	x 4 DN100	15.50 (sw) 394	15.50 (sw) 394	194.0 88.0
			6 DN150	15.50 (sw) 394	15.50 (sw) 394	200.0 90.7
			8 DN200	15.50 (sw) 394	15.50 (sw) 394	202.0 91.6
			10 DN250	15.50 394	15.50 394	212.0 96.2
			12 DN300	15.50 394	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[8] DN500	x	20 DN500	x 6 DN150	17.25 438	17.25 438	240.0 108.9
			8 DN200	17.25 438	17.25 438	244.0 110.7
			10 DN250	17.25 438	17.25 438	256.0 116.1
			12 DN300	17.25 438	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

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

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

(sw) = Carbon Steel Segmentally Welded



No. 25 No. 29T

Size				No. 25 Std.	No. 29T w/ Thd. Branch	Approx. Weight (Each)
Nominal Size inches DN				C to E inches mm	C to E inches mm	lb kg
24[8] DN600	x	24 DN600	x 8 DN200	20.00 508	20.00 508	340.0 154.2
			10 DN250	20.00 508	20.00 508	343.9 156.0
			12 DN300	20.00 508	20.00 508	352.8 160.0
			14[9] DN350	20.00 508	—	360.0 163.3
			16 DN400	20.00 508	—	378.0 171.5
			18[9] DN450	20.00 508	—	380.0 172.4
			20 DN500	20.00 508	—	373.0 169.2
DN14 – 60 DN350 – 1500				For AGS fitting information, see publication 20.05 AGS™		

[8] For 14"/350 mm 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.

[9] Cast fitting available. Contact Victaulic for details.

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

(sw) = Carbon Steel Segmentally Welded

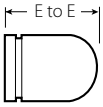
NOTES

- 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).

4.6 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

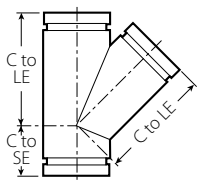
NOTES

- Steel dish caps available through 24”/600 mm, 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).

4.7 DIMENSIONS

45° Lateral

No. 30



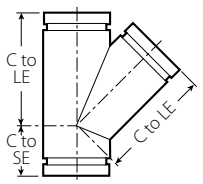
No. 30

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

[10] For 14"/350 mm 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



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
	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 49.8
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
14[10] DN350	14.000 355.6	26.50 (sw) 673	7.50 (sw) 191	276.0 125.2
16[10] DN400	16.000 406.4	29.00 (sw) 737	8.00 (sw) 203	344.2 156.1
18[10] DN450	18.000 457.0	32.00 (sw) 813	8.50 (sw) 216	429.0 194.6
20[10] DN500	20.000 508.0	35.00 (sw) 889	9.00 (sw) 229	500.0 226.8
24[10] DN600	24.000 610.0	40.00 (sw) 1016	10.00 (sw) 254	715.0 324.3
DN14 – 60 DN350 – 1500	**For AGS fitting information, see** publication 20.05 AGS™			

[10] For 14"/350 mm 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

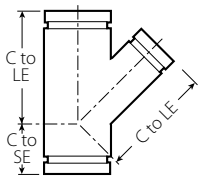
NOTE

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

4.8 DIMENSIONS

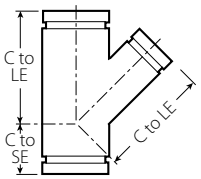
45° Reducing Lateral

No. 30-R



No. 30-R

Size						No 30-R 45° Reducing Lateral		
Nominal Size inches DN						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 DN65		8.50 216	3.25 83	9.8 4.4
4 DN100	x	4 DN100	x	2 DN50		10.50 267	3.75 95	10.0 4.5
				2½ DN65		10.50 267	3.75 95	10.0 4.5
				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



No. 30-R

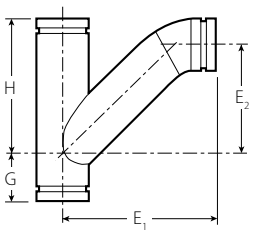
Size						No 30-R 45° Reducing Lateral		
Nominal Size inches DN						C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg
14[11] DN350	x	14 DN350	x	4 DN100		26.50 673	7.50 191	172.0 78.0
				6 DN150		26.50 673	7.50 191	187.0 84.8
				8 DN200		26.50 673	7.50 191	205.8 93.4
				10 DN250		26.20 673	7.50 191	235.0 106.6
				12 DN300		26.50 673	7.50 191	250.0 113.4
16[11] 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[11] 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[11] 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
24[11] 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 AGS™		

[11] For 14"/350 mm 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.

4.9 DIMENSIONS

Tee Wye

No. 32



No. 32

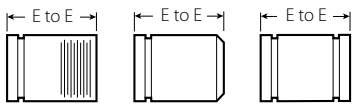
Size					No. 32 Tee Wye (sw)				
Nominal Size inches DN					G inches mm	H inches mm	E1 inches mm	E2 inches mm	Approx. Weight (Each) lb kg
2 DN50	x	2 DN50	x	2 DN50	2.75 70	7.00 178	9.00 229	4.63 118	6.4 2.9
2½	x	2½	x	2½	3.00 76	7.75 197	10.50 267	5.75 146	11.5 5.2
3 DN80	x	3 DN80	x	3 DN80	3.25 83	8.50 216	11.50 292	6.50 165	14.3 6.5
3½ DN90	x	3½ DN90	x	3½ DN90	3.25 89	10.00 254	13.00 330	7.75 197	22.9 10.4
4 100	x	4 DN100	x	4 DN100	3.75 95	10.50 267	13.63 346	8.13 207	26.0 11.8
5	x	5	x	5	4.00 102	12.50 318	16.13 410	10.00 254	48.0 21.8
6 DN150	x	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	x	8 DN200	6.00 152	18.00 457	23.25 591	15.25 387	127.1 57.7
10 DN250	x	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	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

4.10 DIMENSIONS

Adapter Nipple

No. 40[12] Grv. × Thd.
No. 42 Grv. × Bev.
No. 43 Grv. × Grv.



No. 40 No.42 No.43

Size		No. 40, 42, 43 Adapter Nipple (s)	
Nominal Size inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approx. Weight (Each) inches mm
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

[12] Available with British Standard Pipe Threads, specify "BSP" clearly on order.

(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"/100 – 300 mm diameter — 8"/200 mm 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.

4.11 DIMENSIONS

Cap

No. 60

No. 60

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

[13] For 14"/350 mm 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.

No. 60

Size		No. 60 Cap	
Nominal inches DN	Actual Outside Diameter inches mm	"T" Thickness inches mm	Approx. Weight (Each) lb kg
	6.250 159.0	1.00 25	6.8 3.1
	6.500 165.1	1.00 25	7.3 3.3
6 DN150	6.625 168.3	1.00 25	6.1 2.8
8 200	8.625 219.1	1.19 30	13.1 5.9
10 DN250	10.750 273.0	1.25 32	21.0 9.5
12 DN300	12.750 323.9	1.25 32	35.6 16.2
14[13] DN350	14.000 355.6	9.50 (s) 241	+
16[13] DN400	16.000 406.4	10.00 (s) 254	+
18[13] DN450	18.000 457.0	11.00 (s) 279	+
20[13] DN500	20.000 508.0	12.00 (s) 305	+
24[13] DN600	24.000 610.0	13.50 (s) 343	+
14 – 60 DN350 – DN1500	**For AGS fitting information, see** publication 20.05 AGS™		

[13] For 14"/350 mm 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.

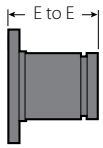
NOTES

- 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).

4.12 DIMENSIONS

Flanged Adapter Nipple

No. 41 ANSI Class 125
No. 45F ANSI Class 150 Flat Face
No. 45R ANSI Class 150 Raised Face
No. 46F ANSI Class 300 Flat Face
No. 46R ANSI Class 300 Raised Face
No. 45RE PN10/PN16 Raised Face



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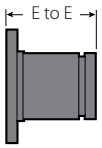

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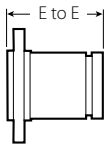

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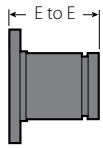

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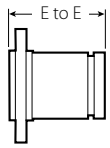

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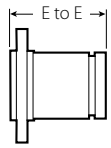


No. 45RE

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	5.000 139.7	—	—	—	—	—	—	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 DN 250	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[14] DN350	14.000 355.6	8.00 203	—	8.00 203	+	8.00 203	+	—	—
16[14] DN400	16.000 406.4	8.00 203	—	8.00 203	+	8.00 203	+	—	—
18[14] DN450	18.000 457.0	8.00 203	—	8.00 203	+	8.00 203	+	—	—

[14] For 14"/350 mm 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.

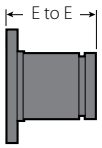
(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

4.12 DIMENSIONS (Continued)

Flanged Adapter Nipple

No. 41 ANSI Class 125
No. 45F ANSI Class 150 Flat Face
No. 45R ANSI Class 150 Raised Face
No. 46F ANSI Class 300 Flat Face
No. 46R ANSI Class 300 Raised Face
No. 45RE PN10/PN16 Raised Face



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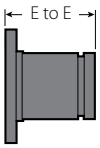

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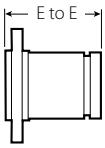

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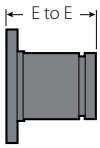

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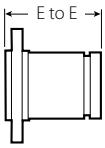

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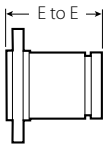


No. 45RE

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[14] DN500	20.000 508.0	8.00 203	—	8.00 203	+	8.00 203	+	—	—
24[14] 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								

[14] For 14"/350 mm 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

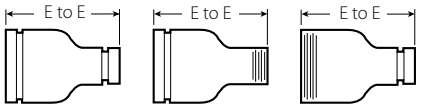
NOTE

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

4.13 DIMENSIONS

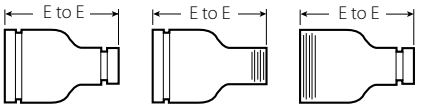
Swaged Nipple

No. 53 Grv. × Grv.
No. 54 Grv. × Thd.
No. 55 Thd. × Grv.



No. 53 No. 54 No. 55

Size			No. 53, 54, and 55 Swaged Nipples (s)	
Nominal Sizes 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



No. 53 No. 54 No. 55

Size			No. 53, 54, and 55 Swaged Nipples (s)	
Nominal Sizes 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 DN120	12.00 305	17.5 7.9
		5	12.00 305	17.5 7.9
8 DN200	x	6 DN150	+	20.0 9.1

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

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details

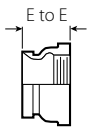
NOTE

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

4.14 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

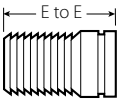
NOTES

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

4.15 DIMENSIONS

Hose Nipple

No. 48



No. 48

Size		No. 48 Hose Nipple (s)	
Nominal Size 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

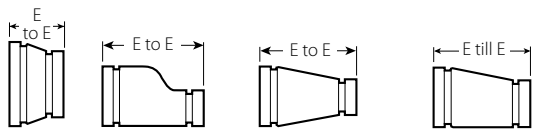
NOTE

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

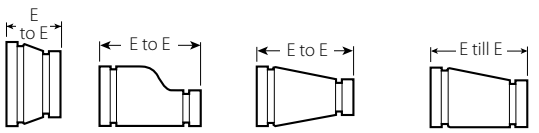
4.16 DIMENSIONS

Concentric/Eccentric Reducer

No. 50 Concentric
No. 51 Eccentric



No. 50 | No. 51 | Fabricated Steel No. 50 | Fabricated Steel No. 51



No. 50 | No. 51 | Fabricated Steel No. 50 | Fabricated Steel No. 51

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
1¼ DN32	x	¾ DN20	+	1.9 0.9	—	—
		1 DN25	+	1.9 0.9	—	—
1½ DN40	x	¾ DN20	+	1.4 0.6	—	—
		1 DN25	2.50 64	0.8 0.4	8.50 (sw) 216	4.5 2.0
		1¼ DN32	2.50 64	1.0 0.5	—	—
2 DN50	x	¾ 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
		1¼ DN32	2.50 64	1.2 0.5	9.00 (sw) 229	4.6 2.1
		1½ DN40	3.50 89	1.0 0.5	3.50 89	1.1 0.5
2½	x	¾ 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
		1¼ DN32	3.50 89	3.3 1.5	3.50 89	1.4 0.6
		1½ 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	¾ 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
		1¼ DN32	2.50 64	1.4 0.6	+	4.8 2.2
		1½ 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
		2½	2.50 64	1.8 0.8	3.50 89	7.0 3.2
		DN76.1	2.50 64	2.1 1.0	—	—
3½ 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

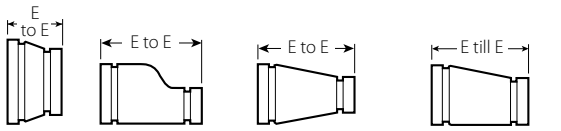
Size			No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
Nominal inches DN			E to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
		1¼ DN32	+	4.6 2.1	—	—
		1½ DN40	3.00 (sw) 76	2.6 1.2	10.00 (sw) 254	8.1 3.7
		2 DN50	3.00 76	2.4 1.1	4.00 102	3.3 1.5
		2½	3.00 76	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
		3½ DN90	3.00 76	2.9 1.3	10.00 (sw) 254	8.0 3.6
5	x	2 DN50	11.00 (sw) 279	9.0 4.1	11.00 (sw) 279	5.2 2.4
		2½	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	4.00 102	5.0 2.3	11.50 (sw) 292	14.5 6.6
		1½ DN40	+	5.5 2.5	+	+
		2 DN50	4.00 102	6.6 3.0	11.50 (sw) 292	14.5 6.6
		2 ½	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	2½	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

[15] For 14"/350 mm 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.

4.16 DIMENSIONS (Continued)

Concentric/Eccentric Reducer

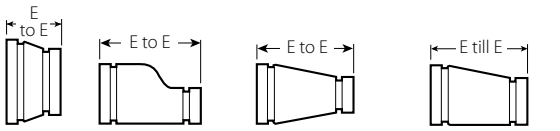
No. 50 Concentric
No. 51 Eccentric



No. 50 | No. 51 | Fabricated Steel No. 50 | Fabricated Steel No. 51

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	6.00 152	19.7 8.9	13.00 (sw) 330	32.0 14.5
		5	+	33.0 15.0	+	34.6 15.7
		6 DN150	6.00 152	20.0 9.1	13.00 (sw) 330	36.9 16.7
		8 DN200	6.00 152	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	7.00 178	24.6 11.2	14.00 (sw) 356	50.0 22.7
		8 DN200	7.00 178	52.0 23.6	14.00 (sw) 356	53.5 24.3
		10 DN250	7.00 178	39.0 17.7	14.00 (sw) 356	57.0 25.9
14 DN350	x	6 DN150	13.00 330	65.0 29.5	13.00 330	60.0 27.2
		8 DN200	13.00 330	65.0 29.5	13.00 330	60.0 27.2
		10 DN250	13.00 330	66.0 29.9	13.00 330	65.0 29.5
		12 DN300	13.00 330	68.0 30.8	13.00 330	66.0 29.9
16 DN400	x	8 DN200	14.00 356	73.0 33.1	14.00 355	73.0 33.1
		10 DN250	14.00 356	73.0 33.1	14.00 355	73.0 33.1
		12 DN300	14.00 356	73.0 33.1	14.00 355	73.0 33.1
		14 DN350	14.00 356	73.0 33.1	14.00 355	73.0 33.1
18 DN450	x	10 DN250	15.00 381	91.0 41.3	15.00 381	91.0 41.3
		12 DN300	15.00 381	91.0 41.3	15.00 381	91.0 41.3
		14 DN350	15.00 381	91.0 41.3	15.00 381	91.0 41.3
		16 DN400	15.00 381	91.0 41.3	15.00 381	91.0 41.3

[15] For 14"/350 mm 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.



No. 50 | No. 51 | Fabricated Steel No. 50 | Fabricated Steel No. 51

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 DN500	x	10 DN250	20.00 508	110.0 49.9	20.00 508	177.0 80.3
		12 DN300	20.00 508	120.0 54.4	20.00 508	120.0 54.4
		14 DN350	20.00 508	149.0 67.9	20.00 508	149.0 67.9
		16 DN400	20.00 508	120.0 54.4	20.00 508	120.0 54.4
		18 DN450	20.00 508	136.0 61.7	20.00 508	136.0 61.7
24 DN600	x	10 DN250	20.00 508	142.0 64.4	20.00 508	142.0 64.4
		12 DN300	20.00 508	150.0 68.0	20.00 508	150.0 68.0
		14 DN350	20.00 508	162.0 73.5	20.00 508	162.0 73.5
		16 DN400	20.00 508	162.0 73.5	20.00 508	162.0 73.5
		18 DN450	20.00 508	162.0 73.5	20.00 508	162.0 73.5
		20 DN500	20.00 508	151.0 68.5	20.00 508	190.0 86.2
14 – 60[15] DN350 – DN1500			For AGS fitting information, see publication 20.05 AGS™			

[15] For 14"/350 mm 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"/750 mm, contact Victaulic for dimensions.
- All fittings are ductile iron unless otherwise noted with an (sw) or (s).

4.17 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 Size 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	—	—
		1¼ DN32	2.50 64	0.9 0.4	—	—
2 DN50	x	¾ DN20	2.50 64	0.9 0.4	—	—
		1 DN25	2.50 64	0.7 0.3	—	—
		1 ¼ DN32	2.50 64	1.2 0.5	—	—
		1 ½ DN40	2.50 64	1.0 0.5	—	—
2½	x	1 DN25	2.50 64	1.1 0.5	—	—
		1¼ DN32	2.50 (sw) 64	1.2 0.5	—	—
		1½ DN40	2.50 (sw) 64	1.3 0.6	—	—
		2 DN50	2.50 64	1.4 0.6	—	—
DN65	x	1 ½ DN40	64	0.8	64	0.8
		2 DN50	—	—	64	0.9
3 DN80	x	¾ DN20	+(sw)	1.5 0.7	—	—
		1 DN25	2.50 64	1.3 0.6	—	—
		1 ¼ DN32	2.50 64	1.5 0.7	—	—
		1 ½ DN40	2.50 (sw) 64	1.5 0.7	—	—
		2 DN50	2.50 64	1.5 0.7	—	—
		2 ½	2.50 64	2.4 1.1	—	—
88.9mm	x	42.4mm	64	0.9	64	0.8
		48.3mm	64	0.9	64	0.9
		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 Size 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	—	—
		1½ DN40	3.00 76	2.7 1.2	—	—
		2 DN50	3.00 76	2.6 1.2	—	—
		2 ½	3.00 76	2.6 1.2	—	—
		3 DN80	3.00 76	2.5 1.1	—	—
108.0mm	x	42.4mm	76	1.3	76	1.3
		48.3mm	76	1.3	76	1.4
		60mm	—	—	76	1.4
114.3mm	x	42.4mm	76	1.3	76	1.3
		48.3mm	76	1.3	76	1.3
		60mm	76	1.3	76	1.4
5	x	4 DN100	+	4.5 2.0	—	—
133.0mm	x	60mm	—	—	114	2.2
139.0mm	x	60mm	—	—	114	2.3
6 DN150	x	1 DN25	4.00 102	5.5 2.5	—	—
		2 DN50	4.00 102	5.7 2.6	—	—
		2½	4.00 102	5.8 2.6	—	—
		3 DN80	4.00 102	5.8 2.6	—	—
		4 100	+(sw)	6.5 2.9	—	—
		5	+(sw)	2.0 0.9	—	—
159.0mm	x	42.4mm	114	2.2	144	2.5
		48.3mm	114	2.2	114	2.5
		60mm	—	—	114	2.6

4.17 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 Size 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	102mm	2.4	102	2.9
		48.3mm	102mm	2.6	102	3.0
		60mm	—	—	102	3.0
8 DN200	x	2 DN50	16.00 406	1.5 0.7	—	—
		2 ½	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).

Fig. 146

Continuous Threaded Rod

Size Range: 1/4" through 1 1/2" Stocked in six, ten, and twelve foot lengths. Other even foot lengths can be furnished to order.
Material: Carbon steel or Stainless Steel Gr 304
Threads: National Coarse (USS), rod threaded complete length.
Finish: ☐ Plain or ☐ Zinc Plated (Hot-Dip Galvanized optional)
Maximum Temperature: 650° F.
Ordering: Specify rod diameter and length, figure number, name and finish.
Note: The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

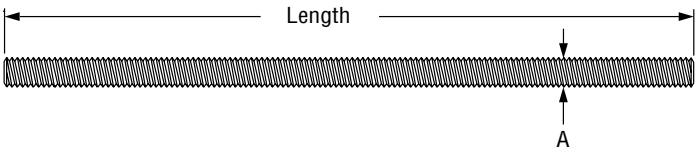


FIG. 146:
LOADS (LBS) • WEIGHTS (LBS) • DIMENSIONS (IN)

Rod Size A	Threads per Inch	Max Load 650° F	Weight per Ft.
1/4	20	240	0.12
3/8	16	730	0.30
1/2	13	1,350	0.53
5/8	11	2,160	0.84
3/4	10	3,230	1.20
7/8	9	4,480	1.70
1	8	5,900	2.30
1 1/4	7	9,500	3.60
1 1/2	6	13,800	5.10

Note: Other rod sizes available upon request. Class 2 fit is available upon request.

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

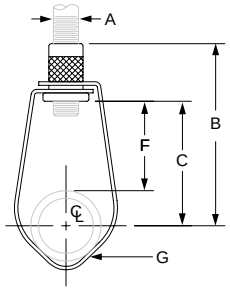
Fig. 69 Adjustable Swivel Ring, Tapped Per NFPA Standards

Size Range: 1/2" through 8"
Material: Carbon steel
Finish: Galvanized
Service: Recommended for suspension of non-insulated **stationary** pipe line.
Maximum Temperature: 650° F
Approvals: Complies with Federal Specification A-A-1192A (Type 10), *WW-H-171-E (Type 10)*, ANSI/MSS SP-69 and MSS SP-58 (Type 10). UL Listed and FM Approved (Sizes 3/4" - 8").
Features:

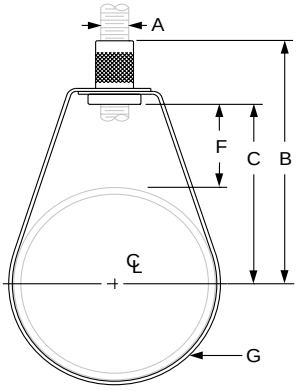
- Threads are countersunk so that they cannot become burred or damaged.
- Knurled swivel nut provides vertical adjustment after piping is in place.
- Captured swivel nut in the 1/2" through 6" sizes. The capture is permanent in the bottom portion of the band, allowing the hanger to be opened during installation if desired, but not allowing the nut to fall completely out.

Ordering: Specify size, figure number and name.
Note: The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.
Metric nut available upon request. Non-captured nut also available upon request.

UL LISTED FM APPROVED



1/2" through 1" pipe



1 1/4" through 8" pipe

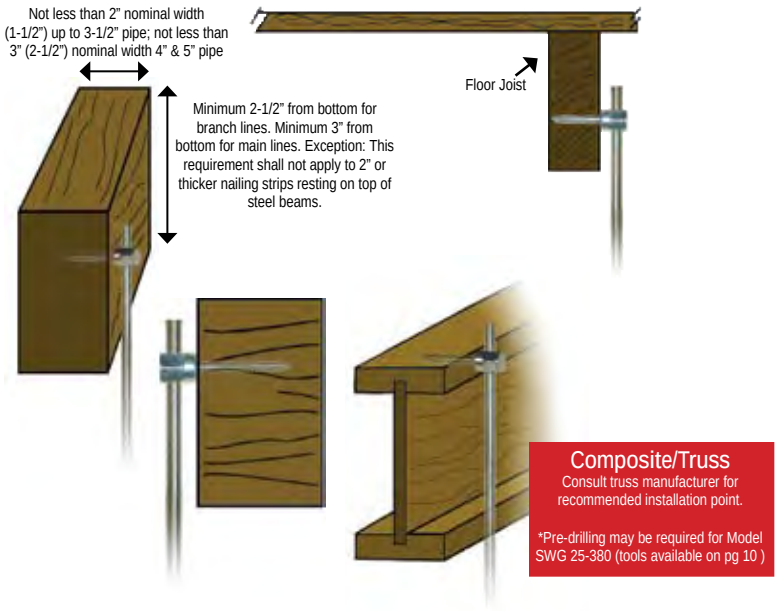
FIG. 69: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)							
Pipe Size	Max Load	Weight	Rod Size A	B	C	F	G Width
1/2	300	0.10	3/8	2 7/8	2	1 9/16	5/8
3/4		0.10		2 3/4	1 7/8	1 5/16	
1		0.10		2 9/16	1 11/16	1	
1 1/4		0.10		2 5/8	1 3/4	7/8	
1 1/2		0.10		2 3/4	1 7/8		
2		0.11		3 1/4	2 3/8	1 1/8	
2 1/2	525	0.20		4	2 3/4	1 5/16	3/4
3		0.20		3 13/16	2 15/16	1 3/16	
4	650	0.30		4 11/16	3 13/16	1 9/16	
5	1,000	0.54	1/2	5 5/16	4 3/8		
6		0.65		6 11/16	5 9/16	2 1/4	
8		1.00		8	7	2 11/16	1

Note: Reflects changes in rod diameter from previously published data per recent revisions in MSS-SP-58 & 69

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

SIDEWINDERS® for Wood

Installs HORIZONTALLY into the side of wood structures easily and quickly!



Composite/Truss
Consult truss manufacturer for recommended installation point.

*Pre-drilling may be required for Model SWG 25-380 (tools available on pg 10)

Product Features

- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.
- Saves time from traditional methods.
- Reduces installation cost.
- Made in the U.S.A.

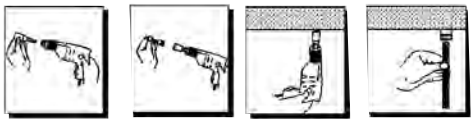
#14 SW Red Nut Driver Part # 8114910

Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	Box Qty	Case Qty
	1/4"	8018957	SWG 100	1/4 x 1"	622 (Fir)		25	125
	1/4"	8019957	SWG 200	1/4 x 2"	1725 (Fir)		25	125
	3/8"	8020957	SWG 10	1/4 x 1"	622 (Fir)	300	25	125
	3/8"	8021957	SWG 20	1/4 x 2"	1725 (Fir)	1050	25	125
	3/8"	8073925	SWG 20-SS	1/4 x 2"	1725 (Fir)	850	25	125
	3/8"	8022925	SWG 25-380	3/8 x 2-1/2"	2249 (Fir)	1500	25	125
	3/8"	8023925	SWG 30	1/4 x 3"	1884 (Fir)		25	125

INSTALLATION STEPS - VERTICAL INTO WOOD & STEEL:

1. *Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.*
2. *Insert the SAMMYS into the #14 (black) nut driver (p/n 8113910). Drill should be in a vertical position.*
3. *Push the face of the nut driver tight to the member. When the nut driver spins freely on the SAMMYS, stop drill and remove.*
4. *The SAMMYS is now ready to receive 1/4", 3/8", 1/2" or metric all thread rod, bolt stock. (The 1/2" requires the #14SW red nut driver)*

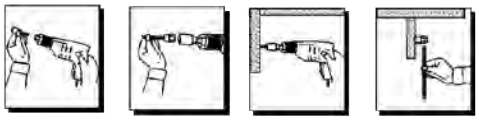
Note: When installing DSTR, follow the above instructions, then add retainer nut and torque to 20 foot lbs. for maximum pullout in purlin steel.



INSTALLATION STEPS - HORIZONTAL INTO WOOD & STEEL:

1. *Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.*
2. *Insert the SAMMYS into the #14SW (red) nut driver (p/n 8114910). With drill unit in a horizontal position and at a right angle to the structural member, begin installation.*
3. *When the nut driver spins free on the SAMMYS, stop the drill and remove.*
4. *The unit is now ready to receive 1/4", 3/8" or metric all thread rod or bolt stock.*

Note: When installing SWDR, follow the above instructions, then add retainer nut and torque to 20 foot lbs. for maximum pullout in purlin steel.



SPECIAL NUT DRIVER SYSTEM: The nut drivers were designed with a unique spin-off feature which provides a fast and safe installation each time. When the face of the driver comes into contact with the material you are installing into, continue drilling until nut driver spins free. Installation is then complete. Warranty requires the use of the appropriate nut driver for installations.

POTTER ROEMER FIRE PRO™
Member of Morris Group International™

SPECIALTY ITEMS
SPRINKLER AND STANDPIPE ACCESSORIES

Model/Series No.
6201-6240 SERIES

SPECIFICATIONS

FLOW SWITCH
Red tamper proof switch housing with flow paddle. Adjustable pneumatic retard setting from 0 to 70 seconds. Two single pole, double throw microswitches to operate separate circuits, 120 Volt A.C. UL Listed for schedule 10 and 40 steel water pipe. Type and size as selected by model number.

MODEL SELECTION

FLOW SWITCHES
- ❑ **6201** 2” For Steel Tube
- ❑ **6202** 2-1/2” For Steel Tube
- ❑ **6203** 3” For Steel Tube
- ❑ **6204** 3-1/2” For Steel Tube
- ❑ **6205** 4” For Steel Tube
- ❑ **6206** 5” For Steel Tube
- ❑ **6207** 6” For Steel Tube
- ❑ **6208** 8” For Steel Tube
- ❑ **6211** 2” For Copper Tube
- ❑ **6212** 2-1/2” For Copper Tube
- ❑ **6216** Tee Type with Retard
- ❑ **6217** Tee Type without Retard

SUPERVISORY SWITCHES
- ❑ **6220** For OS&Y Gate valves
- ❑ **6222** For Sprinkler System Valves
- ❑ **6223** For Post Indicator Type Valves & Regulating Valves

ACCESSORIES
- ❑ **6230** Bell
  - ❑ 12 Volts ❑ 24 Volts
- ❑ **6235** Bell Guard
- ❑ **6240** Pressure Gauge (UL Listed)

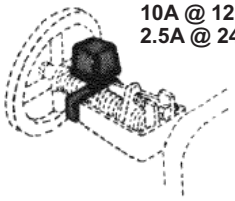
PRODUCT OPTIONS

“NO AVAILABLE OPTIONS”

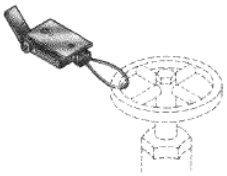
MODEL 6206 (Shown)

MODELS

Contact Ratings:
10A @ 125/250 VAC
2.5A @ 24 VDC



SUPERVISORY SWITCH
MODEL 6220



SUPERVISORY SWITCH
MODEL 6222

Contact Ratings:
10A @ 125/250 VAC
2.5A @ 24 VDC

SUPERVISORY SWITCH
MODEL 6223

BELL
MODEL 6230

BELL GUARD
MODEL 6235

PRESSURE GAUGE
MODEL 6240

MEMBERSHIP

POTTER ROEMER/FIRE PRO
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91744 U.S.A.
Los Angeles Area
800-366-3473
626-855-4890

Also in:
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Chicago (800) 547-3473
Atlanta (800) 762-0542
Miami (866) 961-3473
Dallas (866) 644-3473

www.potterroemer.com

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

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

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.

2. LISTINGS AND APPROVALS:.

cULus Listed: HMER
FM Approved: Single Check Valves
NYC Department of Buildings: MEA 89-92-E, Vol. XI
VNIIPO (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.

Replaces page 815a-g, dated May 09, 2013.
(Removed Cold Storage references)

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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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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. (3.1m)	35 lbs. (16 kg)
ANSI	4"	08508	13 ft. (4.0 m)	27 lbs. (12 kg)
ANSI	6"	08511	20 ft. (6.0 m)	75 lbs. (34 kg)
ANSI/Japan	DN100	09039	13 ft. (4.0 m)	27 lbs. (12 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. (3.1m)	35 lbs. (16 kg)
PN10/16	DN100	08797	13 ft. (4.0 m)	27 lbs. (12 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. (3.1m)	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. (3.1m)	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. (1.8m)	16 lbs. (7kg)
	Model F-1			
89mm	3" / DN80	08507	10 ft. (3.1m)	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)

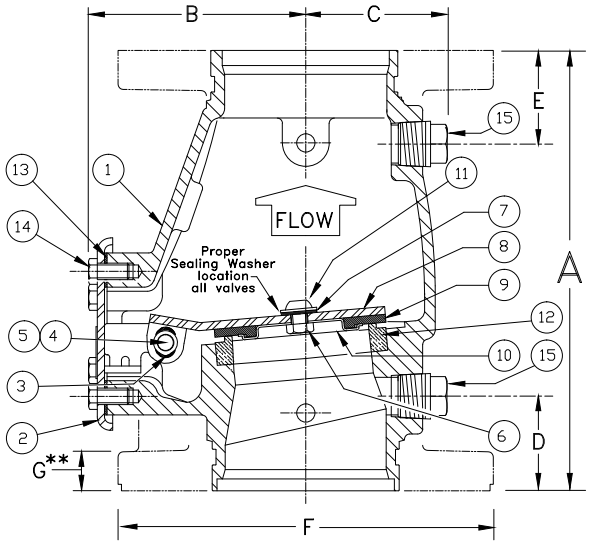
Table 3 - Trim Package Part Numbers

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

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



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" (23,81)
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 E-1 2-1/2" (DN65)	F-1 3" (DN80)	F-1 4" (DN100)	F-1 6" (DN150)	F-1 8" (DN200)	DESCRIPTION	MATERIAL	NO. REQ'D 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 ½"-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
11	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
14	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.

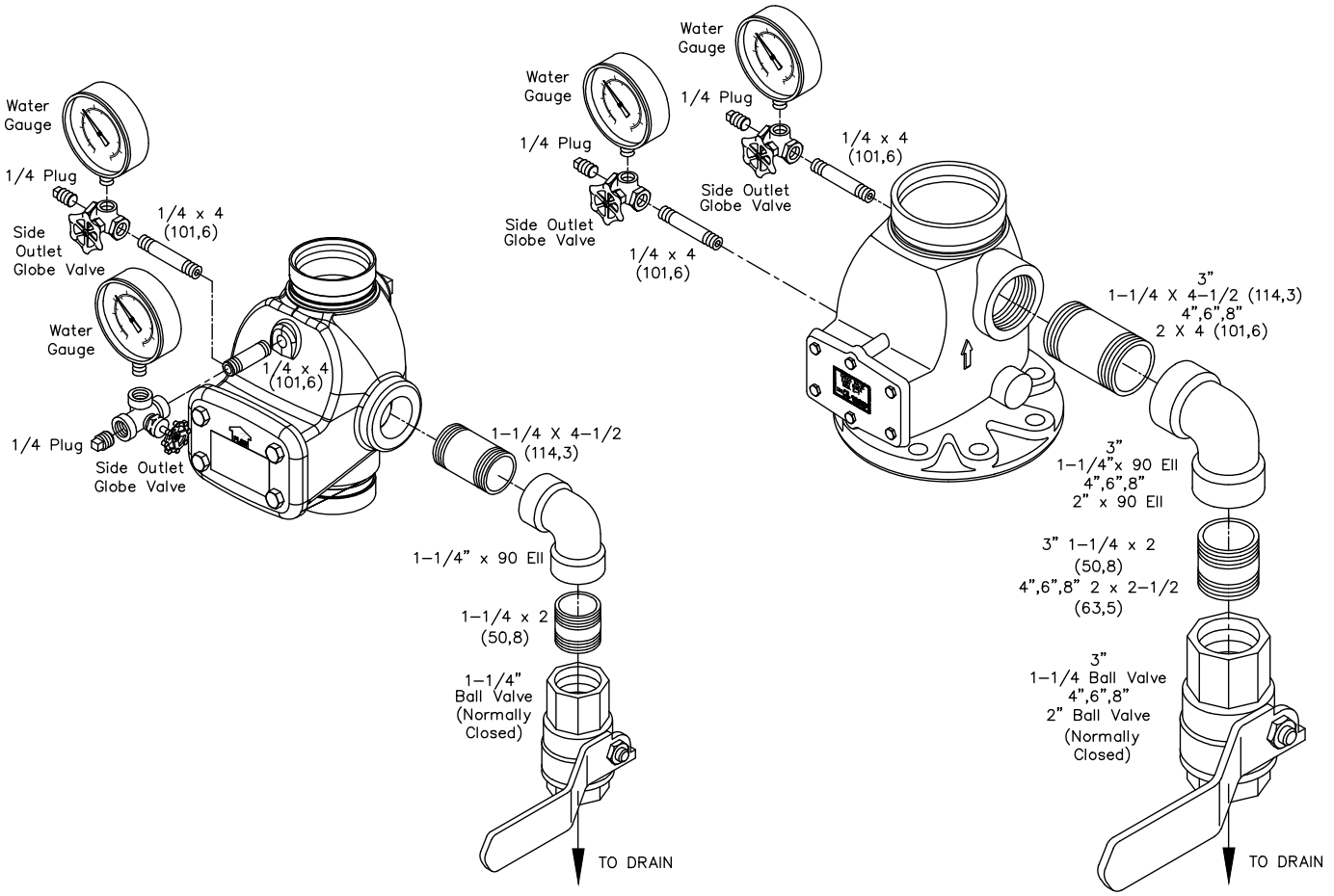
Sub-Assemblies

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

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



2-1/2" MODEL E-1 EASY RISER CHECK VALVE TRIM CHART

3",4",6", & 8" MODEL F-1 EASY RISER CHECK VALVE TRIM CHART

Figure 2

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.

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

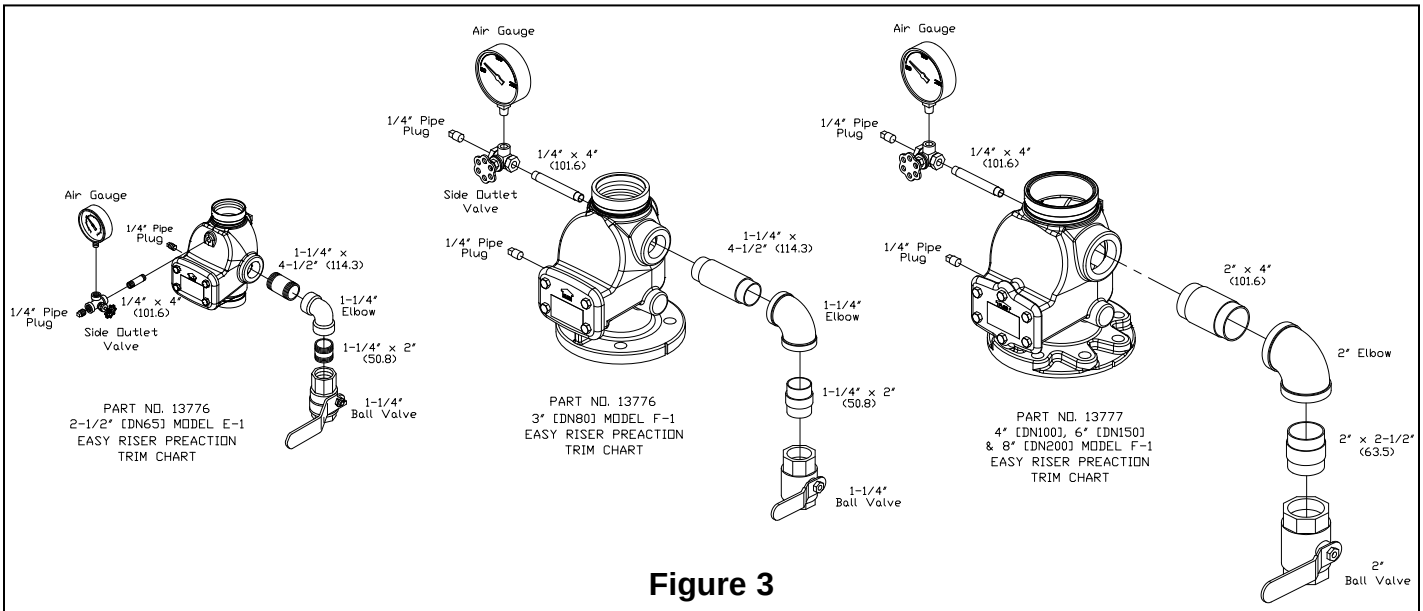
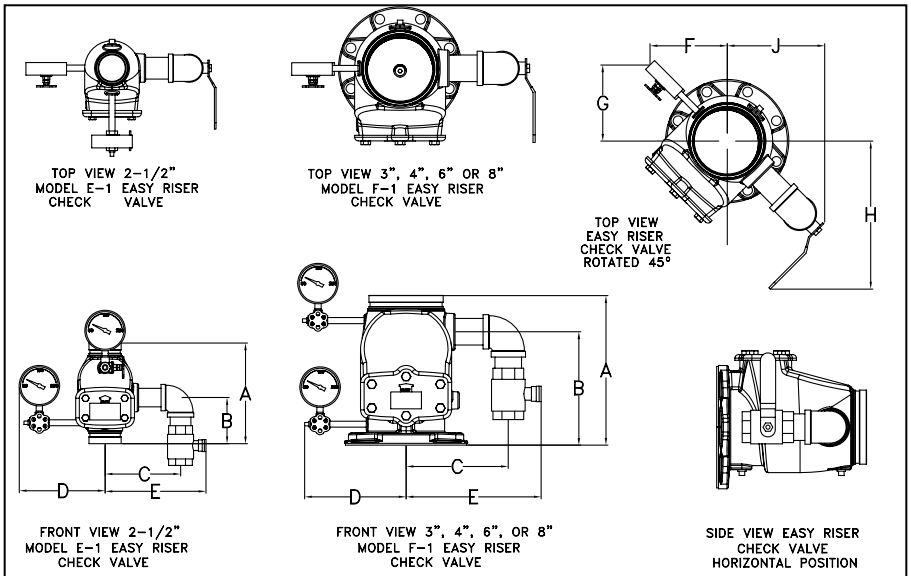


Figure 3
For use on Preaction Systems



SIZE	A	B	C	D	E	F	G	H	J
2-1/2" (65mm)	9" (228,6)	4-1/8" (105)	6-3/4" (171)	7-5/8" (194)	9" (229)	5-1/2" (139)	5-3/8" (137)	10-7/16" (265)	6-5/8" (169)
3" (80mm)	10-1/8" (257)	7-1/4" (184)	6-3/4" (171)	7-7/8" (200)	8-7/8" (226)	5-15/16" (150)	5-7/8" (149)	9-7/8" (251)	6-7/16" (163)
4" (100mm)	10-5/8" (270)	7-3/8" (187)	8-3/8" (213)	8-7/16" (214)	11-5/16" (287)	6-3/16"" (157)	6-1/8" (155)	12-11/16" (322)	8-1/16" (205)
6" (150mm)	13-3/8" (340)	10-1/8" (257)	9-1/8" (232)	9-1/2" (241)	12-1/16" (306)	6-7/8" (175)	6-13/16" (173)	13-3/16" (336)	8-5/8" (219)
8" (200mm)	17" (432)	13-1/8" (333)	9-15/16" (253)	10-3/4" (273)	13-1/16" (332)	7-5/8" (193)	7-1/2" (191)	13-15/16" (354)	9-5/16" (237)

Figure 4

Dimensions in parentheses are millimeter.
Dimensions are approximate.

Replaces page 815a-g, dated May 09, 2013.
(Removed Cold Storage references)

KENNEDY VALVE

UL/FM Butterfly Valves

APPROVED

Designed for the Fire Protection Industry

Sizes: 2-1/2", 3", 4", 6", 8"
300 PSI Rated
Double Seal Design For Bubble Tight Shut Off
UL Listed and FM Approved
Outdoor Rated
Wetted Components NSF Certified
C.S.F.M. Approved
N.Y.C. Acceptable
Light Weight
Corrosion Resistant Fusion Bond Coating
Low Torque Operation, High Cycle Life
Easy to read Flag Type Position Indicator

Updated 02/05/13

KENNEDY VALVE

Division of McWane, Inc.

1021 East Water St., Elmira, NY 14901 (607) 734-2211

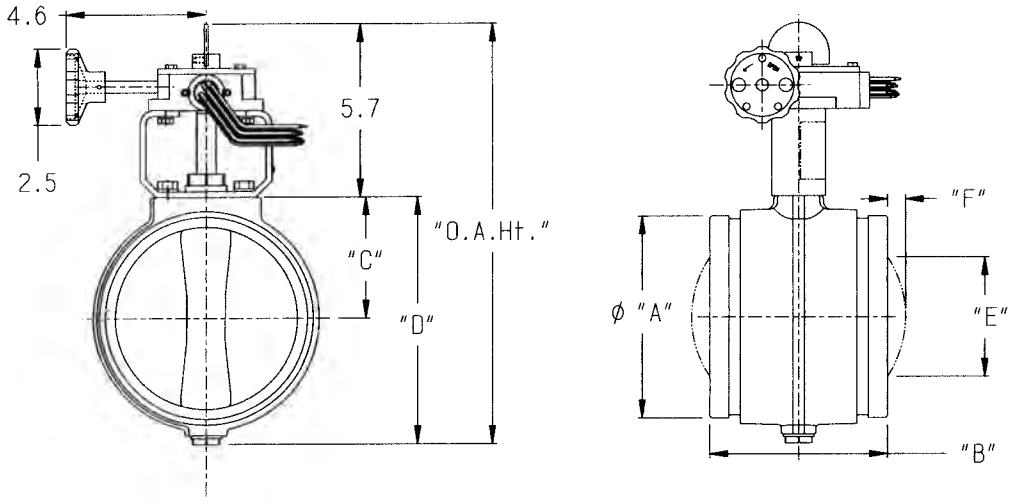
c UL us LISTED

FM APPROVED

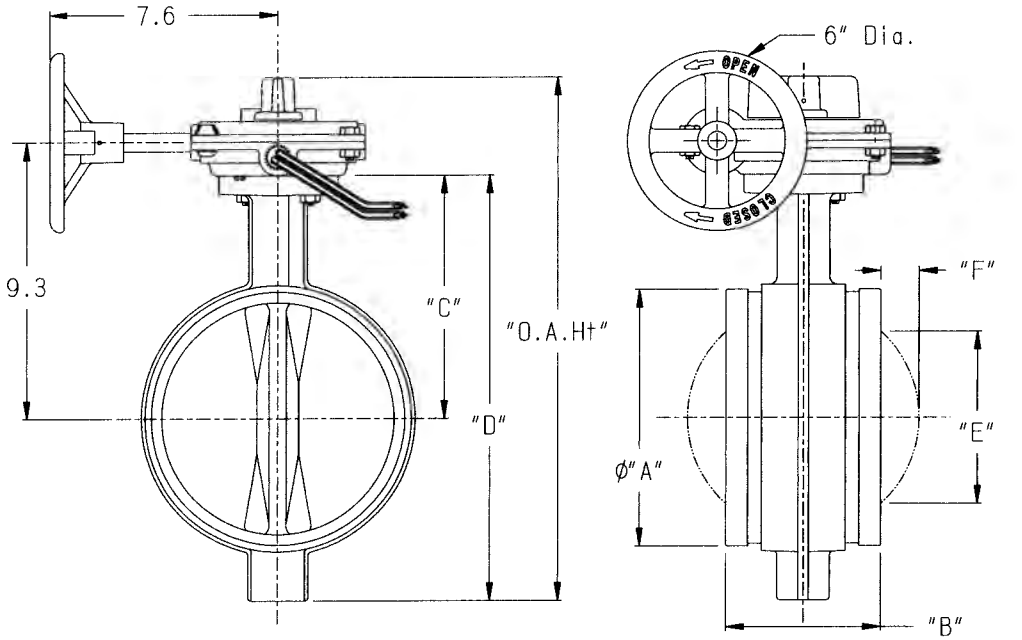
Grooved End Butterfly Valves 2-1/2" to 8"

Figure G300 & 01G 300 psi with Supervisory Tamper Switch

Wetted Components NSF Certified 4"-8"



2-1/2" to 6"
G300
Outdoor Rated UL/FM



8" Only
01G
Outdoor Rated UL

1. UPPER AND LOWER SHAFTS: 416 SS
2. BODY COATING: EPOXY
3. DISC ENCAPSULATION MTL: SBR

	G300				01G
SIZE	2-1/2"	3"	4"	6"	8"
A	2.85	3.47	4.47	6.61	8.6
B	3.8	3.8	4.5	5.8	5.2
C	2.2	2.4	2.9	4.0	8.2
D	4.3	4.8	5.9	8.1	14.3
E	-	-	-	1.7	5.9
F	-	-	-	.1	1.3
O.A.Ht.	10.0	10.4	11.6	13.8	17.6
Wt.#	8.8	10.1	13.5	24.6	44

Note: "E" will be MINIMUM allowed pipe I.D.
Exercise care handling and during installation.

Updated 02/05/13

KENNEDY VALVE

Division of McWane, Inc.

1021 East Water St., Elmira, NY 14901 (607) 734-2211

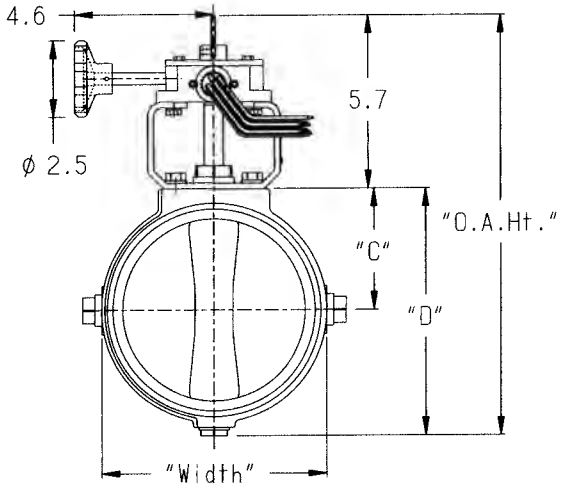
c UL us LISTED

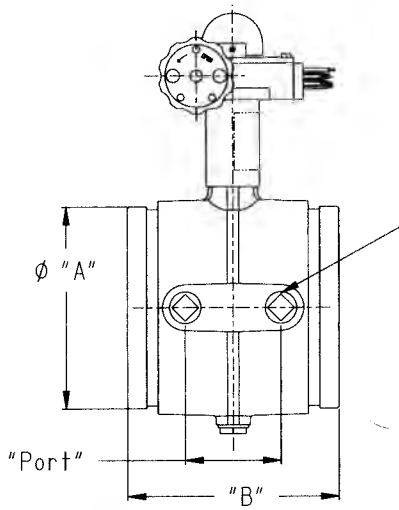
FM APPROVED

Grooved End Butterfly Valves 2-1/2" to 8"

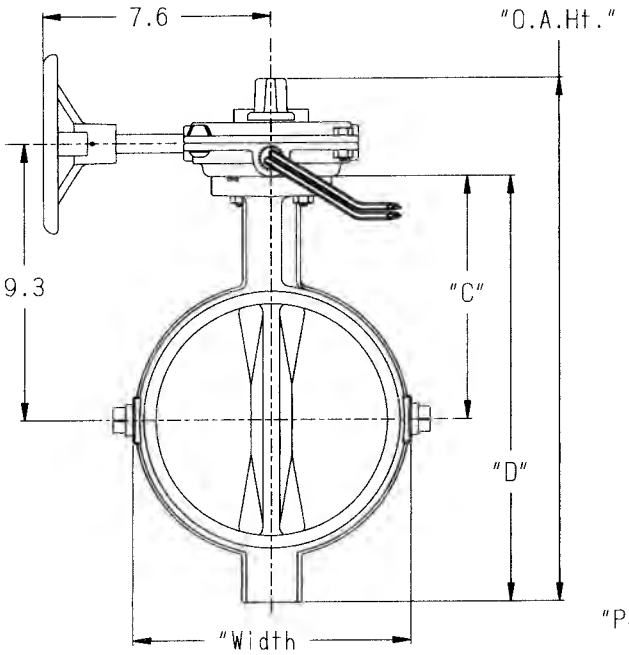
Figure G300E & 02G 300 psi with Supervisory Tamper Switch

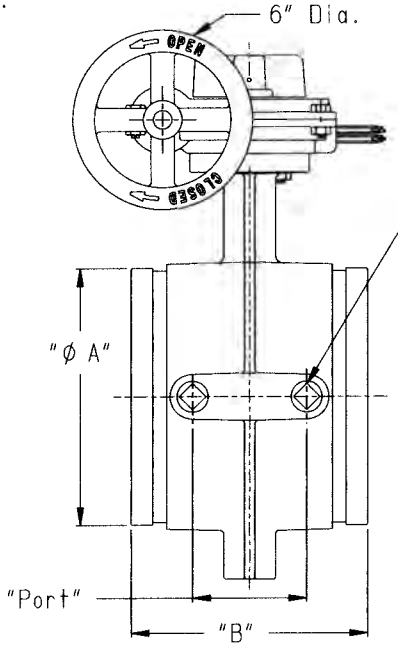
- ☐ Extended Length Valves Equipped with Four 3/4"NPT Ports
- ☐ Wetted Components NSF Certified 4"-8"
- ☐ 4" to 8" sizes have been Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California





2-1/2" to 6"
G300E
Outdoor Rated UL/FM





8" Only
02G
Outdoor Rated UL

1. UPPER AND LOWER SHAFTS: 416 SS
2. BODY COATING: EPOXY
3. DISC ENCAPSULATION MTL: SBR

	G300E				02G
SIZE	2-1/2"	3"	4"	6"	8"
A	2.85	3.47	4.47	6.61	8.6
B	6.0	6.3	6.6	6.9	7.9
C	2.2	2.4	2.9	4.0	8.2
D	4.3	4.8	5.9	8.1	14.3
Width	3.7	4.2	5.2	7.4	9.3
Port	2.3	2.6	2.8	3.1	2.3
O.A.Ht.	10.0	10.4	11.6	13.8	17.6
Wt.#	12.5	14.5	18	28	55

Note: Disc does not protrude past the "B" dimension of the body on any size in the open position. Exercise care handling and during installation.

Updated 02/05/13

KENNEDY VALVE

Division of McWane, Inc.

1021 East Water St., Elmira, NY 14901 (607) 734-2211

c UL us LISTED

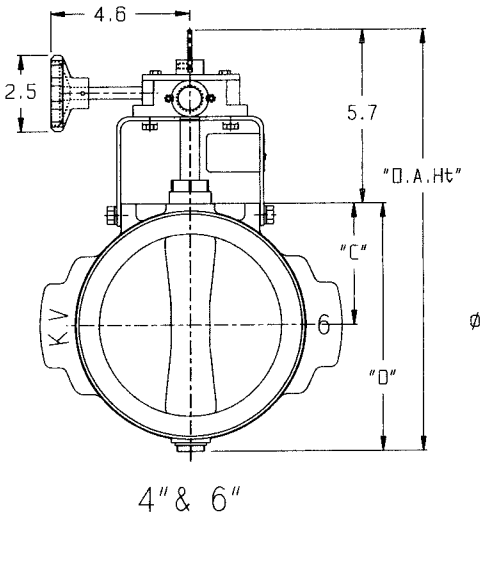
FM APPROVED

Wafer Butterfly Valves 2-1/2" to 8"

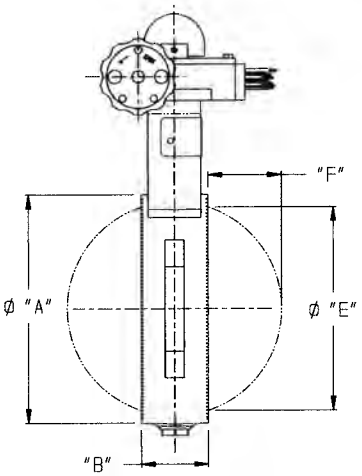
Figure W300,W300I, & 01G 300 psi with Supervisory Tamper Switch

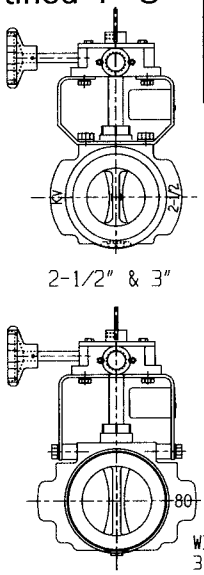
Wetted Components NSF Certified 4"- 8"

VALVE SELECTION FOR ISO PN 16 FLANGE	
FLANGE SIZE	KV MODEL
65 MM	2-1/2" W300
80 MM	3" W300I
100 MM	4" W300I
150 MM	6" W300

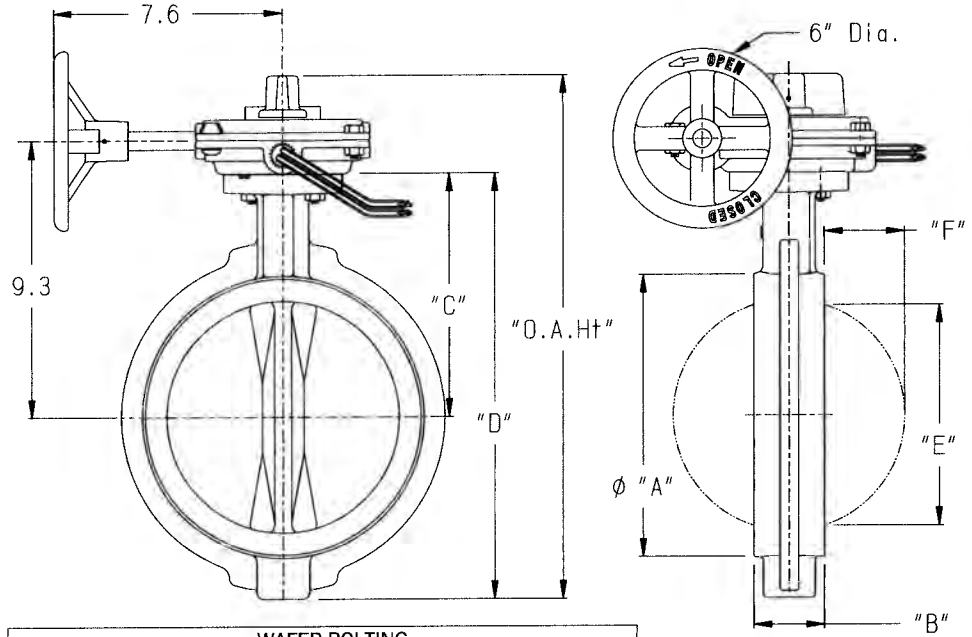


4" & 6"





2-1/2" to 6"
W300 & W300I
Outdoor Rated UL/FM



8" Only
01W
Outdoor Rated UL

WAFER BOLTING					
SIZE	2-1/2"	3"	4"	6"	8"
Number of Studs	4	4	8	8	8
Stud size (inch)	5/8	5/8	5/8	3/4	3/4
Stud Length Min. (inch)	5.5	5.5	6.5	7	7.5
Recommended Min.Torque (Ft-Lbs)	30	30	30	40	50

1. UPPER AND LOWER SHAFTS: 416 SS
2. BODY COATING: EPOXY
3. DISC ENCAPSULATION MTL: SBR

	W300, W300I				01W
SIZE	2-1/2"	3"	4"	6"	8"
A	4.2	4.4	5.3	7.5	9.5
B	1.8	1.8	2.0	2.2	2.4
C	2.2	2.4	2.9	4.0	8.2
D	4.3	4.8	5.9	8.1	14.3
E	1.7	2.4	3.3	5.6	7.5
F	.4	.6	.9	1.9	2.7
O.A.Ht.	10.0	10.4	11.6	13.8	17.6
Wt.#	10.5	11.1	13.8	20.5	44

Dimensions B, D, and E are referenced in Installation Instructions.
"E" is MINIMUM allowed pipe I.D.
Exercise care handling and during installation

Updated 02/05/13

BUTTERFLY VALVE - G300/G300E/W300/W300I/01G/01W/02G
SUPPLEMENTARY INSTALLATION INSTRUCTIONS

Information shown here is intended to supplement, not replace, instructions that is shipped with each valve.

Dimensional information regarding minimum pipe I.D. and disc protrusion are shown on dimensional page for particular valve.

Exercise care handling and during assembly.

Grooved Body

For use with grooved end in steel pipe (IPS)

See valve dimensional information for min. pipe I.D. (dimension E)

Valves shall be installed by person(s) certified to install grooved end fittings in a fire protection system by authority having jurisdiction.

1) Place gasket over pipe or fitting to which valve will be joined.
2) Position valve against mating pipe/fitting.
3) Slide gasket into position on valve and adjacent pipe/fitting and install coupling according to coupling manufacturer's instructions.

Wafer Body

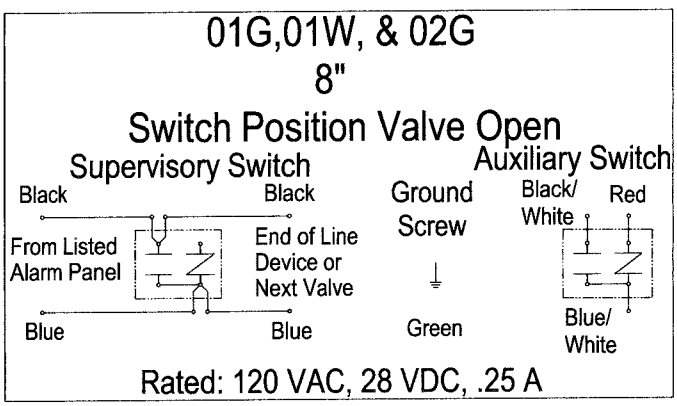
For installation between two ANSI B16.1, 125 lb. flanges

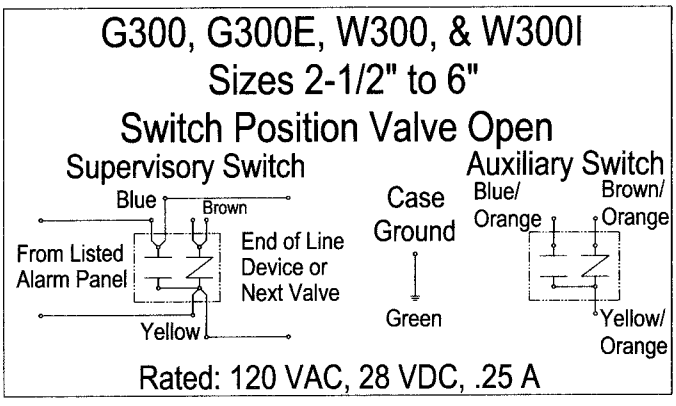
See valve dimensional information for min. pipe I.D. (dimension E)

1) Two flanged mating pieces should be placed at a distance apart that is slightly more than the thickness of the body (dimension B on wafer table)
2) A minimum of 2 studs shall be placed through adjacent flange holes so that the lower trunnion of the valve can fit between them. Normally this is the bottom 2 holes if the valve will be vertical with open/closed indicator on top.
3) Place the valve between the flanges taking care not to disturb the body gaskets.
4) Place remaining studs around the valve and tighten using an alternating pattern until desired torque is reached.

Switch Wiring

1) Valve has internal switches that operate from the OPEN position.
2) One switch has dual leads that is for connection to the SUPERVISORY circuit of an alarm panel. The other switch has single leads and is intended to be connected to AUXILIARY equipment.
3) Unused leads can be tucked into junction box (not provided)
4) Always comply with national codes, local codes, and NFPA 13, 71, and 72.





Updated 02/05/13

Kennedy Valve

A DIVISION OF McWANE, INC.

www.kennedyvalve.com

2009

1021 E. Water Street • Elmira, New York 14901
P.O. Box 981
PHONE: (607) 734-2211 • FAX: 1-800-952-4771

PUB_K8IV_909

Updated 02/05/13

TECHNICAL DATA

DRY VALVE
MODEL F-2
GROOVE/GROOVE

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

The Viking Model F-2 Dry Pipe Valve is a latching differential valve used to separate the water supply from the dry pipe sprinkler system. The valve combines a positive latching clapper and air plate assembly with a differential air to water seat design. The latching clapper and air plate assembly provides a positive mechanical seal for the air pressure in the dry pipe system. The differential design allows an air supply of moderate pressure to control a higher water supply pressure. When the air pressure in the dry pipe system is lowered sufficiently to destroy the pressure differential, the valve opens allowing water to enter the dry pipe system.

The valve is also designed to operate a water motor alarm and/or an electric pressure alarm switch. The Viking accelerator can be used to speed the operation of the valve on large capacity systems or where faster action is required.

2. LISTINGS AND APPROVALS

UL Listed: VPZV, **cUL Listed:** VPZVC

FM Approved: Dry Pipe Valves

NYC Department of Buildings: MEA 89-92-E Vol. 39

3. TECHNICAL DATA

Specifications:

Rated to - 175 PSI (12.1 bar) Water Working Pressure.
Factory tested hydrostatically - 350 PSI (24.1 bar) with the clapper open.
Air pressure to water pressure area differential: Approximately 6 to 1.

Material Specifications:

Refer to Figure 3.

Ordering Information:

Part Number - Refer to Table 1
Available Since 2007

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.

Accessories: Note: When viewing this Page online, blue text represents hyper links and will open the desired data page.

Model F Dry Valve Conventional Trim Package: For use when the dry valve is used on systems with fresh water supplies.

- 3" Part No. 10158 (galvanized steel)
- 4" Part No. 08395 (galvanized steel)
- 6" Part No. 09456 (galvanized steel)

Model F Dry Valve Accessory Package: This package is needed when Viking Trim Packages are not used.

- Part No. 08397

Model D-2 Accelerator:

- Part No. 09881

Model D-2 Accelerator Trim Kit: Package includes trim components and air gauge required to install the Model D-2 Accelerator

- Part No. 09730

Model E-1 Accelerator and B-1 Anti-Flood Assembly Package: Includes Model E-1 Accelerator and Model B-1 Anti-flood Device

- Part No. 08116

Model E-1 Accelerator Trim Kit: Package includes trim components and air gauge required to install the Model E-1 Accelerator and B-1 Anti-flood Device

- Part No. 08264 (galvanized steel)

Additional accessories are available and may be required for operation or supervision. Refer to the system description for complete operating trim requirements.

Table 1 - Part Numbers and Specifications

DESCRIPTION	NOMINAL SIZE	PART NUMBER	FRICTION LOSS*	C_V FACTOR	SHIPPING WEIGHT
Groove/Groove Pipe OD					
89 mm	3"	13764	3 ft (0.91 m)	800	125 lbs (57 kg)
114 mm	4"	13765	5 ft (1.52 m)	821	125 lbs (57 kg)
168 mm	6"	13766	49 ft (14.9 m)	780	188 lbs (85 kg)
165 mm	6"	13767	49 ft (14.9 m)	780	188 lbs (85 kg)

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

$$Q = C_V \sqrt{\frac{\Delta P}{S}}$$

Q= Flow
C_V= Flow Factor (GPM/1 PSI ΔP)
ΔP= Pressure Loss through Valve
S= Specific Gravity of Fluid

Revised page replaces page 135a-j, dated February 25, 2011.
(Removed Hook Assembly from Clapper Assembly.)

TECHNICAL DATA

DRY VALVE MODEL F-2
GROOVE/GROOVE

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

	3" (DN80)	4" (DN100)	6" (DN150)
A	18-1/2" (470)	18-3/4" (476)	20-5/16" (516)
B	8-1/16" (205)	7-1/16" (179)	7-5/16" (186)
C	16-3/4" (425)	13-5/16" (338)	13-7/16" (332)
D	9-1/16" (230)	9-1/16" (230)	9-5/16" (237)
E	11-13/16" (300)	13-5/16" (338)	13-7/16" (332)
F	21-11/16" (551)	21-7/8" (556)	22-5/16" (567)
G	35-7/8" (911)	36-1/16" (916)	36-13/16" (936)

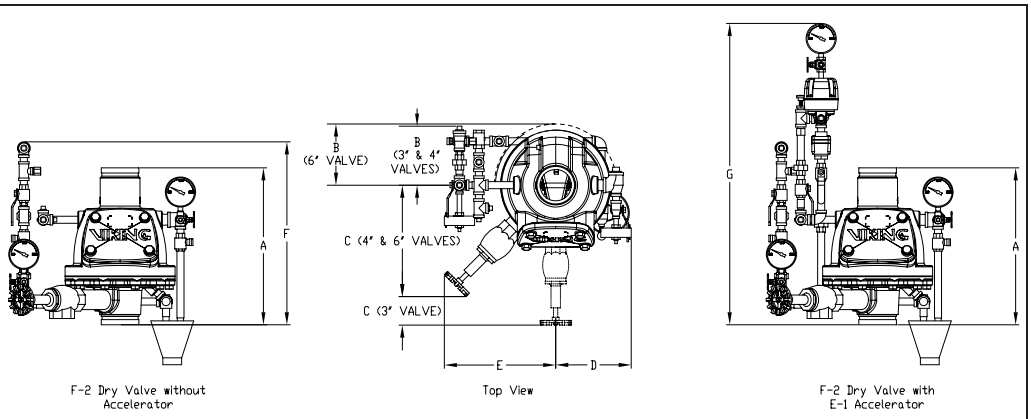


Figure 1 - Take Out Dimensions

4. INSTALLATION

1. For proper operation and approval, the valve must be trimmed in accordance with Viking Model F Dry Valve Trim Charts.
2. The Model F-2 Dry Valve must be installed in the vertical position as shown in Figure 2.
3. Air or nitrogen supply to the dry pipe system must be clean, dry, and oil free.
4. Automatic air supplies must be regulated, restricted, and from a continuous source (refer to Table 2).
5. A Viking air maintenance device should be installed on each system equipped with an automatic air supply.
6. Never exceed 60 PSI (4.1 bar) pressure in the system piping with the dry valve clapper closed.
7. The dry valve must be installed in an area not subject to freezing temperatures or physical damage. If required, provide a valve house (enclosure) with adequate heat around the dry valve and trim. Freezing temperatures and/or excessive pressure will damage the dry valve member assembly.
8. When corrosive atmospheres and/or contaminated water supplies are present, it is the owner's responsibility to verify compatibility with the Model F-2 Dry Valve and associated equipment.
9. Consider installation of the Viking accelerator and anti-flood device. An accelerator (quick opening device) is recommended on all differential dry pipe valves and is required on dry pipe systems of certain capacities. Refer to Installation Standards and Authorities Having Jurisdiction. If an accelerator is to be installed, verify that the appropriate Trim Chart is used.
10. Prior to installing the valve, thoroughly flush the water supply piping to verify that no foreign matter is present.

A. General Installation Instructions

1. Verify that necessary Trim Charts and Technical Data for the dry valve and associated equipment are available.
2. Remove all plastic thread protectors from the openings of the dry valve.
3. 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 dry valve or trim components.
4. Install the Model F-2 Dry Valve and trim piping according to the current Model F-2 Dry Valve Trim Chart provided with the Trim Package and the *Viking Engineering and Design Data* book. The Model F-2 Dry Valve must be installed in the vertical position.
5. When installing a Viking Accelerator and Anti-flood Device in conjunction with the Model F-2 Dry Valve, refer to the appropriate Viking E-1 Accelerator Trim Chart provided with the Accelerator Trim Package and the *Viking Engineering and Design Data* book.
   a. When a Viking Accelerator is installed on the Model F-2 Dry Valve, the dry system air supply must be connected as shown on the Model E-1 Accelerator Trim Chart.
   b. The Viking external anti-flood device is required when a Viking accelerator is installed on a dry valve according to the Model E-1 Accelerator Trim Chart.

Hydrostatic Test:

CAUTION: THE DRY VALVE CLAPPER MUST BE LATCHED OPEN DURING PERFORMANCE OF THE HYDROSTATIC TEST.

1. DO NOT perform a 200 PSI (13.8 bar) hydrostatic system test with the dry valve clapper in the closed (set) position.
2. Never exceed 60 PSI (4.1 bar) air pressure in the system piping with the dry valve clapper closed.
3. DO NOT expose the Viking accelerator to the hydrostatic test. For warnings and considerations regarding hydrostatic testing of the Viking accelerator and other system components, refer to Technical Data for the equipment used.

TECHNICAL DATA

DRY VALVE
MODEL F-2
GROOVE/GROOVE

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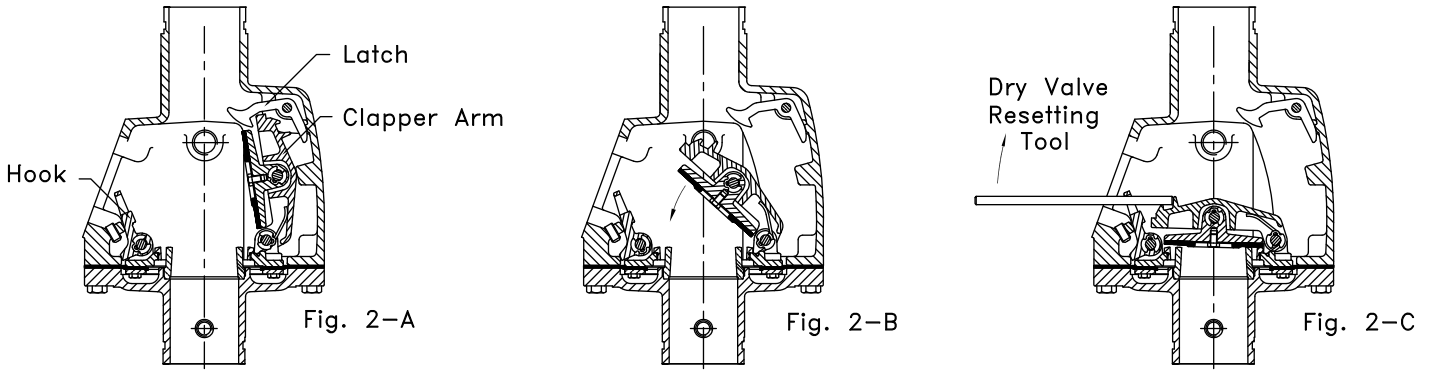

Figure 2 - Resetting the Dry Valve

B. Placing the Valve in Service

(Refer to Figure 2.)

When the dry pipe system is ready to be placed in service, verify that all equipment is adequately heated and protected to prevent freezing and physical damage.

1. Verify that the water supply main control valve supplying the dry valve is closed.
2. Open the main drain valve (located on the inlet of the dry valve).
3. Drain all water from the dry pipe system. If the system has operated, or if water has entered the system, open all auxiliary drains and the system test valve. Allow enough time to completely drain the system. Perform steps 4 through 10 to set the dry valve and/or inspect the internal operating parts of the dry valve.
4. Verify that the dry pipe system is not pressurized.
5. Use the dry valve reset bar/wrench, part number 02977BM, to loosen and remove hand-hole cover bolts (21). Remove hand-hole cover (24).

CAUTION: CLAPPER ARM ASSEMBLY (8) AND CLAPPER ASSEMBLY (5) ARE SPRING LOADED TO OPEN. NEVER PLACE HANDS INSIDE THE DRY VALVE IF THE CLAPPER ASSEMBLY IS LATCHED CLOSED.

6. To release a latched clapper assembly for service:
   a. Insert the re-setting tool through the hole in hook assembly (15), across the fulcrum cast on top of clapper arm assembly (8) until the re-setting tool contacts the stopping boss on top of clapper arm assembly (8) (see Figure 2C).
   b. Apply a downward force on the end (outside the valve) of the re-setting tool. Hook assembly (15) will slide toward the hand-hole and off clapper arm assembly (8). Clapper arm assembly (8) and clapper assembly (5) will forcefully open, impact against latch (2), and latch in the open position.

NOTE: INSPECTION AND CLEANING PROCEDURE STEP 7 BELOW IS CONSIDERED PART OF THE ANNUAL TRIP TEST.

7. Inspect and clean the internal parts of the valve. Give special consideration to the water seat (16), air seat (20) and clapper rubber (19). Wipe away all contaminants, dirt, and mineral deposits. DO NOT use solvents or abrasives. Operate all parts to test freedom of movement. Renew or replace damaged or worn parts as required.

CAUTION: NEVER APPLY ANY LUBRICANT TO SEATS, GASKETS, OR ANY INTERNAL OPERATING PARTS OF THE DRY VALVE. PETROLEUM BASED GREASE OR OIL WILL DAMAGE RUBBER COMPONENTS AND MAY PREVENT PROPER OPERATION OF THE DRY VALVE.

8. To set the dry valve clapper (Refer to figures 2 & 3)
   a. Raise the latch (2) to release spring loaded clapper arm assembly (8) from the latched open position.
   b. Move the clapper arm assembly (8) down toward the horizontal position (see Figure 2-B).
   c. While holding spring loaded clapper arm assembly (8) down, insert the re-setting tool through the hole in hook assembly (15), across the fulcrum cast on top of clapper arm assembly (8) until the re-setting tool contacts the stopping boss as shown in Figure 2-C.
   d. Apply a sharp upward force at the end of the re-setting tool. Hook (15) will slide forward on the re-setting bar and latch the clapper closed with a positive setting action (see Figure 2-C).

Table 2 - Air Pressure Settings

Maximum Water Pressure		Minimum		Maximum	
PSI	**bar**	**PSI**	**bar**	**PSI**	**bar**
50	3.45	15	1.03	25	1.72
75	5.17	20	1.38	30	2.07
100	6.90	25	1.72	35	2.41
125	8.62	30	2.07	45	3.10
150	10.34	35	2.41	50	3.45
175	12.07	45	3.10	60	4.14

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9. Priming water is not required and may not be desirable where clean, good quality fresh water is not available. If priming water is desired, fill the dry valve with water to the bottom of the hand-hole. Verify that the intermediate chamber of the dry valve is free of water. No water should flow from the drip check when the plunger is pushed.
10. Visually inspect hand-hole cover gasket (25). Verify that it is in good condition.
11. Re-install hand-hole cover (24), gasket (25), and hand-hole cover bolts (21). Tighten the bolts using the Dry Valve Reset Bar/Wrench, part number 02977BM.
12. Close all auxiliary drains, the system test valve, and the priming water level test valve on the dry valve trim. The main drain (located on the inlet of the dry valve) should remain open.
13. If equipped with a Viking Accelerator and external Anti-flood Device:
    a. Close the ½" (15 mm) anti-flood isolation valve.
    b. Observe the air pressure gauge on top of the accelerator. The gauge must read zero before the accelerator will automatically reset. It may be necessary to loosen, remove, and re-install (use the appropriate wrench) the air gauge to vent trapped air pressure from the upper chamber.
14. Open the dry system air supply and establish desired system pressure. See Table 2 for suggested air pressure to water pressure settings. NEVER EXCEED 60 PSI (4.1 bar) AIR PRESSURE.
15. Verify that the intermediate chamber of the dry valve is free of water. No water should flow from the drip check when the plunger is pushed.
16. If equipped with a Viking Accelerator and external Anti-flood Device: When pressure on the accelerator air pressure gauge equals the system set pressure, OPEN and secure the ½" (15 mm) anti-flood isolation valve.
17. Slowly open the water supply main control valve.
18. When flow is developed from the main drain, CLOSE the main drain valve.
19. Fully open the water supply main control valve.
20. Secure all valves in their normal operating position.
21. Notify Authorities Having Jurisdiction and those in the affected area that the system is in service.

5. OPERATION (Refer to Figure 2)

The clapper (5) and air plate (11) assemblies combine to form a floating member assembly. With the clapper assembly (5) latched closed, system air pressure forces the member assembly down, sealing the water seat (16) from the intermediate chamber. When a sprinkler operates, the system air pressure is reduced. When system air pressure is reduced to the differential tripping point of the valve, water supply pressure in the inlet chamber lifts the member assembly off the water seat (16) and flows into the intermediate chamber. As the member assembly continues to rise, the latching hook (15) is forced against operating pin (23), which causes the hook (15) to pivot on hook rod (6b) and unlatch the clapper. The clapper is spring loaded and swings to a full-open locked position (See Figure 2-A).

When equipped with the optional Accelerator and external Anti-flood Device, a drop in system air pressure causes the Accelerator to operate. Operation of the Accelerator causes the Anti-flood Device to open allowing system air pressure to enter the dry valve intermediate chamber. This immediately destroys the pressure differential, causing the member assembly to rise faster.

The intermediate chamber is normally at atmospheric pressure and is connected to the alarm line. When the valve trips, the intermediate chamber and alarm line are pressurized with system water pressure, activating alarms connected to the dry valve trim.

ABNORMAL CONDITIONS: See Table 3.

6. INSPECTIONS, TESTS AND MAINTENANCE

NOTICE: THE OWNER IS RESPONSIBLE FOR MAINTAINING THE FIRE PROTECTION SYSTEM AND DEVICES IN PROPER OPERATING CONDITION.

The Viking Model F-2 Dry 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, corrosive atmospheres, as well as the condition of the air supply to the system. 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 WHICH 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.

VIKING®

TECHNICAL DATA

DRY VALVE
MODEL F-2
GROOVE/GROOVE

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I. INSPECTION

Weekly inspection is recommended. If the system is equipped with a low air (or nitrogen) alarm, monthly inspections may be adequate.

1. Check pressure gauges located on the supply side and system side of the dry valve. Verify that the proper ratio of air (or nitrogen) pressure to water supply pressure is being maintained. Refer to Table 2.
2. Verify that the intermediate chamber of the dry valve is free of water. No water should flow from the drip check when the plunger is pushed.
3. If equipped with a Viking Accelerator:
   a. Check the air pressure gauge located on the top of the Accelerator. Air pressure in the upper chamber of the accelerator should equal the pneumatic pressure maintained in the system.

NOTE: STANDARD TOLERANCE ALLOWANCE IN PRESSURE GAUGE CALIBRATION MAY RESULT IN A SLIGHT VARIATION WHEN PRESSURE READINGS FROM ANY TWO GAUGES ARE COMPARED. A DIFFERENCE IN PRESSURES OTHER THAN SLIGHT VARIATION DUE TO GAUGE CALIBRATION TOLERANCE MAY INDICATE MAINTENANCE IS REQUIRED. REFER TO TECHNICAL DATA FOR THE ACCELERATOR USED.

   b. For dry systems with Viking Accelerators installed according to the Viking Model E-1 Accelerator Trim Chart, verify that the ½" (15 mm) anti-flood isolation valve is OPEN and secured.
4. Verify that the water supply main control valve is open and all trim valves are in their normal operating position.
5. Check for signs of mechanical damage and/or corrosive activity. If detected, perform maintenance as required or, if necessary, replace the device.
6. Verify that dry valve and trim are adequately heated and protected from freezing and physical damage.

II. TESTS

QUARTERLY TESTS

A. Water Flow Alarm Test

Quarterly testing of water flow alarms is recommended and may be required by the Authority Having Jurisdiction.

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.

NOTE: VIKING CONVENTIONAL TRIM PROVIDES A CONNECTION FOR INSTALLATION OF A NON-INTERRUPTIBLE PRESSURE SWITCH. ALARMS AND/OR ELECTRIC PANELS CONTROLLED BY AN ALARM PRESSURE SWITCH INSTALLED IN THAT CONNECTION CANNOT BE INTERRUPTED.

2. Fully open the main drain (located on the base of the dry valve) to flush away any accumulation of foreign material.
3. Close the main drain.
4. To test the local electric alarm (if provided) and/or mechanical water motor gong (if provided), OPEN the alarm test valve in the dry valve trim.
   a. Electric alarm pressure switches (if provided) should activate.
   b. Electric local alarms should be audible.
   c. The local water motor gong should be audible.
   d. Verify that (if provided) remote station alarm signals were received.
5. When testing is complete, close the alarm test valve.
6. Verify:
   a. All local alarms stop sounding and alarm panels (if provided) reset.
   b. All remote station alarms reset.
   c. All supply piping to water motor properly drains.
7. Verify that the alarm shut-off valve in the dry valve trim is OPEN, and the alarm test valve is CLOSED.
8. Verify that the intermediate chamber of the dry valve is free of water. No water should flow from the drip check when the plunger is pushed.
9. Notify the Authority Having Jurisdiction and those in the affected area that testing is complete.

B. Main Drain Test

Quarterly performance of the Main Drain Test is recommended and may be required by Authorities Having Jurisdiction to verify integrity of the water supply.

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. Record pressure reading from the water supply pressure gauge.
3. Verify that the intermediate chamber of the dry valve is free of water. No water should flow from the drip check when the plunger is pushed.
4. Verify that the dry pipe system is pressurized at or above the minimum pressure recommended in Table 2 for the water supply pressure available.

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5. Fully OPEN the main drain located on the base of the dry valve.
6. When a full flow is developed from the main drain, record the residual pressure from the water supply pressure gauge.
7. When the test is complete, SLOWLY CLOSE the main drain.
8. Compare test results with previous flow information. If deterioration of the water supply is detected, take appropriate steps to restore adequate water supply.
9. Verify that normal water supply pressure and system pneumatic pressure have been restored, and that all alarm devices and valves are secured in normal operating position.
10. Notify the Authority Having Jurisdiction that the test is complete. Record and/or provide notification of test results as required by the Authority Having Jurisdiction.

C. Priming Water Level, and Low Air Alarm Test

Quarterly testing is recommended to verify that water is not present above the Priming Level Test Valve in the dry valve trim.
Quarterly testing of low air alarms is recommended.

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. Fully open the main drain (located on the base of the dry valve) to flush away any accumulation of foreign material.
3. Close the main drain.
4. Close the water supply Main Control Valve supplying the dry valve.
5. Open the Main Drain Valve (located on the inlet of the dry valve).

If the dry valve being tested is equipped with a Viking Accelerator and external Anti-flood Device installed according to Viking Model E-1 Accelerator Trim Charts, performing steps 6 or 7 of this test will cause the accelerator to operate. A burst of air from the vent in the bottom of the accelerator will indicate operation of the accelerator. However, with the water supply Main Control Valve CLOSED and the Main Drain Valve OPEN, operation of the accelerator should not trip the dry valve.

6. Dry Valve Priming Water Level Test:
   a. Verify that the water supply main control valve is closed and the main drain valve is open.
   b. Fully open the Priming Level Test Valve in the dry valve trim to check for the presence of water. If the presence of water is detected, the system may not have been properly drained. Perform steps 1 through 3, and 11 through 15 of paragraph 10, PLACING DRY VALVE IN SERVICE, and repeat this Dry Valve Priming Water Level Test.
   c. If/when no water is detected and the test is complete, continue to step 8.
7. Low Air Alarm Test:
   a. Verify that the water supply main control valve is closed and the main drain valve is open.
   b. Gradually open the Priming Level Test Valve in the trim of the dry valve to simulate operation of the Dry System. Observe and record the pressure at which the low air alarm operates.
8. Close the Priming Level Test Valve.
9. If the dry valve being tested is equipped with a Viking Accelerator and external Anti-flood Device:
   a. Close the ½" (15 mm) NPT Anti-flood Isolation Valve. Air will continue to flow from the accelerator after it has operated until step "b" below is performed.
   b. Loosen (use the appropriate wrench), and remove the Accelerator Air Gauge to release pressure from the upper chamber of the accelerator. When the accelerator re-sets, re-install the accelerator air gauge.
10. Perform steps 13 through 20 of paragraph 4-B INSTALLATION, Placing the Valve in Service.

TRIP TESTS

Partial Flow Trip Tests are conducted with the water supply main control valve partially closed to minimize the amount of water entering the system during the test. Performance of a Partial Flow Trip Test is recommended during warm weather at least annually except when a Full Flow Trip Test is conducted. Partial Flow Trip Tests may verify operation of equipment and devices but do not simulate operation of the system in fire conditions.
Full Flow Trip Tests are conducted with the water supply main control valve fully open. The dry valve is operated by opening the system test valve to simulate the opening of a sprinkler in fire conditions. When the dry valve operates, the sprinkler piping will be flooded with water.
Performance of a Full Flow Trip Test is recommended during warm weather at least once every three years. More frequent testing may be required by the Authority Having Jurisdiction.

A. Full Flow Trip Test

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.

NOTE: ALARMS AND ELECTRIC PANELS CONTROLLED BY AN ALARM PRESSURE SWITCH INSTALLED IN THE "ELECTRIC ALARM PANEL CONNECTION", CANNOT BE INTERRUPTED (SEE DRY VALVE TRIM CART).

2. Fully open the main drain (located on the base of the dry valve) to flush away any accumulation of foreign material.
3. Close the main drain.
4. Record water supply pressure and system pneumatic pressure.
5. Open the remote system test valve to simulate operation of the dry system. Record:
   a. Elapsed time from opening of the test valve to operation of the dry valve.

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b. System pressure when the dry valve operated.
c. Elapsed time from opening of the test valve to development of full flow of water from the system test connection.
d. Any other information required by the Authority Having Jurisdiction.

6. Verify that alarms operate properly.
7. Allow water to flow from the system test connection until it appears clear and clean.
8. When test is complete, close the water supply main control valve.
9. Perform steps 1 through 20 of paragraph 4-B INSTALLATION, Placing the Valve in Service.
10. Verify that the water supply main control valve is open, and all other valves are in their normal operating position. If equipped with an external Anti-flood Device, the ½" Anti-flood Isolation Valve must be OPEN and secured.

B. Partial Flow Trip Test

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.

NOTE: VIKING CONVENTIONAL TRIM PROVIDES A CONNECTION FOR INSTALLATION OF A NON-INTERRUPTIBLE PRESSURE SWITCH. ALARMS AND ELECTRIC PANELS CONTROLLED BY AN ALARM PRESSURE SWITCH INSTALLED IN THE "ELECTRIC ALARM PANEL CONNECTION", CANNOT BE INTERRUPTED (SEE DRY VALVE TRIM CART).

2. Record water supply pressure and system pneumatic pressure.
3. Fully open the main drain (located on the base of the dry valve) to flush away any accumulation of foreign material.
4. CLOSE the water supply main control valve as far as possible while maintaining full flow from the main drain. CLOSE the main drain.
5. Open the priming level test valve to simulate operation of the system.
6. Note (for records) water supply pressure and system pneumatic pressure when the dry valve operates.
7. CLOSE the water supply main control valve and OPEN the main drain IMMEDIATELY, when test is complete.
8. Perform steps 1 through 20 of paragraph 4-B INSTALLATION, Placing the Valve in Service.
9. Verify that the water supply main control valve is open, all other valves are in their normal operating position. If equipped with an external Anti-flood Device, the ½" anti-flood isolation valve must be OPEN and secured.

III. MAINTENANCE (See Figure 3)

WARNING: PRIOR TO SERVICING INTERNAL OPERATING PARTS OF THE DRY VALVE, TAKE THE FOLLOWING PRECAUTIONS.

1. Close the water supply main control valve, placing the system out of service.
2. Open the main drain located in the base of the dry valve.
3. Close the air (or nitrogen) supply to the dry system piping.
4. Relieve all pressure from the dry system piping. If the system has operated, open all auxiliary drains and the system Test Valve to allow the system to drain completely.
5. Use the Dry Valve Reset Bar/Wrench, part number 02977BM, to loosen and remove hand-hole cover bolts (21) and remove hand-hole cover (24).

CAUTION: CLAPPER ARM ASSEMBLY (8) AND CLAPPER ASSEMBLY (5) IS SPRING LOADED TO OPEN. NEVER PLACE HANDS INSIDE THE DRY VALVE IF THE CLAPPER ASSEMBLY IS LATCHED CLOSED.

6. Release latched (set) clapper assembly for service:
   a. Insert the re-setting tool through the hole in hook assembly (15), across the cast fulcrum on top of clapper arm assembly (8) until the re-setting tool contacts the stopping boss on top of clapper arm assembly (8).
   b. Apply a downward force on the end (outside the valve) of the re-setting tool. Hook assembly (15) will slide toward the hand-hole and off clapper arm assembly (8). The clapper arm assembly (8) and clapper assembly (5) will forcefully open, impact against latch (2), and be trapped in the open position.

CAUTION: NEVER APPLY ANY LUBRICANT TO SEATS, GASKETS, OR ANY INTERNAL OPERATING PARTS OF THE DRY VALVE. PETROLEUM-BASED GREASE OR OIL WILL DAMAGE RUBBER COMPONENTS AND MAY PREVENT PROPER OPERATION OF THE DRY VALVE.

Recommended practice: When performing maintenance inside the dry valve with the clapper in the open position, cover the opening to prevent tools or parts from dropping onto the seat or into the waterway.

7. To remove Clapper Rubber (19):
   a. Use a 9/16" wrench to remove hex-head screw (17) and rubber retainer (18).
   b. Remove clapper rubber (19) for inspection. If the clapper rubber shows signs of wear, such as cracking, cuts, or excessively deep grooves where the rubber contacts the air or water seat, replace the rubber.
8. To re-install Clapper Rubber (19):
   a. Place a new clapper rubber (19), over the center hub of rubber retainer (18).
   b. Position retainer (18) (with rubber in place) against clapper assembly (5).
   c. Replace and tighten hex-head screw (17). Do not over-tighten.

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9. To remove Clapper Assembly (5):
   a. While holding spring loaded clapper arm assembly (8) down, remove a retaining ring (7) from one end of clapper rod (6a).
   b. Release spring loaded clapper arm assembly (8) and allow it to latch in the open position.
   c. Slide rod (6a) out of clapper arm assembly (8) to free clapper assembly (5).
   d. Remove clapper assembly (5) for inspection or replacement.
10. To re-install Clapper Assembly (5):
   a. Reverse disassembly procedures a through d in step 9 above.
11. To remove Latch (2):
   a. Remove ½" NPT pipe plug (4) (outside of valve) to expose latch pin (3).
   b. While holding latch (2) with one hand, remove latch pin (3).
   c. Remove latch (2).
12. To re-install Latch (2) and Latch Pin (3), reverse disassembly procedures a through c in step 11 above.

The internal member assembly of the dry valve consists of several sub-assemblies. To service these sub-assemblies, it is necessary to disassemble the dry valve.

13. To disassemble The Dry Valve:
   a. Disconnect the trim and remove the valve from the system piping.
   b. Use the Dry Valve Reset Bar/Wrench, part number 02977BM, to remove hand-hole cover bolts (21) from base (22).
   c. Remove housing (1) from base (22). Member assembly components (5-15), and (17-19, 21, 25) are accessible for replacement.
   d. When inspection and/or replacement of Member assembly components is complete Re-assemble the dry valve.
14. To re-assemble the dry valve:
   a. Reverse disassembly procedures a through c in step 13 above.
   b. Socket-set screw (23) will need adjustment. After the valve has been completely reassembled, latch the clapper in place. With a 1/4" (6,35 mm) Allen wrench, turn the screw clockwise until it contacts the hook (24). Then, turn the screw one complete turn counter-clockwise. Set the system and trip test the valve to verify proper operation of the valve.
15. To remove Hook Assembly (15):
   a. Remove a retaining ring (7) from one end of hook rod (6b).
   b. Slide rod (6b) out of the bushings in air plate assembly (11) to free hook assembly (15).
   c. Remove hook assembly (15).
16. To re-install Hook Assembly (15):
   a. Reverse disassembly procedures a through c in step 15 above.
17. To remove Clapper Arm Assembly (8) and Spring (9):
   a. Remove a retaining ring (7) from one end of clapper arm rod (10).
   b. Slide clapper arm rod (10) out of the bushings in air plate assembly (11) to free clapper arm assembly (8) taking care to retrieve spring (9).
   c. Remove clapper arm assembly (8), and spring (9).
18. To re-install Clapper Arm Assembly (8):
   a. Reverse disassembly procedures a through c in step 17 above.
19. To remove Diaphragm (12) and Diaphragm Retainer (13):
   a. Use a 9/16" wrench to remove hex-head screws (14).
   b. Remove diaphragm retainer (13) and diaphragm (12) for replacement. If the diaphragm rubber shows signs of wear, such as cracking or cuts, replace the rubber diaphragm.
20. To re-install Diaphragm (12) and Diaphragm Retainer (13):
   a. Reverse disassembly procedures a and b in step 19 above.
   b. When re-installing diaphragm retainer (13), cross tighten hex-head screws (14) to 20 ft. lbs. of torque for even compression of diaphragm (12).
   c. When assembling base (22) to housing (1):
      i. Invert housing (1) on work bench so holes for hand-hole cover bolts (21) are facing up.
      ii. Position complete member sub-assembly (5-15 & 17-19, 21, 25) with screw holes in diaphragm (12), aligned with screw holes in inverted housing (1). Use care to align screw holes so hook assembly (15) properly aligns with set screw (23).
      iii. Position base (22) over inverted housing (1) with member assembly (5-15 & 17-19, 21, 25). Align screw holes so ½" (15 mm) NPT trim connection in base (22) aligns with ½" (15 mm) NPT trim connection in housing (1).
      iv. Install hand-hole cover bolts (21) finger tight only.
      v. Cross-tighten all hand-hole cover bolts (21), to 90 ft. lbs. of torque to evenly compress diaphragm (12) and maintain proper alignment of member sub-assembly (5-15 & 17-19, 21, 25).

7. AVAILABILITY

The Viking Model F-2 Dry Pipe 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.

VIKING®

TECHNICAL DATA

DRY VALVE
MODEL F-2
GROOVE/GROOVE

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Table 3 - Troubleshooting Guide

Condition:	Possible causes:	Suggested action:
The valve trips when no sprinkler has fused	Loss of air pressure in the system	Check the system for leaks and check for proper air supply. A Viking air maintenance device should be installed on each system equipped with an automatic air supply. Consider adding a maintenance air compressor.
	An extreme pressure surge in the water supply	Increase the air pressure on the system. The maximum limit is 60 PSI (4.1 bar). Note: Increasing system pressure may increase the trip time of the dry valve.
Water constantly passing through the drip check when the valve is in the SET position	Water leaking over the water seat into the intermediate chamber	Inspect and clean the water seat and clapper rubber (see step 5 of paragraph 4, Installation, Placing the Valve in Service). Consider replacing the clapper rubber. If the water seat has been pitted or damaged by debris, it may be necessary to replace the base assembly.
	Alarm test valve in the bypass connection of the dry valve trim not tightly closed	Verify that water is not getting past alarm test valve.
Air constantly passing through the drip check when the valve is in the SET position	Air leaking over the air seat into the intermediate chamber	Inspect and clean the air seat and clapper rubber (see step 5 of paragraph 4, Installation, Placing the Valve in Service). Consider replacing the clapper rubber. If the air seat has been pitted or damaged by debris, it may be necessary to replace the air plate assembly.
	Air leaking past the rubber diaphragm	Inspect the rubber diaphragm for deterioration. If necessary, replace the diaphragm.
Clapper will not latch	Incorrect resetting tool	Verify that the re-setting tool used is smooth and of the proper strength and diameter* to provide the required force at the appropriate angle to cause the latching hook to slide over the clapper arm when setting the dry valve. *The Viking re-setting tool is a 3/4" (19 mm) diameter cold rolled steel bar, chamfered at one end and a standard 15/16" hex-socket on other end (PN 02977BM).
	The hook not sliding on the re-setting tool	File or grind the re-setting tool. Remove any rough spots to provide a smooth sliding surface and proper clearance.
	Clapper rubber worn	Replace the clapper rubber.
	Internal parts damaged by accidental application of high pressure	Replace the valve member assembly.
The valve latches but will not remain set	Improper resetting procedure	See paragraph 4, Installation, Placing the Valve in Service.
	Inadequate air supply	See paragraph 4, Installation, Placing the Valve in Service.
	Air pressure and priming water passing through the intermediate chamber and out of the drip check	Clean the air seat and the clapper rubber. Replace the clapper rubber, if worn.

8. GUARANTEES

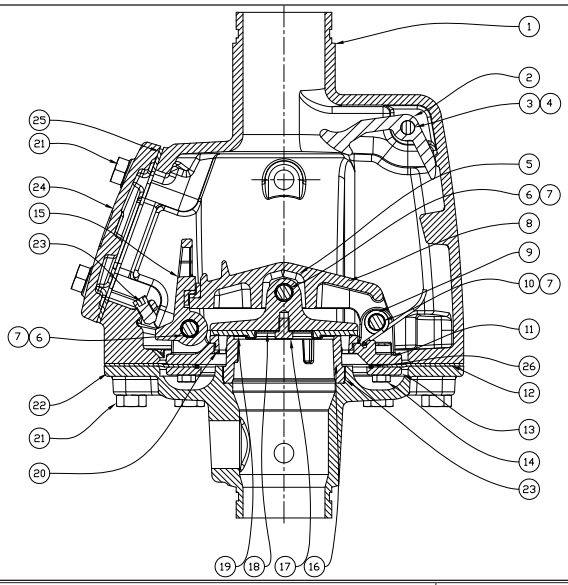
For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

TECHNICAL DATA

DRY VALVE
MODEL F-2
GROOVE/GROOVE

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

Figure 3 - Replacement Parts



ITEM NO.	3" & 4"	6"	DESCRIPTION	MATERIAL	NO. REQ'D	
					3" & 4"	6"
1	--	--	Housing	Ductile Iron 65-45-12	1	1
2	07641	07641	Latch	Brass UNS-C84400	1	1
3	08449	08449	Latch Pin	Brass UNS-C36000	1	1
4	--	--	1/2" NPT Pipe Plug	Steel	1	1
5	*	*	Clapper Assembly	Ductile Iron 65-45-12	1	1
			(includes bushings)	Teflon® Coated Steel	2	2
6a	*	*	Clapper Rod	Brass UNS-C36000	1	1
6b	*	*	Hook Rod	Brass UNS-C36000	1	1
7	*	*	Retaining Ring	Stainless Steel UNS-S15700	6	6
8	*	*	Clapper Arm Assembly	Ductile Iron 65-45-12	1	1
			(includes bushings)	Teflon® Coated Steel	4	4
9	*	*	Spring	Type 302 Stainless Steel Wire	1	1
10	*	*	Clapper Arm Rod	Brass: UNS-C36000	1	1
11	*	*	Air Plate Assembly	Ductile Iron 65-45-12	1	1
			(includes bushings)	Teflon® Coated Steel	4	4
12	*	*	Diaphragm	Nylon Reinforced EPDM	1	1
13	*	*	Diaphragm Retainer	Ductile Iron 65-45-12	1	1
14	*	*	3/8"-16 x 3/4" (19.1 mm) lg. Hex Head Cap Screw	Zinc Plated Steel	10	12
15	*	*	Hook Assembly	Ductile Iron 65-45-12	1	1
			(includes bushings)	Teflon® Coated Steel	2	2
16	--	--	Water Seat	Brass UNS-C84400	1	1
17	07932	07932	3/8"-16 x 1/2" (12.7 mm) lg. Hex Head Cap Screw	Stainless Steel UNS-S30400	1	1
18	07659	07659	Rubber Retainer	Stainless Steel UNS-S30400	1	1
19	07651	08487	Clapper Rubber	Ethylene Propylene	1	1
20	*	*	Air Seat	Brass UNS-C84400	1	1
21	02079A	02079A	5/8"-11 x 2" (50.8 mm) lg. Hex Head Cap Screw	Steel	14	16
22	--	--	Base	Ductile Iron 65-45-12	1	1
23	08056	08056	1/2"-13 x 1" (25.4 mm) lg. Socket Set Screw	Brass UNS-C36000	1	1
24	05436C	05436C	Cover	Ductile Iron 65-45-12	1	1
25	04187B	04187B	Cover Gasket	EPDM, ASTM D2000	1	1
26	*	*	Square Cut Ring	EPDM	1	1
--Indicates replacement part not available						
* Indicates replacement part only available in a Sub-Assembly listed below.						
SUB-ASSEMBLIES						
5-15, 17-21, 25, 26	14027	14028	Member Assembly Kit			
5, 17-19	08324	08490	Clapper Assembly			

Revised page replaces page 135a-j, dated February 25, 2011.
(Removed Hook Assembly from Clapper Assembly.)

Electrical Specs on page 2!

GENERAL AIR PRODUCTS

OL Plus Series - Single Phase Riser Mount Air Compressors for Dry Pipe Sprinkler Systems

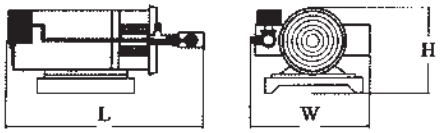
OL Plus Series

This oilless riser mounted air compressor is UL1450 listed for use in sprinkler systems.

- Oil Less Piston Compressor
- UL Listed Pressure Switch
- Riser Mounting Kit *included*
- *30" SS Flex Hose included* ***(NEW)***
- Bubble tight air check valve
- Permanently lubricated bearings
- Integrated Air Intake Filters
- Fully automatic, direct drive
- 60 Hz (cycle)
- **Max Pressure: 60 PSI**

- Specifically designed to fill the sprinkler system to 40 PSI in 30 minutes as per NFPA 13.

System Capacity**	Model Number	Average CFM*	Motor HP	Minimum Wire Size +	Dimensions			Weight (lbs)
					L	W	H	
125 gal.	OL12516AC	1.52	1/6	12	16"	12"	12"	30
250 gal.	OL25033AC	3.03	1/3	12	16"	12"	12"	31
365 gal.	OL36550AC	4.43	1/2	12	16"	15"	10"	38
430 gal.	OL43075AC	5.21	3/4	10	17"	15"	10"	48
615 gal.	OL615100AC	7.46	1	6	17"	15"	10"	48
915 gal.	OL915150AC	11.10	1 1/2	6	23"	15"	10"	60
1225 gal.	OL1225200AC	14.85	2	10	24"	15"	11"	70



Accessories:

Magnetic Line Starters - *Thermal Overload Protection*

Single Phase

	115V	208/230V	Size	Model
	1/3 HP	1 HP	00	MG00A
Maximum HP	1 HP	2 HP	0	MGX0A
	2 HP	3 HP	1	MG01A
	3 HP	5 HP	1P	MG15A

When Ordering a Motor Starter you must specify HP, Voltage and Phase that is supplied to the motor.

VOLTAGE: All Single Phase Units 115 or 208-230 Volt except OL1225200AC which is 208-230 only.

* Average CFM is the average free air delivery from 0 to 40 PSIG.

+ Based on 100 foot run at weakest electrical supply. Consult Factory for longer or shorter runs.

** Based on 70 degree F system temp. For other conditions consult factory for pump up times.

++ OLRTK Riser Tank Kit may be required, consult factory.

OL Plus Series - Single Phase Riser Mount
Fire Protection Air Compressor Electrical Cut Sheet

OL Plus Series

This oilless riser mounted air compressor is UL1450 listed for use in sprinkler systems.

Model Number	Nominal HP	Factory Wired Voltage	Amperage (amps)			Minimum Wire Size Based on Run Length (gage)		
			Voltage	FLA	Start Up	25 FT	50 FT	100 FT
OL12516AC	1/6	115	115	5	35	12	12	12
			208	2.3	16.1	12	12	12
			230	2.5	17.5	12	12	12
OL25033AC	1/3	115	115	7.4	51.8	12	12	8
			208	3.5	24.5	12	12	12
			230	3.7	25.9	12	12	12
OL36550AC	1/2	115	115	10	70	12	10	8
			208	4.9	34.3	12	12	12
			230	5	35	12	12	12
OL43075AC	3/4	115	115	11.6	81.2	12	10	6
			208	5	35	12	12	12
			230	5.8	40.6	12	12	12
OL615100AC	1	115	115	18	126	12	8	6
			208	7.7	53.9	12	12	12
			230	9	63	12	12	12
OL915150AC	1 1/2	208-230	115	16.6	116.2	12	8	6
			208	8.2	57.4	12	12	12
			230	8.3	58.1	12	12	12
OL1225200AC	2	208-230	208	11.6	81.2	12	12	10
			230	11	77	12	12	10

Note:
Wire sizes are based on maintaining 90% of the nominal voltage at starting amps. Starting amps are assumed to be 6 times the SFA.

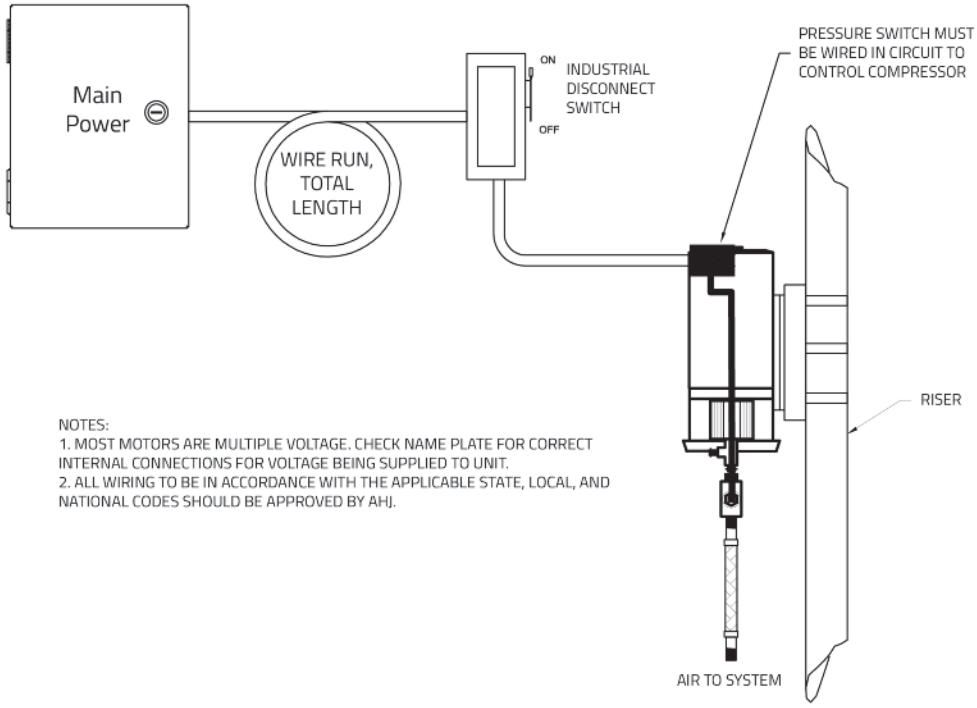
Warning:
Failure to consult with a licensed electrical professional can result in serious personal injury or death. Disconnect all power before servicing. Undersized wire between the motor and the power source will limit the starting and load carrying abilities of the motor causing motor overheating and permanent damage to the motor. Wire sizes listed are recommendations only - consult the National Electric Code (NEC) and any applicable local electrical safety codes. The NEC and GAP recommends a maximum voltage drop of 3%. Install motors and related equipment in accordance with the National Electrical Code (NEC) local electrical safety codes and practices. **It is always the electrician's responsibility to determine and install a wire size that ensures motors can start and run well.**

OL Plus Series - Connection Diagram

OL Plus Series

This oilless riser mounted air compressor is UL1450 listed for use in sprinkler systems.

System Layout



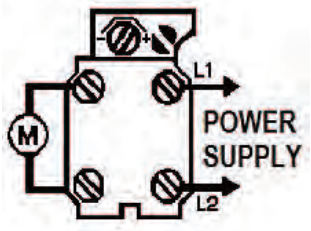
NOTES:
1. MOST MOTORS ARE MULTIPLE VOLTAGE. CHECK NAME PLATE FOR CORRECT INTERNAL CONNECTIONS FOR VOLTAGE BEING SUPPLIED TO UNIT.
2. ALL WIRING TO BE IN ACCORDANCE WITH THE APPLICABLE STATE, LOCAL, AND NATIONAL CODES SHOULD BE APPROVED BY AHJ.

Pressure Switch Connection

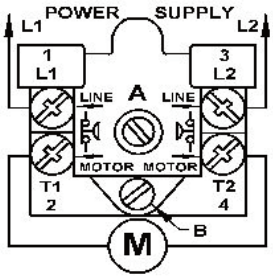
PRESSURE SWITCH Diagram

Note: Location of pressure switch varies based on model. This is a general diagram of components. For help specific to your switch please contact General Air Products.

SWP60401U-H for 1/6 - 1/2 HP



SWP60601U for 3/4 - 2 HP



Warning:

Failure to consult with a licensed electrical professional can result in serious personal injury or death. Disconnect all power before servicing. Undersized wire between the motor and the power source will limit the starting and load carrying abilities of the motor causing motor overheating and permanent damage to the motor. Wire sizes listed are recommendations only - consult the National Electric Code (NEC) and any applicable local electrical safety codes. The NEC and GAP recommends a maximum voltage drop of 3%. Install motors and related equipment in accordance with the National Electrical Code (NEC) local electrical safety codes and practices. **It is always the electrician's responsibility to determine and install a wire size that ensures motors can start and run well.**

MERIT MANUFACTURING CORPORATION
319 Circle of Progress • Pottstown, Pennsylvania 19464-3811
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Fax Toll Free 800-543-7013 • www.meritmfg.com

SUBMITTAL SHEET

Merit Weld-Miser™ Tee-Let® Welding Outlet Fittings

Merit Weld-Miser™ Tee-Let® Welding Branch Outlet Fittings offer the user a high strength, low cost forged threaded and grooved line of fittings specifically designed and manufactured to be installed on schedules 5 thru 10, proprietary thin wall flow pipe and standard wall pipe.

Merit Tee-Lets are forged steel welding outlet fittings. The material used in manufacture meets the chemical and physical requirements of ASTM A 53, Grades A or B, Type E, Tee-Lets employ a low weld volume design to provide for either a partial or full penetration weld employing a single pass with minimum burn-through and pipe distortion. Weld Miser Tee-Lets are recommended for use on proprietary thin wall, schedules 5, 10 and 40 pipe. Threads comply with ANSI B1.20.1 or ISO7/1. They are UL Listed and FM Approved for use conforming to the requirements of Bulletin 13 1999 of the National Fire Protection Association. When used in fire sprinkler systems, Tee-Lets are rated for 300 psi. When used in mechanical systems, maximum pressures are calculated using criteria developed for ASME B31 piping code. Send for details if required.

c UL LISTED Factory Mutual System APPROVED

PRODUCT APPROVALS

Tee-Let Welded Outlet Fitting (UL VIZU — EX3788, FM Approval Guide Chapter 1 – Pipe Fittings)

Outlet Model	Outlet Pipe Size (Inch)	Header Pipe Size (Inch)	Rated Pressure (psig)
Tee-Let Type A (F-Threaded End)	½, ¾, 1	½ - 8 (Sch. 10, 40)	300
	1¼, 1½, 2, 2½, 3, 4	½ - 4 (Sch. 5, DynaFlow)	
	2	4 (EZ-Flow)	
	2, 4	6 (EZ-Flow)	
Tee-Let Type C (Grooved End)	1¼ - 8	1¼ - 8 (Sch. 10, 40)	300
	2½ - 8	½ - 4 (Sch. 5, DynaFlow)	
Tee-Let Type C/R (Roll Grooved End)	1¼ - 6	1¼ - 8 (All Schedules)	300

1) Size on size (ie 2 x 2) Tee-Lets are not FM Approved 2) FM rated working pressure when welded on Sch. 5 or nonthreadable lightwell pipe is 175 psi.

PROJECT:

ARCHITECT / ENGINEER:

CONTRACTOR: **PHONE:**

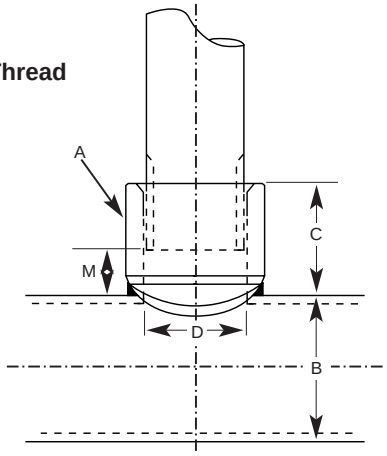
ADDRESS:

NOTES:

APPROVAL:

Merit Weld-Miser Tee-Let Welding Outlet Fittings

Type A
Female Thread

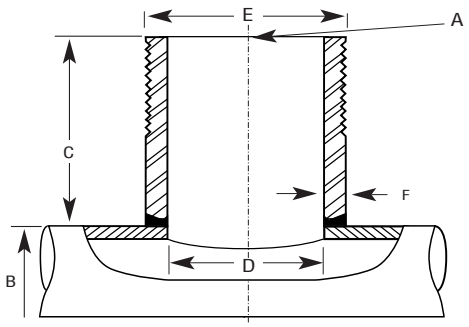


Part Number BSPT	Nominal Outlet Size A	Nominal Header Size B	Outlet Length Size C	Inside Diameter Size D In. / mm	Make up Size M	Weight Each Lb. / kgs
1002002	1/4 x	1-1/4 - 8				0.080
–	6 x	6 - 200				0.04
1005012	1/2 x	1-1/4 - 1-1/2	1.063	0.700	0.500	0.171
–	13 x	32 - 40	27.0	17.8	12.7	0.08
1005015		1-1/2 - 2	1.063	0.700	0.500	0.171
–		40 - 50	27.0	17.8	12.7	0.08
1005020		2 - 2-1/2	1.063	0.700	0.500	0.171
–		50 - 65	27.0	17.8	12.7	0.08
1005025		2-1/2 - 8	1.063	0.700	0.500	0.169
–		65 - 200	27.0	17.8	12.7	0.08
1007012	3/4 x	1-1/4 - 1-1/2	1.125	0.900	0.500	0.260
–	19 x	32 - 40	28.6	22.9	12.7	0.12
1007015		1-1/2 - 2	1.125	0.900	0.500	0.260
–		40 - 50	28.6	22.9	12.7	0.12
1007020		2 - 2-1/2	1.125	0.900	0.500	0.260
–		50 - 65	28.6	22.9	12.7	0.12
1007025		2-1/2 - 8	1.125	0.900	0.500	0.256
–		65 - 200	28.6	22.9	12.7	0.12
1010012	1 x	1-1/4 - 1-1/2	1.250	1.145	0.500	0.331
1110012	25 x	32 - 40	31.8	29.1	12.7	0.15
1010015		1-1/2 - 2	1.250	1.145	0.500	0.331
1110015		40 - 50	31.8	29.1	12.7	0.15
1010020		2 - 2-1/2	1.250	1.145	0.500	0.320
1110020		50 - 65	31.8	29.1	12.7	0.15
1010025		2-1/2 - 3	1.250	1.145	0.500	0.314
1110025		65 - 80	31.8	29.1	12.7	0.14
1010030		3 - 4	1.250	1.145	0.500	0.309
1110030		80 - 100	31.8	29.1	12.7	0.14
1010050		5 - 8	1.250	1.145	0.500	0.291
1110050		125 - 200	31.8	29.1	12.7	0.13
1012012	1- 1/4 x	1-1/4 - 1-1/2	1.375	1.490	0.500	0.432
1112012	32 x	32 - 40	34.9	37.8	12.7	.019
1012015		1-1/2 - 2	1.375	1.490	0.500	0.421
1112015		40 - 50	34.9	37.8	12.7	.019
1012020		2 - 2-1/2	1.375	1.490	0.500	0.421
1112020		50 - 65	34.9	37.8	12.7	.019
1012025		2-1/2 - 3	1.375	1.490	0.500	0.411
1112025		65 - 80	34.9	37.8	12.7	.019
1012030		3 - 4	1.375	1.490	0.500	0.389
1112030		80 - 100	34.9	37.8	12.7	.018
1012050		5 - 8	1.375	1.490	0.500	0.389
1112050		125 - 200	34.9	37.8	12.7	.018
1015015	1- 1/2 x	1-1/2	1.625	1.610	0.875	0.477
1115015	40 x	40	41.3	40.9	22.2	.022
1015020		2	1.625	1.610	0.875	0.477
1115020		50	41.3	40.9	22.2	.022
1015025	2-1/2	1.625	1.610	0.875	0.477	
1115025		65	41.3	40.9	22.2	.022
1015030		3 - 4	1.625	1.610	0.875	0.477
1115030		80 - 100	41.3	40.9	22.2	.022

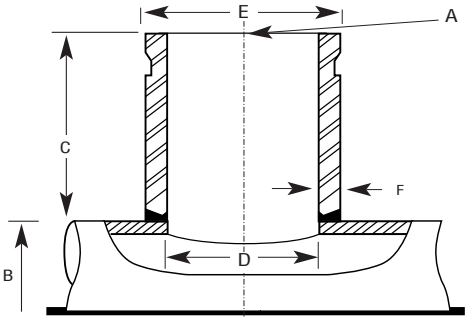
Part Number BSPT	Nominal Outlet Size A	Nominal Header Size B	Outlet Length Size C	Inside Diameter Size D In. / mm	Make up Size M	Weight Each Lb. / kgs
1015040	2- 1/2 x	4	1.625	1.610	0.875	0.477
1115040		100	41.3	40.9	22.2	.022
1015050		5 - 8	1.625	1.610	0.875	0.477
1115050		125 - 200	41.3	40.9	22.2	.022
1020020	2 x	2	1.750	2.067	0.875	0.857
1120020	50 x	50	44.5	52.5	22.2	0.38
1020025		2-1/2	1.750	2.067	0.875	0.829
1120025		65	44.5	52.5	22.2	0.38
1020030		3	1.750	2.067	0.875	0.829
1120030		80	44.5	52.5	22.2	0.39
1020040		4	1.750	2.067	0.875	0.800
1120040		100	44.5	52.5	22.2	0.36
1020050		5	1.750	2.067	0.875	0.743
1120050		125	44.5	52.5	22.2	0.34
1020060		6	1.750	2.067	0.875	0.743
1120060		150	44.5	52.5	22.2	0.34
1020080		8	1.750	2.067	0.875	0.743
1120080		200	44.5	52.5	22.2	0.34
1025025	2-1/2 x	2-1/2	2.215	2.469	1.125	1.250
1125025	65 x	65	54.0	62.7	28.6	0.55
1025030		3	2.215	2.469	1.125	1.200
1125030		80	54.0	62.7	28.6	0.55
1025040		4	2.215	2.469	1.125	1.150
1125040		100	54.0	62.7	28.6	0.52
1025050		5	2.215	2.469	1.125	1.150
1125050		125	54.0	62.7	28.6	0.52
1025060		6	2.215	2.469	1.125	1.150
1125060		150	54.0	62.7	28.6	0.52
1025080		8	2.215	2.469	1.125	1.150
1125080		200	54.0	62.7	28.6	0.52
1025030	3 x	3	2.500	3.068	1.500	3.100
–	80 x	80	63.5	77.9	38.1	1.41
1025040		4	2.500	3.068	1.500	3.100
–		100	63.5	77.9	38.1	1.41
1025050		5	2.500	3.068	1.500	3.100
–		125	63.5	77.9	38.1	1.412
1025060		6	2.500	3.068	1.500	3.100
–		150	63.5	77.9	38.1	1.412
1025080		8	2.500	3.068	1.500	3.100
–		200	63.5	77.9	38.1	1.41
1040040	4 x	4	3.000	4.026	2.000	5.000
–	4 x	100	76.2	102.3	50.8	2.27
1040050		5	3.000	4.026	2.000	5.000
–		125	76.2	102.3	50.8	2.27
1040060		6	3.000	4.026	2.000	5.000
–		150	76.2	102.3	50.8	2.27
1040080		8	3.000	4.026	2.000	5.000
–		200	76.2	102.3	50.8	2.27

Merit Weld-Miser Tee-Let Welding Outlet Fittings

Type B
Male Thread
Standard Weight



Type C
Cut Groove
Standard Weight

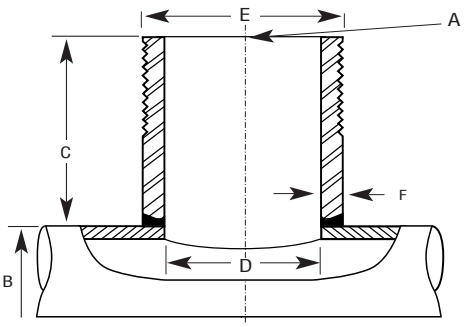


Male Thread Std. Wt.	Cut Groove Std. Wt.	Roll Groove Sch. 10	Nominal Outlet Size A	Nominal Header Size B	Outlet Length Size C	In. / mm Inside Diameter Size D	Outside Diameter Size E	F Wall Thickness Std. Wt.	Weight Each Lb. / kgs
1310012	2010012	2210012	1 x	1-1/4 - 1-1/2	3	1.049	1.315	0.133	1.500
			25 x	32 - 40	80	26.6	33.4	3.4	30
1310015	2010015	2210015		1-1/2 - 2	3	1.049	1.315	0.133	1.500
				40 - 50	80	26.6	33.4	3.4	30
1210020	2010020	2210020		2 - 2-1/2	3	1.049	1.315	0.133	1.500
				50 - 65	80	26.6	33.4	3.4	30
1310025	2010025	2210025		2-1/2 - 4	3	1.049	1.315	0.133	1.500
				65 - 100	80	26.6	33.4	3.4	30
1310050	2010050	2210050		5 - 8	3	1.049	1.315	0.133	1.500
				125 - 200	80	26.6	33.4	3.4	30
1312012	2012012	2212012	1-1/4 x	1-1/4	3	1.368	1.660	0.140	1.500
			32 x	32	80	34.7	42.2	3.6	30
1312015	2012015	2212015		1-1/2	3	1.368	1.660	0.140	1.500
				40	80	34.7	42.2	3.6	30
1212020	2012020	2212020		2 - 2-1/2	3	1.368	1.660	0.140	1.500
				50 - 65	80	34.7	42.2	3.6	30
1312025	2012025	2212025		3 - 4	3	1.368	1.660	0.140	1.500
				80 - 100	80	34.7	42.2	3.6	30
1312050	2012050	2212050		5 - 8	3	1.368	1.660	0.140	1.500
				125 - 200	80	34.7	42.2	3.6	30
1315015	2015015	2215015	1-1/2 x	1-1/2	3	1.610	1.900	0.145	1.500
			40 x	40	80	40.9	48.3	3.7	30
1215020	2015020	2215020		2	3	1.610	1.900	0.145	1.500
				50	80	40.9	48.3	3.7	30
1315025	2015025	2215025		2-1/2	3	1.610	1.900	0.145	1.500
				65	80	40.9	48.3	3.7	30
1315030	2015030	2215030		3 - 4	3	1.610	1.900	0.145	1.500
				80 - 100	80	40.9	48.3	3.7	30
1315050	2015050	2215050		5 - 8	3	1.610	1.900	0.145	1.500
				125 - 200	80	40.9	48.3	3.7	30
1320020	2020020	–	2 x	2	3	2.067	2.375	0.154	1.500
			50 x	50	80	52.5	60.3	3.9	30
1320025	2020025	–		2-1/2	3	2.067	2.375	0.154	1.500
				65	80	52.5	60.3	3.9	30
1320030	2020030	–		3	3	2.067	2.375	0.154	1.500
				80	80	52.5	60.3	3.9	30
1320035	2020040	–		4	3	2.067	2.375	0.154	1.500
				100	80	52.5	60.3	3.9	30
1320050	2020050	–		5	3	2.067	2.375	0.154	1.500
				125	80	52.5	60.3	3.9	30
1320060	2020060	–		6	3	2.067	2.375	0.154	1.500
				150	80	52.5	60.3	3.9	30
1320080	2020080	–		8	3	2.067	2.375	0.154	1.500
				200	80	52.5	60.3	3.9	30

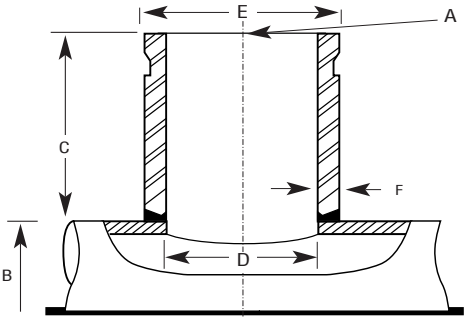
Note: Tee-lets are manufactured to fit size-on-size, that is the contoured shape on a given Tee-Let is made to fit perfectly on the first listed header size. If installed on the second header size marked on the fitting, a slight gap of approximately 1/32" will appear along the longitudinal centerline of the header. For example, a 1" x 2 - 2-1/2" Tee-Let, is a 1" outlet fitting manufactured to fit perfectly on the 2" header size listed, while leaving a 1/32" gap along the longitudinal centerline of the 2-1/2" size. If a perfect fit is required for a 2-1/2" header pipe, then a 1" x 2-1/2 - 3" Tee-let would be ordered. Size consolidations are employed to reduce inventory and provide for greater flexibility.

Merit Weld-Miser Tee-Let Welding Outlet Fittings

Type B
Male Thread
Standard Weight



Type C
Cut Groove
Standard Weight



Male Thread Std. Wt.	Cut Groove Std. Wt. Metric	Roll Groove Sch. 10	Nominal Outlet Size A	Nominal Header Size B	Outlet Length Size C	Inside Std. Wt. Size D	Inside Schedule Size D	Inside Diameter Size E	F Wall Thickness Std.	F Wall Thickness Sch. 10	Weight Each Lb. / kgs
						In. / mm					
1325025	2025025	2225025	2-1/2 x	2-1/2	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125025		65 x	65	80	62.7	67.0	76.2	5.0	3.0	30
1325030	2025030	2225030		3	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125030			80	80	62.7	67.0	76.2	5.0	3.0	30
1325035	2025040	2225035		4	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125040			100	80	62.7	67.0	76.2	5.0	3.0	30
1325050	2025050	2225050		5	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125050			125	80	62.7	67.0	76.2	5.0	3.0	30
1325060	2025060	2225060		6	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125060			175	80	62.7	67.0	76.2	5.0	3.0	30
1325080	2025080	2225080		8	3	2.469	2.635	2.875	0.203	0.120	1.500
	2125080			200	80	62.7	67.0	76.2	5.0	3.0	30
1330025	2030025	2230025	3 x	3	3	3.068	3.260	3.500	0.216	0.120	1.500
			80 x	80	80	78.0	83.0	88.0	5.0	3.0	30
1330030	2030030	2230030		3-1/2	3	3.068	3.260	3.500	0.216	0.120	1.500
				85	80	78.0	83.0	88.0	5.0	3.0	30
1330035	2030035	2230035		4	3	3.068	3.260	3.500	0.216	0.120	1.500
				100	80	78.0	83.0	88.0	5.0	3.0	30
1330050	2030050	2230050		5	3	3.068	3.260	3.500	0.216	0.120	1.500
				125	80	78.0	83.0	88.0	5.0	3.0	30
1330060	2030060	2230060		6	3	3.068	3.260	3.500	0.216	0.120	1.500
				150	80	78.0	83.0	88.0	5.0	3.0	30
1330080	2030080	2230080		8	3	3.068	3.260	3.500	0.216	0.120	1.500
				200	80	78.0	83.0	88.0	5.0	3.0	30
1340040	2040040	2240040	4 x	4	4	4.026	4.260	4.500	0.237	0.120	1.500
			100 x	100	100	102.0	108.0	114.0	6.0	3.0	30
1340050	2040050	2240050		5	4	4.026	4.260	4.500	0.237	0.120	1.500
				125	100	102.0	108.0	114.0	6.0	3.0	30
1340060	2040060	2240060		6	4	4.026	4.260	4.500	0.237	0.120	1.500
				150	100	102.0	108.0	114.0	6.0	3.0	30
1340080	2040080	2240080		8	4	4.026	4.260	4.500	0.237	0.120	1.50
				200	100	102.0	108.0	114.0	6.0	3.0	30
–	2060060	2260060	6 x	6	4	6.065	6.357	6.625	0.280	0.134	1.500
			150 x	150	100	155.0	161.5	168.3	7.1	3.0	30
–	2060080	2260080		8	4	6.065	6.357	6.625	0.280	0.134	1.50
				200	100	155.0	161.5	168.3	7.1	3.0	30
–	2080080	2280080	8 x	8	4	7.981	8.329	8.625	0.322	0.148	1.50
			200 x	200	100	203.0	212.0	213.0	8.0	3.0	30

Note: Tee-lets are manufactured to fit size-on-size, that is the contoured shape on a given Tee-Let is made to fit perfectly on the first listed header size. If installed on the second header size marked on the fitting, a slight gap of approximately 1/32" will appear along the longitudinal centerline of the header. For example, a 1" x 2 - 2-1/2" Tee-Let, is a 1" outlet fitting manufactured to fit perfectly on the 2" header size listed, while leaving a 1/32" gap along the longitudinal centerline of the 2-1/2" size. If a perfect fit is required for a 2-1/2" header pipe, then a 1" x 2-1/2 - 3" Tee-let would be ordered. Size consolidations are employed to reduce inventory and provide for greater flexibility.

VIKING®

TECHNICAL DATA

SPRINKLER WRENCHES AND CABINETS

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

A. Sprinkler Cabinets

Viking sprinkler cabinets are metal enclosures constructed to store an emergency supply of spare sprinklers and a sprinkler installation wrench.

NFPA 13 requires a representative number of each type and temperature rating of sprinkler head to be kept in a cabinet on the premises. NFPA 13 also requires a special sprinkler wrench to be provided in the cabinet. This allows for immediate removal and replacement of sprinklers that have operated or that have become damaged.

Stock of spare sprinklers should include sprinklers of all the types and temperature ratings as are installed in the sprinkler system, in the following quantities:

Number of Sprinklers in the System	Minimum Number of Spare Sprinklers Required
Under 300	6
300-1,000	12
Over 1,000	24

B. Sprinkler Wrenches

Viking sprinkler wrenches are special installation tools specifically designed for use with the various Viking sprinklers and spray nozzles. The appropriate wrenches must be used with the indicated sprinklers and nozzles to provide the proper leverage when tightening sprinklers or nozzles and to minimize slippage during installation.

Using wrenches other than the ones designated for installation may damage the sprinkler. Refer to Tables 2a and 2b and the appropriate sprinkler or spray nozzle data page for the correct installation wrenches that must be used.

Wrenches 10896W/B, 07297W/B, 05118CW/B, 13635W/B, and 16888M/B provide the amount of leverage needed to tighten sprinklers and spray nozzles into pipe fittings while preventing sprinkler damage. No additional tools are necessary with these wrenches.

The following wrenches require a separate ½" ratchet (not available from Viking) to provide the correct amount of leverage: 08336W/B, 10366W/B, 07565W/B, 11663W/B, 13032W/B, 13577W/B, 13619, 15466, 13623W/B, 15467W/B, 15209W/R, 13655W/B, 14031, 14047W/B, 16208W/R, and 16267.

The internal diameters of sprinkler wrenches 08336W/B, 10366W/B, 15209W/R, 16036W/B, 16208W/R, and 16267 are designed for use with the sprinkler contained in the protective shell. (A protective shell should be retained in the spare sprinkler cabinet.)

Wrench part number 10551W/B is required for threading institutional escutcheon plates onto institutional sprinklers. Wrench part number 10729 is a 2-1/2" (63.5 mm) C-C face spanner wrench used for removing institutional escutcheon plates from institutional sprinklers (refer to the DISASSEMBLY section of institutional sprinkler technical data pages).

Wrench part number 15915 is optional for removing protective sprinkler caps and for installing E-1 and F-1 Escutcheons on frame style pendent sprinklers from the floor by attaching a length of 1" diameter CPVC tubing to the tool. Refer to Technical Bulletin Form No. 051808.

2. LISTINGS AND APPROVALS

Refer to the specific sprinkler or spray nozzle technical data pages for sprinkler listings and approvals.

3. TECHNICAL DATA

Specifications:

Sprinkler Cabinets: Designed with four 3/16" diameter holes in back. Spacing of mounting holes: 3-1/2" (88.9 mm) length, 3-1/2" (88.9 mm) height. The sprinkler cabinet should be located adjacent to the main system riser.

Material Standards:

Sprinkler Cabinets: Cold Rolled Steel. Finish: Painted high-gloss red enamel interior and exterior, chrome plated door knob.

Wrenches: Ductile Iron, Steel, Acetal, or 50% glass filled nylon (for head cabinet wrenches)

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.

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

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

A. Sprinkler Cabinets

1. Determine appropriate cabinet from Table 1 on this page for use with the specific model/number of sprinklers to be contained in the cabinet.
2. Specify cabinet part number and quantity needed.

B. Sprinkler Wrenches

1. Determine the appropriate wrench for use with the given sprinkler or spray nozzle model from Tables 2a and 2b.
2. Specify the wrench part number and quantity needed.

NOTE: Sprinklers and sprinkler wrenches are not supplied with the cabinets; they must be ordered separately.

4. INSTALLATION

Refer to the appropriate sprinkler or spray nozzle technical data page.

5. OPERATION

Refer to the sprinkler or spray nozzle techical data page for the particular model used.

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

The Viking sprinkler wrenches and cabinets are 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.

For Sprinkler Models:	Cabinet Capacity	Cabinet Part No.	Size		
			Length	Height	Depth
Viking frame style sprinklers	6 sprinklers	01724A Available since 1971.	10-3/16" (259 mm)	4-11/16" (103 mm)	2-9/16" (65 mm)
Viking frame style sprinklers, ESFR K14 sprinklers, K16.8 pendent sprinklers, and K25.2 EC sprinklers	12 sprinklers (6 K25.2 EC sprinklers)	01725A Available since 1971.	10-3/16" (259 mm)	8-9/16" (217 mm)	2-9/16 (65 mm)
Viking concealed and flush style sprinklers, ESFR K25.2 and K22.4 pendent sprinklers, and K19.6 CMSA sprinklers	5-6 sprinklers	01731A Available since 1971.	13-13/16" (351 mm)	5-11/16" (144 mm)	3" (76 mm)
High Challenge® Sprinklers, upright ESFR sprinklers, and Intermediate Level Sprinklers	6 sprinklers	03985A Available since 1977	12-5/8" (321 mm)	9-1/8" (232 mm)	4-1/8" (105 mm)

Table 1: Sprinkler Cabinets

VIKING®	TECHNICAL DATA	SPRINKLER WRENCHES AND CABINETS

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

IMPORTANT NOTES

The sprinkler cabinet should be easily accessible.

The sprinkler cabinet must not be exposed to corrosive atmospheres or temperatures above 100 °F (38 °C).

The stock of spare sprinklers should include an adequate number of sprinklers of each type and temperature rating.

The stock of sprinklers must be in good condition.

A sprinkler wrench of the appropriate type must be included in the cabinet.

Orient sprinklers and sprinkler wrench as indicated in Figure 1 below.

CAUTION: When replacing automatic sprinklers in an existing system, be sure to replace with sprinklers of the correct type, thread size, orifice size, temperature rating, and finish.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to the appropriate sprinkler data page. Viking sprinklers and spray nozzles are designed to be installed in accordance with the latest edition of Viking technical data, the latest standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards whenever applicable. The use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

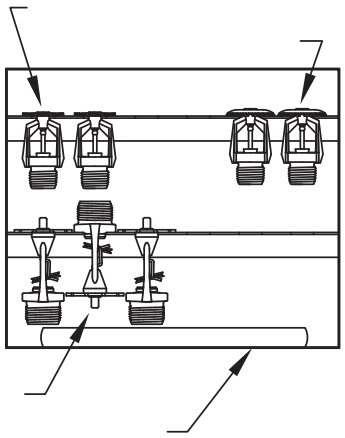


Figure 1: Correct orientation of sprinklers and wrench inside cabinet. (12-head cabinet shown)

Figure 2: Sprinkler Cabinet 01724A (Sprinklers and wrench not included)

Figure 3: Sprinkler Cabinet 01725A (Sprinklers and wrench not included)

VIKING®

TECHNICAL DATA

SPRINKLER WRENCHES AND CABINETS

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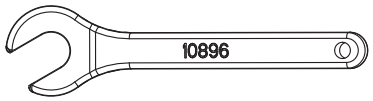
For Sprinkler Models:	Use Wrench:
Frame-style sprinklers and spray nozzles	10896W/B Available since 2000 or 05000CW/B*
Wax coated sprinklers and domed concealed pendent sprinklers	13577W/B Available since 2006 replaces 07398W*
Recessed horizontal sidewall sprinklers with protective shields, domed concealed horizontal sidewall sprinklers, and recessed pendent sprinklers	13655W/B Available since 2006
Coated and recessed ECOH K14 sprinkler	13032W/B Available since 2004
Standard adjustable and plain barrel dry sprinklers, K16.8 and ECOH K14 sprinklers	07297W/B Available since 1991
Recessed and domed concealed dry sprinklers	07565W/B Available since 1991
High Challenge® sprinklers, upright ESFR sprinklers, and ELO sprinklers**	05118CW/B Available since 1981
Coated, recessed, and domed concealed ELO sprinklers	11663W/B Available since 2001
Pendent K14 and K16.8 ESFR sprinklers	13635W/B double ended (use Side A) Available since 2006, or 10285W/B*
Pendent K25.2, K22.4 ESFR sprinklers and K19.6 CMSA Sprinkler VK592	13635W/B double ended (use Side B) Available since 2006, or 12143W/B*
Upright EC K25.2 sprinklers	16888M/B Available since 2011
QR and EC Concealed Sprinklers VK461, VK462, VK463, VK464, VK465, VK632, and VK634 (also optional for cap removal)	14031† Available since 2006
QR and EC Concealed Sprinklers VK461, VK462, VK463, VK464, VK465, VK632, and VK634	14047W/B (heavy duty) Available since 2006
Residential Concealed Sprinklers VK456, VK457, VK474, and VK488 (also optional for removal of protective caps)	13619† (red) Available since 2006

*Wrench no longer available. May still be used until wrench replacement is necessary.

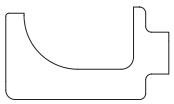
**ELO sprinklers manufactured before Dec. 2001 use wrench part number 07297W/B (07565W/B for coated and recessed).

†Ideal for sprinkler cabinets.

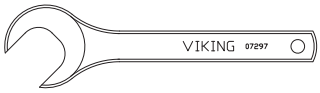
Table 2a: Sprinkler Wrenches



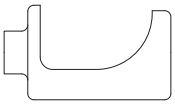
Part No. 10896W/B



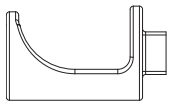
Part No. 13577W/B & 13032W/B



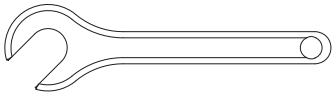
Part No. 07297W/B



Part Nos. 07565W/B & 11663W/B



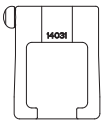
Part No. 13655W/B



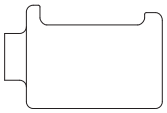
Part No. 05118CW/B

Part No. 13635W/B

Part No. 16888M/B



Part No. 14031



Part No. 14047W/B

Figure 4a: Sprinkler Wrenches

VIKING®

TECHNICAL DATA

SPRINKLER WRENCHES AND CABINETS

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

For Sprinkler Models:	Use Wrench:
Residential Concealed Sprinklers VK456, VK457, VK474, and VK488	13623W/B (heavy duty) Available since 2006
Residential Concealed HSW Sprinkler VK480	16267† or 16208W/R (heavy duty) Available since 2010
Mirage® QR ELO Concealed Sprinklers VK636 and VK469 (also optional for removal of protective caps)	15466† Available since 2009
Mirage® QR ELO Concealed Sprinklers VK636 and VK469	15467W/B (heavy duty) Available since 2009
Mirage® Concealed and flush style sprinklers	08336W/B (heavy duty) Available since 1993
Mirage® Concealed and flush style sprinklers	10366W/B† Available since 1998
Residential Flush Pendent Sprinklers VK476 and VK478	15209W/R (heavy duty) Available since 2009
Recessed Flush Dry Sprinklers VK482	18315 (heavy duty) Available since 2014
Mirage® and Freedom® Concealed Sprinklers VK461, VK462, VK463, VK464, VK465, VK469, VK474, VK632, VK634, VK636, and VK488 (optional concealed cover installer tool)	14412†, or 14867 for the large diameter cover, Available since 2007
Shipping Cap Remover/ Escutcheon Installer (optional***)	15915† Available since 2010
Institutional style flush sprinklers (for installation of the escutcheon plate)	10551W/B Available since 1999
Institutional style flush sprinklers (spanner wrench for escutcheon plate removal)	10729 Available since 1999

***Allows removal of sprinkler caps and installation of E-1 and F-1 escutcheons on frame style pendent sprinklers from the floor.
†Ideal for sprinkler cabinets.

Table 2b: Sprinkler Wrenches

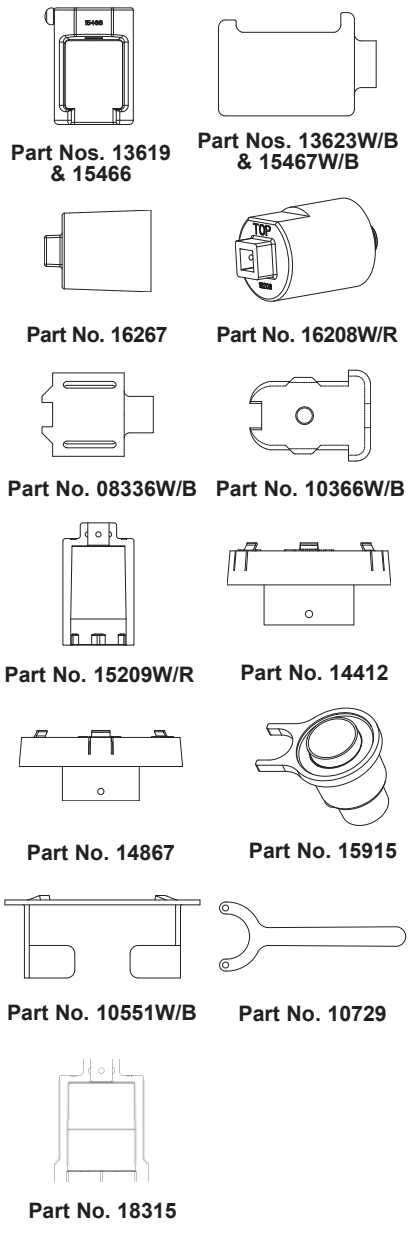


Figure 4b: Sprinkler Wrenches

GUARDIAN
FIRE EQUIPMENT, INC.
MIAMI, FL
Ph. 800.327.6584 • Fax 800.827.3869

DETAIL AND SUBMITTAL SHEET

6300 Series - Fire Dept. Inlet Connections - Bodies

Project/Location: _____ **Date:** _____

Architect/Engineer: _____ **Qty:** _____

Contractor: _____

☑ *Appropriate Selection*

Used as auxiliary connections through which the fire department can pump water to supplement existing water supplies. Provides 250 GPM flow (minimum), per 2½" inlet.

Two and three-way - inlet connections feature clappered brass bodies (straight or angle pattern), with female hose thread swivel inlets and female outlets. Cast brass construction, standard.

Two and Three-Way Connections

Model No.	Outlet	Size	Clappers	A	B
☐ 6314*	Back	4" x 2½" x 2½"	1	5½"	8⅛"
☐ 6315*	Angle	4" x 2½" x 2½"	1	8⅛"	8¾"
☐ 6324	Back	4" x 2½" x 2½"	2	7 9/32"	11 21/32"
☐ 6325	Angle	4" x 2½" x 2½"	2	8 31/64"	11 21/32"
☐ 6326	Back	6" x 2½" x 2½"	2	7¼"	10½"
☐ 6327	Angle	6" x 2½" x 2½"	2	10"	10½"
☐ 6336**	Back	6" x 2½" x 2½" x 2½"	3	10½"	13¾"
☐ 6337**	Angle	6" x 2½" x 2½" x 2½"	3	11½"	14½"

Body Lettering

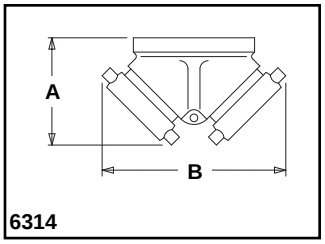
☐ **AUTO SPKR** ☐ **STANDPIPE**

☐ ***Blank (unlettered)***

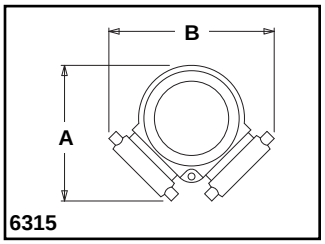
**Auto Spkr lettering only ** Blank (Unlettered) only*

Optional Finish:
☐ **-B** Polished Brass
☐ **-C** Rough Chrome Plated
☐ **-D** Polished Chrome Plated

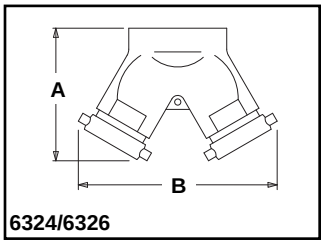
Threads:
☐ NST
☐ Other
_____



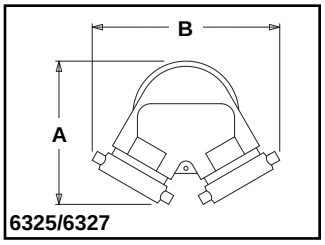
6314



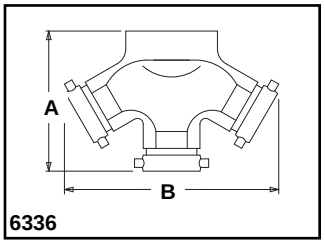
6315



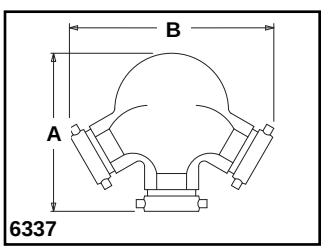
6324/6326



6325/6327



6336



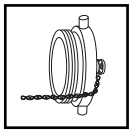
6337

Plugs with Chains and Break Caps - Used to keep fire dept. inlet connections free of debris and protect female threads.

Plugs with Chains

Model No.	Size	Type
☐ 6404	2½"	Brass

Optional Finish:
☐ **-B** Polished
☐ **-C** Rough Chrome Plated
☐ **-D** Polished Chrome Plated



Threads:
☐ NST
☐ Other
_____

Break Caps

Model No.	Size	Type
☐ 6406	2½"	Aluminum
☐ 6407	2½"	Plastic

Adjustable Plugs

Model No.	Size	Type
☐ 6408	2½"	Aluminum
☐ 6409	2½"	Plastic

Contact factory for current listings and approvals

AMES
FIRE & WATERWORKS

COLT SERIES EXCELLENCE MATTERS – SPECIFY IT!

200 DOUBLE CHECK ASSEMBLY

300 DOUBLE CHECK DETECTOR ASSEMBLY

COLT FEATURES BACKFLOW ASSEMBLIES

- Most compact design in the industry
- Entire valve body and closure sleeve manufactured from 300 Series Stainless Steel

- Approved with gate valves or UL/FM butterfly valves
- Approved for horizontal, vertical or "N" pattern installations

CHECK OUR WEBSITE FOR APPROVAL UPDATES!

- Utilizes groove connections for ease of installation & pipe alignment
- Patented Link-check modules allow ease of serviceability
- Smallest enclosure
- Eliminates flowswitch fluctuation
- Meet ARRA-18AA Requirements

THE AMES CHALLENGE

AMES offers the best performing, easiest to service, lowest installed cost backflow assemblies in the industry. We challenge any backflow manufacturer to disprove these claims, through authorized, 3rd party testing.

The AMES Challenge

Assembly Weight
Compare 4" Double Check With Shutoff Valves

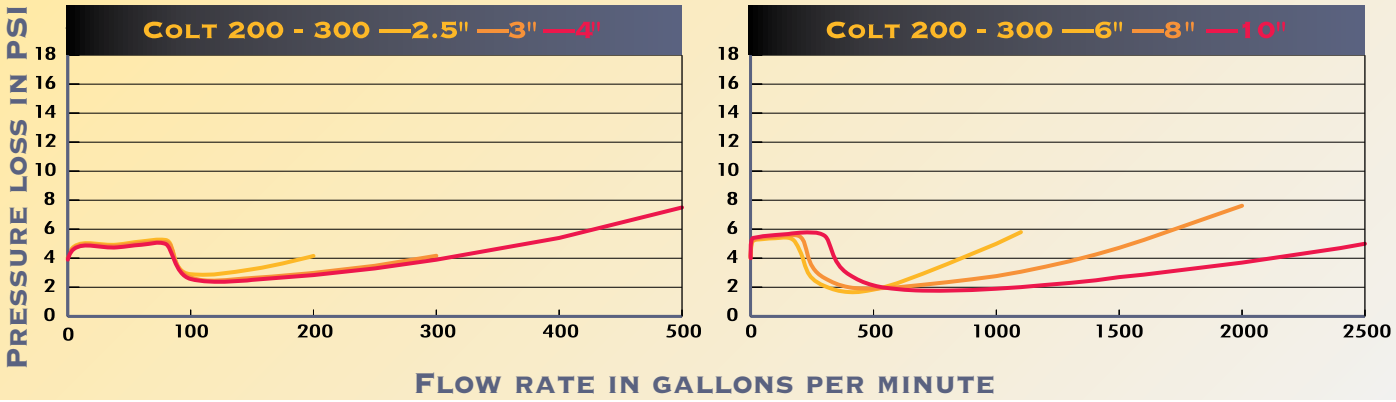
Backflow Assembly	Weight (lbs)	% Heavier Than AMES
Colt 200 W/BFG	61	
Wilkins 350 W/OS&Y - BF 350	281	360%

Laylength
Compare 4" Double Check With Shutoff Valves

Backflow Assembly	Laylength (in)	% Longer Than AMES
Colt 200 W/BFG	29.3	
Wilkins 350 W/OS&Y - BF 350	37.7	29%

Engineering the Curve

Colt 200/300 Certified Flow Characteristics (Including OS&Y Shut-offs)



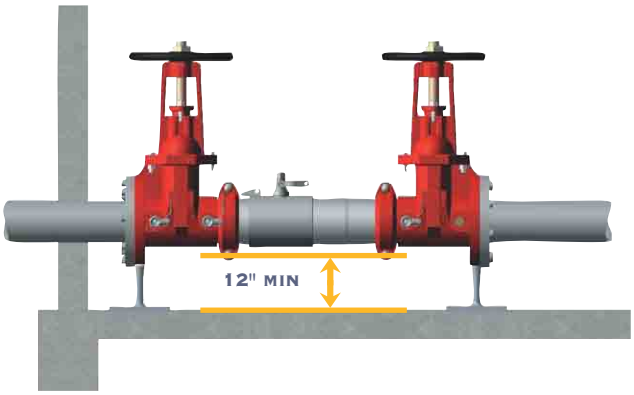
Installation Guidelines

Most field problems occur because dirt or debris present in the system at the time of installation becomes trapped in the 1st check seating area resulting in a low or zero differential across the 1st check. **The system should be flushed before the backflow valve is installed.** If the system is not flushed until after the backflow valve is installed, remove both check modules from the valve and open the inlet shut-off to allow water to flow for a sufficient time to flush debris from the water line. If debris in the water system continues to cause fouling, a strainer can be installed upstream of the backflow assembly.

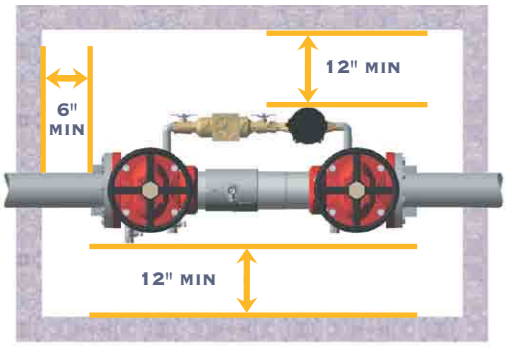
AMES models 200 & 300 may be installed in either **horizontal, vertical, or "N"** position as long as the backflow assembly is installed in accordance with the direction of the flow arrow on the assembly and the local water authority approves the installation.

The assembly should be installed with adequate clearance around the valve to allow for inspection, testing, and servicing. Twelve inches should be the minimum clearance between the lower portion of the assembly and the floor or grade.

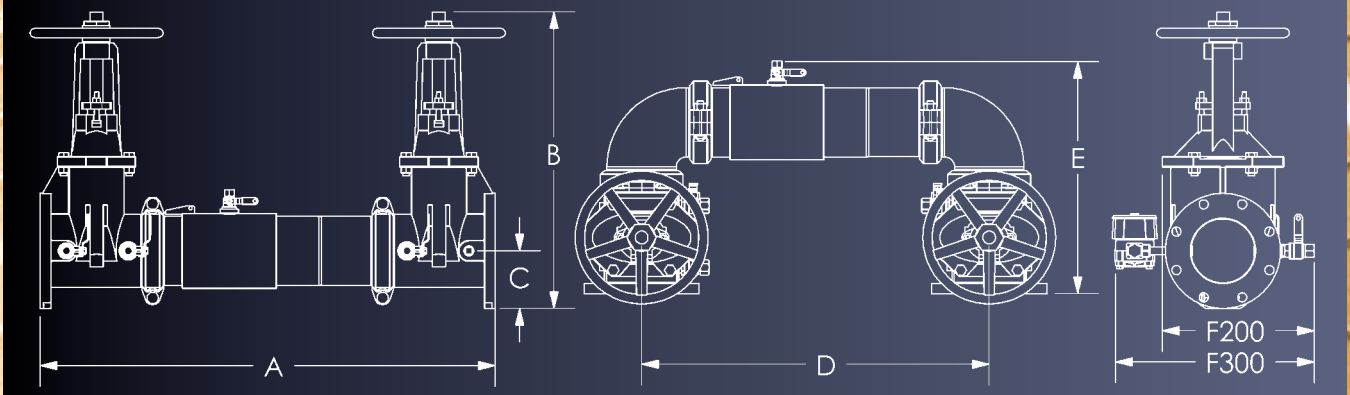
Interior Installation



Enclosure Installation



Colt 200/300 dimensions & weight

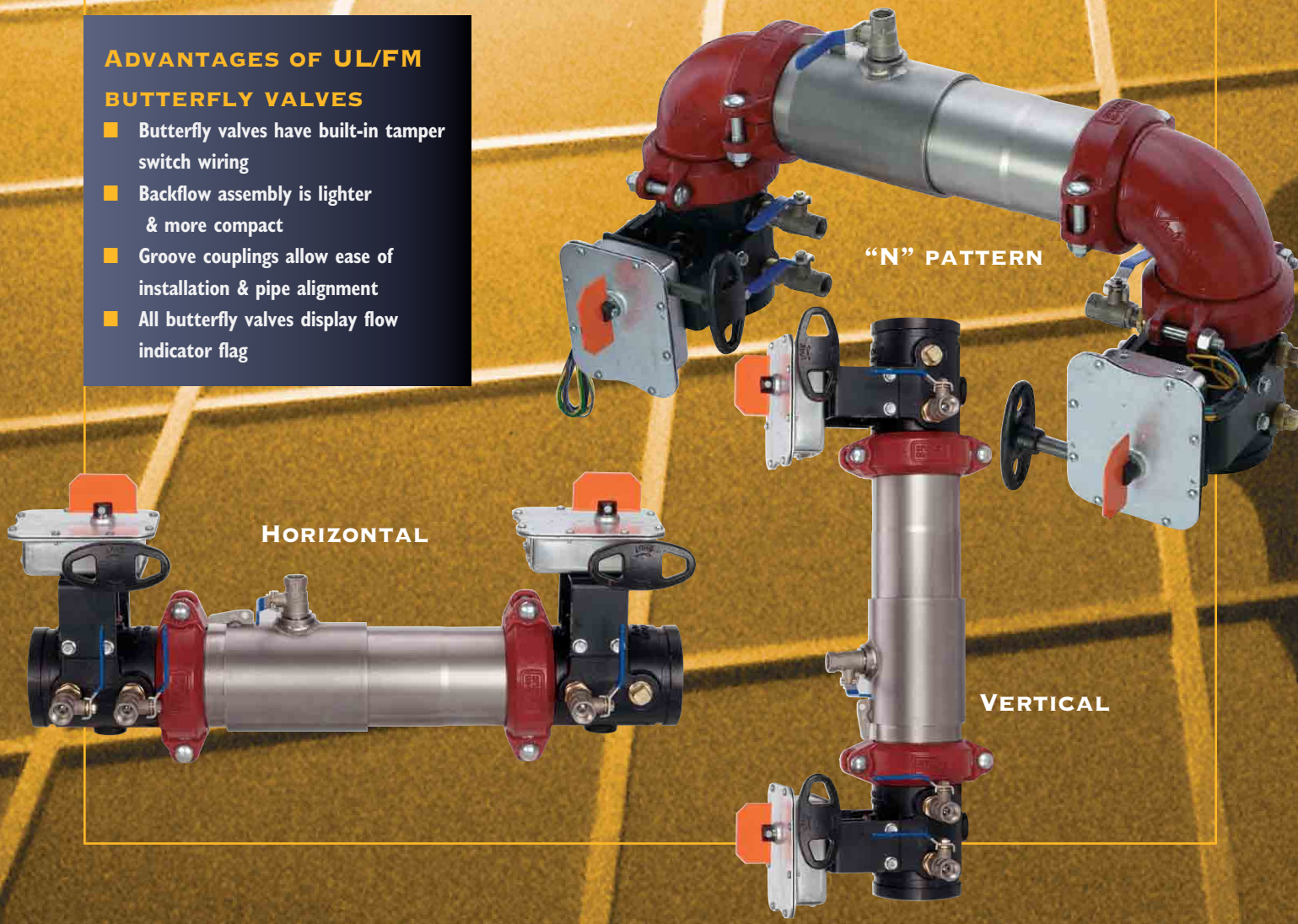


Size	With gate valves (inches)									With UL/FM butterfly valves (inches)							
	A	OS&Y B	NRS B	C	D	E	F/200	F/300	OS&Y Weight	A	B	C	D	E	F/200	F/300	BFG Weight
2 1/2"	31	16 3/8	9 3/8	3 1/2	22	15 1/2	9 3/16	13 3/16	125 lbs	28	11 1/2	3 1/2	22	14 15/16	9	13	56 lbs
3"	31 11/16	18 7/8	10 1/4	3 11/16	22 3/4	17 1/8	10 1/2	14 1/2	145 lbs	28 1/2	12	3 11/16	22 3/4	15 7/16	9 1/2	13 1/2	54 lbs
4"	33 11/16	22 3/4	12 3/16	4	24	18 1/2	11 3/16	15 3/16	161 lbs	29 3/16	12 5/8	3 11/16	24	16 1/4	10	14	61 lbs
6"	43 1/2	30 1/8	16	5 1/2	33 3/4	23 3/16	15	19	295 lbs	36 1/2	15	5	33 3/4	19 11/16	10 1/2	14 1/2	117 lbs
8"	50	37 3/4	19 15/16	6 11/16	40 5/8	27 7/16	17 3/16	21 3/16	480 lbs	43	18 3/4	6 1/2	40 5/8	23 5/16	14 3/16	18 3/16	261 lbs
10"	57 1/2	45 3/4	23 13/16	8 3/16	50	32 1/2	20	24	781 lbs								

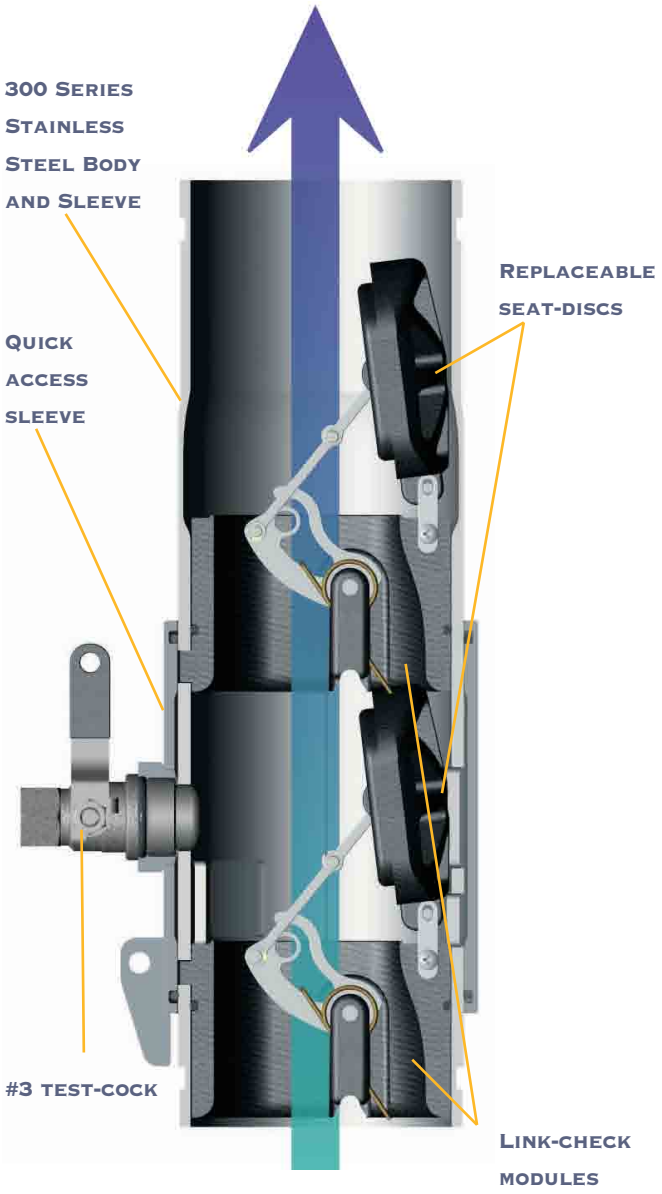
UL/FM Butterfly valves available for shutoff valves

Advantages of UL/FM butterfly valves

- Butterfly valves have built-in tamper switch wiring
- Backflow assembly is lighter & more compact
- Groove couplings allow ease of installation & pipe alignment
- All butterfly valves display flow indicator flag



Cutaway View - Full Flow Operation



Normal Operation

In normal flowing operation, the independent Link-check remains closed until there is a water demand. Each check will then open and maintain an approximate 1psi differential in the direction of flow. In a nonflow or backflow condition, both checks will close until the resumption of normal flow.

Applications — Colt 200

Double Check Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic. Double checks may be installed under continuous pressure service and may be subject to backpressure.

Double Check Assemblies may be used in fire protection systems without chemical additives, industrial in-plant plumbing systems and other systems requiring low hazard protection. Local codes may vary, consult authorities for specific approved applications.

Applications — Colt 300

Double Check Detector Check Assemblies are used to prevent backflow of pollutants that are objectionable, but not toxic. Double Check Detector Check Assemblies may be installed under continuous pressure service and may be subject to backpressure.

The Double Check Detector Check Assembly is used primarily on fireline sprinkler systems when it is necessary to monitor unauthorized use of water.

Approvals

Contact the factory or visit the website:
www.amesfirewater.com

Specifications

The Backflow Assembly shall consist of two independent Link-check modules within a single housing with sleeve access, required test cocks and drip tight shut-off valves. Link-checks may be removed and reinstalled in housing without any special tools. The housing shall be constructed of 300 Series stainless steel with groove end connections. Link-checks shall have reversible elastomer disks and in operation shall produce drip tight closure against the reverse flow of liquid caused by back pressure or back siphonage. Device shall be manufactured in the USA. Device shall be COLT 200 or 300 manufactured by AMES of Sacramento, California.

Characteristics and Materials

Rated Working Pressure	Hydrostatic Test Pressure
175psi	350psi
Temperature Range	**Body Construction**
33°F-110°F	300 Series Stainless Steel

End Connection

Groove per AWWA C-606 (IPS) or Flange per ANSI B16.1, Class 125

Patent Nos. 6,220,282, 6,443,181, and 6,478,047

AMES FIRE & WATERWORKS

www.amesfirewater.com

ISO 9001-2008 CERTIFIED

A Watts Water Technologies Company

USA: Backflow- Tel: (916) 928-0123 • Fax: (916) 928-9333
Control Valves- Tel: (713) 943-0688 • Fax: (713) 944-9445
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068

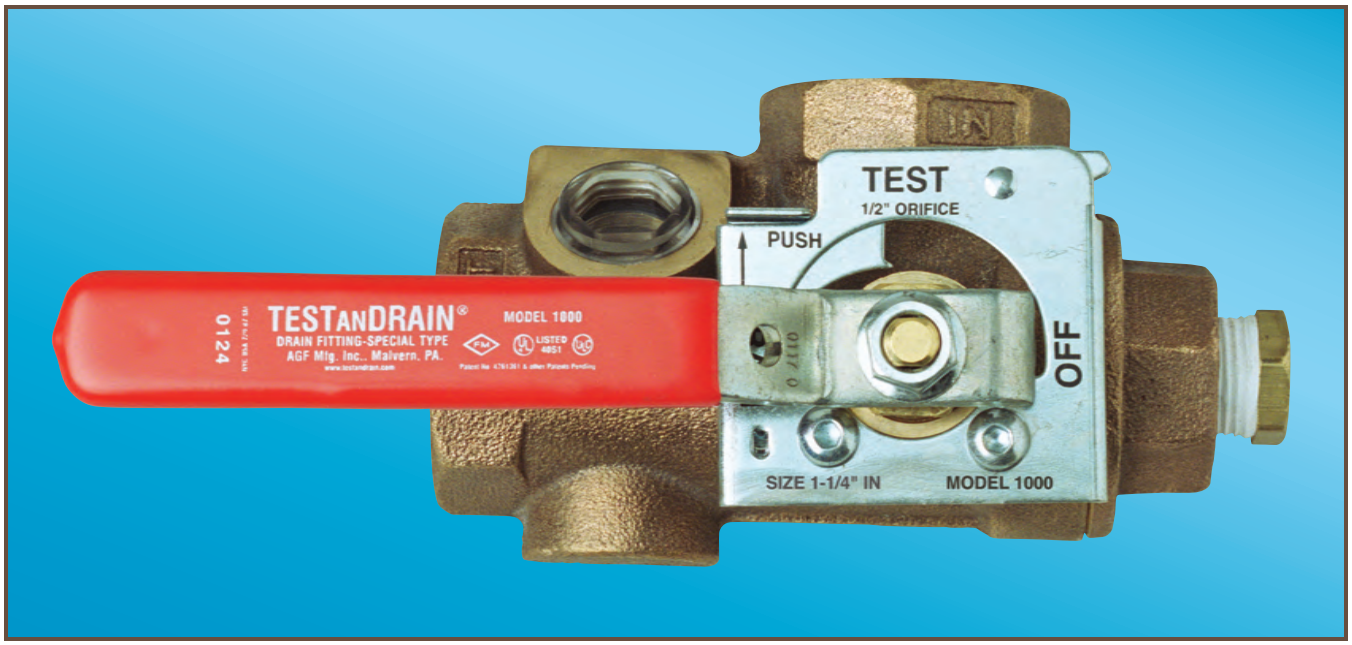
Model 1000

TESTANDRAIN®

Sectional Floor Control Test and Drain Valve

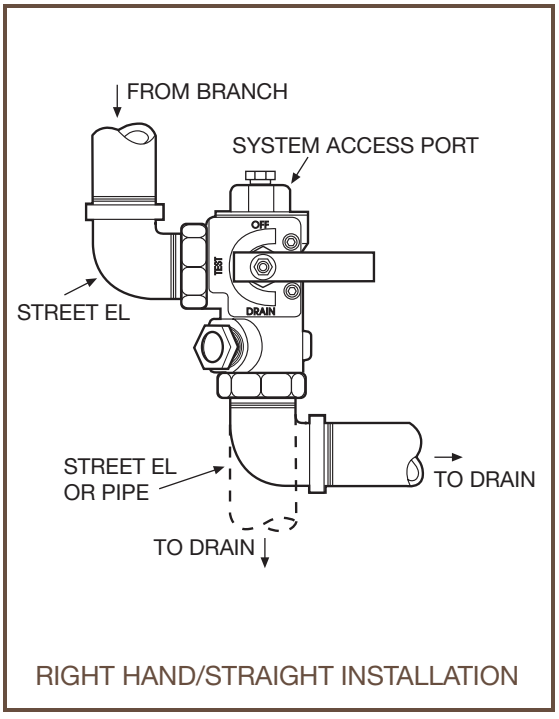
c UL us FM APPROVED

¾" 1" 1¼" 1½" 2"



- The AGF Manufacturing Inc. **Model 1000 TESTANDRAIN®** provides both the test function and the express drain function for a wet fire sprinkler system.
- The **Model 1000** complies with the requirements of NFPA-13, NFPA-13R, and NFPA-13D.
- The **Model 1000 TESTANDRAIN®** is a compact single handle ball valve which includes a tamper resistant test orifice and integral tamper resistant sight glasses, and is 300 PSI rated.
- Available in a full range of sizes from ¾" to 2" NPT and BSPT, with all specifiable orifice sizes ⅜" (2.8K), 7⁄16" (4.2K), ½" (5.6K), 17⁄32" (8.0K), ⅝" (11.2K, ELO), ¾" (14.0K, ESFR), and K25 as required by NFPA 13, 2007 Edition (see reverse).
- The orifice size is noted on the indicator plate and the valve features a tapped and plugged port for system access.
- A locking kit is available and can be ordered with the valve to provide vandal resistance or prevent unintentional alarm activation.
- Repair kits including (1) adapter gasket, (1) ball, (2) valve seats, (1) stem packing, and (1) stem washer are available for all **TESTANDRAIN®** valves. Valve and orifice size must be specified when ordering.

Model 1000 - Front View, Vertical Installation



RIGHT HAND/STRAIGHT INSTALLATION

Reliability, Versatility, Code Compatibility

Model 1000

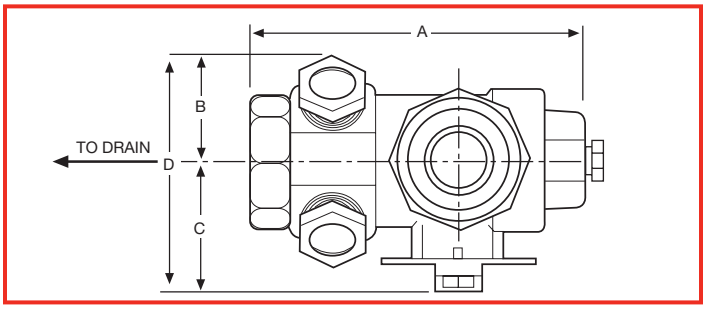
TEST AN DRAIN®

300 PSI Bronze Ball Valve

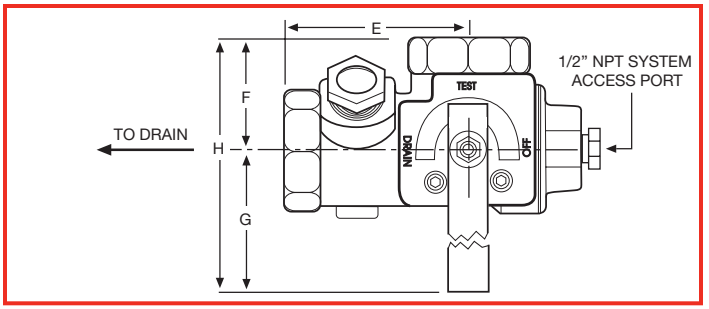
c UL us

FM APPROVED

Model 1000 - Plan View



Front View - Horizontal Install



Dimensions

Orifice Size Available: ⅜", 7⁄16", ½", 17⁄32", ELO (5⁄8")*, ESFR (¾")*, & K25**

SIZE	A	B	C	D	E	F	G	H
¾"	5 1⁄16" (128 mm)	1 ½" (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"	5 1⁄16" (128 mm)	1 ½" (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 ¼"	5 7⁄16" (163 mm)	1 11⁄16" (43 mm)	2 9⁄16" (65 mm)	4 ¼" (108 mm)	3 5⁄16" (83 mm)	1 15⁄16" (51 mm)	5 9⁄16" (141 mm)	5 ½" (192 mm)
1 ½"	6 7⁄16" (163 mm)	1 13⁄16" (45 mm)	3 ¼" (81.5 mm)	5 1⁄16" (127 mm)	3 7⁄8" (99 mm)	2 5⁄8" (67 mm)	8 ¼" (207 mm)	10 7⁄8" (274 mm)
2"	6 7⁄16" (163 mm)	1 13⁄16" (45 mm)	3 ¼" (81.5 mm)	5 1⁄16" (127 mm)	3 7⁄8" (99 mm)	2 5⁄8" (67 mm)	8 ¼" (207 mm)	10 7⁄8" (274 mm)

* Available on 1¼" to 2" size units only

** Available on 1½" and 2" size units only

Materials

Handle: Steel
Stem: Rod Brass
Ball: C.P. Brass
Body: Bronze
Valve Seat: Impregnated Teflon®
Indicator Plate: Steel
Handle Stop: Steel

Approvals

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

MADE IN U.S.A.

The Model 1000 provides all of the following...

From the 2007 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 & 8.16.2.4.3	Drain connections, interior sectional or floor control valve(s) – 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 readily 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.

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:_____