City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

FIRE SPRINKLERS INC
WA CL# FIRESI*988RJ

FIRE SPRINKLER MATERIAL SUBMITTAL

FOR

Hampton Inn Baldwin

1515 Meridian S
Puyallup, WA 98371

FSI Job #4807

TABLE OF CONTENTS

SECTION A

Pipe & Fittings

BULL MOOSE TUBE

SCHEDULE 10 & 40 SPRINKLER PIPE SUBMITTAL DATA SHEET

APPROVALS AND SPECIFICATIONS

- ASTM A135, Grade A
- ASTM A795, Type E, Grade A
- Pressure rated to 300 psi
- Underwriters Laboratories—United States of America
- Underwriters Laboratories—Canada
- Factory Mutual
- NFPA-13
- NFPA-13R
- NFPA-14
- CIVIL DEFENSE APPROVAL—United Arab Emirates
- Made in the United States of America
- UL, ULC & FM listed for roll-groove, plain-end and welded joints for wet, dry, preaction and deluge sprinkler systems.
- LEED v4 Certified

FINISHES AND COATINGS

- Schedule 10 & 40 Sprinkler Pipe receives an OD mill coating of water-based paint which has corrosion protection expected with a painted carbon steel product, i.e. it would be expected to resist corrosion for an extended and indefinite period in a clean and dry environment and, as environmental conditions deteriorate, the corrosion protection would also diminish.
- Schedule 10 & 40 Sprinkler Pipe (black) receives an ID mill coating of Eddy Guard II MIC preventative coating. EG2 has been tested at independent laboratories to resist bacterial growth and maintain minimal bacterial count after multiple flushes (25) of the pipe.
- Schedule 10 & 40 Sprinkler Pipe when Hot Dip Galvanized by ASTM A123 and supplied by Bull Moose Tube is UL listed and FM approved.

PRODUCT IDENTIFICATION

- Every length of Bull Moose fire sprinkler pipe features large, easy-to-read, continuous stenciling, clearly identifying the manufacturer, type of pipe, size, and length.

	Nominal Pipe Size (inches)	1	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"
Schedule 10	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625	8.625
	I.D. (in)	1.097	1.442	1.682	2.157	2.635	3.260	4.260	6.357	8.249
	Empty Weight (lb/ft)	1.410	1.810	2.090	2.640	3.530	4.340	5.620	9.290	16.940
	Water Filled Weight (lb/ft)	1.800	2.518	3.053	4.223	5.893	7.957	11.796	23.038	40.086
	C.R.R.*	15.27	9.91	7.76	6.27	4.92	3.54	2.50	1.158	1.805
	Pieces per Lift	91	61	61	37	30	19	19	10	7
Schedule 40	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500		
	I.D. (in)	1.049	1.380	1.610	2.067	2.469	3.068	4.026		
	Empty Weight (lb/ft)	1.680	2.270	2.720	3.660	5.800	7.580	10.800		
	Water Filled Weight (lb/ft)	2.055	2.918	3.602	5.114	7.875	10.783	16.316		
	C.R.R.*	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
	Pieces per Lift	70	51	44	30	30	19	19		

*Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY

SUBMITTAL INFORMATION

Project

Contractor

Engineer

Specification Reference

Date

System Type

Locations

Comments

◯ Schedule 10 - Black ◯ Schedule 10 - Hot Dip Galvanized ◯ Schedule 40 - Black ◯ Schedule 40 - Hot Dip Galvanized

BULLMOOSETUBE.COM
1819 Clarkson Road, Chesterfield, MO 63017
US: 800.325.4467 | Canada: 800.882.4666 | sales@BullMooseIndustries.com

Victaulic® Grooved End Fittings

No. 20 Tee

No. 10 Elbow

1.0 PRODUCT DESCRIPTION

Available Sizes

- ¾ – 24"/DN20 – DN600

Pipe Material

- Carbon steel

Maximum Working Pressure

- Pressure ratings for Victaulic standard fittings conform to the ratings of Victaulic Style 77 couplings (refer to publication 06.04 for more information).

Application

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

NOTES

- For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information.
- 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.

 © 2023 Victaulic Company. All rights reserved.

2.0 CERTIFICATION/LISTINGS

EN 10311
CPR (EU)
No. 305/2011

BS EN 10311
CPR (UK)
2019 No. 465

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 22½° Elbow, No. 13 11¼° Elbow, No. 100 90° Long Radius Elbow, No. 110 45° Long Radius Elbow, No. 20 Tee, No. 25 Tee with Grooved Branch, No. 30 45° Lateral, No. 60 Cap, No. 50 Concentric Reducers, No. 51 Eccentric Reducers.
- The following Victaulic fittings are VdS approved: No.10 90° Elbow, No.11 45° Elbow, No.20 Tee and No.60 Cap.
- The following Victaulic fittings are LPCB approved: No.10 90° Elbow, No.11 45° Elbow, No.12 22 ½ Elbow, No.13 11 ¼° Elbow, No.30 45° Lateral, No.30-R Reducing Lateral, No.100 Long Radius Elbow, No.110 Long Radius Elbow, No.20 Tee, No.35 Cross, No.60 Cap, No.25 Reducing Tee, No.33 True Wye, No.50 Concentric Reducer, No.51 Eccentric Reducer and No.29M Tee with Threaded Branch.
- The following Victaulic fittings are FM approved: No.10 90° Elbow, No.11 45° Elbow, No.12 22½ Elbow, No.13 11¼° Elbow, No.30 45° Lateral, No.100 Long Radius Elbow, No.20 Tee, No.35 Cross, No.60 Cap, No.25 Reducing Tee and No.50 Concentric Reducer.
- Download publication 10.01 for Fire Protection Certifications/Listings Reference Guide to view which sizes of the fittings listed above have active fire protection approvals.

3.0 SPECIFICATIONS – MATERIAL

Fitting: (specify choice)

- ☐ Standard: Ductile iron conforming to ASTM A536, Grade 65-45-12.
- ☐ Optional: Segmentally welded carbon steel, standard wall, conforming to ASTM A53, Type E or S, Gr. B

Nipples: (specify choice)

- ☐ ¾ – 6"/DN20 – DN150: Carbon steel, Schedule 40, conforming to ASTM A53, Type E or S, Gr. B
- ☐ 8 – 12"/DN200 – DN300: Carbon steel, standard wall, conforming to ASTM A53, Type E or S, Gr. B

Flanged Adapter Nipples: (specify choice)

- ☐ Class 125 Flange: Cast iron conforming to ANSI B16.1
- ☐ Class 150 Flange: Carbon steel conforming to ANSI B16.5, raised or flat face
- ☐ Class 300 Flange: Carbon steel conforming to ANSI B16.5, raised or flat face

Fitting Coating: (specify choice)

- ☐ Standard: Orange enamel
- ☐ Optional: Hot dip galvanized and others. Some fittings supplied electroplated as standard – see product specifications

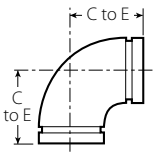
Flanged Adapter Nipple Coating: (specify choice)

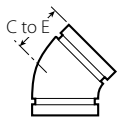
- ☐ Standard: None (Unfinished)
- ☐ Optional: Orange enamel, hot dip galvanized and others

 © 2023 Victaulic Company. All rights reserved.

4.0 DIMENSIONS

Elbows
No. 10 90° Elbow
No. 11 45° Elbow





Size		No. 10 90° Elbow		No. 11 45° Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	2.25 57	0.5 0.2	1.50 38	0.5 0.2
1 DN25	1.315 33.7	2.25 57	0.6 0.2	1.75 44	0.5 0.2
1 ¼ DN32	1.660 42.4	2.75 70	0.8 0.4	1.75 44	0.6 0.3
1 ½ DN40	1.900 48.3	2.75 70	1.0 0.5	1.75 44	0.8 0.4
2 DN50	2.375 60.3	3.25 83	1.8 0.8	2.00 51	1.3 0.6
2 ½	2.875 73.0	3.75 95	3.0 1.3	2.25 57	2.1 1.0
DN65	3.000 76.1	3.75 95	3.1 1.4	2.25 57	2.3 1.0
3 DN80	3.500 88.9	4.25 108	4.5 2.0	2.50 64	3.0 1.3
3 ½ DN90	4.000 101.6	4.50 114	5.6 2.5	2.75 70	4.0 1.8
	4.250 108.0	5.00 127	6.2 2.8	3.00 76	4.6 2.1
4 DN100	4.500 114.3	5.00 127	6.8 3.1	3.00 76	5.2 2.4
4 ½	5.000 127.0	5.00 127	8.6 3.9	3.13 79	5.9 2.7
	5.250 133.0	5.50 140	10.3 4.7	3.25 83	6.6 3.0
DN125	5.500 139.7	5.50 140	9.9 4.5	3.25 83	7.2 3.2
5	5.563 141.3	5.50 140	10.1 4.6	3.25 83	7.4 3.4
	6.000 152.4	6.50 (sw) 165	13.3 6.0	3.50 (sw) 89	9.5 4.3
	6.250 159.0	6.50 165	13.0 5.9	3.25 83	9.5 4.3
	6.500 165.1	6.50 165	15.5 7.0	3.50 89	9.7 4.4
6 DN150	6.625 168.3	6.50 165	15.3 6.9	3.50 89	10.2 4.6
200A	216.3	7.75 197	34.7 15.7	4.25 108	14.4 6.5

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

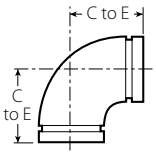
NOTE
- All fittings are ductile iron unless otherwise noted with an (sw).

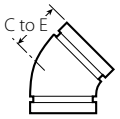
 © 2023 Victaulic Company. All rights reserved.

4.0 DIMENSIONS (CONTINUED)

Elbows

No. 10 90° Elbow
No. 11 45° Elbow





Size		No. 10 90° Elbow		No. 11 45° Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
8 DN200	8.625 219.1	7.75 197	27.5 12.5	4.25 108	18.6 8.4
250A	267.4	9.00 229	67.8 30.7	4.75 121	28.1 12.7
10 DN250	10.750 273.0	9.00 229	50.0 22.7	4.75 121	37.5 17.0
300A	318.5	10.00 254	73.5 33.3	5.25 133	41.3 18.7
12 DN300	12.750 323.9	10.00 254	79.3 36.0	5.25 133	45.0 20.4
14[1] DN350	14.000 355.6	14.00 356	146.0 66.2	5.80 147	78.0 35.4
	14.843 377.0	14.88 378	168.0 76.2	6.15 156	82.0 37.2
16[1] DN400	16.000 406.4	16.00 406	190.0 86.2	6.63 168	88.2 40.0
	16.772 426.0	16.75 425	216.0 98.0	6.95 177	98.1 44.5
18[1] DN450	18.000 457.2	18.00 457	241.0 109.3	7.46 189	123.0 55.8
	18.898 480.0	18.90 480	291.0 132.0	7.83 199	123.2 55.9
20[1] DN500	20.000 508.0	20.00 508	296.0 134.3	8.28 210	151.0 68.5
	20.866 530.0	20.88 530	355.0 161.0	8.64 219	179.0 81.2
22 DN550	22.000 558.8	25.00 635	386.0 175.1	12.11 308	210.0 95.3
24[1] DN600	24.000 609.6	24.00 610	475.0 215.5	9.94 252	240.0 108.9
	24.803 630.0	24.75 629	545.0 247.2	10.27 261	275.4 124.9
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™				

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NOTE

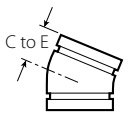
- All fittings are ductile iron unless otherwise noted with an (sw).

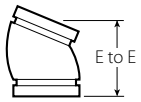
 © 2023 Victaulic Company. All rights reserved.

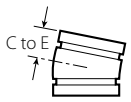
4.0 DIMENSIONS (CONTINUED)

Elbows

No. 12 22 ½° Elbow
No. 13 11 ¼° Elbow







Size		No. 12 22 ½° Elbow		No. 12G (GSNK) 22 ½° Elbow		No. 13 11 ¼° Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	1.63 (sw) 41	0.4 0.2	NA	NA	1.38 (sw) 35	0.4 0.2
1 DN25	1.315 33.7	1.63 (sw) 41	0.5 0.2	3.25 83	0.6 0.3	1.38 (sw) 35	0.4 0.2
1 ¼ DN32	1.660 42.4	1.75 44	0.8 0.4	NA	NA	1.38 35	0.6 0.3
1 ½ DN40	1.900 48.3	1.75 44	1.0 0.4	NA	NA	1.38 35	0.6 0.3
2 DN50	2.375 60.3	1.88 48	1.2 0.5	3.75 95	1.4 0.6	1.38 35	1.0 0.4
2 ½	2.875 73.0	2.00 (sw) 51	2.4 1.1	4.00 102	2.0 0.9	1.50 38	1.6 0.7
DN65	3.000 76.1	2.25 57	2.5 1.1	NA	NA	1.50 38	1.7 0.8
3 DN80	3.500 88.9	2.25 (sw) 57	3.1 1.4	4.50 114	3.1 1.4	1.50 38	2.0 0.9
3 ½ DN90	4.000 101.6	2.50 (sw) 64	4.0 1.8	NA	NA	1.75 (sw) 44	2.8 1.3
	4.250 108.0	2.88 (sw) 73	+	NA	NA	1.75 (sw) 44	+
4 DN100	4.500 114.3	2.88 73	4.8 2.2	5.25 133	4.8 2.2	1.75 44	3.3 1.5
4 ½	5.000 127.0	2.88 (sw) 73	+	NA	NA	1.88 (sw) 48	+
	5.250 133.0	2.88 (sw) 73	+	NA	NA	2.00 (sw) 51	+
DN125	5.500 139.7	2.88 73	6.3 2.9	NA	NA	2.00 51	4.6 2.1
5	5.563 141.3	2.88 (sw) 73	7.8 3.5	NA	NA	2.00 (sw) 51	5.0 2.3
	6.000 152.4	3.13 (sw) 79	+	NA	NA	2.00 (sw) 51	+
	6.250 159.0	3.13 (sw) 79	+	NA	NA	2.00 (sw) 51	+
	6.500 165.1	3.13 79	10.4 4.7	NA	NA	2.00 51	7.1 3.2
6 DN150	6.625 168.3	3.13 (sw) 79	12.2 5.5	6.25 159	12.2 5.5	2.00 51	6.4 2.9

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTE

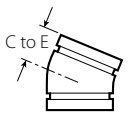
- All fittings are ductile iron unless otherwise noted with an (sw).

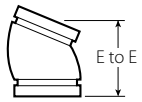
 © 2023 Victaulic Company. All rights reserved.

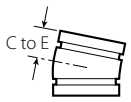
4.0 DIMENSIONS (CONTINUED)

Elbows

No. 12 22 ½° Elbow
No. 13 11 ¼° Elbow







Size		No. 12 22 ½° Elbow		No. 12G (GSNK) 22 ½° Elbow		No. 13 11 ¼° Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
8 DN200	8.625 219.1	3.88 (sw) 98	20.0 9.1	7.50 191	18.1 8.2	2.00 51	8.2 3.7
10 DN250	10.750 273.0	4.38 111	30.0 13.6	NA	NA	2.13 54	11.8 5.3
12 DN300	12.750 323.9	4.88 124	40.0 18.1	NA	NA	2.25 57	29.3 13.3
14[1] DN350	14.000 355.6	5.00 (sw) 127	46.0 20.9	NA	NA	3.50 (sw) 89	32.0 14.5
16[1] DN400	16.000 406.4	5.00 (sw) 127	58.0 26.3	NA	NA	4.00 (sw) 102	42.0 19.1
18[1] DN450	18.000 457.2	5.50 (sw) 140	65.0 29.5	NA	NA	4.50 (sw) 114	53.0 24.0
20[1] DN500	20.000 508.0	6.00 (sw) 152	78.6 35.7	NA	NA	5.00 (sw) 127	65.0 29.5
22 DN550	22.000 558.8	6.50 (sw) 165	125.0 56.7	NA	NA	5.50 (sw) 140	80.0 36.3
24[1] DN600	24.000 609.6	7.00 (sw) 178	140.0 63.5	NA	NA	6.00 (sw) 152	94.5 42.9
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™						

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTE

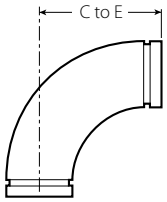
- All fittings are ductile iron unless otherwise noted with an (sw).

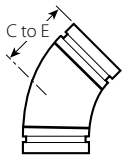
 © 2023 Victaulic Company. All rights reserved.

4.0 DIMENSIONS (CONTINUED)

Elbows

No. 100 90° Long Radius Elbow
No. 110 45° Long Radius Elbow





Size		No. 100 90° 1½D Long Radius Elbow		No. 110 45° 1½D Long Radius Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	2.50 (s) 64	0.4 0.2	1.75 (s) 44	0.4 0.2
1 DN25	1.315 33.7	2.88 (s) 73	0.8 0.4	2.25 (s) 57	0.6 0.3
1¼ DN32	1.660 42.4	3.25 (s) 83	1.1 0.5	2.38 (s) 60	0.9 0.4
1½ DN40	1.900 48.3	3.63 (s) 92	2.2 1.0	2.50 (s) 64	1.1 0.5
2 DN50	2.375 60.3	4.38 111	2.6 1.2	2.75 70	1.9 0.9
2½	2.875 73.0	5.13 130	3.4 1.5	3.13 (s) 79	3.0 1.4
3 DN80	3.500 88.9	5.88 149	6.0 2.7	3.38 86	3.8 1.7
3½ DN90	4.000 101.6	6.63 (s) 168	8.7 3.9	3.63 (s) 92	5.6 2.5
4 DN100	4.500 114.3	7.50 191	10.8 4.9	4.00 102	7.4 3.4
5	5.563 141.3	9.25 235	18.0 8.2	4.25 108	14.8 6.7
	6.500 165.1	10.75 273	25.8 11.7	5.50 140	15.8 7.2
6 DN150	6.625 168.3	10.75 273	30.4 13.8	5.38 137	16.7 7.6
8 DN200	8.625 219.1	14.25 362	68.5 31.1	7.25 184	36.0 16.3
10 DN250	10.750 273.0	15.00 381	81.6 37.0	6.25 159	40.1 18.2
12 DN300	12.750 323.9	18.00 457	138.0 62.6	7.50 191	69.6 31.6
14[1] DN350	14.000 355.6	21.00 533	222.7 101.0	8.75 222	112.4 51.0
16[1] DN400	16.000 406.4	24.00 610	302.0 137.0	10.00 254	158.7 72.0
18[1] DN450	18.000 457.2	27.00 686	421.8 191.3	11.25 286	224.9 102.0
20[1] DN500	20.000 508.0	30.00 762	498.2 226.0	12.50 318	246.9 112.0
22[1] DN550	22.000 558.8	36.00 (s) 914	400.0 181.4	16.50 (s) 419	205.0 93.0
24[1] DN600	24.000 609.6	36.00 914	765.0 347.0	15.00 381	370.4 168.0
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™				

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(s) = Carbon Steel

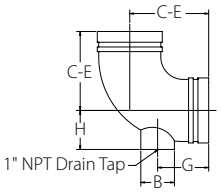
NOTE

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

 © 2023 Victaulic Company. All rights reserved.

4.1 DIMENSIONS

No. 10-DR
90° Drain Elbow

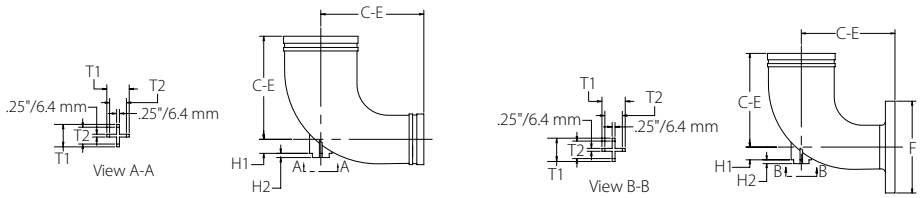


Size		No. 10-DR 90° Drain Elbow					Weight
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	ØB inches mm	G inches mm	H inches mm	Drain Tap NPT inches mm	Approx. (Each) lb kg
2½	2.875 73.0	3.75 95	1.81 46	2.75 70	1.68 43	1 25	3.5 1.6
3 DN80	3.500 88.9	4.25 108	1.81 46	2.75 70	2.13 54	1 25	4.8 2.2
4 DN100	4.500 114.3	5.00 127	1.81 46	2.75 70	2.63 67	1 25	7.8 3.5
6 DN150	6.625 168.3	6.50 165	1.81 46	2.75 70	3.65 93	1 25	18.1 8.2

4.2 DIMENSIONS

Reducing Base Support Elbow

No. R-10G
No. R-10F



Size						No. R-10G 90° Reducing Base Support Elbow Groove x Groove						No. R-10F 90° Reducing Base Support Elbow Groove x Class 150 Flange*						
Nominal inches DN			Actual Outside Diameter inches mm			C to E inches mm	H1 inches mm	H2 inches mm	T1 inches mm	T2 inches mm	Approx. Weight (Each) lb kg	C to E inches mm	ØF inches mm	H1 inches mm	H2 inches mm	T1 inches mm	T2 inches mm	Approx. Weight (Each) lb kg
6 DN150	x	4 DN100	6.625 168.3	x	4.500 114.3	9.19 233	1.25 32	0.38 10	2.00 51	1.50 38	33.0 15.0	9.19 233	9.00 229	1.25 32	0.38 10	2.00 51	1.50 38	46.0 20.9
		5			5.563 141.3	9.00 229	1.50 38	0.38 10	2.00 51	1.50 38	37.0 16.8	9.00 229	10.00 254	1.50 38	0.38 10	2.00 51	1.50 38	52.0 23.6
8 DN200	x	6 DN150	8.625 219.1	x	6.625 168.3	10.50 267	2.13 54	0.38 10	2.00 51	1.50 38	51.0 23.1	10.50 267	11.00 279	2.13 54	0.38 10	2.00 51	1.50 38	70.0 31.8
10 DN250	x	8 DN200	10.750 273.0	x	8.625 219.1	12.00 305	2.38 60	0.38 10	2.00 51	1.50 38	88.0 39.9	12.00 305	13.50 343	2.38 60	0.38 10	2.00 51	1.50 38	118.0 53.5

* Contact Victaulic for additional flange end options.

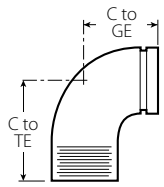
For long radius base support elbow options, please refer to publication 07.13.

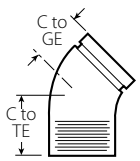
 © 2023 Victaulic Company. All rights reserved.

4.3 DIMENSIONS

Adapter Elbow

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





Size		No. 18 90° Adapter Elbow Groove x Male Thread[1]			No. 19 45° Adapter Elbow Groove x Male Thread[1]		
Nominal inches DN	Actual Outside Diameter inches mm	C to GE inches mm	C to TE inches mm	Approx. Weight (Each) inches mm	C to GE inches mm	C to TE inches mm	Approx. Weight (Each) lb kg
3/4 DN20	1.050 26.9	2.25 57	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	0.6 0.3	NA	NA	NA
1 ¼ DN32	1.660 42.4	2.75 70	2.75 70	1.2 0.5	NA	NA	NA
1 ½ DN40	1.900 48.3	2.75 70	2.75 70	1.4 0.7	1.88 48	1.75 44	0.9 0.4
2 DN50	2.375 60.3	3.25 83	4.25 108	2.5 1.1	2.00 51	2.00 51	1.6 0.7
2 ½	2.875 73.0	3.75 95	3.75 95	3.7 1.7	2.25 57	2.25 57	2.3 1.0
3 DN80	3.500 88.9	4.25 108	6.00 152	6.6 3.0	2.50 64	4.25 108	5.0 2.3
4 DN100	4.500 114.3	5.00 127	7.25 184	10.0 4.5	NA	NA	NA
6 DN150	6.625 168.3	6.50 165	6.50 165	19.0 8.6	3.50 89	3.50 89	10.8 4.9

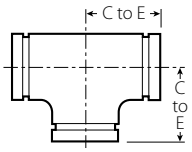
[1] Available with British Standard Pipe Threads, specify "BSP" clearly on order.

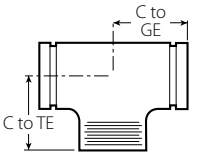
NA = Not Available

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS

Tees, Crosses and True Wyes
No. 20
No. 29M





Size		No. 20 Tee		No. 29M Tee Groove x Male Thread[2] Branch		
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to GE inches mm	C to TE lb kg	Approx. Weight (Each) inches mm
¾ DN20	1.050 26.9	2.25 57	0.8 0.4	2.25 (sw) 57	2.25 (sw) 57	0.6 0.3
1 DN25	1.315 33.7	2.25 57	0.9 0.4	2.25 (sw) 57	2.25 (sw) 57	0.9 0.4
1 ¼ DN32	1.660 42.4	2.75 70	1.5 0.7	2.75 70	2.75 70	1.6 0.7
1 ½ DN40	1.900 48.3	2.75 70	1.7 0.8	2.75 70	2.75 70	1.8 0.8
2 DN50	2.375 60.3	3.25 83	2.8 1.3	3.25 83	4.25 108	3.5 1.6
2 ½	2.875 73.0	3.75 95	4.8 2.2	3.75 (sw) 95	3.75 (sw) 95	4.3 2.0
DN65	3.000 76.1	3.75 95	5.3 2.4	3.75 (sw) 95	3.75 (sw) 95	5.2 2.4
3 DN80	3.500 88.9	4.25 108	6.4 2.9	4.25 (sw) 108	4.25 (sw) 108	7.2 3.3
3 ½ DN90	4.000 101.6	4.50 (sw) 114	7.9 3.6	4.50 (sw) 114	4.50 (sw) 114	7.9 3.6
	4.250 108.0	5.00 127	12.0 5.4	5.00 (sw) 127	5.00 (sw) 127	15.5 7.0
4 DN100	4.500 114.3	5.00 127	11.3 5.1	5.00 127	7.25 184	16.3 7.4
4 ½	5.000 127.0	5.25 (sw) 133	15.0 6.8	5.25 (sw) 133	5.25 (sw) 133	15.0 6.8
	5.250 133.0	5.50 140	16.2 7.3	5.50 (sw) 140	5.50 (sw) 140	17.8 8.1
DN125	5.500 139.7	5.50 140	17.8 8.1	5.50 (sw) 140	5.50 (sw) 140	17.8 8.1
5	5.563 141.3	5.50 140	17.8 8.1	5.50 (sw) 140	5.50 (sw) 140	24.0 10.9
	6.000 152.4	6.50 (sw) 165	+	6.50 (sw) 165	6.50 (sw) 165	25.7 11.7
	6.250 159.0	6.50 (sw) 165	+	6.50 (sw) 165	6.50 (sw) 165	27.1 12.3
	6.500 165.1	6.50 165	25.0 11.3	6.50 (sw) 165	6.50 (sw) 165	28.0 12.7
6 DN150	6.625 168.3	6.50 165	25.7 11.7	6.50 (sw) 165	6.50 (sw) 165	33.0 15.0
200A	216.3	7.75 197	43.3 19.6	NA	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

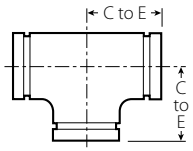
- All fittings are ductile iron unless otherwise noted with an (sw).

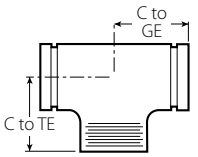
 © 2023 Victaulic Company. All rights reserved.

4.3 DIMENSIONS (CONTINUED)

Tees, Crosses and True Wyes

No. 20
No. 29M





Size		No. 20 Tee		No. 29M Tee Groove x Male Thread[2] Branch		
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to GE inches mm	C to TE lb kg	Approx. Weight (Each) inches mm
8 DN200	8.625 219.1	7.75 197	49.5 22.5	7.75 (sw) 197	7.75 (sw) 197	47.6 21.6
250A	267.4	9.00 229	66.0 29.9	NA	NA	NA
10 DN250	10.750 273.0	9.00 229	72.4 32.8	9.00 (sw) 229	9.00 (sw) 229	99.0 44.9
300A	318.5	10.00 254	95.0 43.1	NA	NA	NA
12 DN300	12.750 323.9	10.00 254	107.2 48.6	10.00 (sw) 254	10.00 (sw) 254	133.0 60.3
14[1] DN350	14.000 355.6	11.00 (sw) 279	150.0 68.0	11.00 (sw) 279	11.00 (sw) 279	+
	14.843 377.0	11.50 292	159.3 72.3	NA	NA	NA
16[1] DN400	16.000 406.4	12.00 (sw) 305	188.0 85.3	12.00 (sw) 305	12.00 (sw) 305	+
	16.772 426.0	13.00 330	211.6 96.0	NA	NA	NA
18[1] DN450	18.000 457.2	15.50 (sw) 394	200.0 90.7	15.50 (sw) 394	15.50 (sw) 394	+
	18.898 480.0	14.57 370	211.6 96.0	NA	NA	NA
20[1] DN500	20.000 508.0	17.25 (sw) 438	339.0 153.8	17.25 (sw) 438	17.25 (sw) 438	+
	20.866 530.0	15.39 391	382.0 173.3	NA	NA	NA
22 DN550	22.000 558.8	19.00 (sw) 483	468.0 212.3	19.00 (sw) 483	19.00 (sw) 483	+
24[1] DN600	24.000 609.6	20.00 (sw) 508	592.0 268.5	20.00 (sw) 508	20.00 (sw) 508	+
	24.803 630.0	17.37 441	502.0 227.7	NA	NA	NA
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™					

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

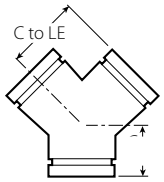
- All fittings are ductile iron unless otherwise noted with an (sw).

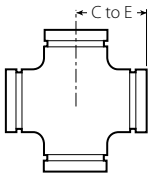
 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS

Tees, Crosses and True Wyes

No. 33
No. 35





Size		No. 33 True Wye			No. 35 Cross	
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	2.25 (sw) 57	2.00 (sw) 51	0.8 0.4	2.25 (sw) 57	0.9 0.4
1 DN25	1.315 33.7	2.25 (sw) 57	2.25 (sw) 57	1.1 0.5	2.25 (sw) 57	1.3 0.6
1 ¼ DN32	1.660 42.4	2.75 (sw) 70	2.50 (sw) 64	1.5 0.7	2.75 (sw) 70	2.1 1.0
1 ½ DN40	1.900 48.3	2.75 (sw) 70	2.75 (sw) 70	1.8 0.8	2.75 (sw) 70	2.5 1.1
2 DN50	2.375 60.3	3.25 (sw) 83	2.75 (sw) 70	2.5 1.1	3.25 83	4.0 1.8
2 ½	2.875 73.0	3.75 (sw) 95	3.00 (sw) 76	5.1 2.3	3.75 95	6.1 2.8
DN65	3.000 76.1	3.75 (sw) 95	3.25 (sw) 83	5.5 2.5	3.75 95	7.8 3.5
3 DN80	3.500 88.9	4.25 (sw) 108	3.25 (sw) 83	6.1 2.8	4.25 108	11.8 5.4
3 ½ DN90	4.000 101.6	4.50 (sw) 114	3.50 (sw) 89	9.6 4.4	4.50 (sw) 114	11.5 5.2
	4.250 108.0	5.00 (sw) 127	3.75 (sw) 95	9.7 4.4	5.00 127	18.4 8.3
4 DN100	4.500 114.3	5.00 127	3.75 95	10.0 4.5	5.00 127	15.8 7.2
4 ½	5.000 127.0	5.25 (sw) 133	4.00 (sw) 102	12.5 5.7	5.25 (sw) 133	18.5 8.4
	5.250 133.0	5.50 (sw) 140	4.00 (sw) 102	13.8 6.2	5.50 (sw) 140	19.0 8.6
DN125	5.500 139.7	5.50 (sw) 140	4.00 (sw) 102	15.0 6.8	5.50 (sw) 140	19.5 8.8
5	5.563 141.3	5.50 (sw) 140	4.00 (sw) 102	15.0 6.8	5.50 140	28.6 13.0
	6.000 152.4	6.50 (sw) 165	4.50 (sw) 114	17.5 7.9	6.50 (sw) 165	22.0 10.0
	6.250 159.0	6.50 (sw) 165	4.50 (sw) 114	19.9 9.0	6.50 165	41.4 18.8
	6.500 165.1	6.50 (sw) 165	4.50 (sw) 114	21.5 9.8	6.50 165	44.0 20.0
6 DN150	6.625 168.3	6.50 (sw) 165	4.50 (sw) 114	22.3 10.1	6.50 165	46.0 20.9
8 DN200	8.625 219.1	7.75 (sw) 197	6.00 (sw) 152	36.0 16.3	7.75 (sw) 197	48.0 21.8

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NOTE

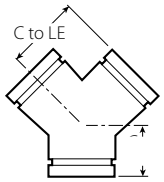
- All fittings are ductile iron unless otherwise noted with an (sw).

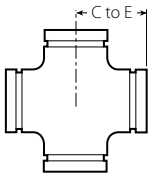
 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Tees, Crosses and True Wyes

No. 33
No. 35





Size		No. 33 True Wye			No. 35 Cross	
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
10 DN250	10.750 273.0	9.00 (sw) 229	6.50 (sw) 165	54.5 24.7	9.00 (sw) 229	70.0 31.8
12 DN300	12.750 323.9	10.00 (sw) 254	7.00 (sw) 178	80.0 36.3	10.00 (sw) 254	110.0 49.9
14[1] DN350	14.000 355.6	11.00 (sw) 279	7.50 (sw) 191	134.2 60.9	11.00 (sw) 279	198.0 89.8
16[1] DN400	16.000 406.4	12.00 (sw) 305	8.00 (sw) 203	167.0 75.7	12.00 (sw) 305	250.0 113.4
18[1] DN450	18.000 457.2	15.50 (sw) 394	8.50 (sw) 216	180.0 81.6	15.50 (sw) 394	350.0 158.8
20[1] DN500	20.000 508.0	17.25 (sw) 438	9.00 (sw) 229	200.0 90.7	17.25 (sw) 438	452.0 205.0
22 DN550	22.000 558.8	19.00 (sw) 483	9.50 (sw) 241	225.0 102.1	19.00 (sw) 483	624.0 283.0
24[1] DN600	24.000 609.6	20.00 (sw) 508	10.00 (sw) 254	250.0 113.4	20.00 (sw) 508	795.0 360.6
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™					

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NOTE

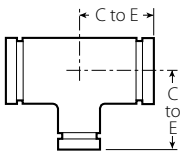
- All fittings are ductile iron unless otherwise noted with an (sw).

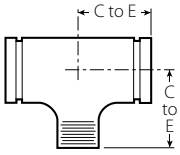
 © 2023 Victaulic Company. All rights reserved.

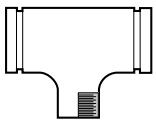
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size									No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN					Actual Outside Diameter inches mm				C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
1 DN25	x	1 DN25	x	¾ DN20	1.315 33.7	x	1.315 33.7	x	1.050 26.9	2.25 (sw) 57	0.8 0.4	2.25 (sw) 57	0.8 0.4	NA	NA
1 ¼ DN32	x	1 ¼ DN32	x	¾ DN20	1.660 42.4	x	1.660 42.4	x	1.050 26.9	2.75 (sw) 70	1.0 0.5	2.75 (sw) 70	1.0 0.5	NA	NA
				1 DN25					1.315 33.7	2.75 (sw) 70	1.3 0.6	2.75 (sw) 70	1.5 0.7	NA	NA
1 ½ DN40	x	1 ½ DN40	x	¾ DN20	1.900 48.3	x	1.900 48.3	x	1.050 26.9	2.75 (sw) 70	1.5 0.7	2.75 (sw) 70	1.5 0.7	NA	NA
				1 DN25					1.315 33.7	2.75 (sw) 70	1.5 0.7	2.75 (sw) 70	1.8 0.8	NA	NA
				1 ¼ DN32					1.660 42.4	2.75 (sw) 70	2.1 1.0	2.75 (sw) 70	1.7 0.8	NA	NA
2 DN50	x	2 DN50	x	¾ DN20	2.375 60.3	x	2.375 60.3	x	1.050 26.9	3.25 83	2.5 1.1	3.25 83	2.5 1.1	NA	NA
				1 DN25					1.315 33.7	3.25 83	2.7 1.2	3.25 83	2.7 1.2	NA	NA
				1 ¼ DN32					1.660 42.4	3.25 (sw) 83	2.3 1.0	3.25 (sw) 83	2.3 1.0	NA	NA
				1 ½ DN40					1.900 48.3	3.25 83	3.2 1.5	3.25 83	3.2 1.5	NA	NA
2 ½	x	2 ½	x	¾ DN20	2.875 73.0	x	2.875 73.0	x	1.050 26.9	3.75 (sw) 95	3.9 1.8	3.75 (sw) 95	3.0 1.4	NA	NA
				1 DN25					1.315 33.7	3.75 95	3.8 1.7	3.75 95	3.8 1.7	NA	NA
				1 ¼ DN32					1.660 42.4	3.75 95	4.0 1.8	3.75 95	4.0 1.8	NA	NA
				1 ½ DN40					1.900 48.3	3.75 95	4.8 2.2	3.75 95	4.8 2.2	NA	NA
				2 DN50					2.375 60.3	3.75 95	4.5 2.0	3.75 95	4.5 2.0	NA	NA
DN65	x	DN65	x	¾ DN20	3.000 76.1	x	3.000 76.1	x	1.050 26.9	3.75 (sw) 95	+	3.75 (sw) 95	+	NA	NA
				1 DN25					1.315 33.7	3.75 (sw) 95	+	3.75 (sw) 95	+	NA	NA
				1 ¼ DN32					1.660 42.4	3.75 (sw) 95	+	3.75 (sw) 95	+	NA	NA
				1 ½ DN40					1.900 48.3	3.75 (sw) 95	+	3.75 (sw) 95	+	NA	NA
				2 DN50					2.375 60.3	3.75 95	4.6 2.1	3.75 95	4.6 2.1	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

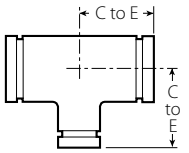
- All fittings are ductile iron unless otherwise noted with an (sw).

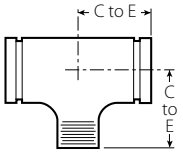
 © 2023 Victaulic Company. All rights reserved.

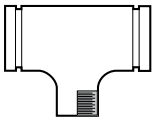
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size									No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN					Actual Outside Diameter inches mm				C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
3 DN80	x	3 DN80	x	¾ DN20	3.500 88.9	x	3.500 88.9	x	1.050 26.9	4.25 (sw) 108	5.7 2.6	4.25 (sw) 108	5.7 2.6	NA	NA
				1 DN25					1.315 33.7	4.25 108	6.0 2.7	4.25 108	6.0 2.7	NA	NA
				1 ¼ DN32					1.660 42.4	4.25 108	6.0 2.7	4.25 108	6.3 2.9	NA	NA
				1 ½ DN40					1.900 48.3	4.25 108	6.6 3.0	4.25 108	6.6 3.0	NA	NA
				2 DN50					2.375 60.3	4.25 108	6.2 2.8	4.25 108	6.2 2.8	4.25 108	6.2 2.8
				2 ½					2.875 73.0	4.25 108	6.6 3.0	4.25 108	6.6 3.0	NA	NA
				DN65					3.000 76.1	4.25 108	6.8 3.1	4.25 108	11.6 5.3	NA	NA
3 ½ DN90	x	3 ½ DN90	x	¾ DN20	4.000 101.6	x	4.000 101.6	x	1.050 26.9	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				1 DN25					1.315 33.7	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				1 ¼ DN32					1.660 42.4	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				1 ½ DN40					1.900 48.3	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				2 DN50					2.375 60.3	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				2 ½					2.875 73.0	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
				3 DN80					3.500 88.9	4.50 (sw) 114	+	4.50 (sw) 114	+	NA	NA
					4.250 108.0	x	4.250 108.0	x	1.050 26.9	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									1.315 33.7	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									1.660 42.4	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									1.900 48.3	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									2.375 60.3	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									3.000 76.1	5.00 (sw) 127	+	5.00 (sw) 127	+	5.00 (sw) 127	+
									3.500 88.9	5.00 127	9.5 4.3	5.00 (sw) 127	+	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

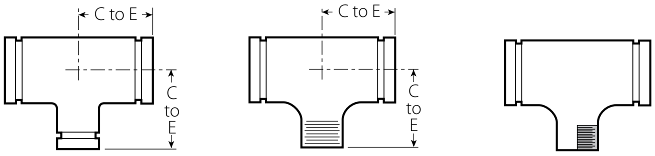
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size		No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
4 x 4 x ¾ DN100 x DN100 x DN20	4.500 x 4.500 x 1.050 114.3 x 114.3 x 26.9	5.00 (sw) 127	8.0 3.6	5.00 (sw) 127	9.3 4.2	NA	NA
1 DN25	1.315 33.7	5.00 127	9.1 4.1	5.00 127	9.1 4.1	NA	NA
1 ¼ DN32	1.660 42.4	5.00 (sw) 127	8.9 4.0	5.00 (sw) 127	10.0 4.5	NA	NA
1 ½ DN40	1.900 48.3	5.00 127	10.2 4.6	5.00 127	10.2 4.6	NA	NA
2 DN50	2.375 60.3	5.00 127	11.2 5.1	5.00 127	11.2 5.1	NA	NA
2 ½	2.875 73.0	5.00 127	11.5 5.2	5.00 127	11.5 5.2	NA	NA
DN65	3.000 76.1	5.00 127	10.3 4.7	5.00 127	10.3 4.7	NA	NA
3 DN80	3.500 88.9	5.00 127	11.6 5.3	5.00 127	11.6 5.3	NA	NA
	5.250 x 5.250 x 1.050 133.0 x 133.0 x 26.9	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	1.315 33.7	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	1.660 42.4	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	1.900 48.3	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	2.375 60.3	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
	3.000 76.1	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	3.500 88.9	5.50 (sw) 140	+	5.50 (sw) 140	+	5.50 (sw) 140	+
	4.250 108.0	5.50 140	12.9 5.9	5.50 (sw) 140	+	NA	NA

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

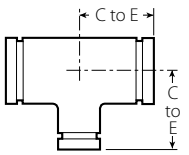
- All fittings are ductile iron unless otherwise noted with an (sw).

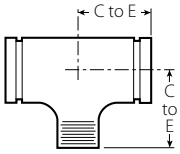
© 2023 Victaulic Company. All rights reserved.

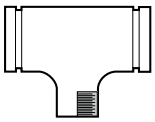
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size									No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN				Actual Outside Diameter inches mm					C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
DN125	x	DN125	x	¾ DN20	5.500 139.7	x	5.500 139.7	x	1.050 26.9	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				1 DN25					1.315 33.7	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				1 ¼ DN32					1.660 42.4	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				1 ½ DN40					1.900 48.3	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				2 DN50					2.375 60.3	5.50 140	13.5 6.1	5.50 (sw) 140	+	NA	NA
				DN65					3.000 76.1	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				3 DN80					3.500 88.9	5.50 140	13.8 6.3	5.50 (sw) 140	+	NA	NA
									4.250 108.0	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				4 DN100					4.500 114.3	5.50 140	14.4 6.5	5.50 (sw) 140	+	NA	NA
5	x	5	x	¾ DN20	5.563 141.3	x	5.563 141.3	x	1.050 26.9	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				1 DN25					1.315 33.7	5.50 (sw) 140	14.0 6.4	5.50 (sw) 140	14.0 6.4	NA	NA
				1 ¼ DN32					1.660 42.4	5.50 (sw) 140	+	5.50 (sw) 140	+	NA	NA
				1 ½ DN40					1.900 48.3	5.50 (sw) 140	14.3 6.5	5.50 (sw) 140	14.5 6.6	NA	NA
				2 DN50					2.375 60.3	5.50 (sw) 140	14.5 6.6	5.50 (sw) 140	14.5 6.6	NA	NA
				2 ½					2.875 73.0	5.50 140	15.5 7.0	5.50 140	15.8 7.2	NA	NA
				3 DN80					3.500 88.9	5.50 140	12.6 5.7	5.50 (sw) 140	17.0 7.7	NA	NA
				4 DN100					4.500 114.3	5.50 140	16.0 7.3	5.50 (sw) 140	16.0 7.3	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

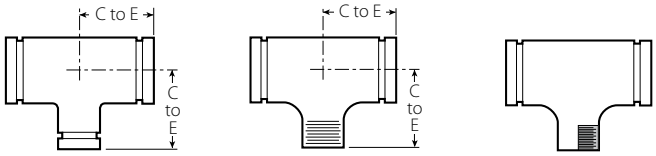
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size				No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN	Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
	6.000 x 6.000 x 1.050 152.4 152.4 26.9			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	1.315 33.7			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	1.660 42.4			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	1.900 48.3			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	2.375 60.3			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	3.000 76.1			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	3.500 88.9			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	4.250 108.0			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	4.500 114.3			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
	5.250 133.0			6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

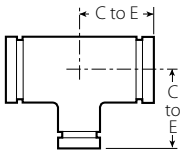
- All fittings are ductile iron unless otherwise noted with an (sw).

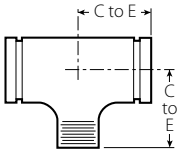
 © 2023 Victaulic Company. All rights reserved.

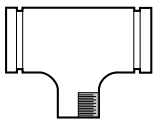
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size				No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN	Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
	6.250 x 6.250 x		1.050 26.9	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			1.315 33.7	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			1.660 42.4	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			1.900 48.3	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			2.375 60.3	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			3.000 76.1	6.50 (sw) 165	+	6.50 (sw) 165	+	6.50 (sw) 165	+
			3.500 88.9	6.50 165	18.5 8.4	6.50 (sw) 165	+	NA	NA
			4.250 108.0	6.50 165	18.5 8.4	6.50 (sw) 165	+	NA	NA
			4.500 114.3	6.50 165	12.1 5.5	6.50 (sw) 165	+	NA	NA
			5.250 133.0	6.50 165	19.0 8.6	6.50 (sw) 165	+	NA	NA
	6.500 x 6.500 x		1.050 26.9	6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
			1.315 33.7	6.50 (sw) 165	10.8 4.9	6.50 (sw) 165	10.8 4.9	NA	NA
			1.660 42.4	6.50 (sw) 165	11.0 5.0	6.50 (sw) 165	11.0 5.0	NA	NA
			1.900 48.3	6.50 (sw) 165	11.3 5.1	6.50 (sw) 165	11.3 5.1	NA	NA
			2.375 60.3	6.50 165	18.9 8.6	6.50 165	18.9 8.6	NA	NA
			3.000 76.1	6.50 165	20.0 9.1	6.50 (sw) 165	+	NA	NA
			3.500 88.9	6.50 165	24.3 11.0	6.50 (sw) 165	+	NA	NA
			4.500 114.3	6.50 165	23.8 10.8	6.50 (sw) 165	+	NA	NA
			5.500 139.7	6.50 165	26.0 11.8	6.50 (sw) 165	+	NA	NA

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

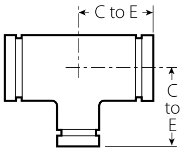
- All fittings are ductile iron unless otherwise noted with an (sw).

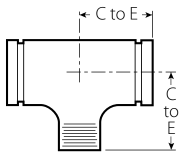
 © 2023 Victaulic Company. All rights reserved.

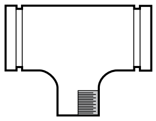
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size		No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
6 x 6 x ¾ DN150 x DN150 x DN20	6.625 x 6.625 x 1.050 168.3 x 168.3 x 26.9	6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
1 DN25	1.315 33.7	6.50 (sw) 165	23.0 10.4	6.50 (sw) 165	23.0 10.4	NA	NA
1 ¼ DN32	1.660 42.4	6.50 (sw) 165	25.0 11.3	6.50 (sw) 165	25.0 11.3	NA	NA
1 ½ DN40	1.900 48.3	6.50 (sw) 165	25.0 11.3	6.50 (sw) 165	25.0 11.3	NA	NA
2 DN50	2.375 60.3	6.50 165	22.8 10.3	6.50 165	22.8 10.3	NA	NA
2 ½	2.875 73.0	6.50 165	23.8 10.8	6.50 165	25.2 11.4	NA	NA
DN65	3.000 76.1	6.50 (sw) 165	+	6.50 165	+	NA	NA
3 DN80	3.500 88.9	6.50 165	24.8 11.2	6.50 165	24.9 11.3	NA	NA
4 DN100	4.500 114.3	6.50 165	24.8 11.2	6.50 165	22.1 10.0	NA	NA
DN125	5.500 139.7	6.50 (sw) 165	+	6.50 (sw) 165	+	NA	NA
5	5.563 141.3	6.50 165	26.7 12.1	6.50 (sw) 165	26.7 12.1	NA	NA
200A x 200A x 65A	216.3 x 216.3 x 76.3	7.75 (sw) 197	+	NA	NA	NA	NA
100A	114.3	7.75 (sw) 197	+	NA	NA	NA	NA
165A		7.75 197	50.0 22.7	NA	NA	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

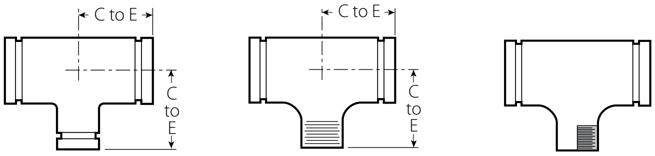
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size		No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
8 x 8 x ¾ DN200 x DN200 x DN20	8.625 x 8.625 x 1.050 219.1 x 219.1 x 26.9	7.75 (sw) 197	+	7.75 (sw) 197	+	7.75 (sw) 197	+
1 DN25	1.315 33.7	7.75 (sw) 197	+	7.75 (sw) 197	+	7.80 (sw) 198	+
1 ¼ DN32	1.660 42.4	7.75 (sw) 197	+	7.75 (sw) 197	+	7.80 (sw) 198	+
1 ½ DN40	1.900 48.3	7.75 (sw) 197	33.0 15.0	7.75 (sw) 197	37.7 17.1	7.80 (sw) 198	+
2 DN50	2.375 60.3	7.75 (sw) 197	33.5 15.2	7.75 (sw) 197	33.5 15.2	NA	NA
2 ½	2.875 73.0	7.75 197	37.3 16.9	7.75 (sw) 197	34.0 15.4	NA	NA
DN65	3.000 76.1	7.75 (sw) 197	37.5 17.0	NA	NA	7.80 (sw) 198	+
3 DN80	3.500 88.9	7.75 197	37.5 17.0	7.75 (sw) 197	33.6 15.2	NA	NA
	4.250 108.0	7.75 197	48.9 22.2	NA	NA	NA	NA
4 DN100	4.500 114.3	7.75 197	42.9 19.5	7.75 (sw) 197	35.0 15.9	NA	NA
	5.250 133.0	9.02 229	54.6 24.8	7.75 (sw) 197	+	NA	NA
DN125	5.500 139.7	7.75 (sw) 197	+	NA	NA	NA	NA
5	5.563 141.3	7.75 197	37.0 16.8	7.75 (sw) 197	37.0 16.8	NA	NA
	6.250 159.0	7.75 197	51.6 23.4	7.75 (sw) 197	+	NA	NA
	6.500 165.1	7.75 197	43.2 19.6	7.75 (sw) 197	+	NA	NA
6 DN150	6.625 168.3	7.75 197	48.5 22.0	7.75 (sw) 197	43.0 19.5	NA	NA
	10.528 10.528 6.500 267.4 267.4 165.1	9.02 229	68.4 31.0	NA	NA	NA	NA
250A x 250A x 125A	267.4 x 267.4 x 139.8	9.00 (sw) 229	+	NA	NA	NA	NA
200A	216.3	9.00 229	82.0 37.2	NA	NA	NA	NA

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

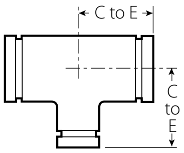
- All fittings are ductile iron unless otherwise noted with an (sw).

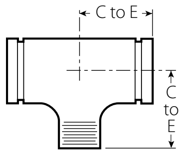
 © 2023 Victaulic Company. All rights reserved.

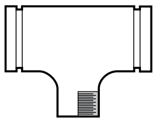
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size						No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN			Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
10 x DN250	10 x DN250	¾ DN20	10.750 x 273.0	10.750 x 273.0	1.050 26.9	9.00 (sw) 229	+	9.00 (sw) 229	+	NA	NA
		1 DN25			1.315 33.7	9.00 (sw) 229	+	9.00 (sw) 229	+	NA	NA
		1¼ DN32			1.660 42.4	9.00 (sw) 229	+	9.00 (sw) 229	+	NA	NA
		1½ DN40			1.900 48.3	9.00 (sw) 229	57.0 25.9	9.00 (sw) 229	57.0 25.9	NA	NA
		2 DN50			2.375 60.3	9.00 (sw) 229	62.0 28.1	9.00 (sw) 229	65.0 29.5	9.00 (sw) 229	+
		2½			2.875 73.0	9.00 229	62.5 28.3	9.00 (sw) 229	53.0 24.0	NA	NA
		DN65			3.000 76.1	9.00 (sw) 229	71.2 32.3	NA	NA	NA	NA
		3 DN80			3.500 88.9	9.00 229	62.1 28.2	9.00 (sw) 229	60.0 27.2	NA	NA
					4.250 108.0	9.02 229	77.6 35.2	9.00 (sw) 229	+	NA	NA
		4 DN100			4.500 114.3	9.00 229	61.0 27.7	9.00 (sw) 229	61.0 27.7	NA	NA
					5.250 133.0	9.02 229	84.2 38.2	9.00 (sw) 229	+	NA	NA
		DN125			5.500 139.7	9.00 (sw) 229	+	9.00 (sw) 229	+	NA	NA
					6.250 159.0	9.02 229	84.9 38.5	9.00 (sw) 229	+	NA	NA
		5			5.563 141.3	9.00 (sw) 229	52.0 23.6	9.00 (sw) 229	52.0 23.6	NA	NA
					6.250 159.0	9.00 229	61.0 27.7	9.00 (sw) 229	+	NA	NA
					6.500 165.1	9.00 229	64.2 29.1	9.00 (sw) 229	+	NA	NA
		6 DN150			6.625 168.3	9.00 229	59.0 26.8	9.00 (sw) 229	60.0 27.2	NA	NA
		8 DN200			8.625 219.1	9.00 229	64.7 29.3	9.00 (sw) 229	64.7 29.3	NA	NA
300A x	300A x	150A	318.5 x	318.5 x	165.2	10.00 (sw) 254	+	NA	NA	NA	NA
		200A			216.3	10.00 (sw) 254	+	NA	NA	NA	NA
		250A			267.4	10.00 254	111.0 50.3	NA	NA	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

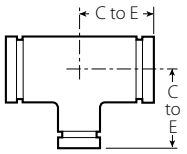
NOTES

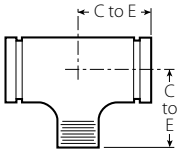
- All fittings are ductile iron unless otherwise noted with an (sw).

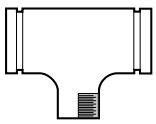
 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee
No. 25
No. 29T
No. 29F







Size						No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN			Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
12 x 12 x ¾			12.750 x 12.750 x 1.050			10.00 (sw) 254	+	NA	NA	10.00 (sw) 254	+
DN300 x DN300 x DN20			323.9 x 323.9 x 26.9								
		1 DN25			1.315 33.7	10.00 (sw) 254	70.0 31.8	10.00 (sw) 254	77.0	10.00 (sw) 254	+
		1 ¼ DN32			1.660 42.4	10.00 (sw) 254	+	10.00 (sw) 254	+	10.00 (sw) 254	+
		1 ½ DN40			1.900 48.3	10.00 (sw) 254	+	10.00 (sw) 254	+	10.00 254	+
		2 DN50			2.375 60.3	10.00 (sw) 254	78.0 35.4	10.00 (sw) 254	78.0 35.4	10.00 (sw) 254	+
		2 ½			2.875 73.0	10.00 (sw) 254	80.0 36.3	10.00 (sw) 254	80.0 36.3	NA	NA
		DN65			3.000 76.1	10.00 (sw) 254	+	10.00 (sw) 254	+	10.00 (sw) 254	+
		3 DN80			3.500 88.9	10.00 (sw) 254	80.0 36.3	10.00 (sw) 254	86.5 39.2	NA	NA
					4.250 108.0	10.00 254	+	10.00 (sw) 254	+	NA	NA
		4 DN100			4.500 114.3	10.00 (sw) 254	86.7 39.3	10.00 (sw) 254	77.0 34.9	NA	NA
					5.250 133.0	10.00 254	130.0 59.0	10.00 (sw) 254	+	NA	NA
		DN125			5.500 139.7	10.00 (sw) 254	81.8 37.1	10.00 (sw) 254	+	NA	NA
		5			5.563 141.3	10.00 (sw) 254	75.0 34.0	10.00 (sw) 254	75.0 34.0	NA	NA
					6.250 159.0	10.00 254	125.6 57.0	10.00 (sw) 254	+	NA	NA
					6.500 165.1	10.00 (sw) 254	+	10.00 (sw) 254	+	NA	NA
		6 DN150			6.625 168.3	10.00 254	88.5 40.2	10.00 (sw) 254	75.0 34.0	NA	NA
		8 DN200			8.625 219.1	10.00 254	80.0 36.3	10.00 (sw) 254	80.0 36.3	NA	NA
		10 DN250			10.750 273.0	10.00 254	123.5 56.0	10.00 (sw) 254	84.0 38.1	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

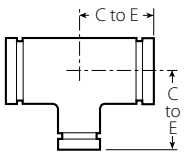
- All fittings are ductile iron unless otherwise noted with an (sw).

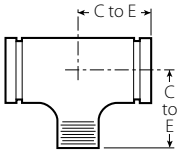
 © 2023 Victaulic Company. All rights reserved.

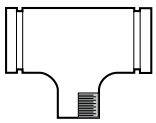
4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F







Size						No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN			Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
14[1] DN350	x 14 DN350	x 4 DN100	14.000 355.6	x 14.000 355.6	x 4.500 114.3	11.00 (sw) 279	102.0 46.3	11.00 (sw) 279	102.0 46.3	NA	NA
		6 DN150			6.625 168.3	11.00 (sw) 279	108.2 49.1	11.00 (sw) 279	108.2 49.1	NA	NA
		8 DN200			8.625 219.1	11.00 (sw) 279	112.0 50.8	11.00 (sw) 279	112.0 50.8	NA	NA
		10 DN250			10.750 273.0	11.00 (sw) 279	120.0 54.4	11.00 (sw) 279	120.0 54.4	NA	NA
		12 DN300			12.750 323.9	11.00 (sw) 279	129.1 58.6	11.00 (sw) 279	129.1 58.6	NA	NA
			14.843 377.0	14.843 377.0	6.500 165.1	11.00 279	142.4 64.6	NA	NA	NA	NA
					8.625 219.1	11.00 279	145.5 66.0	NA	NA	NA	NA
					10.750 273.0	11.00 279	149.9 68.0	NA	NA	NA	NA
					12.750 323.9	11.00 279	144.6 65.6	NA	NA	NA	NA
16[1] DN400	x 16 DN400	x 4 DN100	16 DN400	x 16 DN400	x 4.500 114.3	12.00 (sw) 305	130.0 59.0	12.00 (sw) 305	130.0 59.0	NA	NA
		6 DN150			6.625 168.3	12.00 (sw) 305	133.5 60.6	12.00 (sw) 305	133.5 60.6	NA	NA
		8 DN200			8.625 219.1	12.00 (sw) 305	145.0 65.8	12.00 (sw) 305	145.0 65.8	NA	NA
		10 DN250			10.750 273.0	12.00 (sw) 305	149.5 67.8	12.00 (sw) 305	149.5 67.8	NA	NA
		12 DN300			12.750 323.9	12.00 (sw) 305	154.0 69.9	12.00 (sw) 305	154.0 69.9	NA	NA
		14 DN350			14.000 355.6	12.00 (sw) 305	167.0 75.7	NA	NA	NA	NA
			16.772 426.0	x 16.772 426.0	x 6.250 159.0	12.83 326	189.6 86.0	NA	NA	NA	NA
					8.625 219.1	12.83 326	213.9 97.0	NA	NA	NA	NA
					10.750 273.0	12.83 326	224.9 102.0	NA	NA	NA	NA
					12.750 323.9	12.83 326	224.9 102.0	NA	NA	NA	NA
					14.843 377.0	12.83 326	227.1 103.0	NA	NA	NA	NA

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

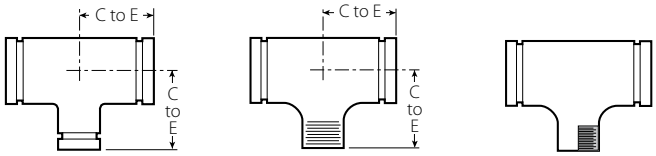
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size								No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN				Actual Outside Diameter inches mm				C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
18[1] DN450	x	18 DN450	x	4 DN100	18.000 457.2	x	18.000 457.2	x 4.500 114.3	15.50 (sw) 394	194.0 88.0	15.50 (sw) 394	194.0 88.0	NA	NA
				6 DN150				6.625 168.3	15.50 (sw) 394	200.0 90.7	15.50 (sw) 394	200.0 90.7	NA	NA
				8 DN200				8.625 219.1	15.50 (sw) 394	202.6 91.9	15.50 (sw) 394	202.0 91.6	NA	NA
				10 DN250				10.750 273.0	15.50 (sw) 394	212.0 96.2	15.50 (sw) 394	212.0 96.2	NA	NA
				12 DN300				12.750 323.9	15.50 (sw) 394	222.6 101.0	15.50 (sw) 394	222.6 101.0	NA	NA
				14 DN350				14.000 355.6	15.50 (sw) 394	230.1 104.4	NA	NA	NA	NA
				16 DN400				16 DN400	15.50 (sw) 394	247.6 112.3	NA	NA	NA	NA
					18.898 480.0	x	18.898 480.0	x 4.250 108.0	14.75 375	282.4 128.1	NA	NA	NA	NA
								5.250 133.0	14.75 375	283.0 128.4	NA	NA	NA	NA
								6.250 159.0	14.75 375	283.3 128.5	NA	NA	NA	NA
								10.750 273.0	14.75 375	285.1 129.3	NA	NA	NA	NA
								14.843 377.0	14.75 375	293.8 133.2	NA	NA	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

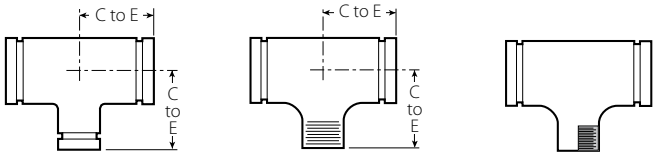
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size						No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN			Actual Outside Diameter inches mm			C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
20[1] DN500	x 20 DN500	x 6 DN150	20.000 508.0	x 20.000 508.0	x 6.625 168.3	17.25 (sw) 438	240.0 108.9	17.25 (sw) 438	240.0 108.9	NA	NA
		8 DN200			8.625 219.1	17.25 (sw) 438	244.0 110.7	17.25 (sw) 438	244.0 110.7	NA	NA
		10 DN250			10.750 273.0	17.25 (sw) 438	256.0 116.1	17.25 (sw) 438	256.0 116.1	NA	NA
		12 DN300			12.750 323.9	17.25 (sw) 438	264.3 119.9	17.25 (sw) 438	264.0 119.7	NA	NA
		14 DN350			14.000 355.6	17.25 (sw) 438	275.0 124.7	NA	NA	NA	NA
		16 DN400			16.000 406.4	17.25 (sw) 438	288.6 130.9	NA	NA	NA	NA
		18 DN450			18.000 457.2	17.25 (sw) 438	297.0 134.7	NA	NA	NA	NA
			20.866 530.0	x 20.866 530.0	x 6.250 159.0	17.25 438	368.2 167.0	NA	NA	NA	NA
					8.625 219.1	17.25 438	401.3 182.0	NA	NA	NA	NA
					10.750 273.0	17.25 438	379.2 172.0	NA	NA	NA	NA
					12.750 323.9	17.25 438	401.2 182.0	NA	NA	NA	NA
					14.843 377.0	17.25 438	383.6 174.0	NA	NA	NA	NA
					16.772 426.0	17.25 438	401.2 182.0	NA	NA	NA	NA
					18.898 480.0	17.25 438	399.2 181.1	NA	NA	NA	NA

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

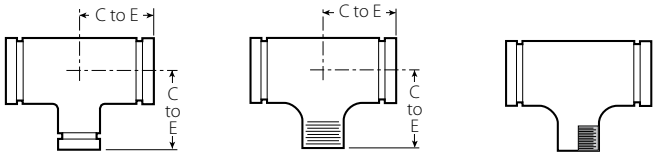
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.4 DIMENSIONS (CONTINUED)

Reducing Tee

No. 25
No. 29T
No. 29F



Size								No. 25 Grooved Branch Reducing Tee		No. 29T Reducing Tee Groove x Male Thread[2] Branch		No. 29F[2] Reducing Tee Groove x Female Thread[2] Branch	
Nominal inches DN				Actual Outside Diameter inches mm				C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg	C to E inches mm	Approx. Weight (Each) lb kg
24[1] DN600	x	24 DN600	x	24.000 609.6	x	24.000 609.6	x	8.625 219.1	20.00 (sw) 508	340.0 154.2	20.00 (sw) 508	340.0 154.2	NA	NA
								10.750 273.0	20.00 (sw) 508	343.9 156.0	20.00 (sw) 508	343.9 156.0	NA	NA
								12.750 323.9	20.00 (sw) 508	352.8 160.0	20.00 (sw) 508	352.8 160.0	NA	NA
								14.000 355.6	20.00 508	+	NA	NA	NA	NA
								16.000 406.4	20.00 (sw) 508	378.0 171.5	NA	NA	NA	NA
								18.000 457.2	20.00 508	+	NA	NA	NA	NA
								20.000 508.0	20.00 (sw) 508	400.0 181.4	NA	NA	NA	NA
				24.803 630.0	x	24.803 630.0	x	6.250 159.0	20.00 508	559.2 253.6	NA	NA	NA	NA
								8.625 219.1	20.00 508	559.2 253.6	NA	NA	NA	NA
								10.750 273.0	20.00 508	562.2 255.0	NA	NA	NA	NA
								12.750 323.9	20.00 508	562.2 255.0	NA	NA	NA	NA
								14.843 377.0	20.00 508	586.4 266.0	NA	NA	NA	NA
								16.772 426.0	20.00 508	579.8 263.0	NA	NA	NA	NA
								18.898 480.0	20.00 508	568.8 258.0	NA	NA	NA	NA
								20.866 530.0	20.00 508	574.3 260.5	NA	NA	NA	NA
14 – 60 DN350 – DN1500				For AGS fitting information, see publication 20.05 AGS™										

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(sw) = Carbon Steel Segmentally Welded

NA = Not Available

"+" = Contact Victaulic for details

NOTES

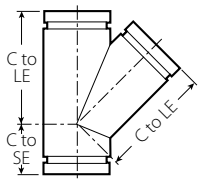
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.6 DIMENSIONS

45° Lateral

No. 30



Size		No. 30 45° Lateral		
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	4.50 (sw) 114	2.00 (sw) 51	0.9 0.4
1 DN25	1.315 33.7	5.00 (sw) 127	2.25 (sw) 57	1.7 0.8
1 ¼ DN32	1.660 42.4	5.75 (sw) 146	2.50 (sw) 64	2.5 1.1
1 ½ 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	5.1 2.3
2 ½	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	9.8 4.4
3 DN80	3.500 88.9	8.50 216	3.25 83	10.3 4.6
3 ½ DN90	4.000 101.6	10.00 (sw) 254	3.50 (sw) 89	22.0 10.0
	4.250 108.0	10.50 (sw) 267	3.75 (sw) 95	22.1 10.0
4 DN100	4.500 114.3	10.50 267	3.75 95	17.9 8.1
4 ½	5.000 127.0	12.50 (sw) 318	4.00 (sw) 102	23.8 10.8
	5.250 133.0	12.50 (sw) 318	4.00 (sw) 102	25.3 11.5
DN125	5.500 139.7	12.50 (sw) 318	4.00 (sw) 102	26.8 12.1
5	5.563 141.3	12.50 (sw) 318	4.00 (sw) 102	29.8 13.5
	6.000 152.4	14.00 (sw) 356	4.50 (sw) 114	33.8 15.3
	6.250 159.0	14.00 (sw) 356	4.50 (sw) 114	36.8 16.7
	6.500 165.1	14.00 (sw) 356	4.50 (sw) 114	43.6 19.8
6 DN150	6.625 168.3	14.00 356	4.50 114	43.6 19.8

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NOTE

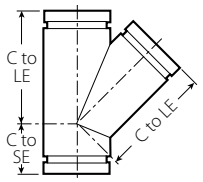
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.6 DIMENSIONS (CONTINUED)

45° Lateral

No. 30



Size		No. 30 45° Lateral		
Nominal inches DN	Actual Outside Diameter inches mm	C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg
8 DN200	8.625 219.1	18.00 (sw) 457	6.00 (sw) 152	73.0 33.1
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[1] DN350	14.000 355.6	26.50 (sw) 673	7.50 (sw) 191	276.0 125.2
16[1] DN400	16.000 406.4	29.00 (sw) 737	8.00 (sw) 203	344.2 156.1
18[1] DN450	18.000 457.2	32.00 (sw) 813	8.50 (sw) 216	429.0 194.6
20[1] DN500	20.000 508.0	35.00 (sw) 889	9.00 (sw) 229	500.0 226.8
22 DN550	22.000 558.8	38.00 (sw) 965	9.50 (sw) 241	610.0 276.7
24[1] DN600	24.000 609.6	40.00 (sw) 1016	10.00 (sw) 254	715.0 324.3

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

(sw) = Carbon Steel Segmentally Welded

NOTE

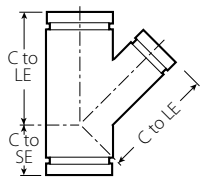
- All fittings are ductile iron unless otherwise noted with an (sw).

 © 2023 Victaulic Company. All rights reserved.

4.7 DIMENSIONS

45° Reducing Lateral

No. 30-R SWS



Size											No. 30-R SWS 45° Reducing Lateral (sw)		
Nominal inches DN					Actual Outside Diameter 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	3.500 88.9	x	3.500 88.9	x	2.375 60.3		8.50 216	3.25 83	9.8 4.4
				2½					2.875 73.0		8.50 216	3.25 83	9.8 4.4
4 DN100	x	4 DN100	x	2 DN50	4.500 114.3	x	4.500 114.3	x	2.375 60.3		10.50 267	3.75 95	10.0 4.5
				2½					2.875 73.0		10.50 267	3.75 95	10.0 4.5
				3 DN80					3.500 88.9		10.50 267	3.75 95	18.3 8.3
5	x	5	x	2 DN50	5	x	5	x	2.375 60.3		12.50 318	4.00 102	24.0 10.9
				3 DN80					3.500 88.9		12.50 318	4.00 102	27.0 12.2
				4 DN100					4.500 114.3		12.50 318	4.00 102	26.5 12.0
6 DN150	x	6 DN150	x	3 DN80	6.625 168.3	x	6.625 168.3	x	3.500 88.9		14.00 356	4.50 114	37.0 16.8
				4 DN100					4.500 114.3		14.00 356	4.50 114	36.0 16.3
				5					5.563 141.3		14.00 356	4.50 114	44.7 20.3
8 DN200	x	8 DN200	x	3 DN80	8.625 219.1	x	8.625 219.1	x	3.500 88.9		18.00 457	6.00 152	58.0 26.3
				4 DN100					4.500 114.3		18.00 457	6.00 152	62.0 28.1
				5					5.563 141.3		18.00 457	6.00 152	75.5 34.2
				6 DN150					6.625 168.3		18.00 457	6.00 152	82.0 37.2
10 DN250	x	10 DN250	x	4 DN100	10.750 273.0	x	10.750 273.0	x	4.500 114.3		20.50 521	6.50 165	104.8 47.5
				5					5.563 141.3		20.50 521	6.50 165	105.0 47.6
				6 DN150					6.625 168.3		20.50 521	6.50 165	105.8 48.0
				8 DN200					8.625 219.1		20.50 521	6.50 165	118.0 53.5
12 DN300	x	12 DN300	x	4 DN100	12.750 323.9	x	12.750 323.9	x	4.500 114.3		23.00 584	7.00 178	135.0 61.2
				5					5.563 141.3		23.00 584	7.00 178	122.0 55.3
				6 DN150					6.625 168.3		23.00 584	7.00 178	137.0 62.1
				8 DN200					8.625 219.1		23.00 584	7.00 178	147.0 66.7
				10 DN250					10.750 273.0		23.00 584	7.00 178	167.0 75.7

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

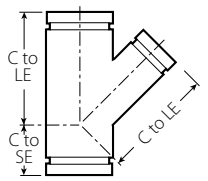
(sw) = Carbon Steel Segmentally Welded

 © 2023 Victaulic Company. All rights reserved.

4.7 DIMENSIONS (CONTINUED)

45° Reducing Lateral

No. 30-R SWS



Size											No. 30-R SWS 45° Reducing Lateral (sw)		
Nominal inches DN					Actual Outside Diameter inches DN						C to LE inches mm	C to SE inches mm	Approx. Weight (Each) lb kg
14[1] DN350	x	14 DN350	x	4 DN100	14.000 355.6	x	14.000 355.6	x	4.500 114.3		26.50 673	7.50 191	176.0 79.8
				6 DN150					6.625 168.3		26.50 673	7.50 191	187.0 84.8
				8 DN200					8.625 219.1		26.50 673	7.50 191	210.0 95.3
				10 DN250					10.750 273.0		26.50 673	7.50 191	235.0 106.6
				12 DN300					12.750 323.9		26.50 673	7.50 191	252.0 114.3
16[1] DN400	x	16 DN400	x	6 DN150	16.000 406.4	x	16.000 406.4	x	6.625 168.3		29.00 737	8.00 203	215.0 97.5
				8 DN200					8.625 219.1		29.00 737	8.00 203	252.5 114.5
				10 DN250					10.750 273.0		29.00 737	8.00 203	265.0 120.2
				12 DN300					12.750 323.9		29.00 737	8.00 203	295.0 133.8
				14 DN350					16.000 406.4		29.00 737	8.00 203	305.0 138.3
18[1] DN450	x	18 DN450	x	6 DN150	18.000 457.2	x	18.000 457.2	x	6.625 168.3		32.00 813	8.50 216	274.0 124.3
				8 DN200					8.625 219.1		32.00 813	8.50 216	275.0 124.7
				10 DN250					10.750 273.0		32.00 813	8.50 216	285.0 129.3
				12 DN300					12.750 323.9		32.00 813	8.50 216	347.0 157.4
				14 DN350					14.000 355.6		32.00 813	8.50 216	350.0 158.8
				16 DN400					16.000 406.4		32.00 813	8.50 216	362.0 164.2
20[1] DN500	x	20 DN500	x	10 DN250	20.000 508.0	x	20.000 508.0	x	10.750 273.0		35.00 889	9.00 229	410.0 186.0
				12 DN300					12.750 323.9		35.00 889	9.00 229	415.0 188.2
				14 DN350					14.000 355.6		35.00 889	9.00 229	420.0 190.5
				16 DN400					16.000 406.4		35.00 889	9.00 229	425.0 192.8
24[1] DN600	x	24 DN600	x	16 DN400	24.000 609.6	x	24.000 609.6	x	16.000 406.4		40.00 1016	10.00 254	556.0 252.2
				20 DN500					20.000 508.0		40.00 1016	10.00 254	715.0 324.3
14 – 60 DN350 – DN1500					For AGS fitting information, see publication 20.05 AGS™								

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

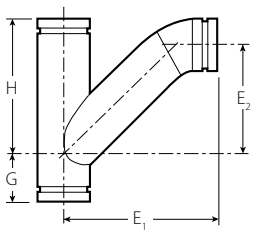
(sw) = Carbon Steel Segmentally Welded

 © 2023 Victaulic Company. All rights reserved.

4.8 DIMENSIONS

Tee Wye

No. 32



Size										No. 32 Tee Wye (sw)				
Nominal inches DN					Actual Outside Diameter inches mm					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	2.375 60.3	x	2.375 60.3	x	2.375 60.3	2.75 70	7.00 178	9.00 229	4.63 117	6.4 2.9
2½	x	2½	x	2½	2.875 73.0	x	2.875 73.0	x	2.875 73.0	3.00 76	7.75 197	10.50 267	5.75 146	11.5 5.2
3 DN80	x	3 DN80	x	2 DN50	3.500 88.9	x	3.500 88.9	x	2.375 60.3	3.25 83	8.50 216	10.38 264	6.00 152	12.5 5.7
				3 DN80					3.500 88.9	3.25 83	8.50 216	11.50 292	6.50 165	14.3 6.5
3½ DN90	x	3½ DN90	x	3½ DN90	4.000 101.6	x	4.000 101.6	x	4.000 101.6	3.25 83	10.00 254	13.00 330	7.75 197	15.0 6.8
4 DN100	x	4 DN100	x	1 DN25	4.500 114.3	x	4.500 114.3	x	1.315 33.7	3.75 95	10.50 267	12.25 311	8.38 213	17.0 7.7
				2 DN50					2.375 60.3	3.75 95	10.50 267	11.88 302	7.50 191	20.0 9.1
				3 DN80					3.500 88.9	3.75 95	10.50 267	12.88 327	7.88 200	23.0 10.4
				4 DN100					4.500 114.3	3.75 95	10.00 254	13.63 346	8.13 206	26.0 11.8
5	x	5	x	2 DN50	5.563 141.3	x	5.563 141.3	x	2.375 60.3	4.00 102	12.50 318	13.13 333	8.75 222	29.0 13.2
				3 DN80					3.500 88.9	4.00 102	12.50 318	14.25 362	9.25 235	31.5 14.3
				4 DN100					4.500 114.3	4.00 102	12.50 318	15.13 384	9.63 244	36.7 16.6
				5					5.563 141.3	4.00 102	12.50 318	16.13 410	10.00 254	48.0 21.8
6 DN150	x	6 DN150	x	2 DN50	6.625 168.3	x	6.625 168.3	x	2.375 60.3	4.50 114	14.00 356	14.13 359	9.75 248	29.0 13.2
				3 DN80					3.500 88.9	4.50 114	14.00 356	15.31 389	10.31 262	37.3 16.9
				4 DN100					4.500 114.3	4.50 114	14.00 356	16.25 413	10.75 273	46.3 21.0
				5					5.563 141.3	4.50 114	14.00 356	17.25 438	11.13 283	55.0 25.0
				6 DN150					6.625 168.3	4.50 114	14.00 356	18.25 464	11.50 292	60.5 27.4
8 DN200	x	8 DN200	x	2 DN50	8.625 219.1	x	8.625 219.1	x	2.375 60.3	6.00 152	18.00 457	17.00 432	12.63 321	70.0 31.8
				3 DN80					3.500 88.9	6.00 152	18.00 457	18.19 462	13.19 335	76.0 34.5
				4 DN100					4.500 114.3	6.00 152	18.00 457	19.00 483	13.50 343	76.4 34.6
				5					5.563 141.3	6.00 152	18.00 457	20.00 508	13.88 352	85.6 38.8
				6 DN150					6.625 168.3	6.00 152	18.00 457	21.13 537	14.38 365	112.0 50.8
				8 DN200					8.625 219.1	6.00 152	18.00 457	23.25 591	15.25 387	127.9 58.0

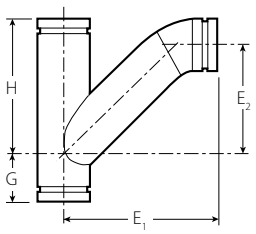
(sw) = Carbon Steel Segmentally Welded

 © 2023 Victaulic Company. All rights reserved.

4.8 DIMENSIONS

Tee Wye

No. 32



Size									No. 32 Tee Wye (sw)				
Nominal inches DN					Actual Outside Diameter inches mm				G inches mm	H inches mm	E1 inches mm	E2 inches mm	Approx. Weight (Each) lb kg
10 DN250	x	10 DN250	x	2 DN50	10.750 273.0	x	10.750 273.0	x	2.375 60.3	6.50 165	20.50 521	18.75 476	14.38 365	90.0 40.8
				3 DN80					3.500 88.9	6.50 165	20.50 521	19.88 505	14.88 378	96.0 43.5
				4 DN100					4.500 114.3	6.50 165	20.50 521	20.75 527	15.25 387	97.4 44.2
				5					5.563 141.3	6.50 165	20.50 521	21.88 556	15.75 400	115.0 52.2
				6 DN150					6.625 168.3	6.50 165	20.50 521	22.88 581	16.13 410	133.1 60.4
				8 DN200					8.625 219.1	6.50 165	20.50 521	27.25 692	19.25 489	156.0 70.8
				10 DN250					10.750 273.0	6.50 165	20.50 521	27.25 692	18.00 457	190.0 86.2
12 DN300	x	12 DN300	x	2 DN50	12.750 323.9	x	12.750 323.9	x	2.375 60.3	7.00 178	23.00 584	20.75 527	16.38 416	120.0 54.4
				3 DN80					3.500 88.9	7.00 178	23.00 584	21.75 552	16.75 425	125.0 56.7
				4 DN100					4.500 114.3	7.00 178	23.00 584	22.63 575	17.13 435	127.0 57.6
				5					5.563 141.3	7.00 178	23.00 584	23.63 600	17.50 445	143.0 64.9
				6 DN150					6.625 168.3	7.00 178	23.00 584	24.78 629	18.03 458	165.0 74.8
				8 DN200					8.625 219.1	7.00 178	23.00 584	26.92 684	18.92 481	176.0 79.8
				10 DN250					10.750 273.0	7.00 178	23.00 584	29.00 737	19.75 502	200.0 90.7
				12 DN300					12.750 323.9	7.00 178	23.00 584	31.00 787	20.50 521	240.0 108.9

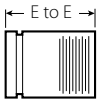
(sw) = Carbon Steel Segmentally Welded

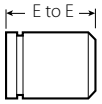
 © 2023 Victaulic Company. All rights reserved.

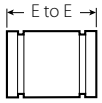
4.9 DIMENSIONS

Adapter Nipple

No. 40
No. 42
No. 43







Size		No. 40 Adapter Nipple Groove x Male Thread[2] (s)		No. 42 Adapter Nipple Groove x Bevel (s)		No. 43 Adapter Nipple Groove x Groove (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
¾ DN20	1.050 26.9	3.00 76	0.3 0.1	3.00 76	0.3 0.1	3.00 76	0.3 0.1
1 DN25	1.315 33.7	3.00 76	0.4 0.2	3.00 76	0.4 0.2	3.00 76	0.4 0.2
1 ¼ DN32	1.660 42.4	4.00 102	0.8 0.3	4.00 102	0.8 0.3	4.00 102	0.8 0.3
1 ½ DN40	1.900 48.3	4.00 102	0.9 0.4	4.00 102	0.9 0.4	4.00 102	0.9 0.4
2 DN50	2.375 60.3	4.00 102	1.2 0.6	4.00 102	1.2 0.6	4.00 102	1.2 0.6
2 ½	2.875 73.0	4.00 102	1.9 0.9	4.00 102	1.9 0.9	4.00 102	1.9 0.9
DN65	3.000 76.1	4.00 102	2.0 0.9	4.00 102	2.0 0.9	4.00 102	2.0 0.9
3 DN80	3.500 88.9	4.00 102	2.5 1.1	4.00 102	2.5 1.1	4.00 102	2.5 1.1
3 ½ DN90	4.000 101.6	4.00 102	3.0 1.4	4.00 102	3.0 1.4	4.00 102	3.0 1.4
	4.250 108.0	6.00 152	4.9 2.2	6.00 152	4.9 2.2	6.00 152	4.9 2.2
4 DN100	4.500 114.3	6.00 152	5.4 2.5	6.00 152	5.4 2.5	6.00 152	5.4 2.5
4 ½	5.000 127.0	6.00 152	6.3 2.8	6.00 152	6.3 2.8	6.00 152	6.3 2.8
	5.250 133.0	6.00 152	6.9 3.1	6.00 152	6.9 3.1	6.00 152	6.9 3.1
DN125	5.500 139.7	6.00 152	7.2 3.3	6.00 152	7.2 3.3	6.00 152	7.2 3.3
5	5.563 141.3	6.00 152	7.3 3.3	6.00 152	7.3 3.3	6.00 152	7.3 3.3
	6.000 152.4	6.00 152	8.6 3.9	6.00 152	8.6 3.9	6.00 152	8.6 3.9
	6.250 159.0	6.00 152	9.0 4.1	6.00 152	9.0 4.1	6.00 152	9.0 4.1
	6.500 165.1	6.00 152	9.3 4.2	6.00 152	9.3 4.2	6.00 152	9.3 4.2
6 DN150	6.625 168.3	6.00 152	9.5 4.3	6.00 152	9.5 4.3	6.00 152	9.5 4.3
8 DN200	8.625 219.1	6.00 152	14.3 6.5	6.00 152	14.3 6.5	6.00 152	14.3 6.5
10 DN250	10.750 273.0	8.00 203	22.8 10.3	8.00 203	22.8 10.3	8.00 203	22.8 10.3
12 DN300	12.750 323.9	8.00 203	33.1 15.0	8.00 203	33.1 15.0	8.00 203	33.1 15.0

[1] For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(s) = Carbon Steel Segmentally Welded

NOTE

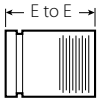
- For pump package nipples with 1 ½"/40mm hole cut to receive Style 923 Vic-Let or Style 924 Vic-O-Well request special No. 40, 42 or 43 nipples and specify No. 40-H, 42-H or 43-H on order. Note: 4 – 12"/DN100 – N300 diameter – 8"/200mm length required.

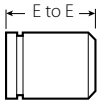
 © 2023 Victaulic Company. All rights reserved.

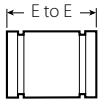
4.9 DIMENSIONS (CONTINUED)

Adapter Nipple

No. 40
No. 42
No. 43







Size		No. 40 Adapter Nipple Groove x Male Thread[2] (s)		No. 42 Adapter Nipple Groove x Bevel (s)		No. 43 Adapter Nipple Groove x Groove (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
14[1] DN350	14.000 355.6	8.00 203	36.5 16.5	8.00 203	36.5 16.5	8.00 203	36.5 16.5
16[1] DN400	16.000 406.4	8.00 203	41.8 19.0	8.00 203	41.8 19.0	8.00 203	41.8 19.0
18[1] DN450	18.000 457.2	8.00 203	47.2 21.4	8.00 203	47.2 21.4	8.00 203	47.2 21.4
20[1] DN500	20.000 508.0	8.00 203	52.5 23.8	8.00 203	52.5 23.8	8.00 203	52.5 23.8
22 DN550	22.000 558.8	8.00 203	57.9 26.3	8.00 203	57.9 26.3	8.00 203	57.9 26.3
24[1] DN600	24.000 609.6	8.00 203	63.2 28.7	8.00 203	63.2 28.7	8.00 203	63.2 28.7
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™						

1 For 14"/DN350 and larger roll grooved systems for carbon steel pipe, Victaulic offers fittings for the Advanced Groove System (AGS). Refer to publication 20.05 for more information. For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

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

(s) = Carbon Steel Segmentally Welded

NOTE

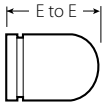
- For pump package nipples with 1 ½"/40mm hole cut to receive Style 923 Vic-Let or Style 924 Vic-O-Well request special No. 40, 42 or 43 nipples and specify No. 40-H, 42-H or 43-H on order. Note: 4 – 12"/DN100 – N300 diameter – 8"/200mm length required.

 © 2023 Victaulic Company. All rights reserved.

4.10 DIMENSIONS

Cap
No. 60

Bull Plug
No. 61



Size		No. 60 Cap		No. 61 Bull Plug (s)	
Nominal inches DN	Actual Outside Diameter inches mm	T inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
¾ DN20	1.050 26.9	0.91 (s) 23	0.2 0.1	NA	NA
1 DN25	1.315 33.7	0.79 20	0.2 0.1	NA	NA
1 ¼ DN32	1.660 42.4	0.79 20	0.4 0.2	NA	NA
1 ½ DN40	1.900 48.3	0.79 20	0.4 0.2	NA	NA
2 DN50	2.375 60.3	0.88 22	0.7 0.3	4.00 102	2.6 1.2
2 ½	2.875 73.0	0.88 22	1.2 0.5	5.00 127	3.0 1.4
DN65	3.000 76.1	0.88 22	1.2 0.5	NA	NA
3 DN80	3.500 88.9	0.88 22	1.7 0.7	6.00 152	4.5 2.0
3 ½ DN90	4.000 101.6	0.88 22	1.9 0.9	NA	NA
	4.250 108.0	0.92 23	2.6 1.2	NA	NA
4 DN100	4.500 114.3	0.92 23	3.1 1.4	7.00 178	7.5 3.4
4 ½	5.000 127.0	1.00 (s) 25	5.4 2.4	NA	NA
	5.250 133.0	0.92 23	3.9 1.8	NA	NA
DN125	5.500 139.7	0.92 23	4.5 2.0	NA	NA
5	5.563 141.3	0.92 23	4.9 2.2	8.00 203	11.5 5.2
	6.250 159.0	0.92 23	5.7 2.6	NA	NA
	6.500 165.1	0.92 23	6.2 2.8	NA	NA
6 DN150	6.625 168.3	0.92 23	6.4 2.9	10.00 254	18.0 8.2
200A	216.3	1.13 29	17.4 7.9	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTES

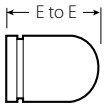
- All fittings are ductile iron unless otherwise noted with an (s).
- No. 60 cap is not suitable for use in vacuum service with Style 72 or Style 750 couplings. No. 61 bull plugs should be used.
- Steel dish caps available through 24"/DN600, contact Victaulic.
- No. 61 Bull Plugs should be ued in vacuum service with Style 72 or Style 750 couplings.

 © 2023 Victaulic Company. All rights reserved.

4.10 DIMENSIONS

Cap
No. 60

Bull Plug
No. 61



Size		No. 60 Cap		No. 61 Bull Plug (s)	
Nominal inches DN	Actual Outside Diameter inches mm	T inches mm	Approx. Weight (Each) lb kg	E to E inches mm	Approx. Weight (Each) lb kg
8 DN200	8.625 219.1	1.13 29	13.6 6.2	12.00 305	29.0 13.2
10 DN250	10.750 273.0	1.13 29	23.6 10.7	10.00 254	39.0 17.7
12 DN300	12.750 323.9	1.25 32	38.5 17.5	NA	NA
14[1] DN350	14.000 355.6	9.50 (s) 241	42.0 19.1	NA	NA
16[1] DN400	16.000 406.4	10.00 (s) 254	45.0 20.4	NA	NA
18[1] DN450	18.000 457.2	11.00 (s) 279	58.0 26.3	NA	NA
20[1] DN500	20.000 508.0	12.00 (s) 305	67.5 30.6	NA	NA
22 DN550	22.000 558.8	13.00 (s) 330	+	NA	NA
24[1] DN600	24.000 609.6	13.50 (s) 343	105.0 47.6	NA	NA
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™				

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTES

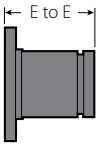
- All fittings are ductile iron unless otherwise noted with an (s).
- No. 60 cap is not suitable for use in vacuum service with Style 72 or Style 750 couplings. No. 61 bull plugs should be used.
- Steel dish caps available through 24"/DN600, contact Victaulic.
- No. 61 Bull Plugs should be ued in vacuum service with Style 72 or Style 750 couplings.

 © 2023 Victaulic Company. All rights reserved.

4.11 DIMENSIONS

Flanged Adapter Nipple

No. 41



Size		No. 41 ANSI Class 125 Flange Adapter Nipple Flat Face (s)		No. 41-DN PN10/16 Flange Adapter Nipple Flat Face (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
¾ DN20	1.050 26.9	3.00 76	+	NA	NA
1 DN25	1.315 33.7	3.00 76	2.0 0.9	3.00 76	2.6 1.2
1 ¼ DN32	1.660 42.4	4.00 102	3.0 1.4	3.00 76	4.1 1.9
1 ½ DN40	1.900 48.3	4.00 102	3.5 1.6	NA	NA
2 DN50	2.375 60.3	4.00 102	5.5 2.5	4.00 102	6.2 2.8
2 ½	2.875 73.0	4.00 102	8.0 3.6	NA	NA
DN65	3.000 76.1	NA	NA	4.00 102	7.1 3.2
3 DN80	3.500 88.9	4.00 102	9.5 4.3	4.00 102	9.0 4.1
3 ½ DN90	4.000 101.6	4.00 102	+	NA	NA
	4.250 108.0	NA	NA	NA	NA
4 DN100	4.500 114.3	6.00 152	16.7 7.6	6.00 152	12.8 5.8
4 ½	5.000 127.0	NA	NA	NA	NA
	5.250 133.0	NA	NA	NA	NA
DN125	5.500 139.7	NA	NA	6.00 152	16.8 7.6
5	5.563 141.3	6.00 152	21.5 9.8	NA	NA
	6.500 165.1	NA	NA	NA	NA
6 DN150	6.625 168.3	6.00 152	26.5 12.0	6.00 152	20.5 9.3
200A	216.3	NA	NA	NA	NA

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

(s) = Carbon Steel

NA = Not Available

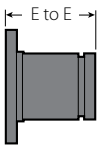
"+" = Contact Victaulic for details

 © 2023 Victaulic Company. All rights reserved.

4.11 DIMENSIONS (CONTINUED)

Flanged Adapter Nipple

No. 41



Size		No. 41 ANSI Class 125 Flange Adapter Nipple Flat Face (s)		No. 41-DN PN10/16 Flange Adapter Nipple Flat Face (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
8 DN200	8.625 219.1	6.00 152	39.0 17.7	6.00 152	30.8 14.0
250A	267.4	NA	NA	NA	NA
10 DN250	10.750 273.0	8.00 203	64.2 29.1	8.00 203	46.3 21.0
300A	318.5	NA	NA	NA	NA
12 DN300	12.750 323.9	8.00 203	87.0 39.5	8.00 203	58.7 26.6

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

(s) = Carbon Steel

NA = Not Available

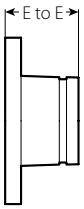
"+" = Contact Victaulic for details

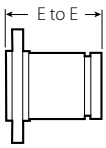
 © 2023 Victaulic Company. All rights reserved.

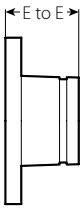
4.11 DIMENSIONS (CONTINUED)

Flanged Adapter Nipple

No. 45F
No. 45R
No. 45FE







Size		No. 45F ANSI Class 150 Flange Adapter Nipple Flat Face		No. 45R ANSI Class 150 Flange Adapter Nipple Raised Face		No. 45FE PN10/16 Flange Adapter Nipple Flat Face	
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
¾ DN20	1.050 26.9	3.00 (s) 76	2.0 0.9	3.00 (s) 76	2.0 0.9	NA	NA
1 DN25	1.315 33.7	3.00 (s) 76	2.7 1.2	3.00 (s) 76	2.7 1.2	NA	NA
1 ¼ DN32	1.660 42.4	4.00 (s) 102	3.6 1.6	4.00 (s) 102	3.6 1.6	NA	NA
1 ½ DN40	1.900 48.3	4.00 (s) 102	3.9 1.8	4.00 (s) 102	3.9 1.8	2.52 64	+
2 DN50	2.375 60.3	4.00 102	6.0 2.7	4.00 102	6.0 2.7	2.52 64	+
2 ½	2.875 73.0	4.00 102	9.9 4.5	4.00 102	9.9 4.5	NA	NA
DN65	3.000 76.1	NA	NA	NA	NA	2.52 64	+
3 DN80	3.500 88.9	4.00 102	11.7 5.3	4.00 102	11.7 5.3	2.52 64	+
3 ½ DN90	4.000 101.6	4.00 (s) 102	13.8 6.3	4.00 (s) 102	13.8 6.3	NA	NA
	4.250 108.0	NA	NA	NA	NA	NA	NA
4 DN100	4.500 114.3	6.00 152	18.5 8.4	6.00 152	18.5 8.4	2.76 70	+
DN125	5.500 139.7	NA	NA	NA	NA	2.76 70	+
5	5.563 141.3	6.00 (s) 152	21.4 9.7	6.00 (s) 152	21.4 9.7	NA	NA
	6.500 165.1	NA	NA	NA	NA	2.76 70	+
6 DN150	6.625 168.3	6.00 (s) 152	29.0 13.2	6.00 (s) 152	29.0 13.2	2.76 70	+
8 DN200	8.625 219.1	6.00 (s) 152	42.0 19.1	6.00 (s) 152	42.0 19.1	3.15 80	0.0 0.0
10 DN250	10.750 273.0	8.00 (s) 203	64.2 29.1	8.00 (s) 203	64.2 29.1	3.15 80	0.0 0.0
12 DN300	12.750 323.9	8.00 (s) 203	88.2 40.0	8.00 (s) 203	88.2 40.0	3.15 80	0.0 0.0
14[1] DN350	14.000 355.6	8.00 (s) 203	126.4 57.3	8.00 (s) 203	126.4 57.3	NA	NA
16[1] DN400	16.000 406.4	8.00 (s) 203	150.0 68.0	8.00 (s) 203	150.0 68.0	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTE

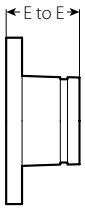
- All fittings are ductile iron unless otherwise noted with an (s).

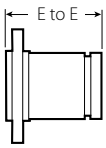
 © 2023 Victaulic Company. All rights reserved.

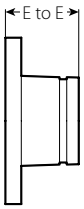
4.11 DIMENSIONS (CONTINUED)

Flanged Adapter Nipple

No. 45F
No. 45R
No. 45FE







Size		No. 45F ANSI Class 150 Flange Adapter Nipple Flat Face		No. 45R ANSI Class 150 Flange Adapter Nipple Raised Face		No. 45FE PN10/16 Flange Adapter Nipple Flat Face	
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
18[1] DN450	18.000 457.2	8.00 (s) 203	177.0 80.3	8.00 (s) 203	177.0 80.3	NA	NA
20[1] DN500	20.000 508.0	8.00 (s) 203	218.0 98.9	8.00 (s) 203	218.0 98.9	NA	NA
24[1] DN600	24.000 609.6	8.00 (s) 203	283.0 128.4	8.00 (s) 203	283.0 128.4	NA	NA
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™						

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTE

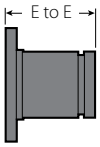
- All fittings are ductile iron unless otherwise noted with an (s).

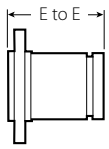
 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS (CONTINUED)

Flange Adapter Nipple

No 46F
No 46R





Size		No. 46F ANSI Class 300 Flange Adapter Nipple Flat Face (s)		No. 46R ANSI Class 300 Flange Adapter Nipple Raised Face (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
¾ DN20	1.050 26.9	3.00 76	3.3 1.5	3.00 76	+
1 DN25	1.315 33.7	3.00 76	3.9 1.8	3.00 76	3.9 1.8
1 ¼ DN32	1.660 42.4	4.00 102	4.8 2.2	4.00 102	4.8 2.2
1 ½ DN40	1.900 48.3	4.00 102	6.9 3.1	4.00 102	6.9 3.1
2 DN50	2.375 60.3	4.00 102	8.1 3.7	4.00 102	8.1 3.7
2 ½	2.875 73.0	4.00 102	11.9 5.4	4.00 102	11.9 5.4
3 DN80	3.500 88.9	4.00 102	16.5 7.5	4.00 102	16.5 7.5
3 ½ DN90	4.000 101.6	4.00 102	20.1 9.1	4.00 102	20.1 9.1
4 DN100	4.500 114.3	6.00 152	27.4 12.4	6.00 152	27.4 12.4
5	5.563 141.3	6.00 152	35.3 16.0	6.00 152	35.3 16.0
6 DN150	6.625 168.3	6.00 152	47.5 21.5	6.00 152	47.5 21.5
8 DN200	8.625 219.1	6.00 152	68.0 30.8	6.00 152	68.0 30.8
10 DN250	10.750 273.0	8.00 203	100.8 45.7	8.00 203	100.8 45.7
12 DN300	12.750 323.9	8.00 203	148.0 67.1	8.00 203	148.0 67.1
14[1] DN350	14.000 355.6	8.00 203	180.0 81.8	NA	NA
16[1] DN400	16.000 406.4	8.00 203	237.0	NA	NA
18[1] DN450	18.000 457.2	8.00 203	297.0 134.7	NA	NA
20[1] DN500	20.000 508.0	8.00 203	+	NA	NA
22 DN550	22.000 558.8	8.00 203	+	NA	NA
24[1] DN600	24.000 609.6	8.00 203	+	NA	NA
14 – 60 DN350 – DN1500	For AGS fitting information, see publication 20.05 AGS™				

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

(s) = Carbon Steel

NA = Not Available

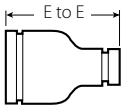
+ = Contact Victaulic for details

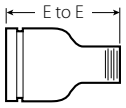
 © 2023 Victaulic Company. All rights reserved.

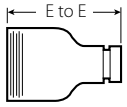
4.12 DIMENSIONS

Swaged Nipple

No. 53
No. 54
No. 55







Size						No. 53 Swage Nipple Groove x Groove (s)		No. 54 Swage Nipple Groove x Male Thread[1] (s)		No. 55 Swage Nipple Male Thread[1] x Groove (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
2 DN50	x	¾ DN20	2.375 60.3	x	1.050 26.9	6.50 165	2.0 0.9	NA	NA	NA	NA
		1 DN25			1.315 33.7	6.50 165	2.0 0.9	6.50 165	2.0 0.9	6.50 165	2.0 0.9
		1 ¼ DN32			1.660 42.4	6.50 165	2.0 0.9	6.50 165	2.0 0.9	6.50 165	2.0 0.9
		1 ½ DN40			1.900 48.3	6.50 165	2.0 0.9	6.50 165	2.0 0.9	6.50 165	2.0 0.9
2 ½ DN65	x	1 DN25	2.875 73.0	x	1.315 33.7	7.00 178	3.0 1.4	7.00 178	3.0 1.4	7.00 178	3.0 1.4
		1 ¼ DN32			1.660 42.4	7.00 178	3.0 1.4	7.00 178	3.0 1.4	7.00 178	3.0 1.4
		1 ½ DN40			1.900 48.3	7.00 178	3.0 1.4	7.00 178	3.0 1.4	7.00 178	3.0 1.4
		2 DN50			2.375 60.3	7.00 178	3.0 1.4	7.00 178	3.0 1.4	7.00 178	3.0 1.4
	x	1 ½ DN40	3.000 76.1	x	1.900 48.3	NA	NA	8.00 203	4.0 1.8	NA	NA
		2 DN50			2.375 60.3	8.00 203	4.0 1.8	NA	NA	NA	NA
3 DN80	x	1 DN25	3.500 88.9	x	1.315 33.7	8.00 203	4.5 2.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0
		1 ¼ DN32			1.660 42.4	8.00 203	4.5 2.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0
		1 ½ DN40			1.900 48.3	8.00 203	4.5 2.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0
		2 DN50			2.375 60.3	8.00 203	4.5 2.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0
		2 ½ DN65			2.875 73.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0	8.00 203	4.5 2.0
					3.000 76.1	8.00 203	4.5 2.0	8.00 203	4.5 2.0	NA	NA
3 ½ DN90	x	3 DN80	4.000 101.6	x	3.500 88.9	8.00 203	6.8 3.1	8.00 203	6.8 3.1	8.00 203	6.8 3.1
4 DN100	x	1 DN25	4.500 114.3	x	1.315 33.7	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4
		1 ¼ DN32			1.660 42.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4	NA	NA
		1 ½ DN40			1.900 48.3	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4
		2 DN50			2.375 60.3	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4
		2 ½ DN65			2.875 73.0	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4
					3.000 76.1	9.00 229	7.5 3.4	NA	NA	NA	NA
		3 DN80			3.500 88.9	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4
		3 ½ DN90			4.000 101.6	9.00 229	7.5 3.4	9.00 229	7.5 3.4	9.00 229	7.5 3.4

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

(s) = Carbon Steel

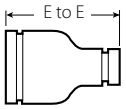
NA = Not Available

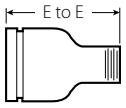
 © 2023 Victaulic Company. All rights reserved.

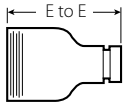
4.12 DIMENSIONS

Swaged Nipple

No. 53
No. 54
No. 55







Size						No. 53 Swage Nipple Groove x Groove (s)		No. 54 Swage Nipple Groove x Male Thread[1] (s)		No. 55 Swage Nipple Male Thread[1] x Groove (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
5	x	2 DN50	5.563 141.3	x	2.375 60.3	11.00 279	11.5 5.2	11.00 279	11.5 5.2	11.00 279	11.5 5.2
		3 DN80			3.500 88.9	11.00 279	11.5 5.2	11.00 279	11.5 5.2	11.00 279	11.5 5.2
		4 DN100			4.500 114.3	11.00 279	11.5 5.2	11.00 279	11.5 5.2	11.00 279	11.5 5.2
6 DN150	x	1 DN25		x	1.315 33.7	12.00 305	17.0 7.7	12.00 305	17.0 7.7	12.00 305	17.0 7.7
		1¼ DN32			1.660 42.4	12.00 305	17.0 7.7	12.00 305	17.0 7.7	12.00 305	17.0 7.7
		1½ DN40			1.900 48.3	12.00 305	17.2 7.8	12.00 305	17.2 7.8	12.00 305	17.0 7.7
		2 DN50			2.375 60.3	12.00 305	17.4 7.9	12.00 305	17.4 7.9	12.00 305	17.4 7.9
		2½			2.875 73.0	12.00 305	17.4 7.9	12.00 305	17.4 7.9	12.00 305	17.4 7.9
		3 DN80			3.500 88.9	12.00 305	17.4 7.9	12.00 305	17.4 7.9	12.00 305	17.4 7.9
		3½ DN90			4.000 101.6	12.00 305	17.5 7.9	12.00 305	17.5 7.9	NA	NA
		4 DN100			4.500 114.3	12.00 305	17.5 7.9	12.00 305	17.5 7.9	12.00 305	17.5 7.9
		4½			5.000 127.0	12.00 305	17.5 7.9	12.00 305	17.5 7.9	NA	NA
		5			5.563 141.3	12.00 305	17.5 7.9	12.00 305	17.5 7.9	12.00 305	17.5 7.9
8 DN200	x	6 DN150	8.625 219.1	x	6.625 168.3	12.00 305	29.0 13.2	12.00 305	29.0 13.2	12.00 305	29.0 13.2

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

(s) = Carbon Steel

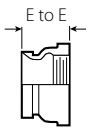
NA = Not Available

 © 2023 Victaulic Company. All rights reserved.

4.13 DIMENSIONS

Female Threaded Adapter

No. 80



Size		No. 80 Adapter Groove x Female Thread[1]	
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 (s) 51	0.6 0.3
1 DN25	1.315 33.7	2.08 53	0.4 0.2
1 ¼ DN32	1.660 42.4	2.29 58	0.6 0.3
1 ½ DN40	1.900 48.3	2.29 58	1.0 0.5
2 DN50	2.375 60.3	2.50 64	1.5 0.7
2 ½	2.875 73.0	2.75 70	1.8 0.8
DN65	3.000 76.1	2.75 70	2.2 1.0
3 DN80	3.500 88.9	2.75 70	2.8 1.3
4 DN100	4.500 114.3	3.25 83	4.5 2.0

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

(s) = Carbon Steel

NOTE

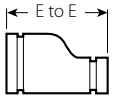
- All fittings are ductile iron unless otherwise noted with an (s).

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer

No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
1 DN25	x	¾ DN20	1.315 33.7	x	1.050 26.9	8.00 (s) 203	+	8.00 (s) 203	+
1 ¼ DN32	x	¾ DN20	1.660 42.4	x	1.050 26.9	8.00 (s) 203	1.3 0.6	8.00 (s) 203	1.3 0.6
		1 DN25			1.315 33.7	2.50 64	0.6 0.3	8.00 (s) 203	1.4 0.6
1 ½ DN40	x	¾ DN20	1.900 48.3	x	1.050 26.9	8.50 (s) 216	1.5 0.7	8.50 (s) 216	1.5 0.7
		1 DN25			1.315 33.7	2.50 64	0.8 0.4	8.50 (s) 216	1.7 0.8
		1 ¼ DN32			1.660 42.4	2.50 64	0.9 0.4	8.50 (s) 216	1.8 0.8
2 DN50	x	¾ DN20	2.375 60.3	x	1.050 26.9	2.56 65	0.8 0.4	9.00 (s) 229	2.2 1.0
		1 DN25			1.315 33.7	2.50 64	0.7 0.3	9.00 (s) 229	2.3 1.0
		1 ¼ DN32			1 ¼ DN32	2.50 64	0.8 0.4	9.00 (s) 229	2.5 1.1
		1 ½ DN40			1.900 48.3	2.50 64	1.2 0.5	3.50 89	1.1 0.5
2 ½	x	¾ DN20	2.875 73.0	x	1.050 26.9	9.50 (s) 241	+	9.50 (s) 241	+
		1 DN25			1.315 33.7	2.50 64	1.4 0.6	9.50 (s) 241	3.4 1.5
		1 ¼ DN32			1 ¼ DN32	2.50 64	1.4 0.6	3.50 89	1.3 0.6
		1 ½ DN40			1.900 48.3	2.50 64	1.4 0.6	9.50 (s) 241	3.8 1.7
		2 DN50			2.375 60.3	2.50 64	1.5 0.7	3.50 89	1.6 0.7
DN65	x	1 DN25	3.000 76.1	x	1.315 33.7	2.50 64	+	NA	NA
		1 ¼ DN32			1.660 42.4	2.50 64	+	NA	NA
		1 ½ DN40			1.900 48.3	2.50 64	+	NA	NA
		2 DN50			2.375 60.3	2.50 64	+	NA	NA
		2 ½			2.875 73.0	2.75 (s) 70	+	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTES

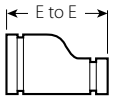
- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS (CONTINUED)

Concentric/Eccentric Reducer

No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
3 DN80	x	¾ DN20	3.500 88.9	x	1.050 26.9	9.50 (s) 241	+	9.50 (s) 241	+
		1 DN25			1.315 33.7	2.50 64	1.8 0.8	9.50 (s) 241	4.8 2.2
		1 ¼ DN32			1.660 42.4	2.50 64	1.4 0.6	9.50 (s) 241	5.0 2.3
		1 ½ DN40			1.900 48.3	2.50 64	2.0 0.9	9.50 (s) 241	5.1 2.3
		2 DN50			2.375 60.3	2.50 64	1.6 0.7	3.50 89	1.9 0.9
		2 ½			2.875 73.0	2.50 64	1.7 0.7	3.50 89	2.1 1.0
		DN65			3.000 76.1	2.50 64	2.1 1.0	9.50 (s) 241	5.4 2.4
3 ½ DN90	x	3 DN80	4.000 101.6	x	3.500 88.9	2.50 64	2.1 1.0	10.00 (s) 254	7.0 3.2
			4.250 108.0	x	2.875 73.0	3.50 89	+	NA	NA
					3.000 76.1	3.50 89	+	NA	NA
					3.500 88.9	3.50 89	+	NA	NA
4 DN100	x	1 DN25	4.500 114.3	x	1.315 33.7	3.00 76	3.0 1.4	10.00 (s) 254	6.5 2.9
		1 ¼ DN32			1.660 42.4	10.00 (s) 254	+	10.00 (s) 254	+
		1 ½ DN40			1.900 48.3	3.00 76	2.6 1.2	10.00 (s) 254	6.9 3.1
		2 DN50			2.375 60.3	3.00 76	3.4 1.5	4.00 102	2.9 1.3
		DN65			3.000 76.1	3.00 76	3.3 1.5	4.00 102	3.2 1.4
		2 ½			2.875 73.0	3.00 76	3.3 1.5	4.00 102	3.1 1.4
		3 DN80			3.500 88.9	3.00 76	3.2 1.5	4.00 102	3.4 1.5
		3 ½ DN90			4.000 101.6	3.00 76	3.0 1.4	10.00 (s) 254	8.1 3.7
			5.250 133.0	x	4.250 108.0	4.50 114	+	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

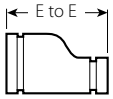
NOTES

- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer
No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
	x			x					
DN125		DN65	5.500 139.7		3.000 76.1	4.50 114	4.1 1.9	10.00 (s) 254	10.7 4.9
		3 DN80			3.500 88.9	4.50 114	5.7 2.6	NA	NA
		4 DN100			4.500 114.3	4.50 114	5.1 2.3	5.00 127	+
5	x	2 DN50	5.563 141.3	x	2.375 60.3	11.00 (s) 279	10.1 4.6	11.00 (s) 279	10.1 4.6
		2½			2.875 73.0	4.00 102	4.3 2.0	11.00 279	10.8 4.9
		3 DN80			3.500 88.9	4.00 102	5.7 2.6	11.00 (s) 279	11.1 5.0
		3½ DN90			4.000 101.6	11.00 (s) 279	+	11.00 (s) 279	+
		4 DN100			4.500 114.3	3.50 89	4.3 2.0	5.00 127	5.5 2.5
			6.250 159.0	x	3.500 88.9	4.50 114	+	NA	NA
					4.250 108.0	4.00 102	+	NA	NA
					4.500 114.3	4.00 102	+	NA	NA
					5.250 133.0	4.00 102	+	NA	NA
			6.500 165.1	x	2.375 60.3	4.00 102	6.1 2.8	NA	NA
					3.000 76.1	4.00 102	5.9 2.7	10.50 (s) 292	18.1 8.2
					3.500 88.9	4.00 102	6.2 2.8	5.50 140	6.1 2.8
					4.500 114.3	4.00 102	6.2 2.8	5.50 140	6.8 3.1
					5.500 139.7	4.00 102	5.6 2.5	5.50 140	8.0 3.6
					5.563 141.3	4.00 102	6.4 2.9	5.50 140	7.5 3.4
					6.250 159.0	4.00 102	6.6 3.0	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

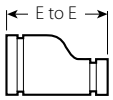
NOTES

- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer
No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
6 DN150	x	1 DN25	6.625 168.3	x	1.315 33.7	4.00 102	6.2 2.8	11.50 (s) 292	+
		1½ DN40			1.900 48.3	11.50 (s) 292	+	11.50 (s) 292	+
		2 DN50			2.375 60.3	4.00 102	6.6 3.0	11.50 (s) 292	14.2 6.4
		2½			2.875 73.0	4.00 102	6.4 2.9	11.50 (s) 292	14.2 6.4
		DN65			3.000 76.1	11.50 (s) 292	+	11.50 (s) 292	+
		3 DN80			3.500 88.9	4.00 102	6.4 2.9	5.50 140	7.4 3.4
		4 DN100			4.500 114.3	4.00 102	5.8 2.6	5.50 140	7.8 3.5
		DN125			5.500 139.7	NA	NA	5.50 140	8.1 3.7
		5			5.563 141.3	4.00 102	6.4 2.9	5.50 140	8.1 3.7
					6.500 165.1	4.00 102	7.2 3.3	11.50 (s) 292	+
			8.515 216.3	x	3.500 88.9	5.00 127	+	NA	NA
					4.500 114.3	5.00 127	+	NA	NA
					5.500 139.7	4.50 114	+	NA	NA
200A	x	165A	216.3	x	6.500 165.1	5.00 127	9.5 4.3	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

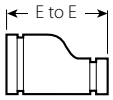
NOTES

- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer
No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
8 DN200	x	2½	8.625 219.1	x	2.875 73.0	12.00 (s) 305	+	12.00 (s) 305	+
		3 DN80			3.500 88.9	5.00 127	9.3 4.2	12.00 (s) 305	22.0 10.0
					4.250 108.0	5.00 127	11.5 5.2	NA	NA
		4 DN100			4.500 114.3	5.00 127	10.4 4.7	6.00 152	10.5 4.8
		DN125			5.500 139.7	5.00 127	11.7 5.3	12.00 (s) 305	24.5 11.1
		5			5.563 141.3	5.00 127	11.6 5.3	12.00 (s) 305	23.8 10.8
					6.250 159.0	4.50 114	11.9 5.4	NA	NA
					6.500 165.1	5.00 127	12.6 5.7	6.00 152	12.8 5.8
		6 DN150			6.625 168.3	5.00 127	11.9 5.4	6.00 152	13.2 6.0
10 DN250	x	4 DN100	10.750 273.0	x	4.500 114.3	6.25 159	20.1 9.1	13.00 (s) 330	33.8 15.3
		DN125			5.500 139.7	NA	NA	13.00 (s) 330	35.7 16.2
		5			5.563 141.3	13.00 (s) 330	35.8 16.2	13.00 (s) 330	35.8 16.2
					6.500 165.1	6.00 152	+	13.00 (s) 330	+
		6 DN150			6.625 168.3	6.00 152	22.0 10.0	13.00 (s) 330	36.9 16.7
		8 DN200			8.625 219.1	6.00 152	23.0 10.4	7.00 178	37.0 16.8
250A	x	200A	267.4	x	216.3	6.00 152	23.0 10.4	NA	NA
12 DN300	x	4 DN100	12.750 323.9	x	4.500 114.3	14.00 (s) 356	48.0 21.8	14.00 (s) 356	48.0 21.8
					6.500 165.1	14.00 (s) 356	+	14.00 (s) 356	+
		6 DN150			6.625 168.3	7.00 178	25.0 11.3	14.00 (s) 356	50.2 22.8
		8 DN200			8.625 219.1	7.00 178	38.0 17.2	14.00 (s) 356	53.5 24.3
		10 DN200			10.750 273.0	7.00 178	38.0 17.2	14.00 (s) 356	56.5 25.6

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

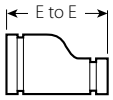
NOTES

- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer
No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
300A	x	250A	318.5	x	216.3	7.00 178	38.0 17.2	NA	NA
14[1] DN350	x	6 DN150	14.000 355.6	x	6.625 168.3	13.00 330	63.1 28.6	13.00 330	77.2 35.0
		8 DN200			8.625 219.1	13.00 330	72.7 33.0	13.00 330	81.6 37.0
					10.528 267.4	13.00 330	80.5 36.5	13.00 330	88.2 40.0
		10 DN200			10.750 273.0	13.00 330	80.5 36.5	13.00 330	88.2 40.0
					12.539 318.5	13.00 330	81.6 37.0	13.00 330	90.4 41.0
		12 DN300			12.750 323.9	13.00 330	81.6 37.0	13.00 330	90.4 41.0
16[1] DN400	x	8 DN200	16.000 406.4	x	8.625 219.1	14.00 356	80.5 36.5	14.00 356	99.2 45.0
		250A			267.4	14.00 356	93.0 42.2	NA	NA
		10 DN200			10.750 273.0	14.00 356	93.0 42.2	14.00 356	99.2 45.0
					12.539 318.5	14.00 356	100.3 45.5	14.00 356	103.6 47.0
		12 DN300			12.750 323.9	14.00 356	100.3 45.5	14.00 356	103.6 47.0
		14 DN350			14.000 355.6	14.00 356	100.3 45.5	14.00 356	108.0 49.0
18[1] DN450	x	10 DN200	18.000 457.2	x	10.750 273.0	15.00 381	112.4 51.0	15.00 381	125.7 57.0
		12 DN300			12.750 323.9	15.00 381	122.4 55.5	15.00 381	134.5 61.0
		14 DN350			14.000 355.6	15.00 381	122.4 55.5	15.00 381	136.7 62.0
		16 DN400			16.000 406.4	15.00 381	126.8 57.5	15.00 381	143.3 65.0

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTES

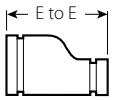
- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.15 DIMENSIONS

Concentric/Eccentric Reducer

No. 50
No. 51



Size						No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
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
20[1] DN500	x	10 DN200	20.000 508.0	x	10.750 273.0	20.00 508	160.0 72.6	20.00 508	172.0 78.0
		300A			318.5	20.00 508	162.3 73.6	NA	NA
		12 DN300			12.750 323.9	20.00 508	162.3 73.6	20.00 508	183.0 83.0
		14 DN350			14.000 355.6	20.00 508	177.5 80.5	20.00 508	191.8 87.0
		16 DN400			16.000 406.4	20.00 508	176.4 80.0	20.00 508	200.6 91.0
		18 DN450			18.000 457.2	20.00 508	205.0 93.0	20.00 508	209.4 95.0
24[1] DN600	x	10 DN200	24.000 609.6	x	10.750 273.0	20.00 508	222.7 101.0	20.00 508	222.7 101.0
		12 DN300			12.750 323.9	20.00 508	209.4 95.0	20.00 508	238.1 108.0
		14 DN350			14.000 355.6	20.00 508	213.8 97.0	20.00 508	246.9 112.0
		16 DN400			16.000 406.4	20.00 508	215.8 97.9	20.00 508	251.3 114.0
		18 DN450			18.000 457.2	20.00 508	229.3 104.0	20.00 508	244.7 111.0
		20 DN500			20.000 508.0	20.00 508	+	20.00 508	275.6 125.0
14 – 60 DN350 – DN1500			For AGS fitting information, see publication 20.05 AGS™						

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTES

- All fittings are ductile iron unless otherwise noted with an (s).
- Available with make threaded small end No. 52
- Steel eccentric reducers available through 30"/DN750, contact Victaulic for dimensions.

 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS

Small Threaded Reducer
No. 52
No. 52F

Size						No. 52 Concentric Reducer Groove x Male Thread[1]		No. 52F Concentric Reducer Groove x Female BSPT Thread	
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
1¼ DN32	x	1 DN25	1.660 42.4	x	1.315 33.7	NA	NA	2.50 64	0.4 0.2
1½ DN40	x	1 DN25	1.900 48.3	x	1.315 33.7	2.50 64	0.8 0.4	NA	NA
		1¼ DN32			1.660 42.4	2.50 64	0.9 0.4	NA	NA
2 DN50	x	¾ DN20	2.375 60.3	x	1.050 26.9	2.56 65	0.8 0.4	NA	NA
		1 DN25			1.315 33.7	2.50 64	0.9 0.4	NA	NA
		1¼ DN32			1.660 42.4	2.50 64	0.9 0.4	NA	NA
		1½ DN40			1.900 48.3	2.50 64	1.0 0.5	NA	NA
2½	x	1 DN25	2.875 73.0	x	1.315 33.7	2.50 64	1.1 0.5	NA	NA
		1¼ DN32			1.660 42.4	2.50 64	1.6 0.7	NA	NA
		1½ DN40			1.900 48.3	2.50 64	1.6 0.7	NA	NA
		2 DN50			2.375 60.3	2.50 64	1.8 0.8	NA	NA
DN65	x	1 DN25	3.000 76.1	x	1.315 33.7	2.50 64	1.8 0.8	NA	NA
		1¼ DN32			1.660 42.4	2.50 64	1.8 0.8	NA	NA
		1½ DN40			1.900 48.3	2.50 64	1.8 0.8	2.50 64	1.8 0.8
		2 DN50			2.375 60.3	2.50 64	1.8 0.8	2.50 64	2.0 0.9

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTE

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

 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS

Small Threaded Reducer
No. 52
No. 52F

Size						No. 52 Concentric Reducer Groove x Male Thread[1]		No. 52F Concentric Reducer Groove x Female BSPT Thread	
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
3 DN80	x	¾ DN25	3.500 88.9	x	1.050 26.9	9.50 (s) 241	+	NA	NA
		1 DN25			1.315 33.7	2.50 64	1.8 0.8	NA	NA
		1 ¼ DN32			1.660 42.4	2.50 64	1.5 0.7	2.50 64	2.0 0.9
		1 ½ DN40			1.900 48.3	2.50 64	2.2 1.0	2.50 64	2.0 0.9
		2 DN50			2.375 60.3	2.50 64	2.0 0.9	2.50 64	2.0 0.9
		2 ½			2.875 73.0	2.50 64	2.4 1.1	NA	NA
		DN65			3.000 76.1	2.50 64	2.4 1.1	2.50 64	2.0 0.9
			4.250 108.0	x	1.660 42.4	NA	NA	3.00 76	2.9 1.3
					1.900 48.3	NA	NA	3.00 76	3.1 1.4
					2.375 60.3	3.00 76	1.3 0.6	3.00 76	3.1 1.4
					2.875 73.0	3.00 76	1.3 0.6	NA	NA
					3.000 76.1	3.00 76	1.3 0.6	NA	NA
					3.500 88.9	3.50 89	3.4 1.5	NA	NA
4 DN100	x	1 DN25	4.500 114.3	x	1.315 33.7	3.00 76	3.0 1.4	NA	NA
		1 ¼ DN32			1.660 42.4	NA	NA	3.00 76	3.3 1.5
		1 ½ DN40			1.900 48.3	3.00 76	2.7 1.2	3.00 76	3.3 1.5
		2 DN50			2.375 60.3	3.00 76	3.5 1.6	3.00 76	3.5 1.6
		2 ½			2.875 73.0	3.00 76	3.5 1.6	NA	NA
		DN65			3.000 76.1	3.00 76	2.9 1.3	NA	NA
		3 DN80			3.500 88.9	3.00 76	3.5 1.6	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTE

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

 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS

Small Threaded Reducer
No. 52
No. 52F

Size						No. 52 Concentric Reducer Groove x Male Thread[1]		No. 52F Concentric Reducer Groove x Female BSPT Thread	
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
			5.250 133.0	x	3.500 88.9	4.50 114	4.6 2.1	NA	NA
DN125	x	DN65	5.500 139.7	x	3.000 76.1	4.50 114	4.4 2.0	NA	NA
					3.500 88.9	4.50 114	4.4 2.0	NA	NA
5	x	2 DN50	5.563 141.3	x	2.375 60.3	11.00 (s) 279	3.5 1.6	NA	NA
		3 DN80			3.500 88.9	11.00 (s) 279	3.6 1.6	NA	NA
		4 DN100			4.500 114.3	11.00 (s) 279	11.9 5.4	NA	NA
			6.250 159.0	x	1.660 42.4	NA	NA	4.50 114	5.5 2.5
					1.900 48.3	NA	NA	4.50 114	5.5 2.5
					2.375 60.3	NA	NA	4.50 114	5.5 2.5
					3.000 76.1	4.50 114	5.1 2.3	NA	NA
					3.500 88.9	4.75 121	5.5 2.5	NA	NA
			6.500 165.1	x	1.660 42.4	NA	NA	4.00 102	6.4 2.9
					1.900 48.3	NA	NA	4.00 102	6.6 3.0
					2.375 60.3	4.00 102	5.5 2.5	4.00 102	6.6 3.0
					3.000 76.1	4.00 102	5.9 2.7	NA	NA
					3.500 88.9	4.00 102	6.6 3.0	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

NOTE

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

 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS

Small Threaded Reducer
No. 52
No. 52F

Size						No. 52 Concentric Reducer Groove x Male Thread[1]		No. 52F Concentric Reducer Groove x Female BSPT Thread	
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
6 DN150	x	1 DN25	6.625 168.3	x	1.315 33.7	4.00 102	5.5 2.5	NA	NA
		2 DN50			2.375 60.3	4.00 102	6.7 3.0	NA	NA
		2½			2.875 73.0	4.00 102	5.8 2.6	NA	NA
		3 DN80			3.500 88.9	4.00 102	8.0 3.6	NA	NA
		4 DN100			4.500 114.3	11.50 (s) 292	15.9 7.2	NA	NA
		5			5.563 141.3	11.50 (s) 292	20.0 9.1	NA	NA
8 DN200	x	4 DN100			4.500 114.3	12.00 (s) 305	22.9 10.4	NA	NA
		6 DN150			6.625 168.3	12.00 (s) 305	25.0 11.3	NA	NA

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

(s) = Carbon Steel

NA = Not Available

"+" = Contact Victaulic for details

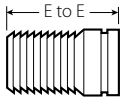
NOTE

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

 © 2023 Victaulic Company. All rights reserved.

4.16 DIMENSIONS (CONTINUED)

Hose Nipple
No. 48



Size		No. 48 Hose Nipple (s)	
Nominal inches DN	**Actual Outside Diameter** inches mm	**E to E** inches mm	**Approx. Weight (Each)** lb kg
¾ DN20	1.050 26.9	3.13 79	0.3 0.1
1 DN25	1.315 33.7	3.38 86	0.4 0.2
1 ¼ DN32	1.660 42.4	3.88 98	0.6 0.3
1 ½ DN40	1.900 48.3	3.88 98	0.8 0.4
2 DN50	2.375 60.3	4.50 114	1.0 0.4
2 ½	2.875 73.0	5.38 137	2.0 0.9
3 DN80	3.500 88.9	5.75 146	3.1 1.4
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	41.0 18.6
12 DN300	12.750 323.9	14.50 368	62.0 28.1

(s) = Carbon Steel

 © 2023 Victaulic Company. All rights reserved.

5.0 PERFORMANCE

Flow Data

(Frictional Resistance)

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

Size		90° Elbows		45° Elbows		Tees	
Nominal inches DN	**Actual Outside Diameter** inches mm	**No. 10 Std. Radius** feet meters	**No. 100 1 ½ D Long Radius** inches mm	**No. 11 Std. Radius** feet meters	**No. 110 1 ½ D Long Radius** inches mm	**Branch** feet meters	**Run** feet meters
¾ DN20	1.050 26.9	1.4 0.4	–	0.7 0.2	–	3.3 1.0	1.4 0.4
1 DN25	1.315 33.7	1.7 0.5	–	0.8 0.2	–	4.2 1.3	1.7 0.5
1 ¼ DN32	1.660 42.4	2.1 0.6	–	1.0 0.3	–	5.3 1.6	2.1 0.6
1 ½ DN40	1.900 48.3	2.7 0.8	–	1.3 0.4	–	6.6 2.0	2.7 0.8
2 DN50	2.375 60.3	3.6 1.1	2.5 0.8	1.8 0.5	1.1 0.3	8.5 2.6	3.6 1.1
	3.000 76.1	4.3 1.3	–	2.3 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 1.0	–	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 1.3	–	20.0 6.1	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	13.1 4.0	9.8 3.0	6.5 2.0	4.0 1.2	33.1 10.1	13.1 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	18.000 457.2	31.0[1] 9.4	20.0 6.1	23.5[1] 7.2	14.0 4.3	90.0 27.4	30.0 9.1
20 DN500	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	24.000 609.6	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

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

 © 2023 Victaulic Company. All rights reserved.

6.0 NOTIFICATIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maitenance of any Victaulic products.**
- **The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **Wear safety glasses, hardhat, and foot protection.**

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

 © 2023 Victaulic Company. All rights reserved.

7.0 REFERENCE MATERIALS

Galvanized
Publication 07.01 for Original Groove Fittings
Publication 20.05 for AGS Fittings

Extra Heavy EndSeal “ES”
Publication 07.03

Fabricated Steel Fittings
Publication 07.04

Shouldered Ends
Publication 07.06

xL fittings for abrasive services
Publication 07.07

Victaulic Base Support Elbows
Publication 07.13

Plain End
Publication 14.04

Stainless Steel
Publication 17.16

AGS - Advanced Groove System
from 14 – 60"/DN350 – DN1500
Publication 20.05

Aluminum
Publication 21.03

Copper
Publication 22.04

Ductile Iron for AWWA size pipe
Publication 23.05

 © 2023 Victaulic Company. All rights reserved.

User Responsibility for Product Selection and Suitability

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

Intellectual Property Rights

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

Note

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

Installation

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

Warranty

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

Trademarks

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

07.01 1449 Rev AI Updated 05/2023 © 2023 Victaulic Company. All rights reserved.

Viking Plastics

BlazeMaster® CPVC Pipe

Features

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

CPVC PIPE PHYSICAL DATA

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

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

Blazemaster® is a registered trademark of Lubrizol.

Specifications subject to change without notice

*Empty pipe weights

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

Trusted above all™

VIKING®

CPVC Pipe Product Specifications

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

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

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

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

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

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

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

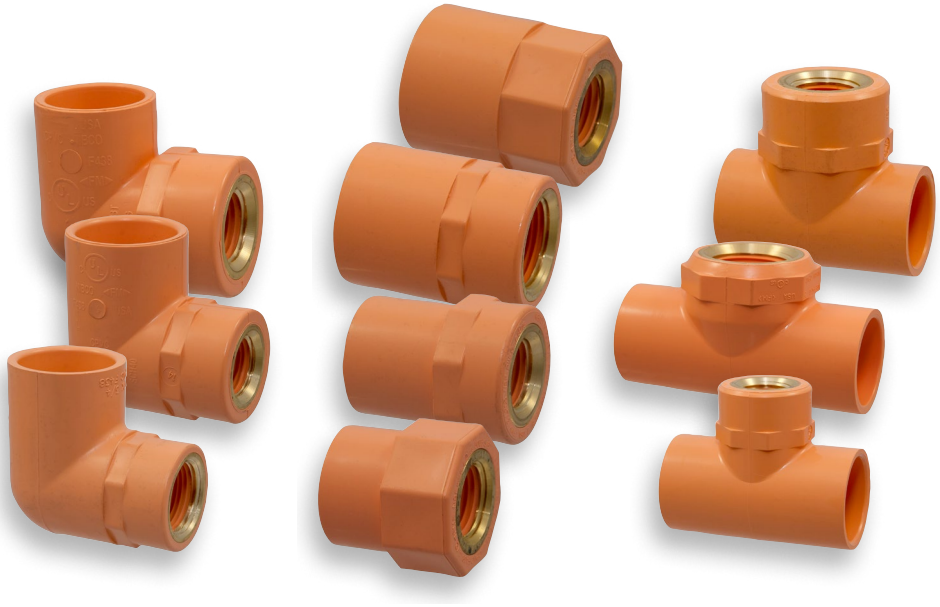
All CPVC fire sprinkler pipe shall be Listed by Underwriters Laboratories for wet pipe systems, and shall carry a rated working pressure of 175 psi @ 150°F (12 bar @ 65.5°C). *The FM Approval is limited to use in wet pipe fire protection sprinkler systems for light hazard occupancies in both concealed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

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

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

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

VIKING®



CPVC BlazeMaster® Fire Protection Fittings

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

Specifications and Engineering Data

Introduction

Viking BlazeMaster® CPVC fire sprinkler products are manufactured from high quality, post-chlorinated polyvinyl chloride (CPVC), a specialty thermoplastic material tested and listed by certifying agencies for use in CPVC fire sprinkler systems. Viking CPVC fire sprinkler products provide unique advantages over traditional metal fire sprinkler systems through superior hydraulics, ease of installation, handling, and quicker assembly using readily available and less expensive tools. These products are also based on technology with a continuous and proven service history of more than forty (40) years.

Pressure Rating

Viking BlazeMaster® fittings of nominal sizes 3/4" – 3" (20 – 80 mm) are rated for continuous service of 175 psi (1270 kPa) at 150°F (65°C).

Approvals

Viking BlazeMaster® fittings for fire sprinkler systems

- Listed by Underwriters Laboratories (UL) for the United States and Canada under Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings - VIWT and VIWT7.EX15419
- FM Global approved for FM Global Group insured properties - Class 1635-Plastic Pipe & Ftngs AS Sys
- Meets approval and listing requirements of NFPA 13, 13D, and 13R
- Red Book listed by the Loss Prevention Safety Board (LPCB) under automatic sprinkler, water spray and deluge systems - Certificate 1558a to LPS 1260-2.2
- CPVC fittings and Brastic® sprinkler adapters are NSF International listed to NSF/ANSI-61 (health effects) and NSF/ANSI-372 (Lead Free*) for use in potable water applications

Nibco ***BlazeMaster***® fittings for fire sprinkler systems

- Listed by Underwriters Laboratories (UL) for the United States and Canada under Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings - VIWT and VIWT7.EX6309
- Red Book listed by the Loss Prevention Safety Board (LPCB) under automatic sprinkler, water spray and deluge systems - Certificate 878a to LPS 1260-2.2

c UL us LISTED
CPVC FIRE SPRINKLER FITTING 7TA2

NSF

FM APPROVED

LPCB

Use with other Manufacturers' Pipes, Fittings, & Solvent Cements

Viking BlazeMaster® CPVC fire sprinkler products are listed by UL to standard 1821. They are also approved by FM to standard 1635. These standards require rigorous testing to ensure the products will function as a component of the assembled fire protection system. For fire protection CPVC pipe the current UL standard is 1821 and FM standard 1635. Viking warrants each Viking BlazeMaster® fitting installed in accordance with local code and regulations with UL listed and/or FM approved CPVC pipe and fittings in compliance with the UL & FM standards. A current list of compatible UL and ULC listed CPVC manufacturers are: Viking (pipe), Harvel (pipe), TYCO Fire Products (pipe & fittings), IPEX (pipe & fittings) and Spears (pipe & fittings).

NOTICE: While Viking BlazeMaster® CPVC fire sprinkler products are UL listed for use in combination with other listed manufacturers' products, specific application approvals may not be the same among manufacturers. It is the installer's responsibility to verify suitability of products used in combination according to each manufacturer's installation instructions. Contact Viking if you have questions on any application not addressed in this manual.

Engineering Data – Product Specifications

Viking BlazeMaster® CPVC fire sprinkler products are made for use with listed CPVC fire sprinkler pipe produced in SDR 13.5 dimensions, as specified in ASTM F442.

Viking BlazeMaster® CPVC fire sprinkler fittings are produced in schedule 40 dimensions for sizes 3/4 inch (20 mm) through 1-1/4 inch (32 mm) in accordance with ASTM F438 and schedule 80 dimensions for sizes 1-1/2 inch (40 mm) through 3 inch (80 mm) in accordance with ASTM F439. These products are cULus listed, and FM Approved for a rated working pressure of 175 psi (1200 kPa) at 150°F (65°C) for sprinkler service.

Installation Instructions

For complete installation instructions refer to the Viking "Installation and Design Manual" on

www.vikinggroupinc.com.

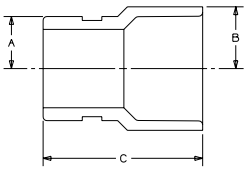
*Weighted average lead content <0.25%.

BlazeMaster® Fire Protection Fittings – STANDARD

ADAPTERS

Grooved Coupling Adapters (G x S)

V5001-G

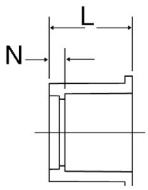


Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimensions						Joint
					A		B		C		
	IN.	mm	lb.	kg	IN.	mm	IN.	mm	IN.	mm	
V5001-G	1-1/4	33	0.17	0.08	0.83	21	1.04	26	2.98	76	GXS
V5001-G	1-1/2	40	0.2	0.09	0.95	24	1.17	30	3.15	80	GXS
V5001-G	2	50	0.3	0.14	1.18	30	1.43	36	3.37	86	GXS
V5001-G	2-1/2	65	0.52	0.24	1.43	36	1.74	44	3.66	93	GXS
V5001-G	--	65	0.52	0.24	1.43	36	1.74	44	3.66	93	GXS
V5001-G	3	75	0.72	0.33	3.5	89	--	--	--	--	GXS

BUSHINGS

Bushings

V5018



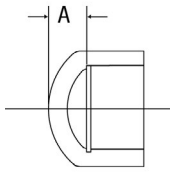
Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimensions				Joint
					L		N		
	IN.	mm	lb.	kg	IN.	mm	IN.	mm	
V5018	1x3/4	25x19	0.04	0.02	1.28	33	0.29	7	SPGXS
V5018	1-1/4x1	31x25	0.08	0.04	1.41	36	0.29	7	SPGXS
V5018	1-1/4x3/4	31x19	0.10	0.05	1.41	36	0.41	10	SPGXS
V5018	1-1/2x1-1/4	40x31	0.07	0.03	1.54	39	0.27	7	SPGXS
V5018	1-1/2x1	40x25	0.12	0.05	1.54	39	0.39	10	SPGXS
V5018	1-1/2x3/4	40x19	0.16	0.07	1.54	39	0.53	13	SPGXS
V5018	2x1-1/2	50x40	0.16	0.07	1.66	42	0.27	7	SPGXS
V5018	2x1-1/4	50x31	0.20	0.09	1.66	42	0.4	10	SPGXS
V5018	2x1	50x25	0.22	0.10	1.66	42	0.52	13	SPGXS
V5018	2x3/4	50x19	0.22	0.10	1.66	42	0.64	16	SPGXS
V5018	2-1/2x2	65x50	0.24	0.11	1.94	49	0.44	11	SPGXS
V5018	2-1/2x1-1/2	65x40	0.36	0.16	1.94	49	0.57	14	SPGXS
V5018	2-1/2x1-1/4	65x31	0.40	0.18	1.94	49	0.68	17	SPGXS
V5018	2-1/2x1	65x25	0.47	0.21	1.94	49	0.81	21	SPGXS
V5018	3x2-1/2	75x65	0.47	0.21	2.42	61	0.6	15	SPGXS
V5018	3x2	75x50	0.66	0.30	2.42	61	0.93	24	SPGXS
V5018	3x1-1/2	75x40	0.73	0.33	2.42	61	1.03	26	SPGXS

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

BlazeMaster® Fire Protection Fittings – STANDARD

CAPS

V5017

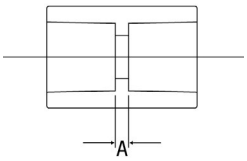


Caps

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimension A		Joint
	IN.	mm	lb.	kg	IN.	mm	
V5017	3/4"	19	0.04	0.02	0.31	8	S
V5017	1"	25	0.06	0.03	0.39	10	S
V5017	1-1/4"	31	0.22	0.1	0.56	14	S
V5017	1-1/2"	40	0.3	0.14	0.68	17	S
V5017	2"	50	0.42	0.19	0.68	17	S
V5017	2-1/2"	65	0.62	0.28	1.2	30	S
V5017	3"	75	0.96	0.44	1.26	32	S

COUPLINGS

V5001
V5001-R

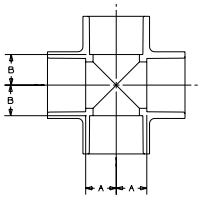


Couplings

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimension A		Joint
	IN.	mm	lb.	kg	IN.	mm	
V5001	3/4	19	0.06	0.03	0.12	3	SXS
V5001	1	25	0.08	0.04	0.09	2	SXS
V5001	1-1/4	31	0.12	0.05	0.08	2	SXS
V5001	1-1/2	40	0.23	0.1	0.27	7	SXS
V5001	2	50	0.44	0.2	0.28	7	SXS
V5001	2-1/2	65	0.72	0.33	0.2	5	SXS
V5001	3	75	1.1	0.5	0.22	6	SXS
V5001-R	1x3/4	25x19	0.08	0.04	0.29	7	SXS
V5001-R	1-1/4x1	31x25	0.12	0.05	0.35	9	SXS
V5001-R	1-1/2x1-1/4	40x31	0.38	0.17	0.51	13	SXS
V5001-R	1-1/2x1	40x25	0.36	0.16	0.67	17	SXS
V5001-R	1-1/2x3/4	40x19	0.34	0.15	0.8	20	SXS
V5001-R	2x1-1/2	50x40	0.49	0.22	0.51	13	SXS
V5001-R	2x1	50x25	0.48	0.22	0.75	19	SXS

CROSSES

V5035
V5035-R



Crosses

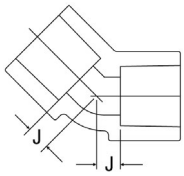
Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimensions				Joint
					L		N		
	IN.	mm	lb.	kg	IN.	mm	IN.	mm	
V5035	3/4	19	0.12	0.05	0.61	15	0.61	15	SXSXSXS
V5035	1	25	0.24	0.11	0.75	19	0.75	19	SXSXSXS
V5035	1-1/4	31	0.34	0.15	0.9	23	0.9	23	SXSXSXS
V5035	1-1/2	40	0.87	0.39	1.23	31	1.23	31	SXSXSXS
V5035	2	50	1.43	0.65	1.53	39	1.53	39	SXSXSXS
V5035	2-1/2	65	2.17	0.98	1.75	44	1.75	44	SXSXSXS
V5035	3	75	3.12	1.42	1.89	48	1.89	48	SXSXSXS
V5035-R	1x1x3/4x3/4	25x25x19x19	0.18	0.08	0.61	15	0.73	19	SXSXSXS

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

BlazeMaster® Fire Protection Fittings – STANDARD

ELBOWS

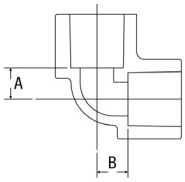
V5006



45° Elbows

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimension J		Joint
	IN.	mm	lb.	kg	IN.	mm	
V5006	3/4	19	0.06	0.03	0.32	8	SXS
V5006	1	25	0.12	0.05	0.39	10	SXS
V5006	1-1/4	31	0.18	0.08	0.48	12	SXS
V5006	1-1/2	40	0.36	0.16	0.47	12	SXS
V5006	2	50	0.54	0.24	0.58	15	SXS
V5006	2-1/2	65	1	0.45	0.65	17	SXS
V5006	3	75	1.28	0.57	0.76	19	SXS

V5007
V5007-R



90° Elbows

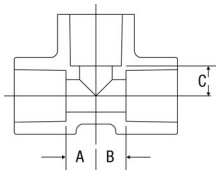
Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimensions				Joint
					L		N		
	IN.	mm	lb.	kg	IN.	mm	IN.	mm	
V5007	3/4	19	0.08	0.04	0.56	14	0.56	14	SXS
V5007	1	25	0.14	0.06	0.69	18	0.69	18	SXS
V5007	1-1/4	31	0.22	0.10	0.91	23	0.91	23	SXS
V5007	1-1/2	40	0.41	0.18	1.06	27	1.06	27	SXS
V5007	2	50	0.83	0.37	1.24	31	1.24	31	SXS
V5007	2-1/2	65	1.16	0.52	1.5	38	1.5	38	SXS
V5007	3	75	1.66	0.74	1.81	46	1.81	46	SXS
V5007-R	1x3/4	25x19	0.12	0.05	0.61	15	0.75	19	SXS

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

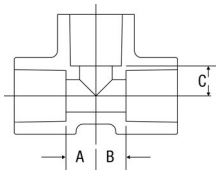
BlazeMaster® Fire Protection Fittings – STANDARD

TEES

V5011



V5011-R



Tees

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimensions						Joint
					A		B		C		
	IN.	mm	lb.	kg	IN.	mm	IN.	mm	IN.	mm	
V5011	3/4	19	0.1	0.04	0.57	14	0.57	14	0.57	14	SXSXS
V5011	1	25	0.17	0.08	0.69	18	0.69	18	0.69	18	SXSXS
V5011	1-1/4	33	0.28	0.12	0.89	23	0.89	23	0.89	23	SXSXS
V5011	1-1/2	40	0.58	0.26	1.05	27	1.05	27	1.05	27	SXSXS
V5011	2	50	0.82	0.37	1.25	32	1.25	32	1.25	32	SXSXS
V5011	2-1/2	65	1.4	0.62	1.53	39	1.53	39	1.53	39	SXSXS
V5011	3	75	2.14	0.96	1.84	47	1.84	47	1.84	47	SXSXS
V5011-R	3/4x3/4x1	19x19x25	0.14	0.06	0.7	18	0.7	18	0.73	19	SXSXS
V5011-R	1x1x3/4	25x25x19	0.16	0.07	0.61	15	0.61	15	0.94	24	SXSXS
V5011-R	1x3/4x1	25x19x25	0.2	0.09	0.76	19	0.99	25	0.78	20	SXSXS
V5011-R	1x3/4x3/4	25x19x19	0.16	0.07	0.6	15	0.87	22	0.77	20	SXSXS
V5011-R	1-1/4x1-1/4x1	33x33x25	0.24	0.11	0.73	19	0.73	19	0.89	23	SXSXS
V5011-R	1-1/4x1-1/4x3/4	33x33x19	0.2	0.09	0.6	15	0.6	15	0.89	23	SXSXS
V5011-R	1-1/4x1x1-1/4	33x25x33	0.28	0.12	0.88	22	1.03	26	0.87	22	SXSXS
V5011-R	1-1/4x1x1	33x25x25	0.24	0.11	0.71	18	0.9	23	0.89	23	SXSXS
V5011-R	1-1/4x1x3/4	33x25x19	0.2	0.09	0.61	15	0.76	19	0.89	23	SXSXS
V5011-R	1-1/4x1-1/4x1-1/2	33x33x45	0.44	0.2	1.01	26	1.01	26	0.88	22	SXSXS
V5011-R	1-1/2x1-1/2x1-1/4	45x45x33	0.46	0.21	0.89	23	0.89	23	1.04	26	SXSXS
V5011-R	1-1/2x1-1/2x1	40x40x25	0.54	0.24	0.77	20	0.77	20	0.96	24	SXSXS
V5011-R	1-1/2x1-1/2x3/4	40x40x19	0.5	0.22	0.67	17	0.67	17	1.04	26	SXSXS
V5011-R	1-1/2x1-1/4x1	40x33x25	0.4	0.18	0.72	18	0.91	23	1.01	26	SXSXS
V5011-R	1-1/2x1-1/4x3/4	40x33x19	0.36	0.16	0.6	15	0.78	20	1.02	26	SXSXS
V5011-R	1-1/2x1-1/2x2	40x40x50	0.66	0.29	1.3	33	1.3	33	1.14	29	SXSXS
V5011-R	2x2x1-1/2	50x50x40	0.86	0.38	1.06	27	1.06	27	1.37	35	SXSXS
V5011-R	2x2x1-1/4	50x50x33	0.67	0.3	1	25	1	25	1.28	33	SXSXS
V5011-R	2x2x1	50x50x25	0.72	0.32	0.8	20	0.8	20	1.25	32	SXSXS
V5011-R	2x2x3/4	50x50x19	0.68	0.3	0.7	18	0.7	18	1.25	32	SXSXS
V5011-R	2-1/2x2-1/2x2	65x65x50	1.32	0.59	1.26	32	1.26	32	1.53	39	SXSXS
V5011-R	2-1/2x2-1/2x1-1/2	65x65x40	1.21	0.54	1.06	27	1.06	27	1.53	39	SXSXS
V5011-R	2-1/2x2-1/2x1-1/4	65x65x33	1.12	0.5	0.91	23	0.91	23	1.53	39	SXSXS
V5011-R	2-1/2x2-1/2x1	65x65x25	1.05	0.47	0.74	19	0.74	19	1.53	39	SXSXS
V5011-R	3x3x2-1/2	75x75x65	1.71	0.76	1.53	39	1.53	39	1.84	47	SXSXS
V5011-R	3x3x2	75x75x50	1.91	0.85	1.26	32	1.26	32	1.84	47	SXSXS
V5011-R	3x3x1-1/2	75x75x40	1.39	0.62	1.06	27	1.06	27	1.82	46	SXSXS

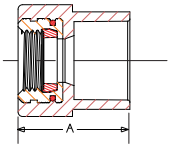
Note: All Viking reducing tees are molded to size, not fabricated.

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

BlazeMaster® Fire Protection Fittings – THREADED

INSTASEAL ADAPTERS

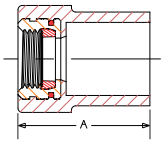
V5003-S-BG



Sprinkler Adapters with Metal Thread Insert and EPDM Rubber Seat

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimension A		Joint
	IN.	mm	lb.	kg	IN.	mm	
V5003-S-BG	3/4 X 1/2	19x13			1.50	38	C x FNPSH
V5003-S-BG	1 X 1/2	25x13			1.88	48	C x FNPSH

V5003-2-S-BG



Sprinkler Adapters with Metal Thread Insert and EPDM Rubber Seat

Univ. Fig. No.	Nominal Size		Approx. Wght.		Dimension A		Joint
	IN.	mm	lb.	kg	IN.	mm	
V5003-2-S-BG	3/4 X 1/2	19x13			1.50	38	FTG x FNPSH
V5003-2-S-BG	1 X 1/2	25x13			1.85	47	FTG x FNPSH

INSTASEAL ADAPTER INSTALLATION INSTRUCTIONS

NOTICE

InstaSeal adapters can only be used with sprinklers having a K-factor less than or equal to 5.8 (83.6 metric).

Pendent and Upright Sprinklers

1. Follow BlazeMaster one-step solvent cement instructions for socket or spigot fittings. Never complete a solvent cement joint with the sprinkler installed into the Instaseal fitting per NFPA 13 requirements. DO NOT OVER APPLY CEMENT WHERE IT COULD OVER SPILL TO RUBBER SEAT. Installer must be properly trained and certified for construction and assembly of BlazeMaster® CPVC piping systems.

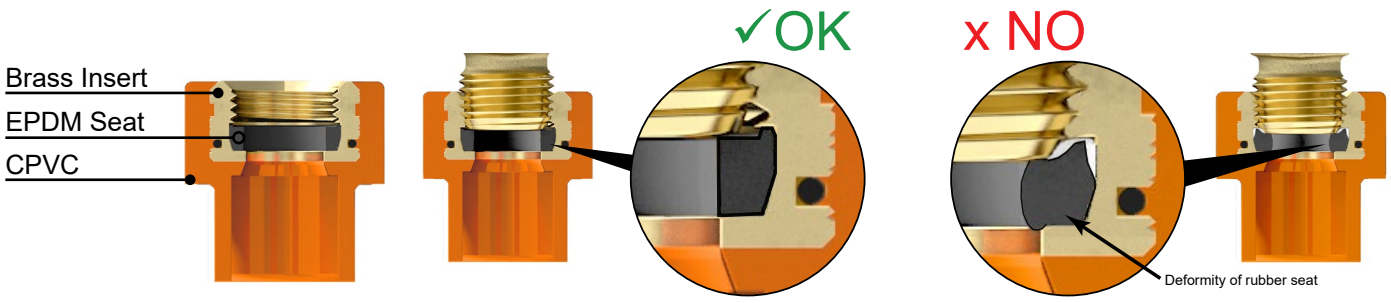


Figure 1: Sprinkler Contact on Rubber Seat

2. After proper cure time of cement, make sure sealing surface of rubber is clean and free of any nicks or scratches on sprinkler seal end surface. Use only the thumb and forefinger (finger strength) to start the sprinkler in the lead thread of the Instaseal sprinkler adapter continuing until sprinkler contacts rubber seat. The rubber seat should not be compressed during this step. (Note: also include accessories as supplied by sprinkler manufacturer, such as adjustable cups and escutcheons, on to sprinkler prior to installing sprinkler into adapter fitting.)

3. Using sprinkler manufacturer's recommended wrench, turn sprinkler clockwise (CW) a minimum of one half (½) turn for seal. If sprinkler frame arms require alignment with pipe, continue to rotate CW additional to align, up to the maximum of 1¼ turns from initial seat to sprinkler contact as stated and as shown in Figure 1.

NOTICE

Do not tighten more than 1¼ turns from initial sprinkler touch to rubber seat. Over-tightening will cause the rubber seat to protrude into the waterway and reduce the K-factor which impedes flow. Additionally, permaent damage to the rubber seat will occur leading to failure and leakage. Refer to Figure 1.

Tightening torque from touch of sprinkler to seat for proper installation of sprinkler		
½ turn CW	14-19 IN-LBS	Minimum
¾ turn CW	24-30 IN-LBS	Recommended
1¼ turns CW	50-60 IN-LBS	Maximum
NOTE: Torque values are shown as "Inch-pounds" and not "foot-pounds".		

Horizontal Sidewall Sprinklers

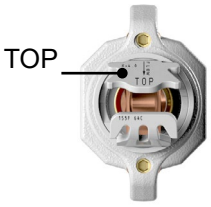
Overview:

Horizontal sidewall sprinklers require a specific position including the deflector in the top position and horizontal to the ceiling. Due to the random starting point of threads on both the sprinklers and the adapter fittings it is required that special attention be given to installation of the horizontal sidewall sprinklers. During the initial assembly (Step 2), note the deflector position. If deflector is greater than ½ turn from final position in proper horizontal position, rotate CW only enough to position sprinkler deflector in proper Horizontal position. If deflector position is less than ½ turn to proper position then rotate CW one full turn plus to proper position, maximum 1¼ turns from sprinkler touch of seat. Use proper manufacturer's sprinkler wrench.

1. Solvent Cement Joining
   Follow BlazeMaster one-step solvent cement instructions for socket or spigot fittings. Never complete a solvent cement joint with the sprinkler installed into Instaseal fitting per NFPA 13 requirements. DO NOT OVER APPLY CEMENT WHERE IT COULD OVER SPILL TO RUBBER SEAT. Installer must be properly trained and certified for construction and assembly of BlazeMaster Piping system.
2. After proper cure time of cement, make sure sealing surface of rubber is clean and free of any nicks or scratches on sprinkler seal end surface. Use only the thumb and forefinger (finger strength) to start the sprinkler in the lead thread of the Instaseal sprinkler adapter continuing until sprinkler contacts rubber seat. The rubber seat should not be compressed during this step. (Note: also include accessories as supplied by sprinkler manufacturer, such as adjustable cups and escutcheons, on to sprinkler prior to installing sprinkler into adapter fitting.)
3. Determine Sprinkler Position

   Take note of the position of the sprinkler deflector in relation to the final required position. Determine whether greater or less than one quarter (½) turn is required to reach the required final position.

   Turn the sprinkler CW with proper sprinkler wrench as required by sprinkler manufacturer. Rotate only to the position where the sprinkler deflector is in the required final installed position.



Required Final Position
See the manufacturer's installation instructions for proper location and distance from ceiling.

3A:

Seal and position sprinkler when the top of the delfecltor is in the 12 O'clock position through the 9 O'clock position.

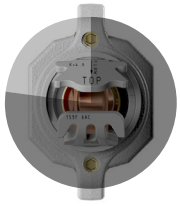


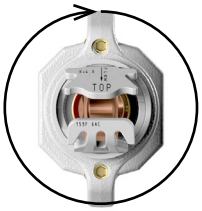
Fig1: HSW Final 12 O'clock Position

NOTICE

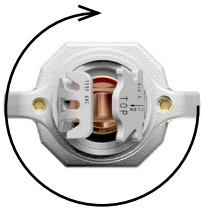
Do not tighten more than 1¼ turns from initial sprinkler touch to rubber seat. Over-tightening will damage the rubber seat causing long term deformation which will lead to failure and leakage.

NOTE: For standard horizontal sidewall sprinklers the deflector position holds true as described above.

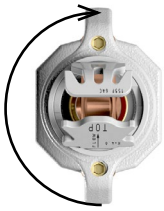
Turn the sprinkler clockwise with the proper sprinkler wrench as required by sprinkler manufacturer. Rotate one full turn plus positioning sprinkler deflector into final required position



Rotate CW 1 full turn



Rotate CW ¾ turn



Rotate CW ½ turn

Position of the HSW sprinkler when finger tight and sprinkler is just touching the EPDM rubber seat. Seat the sprinkler and position the deflector by rotating clockwise as indicated above from the position of sprinkler at finger tight touch of EPDM rubber seat initial installation.

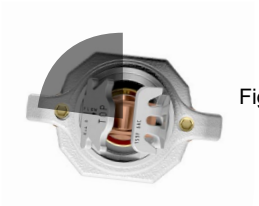


Fig2: HSW at 12 O'clock through 9 O'clock position.

NOTICE

Do not tighten more than 1¼ turns from initial sprinkler touch to rubber seat. Over-tightening will damage the rubber seat causing long term deformation which will lead to failure and leakage.

3B:

Seal and position sprinkler when the top of the deflector is between the 9 o'clock position and the 12 o'clock position.

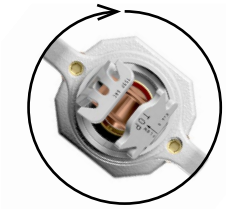


Fig3: HSW at greater than 9 O'clock and less than 12 O'clock position.

Rotate CW 1 full turn plus
to position the top at the 12
O'clock position.

Position of the HSW sprinkler when finger tight and sprinkler is just touching the EPDM rubber seat. Seat the sprinkler and position the deflector by rotating clockwise as indicated above from the position of sprinkler at finger tight touch of EPDM rubber seat initial installation.

Review – Do's & Don'ts

Do's

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

Don'ts

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

SECTION B

Hangers and Sway Bracing

TOLCO™ Fig. 4L - Longitudinal "In-Line" Sway Brace Attachment

Size Range: 2" (50mm) through 8" (200mm) IPS.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance.

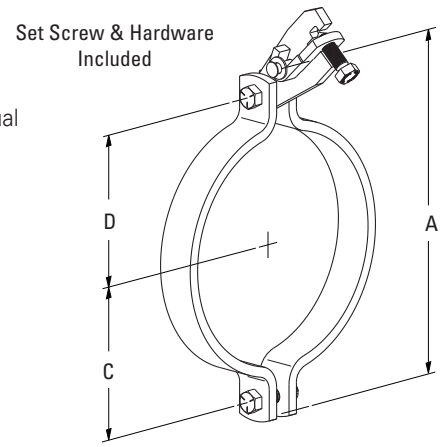
Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)** 2 1/2" (65mm) through 8" (200mm) pipe. Approved by Factory Mutual Engineering **(FM)**, 2 1/2" (65mm) through 8" (200mm) pipe.

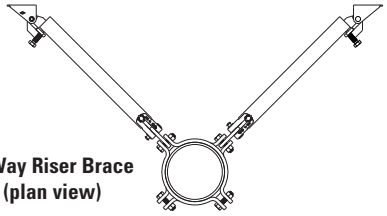
Installation Instructions: Fig. 4L is the "braced pipe" attachment component of a longitudinal sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO structural attachment component to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

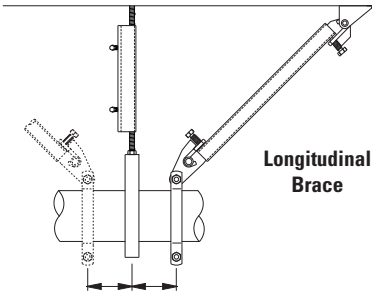
To Install: Place the Fig. 4L over the pipe to be braced and tighten bolts. Then engage "bracing pipe" into jaw opening and tighten set screw until head snaps off. Jaw attachment can pivot for adjustment to proper brace angle.

Finish: Plain. Contact customer service for alternative finishes and materials.

Order By: Figure number, pipe size and finish.







Part No.	Pipe Size in.	(mm)	A in.	(mm)	C in.	(mm)	D in.	(mm)	Bolt Size	Max. Horizontal Design Load (cULuc) lbs.	(kN)	Approx. Wt./100 lbs.	(kg)
4L-2 1/2	2 1/2"	(65)	6 7/16"	(163.5)	2 1/2"	(63.5)	2 3/4"	(69.8)	1/2"-13	2015	(8.96)	253	(114.7)
4L-3	3"	(80)	7"	(177.8)	2 3/4"	(69.8)	3 1/16"	(77.8)	1/2"-13	2015	(8.96)	268	(121.5)
4L-4	4"	(100)	8 1/2"	(215.9)	3 3/8"	(85.7)	3 11/16"	(93.7)	1/2"-13	2015	(8.96)	348	(157.8)
4L-5	5"	(125)	9 3/4"	(247.6)	3 7/8"	(98.4)	4 3/8"	(111.1)	1/2"-13	2015	(8.96)	380	(172.3)
4L-6	6"	(150)	11 1/2"	(292.1)	5"	(127.0)	5 1/8"	(130.2)	1/2"-13	2015	(8.96)	640	(290.3)
4L-8	8"	(200)	13 1/4"	(336.5)	5 5/8"	(142.8)	5 5/8"	(142.8)	1/2"-13	2015	(8.96)	728	(330.2)

Part No.	Pipe Size in.	(mm)	Max. Horizontal Design Load (cULuc) lbs./(kN)	Max. Horizontal Design Load (FM) 30-44° lbs./(kN)	45-59° lbs./(kN	60°-74° lbs./(kN)	75°-90° lbs./(kN)
4L-2 1/2	2 1/2"	(65)	2015 (8.96)	1030 (4.58)	1180 (5.24)	1420 (6.31)	1590 (7.07)
4L-3	3"	(80)	2015 (8.96)	1030 (4.58)	1180 (5.24)	1420 (6.31)	1590 (7.07)
4L-4	4"	(100)	2015 (8.96)	530 (2.36)	730 (3.25)	890 (3.96)	990 (4.40)
4L-5	5"	(125)	2015 (8.96)	530 (2.36)	730 (3.25)	890 (3.96)	990 (4.40)
4L-6	6"	(150)	2015 (8.96)	530 (2.36)	730 (3.25)	890 (3.96)	990 (4.40)
4L-8	8"	(200)	2015 (8.96)	490 (2.18)	680 (3.02)	830 (3.69)	930 (4.13)

* The loads listed are axial loads on the brace. The horizontal load capacity, H, of the brace is: H = F x sin ?, where ? the installation angle measured from the vertical. FM approved when used with 1", 1 1/4", 1 1/2" or 2" Sch. 40 brace pipe.

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Fig. 200 - "Trimline" Adjustable Band Hanger (B-Line Fig. B3170NF)

~~Fig. 200F - "Trimline" Adjustable Band Hanger with Felt Lining (B-Line Fig. B3170NFF)~~

~~Fig. 200C - "Trimline" Adjustable Band Hanger with Plastic Coated (B-Line Fig. B3170NFC)~~

~~Fig. 200S - "Trimline" Adjustable Band Hanger with Non-Captured Nut~~

Size Range:
Fig. 200 - 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel, Pre-Galvanized to G90 specifications

Function: For fire sprinkler and other general piping purposes. Knurled swivel nut design permits hanger adjustment after installation.

Features:

- (1/2" (15mm) thru 2" (50mm)) Flared edges ease installation for all pipe types and protect CPVC plastic pipe from abrasion. Captured design keeps adjusting nut from separating with hanger. Hanger is easily installed around pipe.
  For hanger with non-captured nut order Fig. 200S.
- (2 1/2" (65mm) thru 8" (200mm)) Spring tension on nut holds it securely in hanger before installation. Adjusting nut is easily removed.

Approvals: Underwriters Laboratories listed (1/2" (15mm) thru 8" (200mm)) in the USA **(UL)** and Canada **(cUL)** for steel and CPVC plastic pipe and Factory Mutual Engineering Approved **(FM)** (3/4" (20mm) thru 8" (200mm)). Conforms to Federal Specifications WW-H-171E & A-A-1192A, Type 10 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 10.

Maximum Temperature: 650°F (343°C)

Finish: Pre-Galvanized. Stainless Steel materials will be supplied with (2) hex nuts in place of a knurl nut.

Order By: Figure number and pipe size

Designed to meet or exceed requirements of FM DS 2-0.

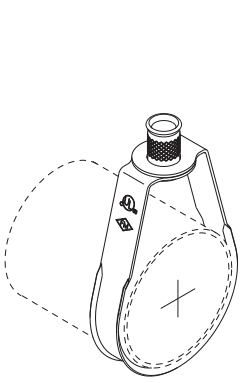


Fig. 200-1 to 200-2

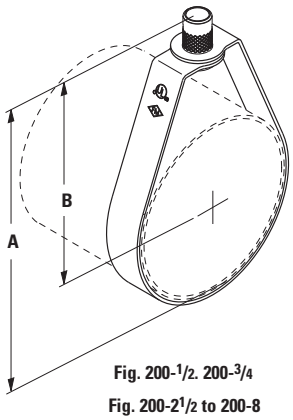


Fig. 200-1/2. 200-3/4
Fig. 200-2 1/2 to 200-8

Fig. 200C

Fig. 200F

Fig. 200

Fig. 200S

Part No.	Pipe Size in.	(mm)	Rod Size	A in.	(mm)	B in.	(mm)	Approx. Wt./100 lbs.	(kg)
200-1/2	1/2"	(15)	3/8"-16	3 1/8"	(79.4)	2 5/8"	(66.7)	11	(5.0)
200-3/4	3/4"	(20)	3/8"-16	3 1/8"	(79.4)	2 1/2"	(63.5)	11	(5.0)
200-1	1"	(25)	3/8"-16	3 3/8"	(85.7)	2 5/8"	(66.7)	12	(5.5)
200-1 1/4	1 1/4"	(32)	3/8"-16	3 3/4"	(94.0)	2 7/8"	(73.0)	13	(5.9)
200-1 1/2	1 1/2"	(40)	3/8"-16	3 7/8"	(98.4)	2 7/8"	(73.0)	14	(6.4)
200-2	2"	(50)	3/8"-16	4 1/2"	(114.3)	3"	(76.3)	15	(6.9)
200-2 1/2	2 1/2"	(65)	3/8"-16	5 5/8"	(142.9)	4 1/8"	(104.7)	27	(12.3)
200-3	3"	(75)	3/8"-16	5 7/8"	(149.1)	4"	(101.6)	29	(13.3)
200-3 1/2	3 1/2"	(90)	3/8"-16	7 3/8"	(187.3)	5 1/4"	(133.3)	34	(15.6)
200-4	4"	(100)	3/8"-16	7 3/8"	(187.3)	5"	(127.0)	35	(16.0)
200-5	5"	(125)	1/2"-13	9 1/8"	(231.8)	6 1/4"	(158.7)	66	(30.2)
200-6	6"	(150)	1/2"-13	10 1/8"	(257.2)	6 3/4"	(171.4)	73	(33.4)
200-8	8"	(200)	1/2"-13	13 1/8"	(333.4)	8 3/4"	(222.2)	136	(62.3)

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO™ Fig. 1001 - Sway Brace Attachment

Component of State of California OSHPD Approved Seismic Restraints System

Size Range: Pipe size to be braced: 1" (25mm) thru 8" (200mm) IPS.
* Pipe size used for bracing: 1" (25mm) and 1¼" (32mm) Schedule 40 IPS.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance.
The pipe attachment component of a sway brace system:
Fig. 1001 is used in conjunction with a Fig. 900 Series fitting and joined together with bracing pipe per NFPA 13, forming a complete sway brace assembly.

Features: Can be used to brace schedules 7 through 40 IPS. Field adjustable, making critical pre-engineering of bracing pipe length unnecessary. Unique design requires no threading of bracing pipe. Can be used as a component of a four-way riser brace. Comes assembled and ready for installation. Fig. 1001 has built-in visual verification of correct installation. See installation note below.

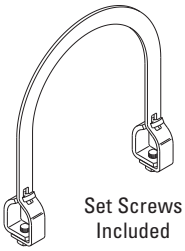
Installation Note: Position Fig. 1001 over the pipe to be braced and tighten two hex head cone point set screws until heads bottom out. A minimum of 1" (25mm) pipe extension is recommended. Brace pipe can be installed on top or bottom of pipe to be braced.

Approvals: Underwriters Laboratories Listed in the USA and Canada **(cULus)**. Approved by Factory Mutual Engineering **(FM)**. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines, OPA-0300-10.

Finish: Plain or Electro-Galvanized. Contact customer service for alternative finishes and materials.

Order By: Indicate pipe size to be braced followed by pipe size used for bracing, figure number and finish.

Important Note: Fig. 1001 is precision manufactured to perform its function as a critical component of a complete bracing assembly. To ensure performance, the UL Listing requires that Fig. 1001 must be used only with other TOLCO bracing products.



Pipe Size		Max. Horizontal Design Load (UL) - Lbs. For Brace Pipe Size 1" / 1¼"		
		Sch. 7	Sch. 10	Sch. 40
in.	(mm)	1" / 1¼"	1" / 1¼"	1" / 1¼"
1"	(25)	-- / --	1000 / 1000	1000 / 1000
1¼"	(32)	1000 / 1000	1000 / 1000	1000 / 1000
1½"	(40)	1000 / 1000	1500 / 1500	1500 / 1500
2"	(50)	1000 / 1000	2015 / 2015	2015 / 2015
2½"	(65)	1600 / 1600	2015 / 2765	2015 / 2765
3"	(80)	1600 / 1600	2015 / 2765	2015 / 2765
4"	(100)	1600 / 1600	2015 / 2765	2015 / 2765
6"	(150)	1600 / 1600	2015 / 2765	2015 / 2765
8"	(200)	1600 / 1600	2015 / 2765	2015 / 2765

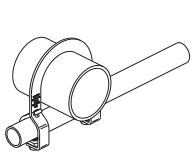
Pipe Size		Part Number & Approx. Wt./100						Max. Horizontal Design Load (FM) For Sch. 7, Sch. 10, & Sch. 40 Pipe [1,2,3]							
		1" (24mm) Brace Pipe			1¼" (32mm) Brace Pipe			30°-44°		45°-59°		60°-74°		75°-90°	
in.	(mm)		Lbs.	(kg)		Lbs.	(kg)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
1"	(25)	**1001-1 X 1**	100.0	(45.3)	**1001-1 X 1¼**	118.0	(53.5)	1800	(8.00)	2550	(11.34)	3120	(13.88)	3490	(25.52)
1¼"	(32)	**1001-1¼ X 1**	100.0	(45.3)	**1001-1¼ X 1¼**	114.0	(51,7)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
1½"	(40)	**1001-1½ X 1**	100.0	(45.3)	**1001-1½ X 1¼**	115.0	(52.1)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
2"	(50)	**1001-2 X 1**	108.0	(49.0)	**1001-2 X 1¼**	121.0	(54.9)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
2½"	(65)	**1001-2½ X 1**	138.6	(62.8)	**1001-2½ X 1¼**	160.4	(72.7)	800	(3.56)	1130	(5.02)	1380	(6.14)	1540	(6.85)
3"	(80)	**1001-3 X 1**	147.2	(66.7)	**1001-3 X 1¼**	168.7	(76,5)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.29)
4"	(100)	**1001-4 X 1**	160.9	(73.0)	**1001-4 X 1¼**	182.4	(82.7)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.29)
6"	(150)	**1001-6 X 1**	190.0	(86.2)	**1001-6 X 1¼**	211.4	(95.9)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)
8"	(200)	**1001-8 X 1**	217.4	(98.6)	**1001-8 X 1¼**	238.8	(108.3)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)

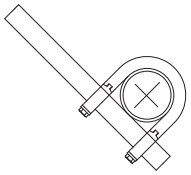
[1] FM Approved when used with 1 or 1¼ inch NPS Schedule 40 GB/T 3091,EN 10255H, or JIS G3451 steel pipe as the brace member.

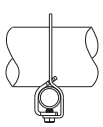
[2] Load rating for LW above refers to FM Approved Lightwall Pipe commonly referred to as "Schedule 7". These ratings may also be applied when EN 10220 and GB/T 8163 steel pipe.

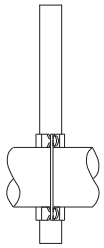
[3] Load rating for Schedule 10 above may be applied to GB/T 3092,EN 10255M and H, or JIS G3454, FM Approved Thinwall, or Schedule 40 steel pipes.

Note: See UL load ratings in UL Listed Design Load chart shown under drawing.









All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO™ Fig. 2002 - Sway Brace Attachment

Component of State of California OSHPD Approved Seismic Restraints System

Size Range: Pipe size to be braced: 2½" (65mm) thru 8" (200mm) all steel schedules, copper, plastic, FRP, cast iron and ductile iron. Consult factory when bracing other than steel. The Fig. 2002 accepts brace pipes sizes 1½" (40mm) and 2" (50mm) steel schedule 10 through schedule 40.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system: Fig. 2002 is used in conjunction with a TOLCO 900 Series sway brace attachments and joined together with bracing pipe. Install per NFPA 13 and/or TOLCO State of California OSHPD Approved Seismic Restrain Manual.

Features: Unique design will not damage thin wall, plastic, copper or ductile iron pipe. Easy verification of proper installation by tightening bolts until ears touch.

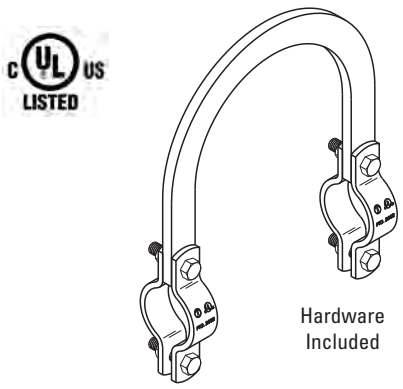
Installation: Place Fig. 2002 over pipe to be braced. Slide bracing pipe through attachment and tighten hex nuts until ears touch.

Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)**. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

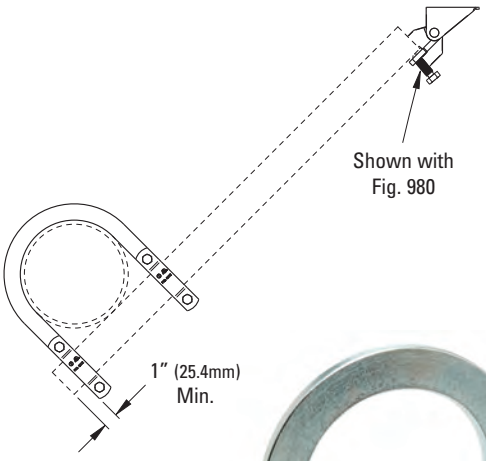
Finish: Plain. Contact customer service for alternative finishes and materials.

Order By: Figure number, pipe size to be braced, pipe size used for bracing (1½" (40mm) or 2" (50mm)) and finish.

Important Note: Fig. 2002 is precision manufactured to perform its function as a critical component of a complete bracing assembly. To ensure performance, the UL Listing requires that the Fig. 2002 must be used only with other TOLCO bracing products.

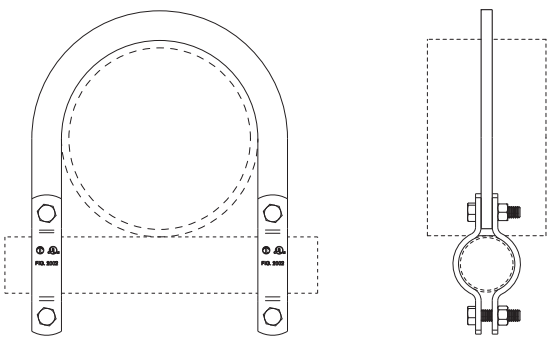


UL Listed Design Load
2015 lbs. (8.96kN)



Pipe Size in.	(mm)	Part Number & Approx. Wt./100 1½" (32mm) Brace Pipe	Lbs.	(kg)	2" (50mm) Brace Pipe	Lbs.	(kg)	Max. Horizontal Design Load (UL) Lbs.	(kg)
2½"	(65)	**2002-2½ X 1½**	224.9	(102.0)	**2002-2½ X 2**	283.3	(128.6)	2015	(8.96)
3"	(80)	**2002-3 X 1½**	241.0	(109.3)	**2002-3 X 2**	299.4	(135.8)	2015	(8.96)
4"	(100)	**2002-4 X 1½**	268.4	(121.7)	**2002-4 X 2**	326.8	(148.2)	2015	(8.96)
6"	(150)	**2002-6 X 1½**	326.6	(148.1)	**2002-6 X 2**	385.0	(174.6)	2015	(8.96)
8"	(200)	**2002-8 X 1½**	381.3	(172.9)	**2002-8 X 2**	439.7	(199.4)	2015	(8.96)

** See load ratings in UL Listed Design Load chart.



All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO™ Fig. 24 - Hanger for CPVC Plastic Pipe & IPS Steel Pipe Double Fastener Strap Side Mounted (B-Line B3183)

Size Range: 3/4" (20mm) thru 2" (50mm) CPVC pipe

Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger to support CPVC piping used in automatic fire sprinkler systems. Can be installed on the top or on the bottom of a beam.

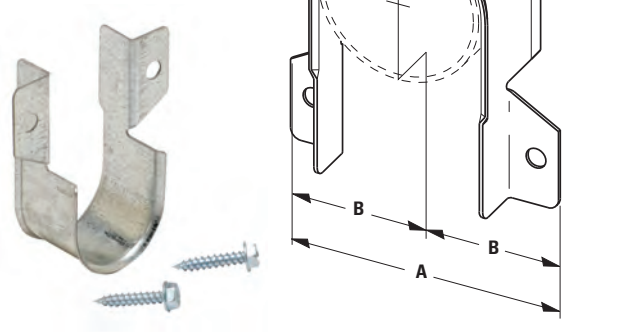
Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)** to support fire sprinkler piping. May be installed in wood using fasteners supplied with product, or into minimum 20 gauge (0.912mm) steel using (2) 1/4" x 1" tek type screws. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Features: Fig. 24 incorporates features which protect the pipe and ease installation. The flared edge design protects the CPVC pipe from any rough surface. Easily attaches to the building structure using the two UL Listed hex head self threading screws* furnished with the product. It is recommended that rechargeable electric drills fitted with a hex socket attachment be used as installation tools. No impact tools (such as a hammer) are allowed. Damage has been known to result from installations using impact type tools. No pre-drilling of a pilot hole in wood is required.

Finish: Pre-Galvanized

Order By: Figure number and pipe size

* Hardened hex head self threading screw is furnished with the product and is the minimum fastener size acceptable.



Part No.	CPVC Pipe Size in.	(mm)	A in.	(mm)	B in.	(mm)	C in.	(mm)	Max. Hanger Spacing Ft.	(m)	Fastener Hex Head Size in.	(mm)	Approx. Wt./100 Lbs.	(kg)
24-3/4	3/4"	(20)	2 5/16"	(58.7)	1 5/32"	(27.8)	1 3/16"	(30.2)	5 1/2	(1.67)	5/16"	(7.9)	9	(4.1)
24-1	1"	(25)	2 5/8"	(66.7)	1 5/16"	(33.3)	1 3/16"	(30.2)	6	(1.83)	5/16"	(7.9)	9	(4.1)
24-1 1/4	1 1/4"	(32)	3"	(76.2)	1 1/2"	(38.1)	1 3/16"	(30.2)	6 1/2	(1.98)	5/16"	(7.9)	11	(5.0)
24-1 1/2	1 1/2"	(40)	3 1/4"	(82.5)	1 5/8"	(42.3)	1 3/16"	(30.2)	7	(2.13)	5/16"	(7.9)	12	(5.4)
24-2	2"	(50)	3 11/16"	(93.7)	1 27/32"	(43.6)	1 3/16"	(30.2)	8	(2.44)	5/16"	(7.9)	15	(6.8)

Reduced Spacing For IPS Pipe

Part No.	IPS Pipe Size in.	(mm)	Max. Hanger Spacing Ft.	(m)
24-3/4	3/4"	(20)	1'-9"	(1.67)
24-1	1"	(25)	1'-10"	(1.83)
24-1 1/4	1 1/4"	(32)	2-4"	(1.98)
24-1 1/2	1 1/2"	(40)	2-9"	(2.13)
24-2	2"	(50)	3-6"	(2.44)

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO™ Fig. 28M - Offset Hanger & Restrainer for CPVC Plastic Pipe and IPS Steel Pipe

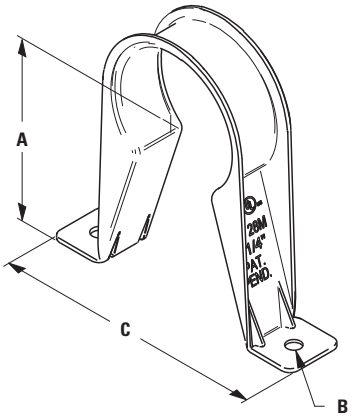
Size Range: 3/4" (20mm) thru 2" (32mm)

Material: Steel, Pre-Galvanized

Function: Designed to be used as a hanger and restrainer for CPVC piping or steel piping where the "stand-off" design will ease installation by eliminating the need for wood blocking.

Features:

- Flared edge design protects CPVC pipe from any rough or abrasive surfaces
- Unique snap-on design holds pipe firmly in place and allows retrofit type of installation
- The "Stand-Off" design eliminates the need for wood block extension
- Can be installed on horizontal or vertical piping regardless of mounting surface orientation
- Attaches easily to wood structure with two hex head self-threading screws furnished with product
- Installs easily using rechargeable electrical driver with 5/16" (7.9mm) extension socket eliminating impact tool damage to pipe
- Attaches easily to steel, minimum 18 gauge (1.024mm) with (2) 1/4" x 1" tek type self drilling tapping screws
- **(cULus)** Listed as a hanger and a restrainer for fire sprinkler piping

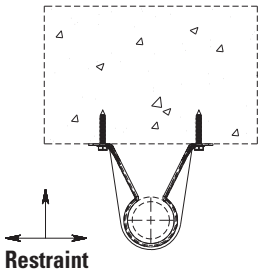


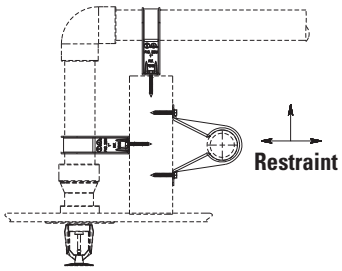
Installation Note: When installed in wood structural members and threads from the #10 x 1" screws are exposed, use Fig. 27B (page 36) speed nut to secure

Approvals: Underwriters Laboratory Listed in the USA **(UL)** and Canada **(cUL)** to support automatic fire sprinkler systems.
May be installed into wood using fasteners screws.
Meets and exceeds the requirements of NFPA 13, 13R and 13D. Fig. 28M satisfies the UL vertical restraint requirements where needed.

Order By: Figure number and pipe size

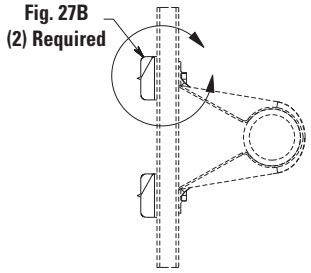
Patent #7,744,042





Part No.	CPVC Pipe Size in.	(mm)	A in.	(mm)	Hole Dia. B in.	(mm)	C in.	(mm)	Max Spacing* in.	(mm)	Approx. Wt./100 lbs.	(kg)
28M-3/4	3/4"	(20)	2"	(50.8)	3/16"	(4.8)	3 5/16"	(84.1)	5'-6"	(1676)	9	(4.1)
28M-1	1"	(25)	2 1/8"	(54.0)	3/16"	(4.8)	3 1/2"	(88.9)	6'-0"	(1829)	12	(5.4)
28M-1 1/4	1 1/4"	(32)	2 5/16"	(58.7)	3/16"	(4.8)	3 1/2"	(88.9)	6'-6"	(1981)	13	(5.9)
28M-1 1/2	1 1/2"	(49)	2 7/16"	(61.9)	3/16"	(4.8)	3 7/8"	(98.4)	7'-0"	(2133)	14	(6.3)
28M-2	2"	(50)	2 5/8"	(66.7)	3/16"	(4.8)	4 7/16"	(112.7)	8'-0"	(2438)	15	(6.8)

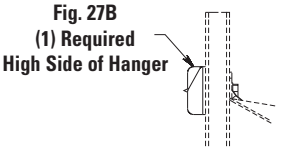
* Required per NFPA 13 for CPVC plastic pipe



Hanger and Restraint Application

Reduced Spacing For IPS Pipe

Part No.	IPS Pipe Size in.	(mm)	Max. Hanger Spacing Ft.	(m)
28-3/4	3/4"	(20)	1'-9"	(1.67)
28-1	1"	(25)	1'-10"	(1.83)
28-1 1/4	1 1/4"	(32)	2-4"	(1.98)
28-1 1/2	1 1/2"	(40)	2-9"	(2.13)
28-2	2"	(50)	3-6"	(2.44)



Detail A Hanger Application

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO™ Fig. 29 - Double Offset Hanger & Restrainer for CPVC Plastic Pipe & IPS Steel Pipe

Size Range: Available in 3/4" (20mm) and 1" (25mm) pipe sizes

Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger and restrainer for CPVC, plastic fire sprinkler pipe. Provides double offset 1 1/2" (20mm) x 1 1/2" (20mm) from mounting surface. This design will ease installation by eliminating the need for wood block extension and allow retro-fit attachment of hanger to sprinkler pipe.

Features:

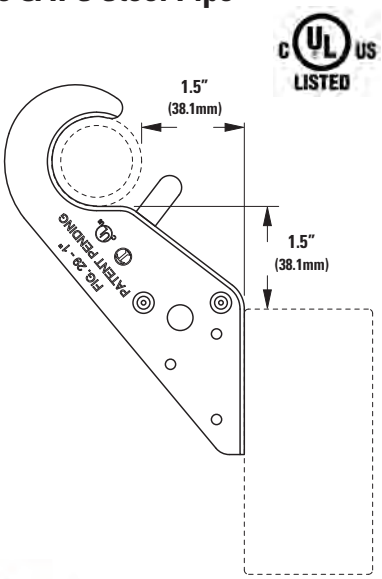
- Thumb tab provides protection to restrain pipe in rough job site conditions. Tab is not required to be bent for listed installation.
- Offset edge eliminates abrasion.
- Attaches easily to wood structure with two special #10 x 1" hex head self-threading screws furnished with product.
- Can be used as a single offset hanger by aligning "dimples" with top of mounting surface and utilizing two fasteners in two of the three holes provided.

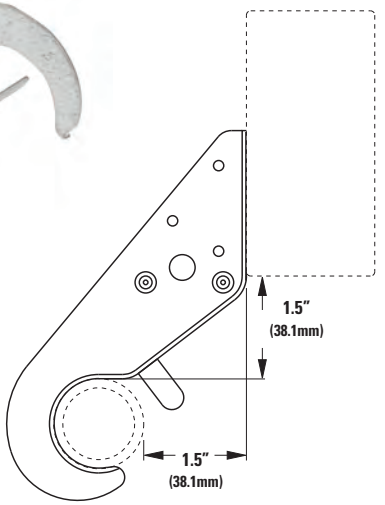
Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)** as a hanger and restrainer to support fire sprinkler systems. Meets and exceeds requirements of NFPA 13, 13R and 13D.

Finish: Pre-Galvanized

Order By: Figure number and pipe size.

Patent Pending

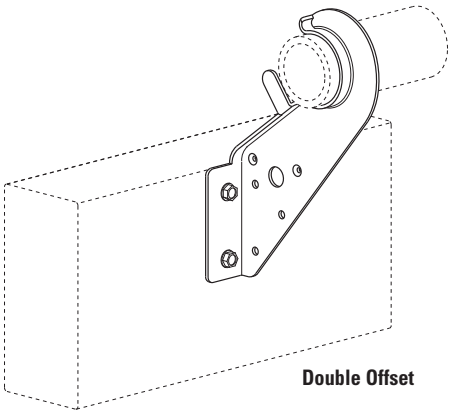




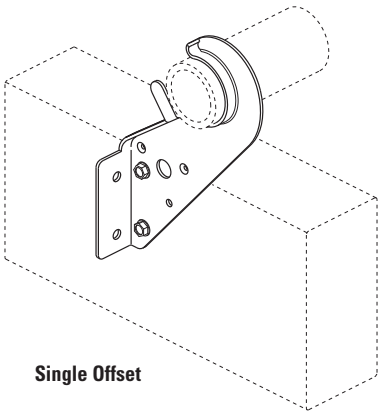
Part No.	CPVC Pipe size in.	(mm)	Max Hanger Spacing Ft.	(m)	Approx. Wt./100 lbs.	(kg)
29-3/4	3/4"	(20)	5'-6"	(1.67)	18	(8.1)
29-1	1"	(25)	6'-0"	(1.83)	19	(8.6)

Reduced Spacing For IPS Pipe

Part No.	IPS Pipe Size in.	(mm)	Max. Hanger Spacing Ft.	(m)
29-3/4	3/4"	(20)	1'-9"	(1.67)
29-1	1"	(25)	1'-10"	(1.83)



Double Offset



Single Offset

Install using a rechargeable electric drill fitted with a 5/16" (7.9mm) socket attachment with the special hex head self-tapping screws provided. Install screws until they bottom out. Pipe can be "snapped" into hanger before or after installation of the screws to the mounting surface. "Thumb tab" may be bent up to provide additional protection to the pipe, but is not required for performance of the hanger / restrainer function.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

SECTION C

Valves

Victaulic® FireLock NXT™ Dry Valve
Series 768N

31.80

Patented

1.0 PRODUCT DESCRIPTION

Available Sizes:

- 1 ½ – 8" /40 – 200 mm

Pressure Class:

- Up to 300 psi/2068 kPa/20 Bar

Minimum Air Pressure:

- 13 psi/90 kPa/.90 Bar

Acutation Options:

- Series 776 Low Pressure Actuator
- Optional: Series 746-LPA Dry Accelerator

Valve Configurations:

- Bare
- Pre-trimmed: Completely assembled with all necessary trim components.
- Vic-Quick Riser: Pre-trimmed and includes:
  - Shut Off Valve (1 ½"/40 mm: Series 728 Ball Valve, 2" – 8"/50 – 200 mm: Series 705 FireLock Butterfly Valve)
  - Pre-set high or low air and alarm pressure switches
  - Drain kit
- Fire-Pac Series 745 (refer to Victaulic submittal 30.23)

Pipe Preparation:

- Victaulic Original Groove System

Application/Media:

- For use on fire protection systems only.

2.0 CERTIFICATION/LISTINGS

EN 12259-3: 2000
Cert/LPCB ref. 104c/02

2831

NOTE

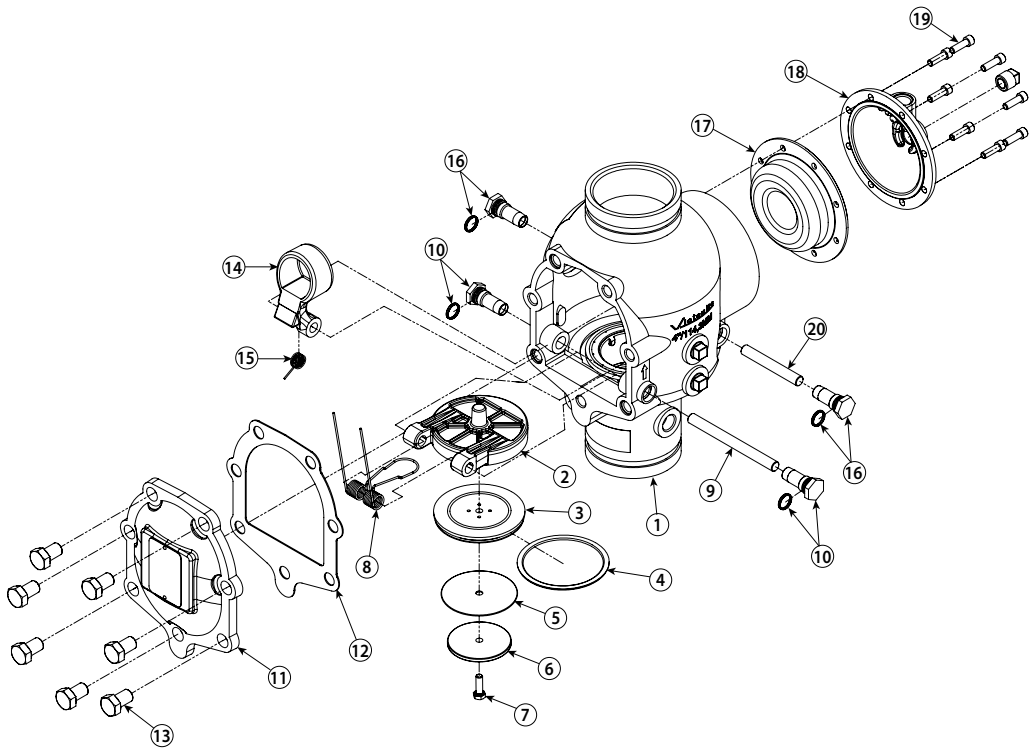
- CCC approval for DN80, DN100, DN150, DN200.

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

© 2022 Victaulic Company. All rights reserved.

3.0 SPECIFICATIONS - MATERIAL

Body: Ductile iron conforming to ASTM A536, grade 65-45-12.
Clapper: Aluminum bronze UNS-C95500
Latch: Aluminum bronze UNS-C95500
Shafts: Stainless 17-4
Clapper Seal: Peroxide cured EPDM, ASTM D2000
Bushings/Seat O-rings: Nitrile
Springs: Stainless Steel (300 Series)
Diaphragm: Peroxide cured EPDM with fabric reinforcement



The 1½-inch/48.3-mm and 2-inch/60.3-mm valve sizes contain washers under the heads of the cover plate bolts.

Item	Description
1	Valve Body
2	Clapper
3	Clapper Seal
4	Seal Ring
5	Seal Washer
6	Seal Retaining Ring
7	Seal Assembly Bolt
8	Clapper Spring
9	Clapper Shaft
10	Clapper Shaft Bushing and O-Ring (Qty. 2)

Item	Description
11	Cover Plate
12	Cover Plate Gasket
13	Cover Plate Bolts
14	Latch
15	Latch Spring
16	Latch Spring Bushing and O-Ring (Qty. 2)
17	Diaphragm
18	Diaphragm Cover
19	Diaphragm Cover Cap Screws (Qty. 8)
20	Latch Shaft

 © 2022 Victaulic Company. All rights reserved.

3.0 SPECIFICATIONS – MATERIAL (CONTINUED)

☐ **Standard Trim Package:**

- Series 776 Low Pressure Actuator – The Series 776 Low Pressure Actuator is pneumatically actuated and requires only 13 psi/90 kPa minimum air pressure, regardless of the system supply pressure. This actuator allows the system to operate with a low air or gas pressure of 7 psi/48 kPa.
- All required pipe nipples and fittings - standard galvanized finish
- All standard trim accessories
- All required gauges

☐ **Optional Trim Package:** Black Trim for Foam Systems – If the valve is intended for use in a foam system, black trim must be ordered, per NFPA requirements. Specify this requirement on the order.

Optional Accessories:

☐ **Alarm Pressure Switch** – Alarm Pressure Switches are designed to activate electrical alarms and control panels when a sustained flow of water occurs (such as with an open sprinkler). Included in VQR trim.

☐ **Air Supervisory Pressure Switch** – Air Pressure Supervisory Switches are used to monitor low and high system air pressure and are factory pre-set. Included in VQR trim.

☐ **Series 746-LPA Dry Accelerator** – The Series 746-LPA Dry Accelerator is required when the Series 768N Dry Valve is installed in large systems to improve response time. Refer to Victaulic submittal 30.64.

☐ **Series 760 Water Motor Alarm** – The Series 760 Water Motor Alarm is a mechanical device that sounds when a sustained flow of water occurs (such as with an open sprinkler). Refer to Victaulic submittal 30.32.

☐ **Series 75B Supplemental Alarm Device** – The Series 75B Supplemental Alarm Device is designed to provide a continuous alarm for systems equipped with a mechanical device. Refer to Victaulic submittal 30.33.

☐ **Series 75D Water Column Kit** – The Series 75D Water Column Kit is designed to minimize residual water in the riser from collecting above the clapper. Refer to Victaulic submittal 30.34.

☐ **Air Supply System** – The air supply system contains all components for establishing and maintaining air in the system. The compressor, low-pressure alarms, ball valves, and required trim are included in the air supply system.

☐ **Air Compressor** (See page 6 for more on the Victaulic Series 7C7 Compressor Package)

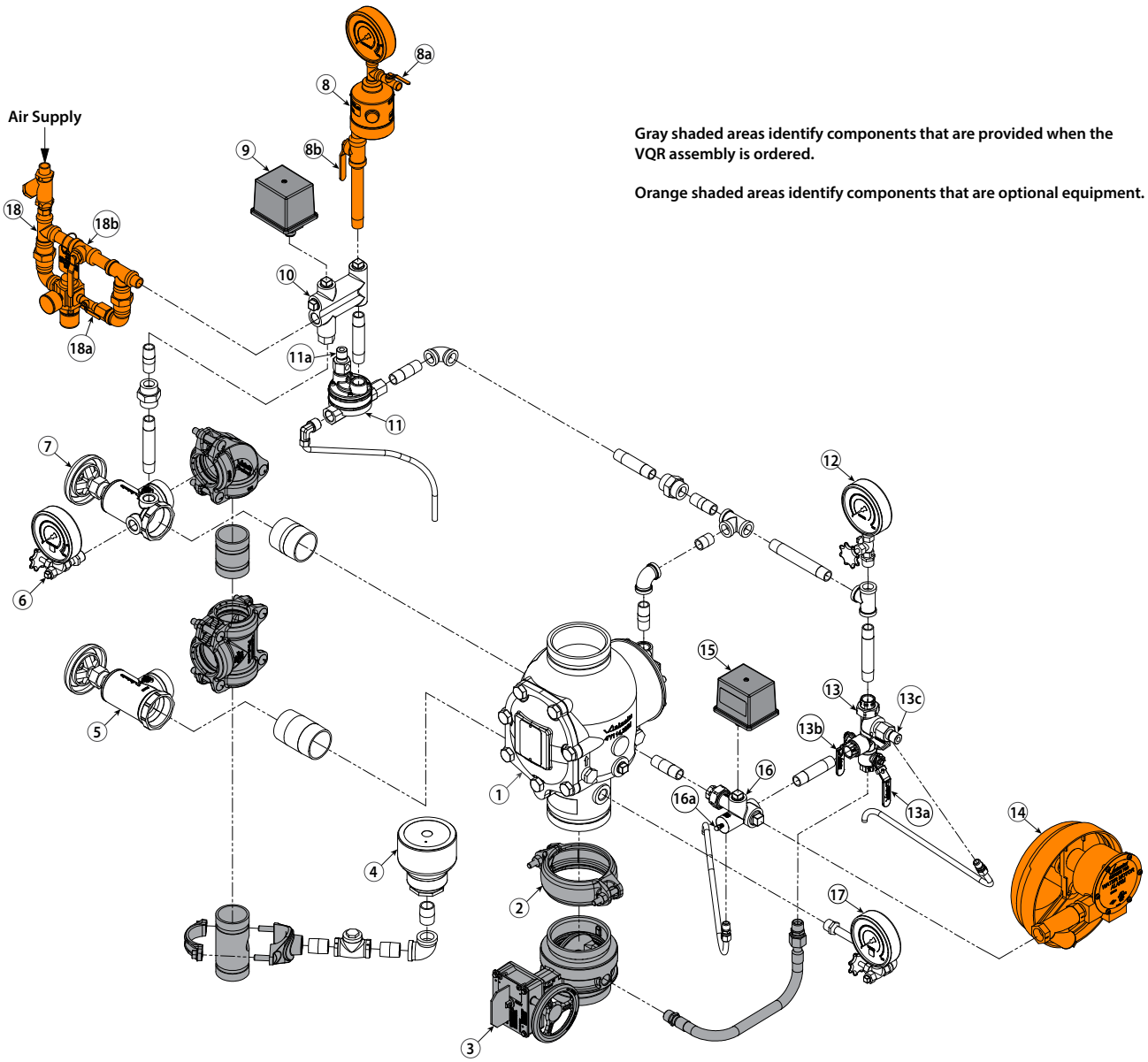
☐ **Air Maintenance Trim Assembly**

☐ **Fire Alarm Control Panels**

☐ **Drain Connection Kit** – Included in VQR option.

 © 2022 Victaulic Company. All rights reserved.

3.0 SPECIFICATIONS – MATERIAL (CONTINUED)



Gray shaded areas identify components that are provided when the VQR assembly is ordered.

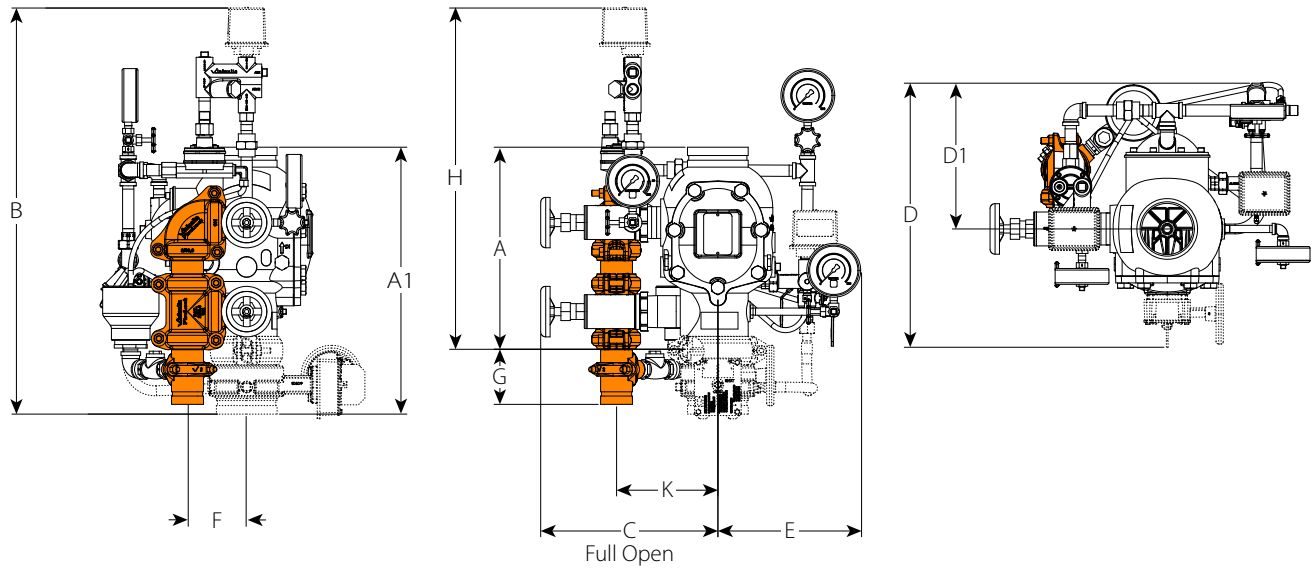
Orange shaded areas identify components that are optional equipment.

Item	Description
1	Series 768N FireLock NXT Dry Valve
2	FireLock Rigid Coupling
3	Water Supply Main Control Valve
4	Drip Cup
5	Water Supply Main Drain Valve – Flow Test
6	System Pressure Gauge/Gauge Valve Assembly
7	System Main Drain Valve
8	Series 746-LPA Dry Accelerator Assembly
8a	Series 746-LPA Dry Accelerator ¼-Turn Vent Ball Valve
8b	Series 746-LPA Dry Accelerator Isolation Ball Valve
9	Air Supervisory Pressure Switch
10	Air Manifold
11	Series 776 Low-Pressure Actuator
11a	Auto Vent Sleeve of Series 776 Low-Pressure Actuator

Item	Description
12	Charge Line Pressure Gauge/Gauge Valve Assembly
13	Priming Manifold Assembly
13a	Charge Line Ball Valve
13b	Alarm Test Ball Valve
13c	Auto Drain Sleeve
14	Series 760 Water Motor Alarm Assembly
15	Alarm Pressure Switch
16	Alarm Manifold Assembly
16a	Ball Drip Plunger
17	Water Supply Pressure Gauge/Gauge Valve Assembly
18	Victaulic Air Maintenance Trim Assembly (AMTA)
18a	Slow-Fill Ball Valve of the Victaulic AMTA
18b	Fast-Fill Ball Valve of the Victaulic AMTA

 © 2022 Victaulic Company. All rights reserved.

4.0 DIMENSIONS



Size	Dimensions											Weight	
												Approx. (Each)	
Nominal inches DN	A inches mm	A1 inches mm	B inches mm	C inches mm	D inches mm	D1 inches mm	E inches mm	F inches mm	G inches mm	H inches mm	K inches mm	Without Trim lbs kg	With Trim lbs kg
1½ DN40	9.00 228.60	16.37 415.80	31.50 800	9.25 235	15.25 387	10.00 254	9.25 235	3.25 83	10.25 260	21.75 552	6.00 152	16.7 7.6	43.0 19.5
2 DN50	9.00 228.60	13.83 351.28	31.50 800	9.25 235	16.25 413	10.00 254	9.25 235	3.25 83	10.25 260	21.75 552	6.00 152	17.0 7.7	43.0 19.5
2½	12.61 320.29	16.51 419.35	29.75 756	11.25 286	17.25 438	9.75 248	9.75 248	4.00 102	6.25 159	23.75 603	6.50 165	41.0 18.7	65.0 29.5
76.1 mm	12.61 320.29	16.51 419.35	29.75 756	11.25 286	17.25 438	9.75 248	9.75 248	4.00 102	6.25 159	23.75 603	6.50 165	41.0 18.7	65.0 29.5
3 DN80	12.61 320.29	16.51 419.35	29.75 756	11.25 286	17.25 438	9.75 248	9.75 248	4.00 102	6.25 159	23.75 603	6.50 165	41.0 18.7	65.0 29.5
4 DN100	15.03 381.76	19.85 504.19	31.50 800	13.50 343	20.00 508	11.25 286	11.00 279	4.75 121	4.50 114	25.75 654	8.00 203	59.0 26.7	95.0 43.0
165.1 mm	16.00 406.40	22.13 562.10	31.00 787	14.00 356	23.25 591	11.75 298	11.25 286	4.50 114	4.25 108	27.00 686	8.25 210	80.0 36.2	116.0 52.6
6 DN150	16.00 406.40	22.13 562.10	31.00 787	14.00 356	23.25 591	11.75 298	11.25 286	4.50 114	4.25 108	27.00 686	8.25 210	80.0 36.2	116.0 52.6
8 DN200	17.50 444.50	23.02 584.71	32.75 832	14.75 375	25.75 654	12.50 318	12.25 311	4.75 121	4.25 108	29.00 737	9.25 235	122.0 55.3	158.0 71.6

NOTES

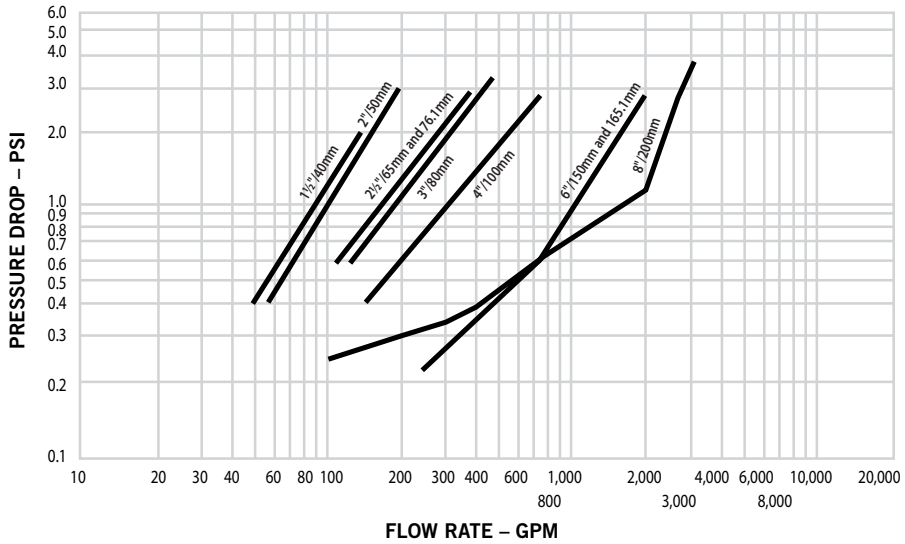
- The “A” dimension is the actual takeout dimension of the valve body.
- The “A1” dimension is the actual takeout dimension of the valve body with water supply main control valve.
- For systems with the optional Series 746-LPA Dry Accelerator, add 11.50 inches/292 mm to the “B” dimension to account for the additional height.
- The “D” and “D1” dimensions are not fixed measurements. The drip cup can be rotated to provide more clearance at the back of the trim.
- Components shown as dotted lines denote optional equipment.
- The recommended drain connection kit (shaded in orange) is for reference and takeout dimensions. This drain connection comes standard when the VQR assembly is ordered.

 © 2022 Victaulic Company. All rights reserved.

5.0 PERFORMANCE

Hydraulic Friction Loss

The chart below expresses the flow of water at 65°F/18°C through an open valve.



Frictional Resistance

The chart below expresses the frictional resistance of Victaulic Series 768N FireLock NXT.
Dry Valve in equivalent feet of straight pipe.

Nominal Size inches DN	Actual Outside Diameter inches mm	Equivalent Length of Pipe feet meters
1 ½ DN40	1.900 48.3	3.00 0.914
2 DN50	2.375 60.3	9.00 2.743
2 ½	2.875 73.0	8.00 2.438
76.1 mm	3.000 76.1	8.00 2.439
3 DN80	3.500 88.9	17.00 5.182
4 DN100	4.500 114.3	21.00 6.401
165.1 mm	6.500 165.1	22.00 6.706
6 DN150	6.625 168.3	22.00 6.706
8 DN200	8.625 219.1	50.00 15.240

Cv Values:

Cv values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below.

Formulas for Cv values

$\Delta P = Q^2/Cv^2$

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

Where:

Flow Coefficient	Cv
Q (Flow)	GPM
ΔP (Pressure Drop)	psi

Valve Size		Full Open
Nominal Size inches DN	Actual Outside Diameter inches mm	Flow Coefficient Cv Kv
1 ½ DN40	1.900 48.3	60 52.0
2 DN50	2.375 60.3	110 95.0
2 ½	2.875 73.0	180 156.0
76.1 mm	3.000 76.1	180 156.0
3 DN80	3.500 88.9	200 173.0
4 DN100	4.500 114.3	350 302.8
165.1 mm	6.500 165.1	1000 865.0
6 DN150	6.625 168.3	1000 865.0
8 DN200	8.625 219.1	1500 1499.1

 © 2022 Victaulic Company. All rights reserved.

5.0 PERFORMANCE (CONTINUED)

Air Supply Requirements

- Minimum: 13 psi/90 kPA/.9 Bar regardless of the system water pressure
- Maximum Recommended: 18 psi/124 kPa/1.24 Bar
- Multiple Series 768N FireLock NXT Dry Valves with a common air supply:
  - Isolate systems with a Victaulic spring –loaded, soft-seated ball check valve to ensure air integrity and serviceability of each system.
- Sizing the compressor:
  - Engineer/system designer is responsible
  - Entire system must be charged to the required air pressure within 30 minutes to meet NFPA requirements
  - An oversized compressor will slow down or possibly prevent valve operation
  - Compressor filling the system too fast:
    - May be necessary to restrict the air supply
    - Ensure that air exhausted from an open sprinkler or manual release valve is not replaced by the air supply system as fast as it is exhausted
- Compressor Requirements
  - Base or Riser Mounted Compressors:
    - “On” or “low” pressure setting: 13 psi/90 kPA/.9 Bar
    - “Off” or “high” pressure setting: 18 psi/124 kPa/1.24 Bar
    - Victaulic Series 7C7 riser mounted and pre-set for pressure requirements (refer to Victaulic submittal 30.22).
    - If the compressor is not equipped with a pressure switch, the Series 757P Air Maintenance Trim Assembly with pressure switch should be installed (refer to Victaulic submittal 30.36).
- Shop Air or Tank-Mounted Air Compressors:
  - Series 757 Regulated Air Maintenance Trim Assembly should be installed (refer to Victaulic submittal 30.35)
  - 13 psi/90 kPA/.9 Bar should be used as the set point for the air regulator
  - The compressor cut-in (turn-on) pressure setting should be at least 5 psi/34kPa/34 Bar above the set point of the air regulator.
  - Exploded View Trim: Series 757 Regulated Air Maintenance Trim Assembly (refer to Victaulic submittal 30.35)
- Compressor Requirements and settings for systems installed with series 746 or series 746-LPA dry accelerators
  - A tank-mounted air compressor with a Series 757 Regulated AMTA must be used to supply air to system installed with a Series 746 or Series 746-LPA Dry Accelerator.
  - In the event a compressor becomes inoperative, a properly sized tank-mounted air compressor provides the greatest protection, since air can be supplied continuously to the sprinkler system for an extended time period.

 © 2022 Victaulic Company. All rights reserved.

6.0 NOTIFICATIONS

⚠ WARNING

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

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

7.0 REFERENCE MATERIALS

30.35: FireLock™ Air Maintenance Trim Assembly Series 757 Submittal
30.36: FireLock™ Air Maintenance Trim Assembly Series 757P Submittal
30.22: FireLock® Compressor Package Series 7C7 Submittal
30.32: FireLock™ Water Motor Alarm Series 760 Submittal
30.64: FireLock™ Dry Accelerator Series 746-LPA
30.65: FireLock™ Low Pressure Actuator Series 776 Submittal
I-768N: FireLock NXT™ Dry Valve Series 768N Installation Manual

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

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

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

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

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

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

 © 2022 Victaulic Company. All rights reserved.

Victaulic® Series UM
Universal Manifold Assembly

30.71

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 8"/DN32 – DN200

Maximum Working Pressure

- Up to 300 psi/2068 kPa/21 Bar

Application

- Fire protection system control module includes test and drain valve, waterflow detector, pressure gauge, flexible drain connection and adjustable pressure relief valve (175 – 310 psi/1206 – 2137 kPa adjustable set pressure).

Configurations

- Optional control valve: Series 705 Butterfly Valve or Series 728 Ball Valve

2.0 CERTIFICATION/LISTINGS

c UL us LISTED FM

3.0 SPECIFICATIONS – MATERIAL

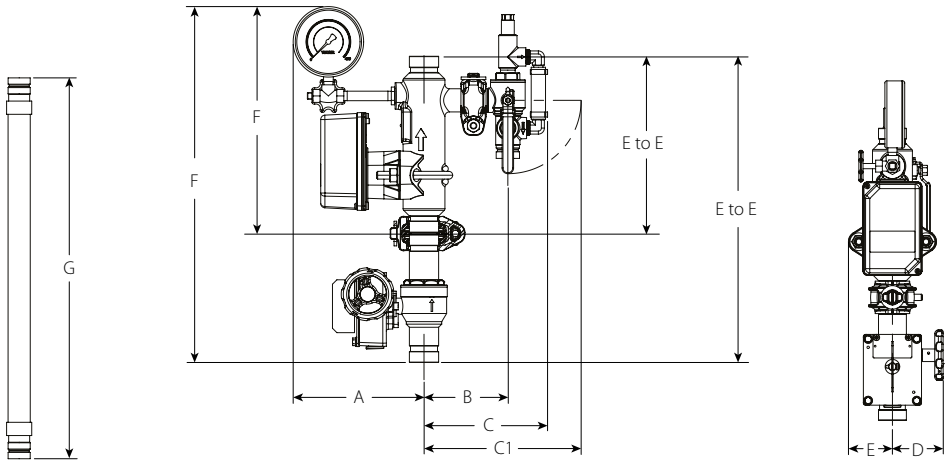
Valve body: Cast ductile iron conforming to ASTM A536, Grade 65-45-12.

Waterflow Detector: Vane type waterflow detector with sealed retard, and mechanical delay adjustment. Cover includes tamper resistant security screws and tool.

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

 © 2021 Victaulic Company. All rights reserved.

4.0 DIMENSIONS



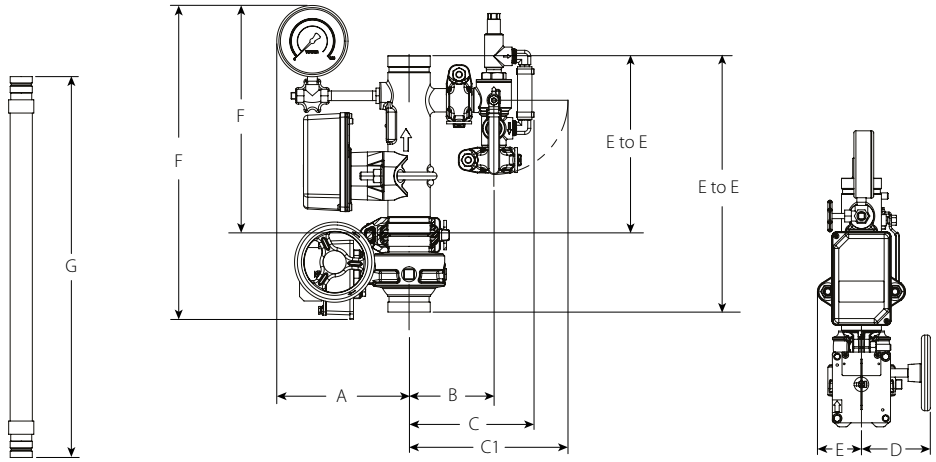
Size		Dimensions													Weight Approx. (Each)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E with control valve inches mm	E to E without control valve inches mm	A inches mm	B inches mm	C inches mm	C1 inches mm	D inches mm	E inches mm	F with control valve inches mm	F without control valve inches mm	G inches mm	Series UTD Valve Size (Nominal) inches DN	Series UTD Test Orifice K-Factor S.I.	with control valve lb kg	without control valve lb kg
1 ¼ DN32	1.660 42.4	17.38 441	10.00 254	7.38 187	4.75 121	7.00 178	8.88 225	3.00 76	2.63 67	20.25 514	12.88 327	24.00 610	1.00 25	2.8 4.0	22 9.98	13 5.90
1 ½ DN40	1.900 48.3	17.38 441	10.00 254	7.38 187	4.75 121	7.00 178	8.88 225	3.00 76	2.63 67	20.25 514	12.88 327	24.00 610	1.00 25	2.8 4.0	22 9.98	13 5.90

NOTE

- When Series UTD Valve Size (Nominal) is 1"/25 mm, flexible drain hose connection utilizes FireLock IGS™ groove profile.

 © 2021 Victaulic Company. All rights reserved.

4.0 DIMENSIONS (CONTINUED)



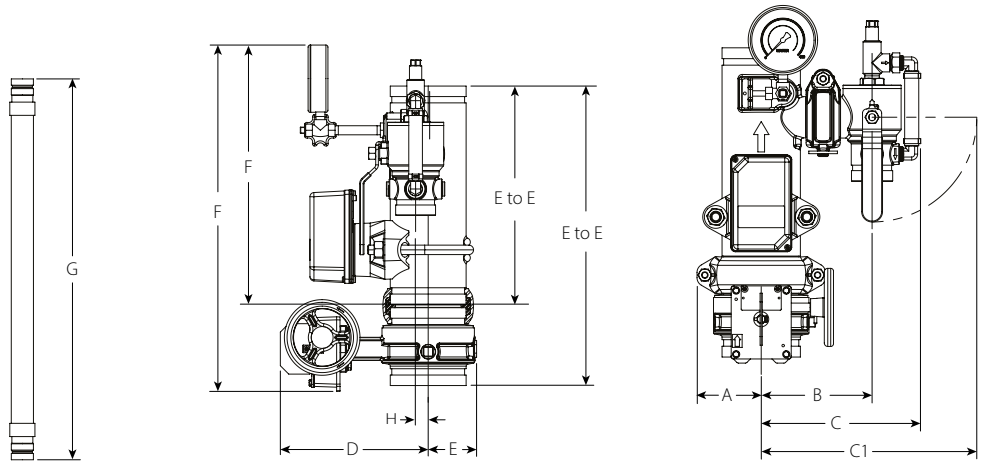
Size		Dimensions													Weight Approx. (Each)	
Nominal inches DN	**Actual Outside Diameter** inches mm	**E to E with control valve** inches mm	**E to E without control valve** inches mm	**A** inches mm	**B** inches mm	**C** inches mm	**C1** inches mm	**D** inches mm	**E** inches mm	**F with control valve** inches mm	**F without control valve** inches mm	**G** inches mm	**Series UTD Valve Size (Nominal)** inches DN	**Series UTD Test Orifice** K-Factor S.I.	**with control valve** lb kg	**without control valve** lb kg
2 DN50	2.375 60.3	14.38 365	10.00 254	7.38 187	4.75 121	7.00 178	8.88 225	4.13 105	2.63 67	17.63 448	12.88 327	24.00 610	1.00 25	4.2 6.1	24 10.89	13 5.90
2½	2.875 73.0	13.88 352	10.00 254	7.63 194	5.88 149	8.38 213	10.75 273	4.13 105	2.63 67	17.50 445	12.88 327	24.00 610	1.25 32	4.2 6.1	29 13.15	17 7.71
DN65	3.000 76.1	13.88 352	10.00 254	7.63 194	5.88 149	8.38 213	10.75 273	4.13 105	2.63 67	17.50 445	12.88 327	24.00 610	1.25 32	4.2 6.1	29 13.15	17 7.71
3 DN80	3.500 88.9	14.88 378	11.00 279	8.00 203	6.13 156	8.63 219	11.00 279	4.13 105	2.88 73	18.50 470	13.88 352	24.00 610	1.25 32	4.2 6.1	33 14.97	20 9.07

NOTE

- When Series UTD Valve Size (Nominal) is 1"/25 mm, flexible drain hose connection utilizes FireLock IGS™ groove profile.

 © 2021 Victaulic Company. All rights reserved.

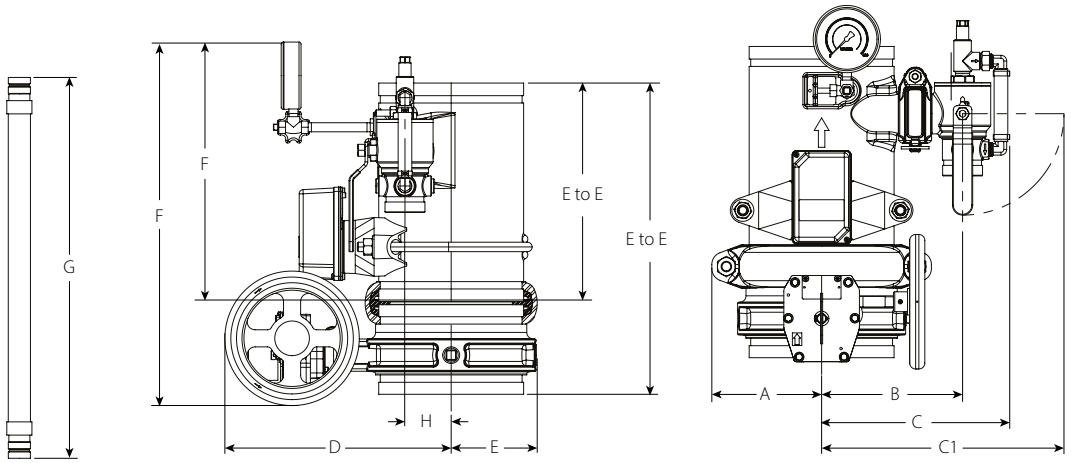
4.0 DIMENSIONS (CONTINUED)



Size		Dimensions														Weight Approx. (Each)	
Nominal inches DN	**Actual Outside Dia.** inches mm	**E to E with control valve** inches mm	**E to E without control valve** inches mm	**A** inches mm	**B** inches mm	**C** inches mm	**C1** inches mm	**D** inches mm	**E** inches mm	**F with control valve** inches mm	**F without control valve** inches mm	**G** inches mm	**H** inches mm	**Series UTD Valve Size (Nominal)** inches DN	**Series UTD Test Orifice** K-Factor S.I.	**with control valve** lb kg	**without control valve** lb kg
4 DN100	4.500 114.3	17.88 454	13.00 330	3.75 95	6.38 162	9.25 235	12.38 314	8.75 222	2.88 73	20.63 524	15.50 394	36.00 914	0.75 19	2.00 51	5.6 8.1	44 19.96	17 7.71
	6.500 165.1	19.00 483	13.00 330	5.13 130	7.38 187	10.25 260	13.38 340	11.38 289	4.25 108	21.50 546	15.50 394	36.00 914	1.50 38	2.00 51	5.6 8.1	66 29.94	34 15.42
6 DN150	6.625 168.3	19.00 483	13.00 330	5.13 130	7.38 187	10.25 260	13.38 340	11.38 289	4.25 108	21.50 546	15.50 394	36.00 914	1.50 38	2.00 51	5.6 8.1	66 29.94	34 15.42

 © 2021 Victaulic Company. All rights reserved.

4.0 DIMENSIONS (CONTINUED)



Size		Dimensions														Weight Approx. (Each)	
Nominal	**Actual Outside Dia.**	**E to E with control valve**	**E to E without control valve**	**A**	**B**	**C**	**C1**	**D**	**E**	**F with control valve**	**F without control valve**	**G**	**H**	**Series UTD Valve Size (Nominal)**	**Series UTD Test Orifice**	**with control valve**	**without control valve**
inches DN	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches DN	K-Factor S.I.	lb kg	lb kg
8 DN200	8.625 219.1	18.50 470	13.00 330	6.50 165	8.38 213	11.25 286	14.38 365	13.50 343	5.13 130	21.63 549	15.50 394	36.00 914	2.75 70	2.00 51	5.6 8.1	91 41.28	54 24.49

 © 2021 Victaulic Company. All rights reserved.

5.0 PERFORMANCE

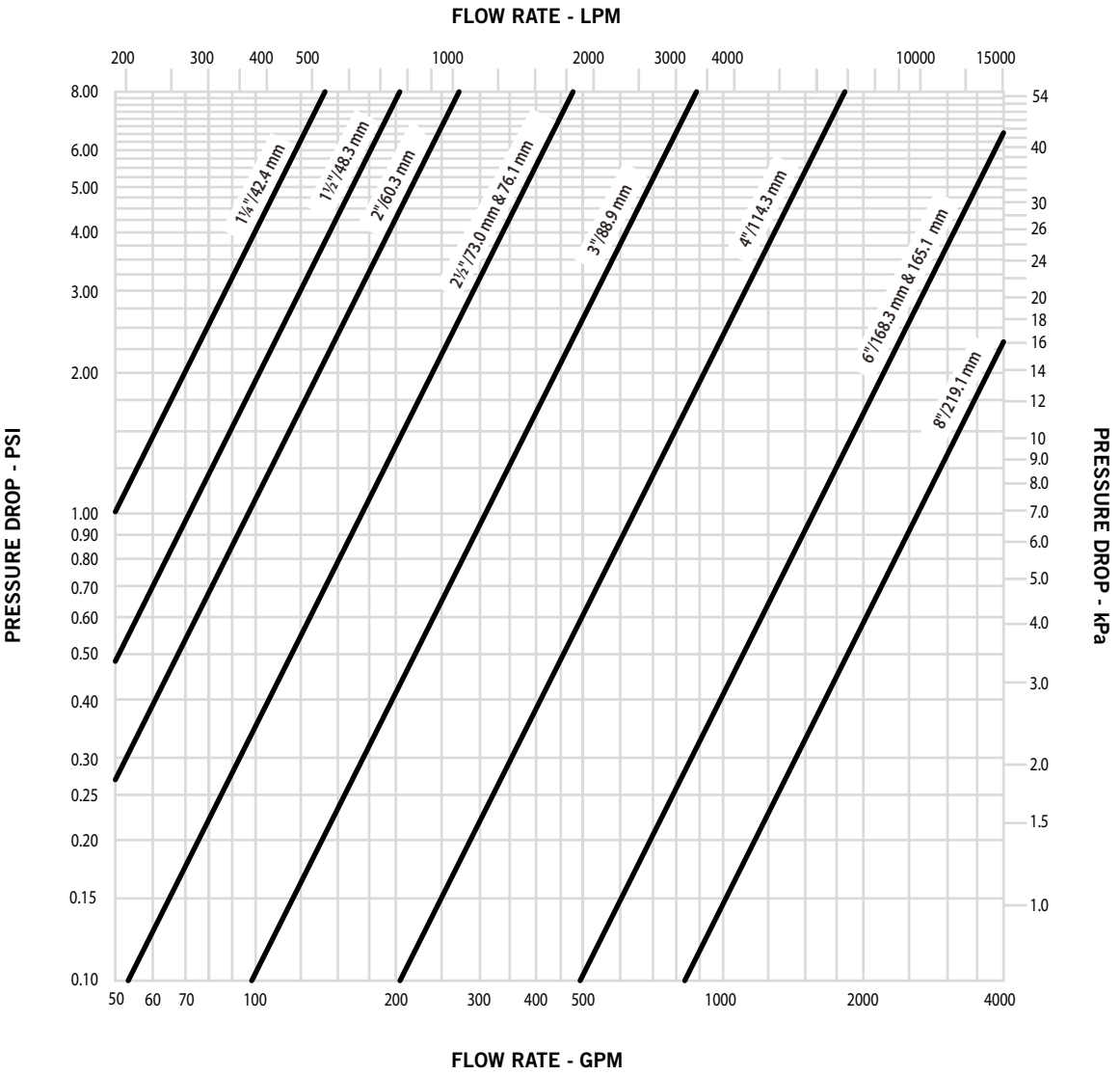
Size		Equivalent Length of Sch. 40 Pipe[1]		Flow Characteristics		Performance
Nominal inches DN	**Actual Outside Diameter** inches mm	**with control valve** feet meters	**without control valve** feet meters	**C_v/K_v Values with control valve** Full Open	**C_v/K_v Values without control valve** Full Open	**Maximum Working Pressure** psi kPa
1¼ DN32	1.660 42.4	5.75 1.8	5.25 1.6	47.65 41	49.33 43	300 2068
1½ DN40	1.900 48.3	6 1.8	5.875 1.8	70.66 61	72.53 63	300 2068
2 DN50	2.375 60.3	12.25 3.7	6.625 2.0	95.39 83	130.61 113	300 2068
2½	2.875 73.0	9.875 3.0	5.25 1.6	149.98 130	218.87 189	300 2068
DN65	3.000 76.1	9.875 3.0	5.25 1.6	149.98 130	218.87 189	300 2068
3 DN80	3.500 88.9	9 2.7	4.125 1.3	298 258	433.2 375	300 2068
4 DN100	4.500 114.3	8.5 2.6	3 0.9	594.94 515	964.95 835	300 2068
	6.500 165.1	12 3.7	4.5 1.4	1472.2 1273	2256.53 1952	300 2068
6 DN150	6.625 168.3	12 3.7	4.5 1.4	1472.2 1273	2256.53 1952	300 2068
8 DN200	8.625 219.1	17.5 5.3	4.125 1.3	2500.92 2163	5035.24 4355	300 2068

[1] Equivalent length of Sch. 40 pipe calculated using the hazen-williams formula with a roughness constant of c=120.

 © 2021 Victaulic Company. All rights reserved.

5.0 PERFORMANCE

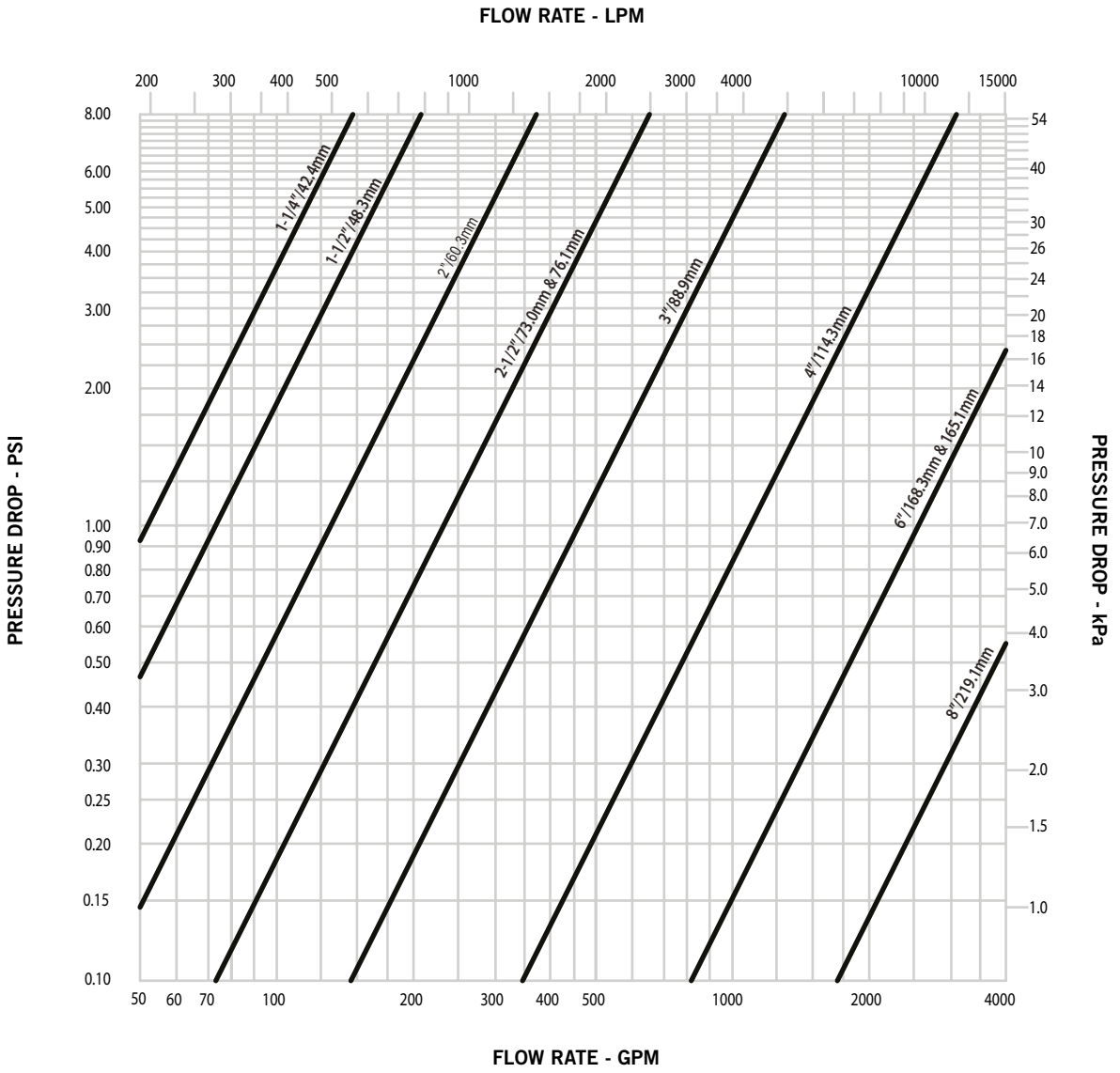
Series UM Friction Loss with Control Valve (including water flow switch)



 © 2021 Victaulic Company. All rights reserved.

5.0 PERFORMANCE (CONTINUED)

Series UM Friction Loss with Control Valve (including water flow switch)



 © 2021 Victaulic Company. All rights reserved.

6.0 NOTIFICATIONS

⚠ WARNING

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

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

7.0 REFERENCE MATERIALS

10.17: Series 728 FireLock™ Ball Valve
10.54: FireLock™ Innovative Groove System I IGS™
10:64: FireLock™ Installation-Ready™ Rigid Couplings Style 009N and Style 109
10.80: Series 765 FireLock™ High Pressure Butterfly Valve
10.81: Series 705 FireLock™ Butterfly Valve
30.73: Series UTD Universal Test and Drain
30.74: Series ARV Adjustable Relief Valve
30.75: Series FTV Flow Test Valve
I-UM: Series UM Universal Manifold Assembly Installation Manual

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

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

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

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

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

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

 © 2021 Victaulic Company. All rights reserved.

FireLock® Butterfly Valve
Series 705 with Weatherproof Actuator

10.81

1.0 PRODUCT DESCRIPTION

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

2.0 CERTIFICATION/LISTINGS

G410001 104j/04

NOTES

- Refer to Victaulic submittal publication 10.01 for details

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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

© 2017 Victaulic Company. All rights reserved.

2.1 CERTIFICATION/LISTINGS

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

3.0 SPECIFICATIONS – MATERIAL

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

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

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

Body Coating: Black alkyd enamel

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

Seat: Grade "E" EPDM

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

Stem Seals: EPDM

Stem Retaining Ring: Carbon steel

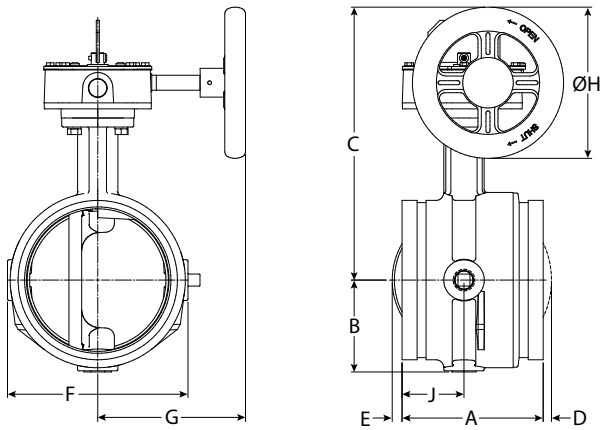
Actuator:

- ☐ 2 – 8"/50 – 200 mm: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing
- ☐ 10 – 12"/250 – 300 mm: Steel worm and cast iron quadrant gear, in a cast iron housing

 © 2017 Victaulic Company. All rights reserved.

4.0 DIMENSIONS

Series 705



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

NOTE

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

 © 2017 Victaulic Company. All rights reserved.

5.0 PERFORMANCE

Series 705

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

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

 © 2017 Victaulic Company. All rights reserved.

5.1 PERFORMANCE

Series 705

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

Formulas for C_v values

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

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

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

Formulas for K_v values

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

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

Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

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

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

 © 2017 Victaulic Company. All rights reserved.

6.0 NOTIFICATIONS

⚠ WARNING

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

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

7.0 REFERENCE MATERIALS

Switch and Wiring

1. The supervisory switch contains two single pole, double throw, pre-wired switches.
2. Switches are rated:

   10 amps @ 125 or 250 VAC/60 Hz

   0.50 amps @ 125 VDC

   0.25 amps @ 250 VDC
3. Switches supervise the valve in the “OPEN” position.
5. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
6. A #14 insulated ground lead (green) is provided.

   Switch #1 = S1

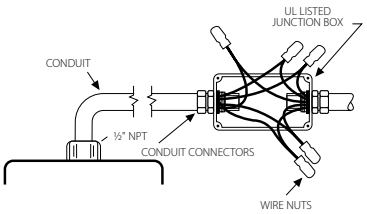
   For connection to the supervisory circuit of a UL Listed alarm control panel

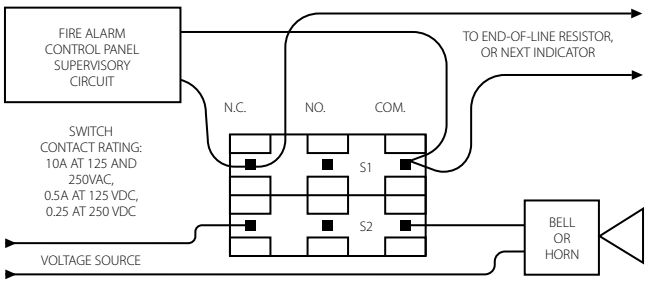
   Switch #2 = S2

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

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

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





Switch 1: 2 leads per terminal
Switch 2: 1 lead per terminal

NOTES

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

 © 2017 Victaulic Company. All rights reserved.

7.1 REFERENCE MATERIALS

10.01: Regulatory Approval Reference Guide

29.01: Terms and Conditions/Warranty

I-100: Field Installation Handbook

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

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

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

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

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

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

 © 2017 Victaulic Company. All rights reserved.

SECTION D

Fire Sprinklers

TECHNICAL DATA

FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

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

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

2. LISTINGS AND APPROVALS

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

VdS Approved

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

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

Refer to the Approval Chart and Design Criteria for C-UL-US-EU Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Available since 2006.
Minimum Operating Pressure: Refer to the Approval Chart.
Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2” (15 mm) NPT
Nominal K-Factor: 4.9 U.S. (70.6 metric†)
†Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
Glass-bulb fluid temperature rated to -65 °F (-55 °C)
Overall Length: 2-1/4” (58 mm)

Material Standards:
Frame Casting: Brass UNS-C84400 or QM Brass
Deflector: Brass UNS-C23000, Phosphor Bronze UNS-C51000, or Brass UNS-C26000
Bulb: Glass, nominal 3 mm diameter
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Polytetrafluoroethylene (PTFE) Tape
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
Compression Screw: Brass UNS-C36000
For ENT coated sprinklers: Belleville spring - Exposed, Screw and Pipcap - ENT plated.

Ordering Information: (Also refer to the current Viking price list.)
Sprinkler: Base Part No. 13637
Order Sprinkler VK468 by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.
Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, Black Polyester = M-/B, and ENT = JN
Temperature Suffix: 155 °F (68 °C) = B, 175 °F (79 °C) = D
For example, sprinkler VK468 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 13637AB.

Available Finishes And Temperature Ratings:
Refer to Table 1.

Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:
A. Standard Wrench: Part No. 21475M/B (available since 2017)
B. Wrench for recessed sprinklers: Part No. 13577W/B* (available since 2006)
C. Optional Protective Sprinkler Cap Remover/Escutcheon Installer Tool** Part No. 15915 (available since 2010.)
*A ½” ratchet is required (not available from Viking).
**Allows use from the floor by attaching a length of 1” diameter CPVC tubing to the tool. Ideal for sprinkler cabinets. Refer to Bulletin F_051808.

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

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

4. INSTALLATION
Refer to appropriate NFPA Installation Standards.

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

6. INSPECTIONS, TESTS AND MAINTENANCE
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

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

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

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating[1]	Maximum Ambient Ceiling Temperature[2]	Bulb Color
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and ENT			
Corrosion Resistant Coatings[3]: ENT			

Footnotes

[1] The sprinkler temperature rating is stamped on the deflector.

[2] Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

[3] The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with ENT coating.

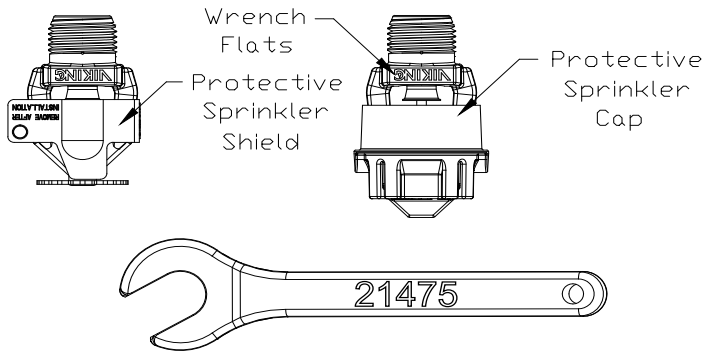


Figure 1: Standard Sprinkler Wrench 21475M/B

VIKING®

TECHNICAL DATA

FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

Approval Chart
Viking VK468, 4.9 K-Factor Residential Pendent Sprinkler

For systems designed to NFPA 13D or NFPA 13R. For systems designed to NFPA 13, refer to the design criteria. For Ceiling types refer to current editions of NFPA 13, 13R or 13D

Sprinkler Base Part Number[1]	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
		Inches	mm	U.S.	metric[2]		Inches	mm
13637	VK468	1/2	15	4.9	70.6	175 psi (12 bar)	2-1/4	58

Max. Coverage Area[4] Ft.X Ft. (m X m)	Ordinary Temp Rating (155 °F/68 °C)		Intermediate Temp Rating (175 °F/79 °C)		Deflector to Ceiling	Installation Type	Listings and Approvals[3]				Minimum Spacing Ft. (m)
	Flow[4] GPM (L/min)	Pressure[4] PSI (bar)	Flow[4] GPM (L/min)	Pressure[4] PSI (bar)			C-UL-US-EU[5]	VdS	NYC[6]	NSF[8]	
12 X 12 (3.7 X 3.7)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)	1-1/8 to 2 inch	Standard surface-mounted escutcheons, or recessed with the Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon	See Footnotes 7 and 10.	See Footnotes 7 and 10.	See Footnote 7.	See Footnote 7.	8 (2.4)
14 X 14 (4.3 X 4.3)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)							
16 X 16 (4.9 X 4.9)	13 (49.2)	7.0 (0.48)	13 (49.2)	7.0 (0.48)							
18 X 18 (5.5 X 5.5)	17 (64.4)	12.0 (0.83)	17 (64.4)	12.0 (0.83)							
20 X 20 (6.1 X 6.1)	20 (75.7)	16.7 (1.15)	20 (75.7)	16.7 (1.15)							

Footnotes

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

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

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

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

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

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

[7] Approved Finishes are: Brass, Chrome, White Polyester, and Black Polyester[9]

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

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

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

TECHNICAL DATA

FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

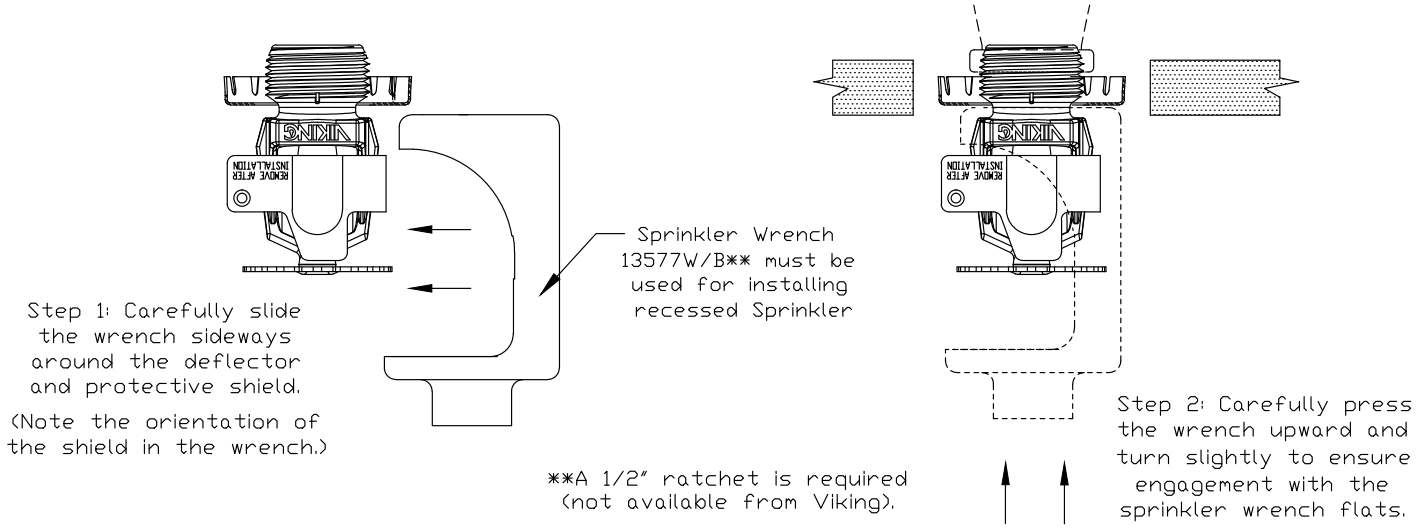


Figure 2: **Wrench 13577W/B for Recessed Sprinkler**

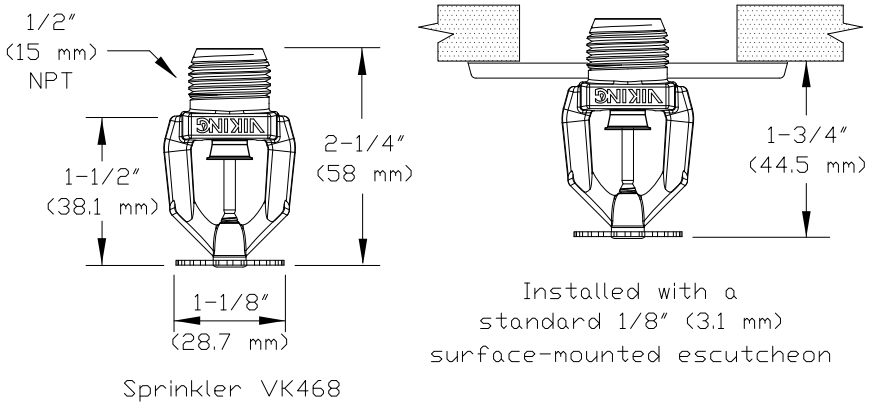


Figure 3: **Sprinkler VK468 Dimensions with a Standard Escutcheon**

VIKING®	TECHNICAL DATA	FREEDOM® RESIDENTIAL PENDENT SPRINKLER VK468 (K4.9)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

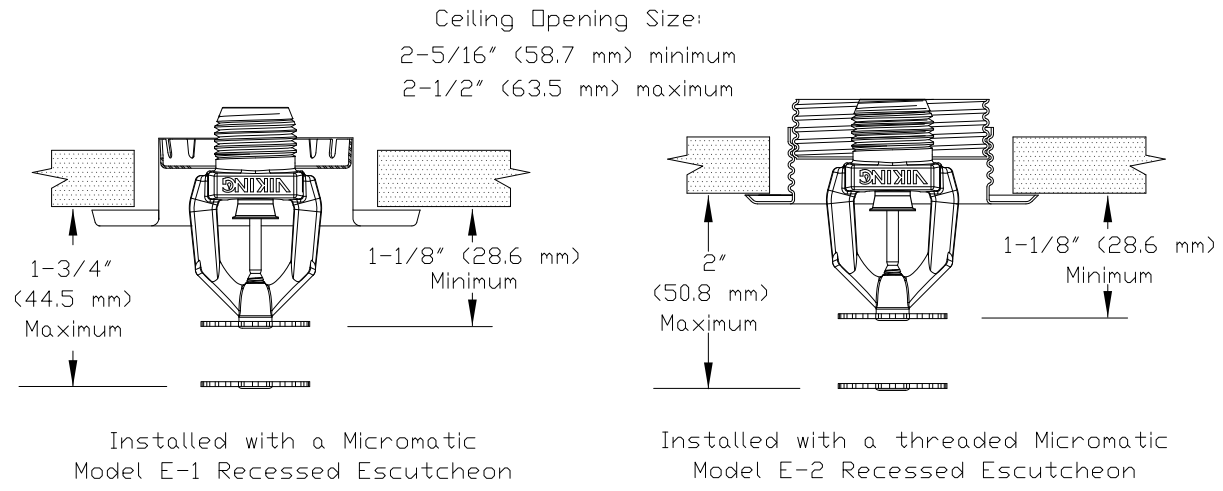


Figure 4: Sprinkler VK468 Dimensions with the Model E-1 and E-2 Recessed Escutcheons

DESIGN CRITERIA

(Also refer to the Approval Chart.)

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

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

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

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

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614, F_080415 and F_080190 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, VdS, and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable. Final approval and acceptance of all residential sprinkler installations must be obtained from the Authorities Having Jurisdiction.

tyco / Fire & Building Products

Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

Series TY-B — 5.6 and 8.0 K-factor Upright and Pendent Intermediate Level Sprinklers Standard Response

General Description

The Series TY-B, 5.6 and 8.0 K-factor Upright and Pendent Intermediate Level Sprinklers described in this data sheet are automatic sprinklers of the "standard response" 5 mm frangible bulb type. They are "standard spray" sprinklers intended for use in fire sprinkler systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA requirements). Both the Pendent and Upright Sprinklers produce a hemispherical water distribution pattern below the deflector.

Intermediate Level Sprinklers are primarily designed for use in rack storage sprinkler systems where their thermally sensitive elements must be shielded from the water spray of higher elevation sprinklers that could operate earlier during a fire. Intermediate Level Sprinklers are also used in other applications such as beneath open gridded catwalks.

Corrosion resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion resistant coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

IMPORTANT

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.

WARNINGS

The Series TY-B Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. ***Failure to do so may impair the performance of these devices.***

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.

Model/Sprinkler Identification Numbers

TY3153 -	**Upright**	**5.6K, 1/2"NPT**
TY3251 -	**Pendent**	**5.6K, 1/2"NPT**
TY4153 -	**Upright**	**8.0K, 3/4"NPT**
TY4251 -	**Pendent**	**8.0K, 3/4"NPT**

Technical Data

Approvals
UL and C-UL Listed.
FM and NYC Approved.
(Refer to Table A for complete approval information including corrosion resistant status.)

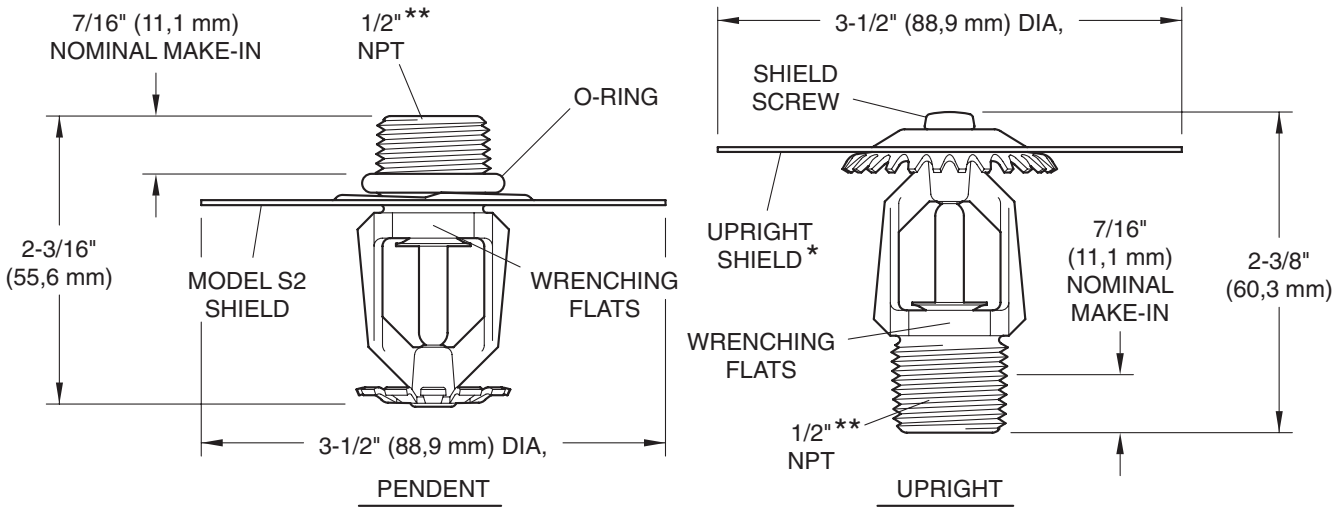
Maximum Working Pressure
175 psi (12,1 bar)

Discharge Coefficient
K = 5.6 GPM/psi$^{1/2}$ (80,6 LPM/bar$^{1/2}$)
K = 8.0 GPM/psi$^{1/2}$ (115,2 LPM/bar$^{1/2}$)

Temperature Ratings
Refer to Table A

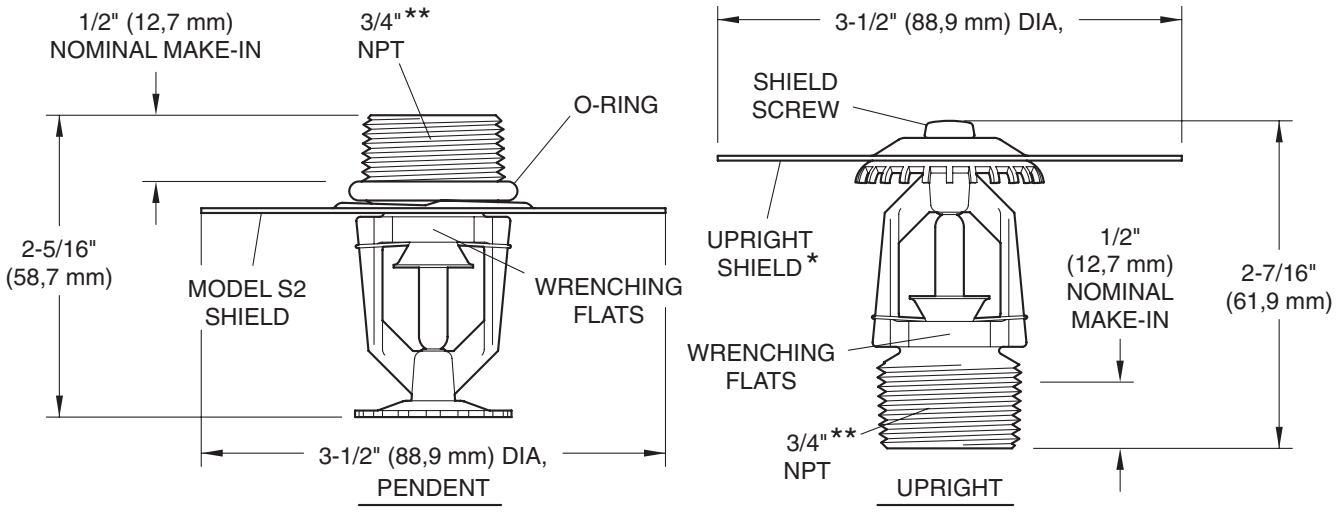
Finishes
Sprinkler: Refer to Table A

† DuPont Registered Trademark



* Temperature rating is indicated on the deflector, shield, or adjacent to orifice seat on frame.
** Pipe thread connections per ISO 7/1 can be provided on special request.

FIGURE 1
STANDARD RESPONSE SERIES TY-B UPRIGHT (TY3153) AND PENDENT (TY3251) SPRINKLERS
INTERMEDIATE LEVEL SPRINKLERS, 5.6 K-FACTOR, 1/2 INCH NPT



* Temperature rating is indicated on the deflector, shield, or adjacent to orifice seat on frame.
** Pipe thread connections per ISO 7/1 can be provided on special request.

FIGURE 1
STANDARD RESPONSE SERIES TY-B UPRIGHT (TY4153) AND PENDENT (TY4251) SPRINKLERS
INTERMEDIATE LEVEL SPRINKLERS, 8.0 K-FACTOR, 3/4 INCH NPT

				SPRINKLER FINISH (See Note 5)			
K	**TYPE**	**TEMP.**	**BULB LIQUID**	**NATURAL BRASS*** **	**LEAD COATED**	**WAX COATED**	**WAX OVER LEAD COATED**
5.6 1/2" NPT	**UPRIGHT (TY3153)**	135°F/57°C	Orange	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue			1**,2**, 3**, 4**	1**, 2**, 3**, 4**
		360°F/182°C	Mauve			N/A	
	PENDENT (TY3251)	135°F/57°C	Orange	1, 2, 3, 4	N/A		
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue				
		360°F/182°C	Mauve				
8.0 3/4" NPT	**UPRIGHT (TY4153)**	135°F/57°C	Orange	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue			1**,2**, 3**, 4**	1**, 2**, 3**, 4**
		360°F/182°C	Mauve			N/A	
	PENDENT (TY4251)	135°F/57°C	Orange	1, 2, 3, 4	N/A		
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue				
		360°F/182°C	Mauve				

NOTES:
1. Listed by Underwriters Laboratories, Inc. (UL).
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
3. Approved by Factory Mutual Research Corporation (FM).
4. Approved by the City of New York under MEA 354-01-E.
5. Where Lead Coated, Wax Coated, and Wax over Lead Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion Resistant Sprinklers. Where Lead Coated, Wax Coated, and Wax over Lead Coated Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as Corrosion Resistant Sprinklers.

** 150°F/66°C Maximum Ceiling Temperature.
*** With Zinc Plated Shield.
N/A: Not Available

TABLE A
LABORATORY LISTINGS AND APPROVALS

Physical Characteristics

Frame	Bronze
Button	Brass/Copper
Sealing Assembly	Beryllium Nickel w/Teflon†
Bulb	Glass
Compression Screw	Bronze
Deflector	Copper
Shield	Plated Steel

Operation

The glass Bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass Bulb, allowing the sprinkler to activate and water to flow.

Design Criteria

The Series TY-B Pendent and Upright Intermediate Level Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on the requirements of NFPA 13, and FM Approval is based on the requirements of FM's Loss Prevention Data Sheets).

Installation

The Series TY-B Sprinklers must be installed in accordance with the following instructions:

NOTES

Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm) for the 135°F/57°C to 3/32 inch (2,4 mm) for the 360°F/182°C temperature ratings.

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). A maximum of 21 ft. lbs. (28,5 Nm) of torque may be used to install sprinklers with 1/2 NPT connections. A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.lbs. (13,4 to 26,8 Nm). A maximum of 30 ft.lbs. (40,7 Nm) of torque is to be used to install sprinklers with 3/4 NPT connections. Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

— Upright Sprinklers —

The Series TY-B Intermediate Level Upright Sprinklers must be installed in accordance with the following instructions.

Step 1. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 2. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 3), except that an 8 or 10 inch adjustable Crescent wrench is to be used for wax coated sprinklers. With reference to Figure 1 or 2, the W-Type 6 Sprinkler Wrench or the Crescent wrench, as applicable, is to be applied to the wrench flats.

— Pendent Sprinklers —

The Series TY-B Intermediate Level Pendent Sprinklers must be installed in accordance with the following instructions.

Step 1. Thread the S2 Shield onto the sprinkler threads with the stamped markings toward the deflector and just to the end of the threads. The final assembly step is easier to accomplish if the Shield is not disengaged by continuing to turn the Shield past the threads.

Step 2. Roll the O-Ring over the sprinkler threads until it seats against the Shield.

Step 3. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 4. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 3). With reference to Figure 1 or 2, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

Step 5. Rotate the S2 Shield clockwise (looking up) so that it slightly compresses the O-Ring between the Shield and sprinkler fitting.

—Wax Coated Sprinklers—

When installing wax coated sprinklers with the adjustable Crescent wrench, additional care needs to be exercised to prevent damage to the wax coating on the sprinkler wrench flats or frame arms and, consequently, exposure of bare metal to the corrosive environment. The jaws of the wrench should be opened sufficiently wide to pass over the wrench flats without damaging the wax coating. Before wrench tightening the sprinkler, the jaws of the wrench are to be adjusted to just contact the sprinkler wrenching flanges. After wrench tightening the sprinkler, loosen the wrench jaws before removing the wrench.

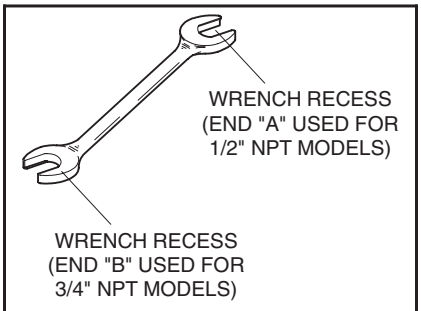


FIGURE 3
W-TYPE 6 SPRINKLER WRENCH

After installation, the sprinkler wrench flats and frame arms must be inspected and the wax coating retouched (repaired) whenever the coating has been damaged and bare metal is exposed. The wax coating on the wrench flats can be retouched by gently applying a heated 1/8 inch diameter steel rod to the areas of wax that have been damaged, to smooth it back over areas where bare metal is exposed.

NOTES

Only retouching of the wax coating applied to the wrench flats and frame arms is permitted, and the retouching is to be performed only at the time of the initial sprinkler installation.

The steel rod should be heated only to the point at which it can begin to melt the wax, and appropriate precautions need to be taken, when handling the heated rod, in order to prevent the installer from being burned.

If attempts to retouch the wax coating with complete coverage are unsuccessful, additional wax can be ordered in the form of a wax stick (the end of which is color coded). Only the correct color coded wax is to be used, and retouching of wrench flats and frame arms is only permitted at the time of initial sprinkler installation. With the steel rod heated as previously described, touch the rod to the area requiring additional wax with the rod angled downward, and then touch the wax stick to the rod approximately one-half inch away from the area requiring retouching. The wax will melt and run down onto the sprinkler.

Care and Maintenance

The Series TY-B Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTES

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage to the sprinklers - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. (Ref. Installation Section).

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the corrosion resistant coating, as it may be affected by the corrosive conditions present.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national code.

Limited Warranty

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Ordering Procedure

When placing an order, indicate the full product name. Refer to the Price List for complete listing of Part Numbers.

Contact your local distributor for availability.

Upright Sprinkler Assemblies with Shield and NPT Thread Connections:
Specify: (Specify Model/SIN), Standard Response, (specify K-factor), (specify temperature rating), Series TY-B Upright Intermediate Level Sprinkler with (specify type of finish or coating), P/N (specify from Table B).

Pendent Sprinkler Assemblies with (Shield Ordered Separately) and NPT Thread Connections:
Specify: (Specify Model/SIN), Standard Response, (specify K-factor), (specify temperature rating), Series TY-B Pendent Sprinkler with (specify type of finish or coating), P/N (specify from Table C)

Model S2 Pendent Shield & O-Ring:
Specify: S2 Pendent Shield & O-Ring for use with (specify 1/2" NPT or 3/4" NPT) Series TY-B Pendent Sprinklers, P/N (specify).

1/2" NPT S2 Pendent Shield & O-Ring . . . . . P/N 56-070-9-332
3/4" NPT S2 Pendent Shield & O-Ring . . . . . P/N 56-070-9-342

Sprinkler Wrench:
Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387.

Wax Sticks:
(for retouching wrench damaged wax coating)
Specify: (Specify color) color coded Wax Stick for retouching (specify temperature rating) temperature rated Series TY-B Sprinklers, P/N (specify).

Black for 135°F . . . . . P/N 56-065-1-135
Red for 155°F . . . . . P/N 56-065-1-155
Yellow for 175°F . . . . . P/N 56-065-1-175
Blue for 200°F and 286°F . . . . . P/N 56-065-1-286

NOTES

Each wax stick is suitable for retouching up to twenty-five sprinklers.

The wax used for 286°F sprinklers is the same as for 200°F sprinklers, and, therefore, the 286°F sprinkler is limited to the same maximum ceiling temperature as the 200°F sprinkler (i.e., 150°F).

P/N 57 — XXX — X — XXX

	MODEL/SIN
533 5.6K UPRIGHT (1/2"NPT)	TY3153
543 8.0K UPRIGHT (3/4"NPT)	TY4153

	SPRINKLER
1	NATURAL BRASS
7	LEAD COATED
6	WAX COATED 286°F/141°C MAX.
8	WAX OVER LEAD 286°F/141°C MAX.

	TEMPERATURE RATING
135	135°F/57°C
155	155°F/68°C
175	175°F/79°C
200	200°F/93°C
286	286°F/141°C
360	360°F/182°C

TABLE B
PART NUMBER SELECTION
SERIES TY-B UPRIGHT INTERMEDIATE LEVEL SPRINKLERS
(UPRIGHT SHIELD INCLUDED WITH SPRINKLER)

P/N 57 — XXX — X — XXX

	MODEL/SIN
571 5.6K PENDENT (1/2"NPT)	TY3251
591 8.0K PENDENT (3/4"NPT)	TY4251

	SPRINKLER
1	NATURAL BRASS

	TEMPERATURE RATING
135	135°F/57°C
155	155°F/68°C
175	175°F/79°C
200	200°F/93°C
286	286°F/141°C
360	360°F/182°C

TABLE C
PART NUMBER SELECTION
SERIES TY-B PENDENT SPRINKLERS
(MODEL S2 PENDENT SHIELD & O-RING MUST BE SEPARATELY ORDERED)

TECHNICAL DATA

COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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 QR COIN® Sprinklers are quick response specific application sprinklers for combustible interstitial (concealed) spaces (i.e., between floors, as well as low pitch attics that meet the criteria shown in the figures in this data page). These upright sprinklers are designed for use in specific light hazard combustible, as well as non-combustible, concealed spaces requiring sprinkler protection. The orifice design of the Viking QR COIN® Sprinkler, with a nominal K-factor of 5.6 (80 metric*), allows efficient use of available water supplies for hydraulically designed fire protection systems. The glass bulb operating element and special deflector combine speed of operation and area of coverage to meet the crucial fire protection requirement for shallow space combustible concealed spaces. The Electroless Nickel PTFE (ENT) coating has been investigated for installation in corrosive environments and is listed/approved as indicated in the Approval Charts.

FEATURES

- In some cases COIN® Sprinklers can allow the use of CPVC piping within the concealed spaces of applications requiring sprinkler protection in open truss construction of both wood and steel trusses (see Figure 3) and solid wood or composite wood joist with upper deck filled with non-combustible insulation (see Figure 5).
- COIN® Sprinklers can also be installed with steel pipe in protected areas constructed of solid wood joists (see Figure 7), and solid wood or composite wood joist with upper deck filled with non-combustible insulation (see Figure 8), and in unobstructed open truss construction of both wood and steel trusses (see Figures 9 and 10) as well as obstructed wood truss construction (see Figure 11).
- When using steel pipe, COIN® Sprinklers can be applied as a dry system using air or gas as a supervisory medium (see Figures 7–11).
- In certain scenarios, draft curtains are **NOT** required when sprinkler spacing meets either of the following criteria (also refer to Design Criteria):
  - 14' X 14' (4,3 m X 4,3 m) for solid wood joists or trusses on edge
  - 16' X 16' (4,9 m X 4,9 m) for truss construction on face (not on edge)

  For examples of trusses on face or edge see Figures 13A and 13B.

COIN® Sprinkler	
VK950	**5.6K (80 metric)**

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

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

Refer to the Approval Chart and Design Criteria in this technical data sheet for cULus Listing requirements that must be followed.

The COIN® Sprinkler has been tested to address the proper application density for shallow concealed combustible space fire protection when installed in accordance with this technical data page. The COIN® Sprinkler must be installed in the upright position as specified in the appropriate application described in Figures 3–12. The clearance from the sprinkler deflector to the roof is critical to operation of the sprinkler (refer to Figures 3–12). The clearances from pipe to lower ceiling for CPVC pipe is critical for protection of CPVC pipe.

For open truss and joist spaces, the maximum detection area is important for proper installation.

In certain installations, draft curtains or heat collection baffles or solid walls are **required** using wood or other product that will not allow heat to escape. In these installations, the maximum detection space shall be **limited** to 1000 ft^2 (93 m^2) or 2000 ft^2 (185 m^2) for solid wood joists. The draft curtain is required to protrude down from the top deck surface as specified herein.

Additionally, draft curtains are **not** required and the maximum detection space shall be **unlimited** for open truss construction with the top chord member on their face (not on edge) when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m) and for solid wood joists or trusses on edge when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m). In these cases, draft curtains are **not required**.

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: Refer to Design Criteria in this technical data sheet.
Rated to 175 psi (12 bar) water working pressure
Factory tested hydrostatically to 500 psi (34.5 bar)
Thread size: 1/2” (15 mm) NPT
Nominal K-Factor: 5.6 U.S. (80 metric*)

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

Glass-bulb fluid temperature rated to -65 °F (-55 °C)
Overall Length: 2-1/4” (57 mm)

Material Standards:
Frame Casting: Brass UNS-C84400 or QM Brass
Deflector: Phosphor Bronze UNS-C51000
Bulb: Glass, nominal 3 mm diameter
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Screw: Brass UNS-C36000
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Ordering Information: (Refer to Table 1.)

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

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

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

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

8. GUARANTEE

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

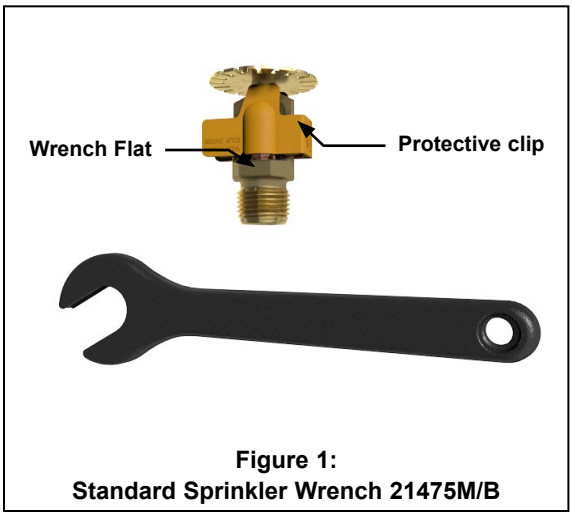


Figure 1:
Standard Sprinkler Wrench 21475M/B

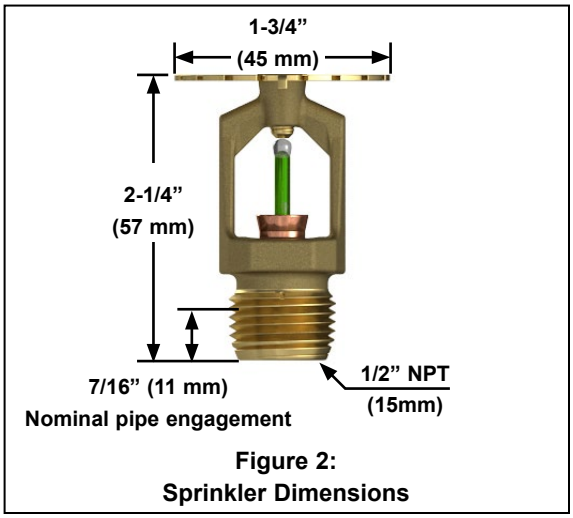


Figure 2:
Sprinkler Dimensions

TECHNICAL DATA

COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

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[4] Classification: Intermediate			
	NPT Inch	Description	Suffix	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature[1]	Suffix
20757	1/2	Brass	A	200 °F (93 °C)	Green	150 °F (65 °C)	E
		ENT [2,3]	JN				

Corrosion-Resistant Coating:
ENT[2,3]

Example: 20757AE = VK950 with Brass Finish and 200 °F (93 °C) Nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 150 °F (65 °C) meaning if the area will experience temperatures above the maximum ambient rating, you shall use a higher temperature-rated sprinkler.

Accessories

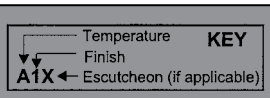
Sprinkler Wrenches (see Figure 1):
A. Standard Wrench: Part No. 21475MB.
Sprinkler Cabinet:
A. Up to 6 sprinklers: Part number 01724A.
B. 6-12 Sprinklers: Part number 01725A.

Footnotes

1. 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.
2. cULus Listed as corrosion resistant.
3. The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway. For ENT coated sprinklers, the Belleville spring is exposed.
4. The sprinkler temperature rating is stamped on the deflector.

Approval Chart

COIN® Specific Application QR Upright Sprinkler VK950
For Light Hazard Occupancies Only



Part Number[1]	SIN	Maximum Pressure	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals[3] (Refer also to Design Criteria.)
			NPT	BSPT	U.S.	metric[2]	Inches	mm	cULus[4]
20757	VK950	175 psi	1/2”	15 mm	5.6	80	2-1/4	57	A1

Approved Temperature Rating	Approved Finish
A - 200 °F (93 °C)	1 - Brass, ENT[6]

Footnotes

[1] Also refer to Viking’s current price schedule.
[2] Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
[3] This table shows the listings and approvals available at the time of printing. Other approvals may be in process.
[4] Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
[5] Meets New York City requirements, effective July 1, 2008.
[6] cULus Listed as corrosion resistant.

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

DESIGN CRITERIA - CPVC PIPE (See Figures 3-6)

(Also refer to the Approval Chart on page 3.)

The Viking COIN® Sprinkler MUST be installed in the upright position.

APPLICATION

For installation in horizontal interstitial concealed spaces constructed of engineered open wood trusses, open bar joist, and non-combustible insulation completely filling the upper joist for solid or composite wood joist construction having roof pitch of up to 2/12.

NOTE: *In order to be considered "non- combustible insulation filled solid wood or composite wood joist construction", the insulation (including insulation provided with a combustible vapor barrier), must completely fill the pockets between the joists to the bottom of the joists, and the insulation must be secured in place with metal wire netting. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the COIN® Sprinklers in the event of a fire.*

A. Concealed Space Limitations

The total concealed space is not limited; however, the following must be observed:

- Draft curtains (heat collection baffle) or full height walls must be provided to limit the maximum area in order to confine heat of localized detection area to 1000 ft^2 (93 m^2) or, for solid wood joists and open truss construction with the top chord members on face (not on edge) to 2000 ft^2 (185 m^2).
- Insulated top chord spaces (on edge) confine heat localized detection area to 2000 ft^2, non-insulated top chord spaces (on edge) confine heat localized area to 1000 ft^2 (93 m^2).
- The draft curtain must be at least 1/3 the depth of the concealed space or 8" (200 mm), whichever is greater, for open truss construction, open bar joist, and non-combustible insulation filled solid or composite wood joist construction.
- The draft curtain must be constructed of material that will not allow heat to escape through or above it; this may be ¼" (6 mm) thick plywood.
- Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m) for solid wood joists or trusses on edge; see Figure 13B.
- Draft curtains are NOT required when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m) for truss construction on face (not on edge); see Figure 13A.
- Draft curtains are NOT required when using wood truss construction with chords on face and non-combustible insulation is provided to the bottom of the trusses (Figure 12).

B. Concealed Space Height

Open Wood Truss and Open Steel Joist Construction (Figure 3):

- Maximum height of the space: 60" (1.5 m).
- Minimum height: 6" (150 mm)
- Maximum roof pitch: 2/12 (9°)

Where applied to pitch roof and flat ceiling, maintain specified clearances from sprinkler deflector to truss and maximum height of pipe run to ceiling or non-combustible ceiling insulation in all locations. **NOTE:** The sprinkler deflector shall be installed parallel with the roof plane.

Solid wood or composite wood joist with non-combustible filled insulation only (Figure 5):

- Maximum depth of concealed space is 60" (1500 mm) from bottom of upper deck joist to top of ceiling joist.
- Minimum depth is 6" (152 mm) from bottom of upper deck joist to top of ceiling joist or non-combustible ceiling insulation.

C. System Type

- Light Hazard, Wet Pipe System

D. Minimum Density

- 0.10 gpm/ft^2 (4.1 mm/min).

E. Spacing of COIN® Sprinklers

- Minimum Spacing: 6'-0"(1.8 m)
- Maximum Spacing: 16'-0" (4.9 m)

NOTE: *Minimum spacing does not include additional sprinklers required for obstructions for use of CPVC pipe that includes offsets.*

F. Maximum Area of Coverage

- 256 ft^2 (24 m^2)

G. Minimum Operating Pressure

- 7.0 PSI (0.5 bar)

H. COIN® Sprinkler Deflector Position

The COIN® Sprinkler shall be installed in the upright position. The frame arms must be installed parallel with the pipe.

- 1-1/2" to 4" (40 - 100 mm) below upper deck for Open Wood Truss and Open Steel Open Joist Construction Using CPVC Pipe (see Figure 3).
- 1-1/2" to 4" (40 - 100 mm) below non-combustible insulation-filled upper deck for Open Wood Truss and Open Steel Open Joist Construction with Using CPVC Pipe (see Figure 4).
- 1-1/2" to 4" (40 - 100 mm) below non-combustible insulation-filled solid wood joists or composite wood joists (see Figure 5).

(continues on page 5.)

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

DESIGN CRITERIA - CPVC PIPE (See Figures 3-6)

(Also refer to the Approval Chart)

(continued from page 4.)

I. Remote Area

For wet pipe systems,

1. The remote area for open wood truss construction or open bar joist construction with the top chord members on face (not on edge) is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m). The remote area for this application is the same as above.
2. The remote area for solid wood joists is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m). The remote area for this application is the same as above.
3. The remote area for open wood truss construction with the top chord members on edge is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m) The remote area for this application is the same as above.
4. The remote area for composite wood joists is 1000 ft² (93 m²).

NOTE: *This area does not include additional sprinklers for protection of CPVC pipe over obstructions.*

J. UL Listed CPVC Pipe for use with COIN™ Sprinklers

The Viking COIN® Sprinkler is UL Listed for use with CPVC pipe products listed for use in concealed spaces with sprinklers**.

**Currently listed products are manufactured under the BlazeMaster®, FireLock®, and FlameGuard® trade names.

In order to use CPVC products, the bottom of the horizontal run must be no greater than 6” (150 mm) or 1/3 of the total space, whichever is smaller, above the ceiling or non-combustible insulation or 1/3 the depth of the space measured from the top surface of the ceiling to the bottom of the deck above. The CPVC pipe can supply the COIN® Sprinklers and the ceiling sprinklers below. Use all guidelines and installation instructions as specified by the CPVC pipe manufacturers unless specified differently in this data sheet. When using 1” (DN25) pipe or larger, a hanger must be located at the truss nearest the sprig for restraint. If using ¾” (DN20), all sprigs over 12” (300 mm) must include lateral bracing.

For use of listed CPVC pipe products in concealed spaces using the COIN® Sprinkler, a minimum lateral distance of 18” (450 mm) must be maintained between the CPVC pipe and the heat sources (e.g. HVAC heat pump units, fan motors, and heat lamps, etc.)

Where CPVC pipe must be installed above the maximum distance of 6” (150 mm) or 1/3 of the total space, whichever is smaller, above the ceiling or non-combustible insulation when piping around obstructions, additional COIN® Sprinklers must be installed as shown in Figures 3, 4, and 5 in order to protect the CPVC product.

NOTE: Where CPVC piping is installed as a vertical riser to the next floor above, refer to Figure 6 for acceptable options.

TABLE 2: PRESSURE VS. COVERAGE MATRIX

All values based on 0.1 gpm/ft² density per sprinkler or 7 psi (0.5 bar) whichever is higher.

Ft. (m)	PSI (bar)								
16 (4.8)	7 (0.4)	7.2 (0.4)	8.2 (0.5)	10.3 (0.7)	12.8 (0.8)	14.1 (0.9)	16.9 (1.1)	18.4 (1.2)	21.6 (1.4)
15 (4.5)	7 (0.4)	7 (0.4)	7.2 (0.4)	9.2 (0.6)	10.3 (0.7)	12.8 (0.8)	14.1 (0.9)	16.9 (1.1)	18.4 (1.2)
14 (4.2)	7 (0.4)	7 (0.4)	7 (0.4)	8.2 (0.5)	9.2 (0.6)	11.5 (0.7)	12.8 (0.8)	14.1 (0.9)	16.9 (1.1)
13 (3.9)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	8.2 (0.5)	9.2 (0.6)	11.5 (0.7)	12.8 (0.8)	14.1 (0.9)
12 (3.6)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	8.2 (0.5)	9.2 (0.6)	10.3 (0.7)	12.8 (0.8)
11 (3.3)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	8.2 (0.5)	9.2 (0.6)	10.3 (0.7)
10 (3.0)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7.2 (0.4)	8.2 (0.5)
9 (2.7)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7.2 (0.4)
8 (2.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)	7 (0.4)
Ft. (m)	**8 (2.4)**	**9 (2.7)**	**10 (3.0)**	**11 (3.3)**	**12 (3.6)**	**13 (3.9)**	**14 (4.2)**	**15 (4.5)**	**16 (4.8)**

NOTES:

- **This table applies to heat collection areas of 2000 ft² (185 m²) and greater (unlimited).**
- **Design areas between table spacing values need to be rounded up.**
- **This table does not apply to heat collection areas of 1000 ft² (93 m²).**

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

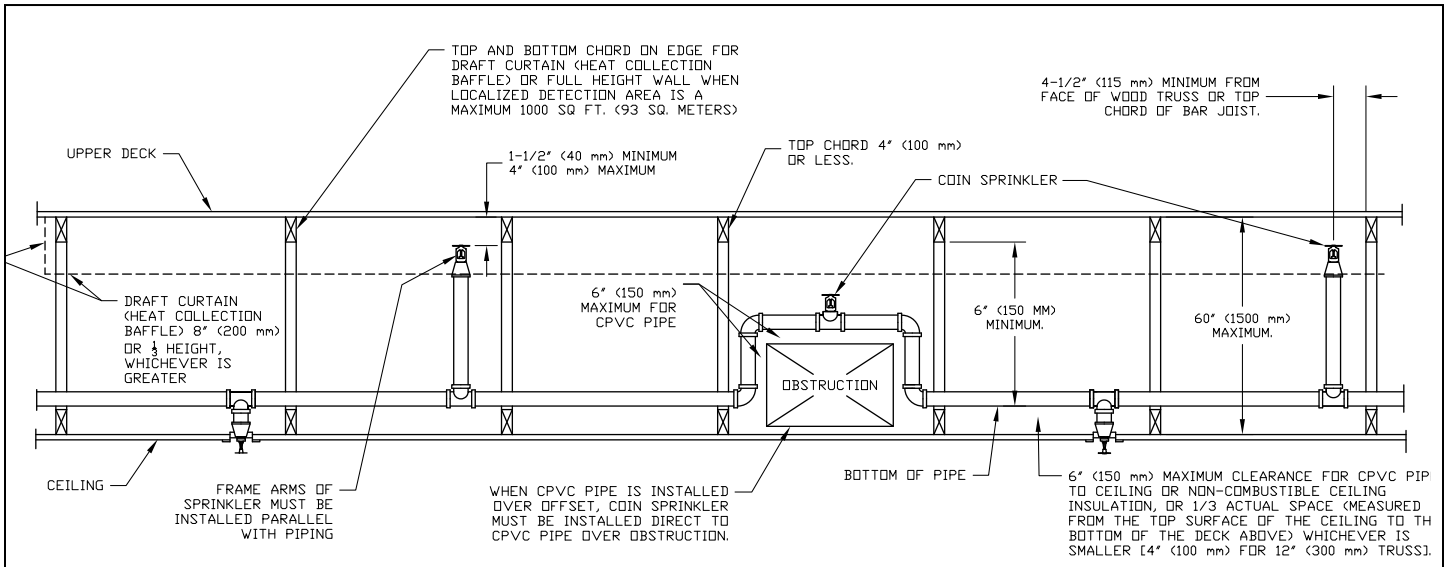


Figure 3: Open Wood Truss and Open Web Steel Joist Construction Using CPVC Pipe (Cross Section View)

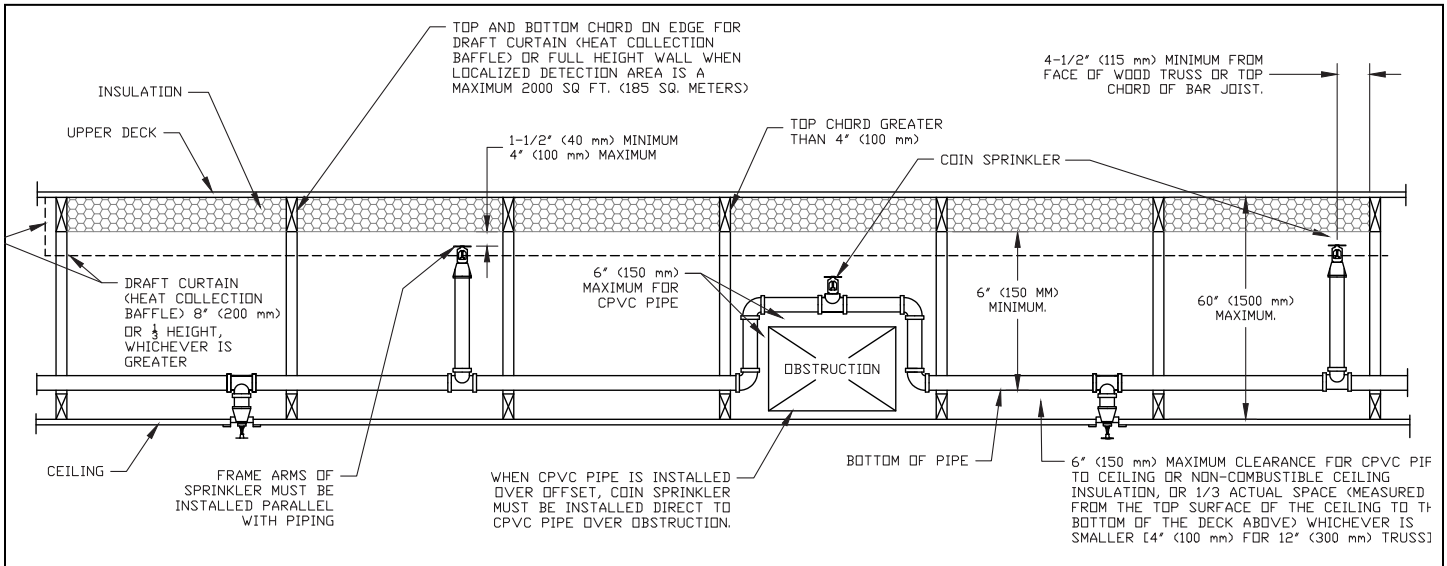


Figure 4: Open Wood Truss and Open Web Steel Joist Construction with Non-Combustible Insulation Filling to Bottom of the Top Cord Using CPVC Pipe (Cross Section View)

TECHNICAL DATA

COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

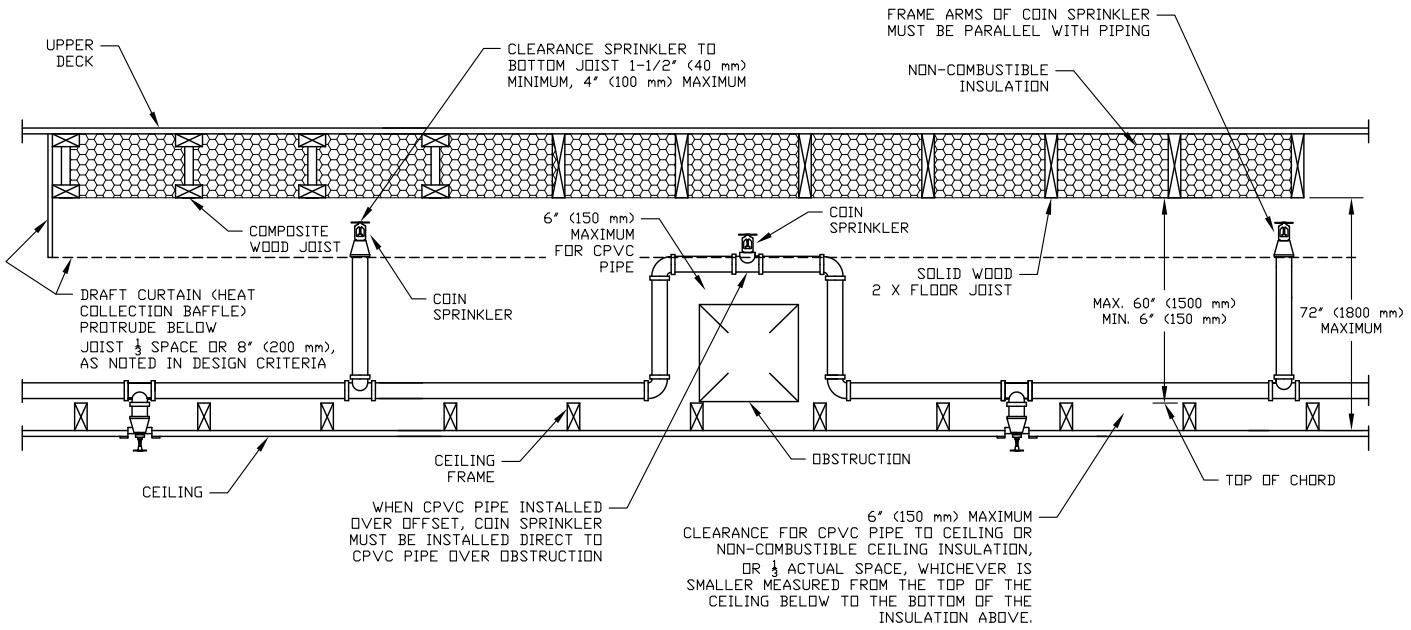


Figure 5: Solid Wood or Composite Wood Joist Construction with Non-Combustible Insulation Filling Upper Deck Using CPVC Pipe (Cross Section View)

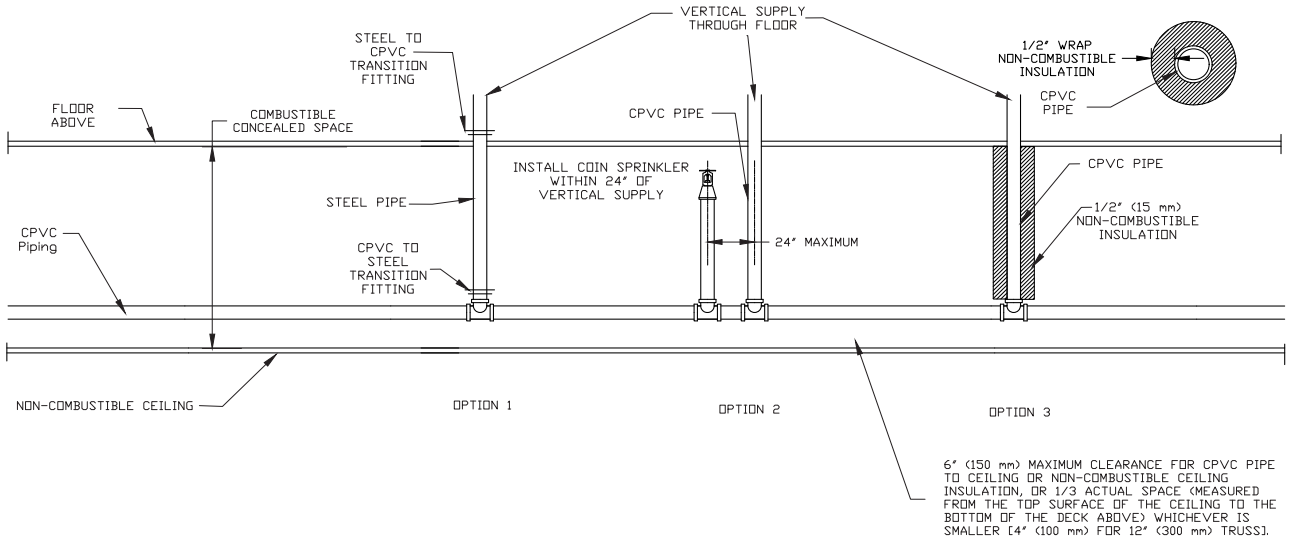


Figure 6: CPVC Piping Installed as a Vertical Riser

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

DESIGN CRITERIA - STEEL PIPE (See Figures 7 – 12)

(Also refer to the Approval Chart on page 3)

The Viking COIN® Sprinkler MUST be installed in the upright position.

APPLICATION

For installation in horizontal concealed spaces of solid wood joist construction with a roof pitch of up to 2/12 maximum. The upper joist is constructed of solid wood or composite wood with a maximum depth of 12" (300 mm) and 16" (400 mm) on center minimum spacing. Also, steel pipe may be applied in truss construction and solid filled non-combustible insulation in upper deck and wood or composite joist construction similar to that shown in Figures 3-5 with the exception of extra sprinklers are not required over obstructions. Also, there is no minimum clearance for supply pipe to upper joists. With the COIN® Sprinkler applied using steel pipe, the system may be wet, dry, or preaction type for wood truss or steel construction; solid wood or composite with non-combustible solid fill insulation (see Paragraph J on page 9).

NOTE: *In order to be considered "non-combustible insulation filled solid wood or composite wood joist construction", the insulation (including insulation provided with a combustible vapor barrier), must completely fill the pockets between the joists to the bottom of the joists, and the insulation must be secured in place with metal wire netting. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the COIN® Sprinklers in the event of a fire.*

A. Concealed Space Limitations

The total concealed space is not limited; however, the following must be observed:

- Blocking between joists and upper deck must be constructed of material that will not allow heat to escape through or above the blocking.
- The blocking must be constructed to the full depth of the upper joist, and must be constructed using a non-combustible material or a material that is the same as that of the joist construction. A maximum channel space for blocking is 32 ft (10 m) intervals.
- Solid wall construction or draft curtains (heat collection baffles) must protrude below the joist a minimum of 6" (150 mm) or 1/3 the space, whichever is greatest, and run laterally with the joist spaced at 31 ft (9.4 m) width maximum to limit the heat detection space to a maximum of 1,000 ft^2 (93 m^2) or with the truss spaced at 62 ft (19 m) width maximum to limit the heat detection space for open wood truss construction to 2000 ft^2 (185 m^2) with their top chord members on face (not on edge) and 2000 ft^2 (185 m^2) for solid wood joists.
- Insulated top chord spaces (on edge) confine heat localized detection area to 2000 ft^2 (185 m^2), non-insulated top chord spaces on edge confine heat localized area to 1,000 ft^2 (93 m^2).
- The draft curtain may be constructed of ¼" (6 mm) thick plywood to prevent heat from escaping beyond.
- When non-combustible solid filled insulation is used, the wood blocking and draft curtains are not required for solid wood or composite wood joist construction.
- Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m) for solid wood joists or trusses on edge for wet systems only; see Figure 13B.
- Draft curtains are NOT required when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m) for truss construction on face (not on edge) for wet or dry systems; see Figure 13A.
- Draft curtains are NOT required when using wood truss construction with chords on face and non-combustible insulation is provided to the bottom of the trusses (Figure 12).

B. Concealed Space Height

Solid Wood or Composite Wood Joist Construction (See Figures 7 and 8):

- Maximum depth or height of concealed space: 60" (1500 mm) from bottom of upper deck joist to top of ceiling joist.
- Maximum space from bottom of upper deck to ceiling surface (bottom of joist): 84" (2100 mm). See Figure 7.
- Minimum depth or height of concealed space: 6" (150 mm) from bottom of upper deck joist to top of ceiling frame joist.

Open Wood Truss or Open Web Steel Joist (See Figure 10):

- Maximum height from inside ceiling to inside deck of concealed space: 60" (1500 mm).
- Minimum height from bottom of upper chords to top of lower chords: 6" (150 mm)
- The top and bottom chord members of these types of wood joists must be on face (not on edge).

Obstructed Wood Truss (See Figure 11):

- Maximum depth of concealed space: 84" (2100 mm) from bottom of upper deck to top of ceiling.
- Minimum depth of concealed space: 6" (150 mm) from bottom of upper chord to top of lower chord.

C. System Type

- Light hazard, wet pipe system or dry pipe system supervised with air or gas when using steel pipe only.

D. Minimum Density

- 0.10 gpm/ft^2. (4.1 mm/min).

E. Spacing of COIN® Sprinklers

- Minimum Space Between Sprinklers: 6'-0" (1.8 m)
- Maximum Space Between Sprinklers: 16'-0" (4.9 m)

F. Maximum Area of Coverage

- 256ft^2 (24 m^2)

G. Minimum Operating Pressure

- 7.0 PSI (0.5 bar)

H. COIN® Sprinkler Deflector Position

The COIN® Sprinkler shall be installed in the upright position. The frame arms must be installed parallel with the pipe.

- 1-1/2" to 2" (40 - 50 mm) below solid wood joist or top chord of obstructed wood truss construction. See Figures 7 and 11.
- 1-1/2" to 4" (40 - 100 mm) below upper deck for unobstructed open wood truss construction or concealed spaces of non-combustible open steel joist construction. See Figures 8 and 9.
- 1-1/2" to 4" (40 - 100 mm) below non-combustible insulation-filled solid wood joists or composite wood joists. See Figure 8.

(continues on page 9.)

TECHNICAL DATA

COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

DESIGN CRITERIA - STEEL PIPE (See Figures 7–12)

(Also refer to the Approval Chart on page 3)

(continued from page 8)

I. Remote Area

For wet pipe systems,

1. The remote area for open wood truss construction or open bar joist construction with the top chord members on face (not on edge) is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m). The remote area for this application is the same as above.
2. The remote area for solid wood joists is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m). The remote area for this application is the same as above.
3. The remote area for open wood truss construction with the top chord members on edge is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 14' X 14' (4,3 m X 4,3 m) The remote area for this application is the same as above.
4. The remote area for composite wood joists is 1000 ft² (93 m²).

For dry pipe systems,

1. The remote area for open wood truss construction or open bar joist construction with the top chord members on face (not on edge) is 1000 ft² (93 m²) or 6 sprinklers, whichever is greater. See Table 2.
   - Draft curtains are NOT required when sprinkler spacing is up to 16' X 16' (4,9 m X 4,9 m). The remote area for this application is the same as above.
2. The remote area for solid wood joists is 2000 ft² (185 m²) or 15 sprinklers, whichever is greater. See Table 2.
3. The remote area for open wood truss construction with the top chord members on edge is 1000 ft² (93 m²).
4. The remote area for composite wood joists is 1000 ft² (93 m²).

J. Piping System

Steel pipe installed in accordance with NFPA 13 standards may be applied. The steel pipe may be hung from the upper joist or truss using proper supports. The sprinkler deflector must be positioned as indicated in paragraph H above. Extra sprinklers are not required for protection of pipe when offsetting for obstructions. Ceiling sprinklers below the concealed space may be fed from the same piping as the COIN® Sprinklers.

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

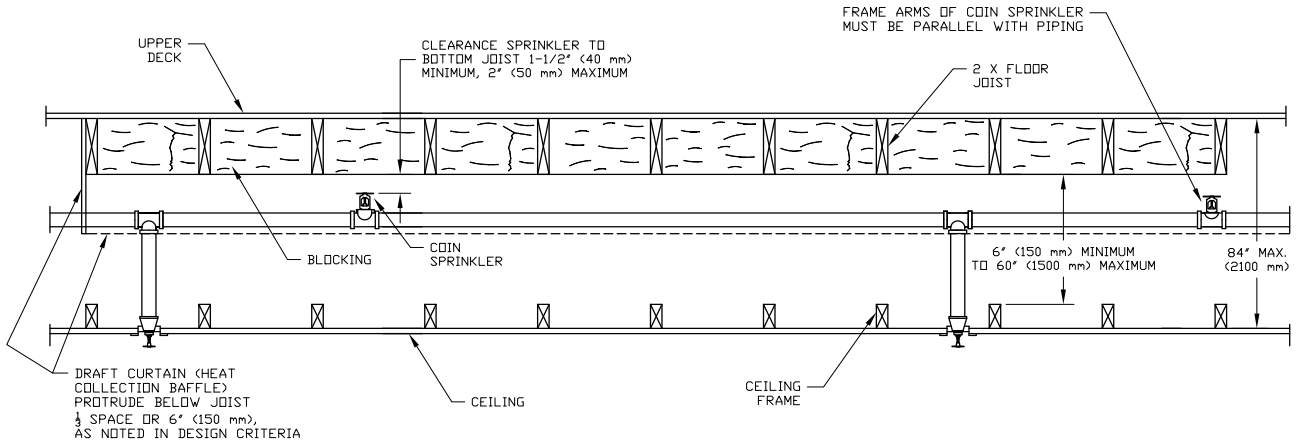


Figure 7: Solid Wood Joist Construction (Steel Pipe, Cross Sectional View)

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

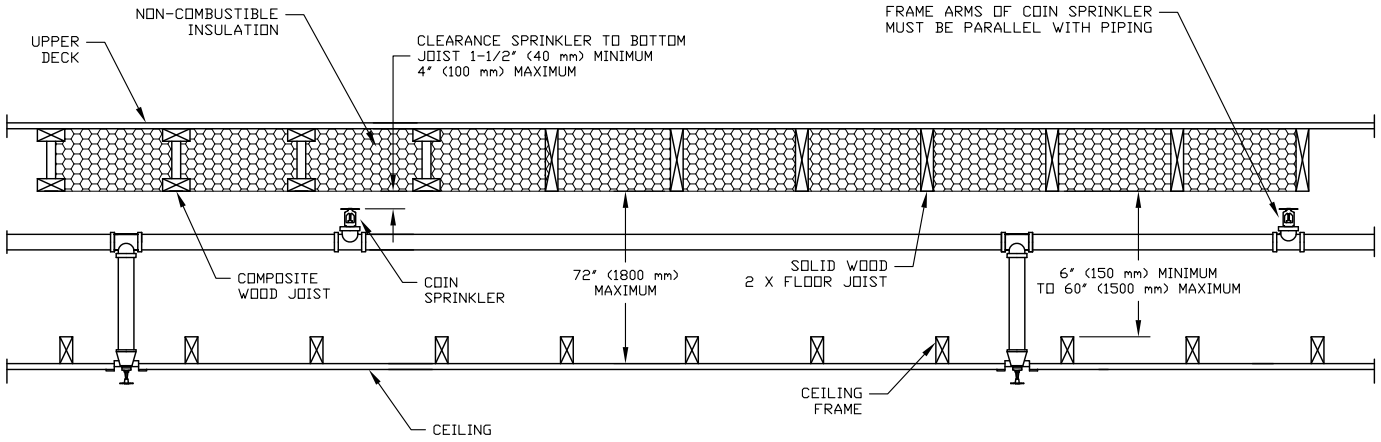


Figure 8: Solid Wood or Composite Wood Joist Construction with Non-Combustible Insulation Filled Upper Deck (Steel Pipe, Cross Sectional View)

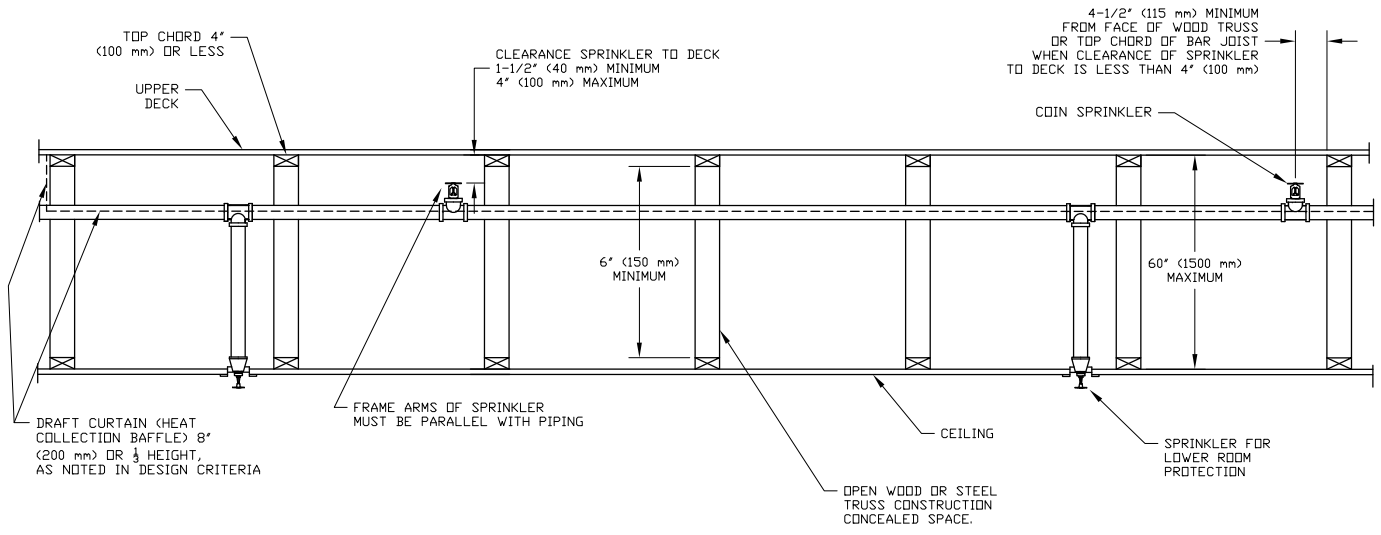


Figure 9: Unobstructed Open Wood Truss and Open Steel Bar Joist (Steel Pipe, Cross Sectional View)

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

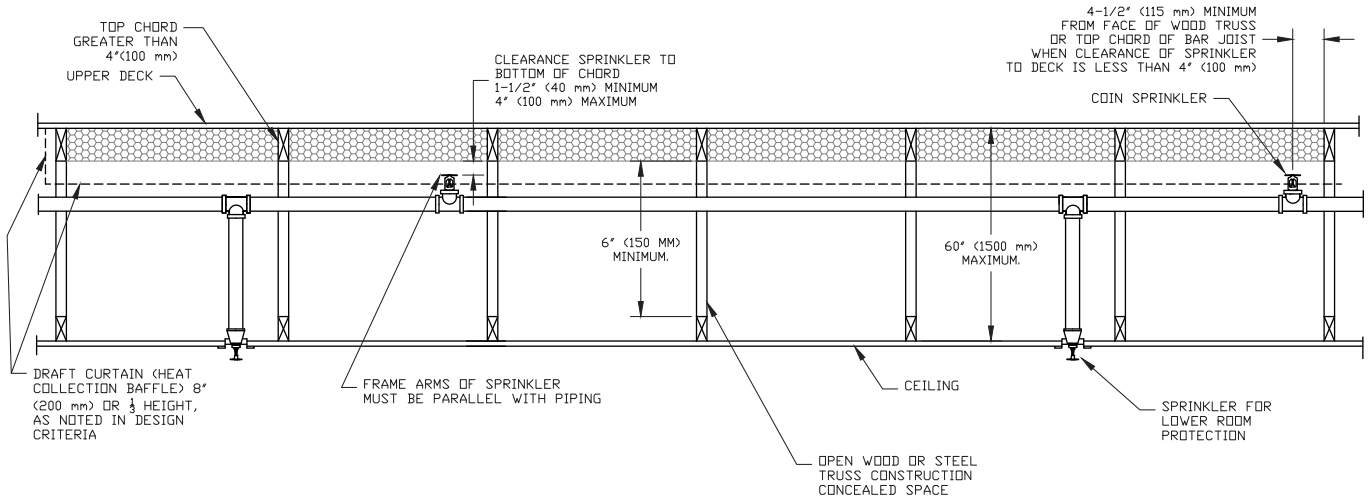


Figure 10: Open Wood Truss and Open Web Steel Joist Construction with Non-Combustible Insulation Filling to Bottom of the Top Cord Using Steel Pipe (Cross Section View)

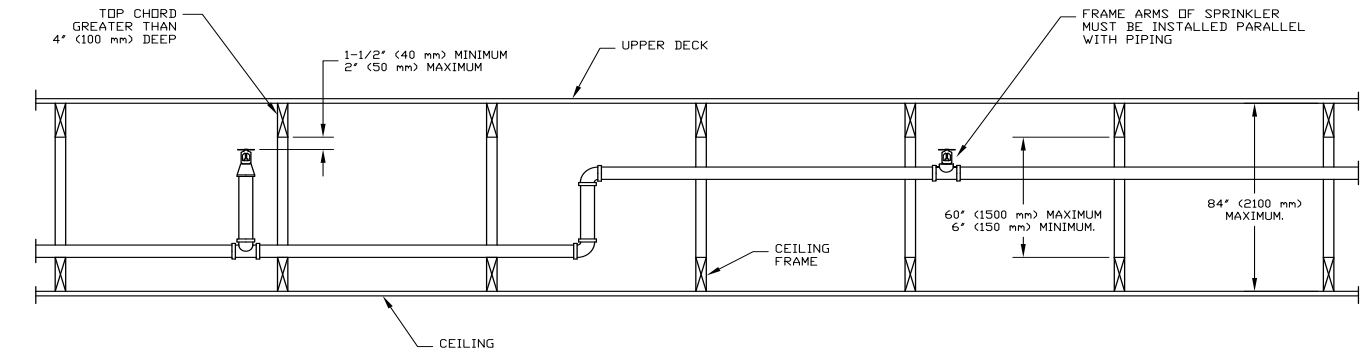


Figure 11: Obstructed Wood Truss Construction (Steel Pipe, Cross Sectional View)

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

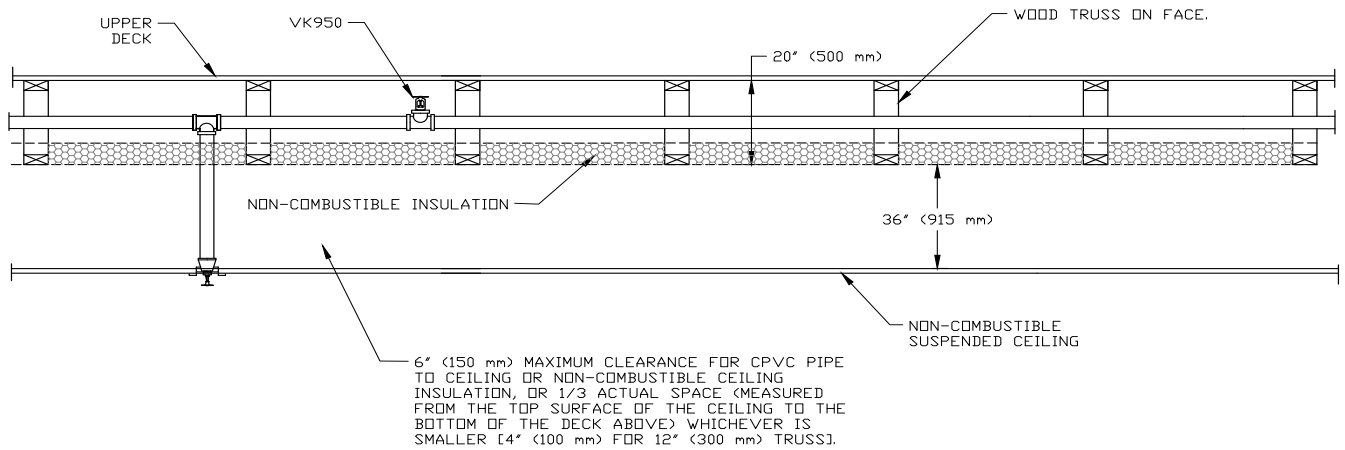


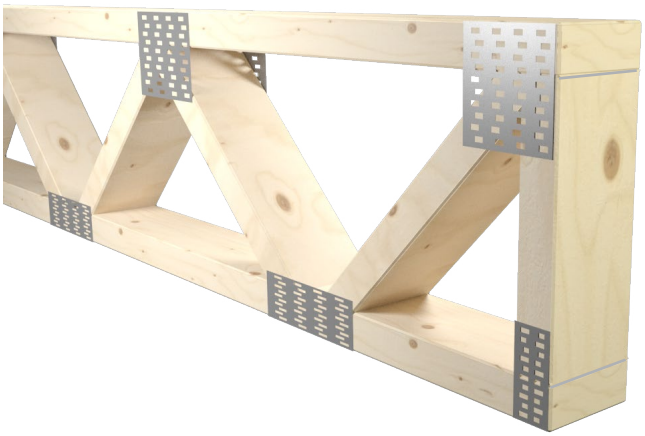
Figure 12:
Wood Truss Construction with Chords on Face and Non-combustible Insulation Provided to the Bottom of the Trusses (CPVC and Steel Pipe, Cross Section View)

VIKING®

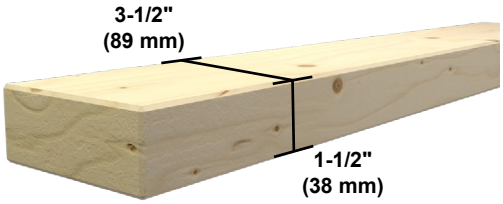
TECHNICAL DATA

COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

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

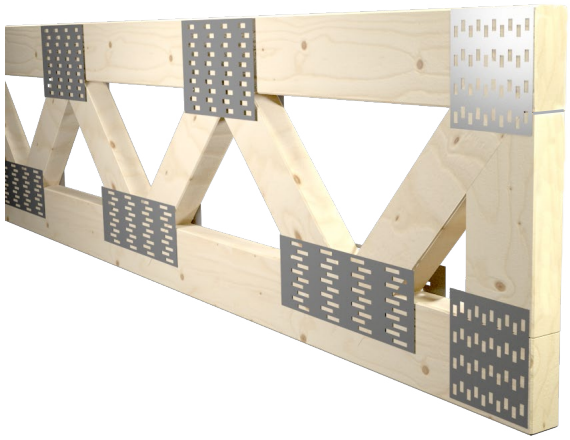


On Face

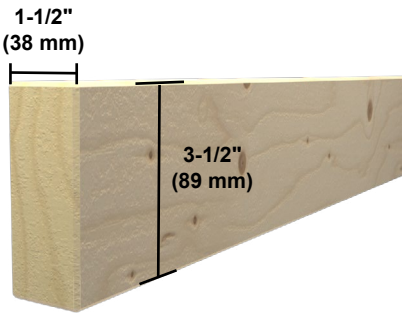


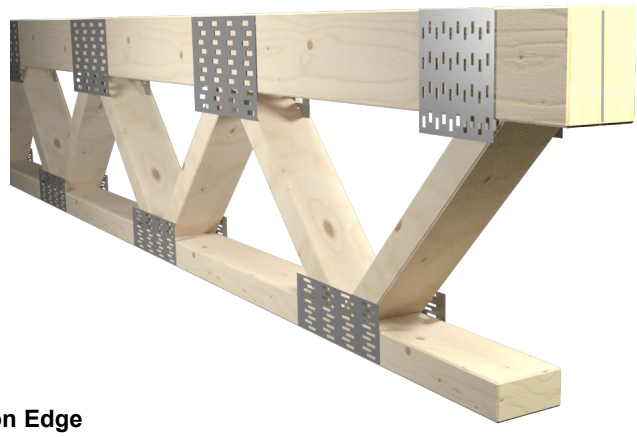
Example of Typical 2x4 Construction
Refer to Design Critera

Figure 13A: Trusses on Face



On Edge





Example of Typical 2x4 Construction
Refer to Design Critera

Figure 13B: Trusses on Edge

VIKING®	TECHNICAL DATA	COIN® QUICK RESPONSE UPRIGHT SPRINKLER VK950 (SPECIFIC APPLICATION)

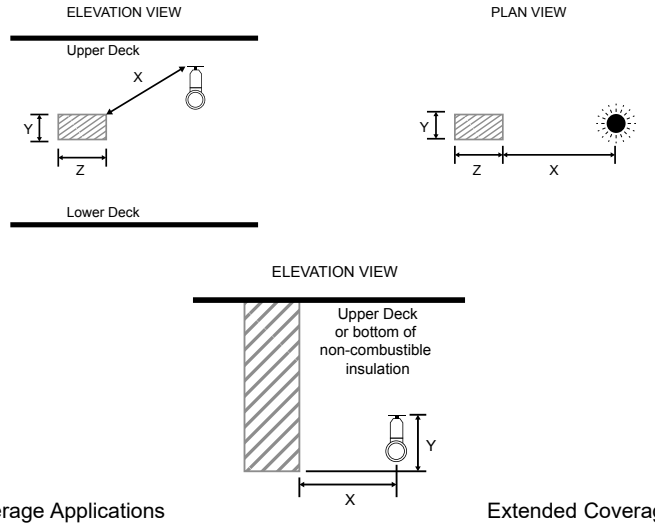
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

OBSTRUCTION CRITERIA - CPVC and STEEL PIPE

APPLIES TO BOTH CPVC AND STEEL PIPE (Also refer to the Approval Chart)

OBSTRUCTIONS

- All obstruction criteria for extended coverage sprinklers per NFPA 13 shall apply unless specified differently in this data sheet.
- For installations where the VK950 is installed up to a 15'-0" X 15'-0" spacing or less between sprinkler, the obstruction rules for standard coverage sprinklers shall apply.
- For installations where the VK950 exceeds 15'-0" X 15'-0" spacing, and up to 16'-0" X 16'-0" spacing, the obstruction rules for extended coverage sprinklers shall apply
- See illustrations below.



Standard Coverage Applications
X ≥ 3Y or 3Z
X ≤ 36" (900 mm)
(Use dimension Y or Z, whichever is greater.)

Extended Coverage Applications
X ≥ 4Y or 4Z
X ≤ 36" (900 mm)
(Use dimension Y or Z, whichever is greater.)

Figure 14: NFPA 13 Obstruction Criteria

NFPA 13 Obstruction Criteria - Standard Coverage ApplicationTable 10.2.7.1.2

Distance from Sprinkler to Side of Obstruction (X)		Maximum Allowable Distance of Deflector Above Bottom of Obstruction (Y)	
< 1'-0"	<300 mm	0"	0 mm
1'-0" to <1'-6"	300 mm to <450 mm	2½"	65 mm
1'-6" to <2'-0"	450 mm to <600 mm	3½"	90 mm
2'-0" to <2'-6"	600 mm to <750 mm	5½"	140 mm
2'-6" to <3'-0"	750 mm to <900 mm	7½"	190 mm
3'-0" to <3'-6"	900 mm to <1.1 m	9½"	240 mm
3'-6" to <4'-0"	1.1 m to <1.2 m	12"	300 mm
4'-0" to <4'-6"	1.2 m to <1.4 m	14"	350 mm
4'-6" to <5'-0"	1.4 m to <1.5 m	16½"	45 mm

NFPA 13 Obstruction Criteria - Extended Coverage ApplicationTable 11.2.5.1.2

Distance from Sprinkler to Side of Obstruction (X)		Maximum Allowable Distance of Deflector Above Bottom of Obstruction (Y)	
< 1'-0"	<300 mm	0"	0 mm
1'-0" to <1'-6"	300 mm to <450 mm	0"	0 mm
1'-6" to <2'-0"	450 mm to <600 mm	1"	25 mm
2'-0" to <2'-6"	600 mm to <750 mm	1"	25 mm
2'-6" to <3'-0"	750 mm to <900 mm	1"	75 mm
3'-0" to <3'-6"	900 mm to <1.1 m	3"	75 mm
3'-6" to <4'-0"	1.1 m to <1.2 m	3"	75 mm
4'-0" to <4'-6"	1.2 m to <1.4 m	5"	125 mm
4'-6" to <5'-0"	1.4 m to <1.5 m	7"	175 mm

TECHNICAL DATA

SPRINKLER GENERAL CARE, INSTALLATION, AND MAINTENANCE GUIDE

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.

1. DESCRIPTION - STANDARD RESPONSE, QUICK RESPONSE, EXTENDED COVERAGE, AND DRY SPRINKLERS

Viking thermosensitive spray sprinklers consist of a small frame and either a glass bulb or a fusible operating element. Available styles include pendent, flush pendent, concealed pendent, upright, horizontal sidewall, vertical sidewall, or conventional, depending on the particular sprinkler model selected.

Viking sprinklers are available with various finishes, temperature ratings, responses, and K-Factors to meet design requirements†. Used in conjunction with one of the corrosion-resistant coatings (for frame style sprinklers), the units provide protection against many corrosive environments. In addition, the special Polyester or Teflon® coatings can be used in decorative applications where colors are desired.

† Refer to the sprinkler technical data page for available styles, finishes, temperature ratings, responses, and nominal K-Factors for specific sprinkler models.

2. LISTINGS AND APPROVALS

Refer to the Approval Charts on the appropriate sprinkler technical data page(s) and/or approval agency listings.

3. TECHNICAL DATA

Specifications:

Refer to the appropriate sprinkler technical data sheet.

Material Standards:

Refer to the appropriate sprinkler technical data sheet.

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

4. INSTALLATION

NOTE: Take care not to over-tighten the sprinkler and/or damage its operating parts!

Maximum Torque:

1/2" NPT: 14 ft-lbs. (19.0 N-m)

3/4" NPT: 20 ft-lbs. (27.1 N-m)

1" NPT: 30 ft-lbs. (40.7 N-m)

A. Care and Handling (also refer to Bulletin - Care and Handling of Sprinklers, Form No. F_091699.)

Sprinklers must be handled with care. They must be stored in a cool, dry place in their original shipping container. Never install sprinklers that have been dropped, damaged, or exposed to temperatures exceeding the maximum ambient temperature allowed (refer to the temperature chart on the sprinkler technical data page). Never install any glass-bulb sprinkler if the bulb is cracked or if there is a loss of liquid from the bulb. A small air bubble should be present in the glass bulb. Any sprinkler with a loss of liquid from the glass bulb or damage to the fusible element should be destroyed immediately. (Note: Installing glass bulb sprinklers in direct sunlight (ultraviolet light) may affect the color of the dye used to color code the bulb. This color change does not affect the integrity of the bulb.)

Sprinklers must be protected from mechanical damage during storage, transport, handling, and after installation. Sprinklers subject to mechanical damage must be protected with an approved sprinkler guard.

Use only sprinklers listed as corrosion resistant when subject to corrosive environments. When installing corrosion-resistant sprinklers, take care not to damage the corrosion-resistant coating. Use only the special wrench designed for installing coated or recessed Viking sprinklers (any other wrench may damage the unit).

Concealed sprinklers must be installed in neutral or negative pressure plenums only!

Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they could be exposed to temperatures exceeding the maximum recommended ambient temperature for the temperature rating used.

Wet pipe systems must be provided with adequate heat. Sprinklers supplied from dry systems in areas subject to freezing must be listed dry sprinklers, upright, or horizontal sidewall sprinklers installed so that water is not trapped. For dry systems, pendent sprinklers and sidewall sprinklers installed on return bends are permitted, where the sprinklers, return bend, and branch line piping are in an area maintained at or above 40 °F (4 °C).

B. Installation Instructions - Standard Spray Sprinklers

Viking sprinklers are manufactured and tested to meet the rigid requirements of approving agencies. They are designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to sprinklers or cover plate assemblies after they leave the factory including, but not limited to: painting, plating, coating, or modification, may render them inoperative and will automatically nullify the approvals and any guarantee made by The Viking Corporation.

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.

Before installation, be sure to have the appropriate sprinkler model and style, with the correct K-Factor, temperature rating, and response characteristics. Sprinklers must be installed after the piping is in place to prevent mechanical damage. Keep sprinklers with protective caps or bulb shields contained within the caps or shields during installation and testing, and any time the sprinkler is shipped or handled.

1a. For frame-style sprinklers, install escutcheon (if used), which is designed to thread onto the external threads of the sprinkler. Refer to the appropriate sprinkler data page to determine approved escutcheons for use with specific sprinkler models.

1b. For flush and concealed style sprinklers: Cut the sprinkler nipple so that the ½" or 3/4" (15 mm or 20 mm)* NPT outlet of the reducing coupling is at the desired location, and centered in the opening* in the ceiling or wall.
*Size depends on the sprinkler model used. Refer to the sprinkler technical data page.

2. Apply a small amount of pipe-joint compound or 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 have the caps or shields kept on them when applying pipe-joint compound or tape. *Exception: For domed concealed sprinklers, remove the protective cap for installation, and then place it back on the sprinkler temporarily..*

3. Refer to the appropriate sprinkler technical data page to determine the correct sprinkler wrench for the model of sprinkler used. DO NOT use the deflector or fusible element to start or thread the sprinkler into a fitting.
   a. Install the sprinkler onto the piping using the special sprinkler wrench only, taking care not to over-tighten or damage the sprinkler.
   b. For flush and concealed style sprinklers: the internal diameter of the special sprinkler installation wrench is designed for use with the sprinkler contained in the protective cap. *Exception: For domed concealed sprinklers, remove the protective cap for installation, and then place it back on the sprinkler temporarily.* Thread the flush or concealed sprinkler into the ½" or 3/4" (15 mm or 20 mm)* NPT outlet of the coupling by turning it clockwise with the special sprinkler wrench. *Thread size depends on the particular sprinkler model used. Refer to the sprinkler technical data page.

C. Installation Instructions - Dry Sprinklers

WARNING: Viking dry sprinklers are to be installed in the 1" outlet (for dry and preaction systems), or run of malleable, ductile iron, or Nibco CPVC* threaded tee fittings (for wet systems) that meet the dimensional requirements of ANSI B16.3 (Class 150), or cast iron threaded tee fittings that meet the dimensional requirements of ANSI B16.4 (Class 125), even at branch line ends. The threaded end of the dry sprinkler is designed to allow the seal to penetrate and extend into the fitting to a predetermined depth. This prevents condensation from accumulating and freezing over the sprinkler seal. ***NOTE: When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-BI. When selecting other CPVC fittings, contact Viking Technical Services.**

1. **DO NOT** install the dry sprinkler into a threaded elbow, coupling, or any other fitting that could interfere with thread penetration. Such installation would damage the brass seal.
2. **DO NOT** install dry sprinklers into couplings or fittings that would allow condensation to accumulate above the seal when the sprinkler is located in an area subject to freezing.
3. **NEVER** try to modify dry sprinklers. They are manufactured for specific "A" or "B" dimensions and cannot be modified.

The dry sprinkler must be installed after the piping is in place to prevent mechanical damage. Before installation, be sure to have the correct sprinkler model and style, with the appropriate "A" or "B" dimension(s), temperature rating, orifice size, and response characteristics. Keep sprinklers with protective caps or bulb shields contained within the caps or shields during installation and testing, and any time the sprinkler is shipped or handled. *Exception:* For concealed and adjustable recessed dry sprinklers, the protective caps and shields are removed for installation.

To install the dry sprinkler, refer to the instructions below and the appropriate sprinkler technical data page for illustrated instructions.

Dry upright sprinklers must be installed above the piping, in the upright position only. When installing dry upright or plain barrel style vertical sidewall sprinklers on piping located close to the ceiling, it may be necessary to lower the sprinkler into the fitting from above the ceiling. When installing dry upright or plain barrel vertical sidewall sprinklers from below the ceiling, verify that the opening in the ceiling is a minimum 1-1/2" (38.1 mm) in diameter.

For dry upright or plain barrel vertical sidewall sprinklers in the upright position: First, install the escutcheon (if used) over the threaded end of the sprinkler barrel. Slide the escutcheon past the external threads. NOTE: When installing the dry upright or plain barrel vertical sidewall sprinkler from above the ceiling, it will be necessary to install the escutcheon after lowering the threaded end of the sprinkler through the ceiling penetration.

A. **For all dry sprinklers:** Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler barrel only, taking care not to allow a build-up of compound or tape over the brass inlet and seal. **NOTE:** Sprinklers with protective caps or bulb shields must be contained within the caps or shields before applying pipe-joint compound or tape.

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.

B. Refer to the appropriate sprinkler technical data page to determine the correct sprinkler wrench for the model of sprinkler used.
C. Install the dry sprinkler on the piping using the special dry sprinkler wrench only, while taking care not to damage the sprinkler. **NOTE:** Thread the sprinkler into the fitting hand tight, plus 1/2 turn with the dry sprinkler wrench.
D. *For adjustable standard and adjustable recessed dry pendent and sidewall sprinklers: Escutcheons can be installed after the sprinklers have been installed onto the piping. Refer to the appropriate sprinkler technical data page for escutcheon installation instructions and illustrations.*

D. Installation Instructions - Testing

4. After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the installation standards. Viking *high pressure* sprinklers may be hydrostatically tested at a maximum of 300 psi (20.7 bar) for limited periods of time (two hours), for the purpose of acceptance by the Authority Having Jurisdiction.
   a. Make sure the sprinkler is properly tightened. If a thread leak occurs, normally the sprinkler must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint. Air testing [do not exceed 40 psi (2.76 bar)] the sprinkler piping prior to testing with water may be considered in areas where leakage during testing must be prevented. Refer to the Installation Standards and the Authority Having Jurisdiction.
   b. **Remove plastic protective sprinkler caps or 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 OR BULB SHIELDS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!** Retain a protective cap or shield in the spare sprinkler cabinet.
5. For flush style sprinklers: the ceiling ring can now be installed onto the sprinkler body. Align the ceiling ring with the sprinkler body and thread or push it on (depends on sprinkler model) until the outer flange touches the surface of the ceiling. Note the maximum adjustment is 1/4" (6.35 mm). DO NOT MODIFY THE UNIT. If necessary, re-cut the sprinkler drop nipple as required.
6. For concealed sprinklers: the cover assembly can now be attached.
   a. Remove the cover from the protective box, taking care not to damage the cover plate assembly.
   b. Gently place the base of the cover plate assembly over the sprinkler protruding through the opening in the ceiling.
   c. Push the cover plate assembly onto the sprinkler until the unfinished brass flange of the cover plate base (or the cover adapter, if used) touches the surface of the ceiling.
   d. Refer to the applicable technical data sheet to determin the maximum adjustment available for concealed sprinklers. DO NOT MODIFY THE UNIT. If necessary, re-cut the sprinkler drop nipple.

NOTE: If it is necessary to remove the entire sprinkler unit, the system must be taken out of service. See section 6. INSPECTIONS, TESTS AND MAINTENANCE and follow all warnings and instructions.

5. OPERATION

Refer to the appropriate sprinkler technical data page(s). During fire conditions, the operating element fuses or shatters (depending on the type of sprinkler), releasing the pip cap and sealing assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate 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 sprinkler technical data page may contain installation requirements specific for the sprinkler model selected. The use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

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.

6. INSPECTIONS, TESTS AND MAINTENANCE

NOTICE: Refer to NFPA 25 for Inspection, Testing and Maintenance requirements. **NOTICE:** The owner is responsible for having the fire-protection system and devices inspected, tested, and maintained in proper operating condition in accordance with this guide, and applicable NFPA standards. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

A. Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. Frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the sprinkler unit.

B. Sprinklers or cover plate assemblies that have been field painted, caulked, or mechanically damaged must be replaced immediately. Sprinklers showing signs of corrosion shall be tested and/or replaced immediately as required. Installation standards require sprinklers to be tested and, if necessary, replaced after a specified term of service. Refer to NFPA 25 and the Authority Having Jurisdiction for the specified period of time after which testing and/or replacement is required. Never attempt to repair or reassemble a sprinkler. Sprinklers and cover assemblies that have operated cannot be reassembled or re-used, but must be replaced. When replacement is necessary, use only new sprinklers and cover assemblies with identical performance characteristics.

C. The sprinkler discharge pattern is critical for proper fire protection. Therefore, nothing should be hung from, attached to, or otherwise obstruct the discharge pattern. All obstructions must be immediately removed or, if necessary, additional sprinklers installed.

D. When replacing existing sprinklers, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

1. Remove the system from service, drain all water, and relieve all pressure on the piping.

2a. For frame-style sprinklers, use the special sprinkler wrench to remove the old sprinkler by turning it counterclockwise to unthread it from the piping.

2b. For flush and concealed style sprinklers: Remove the ceiling ring or cover plate assembly before unthreading the sprinkler body from the piping. Ceiling rings and cover plates can be removed either by gently unthreading them or pulling them off the sprinkler body (depends on the sprinkler model used). After the ceiling ring or cover plate assembly has been removed from the sprinkler body, place the plastic protective cap (from the spare sprinkler cabinet) over the sprinkler to be removed and then fit the sprinkler wrench over the cap. Then use the wrench to unthread the sprinkler from the piping. *Exception: Domed concealed sprinklers are removed without the plastic cap.*

3. Install the new sprinkler unit by following the instructions in section 4. INSTALLATION. Care must be taken to ensure that the replacement sprinkler is the proper model and style, with the correct K-Factor, temperature rating, and response characteristics. A fully stocked spare sprinkler cabinet should be provided for this purpose. For flush or concealed sprinklers: stock of spare ceiling rings or cover plates should also be available in the spare sprinkler cabinet.

E. Place the system back in service and secure all valves. Check for and repair all leaks. Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible. The entire system must be inspected for damage, and repaired or replaced as necessary. Sprinklers that have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.

7. AVAILABILITY

Viking sprinklers 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.

TECHNICAL DATA — SPRINKLER OVERVIEW

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

Viking fire sprinklers consist of a threaded frame with a specific waterway or orifice size and a deflector for distributing water in a specified pattern. A closed or sealed sprinkler refers to a complete assembly, including the thermosensitive operating element. An open sprinkler does not use an operating element and is open at all times. The distribution of water is intended to extinguish a fire or to control its spread.

Viking sprinklers are available in several models and styles. Refer to specific sprinkler technical data pages for available styles, finishes, temperature ratings, thread sizes, and nominal K-Factors for the particular model selected.

2. LISTINGS AND APPROVALS

Refer to the Approval Charts on the appropriate sprinkler technical data page(s) and/or approval agency listings.

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

3. TECHNICAL DATA

Pressure Ratings:

Maximum allowable water working pressure is 175 psig (12 Bar) unless rated and specified for high water working pressure [250 psig (17.2 bar)].

Sprinkler Identification:

Viking sprinklers are identified and marked with the word “Viking”, the sprinkler identification number (SIN) consisting of “VK” plus a three digit number*, the model letter, and the year of manufacture.

Available Finishes:

Viking sprinklers are available in several decorative finishes. Some models are available with corrosion-resistant coatings or are fabricated from non-corrosive material. Refer to the sprinkler technical data page for additional information.

Available Temperature Ratings:

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.

K-Factors:

Viking sprinklers are available in several orifice sizes with related K-Factors. The orifice is a tapered waterway and, therefore, the K-Factor given is nominal. Nominal U.S. K-Factors are provided in accordance with the 1999 edition of NFPA 13, Section 3-2.3. Refer to the specific data page for appropriate K-Factor information.

Available Styles:

Viking sprinklers are available for installation in several positions as indicated by a stamping on the deflector. The deflector style dictates the appropriate installation position of the sprinkler; it breaks the solid stream of water issuing from the sprinkler orifice to form a specific spray pattern. The following list indicates the various styles and identification of Viking sprinklers.

UPRIGHT SPRINKLER: A sprinkler intended to be installed with the deflector above the frame so water flows upward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. Marked “SSU” (Standard Sprinkler Upright) or “UPRIGHT” on the deflector.

PENDENT SPRINKLER: A sprinkler intended to be oriented with the deflector below the frame so water flows downward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. Marked “SSP” (Standard Sprinkler Pendent) or “PENDENT” on the deflector.

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.

CONVENTIONAL SPRINKLER: An “old style” sprinkler intended to be installed with the deflector in either the upright or pendent position. The deflector provides a spherical type pattern with 40 to 60 percent of the water initially directed downward and a proportion directed upward. Must be installed in accordance with installation rules for conventional or old style sprinklers. DO NOT USE AS A REPLACEMENT FOR STANDARD SPRAY SPRINKLERS. Marked “C U/P” (Conventional Upright/Pendent) on the deflector.

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

VERTICAL SIDEWALL (VSW) SPRINKLER: A sprinkler intended for installation near the wall and ceiling. The deflector provides a water spray pattern outward in a quarter-spherical pattern and can be installed in the upright or pendent position with the flow arrow in the direction of discharge. Marked “SIDEWALL” on the deflector with an arrow and the word “FLOW”. (Note: Some vertical sidewall sprinklers can only be installed in the upright or pendent position—in this case, the sprinkler will also be marked “UPRIGHT” or “PENDENT”.)

HORIZONTAL SIDEWALL (HSW) SPRINKLER: A sprinkler intended for installation near the wall and ceiling. The special deflector provides a water spray pattern outward in a quarter-spherical pattern. Most of the water is directed away from the nearby wall with a small portion directed at the wall behind the sprinkler. The top of the deflector is oriented parallel with the ceiling or roof. The flow arrows point in the direction of discharge. Marked “SIDEWALL” and “TOP” with an arrow and the word “FLOW”.

EXTENDED COVERAGE (EC) SPRINKLER: A spray sprinkler designed to discharge water over an area having the maximum dimensions indicated in the individual listings. Maximum area of coverage, minimum flow rate, orifice size, and nominal K-Factor are specified in the individual listings. EC sprinklers are intended for Light-Hazard occupancies with smooth, flat, horizontal ceilings unless otherwise specified. In addition to the above markings, the sprinkler is marked “EC”.

QUICK RESPONSE (QR) SPRINKLER: A spray sprinkler with a fast- actuating operating element. The use of quick response sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction (AHJ) prior to installing.

QUICK RESPONSE EXTENDED COVERAGE (QREC) SPRINKLER: A spray sprinkler designed to discharge water over an area having the maximum dimensions indicated in the individual listing. This is a sprinkler with an operating element that meets the criteria for quick response. QREC sprinklers are only intended for Light Hazard occupancies. The sprinkler is marked “QREC”.

FLUSH SPRINKLER: A decorative spray sprinkler intended for installation with a concealed piping system. The unit is mounted flush with the ceiling or wall, with the fusible link exposed. Upon actuation, the deflector extends beyond the ceiling or wall to distribute water discharge. The sprinkler is marked “SSP”, “PEND”, or “SIDEWALL” and “TOP”.

CONCEALED SPRINKLER: A decorative spray sprinkler intended for installation with a concealed piping system. The sprinkler is hidden from view by a cover plate installed flush with the ceiling or wall. During fire conditions, the cover plate detaches, and upon sprinkler actuation, the deflector extends beyond the ceiling or wall to distribute water discharge. The sprinkler is marked “SSP”, “PEND”, or “SIDEWALL” and “TOP”.

RECESSED SPRINKLER: A spray sprinkler assembly intended for installation with a concealed piping system. The assembly consists of a sprinkler installed in a decorative adjustable recessed escutcheon that minimizes the protrusion of the sprinkler beyond the ceiling or wall without adversely affecting the sprinkler distribution or sensitivity. Refer to the appropriate technical data page for allowable sprinkler models, temperature ratings, and occupancy classifications. DO NOT RECESS ANY SPRINKLER NOT LISTED FOR USE WITH THE ESCUTCHEON.

CORROSION-RESISTANT SPRINKLER: A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers.

DRY SPRINKLER: A special-service sprinkler intended for installation on dry pipe systems or wet pipe systems where the sprinkler is subject to freezing temperatures. The unit consists of a sprinkler permanently secured to an extension nipple with a sealed inlet end to prevent water from entering the nipple until the sprinkler operates. The unit MUST be installed in a tee fitting. Dry upright sprinklers are marked with the “B” dimension [distance from the face of the fitting (tee) to the top of the deflector]. Dry pendent and sidewall sprinklers are marked with the “A” dimension [the distance from the face of fitting (tee) to the finished surface of the ceiling or wall].

LARGE DROP SPRINKLER: A type of special application sprinkler used to provide fire control of specific high-challenge fire hazards. Large drop sprinklers are designed to produce an umbrella-shaped spray pattern downward with a higher percentage of “large” water droplets than standard spray sprinklers. The sprinkler has an extra-large orifice with a nominal K-Factor of 11.2. Marked “HIGH CHALLENGE” and “UPRIGHT”.

EARLY SUPPRESSION FAST-RESPONSE (ESFR) SPRINKLER: A sprinkler intended to provide fire suppression of specific high-challenge fire hazards through the use of a fast response fusible link, 14.0, 16.8, or 25.2 nominal K-Factor, and special deflector. ESFR sprinklers are designed to produce high-momentum water droplets in a hemispherical pattern below the deflector. This permits penetration of the fire plume and direct wetting of the burning fuel surface while cooling the atmosphere early in the development of a high-challenge fire. Marked “ESFR” and “UPRIGHT” or “PEND”.

INTERMEDIATE LEVEL/RACK STORAGE SPRINKLER: A standard spray sprinkler assembly designed to protect its operating element from the spray of sprinklers installed at higher elevations. The assembly consists of a standard or large orifice upright or pendent sprinkler with an integral upright or pendent water shield and guard assembly. Use only those sprinklers that have been tested and listed for use with the assembly. Refer to the technical data page for allowable sprinkler models.

RESIDENTIAL SPRINKLER: A sprinkler intended for use in the following occupancies: one- and two-family dwellings with the fire protection sprinkler system installed in accordance with NFPA 13D; residential occupancies up to four stories in height with the fire protection system installed in accordance with NFPA 13R; and where allowed by the Authority Having Jurisdiction in residential portions of any occupancy with the fire protection system installed in accordance with NFPA 13.

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

Residential sprinklers have a unique distribution pattern and utilize a “fast response” heat sensitive operating element. They enhance survivability in the room of fire origin and are designed to provide a life safety environment for a minimum of ten minutes. For this reason, residential sprinklers must not be used to replace standard sprinklers unless tested for and approved by the Authority Having Jurisdiction. In addition to standard markings, the unit is identified as “RESIDENTIAL SPRINKLER” or “RES”.

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

Refer to the appropriate sprinkler technical data page(s).

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

Viking sprinklers 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.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers and the appropriate sprinkler general care, installation, and maintenance guide. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate 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 sprinkler technical data page may contain installation requirements specific for the sprinkler model selected. The use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

VIKING

BULLETIN

CARE AND HANDLING OF SPRINKLERS

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

SPRINKLERS ARE FRAGILE - HANDLE WITH CARE!

General Handling and Storage:

- Store sprinklers in a cool, dry place.
- Protect sprinklers during storage, transport, handling, and after installation.
- Use the original shipping containers. DO NOT place sprinklers loose in boxes, bins, or buckets.
- Keep sprinklers separated at all times. DO NOT allow metal parts to contact sprinkler operating elements.

For Pre-Assembled Drops:

- Protect sprinklers during handling and after installation.
- For recessed assemblies, use the protective sprinkler cap (Viking Part Number 10364).

Sprinklers with Protective Shields or Caps:

- DO NOT remove shields or caps until after sprinkler installation and there no longer is potential for mechanical damage to the sprinkler operating elements.
- **Sprinkler shields or caps MUST be removed BEFORE placing the system in service!**
- Remove the sprinkler shield by carefully pulling it apart where it is snapped together.
- Remove the cap by turning it slightly and pulling it off the sprinkler.

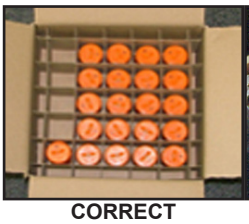
Sprinkler Installation:

- DO NOT use the sprinkler deflector or operating element to start or thread the sprinkler into a fitting.
- **Use only the designated sprinkler head wrench!** Refer to the current sprinkler technical data page to determine the correct wrench for the model of sprinkler used.
- DO NOT install sprinklers onto piping at the floor level.
- Install sprinklers after the piping is in place to prevent mechanical damage.
- DO NOT allow impacts such as hammer blows directly to sprinklers or to fittings, pipe, or couplings in close proximity to sprinklers. Sprinklers can be damaged from direct or indirect impacts.
- DO NOT attempt to remove drywall, paint, etc., from sprinklers.
- **Take care not to over-tighten the sprinkler and/or damage its operating parts!**

  Maximum Torque:
  1/2" NPT: 14 ft-lbs. (19.0 N-m)
  3/4" NPT: 20 ft-lbs. (27.1 N-m)
  1" NPT: 30 ft-lbs. (40.7 N-m)

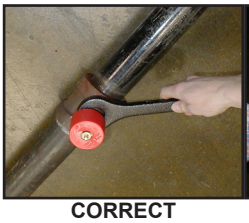
CORRECT
(Original container used)

INCORRECT
(Placed loose in box)



CORRECT
(Protected with caps)

INCORRECT
(Protective caps not used)



CORRECT
(Piping is in place at the ceiling)

INCORRECT
(Sprinkler at floor level)

CORRECT
(Special installation wrenches)

INCORRECT
(Designated wrench not used)

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

⚠ WARNING

Any sprinkler with a loss of liquid from the glass bulb or damage to the fusible element should be destroyed. Never install sprinklers that have been dropped, damaged, or exposed to temperatures exceeding the maximum ambient temperature allowed. Sprinklers that have been painted in the field must be replaced per NFPA 13. Protect sprinklers from paint and paint overspray in accordance with the installation standards. Do not clean sprinklers with soap and water, ammonia, or any other cleaning fluid. Do not use adhesives or solvents on sprinklers or their operating elements.

Refer to the appropriate technical data page and NFPA standards for complete care, handling, installation, and maintenance instructions. For additional product and system information Viking data pages and installation instructions are available on the Viking Web site at www.vikinggroupinc.com.

VIKING | BULLETIN | CARE AND HANDLING OF SPRINKLERS

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

PROTECTIVE SPRINKLER SHIELDS AND CAPS

General Handling and Storage:

Many Viking sprinklers are available with a plastic protective cap or shield temporarily covering the operating elements. The snap-on shields and caps are factory installed and are intended to help protect the operating elements from mechanical damage during shipping, storage, and installation. NOTE: It is still necessary to follow the care and handling instructions on the appropriate sprinkler technical data sheets* when installing sprinklers with bulb shields or caps.

WHEN TO REMOVE THE SHIELDS AND CAPS:

NOTE: SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!

Remove the shield or cap from the sprinkler only after checking all of the following:

- The sprinkler has been installed*.
- 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.

SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!

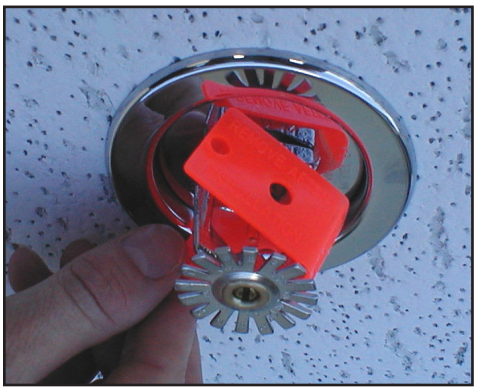


Figure 1: Sprinkler shield being removed from a pendent sprinkler.

Figure 2: Sprinkler cap being removed from a pendent sprinkler.

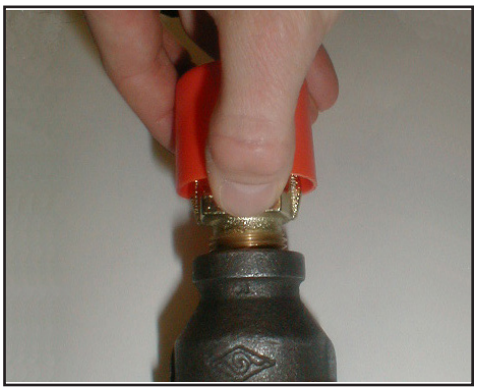


Figure 3: Sprinkler cap being removed from and upright sprinkler.

HOW TO REMOVE SHIELDS AND CAPS:

No tools are necessary to remove the shields or caps from sprinklers. DO NOT use any sharp objects to remove them! **Take care not to cause mechanical damage to sprinklers when removing the shields or caps.** When removing caps from fusible element sprinklers, use care to prevent dislodging ejector springs or damaging fusible elements. NOTE: Squeezing the sprinkler cap excessively could damage sprinkler fusible elements.

- To remove the shield, simply pull the ends of the shield apart where it is snapped together. Refer to Figure 1.
- To remove the cap, turn it slightly and pull it off the sprinkler. Refer to Figures 2 and 3.

NOTICE Refer to the current sprinkler technical data page to determine the correct sprinkler wrench for the model of sprinkler used.

⚠WARNING Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

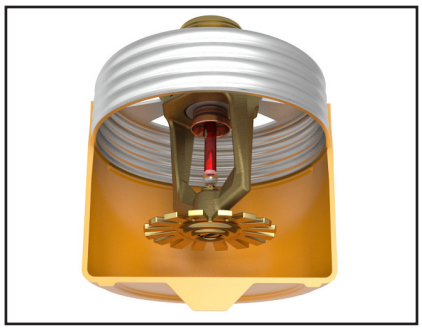
*** Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.**

BULLETIN

CARE AND HANDLING OF SPRINKLERS

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

CAUTION CONCEALED COVER ASSEMBLIES ARE FRAGILE!
TO ASSURE SATISFACTORY PERFORMANCE OF THE PRODUCT, HANDLE WITH CARE.



Concealed Sprinkler and Adapter Assembly with Protective Cap

Concealed Sprinkler and Adapter Assembly (Protective Cap Removed)

Cover Plate Assembly (Pendent Cover 12381 shown)

GENERAL HANDLING AND STORAGE INSTRUCTIONS:

- Do not store in temperatures exceeding 100 °F (38 °C). Avoid direct sunlight and confined areas subject to heat.
- Protect sprinklers and cover assemblies during storage, transport, handling, and after installation.
  -- Use original shipping containers.
  -- Do not place sprinklers or cover assemblies loose in boxes, bins, or buckets.
- Keep the sprinkler bodies covered with the protective sprinkler cap any time the sprinklers are shipped or handled, during testing of the system, and while ceiling finish work is being completed.
- Use only the designated Viking recessed sprinkler wrench (refer to the appropriate sprinkler data page) to install these sprinklers. **NOTE:** The protective cap is temporarily removed during installation and then placed back on the sprinkler for protection until finish work is completed.
- Do not over-tighten the sprinklers into fittings during installation.
- Do not use the sprinkler deflector to start or thread the sprinklers into fittings during installation.
- Do not attempt to remove drywall, paint, etc., from the sprinklers.
- Remove the plastic protective cap from the sprinkler before attaching the cover plate assembly. **PROTECTIVE CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!**

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.

VIKING

BULLETIN

CARE AND HANDLING OF SPRINKLERS

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

USE THE FOLLOWING PRECAUTIONS WHEN HANDLING WAX-COATED SPRINKLERS

Many of Viking's sprinklers are available with factory-applied wax coating for corrosion resistance. These sprinklers MUST receive appropriate care and handling to avoid damaging the wax coating and to assure satisfactory performance of the product.

General Handling and Storage of Wax-Coated Sprinklers:

- Store the sprinklers in a cool, dry place (in temperatures below the maximum ambient temperature allowed for the sprinkler temperature rating. Refer to Table 1 below.)
- Store containers of wax-coated sprinklers separate from other sprinklers.
- Protect the sprinklers during storage, transport, handling, and after installation.
- Use original shipping containers.
- Do not place sprinklers in loose boxes, bins, or buckets.

Installation of Wax-Coated Sprinklers:

Use only the special sprinkler head wrench designed for installing wax-coated Viking sprinklers (any other wrench may damage the unit).

- Take care not to crack the wax coating on the units.
- For touching up the wax coating after installation, wax is available from Viking in bar form. Refer to Table 1 below. The coating MUST be repaired after sprinkler installation to protect the corrosion-resistant properties of the sprinkler.
- Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they would be exposed to temperatures exceeding the maximum recommended ambient temperature for the temperature rating used.
- Inspect the coated sprinklers frequently soon after installation to verify the integrity of the corrosion resistant coating. Thereafter, inspect representative samples of the coated sprinklers in accordance with NFPA 25. Close up visual inspections are necessary to determine whether the sprinklers are being affected by corrosive conditions.

TABLE 1

Sprinkler Temperature Rating (Fusing Point)	Wax Part Number	Wax Melting Point	Maximum Ambient Ceiling Temperature[1]	Wax Color
155 °F (68 °C) / 165 °F (74 °C)	02568A	148 °F (64 °C)	100 °F (38 °C)	Light Brown
175 °F (79 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
200 °F (93 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
220 °F (104 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown
286 °F (141 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown

[1] Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

⚠WARNING Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.

BULLETIN

REGULATORY AND HEALTH WARNINGS

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

Regulatory and Health Warnings applying to materials used in the manufacture and construction of fire protection products are provided herin as they relate to legally mandated jurisdictional regions.

⚠ WARNING

STATE OF CALIFORNIA, USA

Installing or servicing fire protection products such as sprinklers, valves, piping etc. can expose you to chemicals including, but not limited to, lead, nickel, butadiene, titaninum dioxide, chromium, carbon black, and acrylonitrile which are known to the State of California to cause cancer or birth defects or other reproductive harm.

For more information, go to **www.P65Warnings.ca.gov**

2. WARRANTY TERMS AND CONDITIONS

For details of warranty, refer to Viking's current list price schedule at **www.vikinggroupinc.com** or contact Viking directly.

SECTION E

Alarms and Supervisory Devices

POTTER
The Symbol of Protection

BELLS
PBA-AC & MBA-DC

UL, ULC, and FM Approved
Sizes Available: 6" (150mm), 8" (200mm) and 10" (250mm)
Voltages Available: 24VAC
120VAC
12VDC (10.2 to 15.6) Polarized
24VDC (20.4 to 31.2) Polarized
Service Use: Fire Alarm
General Signaling
Burglar Alarm
Environment: Indoor or outdoor use (See Note 1)
-40° to 150°F (-40° to 66°C)
(Outdoor use requires weatherproof backbox.)
Termination: AC Bells - 4 No. 18 AWG stranded wires
DC Bells - Terminal strip
Finish: Red powder coating
Optional: Model BBK-1 weatherproof backbox
Model BBX-1 deep weatherproof backbox

These vibrating type bells are designed for use as fire, burglar or general signaling devices. They have low power consumption and high decibel ratings. The unit mounts on a standard 4" (101mm) square electrical box for indoor use or on a model BBK-1 weatherproof backbox or BBX-1 deep weatherproof backbox for outdoor applications. Weatherproof backbox model BBK-1, Stock No. 1500001.

Notes:
1. Minimum dB ratings are calculated from integrated sound pressure measurements made at Underwriters Laboratories as specified in UL Standard 464. UL temperature range is -30° to 150°F (-34° to 66°C).
2. Typical dB ratings are calculated from measurements made with a conventional sound level meter and are indicative of output levels in an actual installation.
3. ULC only applies to MBA DC bells.

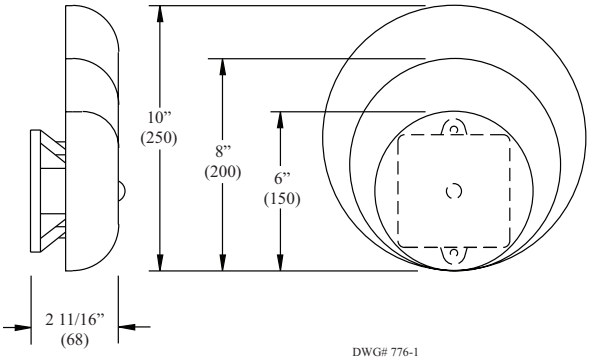
Size inches (mm)	Voltage	Model Number	Stock Number	Current (Max.)	Typical dB at 10 ft. (3m) (2)	Minimum dB at 10 ft. (3m) (1)
6 (150)	12VDC	MBA-6-12	1750070	.12A	85	76
8 (200)	12VDC	MBA-8-12	1750080	.12A	90	77
10 (250)	12VDC	MBA-10-12	1750060	.12A	92	78
6 (150)	24VDC	MBA-6-24	1750100	.06A	87	77
8 (200)	24VDC	MBA-8-24	1750110	.06A	91	79
10 (250)	24VDC	MBA-10-24	1750090	.06A	94	80
6 (150)	24VAC	PBA246	1806024*	.17A	91	78
8 (200)	24VAC	PBA248	1808024*	.17A	94	77
10 (250)	24VAC	PBA2410	1810024*	.17A	94	78
6 (150)	120VAC	PBA1206	1806120*	.05A	92	83
8 (200)	120VAC	PBA1208	1808120*	.05A	99	84
10 (250)	120VAC	PBA12010	1810120*	.05A	99	86

All DC bells are polarized and have built-in transient protection.
* Does not have ULC listing.

⚠ WARNING

In outdoor or wet installations, bell must be mounted with weatherproof backbox, BBK-1 or BBX-1. Standard electrical boxes will not provide a weatherproof enclosure. If the bell and/or assembly is exposed to moisture, it may fail or create an electrical hazard.

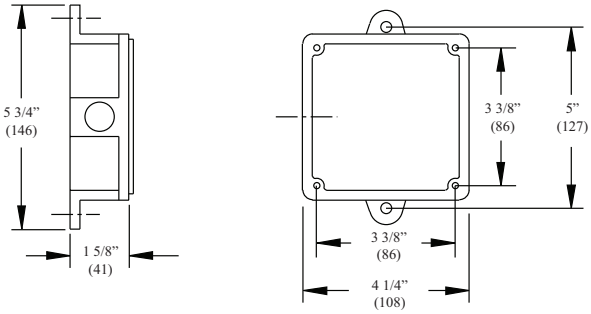
Bells Dimensions Inches (mm)
Fig. 1



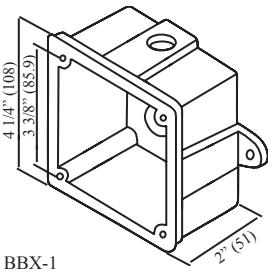
DWG# 776-1

Weatherproof Backbox Dimensions Inches (mm)
Fig. 2

Box has one threaded 1/2" conduit entrance

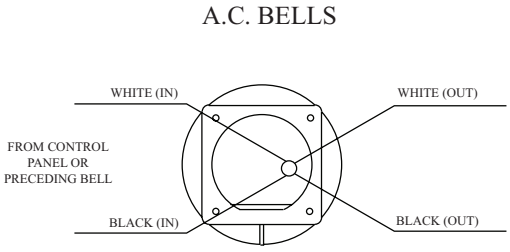


DWG# 776-2



BBX-1

Wiring (rear view)
Fig. 3

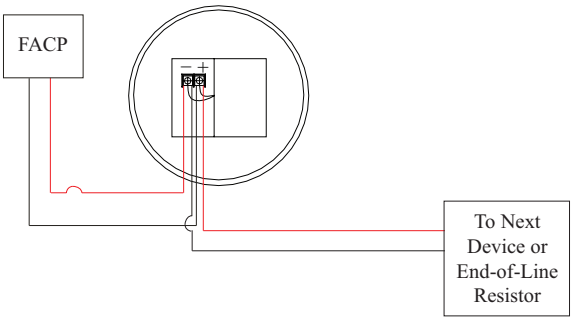


CAUTION:
WHEN ELECTRICAL SUPERVISION IS REQUIRED USE IN AND OUT LEADS AS SHOWN.

NOTES:

1. WHEN USING AC BELLS, TERMINATE EACH EXTRA WIRE SEPARATELY AFTER LAST BELL.
2. END-OF-LINE RESISTOR IS NOT REQUIRED ON AC BELLS.

DWG# 776-3



Installation

1. The bell shall be installed in accordance with NFPA 13, 72, or local AHJ. The top of the device shall be no less than 90" AFF and not less than 6" below the ceiling.
2. Remove the gong.
3. Connect wiring (see Fig. 3).
4. Mount bell mechanism to backbox (bell mechanism must be mounted with the striker pointing down).
5. Reinstall the gong (be sure that the gong positioning pin, in the mechanism housing, is in the hole in the gong).
6. Test all bells for proper operation and observe that they can be heard where required (bells must be heard in all areas as designated by the authority having jurisdiction).

⚠ WARNING

Failure to install striker down will prevent bell from operating.