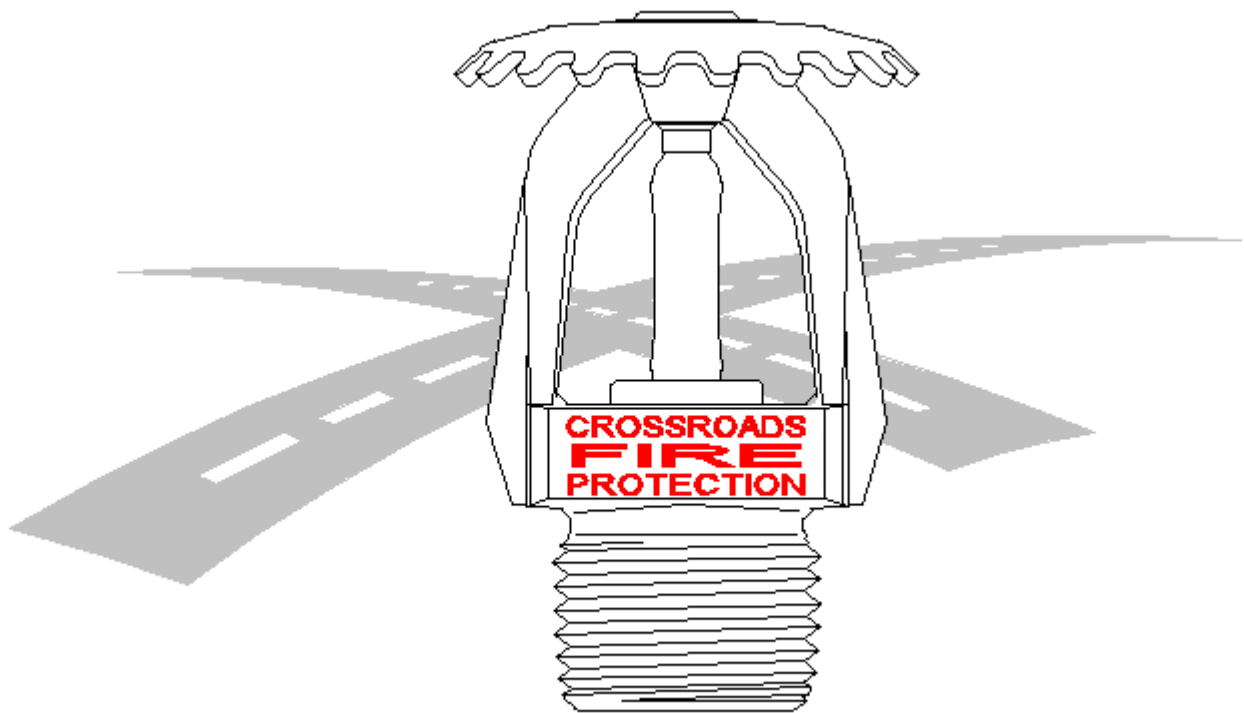


Materials Submittal Data
Benhaven Emergency Services

13151 NC 27
Broadway, NC 27505



CROSSROADS FIRE PROTECTION
BENSON, NC
919-207-3855
dnelson@crossroadsfire.net



Model 375ADA

Reduced Pressure Detector Assembly

Application

Designed for installation on water lines in fire protection systems to protect against both backsiphonage and back-pressure of contaminated water into the potable water supply. The Model 375ADA shall provide protection where a potential health hazard exists. Incorporates metered by-pass to detect leaks and unauthorized water use.

Standards Compliance

- ASSE® Listed 1047 (2 1/2" - 8")
- CSA® Certified B64.4 (2-1/2" - 8")
- AWWA Compliant C550
- UL® Classified
- C-UL® Classified
- FM® Approved
- Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California.
- NYC MEA 104-05-M
- Meets the requirements of NSF/ANSI 61*

*(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

By-Pass Backflow Assembly 3/4" Model 975XLD

Materials

Main valve body Ductile Iron ASTM A 536
 Access covers Ductile Iron ASTM A 536
 Coatings FDA Approved fusion epoxy finish
 Internals Stainless steel, 300 Series
 NORYL™

Fasteners & Springs Stainless Steel, 300 Series
 Elastomers EPDM (FDA approved)
 Buna Nitrile (FDA approved)

Polymers NORYL™
 Sensing line Stainless steel, braided hose

Features

Sizes: 2 1/2", 3", 4", 6", 8", 10"
 Maximum working water pressure 175 PSI
 Maximum working water temperature 140°F
 Hydrostatic test pressure 350 PSI
 End connections (Grooved for steel pipe) AWWA C606
 (Flanged) ANSI B16.1
 Class 125

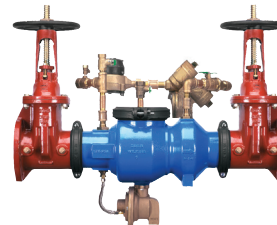
*2 1/2" & 3" sizes use 4" body & reducer coupling

Dimensions & Weights (do not include pkg.)

MODEL 375ADA SIZE	WEIGHT										
	WITHOUT GATES		WITH OS&Y GATES (GXF)		WITH OS&Y GATES(GXG)		WITH BUTTERFLY VALVES (GXG)		WITH BUTTERFLY VALVES (GXF)		
	in.	mm	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	
2 1/2	65	112	50.8	214	97	206	93.5	154	70	164	74
3	80	111	50	231	104.8	221	100.3	156	71	169	77
4	100	98	45	252	114	226	103	146	66	168	76
6	150	151	69	387	176	357	162	225	102	255	116
8	200	321	146	797	362	773	351	465	211	511	232
10	250	374	170	1059	480	937	425	590	268	648	294

MODEL 375ADA SIZE	DIMENSION (approximate)																				
	A		A WITH BUTTERFLY VALVES		B LESS GATE VALVES		C		D		E OS&Y OPEN		E OS&Y CLOSED		E WITH BUTTERFLY VALVES		F		H		
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
2 1/2	65	35 1/8	892	32 1/8	816	20 1/8	511	4 1/2	114	9	229	16 3/8	416	13 7/8	352	8 1/4	210	11	279	9 5/8	247
3	80	36 1/8	918	33	838	20 1/8	511	4 1/2	114	9	229	18 7/8	479	15 5/8	397	8 1/2	216	11	279	9 5/8	247
4	100	38 1/4	972	33 3/4	845	19 7/8	505	4 1/2	114	9	229	22 3/4	578	18 1/4	464	9	229	11	279	9 5/8	247
6	150	47 1/4	1200	40 1/4	1022	25 7/8	657	5 1/2	140	10 1/2	267	30 1/8	765	23 3/4	603	10 1/4	260	12 3/8	314	13	330
8	200	62	1575	55	1397	38 1/2	978	10	254	12	305	37 3/4	959	29 1/4	743	12	305	15 3/8	391	17 5/16	440
10	250	64 5/8	1642	59	1499	38 1/2	978	10	254	12	305	45 3/4	1162	35 3/8	899	13	330	15 3/8	391	17 1/8	435

Relief Valve discharge port:
 2 1/2" - 6" - 2.75 sq. in.
 8" - 10" - 3.69 sq. in.



(with OS&Y gates)



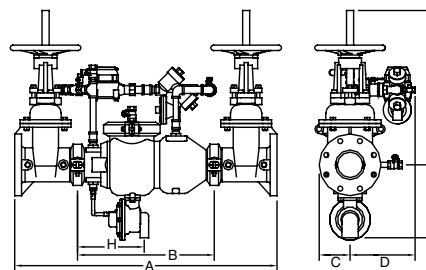
Options

- (Suffixes can be combined)
- with OS & Y gate valves (standard)
 - L - less shut-off valves (grooved body connections)
 - LM - less water meter
 - with remote reading meter
 - with gallon meter (standard)
 - with cu ft/min meter
 - G - with groove end gate valves
 - FG - with flanged inlet gate connection and grooved outlet gate connection
 - MS - with Integral Relief Valve Monitor Switch
 - BG - with grooved end butterfly valves with integral supervisory switches
 - BF - with flanged end butterfly valves with integral supervisory switches
 - PI - with Post Indicator Gate Valve
 - 509 - with AWWA C509 gate valves

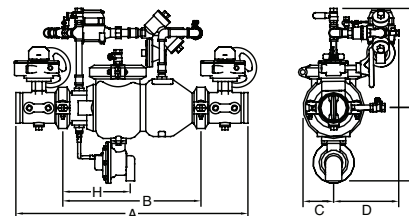
Accessories

- Air gap (Model AG)
- Repair kit (rubber only)
- Thermal expansion tank (Model XT)
- OS & Y Gate valve tamper switch (OSY-40)
- QT-SET Quick Test Fitting Set

MODEL 375ADA with standard OS&Y



MODEL 375ADA with BG option

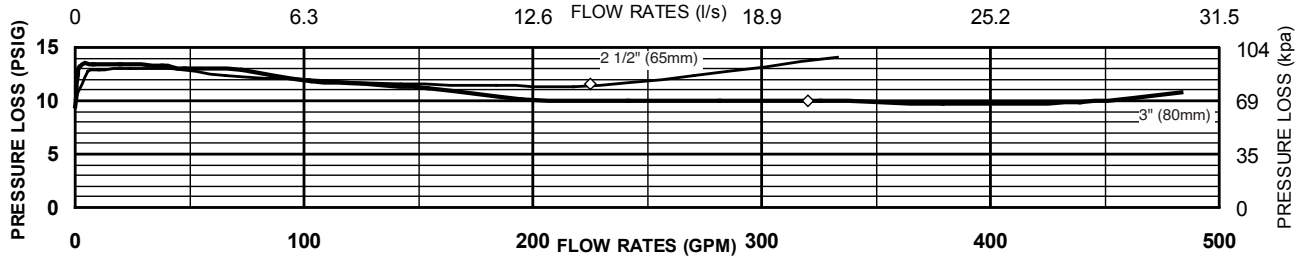


Attention: Model 375ADA (grooved body) and Model 375DA (flange body) have different lay lengths.

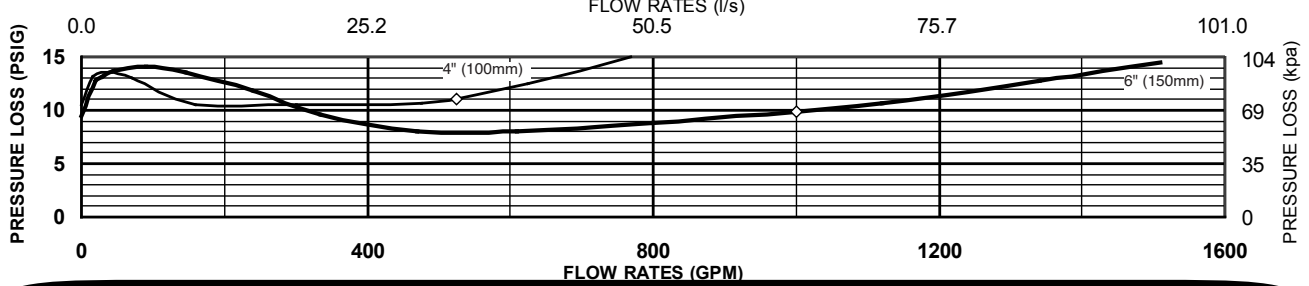
Flow Characteristics

◇ Rated Flow (established by approval agencies)

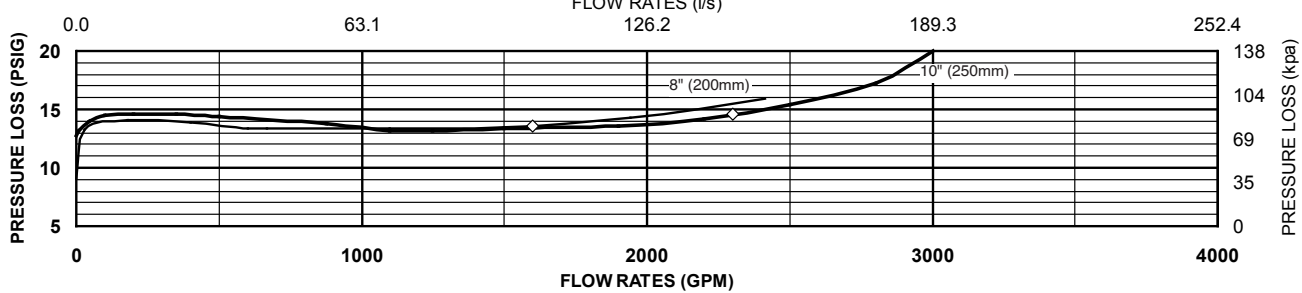
MODEL 375ADA 2-1/2" - 3" (STANDARD AND METRIC)



MODEL 375ADA 4" & 6" (STANDARD & METRIC)



MODEL 375ADA 8" & 10" (STANDARD & METRIC)

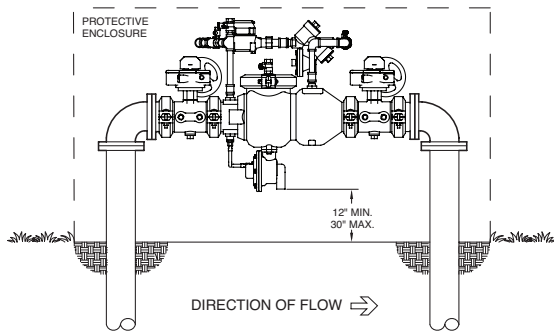


Typical Installation

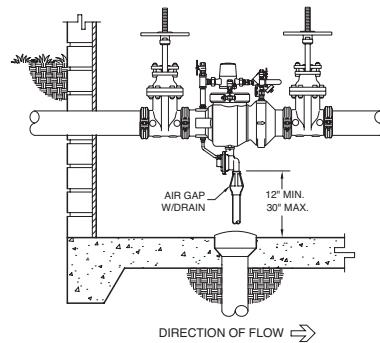
Local codes shall govern installation requirements. To be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) and a maximum of 30" (762mm) above adequate drains with sufficient side clearance for testing and maintenance. The installation shall be made so that no part of the unit can be submerged.

Capacity thru Schedule 40 Pipe (GPM)

Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
2 1/2"	75	112	149	224
3"	115	173	230	346
4"	198	298	397	595
6"	450	675	900	1351
8"	780	1169	1559	2339
10"	1229	1843	2458	3687
12"	1763	2644	3525	5288



OUTDOOR INSTALLATION (MODEL 375ADA with BG option)



INDOOR INSTALLATION (MODEL 375ADA with G option)

Specifications

The Reduced Pressure Detector Backflow Prevention Assembly shall be certified to NSF/ANSI 61, ASSE® Listed 1047, and supplied with full port OS & Y gate valves. The main body and access cover shall be epoxy coated ductile iron (ASTM A 536), the seat ring and check valve shall be NORYL™, the stem shall be stainless steel (ASTM A 276) and the seat disc elastomers shall be EPDM. The checks and the relief valve shall be accessible for maintenance without removing the device from the line. The Reduced Pressure Detector Backflow Prevention Assembly shall be a ZURN WILKINS Model 375ADA.



GUARDIAN

FIRE EQUIPMENT, INC.
MIAMI, FL

Ph. 800.327.6584 • Fax 800.827.3869

DETAIL AND SUBMITTAL SHEET

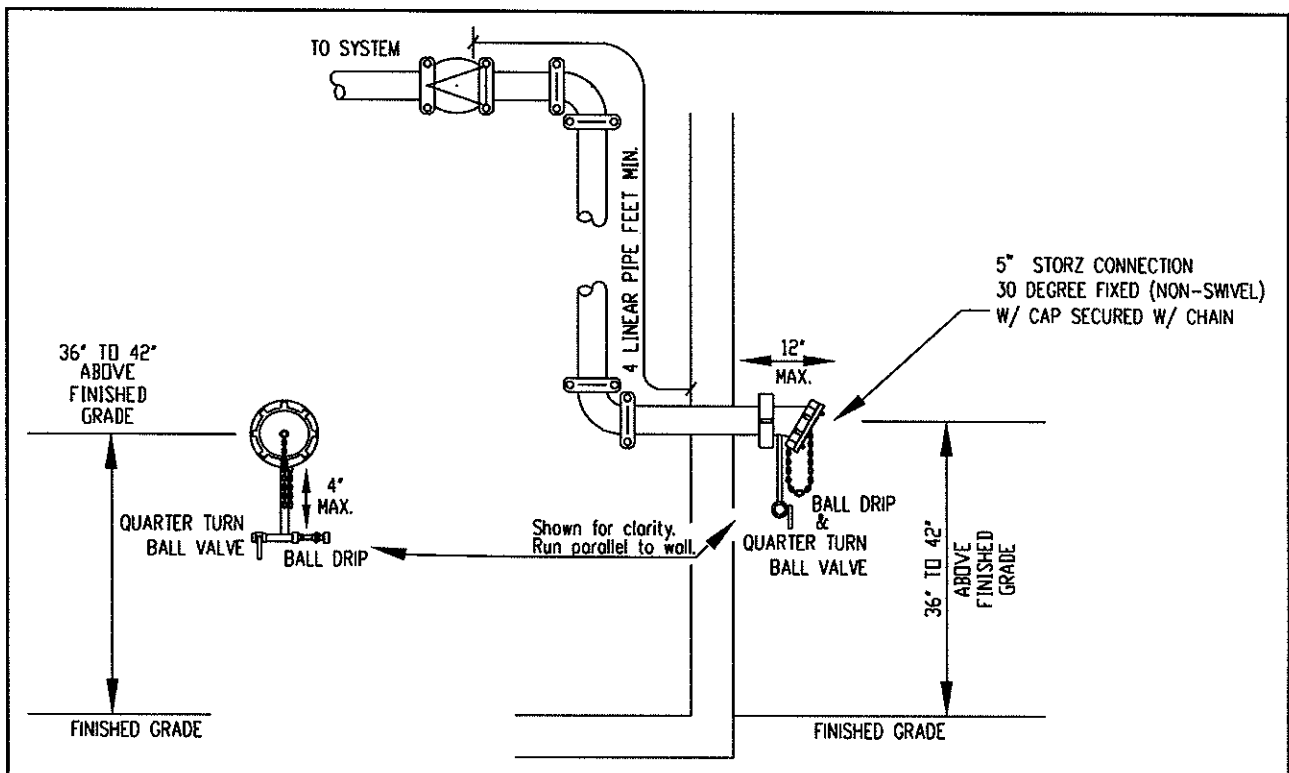
Fire Department Connection for Raleigh, N.C.



Model 6625-R Storz Assembly

Consists:

- 30° aluminum adapter, 4" F. NPT x 5" Storz
- Storz 5" cap and chain, aluminum
- Round 4" wall plate, lettered "AUTO SPKR", red enamel
- Automatic ball drip, 1/2" brass
- Ball valve, 1/2" brass



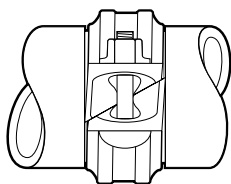
FireLock® Rigid Coupling

Style 005H

with Vic-Plus™ Gasket System



Patented



Exaggerated for clarity



Approvals/Listings:



104-1a/02

[See Victaulic Publication 10.01 for more details.](#)

LPC and VdS Approved, see notes on page 3

Product Description:

FireLock Style 005H rigid coupling has a unique, patented angle-pad design which allows the housings to offset while clamping the grooves. By permitting the housings to slide on the angled bolt pads, rigidity is obtained.

Support and hanging requirements correspond to NFPA 13 Sprinkler Systems. Angle-pad design permits assembly by removing one nut/bolt and swinging the housing over the gasket. This reduces components to handle during assembly.

Style 005H FireLock coupling are designed and recommended for use ONLY on fire protection systems.

Vic-Plus™ Gasket System:

Victaulic offers a gasket system which requires no field lubrication on wet pipe systems that are hydrostatically tested. The Vic-Plus System (patented) is dry, clean, and non-toxic. It reduces assembly time substantially and eliminates the mess and chance of over-lubrication. Please refer to the latest copy of the Victaulic Field Installation Handbook (I-100) for supplemental lubrication requirements and dry pipe fire protection system notes.

Job/Owner

System No.	
Location	

Contractor

Submitted By	
Date	

Material Specifications:

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

Housing Coating: (specify choice)

Standard: Orange enamel (North America); red enamel (Europe)

Optional: Hot dipped galvanized

Coupling Gasket: (specify choice)

NOTE: Additional gasket styles are available. Contact Victaulic for details.

Grade “E” EPDM Type A Vic-Plus™ Gasket System¹

EPDM (Violet color code). FireLock products have been Listed by Underwriters Laboratories Inc. and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services up to the rated working pressure using the Grade “E” Type A Vic-Plus™ Gasket System, requiring no field lubrication for most installation conditions.

Grade “L” silicone

Recommended for dry heat, air without hydrocarbons to +350°F and certain chemical services.

For dry services, Victaulic continues to recommend the use of Grade “E” Type A FlushSeal® Gasket. Contact Victaulic for details.

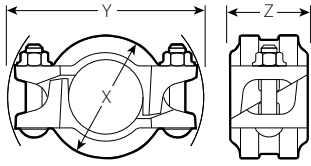
Bolts/Nuts: Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.

¹ Standard gasket and FlushSeal gasket approved for dry pipe systems to -40°F/-40°C. Based on “typical” pipe surface conditions, supplemental lubricant is recommended for services installed below 0°F/-18°C and for all dry pipe systems or systems to be subjected to air tests prior to being filled with water. Supplemental lubrication may also be required on pipe with raised or undercut weld seams or pipe that has voids and/or cracks at the weld seams. Victaulic continues to recommend the use of FlushSeal gaskets for dry services.

Engineer

Spec Section	
Paragraph	
Approved	
Date	

Dimensions:



Rated for wet and dry sprinkler systems at 350 psi/2413 kPa for 1 ¼ – 4”/32 – 100 mm sizes and 300 psi /2068 kPa for 4 ¼ – 8”/108 – 200 mm sizes; Schedule 10 roll grooved or Schedule 40 cut or roll grooved steel pipe. Style 005H is rigid and does not accommodate expansion, contraction or angular deflection.

Nominal Size inches mm	Actual Outside Diameter inches mm	Maximum Working Pressure ^{1 4} psi kPa	Maximum End Load ¹ lbs. N	Allow. Pipe End Separation ² inches mm	Bolt/Nut ³ No. – size inches	Dimensions			Approx. Weight Each lbs. kg
						X inches mm	Y inches mm	Z inches mm	
1 ¼ 32	1.660 42.4	350 2413	755 3370	0.05 1.2	2 – ¾ × 2 ¼	2.75 70	4.50 114	1.88 48	1.2 0.5
1 ½ 40	1.900 48.3	350 2413	990 4415	0.05 1.2	2 – ¾ × 2 ¼	3.00 76	4.75 121	1.88 48	1.2 0.5
2 50	2.375 60.3	350 2413	1550 6900	0.07 1.7	2 – ¾ × 2 ½	3.50 89	5.25 133	1.88 48	1.6 0.7
2 ½ 65	2.875 73.0	350 2413	2270 10110	0.07 1.7	2 – ¾ × 2 ½	4.00 102	5.75 146	1.88 48	1.9 .09
76.1 mm	3.000 76.1	350 2413	2475 11010	0.07 1.7	2 – ¾ × 2 ½	4.13 105	5.75 146	1.88 48	1.9 0.9
3 80	3.500 88.9	350 2413	3365 14985	0.07 1.7	2 – ¾ × 2 ½	4.63 118	6.13 156	1.88 48	2.1 1.0
4 100	4.500 114.3	350 2413	5565 24770	0.16 4.1	2 – ¾ × 2 ½	5.75 146	7.25 184	2.13 54	3.1 1.4
108.0 mm	4.250 108.0	300 2068	4255 18940	0.16 4.1	2 – ¾ × 2 ½	5.63 143	7.25 184	2.13 54	3.1 1.4
5 125	5.563 141.3	300 2068	7290 32445	0.16 4.1	2 – ½ × 3	6.88 175	9.00 229	2.13 54	4.5 2.0
133.0 mm	5.250 133.0	300 2068	6495 28900	0.16 4.1	2 – ½ × 2 ¾	6.63 168	9.00 229	2.13 54	4.5 2.0
139.7 mm	5.500 139.7	300 2068	7125 31715	0.16 4.1	2 – ½ × 2 ¾	6.88 175	9.00 229	2.13 54	4.8 2.2
6 150	6.625 168.3	300 2068	10340 46020	0.16 4.1	2 – ½ × 3	8.00 203	10.00 254	2.13 53	5.0 2.3
159.0 mm	6.250 159.0	300 2068	9200 40955	0.16 4.1	2 – ½ × 2 ¾	7.63 194	10.00 254	2.13 54	5.5 2.5
165.1 mm	6.500 165.1	300 2068	9955 44295	0.16 4.1	2 – ½ × 3	8.15 207	10.00 254	2.13 54	5.5 2.5
8 200	8.625 219.1	300 2068	17525 78000	0.19 4.8	2 – ¾ × 4 ¼	10.50 267	13.14 334	2.63 67	11.3 5.1

- 1 Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard roll or cut grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe. WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.
- 2 The allowable pipe separation dimension shown is for system layout purposes only. Style 005H couplings are considered rigid connections and will not accommodate expansion or contraction of the piping system.
- 3 Number of bolts required equals number of housing segments. Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- 4 Style 005H couplings are VdS and LPC Approved to 16 Bar/235 psi.

Listings/Approvals:

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

Contact Victaulic for performance on other pipe and the latest listings and approvals.

Related Working Pressure psi					Related Working Pressure psi					Related Working Pressure psi				
Pipe Sch.	Size inches	UL	ULC	FM	Pipe Sch.	Size inches	UL	ULC	FM	Pipe Sch.	Size inches	UL	ULC	FM
5	1¼ – 3	175	175	175	EL	1¼ – 2	300	N/A	N/A	MT	1¼ – 2	300	N/A	N/A
10, 40	1¼ – 3	350	350	350	ET	1¼ – 2	300	N/A	N/A	STF	1¼ – 4	N/A	N/A	300
	5 – 8	300	300	300	EZ	4 – 6	300 ⁵	N/A	300	Steady Thd.	1¼ – 2	N/A	N/A	300
	BLT	1¼ – 2	300	300	N/A	FF	1¼ – 4	N/A	N/A	300	TF	3 – 8	N/A	N/A
DF	1¼ – 4	300	300	300	GAL-7	1¼ – 2	300	N/A	N/A	WLS	1¼ – 2	300	300	N/A
DT	1¼ – 2	300	300	N/A	MLT	1¼ – 2	300	N/A	N/A	XL	1¼ – 3	300	300	300
EF	1¼ – 4	175 ⁷	N/A	175	MF	1¼ – 4	300	N/A	300 ⁵					

5 FM approved for service in 1 1/2 – 4" pipe.

6 UL Listed for service up to 4" pipe only.

7 UL Listed for service up to 3" only.

Installation

Reference should always be made to the [I-100 Victaulic Field Installation Handbook](#) for the product you are installing. Handbooks are included with each shipment of Victaulic products for 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.

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.

Trademarks

Victaulic® is a registered trademark of Victaulic Company.

FireLock EZ® Rigid Coupling

STYLE 009H



SEE VICTAULIC PUBLICATION 10.01 FOR DETAILS

The FireLock EZ Style 009H coupling is a rigid, installation-ready coupling for fire protection pipe joining. The coupling's unique design eliminates loose parts, insures consistent installation and provides substantial gains in productivity.

IMPORTANT

FireLock EZ Style 009H couplings are recommended for use ONLY on fire protection systems.



PATENTED

LISTINGS/APPROVALS *

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

Standard Pipe

Size	cULus/FM			VdS	LPCB
	Nominal Size Inches/mm	Sch. 5 psi/KPa	Sch. 10 psi/kPa		
1/4	175	365	365	365	365
3/2	1206	2517	2517	2517	2517
1 1/2	175	365	365	365	365
40	1206	2517	2517	2517	2517
2	175	365	365	365	365
50	1206	2517	2517	2517	2517
2 1/2	N/A	365	365	365	365
65	N/A	2517	2517	2517	2517
76.1 mm	N/A	N/A	365** 2517**	365 2517	365 2517
3	N/A	365	365	365	365
80	N/A	2517	2517	2517	2517
108 mm	N/A	365*** 2517***	365*** 2517***	N/A	N/A
4	N/A	365	365	365	365
100	N/A	2517	2517	2517	2517
133 mm	N/A	290*** 1999***	365*** 2517***	N/A	N/A
139.7 mm	N/A	N/A	290** 1999**	232 1600	365 2517
165.1 mm	N/A	N/A	290** 1999**	232 1600	365 2517
6#	N/A	290	365	232	365
150#	N/A	1999	2517	1600	2517

* Listed/Approved for wet and dry pipe systems (> -40°F/-40°C). Please refer to the Victaulic Installation Manual (I-009H_009_009V.pdf) for details concerning when supplemental lubrication is required.

** EN-10219(L) for 76.1mm size; EN-10255(M)

Regional availability only#

*** FM Approved only.

JOB/OWNER

System No. _____
Location _____

CONTRACTOR

Submitted By _____
Date _____

ENGINEER

Spec Sect _____ Para _____
Approved _____
Date _____

www.victaulic.com

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REV_G



FireLock EZ[®] Rigid Coupling

STYLE 009H

LISTINGS/APPROVALS *

Speciality Pipe

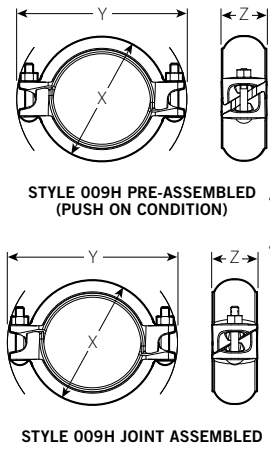
Pipe		Pressure Rating – psi/kPa		Pipe		Pressure Rating – psi/kPa		Pipe		Pressure Rating – psi/kPa	
Sch.	Inches	cULus	FM	Sch.	Inches	cULus	FM	Sch.	Inches	cULus	FM
BLT	1 ¼ – 2	300 2068	300 2068	EZT	1 ¼ – 2	300 2068	300 2068	MT	1 ¼ – 2	300 2068	300 2068
DF	1 ¼ – 4	300 2068	300 2068	FF	1 ¼ – 4	300 2068	300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

Note: The Specialty Pipe table only applies to imperial sizes, NOT to metric sizes.

FireLock EZ® Rigid Coupling

STYLE 009H

STYLE 009H DIMENSIONS



Size		Max. Work. Press. *	Max. End Load *	Allow. Pipe End Sep. †	@ Bolt/Nut No. – Size	Dimensions – Inches/mm					Aprx. Wgt. Ea.
Nominal Size Inches mm	Actual Outside Dia. Inches mm	psi kPa	Lbs. N	Inches mm	Inches	Pre-assembled (Stab in condition)		Joint Assembled			Lbs. kg
						X	Y	X	Y	Z	
1 ¼ 32	1.660 42.4	365 2517	790 3514	0.10 2.54	2 - 3/8 x 2 - M10 x 2	2.95 75	4.77 121	2.70 69	4.63 118	1.93 49	1.4 0.7
1 ½ 40	1.900 48.3	365 2517	1035 4604	0.10 2.54	2 - 3/8 x 2 - M10 x 2	3.19 81	4.97 126	2.94 75	4.79 122	1.93 49	1.5 0.7
2 50	2.375 60.3	365 2517	1616 7193	0.12 3.05	2 - 3/8 x 2 - M10 x 2	3.79 96	5.53 140	3.45 88	5.42 138	1.93 49	1.9 0.9
2 ½ 65	2.875 73.0	365 2517	2370 10542	0.12 3.05	2 - 3/8 x 2 ½ - M10 x 2 ½	4.29 109	6.09 155	3.92 100	5.85 149	1.93 49	2.1 1.0
76.1 mm	3.000 76.1	365 2517	2580 11476	0.12 3.05	2 - 3/8 x 2 ½ - M10 x 2 ½	4.40 112	6.31 160	4.05 103	5.90 150	1.93 49	2.1 1.0
3 80	3.500 88.9	365 2517	3512 15622	0.12 3.05	2 - 3/8 x 2 ½ - M10 x 2 ½	4.91 125	6.70 170	4.55 116	6.46 164	1.93 49	2.3 1.0
108 mm	4.250 108.0	365 2517	5178 23030	0.17 4.32	2 - 3/8 x 2 ½ - M10 x 2 ½	5.56 141	7.61 193	5.27 134	7.51 191	2.14 54	2.8 1.2
4 100	4.500 114.3	365 2517	5805 25822	0.17 4.32	2 - 3/8 x 2 ½ - M10 x 2 ½	5.95 151	7.82 199	5.54 141	7.47 190	2.14 55	2.9 1.3
133 mm	5.250 133.0	365 2517	7900 35140	0.17 4.33	2 - 3/8 x 2 ½ - M10 x 2 ½	6.66 169	9.11 232	6.36 162	9.01 229	2.14 55	4.3 1.9
139.7 mm	5.500 139.7	365 2517	8620 38340	0.17 4.32	2 - 3/8 x 2 ½ - M10 x 2 ½	6.75 172	9.29 236	6.46 164	9.23 234	2.09 53	4.6 2.1
165.1 mm	6.500 165.1	290 1999	9623 42805	0.17 4.32	2 - 5/8 x 3 ¼ - M16 x 3 ¼	7.84 199	10.93 278	7.55 192	10.85 276	2.11 54	5.69 2.6
6 150	6.625 168.3	290 1999	9997 44469	0.17 4.32	2 - 5/8 x 3 ¼ - M16 x 3 ¼	7.96 202	11.08 281	7.67 195	11.99 305	2.11 54	5.92 2.69

* Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard roll or cut grooved in accordance with Victaulic specifications. See page 1 of this document for Listed/Approved ratings on other pipe.

WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown in the chart on page 1, specific to pipe schedule and size.

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

@ Number of bolts required equals number of housing segments.

MATERIAL SPECIFICATIONS

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

Housing Coating:

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

Optional Coatings:

- Hot dipped galvanized

Gasket:

- Grade "E" EPDM (Type A)

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

Bolts/Nuts: Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.

FireLock EZ[®] Rigid Coupling

STYLE 009H

GENERAL NOTES

NOTE: When assembling FireLock EZ couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket end stop. For FireLock EZ Style 009H couplings, use FireLock No. 006 end caps containing the “EZ” marking on the inside face or No. 60 end caps containing the “QV EZ” marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009H couplings.

IMPORTANT: Gaskets intended for the Style 009 or Style 009V couplings cannot be used with the Style 009H coupling. There is no interchanging of gaskets or housings between coupling styles.

USE OF FLUSHSEAL GASKETS FOR DRY PIPE SYSTEMS

FireLock EZ couplings are supplied with FireLock EZ Grade “E” Type A gaskets. These gaskets include an integral pipe stop, that once installed provides the same benefits as a FlushSeal gasket for dry pipe systems. It should be noted that standard FlushSeal gaskets are not compatible and cannot be used with the FireLock EZ couplings.

INSTALLATION

Reference should always be made to the I-100 Victaulic Field Installation Handbook for the product you are installing. Handbooks are included with each shipment of Victaulic products for 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.

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.

For complete contact information, visit www.victaulic.com

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Dimensions

Elbows

No. 10 90° Elbow

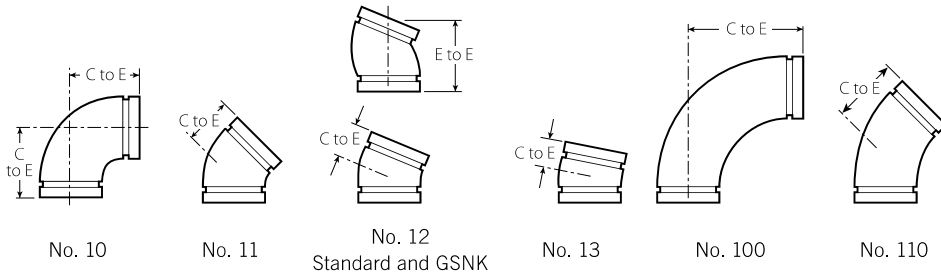
No. 11 45° Elbow

No. 12 22 ½° Elbow

No. 13 11 ¼° Elbow

No. 100 90° Long Radius Elbow

No. 110 45° Long Radius Elbow



Size		No. 10 90° Elbow		No. 11 45° Elbow		No. 12 22½° Elbow		No. 13 11¼° Elbow		No. 100 90° Long Radius Elbow		No. 110 45° Long Radius Elbow	
Nominal Size	Actual Outside Diameter	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each
inches	inches	inches	lbs.	inches	lbs.	inches	lbs.	inches	lbs.	inches	lbs.	inches	lbs.
mm	mm	mm	kg	mm	kg	mm	kg	mm	kg	mm	kg	mm	kg
¾	1.050	2.25	0.5	1.50	0.5	1.63 (sw)	—	1.38 (sw)	—	2.50 (sw)	0.4	1.88 (sw)	0.3
20	26.9	57	0.2	38	0.2	41	—	35	—	64	0.2	48	0.1
1	1.315	2.25	0.6	1.75	0.6	3.25 ²	0.6	1.38 (sw)	0.3	2.88 (sw)	0.6	2.25 (sw)	0.5
25	33.7	57	0.3	44	0.3	83	0.3	35	0.1	73	0.3	57	0.2
1 ¼	1.660	2.75	1.0	1.75	0.9	1.75	0.8	1.38 (sw)	0.5	3.25 (sw)	1.1	2.38 (sw)	0.7
32	42.4	70	0.5	44	0.4	44	0.4	35	0.2	83	0.5	60	0.3
1 ½	1.900	2.75	1.2	1.75	0.9	1.75	0.8	1.38 (sw)	0.5	3.63 (sw)	2.2	2.50 (sw)	1.3
40	48.3	70	0.5	44	0.4	44	0.4	35	0.2	92	1.0	64	0.6
2	2.375	3.25	1.8	2.00	1.3	1.88	1.2	1.38	1.0	4.38	2.5	2.75	1.8
50	60.3	83	0.8	51	0.6	48	0.5	35	0.5	111	1.1	70	0.8
2 ½	2.875	3.75	3.2	2.25	2.2	4.00 ²	2.3	1.50	1.1	5.13	3.4	3.00	2.8
65	73.0	95	1.5	57	1.0	102	1.0	38	0.5	130	1.5	76	1.3
76.1 mm	3.000	3.75	3.7	2.25	3.4	2.25	—	1.50	—	—	—	—	—
	76.1	95	1.7	57	1.5	57	—	38	—	—	—	—	—
3	3.500	4.25	4.5	2.50	3.1	4.50 ²	3.1	1.50	2.1	5.88	6.0	3.38	4.9
80	88.9	108	2.0	64	1.4	114	1.4	38	1.0	149	2.7	86	2.2
3 ½	4.000	4.50	5.6	2.75	4.3	2.50 (sw)	4.0	1.75 (sw)	2.7	—	—	—	—
90	101.6	114	2.5	70	2.0	64	1.8	44	1.2	—	—	—	—
4	4.500	5.00	7.1	3.00	5.6	2.88	5.6	1.75	3.6	7.50	12.3	4.00	7.3
100	114.3	127	3.2	76	2.5	73	2.5	44	1.6	191	5.6	102	3.3
108.0 mm	4.250	5.00	11.0	3.00	5.6	—	—	—	—	—	—	—	—
	108.0	127	5.0	76	2.5	—	—	—	—	—	—	—	—
4 ½	5.000	5.25 (sw)	10.0	3.13 (sw)	6.0	3.50 (sw)	6.6	1.88 (sw)	4.2	—	—	—	—
120	127.0	133	4.5	79	2.7	89	3.0	48	1.9	—	—	—	—
5	5.563	5.50	11.7	3.25	8.3	2.88 (sw)	7.8	2.00 (sw)	5.0	9.25 (sw)	18.0	4.88 (sw)	14.8
125	141.3	140	5.3	83	3.8	73	3.5	51	2.2	235	8.2	124	6.7
133.0 mm	5.250	5.50	11.7	3.25	8.3	—	—	—	—	—	—	—	—
	133.0	140	5.3	83	3.8	—	—	—	—	—	—	—	—
139.7 mm	5.500	5.50	11.7	3.25	8.3	2.88	—	2.00	—	—	—	—	—
	139.7	140	5.3	83	3.8	73	—	51	—	—	—	—	—
6	6.625	6.50	17.2	3.50	10.8	6.25 ²	12.2	2.00	7.0	10.75	30.4	5.50	17.4
150	168.3	165	7.8	89	4.9	159	5.5	51	3.2	273	13.8	140	7.9

- Gooseneck design, end-to-end dimension fittings in this size, contact your nearest Victaulic sales representative.
- For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.
- Chinese standard sizes

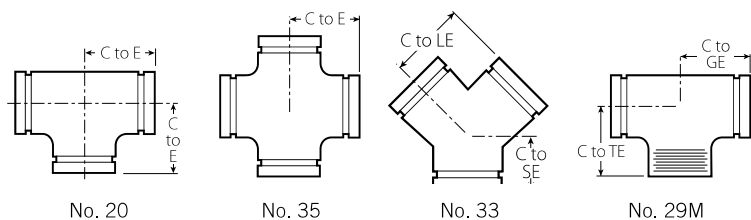
Tees, Crosses and True Wyes

No. 20 Tee

No. 35 Cross

No. 33 True Wye

No. 29M Tee with Threaded Branch



Size		No. 20 Tee			No. 35 Cross (sw)		No. 33 True Wye (sw)			No. 29M Tee with Threaded Branch		
Nominal Size	Actual Outside Diameter	C to E	Approx. Weight Each	C to E	Approx. Weight Each	C to LE	C to SE	Approx. Weight Each	C to GE	C to TE	Approx. Weight Each	
inches	inches	inches	lbs.	inches	lbs.	inches	inches	lbs.	inches	inches	lbs.	
mm	mm	mm	kg	mm	kg	mm	mm	kg	mm	mm	kg	
¾	1.050	2.25	0.6	2.25	0.9	2.25	2.00	0.7	2.25	2.25 (sw)	0.6	
20	26.9	57	0.3	57	0.4	57	51	0.3	57	57	0.3	
1	1.315	2.25	1.0	2.25	1.3	2.25	2.25	1.1	2.25	2.25	1.0	
25	33.7	57	0.5	57	0.6	57	57	0.5	57	57	0.5	
1¼	1.660	2.75	1.5	2.75	2.1	2.75	2.50	1.5	2.75	2.75	1.5	
32	42.4	70	0.7	70	1.0	70	64	0.7	70	70	0.7	
1½	1.900	2.75	2.0	2.75	2.5	2.75	2.75	1.8	2.75	2.75	2.0	
40	48.3	70	0.9	70	1.1	70	70	0.8	70	70	0.9	
2	2.375	3.25	3.0	3.25	3.8	3.25	2.75	2.5	3.25	4.25	3.0	
50	60.3	83	1.4	83	1.7	83	70	1.1	83	108	1.4	
2½	2.875	3.75	4.3	3.75	6.1	3.75	3.00	4.3	3.75	3.75	4.3	
65	73.0	95	2.0	95	2.8	95	76	2.0	95	95	2.0	
76.1 mm	3.000	3.75	5.2	—	—	—	—	—	3.75	3.75 (sw)	5.2	
	76.1	95	2.4	—	—	—	—	—	95	95	2.4	
3	3.500	4.25	6.8	4.25	10.5	4.25	3.25	6.1	4.25	6.00	6.8	
80	88.9	108	3.0	108	4.8	108	83	2.8	108	152	3.1	
3½	4.000	4.50 (sw)	7.9	4.50	11.5	4.50	3.50	9.6	4.50	4.50 (sw)	7.9	
90	101.6	114	3.6	114	5.2	114	89	4.4	114	114	3.6	
108.0 mm	4.250	5.00	15.5	—	—	—	—	—	5.00	5.00 (sw)	15.5	
	108.0	127	7.0	—	—	—	—	—	127	127	7.0	
4	4.500	5.00	11.9	5.00	15.8	5.00	3.75	9.8	5.00	7.25	11.9	
100	114.3	127	5.4	127	7.2	127	95	4.4	127	184	5.4	
4½	5.000	5.25 (sw)	15.0	5.25	18.5	—	—	—	5.25	5.25 (sw)	15.0	
120	127.0	133	6.8	133	8.4	—	—	—	133	133	6.8	
133.0 mm	5.250	5.50	17.8	—	—	—	—	—	5.50	5.50 (sw)	17.8	
	133.0	140	8.1	—	—	—	—	—	140	140	8.1	
139.7 mm	5.500	5.50	17.8	—	—	—	—	—	5.50	5.50 (sw)	17.8	
	139.7	140	8.1	—	—	—	—	—	140	140	8.1	
5	5.563	5.50	17.8	5.50	20.0	5.50	4.00	15.0	5.50	5.50 (sw)	17.8	
125	141.3	140	8.1	140	9.1	140	102	6.8	140	140	8.1	
159.0 mm	6.250	6.50	27.1	—	—	—	—	—	6.50	6.50 (sw)	27.1	
	159.0	165	12.3	—	—	—	—	—	165	165	12.3	
165.1 mm	6.500	6.50	22.0	6.50	28.0	—	—	—	6.50	6.50 (sw)	22.0	
	165.1	165	10.0	165	12.7	—	—	—	165	165	10.0	

6 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

7 Chinese standard sizes

Cap

No. 60




No. 60



No. 60

Size		No. 60 Cap	
Nominal Size	Actual Outside Diameter	"T" Thickness	Approx. Weight Each
inches mm	inches mm	inches mm	lbs. kg
3/4 20	1.050 26.9	0.88 22	0.2 0.1
1 25	1.315 33.7	0.88 22	0.3 0.1
1 1/4 32	1.660 42.4	0.88 22	0.3 0.1
1 1/2 40	1.900 48.3	0.88 22	0.5 0.2
2 50	2.375 60.3	0.88 22	0.6 0.3
2 1/2 65	2.875 73.0	0.88 22	1.0 0.5
76.1 mm	3.000 76.1	0.88 22	1.2 0.5
3 80	3.500 88.9	0.88 22	1.2 0.5
3 1/2 90	4.000 101.6	0.88 22	2.5 1.1
108.0 mm	4.250 108.0	1.00 25	2.3 1.0
4 100	4.500 114.3	1.00 25	2.5 1.1
133.0 mm	5.250 133.0	1.00 25	4.5 2.0
139.7 mm	5.500 139.7	1.00 25	4.5 2.0
5 125	5.563 141.3	1.00 25	4.6 2.1

13 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

Size		No. 60 Cap	
Nominal Size	Actual Outside Diameter	"T" Thickness	Approx. Weight Each
inches mm	inches mm	inches mm	lbs. kg
159.0 mm	6.250 159.0	1.00 25	6.8 3.1
165.1 mm	6.500 165.1	1.00 25	7.3 3.3
6 150	6.625 168.3	1.00 25	6.1 2.8
8 200	8.625 219.1	1.19 30	13.1 5.9
10 250	10.750 273.0	1.25 32	21.0 9.5
12 300	12.750 323.9	1.25 32	35.6 16.2
14 ¹³ 350	14.000 355.6	9.50 (s) 241	+
16 ¹³ 400	16.000 406.4	10.00 (s) 254	+
18 ¹³ 450	18.000 457.0	11.00 (s) 279	+
20 ¹³ 500	20.000 508.0	12.00 (s) 305	+
24 ¹³ 600	24.000 610.0	13.50 (s) 343	+
14 - 60 350 - 1500	For AGS fitting information, see publication 20.05 		

13 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

General Notes

No. 60 cap is not suitable for use in vacuum service with Style 72 or 750 couplings. No. 61 bull plugs should be used.

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

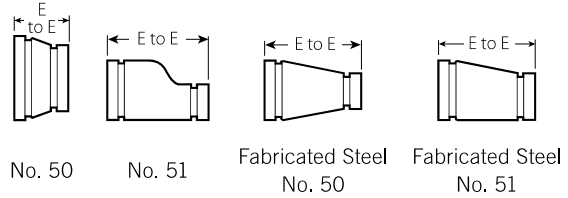
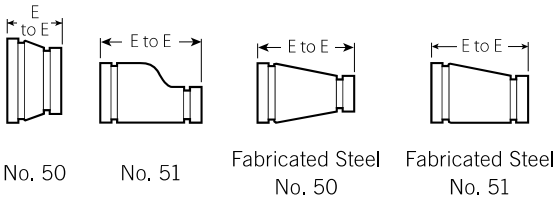
(s) = Carbon Steel Direct Roll Groove (OGS)

(sw) = Carbon Steel Segmentally Welded

+ Contact Victaulic for details.

Concentric/Eccentric Reducer

No. 50 Concentric
No. 51 Eccentric



Size		No. 50 Concentric Reducer		No. 51 Eccentric Reducer		
Nominal Size		E to E	Approx. Weight Each	E to E	Approx. Weight Each	
inches	mm	inches	lbs. kg	inches	lbs. kg	
1¼ 32	x ¾ 20	+	1.9 0.9	—	—	
	1 25	+	1.9 0.9	—	—	
1½ 40	x ¾ 20	+	1.4 0.6	—	—	
	1 25	2.50 64	0.8 0.4	8.50 (sw) 216	4.5 2.0	
	1¼ 32	2.50 64	1.0 0.5	—	—	
2 50	x ¾ 20	2.50 64	0.9 0.3	9.00 (sw) 229	2.0 0.9	
	1 25	2.50 64	0.7 0.3	9.00 (sw) 229	2.3 1.0	
	1¼ 32	2.50 64	1.2 0.5	9.00 (sw) 229	4.6 2.1	
	1½ 40	3.50 89	1.0 0.5	3.50 89	1.1 0.5	
	2½ 65	x ¾ 20	+	1.3 0.6	+	3.3 1.5
2½ 65	1 25	2.50 64	1.1 0.5	9.50 241	3.5 1.6	
	1¼ 32	3.50 89	3.3 1.5	3.50 89	1.4 0.6	
	1½ 40	2.50 64	3.6 1.6	9.50 (sw) 241	3.7 1.7	
	2 50	2.50 64	3.9 1.8	3.50 89	4.3 2.0	
	3 80	x ¾ 20	+	1.5 0.7	+	4.5 2.0
	1 25	2.50 64	1.3 0.6	9.50 (sw) 241	4.8 2.2	
	1¼ 32	2.50 64	1.4 0.6	+	4.8 2.2	
3 80	1½ 40	2.50 64	5.1 2.3	9.50 (sw) 241	5.1 2.3	
	2 50	2.50 64	1.6 0.7	3.50 89	6.0 2.7	
	2½ 65	2.50 64	1.8 0.8	3.50 89	7.0 3.2	
	76.1	2.50 64	2.1 1.0	—	—	
	3½ 90	x 3 80	2.50 64	2.0 0.9	9.50 (sw) 241	7.0 3.2
	4 100	x 1 25	3.00 76	3.0 1.4	13.00 (sw) 330	6.5 2.9

15 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.

Size	No. 50 Concentric Reducer		No. 51 Eccentric Reducer			
	Nominal Size	E to E	Approx. Weight Each	E to E	Approx. Weight Each	
	inches	inches	lbs.	inches	lbs.	
	mm	mm	kg	mm	kg	
1¼ 32	1¼ 32	+	4.6 2.1	—	—	
	1½ 40	3.00 (sw) 76	2.6 1.2	10.00 (sw) 254	8.1 3.7	
	2 50	3.00 76	2.4 1.1	4.00 102	3.3 1.5	
	2½ 65	3.00 76	2.7 1.2	4.00 102	3.4 1.5	
	3 80	3.00 76	3.2 1.4	4.00 102	3.5 1.6	
	3½ 90	3.00 76	2.9 1.3	10.00 (sw) 254	8.0 3.6	
	5 125	x 2 50	11.00 (sw) 279	9.0 4.1	11.00 (sw) 279	5.2 2.4
		2½ 65	4.00 102	4.3 2.0	11.00 (sw) 279	10.8 4.9
		3 80	4.00 102	5.5 2.5	11.00 (sw) 279	11.1 5.0
		4 100	3.50 89	4.3 1.9	5.00 127	12.0 5.4
6 150	x 1 25	4.00 102	5.0 2.3	11.50 (sw) 292	14.5 6.6	
	1½ 40	+	5.5 2.5	+	+	
	2 50	4.00 102	6.6 3.0	11.50 (sw) 292	14.5 6.6	
	2½ 65	4.00 102	6.4 2.9	11.50 (sw) 292	14.2 6.4	
	3 80	4.00 102	6.4 2.9	5.50 140	15.0 6.8	
	4 100	4.00 102	6.5 2.9	5.50 140	17.0 7.7	
	5 125	4.00 102	6.4 2.9	5.50 140	17.0 7.7	
	8 200	x 2½ 65	16.00 406	7.9 3.6	12.00 (sw) 305	26.1 11.8
		3 80	5.00 127	9.3 4.2	12.00 (sw) 305	22.0 10.0
		4 100	5.00 127	10.4 4.8	12.00 (sw) 305	23.0 10.4
5 125		5.00 127	11.6 5.2	12.00 (sw) 305	23.0 10.4	
6 150		5.00 127	11.9 5.4	6.00 152	24.0 10.9	

15 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.



Material Specifications:

Fitting:

Ductile iron conforming to ASTM A-536, grade 65-45-12.

Fitting Coating:

Orange enamel

Red enamel in Europe, Middle East, Africa, and India

Optional: Hot dipped galvanized

Approvals/Listings:



Product Description:

FireLock® products comprise a unique system specifically designed for fire protection services. FireLock full-flow elbows and tees feature CAD-developed, hydrodynamic design, affording a shorter center-to-end dimension than standard fittings. A noticeable bulge allows the water to make a smoother turn to maintain similar flow characteristics as standard full flow fittings.

FireLock fittings are designed for use exclusively with Victaulic couplings that have been Listed or Approved for Fire Protection Services. Use of other couplings or flange adapters may result in bolt pad interference.

Refer to the appropriate listing agency or approval body for pressure ratings. Pressure ratings vary by agency.

Job/Owner

System No.	
Location	

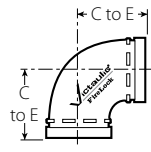
Contractor

Submitted By	
Date	

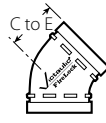
Engineer

Spec Section	
Paragraph	
Approved	
Date	

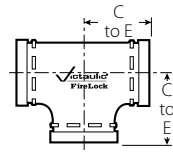
Dimensions:



NO. 001



NO. 003



NO. 002



No. 006

Nominal Size inches mm	Actual Outside Diameter inches mm	No. 001 90° Elbow		No. 003 45° Elbow		No. 002 Straight Tee		No. 006 Cap	
		C to E inches mm	Approx. Weight Each Lbs. kg	C to E inches mm	Approx. Weight Each Lbs. kg	C to E inches mm	Approx. Weight Each Lbs. kg	C to E inches mm	Approx. Weight Each Lbs. kg
1 ¼ 32	1.660 42.4	—	—	—	—	—	—	0.82 21	0.3 0.1
1 ½ 40	1.900 48.3	—	—	—	—	—	—	0.82 21	0.4 0.2
2 50	2.375 60.3	2.75 70	1.7 0.8	2.00 51	1.8 0.8	2.75 70	2.4 1.1	0.88 22	0.6 0.3
2 ½ 65	2.875 73.0	3.00 76	3.1 1.4	2.25 57	2.2 1.0	3.00 76	3.6 1.6	0.88 22	1.0 0.5
76.1 mm	3.000 76.1	3.00 76	3.30 1.5	2.25 57	2.4 1.1	3.00 76.2	3.8 1.7	—	—
3 80	3.500 88.9	3.38 86	4.0 1.8	2.50 64	3.1 1.4	3.38 86	5.3 2.4	0.88 22	1.2 0.5
108 mm	4.250 108.0	4.00 102	5.7 2.6	3.00 76	5.1 2.3	4.00 102	7.5 3.4	—	—
4 100	4.500 114.3	4.00 102	6.7 3.0	3.00 76	5.6 2.5	4.00 102	8.7 3.9	1.00 25	2.4 1.1
5 125	5.563 141.3	4.88 124	12.6 5.7	3.25 83	8.3 3.8	4.88 124	15.7 7.1	1.00 25	4.1 1.9
139.7 mm	5.500 139.7	4.88 124.0	12.4 5.6	3.25 82.6	8.2 3.7	4.88 124.0	15.4 6.9	—	—
159 mm	6.250 158.8	5.50 140	12.6 5.7	3.50 89	9.2 4.2	5.50 140	17.9 8.0	—	—
6 150	6.625 168.3	5.50 140	18.3 8.3	3.50 89	11.7 5.3	5.50 140	22.7 10.3	1.00 25	5.9 2.7
165.1 mm	6.500 165.1	5.43 139.7	17.6 7.9	3.50 88.9	11.4 5.2	5.50 139.7	22.0 9.9	—	—
8 200	8.625 219.1	6.81 173	25.5 11.6	4.25 108	20.4 9.3	6.94 176	38.7 17.6	1.13 29	12.7 5.8

Flow Data:

Nominal Size	Actual Outside Diameter	Frictional Resistance Equivalent Feet/meters of Straight Pipe ¹			
		Elbows		No. 002 Straight Tee	
		No. 001 90° Elbow	No. 003 45° Elbow	Branch	Run
1 ¼ 32	1.660 42.4	—	—	—	—
1 ½ 40	1.900 48.3	—	—	—	—
2 50	2.375 60.3	3.5 1.1	1.8 0.5	8.5 2.6	3.5 1.1
2 ½ 65	2.875 73.0	4.3 1.3	2.2 0.7	10.8 3.3	4.3 1.3
76.1 mm	3.000 76.1	4.5 1.4	2.3 0.7	11.0 3.4	4.5 1.4
3 80	3.500 88.9	5.0 1.5	2.6 0.8	13.0 4.0	5.0 1.5
108 mm	4.250 108.0	6.4 2.0	3.2 0.9	15.3 4.7	6.4 2.0
4 100	4.500 114.3	6.8 2.1	3.4 1.0	16.0 4.9	6.8 2.1
5 125	5.563 141.3	8.5 2.6	4.2 1.3	21.0 6.4	8.5 2.6
139.7 mm	5.500 139.7	8.3 2.5	4.1 1.3	20.6 6.3	8.3 2.5
159 mm	6.250 158.8	9.4 2.9	4.9 1.5	25.0 7.6	9.6 2.9
6 150	6.625 168.3	10.0 3.0	5.0 1.5	25.0 7.6	10.0 3.0
165.1 mm	6.500 165.1	9.8 3.0	4.9 1.5	24.5 7.5	9.8 3.0
8 200	8.625 219.1	13.0 4.0	5.0 1.5	33.0 10.1	13.0 4.0

¹ The flow data listed is based upon the pressure drop of Schedule 40 pipe.

General Notes:

NOTE: When assembling FireLock EZ couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket end stop. For FireLock EZ Style 009N/009H couplings, use FireLock No. 006 end caps containing the “EZ” marking on the inside face or No. 60 end caps containing the “QV EZ” marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009/009V/009H couplings.

Installation

Reference should always be made to the [I-100 Victaulic Field Installation Handbook](#) for the product you are installing. Handbooks are included with each shipment of Victaulic products for 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.

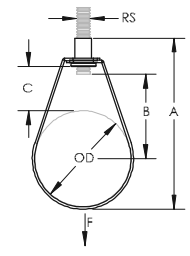
Note

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.

Trademarks

Victaulic® is a registered trademark of Victaulic Company.

115 Standard Duty Loop Hanger



The 115 Standard Duty Loop Hanger, part of the CADDY® line of fasteners and supports from ERICO, is ideal for suspending stationary, non-insulated pipe lines, including CPVC pipes, in fire sprinkler systems. A knurled insert nut helps simplify vertical adjustments and flared edges on the base (1/2" to 4" sizes) help protect pipes from coming into contact with any sharp edges of the hanger.

- Flared edges help prevent any sharp surfaces from coming into contact with the pipe (1/2" to 4" sizes)
- Retained insert nut helps ensure the loop hanger and insert nut stay together
- Recommended for the suspension of stationary non-insulated pipe lines
- Manufactured to use the minimum rod size permitted by NFPA® for fire sprinkler piping
- Conforms with Federal Specification WW-H-171 (Type 10), Manufacturers Standardization Society (MSS) SP-58 (Type 10)

Material: Steel
Finish: Pregalvanized



Part Number	Pipe Size	Outer Diameter OD	Rod Size RS	A	B	C	Static Load F	Certifications
1150050EG	1/2"	0.840"	3/8"	2 13/16"	1 1/8"	1"	300 lb	cULus
1150075EG	3/4"	1.050"	3/8"	3"	1 3/16"	15/16"	300 lb	cULus, FM
1150100EG	1"	1.315"	3/8"	3 1/4"	1 3/8"	15/16"	300 lb	cULus, FM
1150125EG	1 1/4"	1.660"	3/8"	3 9/16"	1 1/2"	15/16"	300 lb	cULus, FM
1150150EG	1 1/2"	1.900"	3/8"	3 13/16"	1 5/8"	15/16"	300 lb	cULus, FM
1150200EG	2"	2.375"	3/8"	4 1/4"	1 7/8"	15/16"	300 lb	cULus, FM
1150250EG	2 1/2"	2.875"	3/8"	5 9/16"	2 13/16"	1 9/16"	525 lb	cULus, FM
1150300EG	3"	3.500"	3/8"	6 9/16"	3 1/2"	1 15/16"	525 lb	cULus, FM
1150350EG	3 1/2"	4.000"	3/8"	7 1/16"	3 3/4"	1 15/16"	585 lb	cULus, FM
1150400EG	4"	4.500"	3/8"	7 9/16"	4"	1 15/16"	650 lb	cULus, FM
1150500EG	5"	5.563"	1/2"	9 13/16"	4 3/4"	2 1/4"	1,000 lb	cULus, FM
1150600EG	6"	6.625"	1/2"	11 5/16"	6 5/16"	3 5/16"	1,000 lb	cULus, FM
1150800EG	8"	8.625"	1/2"	12 7/8"	6 7/8"	2 7/8"	1,000 lb	cULus, FM

FM is a registered certification mark of FM Approvals LLC, LTD. NFPA is a registered trademark of National Fire Protection Association, Inc. UL, UR, cUL, cUR, cULus and cURus are registered certification marks of UL LLC.

WARNING

ERICO products shall be installed and used only as indicated in ERICO's product instruction sheets and training materials. Instruction sheets are available at www.erico.com and from your ERICO customer service representative. Improper installation, misuse, misapplication or other failure to completely follow ERICO's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

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Fig. 146

Continuous Threaded Rod

Size Range: 1/4" through 1 1/2" Stocked in six, ten, and twelve foot lengths. Other even foot lengths can be furnished to order.

Material: Carbon steel or Stainless Steel Gr 304

Threads: National Coarse (UNF), rod threaded complete length.

Finish: Plain or Galvanized.

Maximum Temperature: 650° F.

Ordering: Specify rod diameter and length, figure number, name and finish.

Note: The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

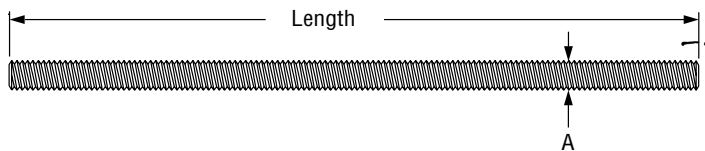


FIG. 146:
LOADS (LBS) • WEIGHTS (LBS) • DIMENSIONS (IN)

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

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

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

Fig. 92

Universal C-type Clamp (Standard Throat)

Size Range: 3/8" and 1/2"

Material: Ductile iron, hardened steel cup point set screw and locknut.

Finish: Plain or Galvanized

Service: Recommended for use under roof installations with bar joist type construction, or for attachment to the top or bottom flange of structural shapes where the vertical hanger rod is required to be offset from the edge of the flange and where the thickness of joist or flange does not exceed 3/4".

Approvals: Complies with Federal Specification A-A-1192A (Type 19 & 23) WW-H-171-E (Type 23), ANSI/MSS SP-69 and MSS SP-58 (Type 19 & 23). UL, ULC Listed and FM Approved.

How to size: Size of clamp is determined by size of rod to be used.

Installation: Follow recommended set screw torque values per MSS-SP-69 (See table on page 233)

Features:

- They may be attached to horizontal flanges of structural members in either the top beam or bottom beam positions.
- Secured in place by a cup-pointed Set Screw tightened against the flange. A Jam Nut is provided for tightening the Set Screw against the Body Casting.
- Thru tapping of the body casting permits extended adjustment of the threaded rod.
- Can be used with Fig 89X retaining clip for seismic applications.

Ordering: Specify rod size, figure number, name of clamp and finish.

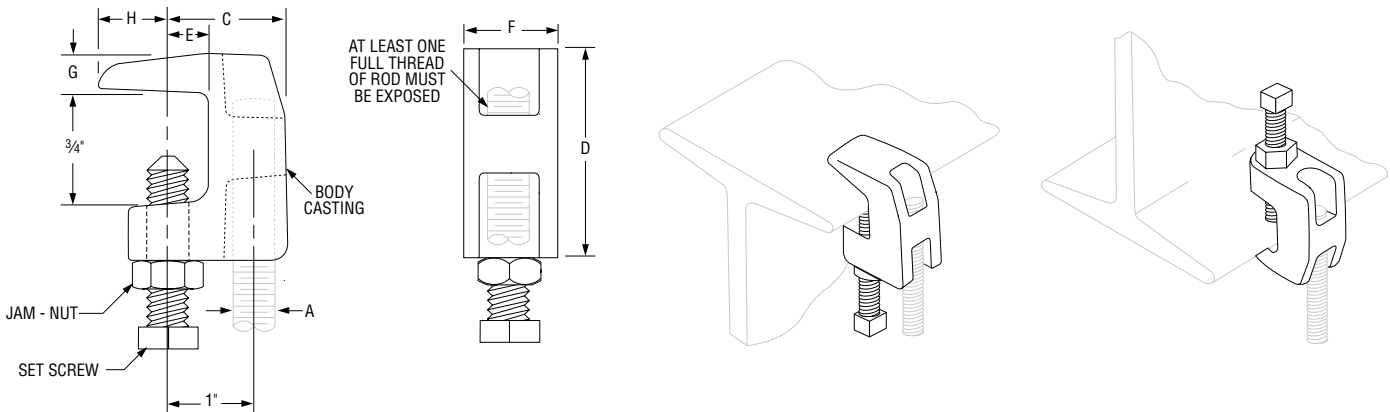


FIG. 92: LOAD (LBS) • WEIGHT (LBS) • DIMENSIONS (IN) • TORQUE (IN-LBS)

Rod Size A	Set Screw Size	Torque Value	Max Loads ■		Weight	C	D	E	F	G	H
			Top	Bottom							
3/8	3/8	60	500	250	0.34	1 5/16	1 9/16	9/16	1 3/16	3/8	1/2
1/2	1/2	125	950	760	0.63	1 3/8	1 13/16	1/2	1 1/16	7/16	23/32

■ Maximum temperature of 450° F

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

Description

FPPI Drop-In Anchors and Mini Drop-In Anchors are UL listed in accordance with NFPA requirements. Zinc plating provides corrosion resistance. Follow NFPA requirements and installation instructions for proper use.



Installation Instructions:

STEP 1 Using a masonry bit suitable for the material being drilled, drill an appropriate diameter hole at the correct depth according to the table below.

Anchor Size	Drill Size	Minimum Hole Depth
3/8" Standard	1/2"	1 9/16"
1/2" Standard	5/8"	2"
3/8" Mini	1/2"	3/4"

STEP 2 Insert the anchor into the hole until the edge of the anchor is flush* with the surface of the material the anchor is being installed in. **The Anchor may be installed at a greater depth by drilling the hole to the desired depth and threading the correct size bolt for the size anchor being installed and tapping the anchor into the drilled hole.*

STEP 3 After inserting the anchor to the desired depth, insert the correct size setting tool into the anchor and drive the plug into the anchor until the shoulder of the setting tool meets the edge of the anchor. The anchor is now installed and ready to be used.

Note: It is recommended that when used in cinder block, that the anchor be placed between the cells.

Average Pullout Values For 4000psi Concrete

Part Number	Bolt Size	Pullout Value
Standard Drop-In		
05-470-00	3/8"	5,530
05-471-00	1/2"	8,080
Mini Drop-In		
05-472-00	3/8"	1,980

Specifications

Materials:

Zinc Plated Steel

Part Numbers:

05-470-00 3/8"

05-471-00 1/2"

05-472-00 3/8", mini

Use With:

05-475-00

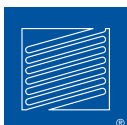
Setting Tool 3/8"

05-474-00

Setting Tool 1/2"

05-476-00

Setting Tool 3/8", mini



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SAMMYS® FOR WOOD Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min Wood Thickness	FM Max Pipe Size	FM Test Load (lbs)	FM Min Wood Thickness
8007957	GST 10	3/8"	Vertical	CPVC 1-1/2"	300	1-1/2"			
8020957	SWG 10	3/8"	Horizontal	CPVC 1-1/2"	300	1-1/2"			
8008957	GST 20	3/8"	Vertical	2-1/2"	850	1-1/2"	4"	1475	1-1/2"
8068925	GST 20-SS	3/8"	Vertical	2-1/2"	850	1-1/2"			
8010957	GST 30	3/8"	Vertical	4"	1500	1-1/2"	4"	1475	1-1/2"
8009925	GST 25-380	3/8"	Vertical	4"	1500	1-1/2"			
8022925	SWG 25-380	3/8"	Horizontal	3-1/2" - 4**	1500	1-1/2"			
8021957	SWG 20	3/8"	Horizontal	2-1/2" - 3***	1050	1-1/2"			
8073925	SWG 20-SS	3/8"	Horizontal	2-1/2"	850	1-1/2"			
8139957	SH-GST 20	3/8"	17° Angle off Vertical	3"	1050	1-1/2"	4"	1475	1-1/2"
8141957	SH-GST 30	3/8"	17° Angle off Vertical	4"	1500	1-1/2"	4"	1475	1-1/2"

SAMMYS® FOR STEEL Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min. Steel Thickness	FM Max Pipe Size	FM Test Load (lbs)	FM Min. Steel Thickness
8038957	DSTR 1	3/8"	Vertical	4"	1500	.035"	4"	1475	.105"
8037957	DSTR 1-1/2	3/8"	Vertical	4"	1500	.035"	4"	1475	.105"
8039957	DSTR 516	3/8"	Vertical	4"	1500	.037"	4"	1475	.105"
8045957	DST 516	3/8"	Vertical	4"	1500	.188"	4"	1475	.188"
8046957	TEK 50	3/8"	Vertical	4"	1500	.250"	4"	1475	.188"
8055957	SWDR 1	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8056957	SWDR 516	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8054957	SWDR 1-1/2	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8137957	SH-DSTR 1	3/8"	17° Angle off Vertical	4"	1500	.035"	4"	1475	.105"
8150922	XP 20	3/8"	Vertical	2-1/2"	850	.027"	2" 4"	940 1475	.029" .105"
8153922	XP 35	3/8"	Vertical	4"	1500	.060"	2" 4"	940 1475	.029" .105"
8294922	SXP 20	3/8"	Vertical or up to 45°	2"	750	.027"	2"	635	.029"
8295922	SXP 35	3/8"	Vertical or up to 89°	3-1/2"	1250	.060"	2"	635	.029"
8293957	SWXP 35	3/8"	Horizontal	3-1/2"	1250	.060"			

SAMMYS® FOR CONCRETE Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min PSI	FM Max Pipe Size	FM Test Load (lbs)	FM Min PSI
8059957	CST 20	3/8"	Vertical				4"	1475	3000
8061957	SWC 20	3/8"	Horizontal				4"	1475	3000
8150922	XP 20	3/8"	Vertical	2-1/2"	850	Pre-Pour Structural @ 3000psi			
8150922	XP 20	3/8"	Vertical	2-1/2"	850	Post-Pour Range II LWC ≤ 35 PCF (lbs/ft³)			

TRUSS-T HANGER® Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Load Rating (lbs)	UL Test Load (lbs)	Listed Application
8296900	HD38TC	3/8"	Top Chord	1200	6075	Maximum 4" Schedule 40 pipe
8297900	HD38BC	3/8"	Bottom Chord	1200	6075	Maximum 4" Schedule 40 pipe
8198900	HD12CZP	1/2"	Bottom Chord	1200	6075	Maximum 8" Schedule 40 Pipe
8298900	HD12TC	1/2"	Top Chord	1200	6075	Maximum 8" Schedule 40 Pipe
8299900	HD12BC	1/2"	Bottom Chord	1200	6075	Maximum 8" Schedule 40 Pipe

*SWG 25-380 Maximum pipe size in composite wood joist allowed by UL is 3-1/2"

*SWG 25-380 Maximum pipe size in wood timber or joist allowed by UL is 4"

**SWG 20 Maximum pipe size in composite wood joist allowed by UL is 2-1/2"

**SWG 20 Maximum pipe size in wood timber or joist allowed by UL is 3"

UL compliance with NEC Standards.

UL and FM tests were performed in compliance with NFPA 13 Standards.

Fastening requirement: 5 times weight of water-filled schedule 40 pipe plus 250 pounds.



PIPE HANGER
ALSO LISTED AS CONDUIT AND CABLE HARDWARE
ALSO LISTED AS ANCHOR FOR LUMINAIRE
9R21



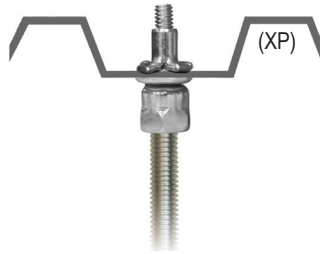
APPROVED

SAMMY X-PRESS® Installs into Metal Deck, Purlin, or Tubular Steel

SAMMY X-PRESS® - Vertical Application



Application

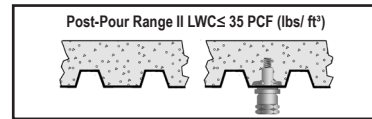
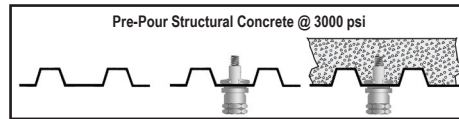
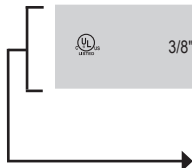


Product Features

- The **Sammy X-Press** expands to provide direct vertical attachment in:
 - light gauge steel deck or purlin (22 ga. - 1/8").
- Installs in seconds with Sammy X-Press It® Tool, saving time & installation costs.
- Use in applications where access to the back of the installed fastener is prohibited, i.e. metal roof deck, tubular steel, or vapor barrier fabric.
- Less jobsite material needed.
- No retaining nut required.
- Provides design flexibility.
- Made in the U.S.A.



Approvals	Rod Size	Part Number	Model	Description	Ultimate Pullout (lbs)	UL Test Load (lbs)	UL Min Thick	FM Test Load (lbs)	FM Min Thick	Max Thick	Box Qty	Case Qty	Application
VERTICAL MOUNT													
UL	1/4"	8181922	XP 200	Sammy X-Press 200	1146 (22 ga)	185 (Luminaire) 250 (Luminaire)	.027" .056"			.125"	25	125	Metal Deck
UL FM	3/8"	8150922	XP 20	Sammy X-Press 20	1146 (22 ga)	850 (2 1/2" Pipe) 185 (Luminaire) 250 (Luminaire) 283 (Conduit & Cable)	.027" .027" .056" .029"	940 (2" Pipe) 1475 (4" Pipe)	.029" .104"	.125"	25	125	Metal Deck
UL FM	3/8"	8153922	XP 35	Sammy X-Press 35	1783 (16 ga)	1500 (4" Pipe) 185 (Luminaire) 250 (Luminaire) 416 (Conduit & Cable)	.060" .029" .056" .059"	940 (2" Pipe) 1475 (4" Pipe)	.029" .104"	.125"	25	125	Purlin
UL	3/8"	8150922	XP 20	Sammy X-Press 20	1146 (22 ga)	850 (2 1/2" Pipe)		Pre-Pour Structural Concrete @ 3000 psi			25	125	Metal Deck (Pre-Pour) Metal Deck (Post-Pour)
								Post-Pour Range II LWC ≤ 35 PCF (lbs/ft³)					



SIDEWINDER X-PRESS™ - Horizontal Application



Application



Product Features

- The **Sidewinder X-Press** expands to provide horizontal attachment in:
 - 16 ga - 3/16" steel - purlin, tubular steel.
- Installs in seconds with Sammy X-Press It® Tool, saving time & installation costs.
- Use in applications where access to the back of the installed fastener is prohibited; i.e. metal roof deck, tubular steel, or vapor barrier fabric.
- Less jobsite material needed.
- No retaining nut required.
- Provides design flexibility.
- Made in the U.S.A.



Approvals	Rod Size	Part Number	Model	Description	Ultimate Pullout (lbs)	UL Test Load (lbs)	UL Min Thick	FM Test Load (lbs)	Max Thick	Box Qty	Case Qty	Application	
HORIZONTAL MOUNT													
UL	3/8"	8293957	SWXP 35	Sidewinder X-Press 35	1798 (16 ga)	1250 (3 1/2" Pipe) 80 (Luminaire) 416 (Conduit & Cable)	.059"			.125"	25	125	Purlin



MINIMUM SIZE ANVIL-STRUT CHANNEL

(To Comply with NFPA 13 Table 2-6.1 5(a) 1996 Edition)

	Channel Size	Section Mod. (in. ³)
	AS-200 1 ⁵ / ₈ " x 1 ⁵ / ₈ " x 12 ga.	.202
	AS-150 1 ⁵ / ₈ " x 2 ⁷ / ₁₆ " x 12 ga.	.391
	AS-100 1 ⁵ / ₈ " x 3 ¹ / ₄ " x 12 ga.	.698

	Channel Size	Section Mod. (in. ³)
	AS-150 BTB 1 ⁵ / ₈ " x 4 ⁷ / ₈ " x 12 ga.	1.153
	AS-100 BTB 1 ⁵ / ₈ " x 6 ¹ / ₂ " x 12 ga.	1.716

Section Modulus Required for Trapeze Members (in.³)

Span of Trapeze	Pipe Size											
	1"	1 ¹ / ₄ "	1 ¹ / ₂ "	2"	2 ¹ / ₂ "	3"	3 ¹ / ₂ "	4"	5"	6"	8"	10"
1 ft. 6 in.	.08	.09	.09	.09	.10	.11	.12	.13	.15	.18	.24	.32
	.08	.09	.09	.10	.11	.12	.13	.15	.18	.22	.30	.41
2 ft. 0 in.	.11	.12	.12	.13	.13	.15	.16	.17	.20	.24	.32	.43
	.11	.12	.12	.13	.15	.16	.18	.20	.24	.29	.40	.55
2 ft. 6 in.	.14	.14	.15	.16	.17	.18	.20	.21	.25	.30	.40	.54
	.14	.15	.15	.16	.18	.21	.22	.25	.30	.36	.50	.68
3 ft. 0 in.	.17	.17	.18	.19	.20	.22	.24	.26	.31	.36	.48	.65
	.17	.18	.18	.20	.22	.25	.27	.30	.36	.43	.60	.82
4 ft. 0 in.	.22	.23	.24	.25	.27	.29	.32	.34	.41	.48	.64	.87
	.22	.24	.24	.26	.29	.33	.36	.40	.48	.58	.80	1.09
5 ft. 0 in.	.28	.29	.30	.31	.34	.37	.40	.43	.51	.59	.80	1.08
	.28	.29	.30	.33	.37	.41	.45	.49	.60	.72	1.00	1.37
6 ft. 0 in.	.33	.35	.36	.38	.41	.44	.48	.51	.61	.71	.97	1.30
	.34	.35	.36	.39	.44	.49	.54	.59	.72	.87	1.20	1.64
7 ft. 0 in.	.39	.40	.41	.44	.47	.52	.55	.60	.71	.83	1.13	1.52
	.39	.41	.43	.46	.51	.58	.63	.69	.84	1.01	1.41	1.92
8 ft. 0 in.	.44	.46	.47	.50	.54	.59	.63	.68	.81	.95	1.29	1.73
	.45	.47	.49	.52	.59	.66	.72	.79	.96	1.16	1.61	
9 ft. 0 in.	.50	.52	.53	.56	.61	.66	.71	.77	.92	1.07	1.45	
	.50	.53	.55	.59	.66	.74	.81	.89	1.08	1.30		
10 ft. 0 in.	.56	.58	.59	.63	.69	.74	.79	.85	1.02	1.19	1.61	
	.56	.59	.61	.65	.74	.82	.90	.99	1.20	1.44		

Top values are for Schedule 10 pipe; bottom values are for Schedule 40 pipe.

Mechanical-T[®] Bolted Branch Outlets



STYLES 920 AND 920N

Victaulic Mechanical-T[®] Outlet provides a direct branch connection at any location a hole can be cut in pipe. The hole is cut oversize to receive a “holefinder” locating collar which secures the outlet in position permanently. A pressure responsive gasket seals on the pipe O.D.

Cross-type connections can be achieved by utilizing two upper housings of the same style and size, with the same or differing branch size connections. NOTE: Style 920 and Style 920N housings cannot be mated to each other to achieve a cross connection.

Style 920 and Style 920N Mechanical-T outlets are available with grooved or female threaded outlet. Specify choice on order. Units are supplied painted with plated bolts. Galvanized housings are available, supplied with plated bolts.

All sizes of Style 920 and 920N are rated at 500 psi/3450 kPa working pressure on Schedule 10 and 40 carbon steel pipe. They may also be used on high density polyethylene or polybutylene (HDPE) pipe. Pressure ratings on HDPE are dependent on the pipe rating. Contact Victaulic for ratings on other pipe. **Style 920 and 920N are not recommended for use on PVC plastic pipe.**

Standard piping practices dictate that the Mechanical-T Styles 920 and 920N must be installed so that the main and branch connections are a true 90° angle when permanently attached to the pipeline surface.

Additionally, the Vic-Tap II[®] hole cutting tool, which allows for hole cutting capabilities on pressurized systems, utilizes the Style 920 Mechanical-T in conjunction with the Series 726 Vic-Ball Valve to create the Style 931 Vic-Tap II Mechanical-T unit. See page 8 for further information.



STYLES 920 AND 920N

STYLE 920 CROSS

PATENTED

MATERIAL SPECIFICATIONS

Housing/Coating: Ductile iron conforming to ASTM A-536, grade 65-45-12, with orange enamel coating. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

- **Optional:** Hot dipped galvanized

Gasket: (Specify choice*)

- **Grade “E” EPDM**
EPDM (Green color code). Temperature range -30°F to +230°F/-34°C to +110°C. Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C. NOT RECOMMENDED FOR PETROLEUM SERVICES.
- **Grade “T” nitrile**
Nitrile (Orange color code). Temperature range -20°F to +180°F/-29°C to +82°C. Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F/+66°C or for hot dry air over +140°F/+60°C.

*Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

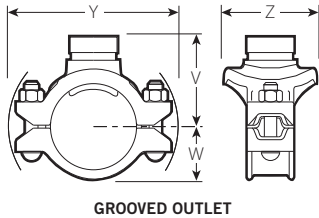
Bolts/Nuts: Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.

JOB/OWNER	CONTRACTOR	ENGINEER
System No. _____	Submitted By _____	Spec Sect _____ Para _____
Location _____	Date _____	Approved _____
		Date _____

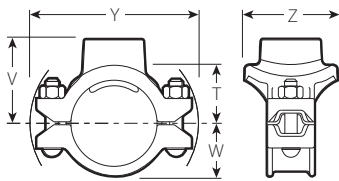
Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

DIMENSIONS



GROOVED OUTLET



FEMALE THREADED OUTLET

- Provides a direct branch connection at any location where a hole can be cut in the pipe
- A pressure responsive gasket provides the seal
- Request Publication 11.03 for Mechanical-T cross assemblies
- Pressure rated up to 500 psi/3450 kPa on steel pipe; also available for use with HDPE pipe
- Sizes from 2 × ½"/50 × 15 mm through 8 × 4"/200 × 100 mm

IMPORTANT NOTES:

Style 920 and Style 920N housings cannot be mated to one another to achieve cross connections.

Size Run × Branch Nominal Size Inches mm	Style No. 920 or 920N	Max. Work Pressure@ psi kPa	Dimensions							Approx. Weight Each	
			Hole Diameter +0.13 -0.00 Inches mm	T** Inches mm	V ‡ # Thd. Inches mm	V ‡ Grv. Inches mm	W Inches mm	Y Inches mm	Z Inches mm	Female Thd. Lbs. kg	Grv. Lbs. kg
2 50 × ½ (a) □ 15	920N	500 3450	1.50 38.1	2.00 51	2.53 64	—	1.61 41	5.35 136	2.75 70	3.1 1.5	—
	920N	500 3450	1.50 38.1	1.97 50	2.53 64	—	1.61 41	5.35 136	2.75 70	3.1 1.5	—
	920N	500 3450	1.50 38.1	1.85 47	2.53 64	—	1.61 41	5.35 136	2.75 70	3.0 1.4	—
	920N	500 3450	1.75 44.5	2.05 52	2.75 70	3.00 76	1.61 41	5.35 136	3.00 76	3.5 1.7	3.2 1.5
	920N	500 3450	1.75 44.5	2.03 52	2.75 70	3.12 79	1.61 41	5.35 136	3.25 83	3.6 1.7	3.2 1.5
2½ 65 × ½ (a) § □ 15	920N	500 3450	1.50 38.1	2.21 56	2.74 70	—	1.82 46	5.64 143	2.75 70	3.0 1.4	—
	920N	500 3450	1.50 38.1	2.18 55	2.74 70	—	1.82 46	5.64 143	2.75 70	3.0 1.4	—
	920N	500 3450	1.50 38.1	2.06 52	2.74 70	—	1.82 46	5.64 143	2.75 70	2.9 1.4	—
	920N	500 3450	1.75 44.5	2.30 58	3.00 76	3.25 83	1.82 46	6.29 160	3.00 76	3.5 1.7	3.2 1.5
	920N	500 3450	2.00 50.8	2.28 58	3.00 76	3.25 83	1.82 46	6.26 159	3.25 83	3.6 1.7	3.3 1.6
76.1 × ½ (a) □ 15	920N	300 2065	1.50 38.1	2.22 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
	920N	300 2065	1.50 38.1	2.19 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
	920N	300 2065	1.50 38.1	2.07 53	2.75 70	—	2.25 57	6.46 164	3.18 81	3.8 1.7	—
	920N	500 3450	1.75 44.5	2.30 58	3.00 76	3.31 84	1.92 49	6.29 160	3.00 76	3.5 1.6	3.2 1.5
	920N	500 3450	2.00 50.8	2.28 58	3.00 76	3.31 84	1.92 49	6.29 160	3.25 83	3.5 1.6	3.3 1.5
3 80 × ½ (a) □ 15	920N	500 3450	1.50 38.1	2.52 64	3.05 78	—	2.28 58	6.15 156	2.75 70	3.4 1.6	—
	920N	500 3450	1.50 38.1	2.49 63	3.05 78	—	2.28 58	6.15 156	2.75 70	3.4 1.6	—
	920N	500 3450	1.50 38.1	2.38 61	3.06 78	—	2.28 58	6.15 156	2.75 70	3.3 1.6	—
	920N	500 3450	1.75 44.5	2.55 65	3.25 83	3.56 90	2.28 58	6.15 156	3.00 76	3.8 1.8	3.7 1.8
	920N	500 3450	2.00 50.8	2.78 71	3.50 89	3.56 90	2.28 58	6.15 156	3.25 83	4.1 1.9	3.8 1.8
	920N	500 3450	2.50 63.5	2.75 70	3.50 89	3.56 90	2.28 58	6.75 172	3.88 99	4.9 2.3	4.6 2.1
3½ 90 × 2 50	920N	500 3450	2.50 63.5	3.00 76	—	3.75 95	2.44 62	6.72 171	3.88 99	—	3.8 1.8

TABLE CONTINUED ON PG. 3

** Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

† Available with grooved or female threaded outlet. Specify choice on order.

‡ Center of run to end of fitting.

Female threaded outlets are available to NPT and BSPT specifications.

@ See page 7 for Fire Protection approvals and pressure ratings.

(a) British Standard female pipe threaded outlet is available as listed. Specify "BSPT" clearly on order.

(b) For 76.1 mm threaded outlet, specify 2½" BSPT clearly on order.

§ Vds approved for fire protection services

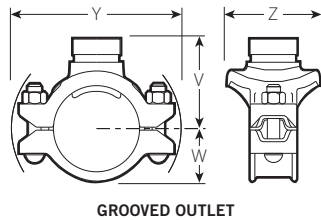
□ LPCB approved for fire protection services

∅ Approved for use in China by Tianjin Approvals Company.

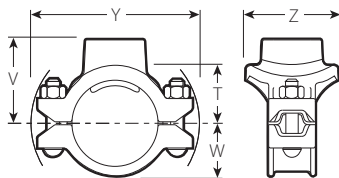
Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

DIMENSIONS



GROOVED OUTLET



FEMALE THREADED OUTLET

- Provides a direct branch connection at any location where a hole can be cut in the pipe
- A pressure responsive gasket provides the seal
- Request Publication 11.03 for Mechanical-T cross assemblies
- Pressure rated up to 500 psi/3450 kPa on steel pipe; also available for use with HDPE pipe
- Sizes from 2 × ½"/50 × 15 mm through 8 × 4"/200 × 100 mm

IMPORTANT NOTES:

Style 920 and Style 920N housings cannot be mated to one another to achieve cross connections.

Size	Style No.	Max. Work Pressure@	Dimensions							Approx. Weight Each		
			Run × Branch Nominal Size Inches mm	920 or 920N	psi kPa	Hole Diameter +0.13 -0.00	T** Inches mm	V ‡ # Thd. Inches mm	V ‡ Grv. Inches mm	W Inches mm	Y Inches mm	Z Inches mm
TABLE CONTINUED FROM PAGE 2												
4 100	½ (a) □	920N	500 3450	1.50 38.1	3.03 77	3.56 90	—	2.69 68	7.01 178	2.75 70	3.7 1.8	—
	¾ (a) □	920N	500 3450	1.50 38.1	3.00 76	3.56 90	—	2.69 68	7.01 178	2.75 70	3.7 1.8	—
	1 (a) □	920N	500 3450	1.50 38.1	2.88 73	3.56 90	—	2.69 68	7.01 178	2.75 70	3.6 1.8	—
	1 ¼ (a) †	920N	500 3450	1.75 44.5	3.08 78	3.78 96	4.00 102	2.69 68	7.01 178	3.00 76	4.0 1.9	3.6 1.8
	1 ½ (a) †	920N	500 3450	2.00 50.8	3.28 83	4.00 102	4.00 102	2.69 68	7.01 178	3.25 83	4.2 2.0	3.9 1.9
	2 (a) †	920N	500 3450	2.50 63.5	3.25 83	4.00 102	4.00 102	2.69 68	7.01 178	3.88 99	5.0 2.3	4.6 2.1
	2 ½ (a) †	920	500 3450	2.75 69.9	2.88 73	4.00 102	4.00 102	2.69 68	7.34 186	4.63 118	5.8 2.6	5.0 2.3
	76.1 mm	920	500 3450	2.75 69.9	2.88 73	—	4.00 102	2.69 68	7.34 186	4.63 118	—	6.4 2.9
	3 (a) †	920	500 3450	3.50 88.9	3.31 84	4.50 114	4.12 105	2.69 68	7.73 196	5.12 130	8.4 3.8	6.4 2.9
	108.0	1 ¼ (a) □	920N	500 3450	1.75 44.5	3.08 78	3.78 96	—	2.63 67	7.64 194	3.05 78	5.0 2.3
1 ½ (a) □		920N	500 3450	2.00 50.8	3.28 83	4.00 102	—	2.63 67	7.64 194	3.25 83	5.0 2.3	—
2 (a)		920N	500 3450	2.50 63.5	3.25 83	4.00 102	—	2.63 67	7.64 194	4.00 102	4.0 1.9	—
76.1 mm		920	500 3450	2.75 69.9	2.88 73	4.00 102	4.00 102	2.63 67	7.64 194	4.29 109	8.0 3.6	7.8 3.5
3 (a)		920	500 3450	3.50 88.9	3.31 84	4.50 114	4.50 114	2.63 67	7.63 194	4.88 124	6.8 3.1	6.5 3.0
5 125		1 ½ (a) †	920	500 3450	2.00 50.8	4.03 102	4.75 121	4.75 121	3.16 80	9.70 246	3.69 94	7.4 3.4
	2 (a) †	920	500 3450	2.50 63.5	4.00 102	4.75 121	4.75 121	3.16 80	9.70 246	4.38 111	8.2 3.7	8.0 3.6
	2 ½ (a) †	920	500 3450	2.75 69.9	3.63 92	4.75 121	4.75 121	3.16 80	9.70 246	4.63 118	8.3 3.8	7.9 3.6
	76.1 mm □	920	500 3450	2.75 69.9	3.75 95	—	4.75 121	3.16 80	9.70 246	4.63 118	—	8.0 3.6
	3 (a) †	920	500 3450	3.50 88.9	3.81 97	5.00 127	4.63 118	3.16 80	9.70 246	5.31 135	8.4 3.8	8.8 4.0
	133.0	2 50	920N	500 3450	2.50 63.5	3.75 95	4.50 114	—	3.17 81	8.00 203	3.88 99	8.0 3.6
3 80		920	500 3450	3.50 88.9	3.81 97	5.00 127	—	3.00 76	9.46 240	5.31 135	8.0 3.6	—
TABLE CONTINUED ON PG. 4												

** Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

† Available with grooved or female threaded outlet. Specify choice on order.

‡ Center of run to end of fitting.

Female threaded outlets are available to NPT and BSPT specifications.

@ See page 7 for Fire Protection approvals and pressure ratings.

(a) British Standard female pipe threaded outlet is available as listed. Specify "BSPT" clearly on order.

(b) For 76.1 mm threaded outlet, specify 2½" BSPT clearly on order.

§ Vds approved for fire protection services

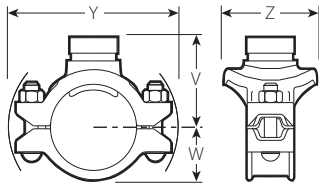
□ LPCB approved for fire protection services

∅ Approved for use in China by Tianjin Approvals Company.

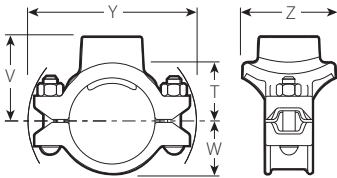
Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

DIMENSIONS



GROOVED OUTLET



FEMALE THREADED OUTLET

- Provides a direct branch connection at any location where a hole can be cut in the pipe
- A pressure responsive gasket provides the seal
- Request Publication 11.03 for Mechanical-T cross assemblies
- Pressure rated up to 500 psi/3450 kPa on steel pipe; also available for use with HDPE pipe
- Sizes from 2 × 1/2"/50 × 15 mm through 8 × 4"/200 × 100 mm

IMPORTANT NOTES:

Style 920 and Style 920N housings cannot be mated to one another to achieve cross connections.

Size Run × Branch Nominal Size Inches mm	Style No. 920 or 920N	Max. Work Pressure@ psi kPa	Dimensions							Approx. Weight Each		
			Hole Diameter +0.13 -0.00 Inches mm	T** Inches mm	V ‡ # Thd. Inches mm	V ‡ Grv. Inches mm	W Inches mm	Y Inches mm	Z Inches mm	Female Thd. Lbs. kg	Grv. Lbs. kg	
TABLE CONTINUED FROM PAGE 3												
139.7 ×	1 1/2 † 40	920N	500 3450	2.00 50.8	3.78 96	4.50 114	—	3.30 84	8.23 209	3.25 83	7.0 3.2	—
	2 † 50	920N	500 3450	2.50 63.5	3.75 95	4.50 114	—	3.30 84	8.23 209	3.88 99	9.0 4.1	—
6 150 ×	1 1/2 (a) 32 (b)	920N	500 3450	1.75 44.5	4.43 112	5.13 130	5.13 130	3.79 96	9.15 232	3.25 83	5.1 2.3	4.8 2.2
	1 1/2 (a) † 40 (b)	920N	500 3450	2.00 50.8	4.40 112	5.13 130	5.13 130	3.79 96	9.15 232	3.25 83	5.4 2.4	5.1 2.3
	2 (a) † 50	920N	500 3450	2.50 63.5	4.38 111	5.13 130	5.13 130	3.79 96	9.15 232	3.88 99	6.0 2.7	5.6 2.5
	2 1/2 65	920	500 3450	2.75 69.9	4.01 110	5.13 130	5.12 130	3.69 94	10.51 267	4.63 118	8.3 3.8	7.6 3.4
	76.1 mm [¶]	920	500 3450	2.75 69.9	4.15 105	—	5.21 132	3.69 94	10.51 267	4.63 118	—	8.4 3.8
	3 (a) † 80	920	500 3450	3.50 88.9	4.31 110	5.50 140	5.13 130	3.69 94	10.51 267	5.31 135	9.9 4.5	8.4 3.8
159.0 ×	4 (a) † 100	920	500 3450	4.50 114.3	3.81 97	5.75 146	5.38 137	3.69 94	10.51 267	6.25 159	10.1 4.6	10.1 4.6
	1 1/2 (a) 40	920N	500 3450	2.00 50.8	4.41 112	5.13 130	—	3.63 92	9.40 239	3.25 83	7.8 3.5	—
	2 (a) 50	920N	500 3450	2.50 63.5	4.38 111	5.13 130	—	3.63 92	9.40 239	3.88 99	8.0 3.6	—
	76.1 mm	920	500 3450	2.75 69.9	4.38 111	5.50 140	5.13 130	3.63 92	9.40 239	4.63 118	9.5 4.3	9.5 4.3
	3 80	920	500 3450	3.50 88.9	4.31 110	5.50 140	5.13 130	3.63 92	9.40 239	5.31 135	8.1 3.7	14.0 6.4
	108.0 mm	920	500 3450	4.50 114.3	4.45 113	—	5.38 137	3.63 92	9.40 239	6.12 155	—	10.0 4.5
TABLE CONTINUED ON PG. 5												

** Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

† Available with grooved or female threaded outlet. Specify choice on order.

‡ Center of run to end of fitting.

Female threaded outlets are available to NPT and BSPT specifications.

@ See page 7 for Fire Protection approvals and pressure ratings.

(a) British Standard female pipe threaded outlet is available as listed. Specify "BSPT" clearly on order.

(b) For 76.1 mm threaded outlet, specify 2 1/2" BSPT clearly on order.

§ Vds approved for fire protection services

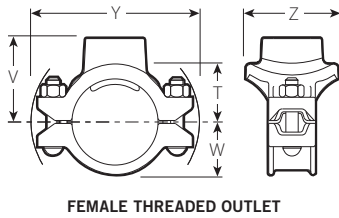
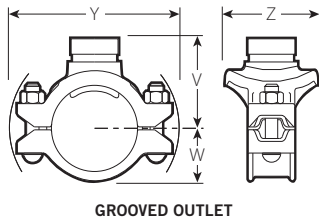
¶ LPCB approved for fire protection services

⊘ Approved for use in China by Tianjin Approvals Company.

Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

DIMENSIONS



- Provides a direct branch connection at any location where a hole can be cut in the pipe
- A pressure responsive gasket provides the seal
- Request Publication 11.03 for Mechanical-T cross assemblies
- Pressure rated up to 500 psi/3450 kPa on steel pipe; also available for use with HDPE pipe
- Sizes from 2 × 1/2"/50 × 15mm through 8 × 4"/200 × 100mm

IMPORTANT NOTES:

Style 920 and Style 920N housings cannot be mated to **each other** to achieve cross connections.

Size	Style No.	Max. Work Pressure@	Dimensions							Approx. Weight Each		
			Run × Branch Nominal Size Inches mm	920 or 920N	psi kPa	Hole Diameter +0.13 -0.00 Inches mm	T** Inches mm	V ‡ # Thd. Inches mm	V ‡ Grv. Inches mm	W Inches mm	Y Inches mm	Z Inches mm
TABLE CONTINUED FROM PAGE 4												
165.1 ×	1 25	920N	500 3450	1.50 38.1	3.88 99	4.56 116	—	3.79 96	9.34 237	2.75 70	8.0 3.6	—
	1 1/4 □ 32	920N	500 3450	1.75 44.5	4.43 113	5.13 130	—	3.79 96	9.34 237	3.25 83	8.4 3.8	—
	1 1/2 (a) †□ 40	920N	500 3450	2.00 50.8	4.41 112	5.13 130	5.13 130	3.79 96	9.34 237	3.25 83	8.4 3.8	5.4 2.4
	2 (a) † 50	920N	500 3450	2.50 63.5	4.38 111	5.13 130	5.13 130	3.79 96	9.34 237	3.88 99	8.5 3.9	6.0 2.7
	76.1 mm	920	500 3450	2.75 69.9	4.01 110	5.13 130	5.21 132	3.63 92	10.51 267	4.63 118	8.6 3.9	7.6 3.4
	3 (a) † ∅ 80	920	500 3450	3.50 88.9	4.31 110	5.50 140	5.13 130	3.63 92	10.51 267	5.31 135	10.2 4.6	8.4 3.8
8 200 ×	2 (a) † 50	920	500 3450	2.75 69.9	5.44 138	6.19 157	6.25 159	4.81 122	12.42 316	4.50 114	11.6 5.3	11.6 5.3
	2 1/2 (a) † 65	920	500 3450	2.75 69.9	5.07 129	6.19 157	6.19 157	4.81 122	12.42 316	4.50 114	11.6 5.3	11.6 5.3
	76.1 mm □	920	500 3450	2.75 69.9	5.25 133	—	6.25 159	4.81 122	12.42 316	4.56 116	—	11.6 5.3
	3 (a) †□ 80	920	500 3450	3.50 88.9	5.31 135	6.50 165	6.50 165	4.81 122	12.42 316	5.31 135	12.6 5.7	11.6 5.3
	4 (a) †□ 100	920	500 3450	4.50 114.3	4.81 122	6.75 171	6.38 162	4.81 122	12.42 316	6.25 159	15.3 6.9	12.5 5.7

** Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

† Available with grooved or female threaded outlet. Specify choice on order.

‡ Center of run to end of fitting.

Female threaded outlets are available to NPT and BSPT specifications.

@ See page 7 for Fire Protection approvals and pressure ratings.

(a) British Standard female pipe threaded outlet is available as listed. Specify "BSPT" clearly on order.

(b) For 76.1 mm threaded outlet, specify 2 1/2" BSPT clearly on order.

§ Vds approved for fire protection services

□ LPCB approved for fire protection services

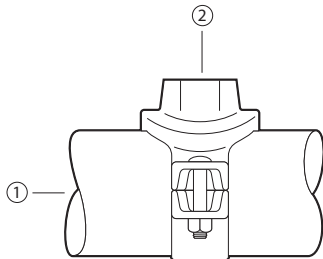
∅ Approved for use in China by Tianjin Approvals Company.

Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

FLOW DATA

Flow test data has shown that the total head loss between point (1) and (2) for the Style 920, 920N and 929 Mechanical-T[®] fittings can best be expressed in terms of the pressure difference across the inlet and branch. The pressure difference can be obtained from the relationship below.



Exaggerated for clarity

C_v and K_v Values

Values for flow of water at +60°F/+16°C are shown in the table below.

Formulas for C_v, K_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

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

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

Where:

Q = Flow (m³/hr)

ΔP = Pressure Drop (Bar)

K_v = Flow Coefficient

OUTLET SIZE		Equivalent Length of Outlet Size Schedule 40 Carbon Steel Pipe (per UL 213, Sec. 16) (C = 120)† FT		C _v /K _v Values	
NOMINAL DIAMETER In/mm	ACTUAL O.D. In/mm	GROOVED	THREADED	GROOVED	THREADED
½	0.840	-	2	-	11
15	21.3	-	-	-	9.4
¾	1.050	-	4	-	16
20	26.7	-	-	-	13.7
1	1.315	3**	8	-	21
25	33.7	-	-	-	1.8
1 ¼	1.660	5 ½	6	50	48
32	42.7	-	-	42.9	41.1
1 ½	1.900	11	11	53	53
40	98.3	-	-	45.4	45.4
2	2.375	9	10 ½	112	104
50	60.3	-	-	96	89.1
2 ½	2.875	20	12 ½	119	150
65	73.0	-	-	102	128.5
76.1 mm	3.000	16*	-	161	-
	76.1	-	-	138.1	-
3	3.500	14	15 ½	249	237
80	88.9	-	-	213.4	203.1
4	4.500	20	22	421	401
100	114.3	-	-	360.8	343.6

† Hazen-Williams coefficient of friction is 120.

* Pipe with a wall thickness of 0.165in./4.2mm.

** 1" FireLock™ Innovative Groove System (IGS) outlet

Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

FIRE PROTECTION APPROVALS AND PRESSURE RATINGS

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

Run Size		Outlet Size Inches/mm	Pipe Schedule	Approval Agency Rated Working Pressures – psi/kPa				Vds	
Nominal Size Inches/mm	Actual Outside Diameter Inches/mm			UL	ULC	FM	LPCB	(Style 920)	(Style 920N)
2 1/2 - 6 65 - 150	2.875 - 6.625 73.0 - 168.3	All	10, 40	400 2755	400 2755	400 2755	290 1999	232 1599	362 2496
2 1/2 - 4 65 - 100	2.875 - 4.500 73.0 - 114.3	All	DF	300 2065	300 2065	300 2065	290 1999	232 1599	362 2496
2 1/2 - 4 65 - 100	2.875 - 4.500 73.0 - 114.3	All	SF	300 2065	300 2065	300 2065	290 1999	232 1599	362 2496
6 150	6.625 168.3	3, 4	10	300 2065	300 2065	250 1724	290 1999	232 1599	362 2496
6 150	6.625 168.3	3,4	30, 40	300 2065	300 2065	300 2065	290 1999	232 1599	362 2496
8 200	8.625 219.1	2 1/2	10, 40	400 2755	—	—	—	145 1000	—
8 200	8.625 219.1	3,4	10	300 2065	—	250 1724	—	145 1000	—
8 200	8.625 219.1	3,4	30, 40	300 2065	—	300 2065	—	145 1000	—

NOTES:

10 refers to Listed/Approved Schedule 10 steel sprinkler pipe.

40 refers to Listed/Approved Schedule 40 steel sprinkler pipe.

DF refers to Listed/Approved Dyna-Flow steel sprinkler pipe manufactured by American Tube Company.

SF refers to Listed/Approved Super-Flo steel sprinkler pipe manufactured by Allied Tube and Conduit Corporation.

VIC-TAP II HOLE CUTTING TOOL FOR 4 - 8"/100 - 200MM CARBON STEEL PIPE



The Vic-Tap II hole cutting tool is designed for use with the Style 931 Vic-Tap II Mechanical-T unit, which is a combination of the Style 920 Mechanical-T and Series 726 Vic-Ball Valve. The Vic-Tap II is capable of tapping into carbon steel pipe systems under pressures up to 500 psi/3450 kPa.

The Style 931 Vic-Tap II Mechanical-T unit is a full port ball valve which can be mounted on 4"/100mm, 5"/125mm, 6"/150mm and 8"/200mm diameter pipe. The Style 931 comes with a 2 1/2"/65mm grooved outlet.

The drill motor is an electric motor with ground fault circuit interrupter (GFCI) in accordance with safety codes.

For more information, refer to publication 24.01.

Mechanical-T[®] Bolted Branch Outlets

STYLES 920 AND 920N

INSTALLATION

Reference should always be made to the I-100 Victaulic Field Installation Handbook for the product you are installing. Handbooks are included with each shipment of Victaulic products for 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.

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.

For complete contact information, visit www.victaulic.com

11.02 1480 REV N UPDATED 12/2017

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METACAULK® 1000
Highly Intumescent Firestop Sealant**Description**

Metacaulk 1000 is a single component, general purpose fire rated sealant and smoke seal for construction joints and through-penetrations. Metacaulk 1000 is a water based, extremely intumescent, non-sag caulking grade sealant that is easy to apply. It cures to an elastomeric seal that is suitable where dynamic movement is expected.

In the event of a fire, Metacaulk 1000 will prevent the spread of flames, smoke, hot gases and water through joint openings and through-penetrations. Metacaulk 1000 systems are rated for 1, 2, 3 and 4 hours in accordance with the ASTM E814 (UL1479), ASTM E1966 (UL 2079) and CAN/ULC-S115 test standards. Metacaulk 1000 is protected in a wet stage as well as in a dry stage against mold growth with a combination of biocides. Tested by a third party independent laboratory to the ASTM G21 standard with Fungal Growth Rating results of zero.

**Applications**

Metacaulk 1000 can be used in interior applications as a general purpose fire rated sealant and smoke seal for construction joints, through penetrations and blank openings on both vertical and horizontal surfaces. Use Metacaulk 1000 to prevent the spread of fire and smoke through joints in fire rated gypsum wallboard partitions, concrete block or concrete walls and/or concrete or corrugated steel deck floor/ceiling assemblies. Metacaulk 1000 is also an excellent fire rated acoustical sealant and can be used in areas under constant vibration or movement to reduce the transfer of noise through assemblies. Metacaulk 1000 can also be used on various penetrations such as EMT, telephone & power cables, insulated pipes, etc. in concrete floors and walls, gypsum walls as well as wood floors.

Characteristics | Features

- Water based
- Excellent freeze-thaw
- Flexible set
- Highly intumescent
- Paintable
- VOC compliant
- Safe and easy to use
- 3 Year shelf life

Packaging

Code	Size	Qty. per Case	Dimensions (in)	Cubic Feet
66640	10.3 oz cartridge	12	8x6x12	.34
66312	20.2 oz foil pack	12	9x14x7	.51
66303	30 oz. cartridge	12	11x9x17	.97
66309	5 Gallon	1	13 dia x14	1.08

Installation Data

Install Metacaulk 1000 using standard caulking techniques or trowel from pails. Metacaulk 1000 may also be pumped from the pails. When damming materials are needed, use only materials approved for the specific application.



TYPICAL TOP OF WALL INSTALLATION

Step 1 Gun, trowel or pump the sealant as required to the specified depth. Properly tool sealant surface flush with the wall.

Consult UL Directory for complete instructions and system listings.

Testing Data

For specific test criteria, refer to the UL Product iQ and Interek Directory of Building Products or call RectorSeal

Metacaulk 1000 was tested at positive pressure with a minimum 0.01 (2.5 Pa) inches water and in accordance with ASTM E814 (UL 1479), ASTM E1966 (UL 2079) and tested with a pressure differential of 50 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side in accordance with CAN/ULC S115 testing standards. Tested to the time-temperature requirements of ASTM E119 (UL 263). Tested by a third party independent laboratory to the ASTM G21 standard with Fungal Growth Rating results of zero.

Sound Transmission Class (STC) 62 - The test was performed in accordance with ASTM 90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

Complies to Required Environmental Exposure Testing of Accelerated Aging and



High Humidity as per UL 1479 Fire Test of Through-Penetration Firestops.

FBC™ System Compatible* indicates that this product has been tested, and is monitored on an ongoing basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® piping systems and products made with TempRite® Technology.
The FBC System Compatible Logo, FBC™, FlowGuard Gold®, BlazeMaster®, Corzan® and TempRite® are trademarks of Lubrizol Advanced Materials, Inc. or its affiliates.

Suggestions and recommendations covering the use of our products are based on our past experience and laboratory findings. However, as we have no control as to the methods and conditions of application, we only assume responsibility for the uniformity of our products within manufacturing tolerances.

Material Properties

Asbestos Fillers	None
Solvents	None
Hazardous Ingredients	None
Application	Caulking Gun or Trowel
Application Temperature between	40°F - 120°F 4°C - 49°C

Activation of Intumescence:	
Expansion Begins	375°F (190°C)
Expansion Greatest	575°F - 1100°F 302°C - 593°C

Color	Red
Cure Time	3 to 4 weeks (at 77°F/25°C)
Density	~11 lbs/gal ~1.32 kg/L
Elastomeric	Yes
Freeze/Thaw	Excellent
Skin Over Time	30 min. (at 77°F/25°C)
pH Value	6.5 to 7

Volume Coverage:	
for 10.3 oz. tube	18 cu. in. (304 ml)
for 20.2 oz. foil packs	36 cu. in. (597 ml)
for 30 oz. tube	54 cu. in. (887 ml)
for 5 gallon	1155 cu. in. (18.9 liter)

VOC	< 10 g/L
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ASTM E 84, UL 723 Tunnel Test	
Flame Spread	0
Smoke Index	0

Inspection & Repair

RectorSeal recommends firestop system inspection is conducted during installation of the material in accordance with ASTM E2174 and ASTM E2393. In the event post-installation inspection and destructive sampling is necessary, RectorSeal advises repairing the damaged firestop system by replacing any material that was removed or damaged with the same product originally installed, and ensuring the assembly matches the original firestop listing. RectorSeal advises, that due to the chemical nature of firestop products and sealants, material depth should be determined by measuring the points of adhesion at the substrate bond area as sealants may decrease in size during the curing process.

Storage & Handling

Metacaulk 1000 should be stored between 35°F (2°C) and 120° F (49° C) to obtain a 3 year shelf life.

NOTE: Do not dilute, no mixing is required. Best if protected from freezing. If freezing occurs, thaw completely before using. Keep products stored under protective cover in original containers.

Limitations

Metacaulk 1000 is not designed to be used in areas under continuous immersion or in areas which would be continuously wet. Metacaulk 1000 should not be used against hot uninsulated surfaces above 300° F (149° C).

Cautions

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC-DAY OR NIGHT 1-800-424-9300.

PRECAUTIONS: Do not take internally. May be harmful if swallowed. May cause eye and skin irritation if prolonged or repeated contact occurs. Wash after handling. **FIRST AID:** For any overexposure, get immediate medical attention after first aid is given. **EYES**-Flush 15 minutes with clean water. **SKIN**-Wash with soap and water. **INHALATION**-Remove to fresh air. **INGESTION**-Only if conscious, give large amounts of water and INDUCE VOMITING. **FIRE AND SPILLS:** Use water fog, CO₂, foam, or dry chemicals. Wipe up spills to prevent footing hazard. Clean up with scrapers and water. **STORAGE AND HANDLING:** Store away from heat sources. Keep container closed. Do not reuse empty container. **KEEP OUT OF REACH OF CHILDREN.**

For additional information, refer to Safety Data Sheet.

Limited Warranty

RectorSeal, LLC makes the Limited Express Warranty that when the instructions for storage and handling of our products are followed we warrant our products to be free from defects. THIS LIMITED EXPRESS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION ON THE PART OF RectorSeal, LLC. The sole remedy for breach of the Limited Express Warranty shall be the refund of the purchase price. All other liability is negated and disclaimed, and RectorSeal, LLC shall not be liable for incidental or consequential damages.



Manufactured by **RectorSeal® LLC • 2601 Spenwick Drive, Houston, TX 77055, USA • 800-231-3345 • Fax 800-441-0051 • RectorSeal.com**

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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.

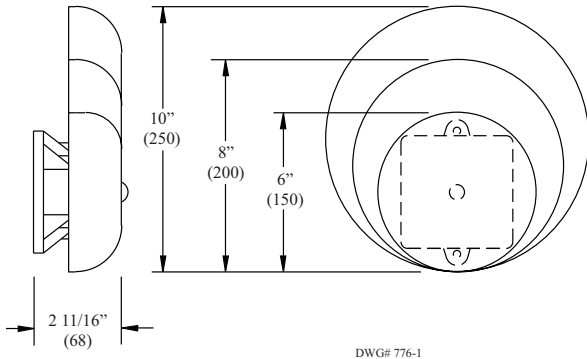
* Does not have ULC listing.

⚠ 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.

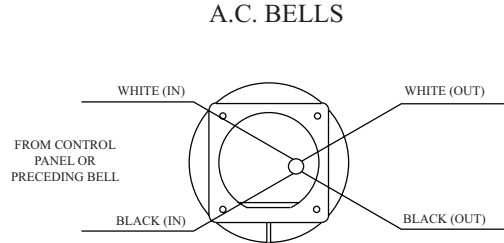
Bells Dimensions Inches (mm)

Fig. 1



Wiring (rear view)

Fig. 3



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

NOTES:

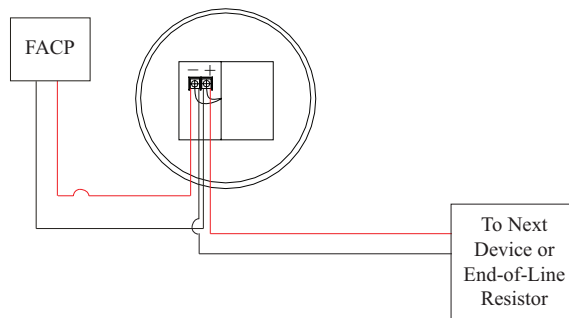
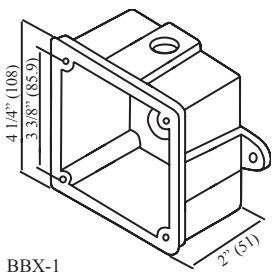
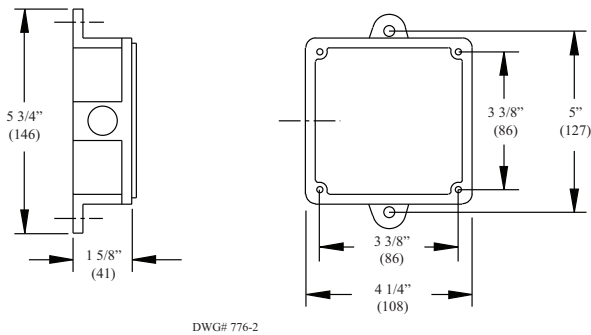
1. WHEN USING AC BELLS, TERMINATE EACH EXTRA WIRE SEPARATELY AFTER LAST BELL.
2. END-OF-LINE RESISTOR IS NOT REQUIRED ON AC BELLS.

DWG# 776-3

Weatherproof Backbox Dimensions Inches (mm)

Fig. 2

Box has one threaded 1/2" conduit entrance



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.



Specifications subject to change without notice.

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

Optional: Cover Tamper Switch Kit, stock no. 0090148

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

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

Service Pressure: 450 PSI (31 BAR) - UL

Flow Sensitivity Range for Signal:

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

Maximum Surge: 18 FPS (5.5 m/s)

Contact Ratings: Two sets of SPDT (Form C)

10.0 Amps at 125/250VAC

2.0 Amps at 30VDC Resistive

10 mAmps min. at 24VDC

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

Individual switch compartments suitable for dissimilar voltages.

Environmental Specifications:

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

Service Use:

Automatic Sprinkler

NFPA-13

One or two family dwelling

NFPA-13D

Residential occupancy up to four stories

NFPA-13R

National Fire Alarm Code

NFPA-72

⚠ WARNING

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

CAUTION

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

General Information

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

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

Enclosure

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

Installation (see Fig. 1)

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

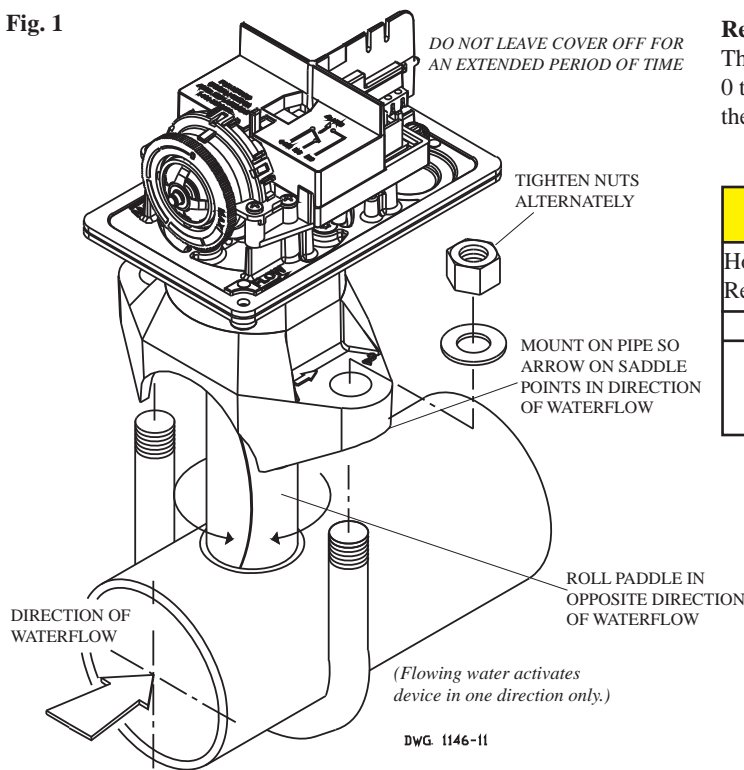
NOTE: Do not leave cover off for an extended period of time.

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

CAUTION

Do not trim the paddle. Failure to follow these instructions may prevent the device from operating and will void the warranty.

Fig. 1



Retard Adjustment

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

CAUTION

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

Correct	Incorrect

ADAPTER 50mm ADAPTER

20mm ±2mm MAX.

DN50 ONLY

USE (2) 5180162 ADAPTERS AS SHOWN ABOVE

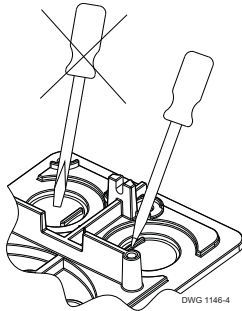
DWG# 1146-1F

Compatible Pipe/ Installation Requirements																
Model	Nominal Pipe Size		Nominal Pipe O.D.		Pipe Wall Thickness								Hole Size		U-Bolt Nuts Torque	
	inch	mm	inch	mm	Schedule 10 (UL)		Schedule 40 (UL)		BS-1387 (LPC)		DN (VDS)		inch	mm	ft-lb	n-m
VSR-2	2	DN50	2.375	60.3	0.109	2.77	0.154	3.91	0.142	3.6	0.091	2.3	1.25 + .125/-0.062	33.0 ± 2.0	20	27
VSR-2 1/2	2.5	-	2.875	73.0	0.120	3.05	0.203	5.16	-	-	-	-				
VSR-2 1/2	-	DN65	3.000	76.1	-	-	-	-	0.142	3.6	0.102	2.6				
VSR-3	3	DN80	3.500	88.9	0.120	3.05	0.216	5.49	0.157	4.0	0.114	2.9	2.00 ± .125	50.8 ± 2.0	20	27
VSR-3 1/2	3.5	-	4.000	101.6	0.120	3.05	0.226	5.74	-	-	-	-				
VSR-4	4	DN100	4.500	114.3	0.120	3.05	0.237	6.02	0.177	4.5	0.126	3.2				
VSR-5	5	-	5.363	141.3	0.134	3.40	0.258	6.55	-	-	-	-				
VSR-6	6	DN150	6.625	168.3	0.134	3.40	0.280	7.11	0.197	5.0	0.157	4.0				
VSR-8	8	DN200	8.625	219.1	0.148	3.76	0.322	8.18	0.248	6.3	0.177	4.5				

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

Fig. 2

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



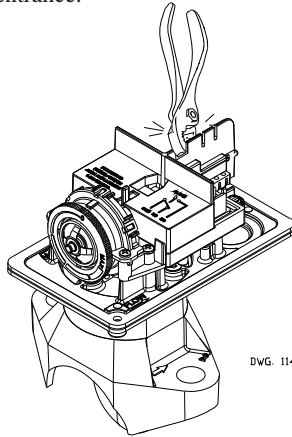
DWG. 1146-4

NOTICE

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

Fig. 3

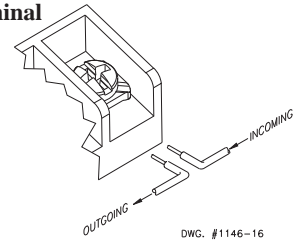
Break out thin section of cover when wiring both switches from one conduit entrance.



DWG. 1146-13

Fig. 4

Switch Terminal Connections Clamping Plate Terminal



DWG. #1146-16

WARNING

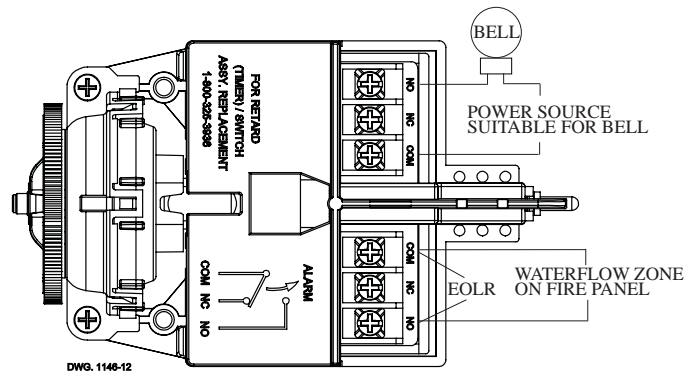
An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render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

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

Fig. 5 Typical Electrical Connections

Notes:

1. The Model VSR has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audible or visual annunciator.
2. A condition of LPC Approval of this product is that the electrical entry must be sealed to exclude moisture.
3. For supervised circuits, see "Switch Terminal Connections" drawing and warning note (Fig. 4).



DWG. 1146-12

Testing

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

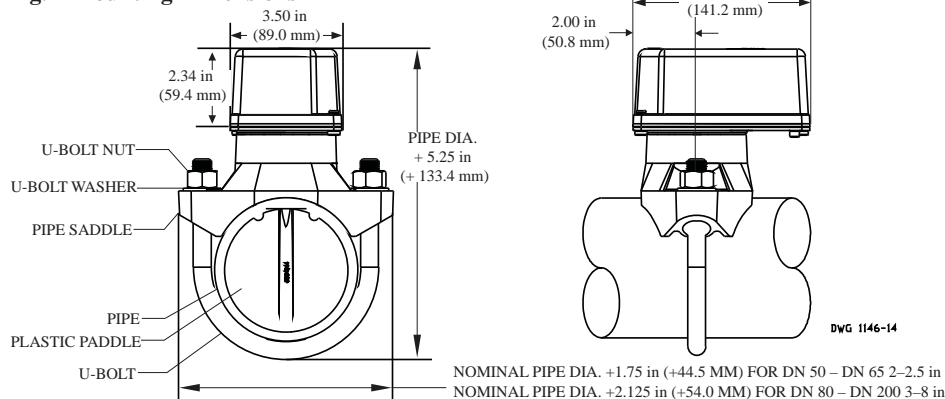
If provided, the inspector's test valve shall always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR is not recommended or advisable.

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

NOTICE

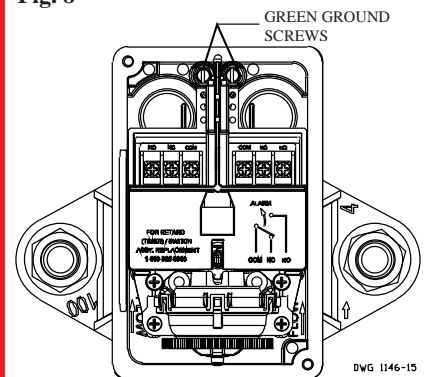
Advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.

Fig. 7 Mounting Dimensions



DWG. 1146-14

Fig. 8



DWG. 1146-15

Maintenance

Inspect detectors monthly. If leaks are found, replace the detector. The VSR waterflow switch should provide years of trouble-free service. The retard and switch assembly are easily field replaceable. In the unlikely event that either component does not perform properly, please order replacement retard switch assembly stock #1029030 (see Fig. 6). There is no maintenance required, only periodic testing and inspection.

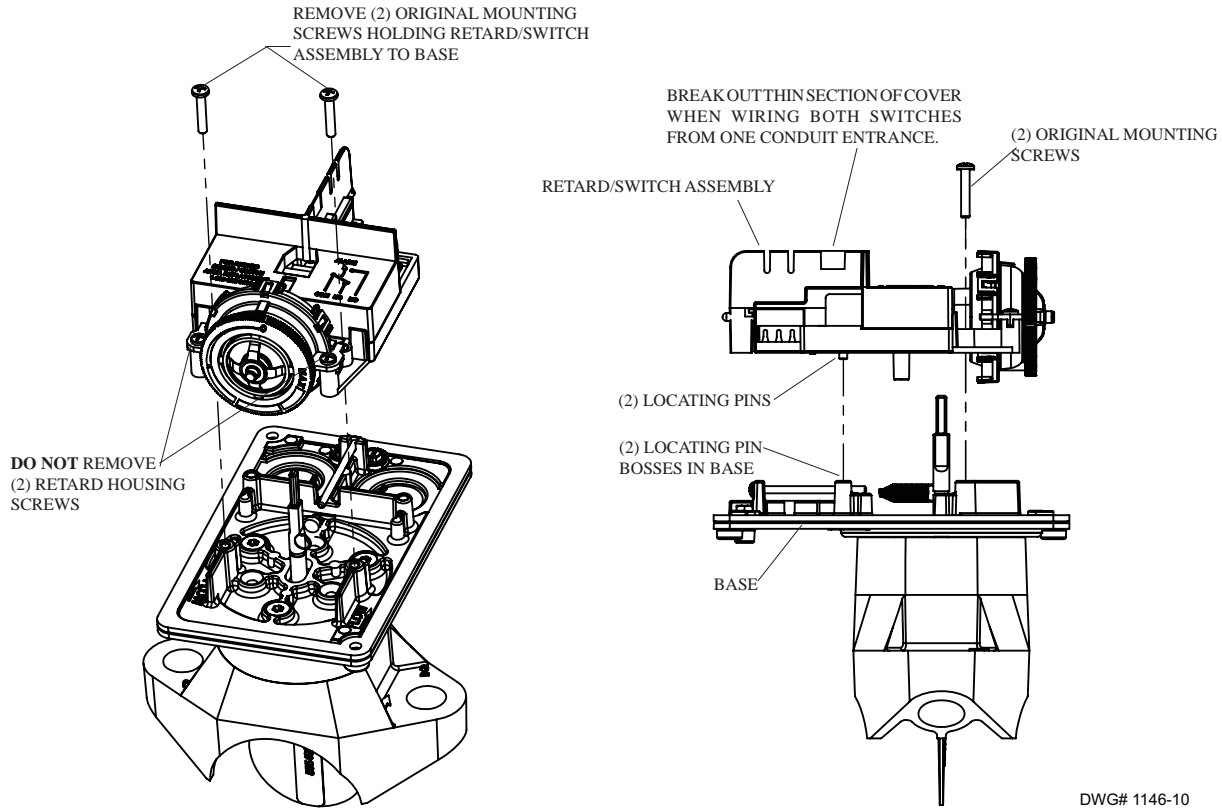
Retard/Switch Assembly Replacement (See Fig. 6)

NOTICE

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

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

Fig. 6



Removal of Waterflow Switch

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

SCHEDULE 10 & 40



Always ready to protect your most valuable assets.

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

Bull Moose Fire Sprinkler Pipe Product Information

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

SCHEDULE 10 & 40 ADVANTAGES:

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

OTHER BENEFITS/SERVICES:

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

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



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BULL MOOSE
TUBE

800.325.4467
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BullMooseTube.com

Series TY-FRB — 5.6 K-factor Horizontal and Vertical Sidewall Sprinklers Quick Response, Standard Coverage

General Description

The Series TY-FRB, 5.6 K-factor, Horizontal and Vertical Sidewall Sprinklers described in this data sheet are quick response -standard coverage, decorative 3 mm glass bulb type spray sprinklers designed for use in light and ordinary hazard, commercial occupancies such as banks, hotels, shopping malls, etc. They are designed for installation along a wall or the side of a beam and just beneath a smooth ceiling. Sidewall sprinklers are commonly used instead of pendent or upright sprinklers due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

The recessed version of the Series TY-FRB Horizontal Sidewall Sprinkler is intended for use in areas with a finished wall. It uses a two-piece Style 10 Recessed Escutcheon with 1/2 inch (12,7 mm) of recessed adjustment or up to 3/4 inch (19,1 mm) of total adjustment from the flush sidewall position, or a two-piece Style 20 Recessed Escutcheon with 1/4 inch (6,4 mm) of recessed adjustment or up to 1/2 inch (12,7 mm) of total adjustment from the flush sidewall position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe nipples to the sprinklers must be cut.

Corrosion resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be ob-

tained 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.

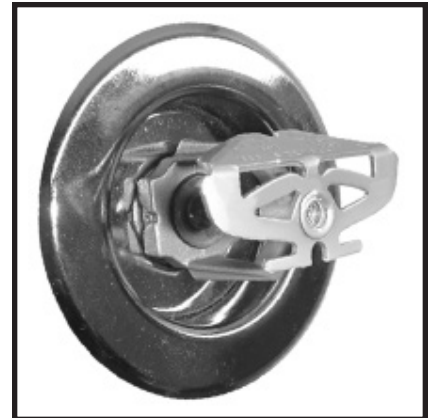
NOTICE

The Series TY-FRB 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. Contact the installing contractor or sprinkler manufacturer with any questions.

Sprinkler Identification Numbers

TY3331	Horizontal
TY3431	Vertical



Technical Data

Approvals

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

Maximum Working Pressure

Refer to Table B.

Discharge Coefficient

K=5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})

Temperature Ratings

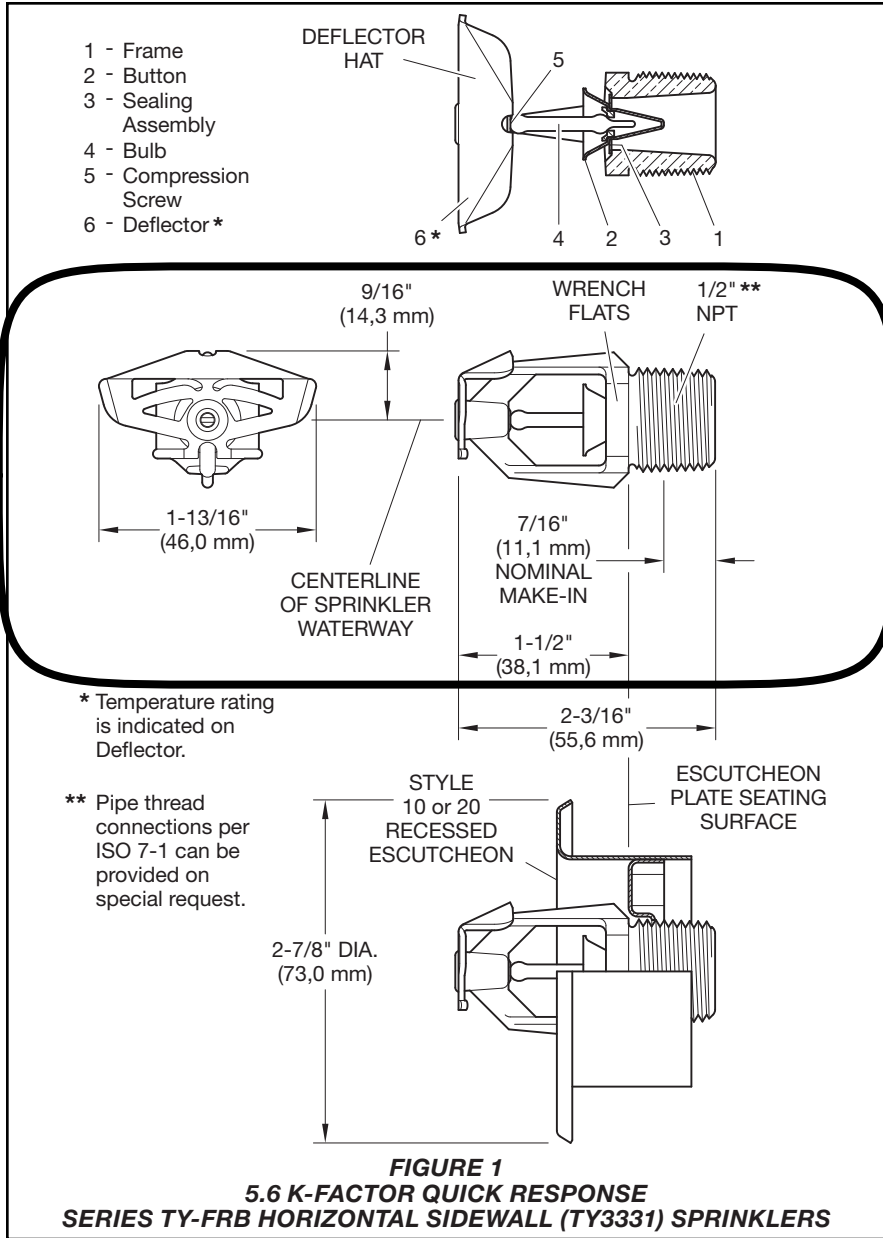
Refer to Table A.

Finishes

Sprinkler: Refer to Table C.
Recessed Escutcheon: Signal or Pure White, Jet Black, Chrome Plated, or Brass Plated.

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.



Physical Characteristics

Frame	Bronze
Button	Brass/Copper
Sealing Assembly	Beryllium Nickel w/ TEFLON
Bulb	Glass
Compression Screw	Bronze
HSW Deflector	Bronze
VSW Deflector	Copper

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-FRB, 5.6 K-factor, Horizontal and Vertical Sidewall 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). Only the Style 10 or 20 Recessed Escutcheon, as applicable, is to be used for recessed horizontal installations.

Installation

The Series TY-FRB, 5.6 K-factor, Horizontal and Vertical Sidewall Sprinklers must be installed in accordance with this section.

General Instructions

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 286°F (141°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). Higher levels of torque may distort the sprinkler and cause leakage or impairment of the sprinkler.

Do not attempt to make-up for insufficient adjustment in the escutcheon plate by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

Series TY-FRB Horizontal and Vertical Sidewall Sprinkler Installation

The Series TY-FRB Horizontal and Vertical Sidewall Sprinklers must be installed in accordance with the following instructions.

Step 1. Horizontal sidewall sprinklers are to be installed in the horizontal position with their centerline of waterway perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the Deflector is to face towards the ceiling.

Vertical sidewall sprinklers are to be installed in the pendent or upright position with the arrow on the Deflector pointing away from the wall.

Step 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 5), With reference to Figure 1 or 2, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

Series TY-FRB Recessed Horizontal Sidewall Sprinkler Installation

The Series TY-FRB Recessed Horizontal Sidewall Sprinklers must be installed in accordance with this section.

Step A. Recessed horizontal sidewall sprinklers are to be installed in the horizontal position with their centerline of waterway perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the Deflector is to face towards the ceiling.

Step B. After installing the Style 10 or 20 Mounting Plate over the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.

Step C. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Ref. Figure 6). With reference to Figure 1, the W-Type 7 Recessed Sprinkler Wrench is to be applied to the sprinkler wrench flats.

Step D. After the ceiling has been installed or the finish coat has been applied, slide on the Style 10 or 20 Closure over the Series TY-FRB Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

Care and Maintenance

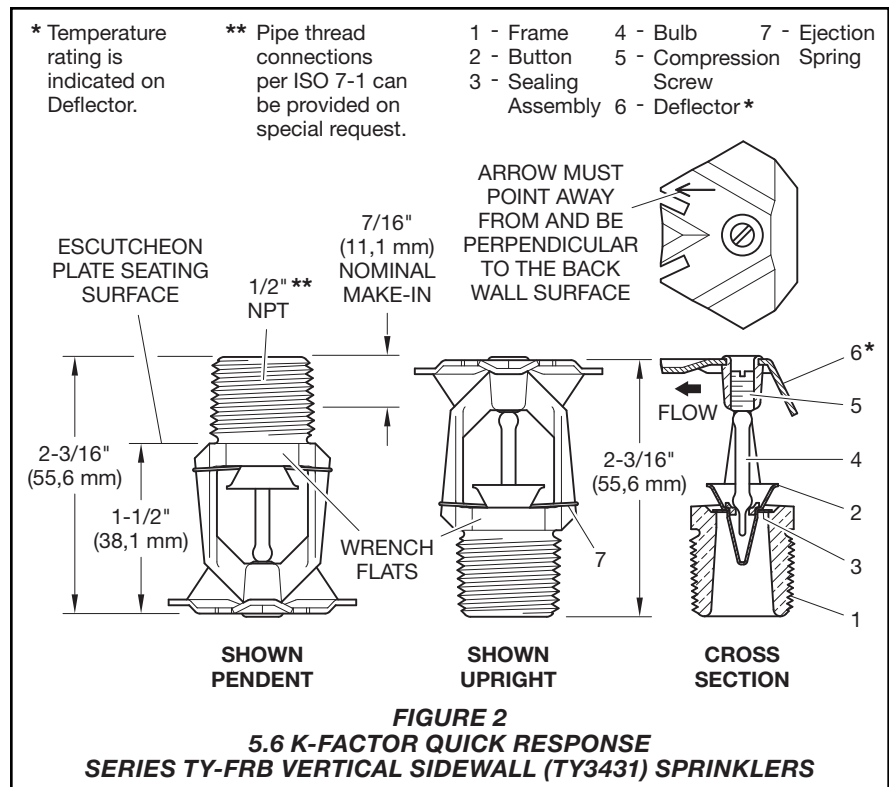
The Series TY-FRB, 5.6 K-factor, Horizontal and Vertical Sidewall Sprinklers must be maintained and serviced in accordance with this section.

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.

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

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.

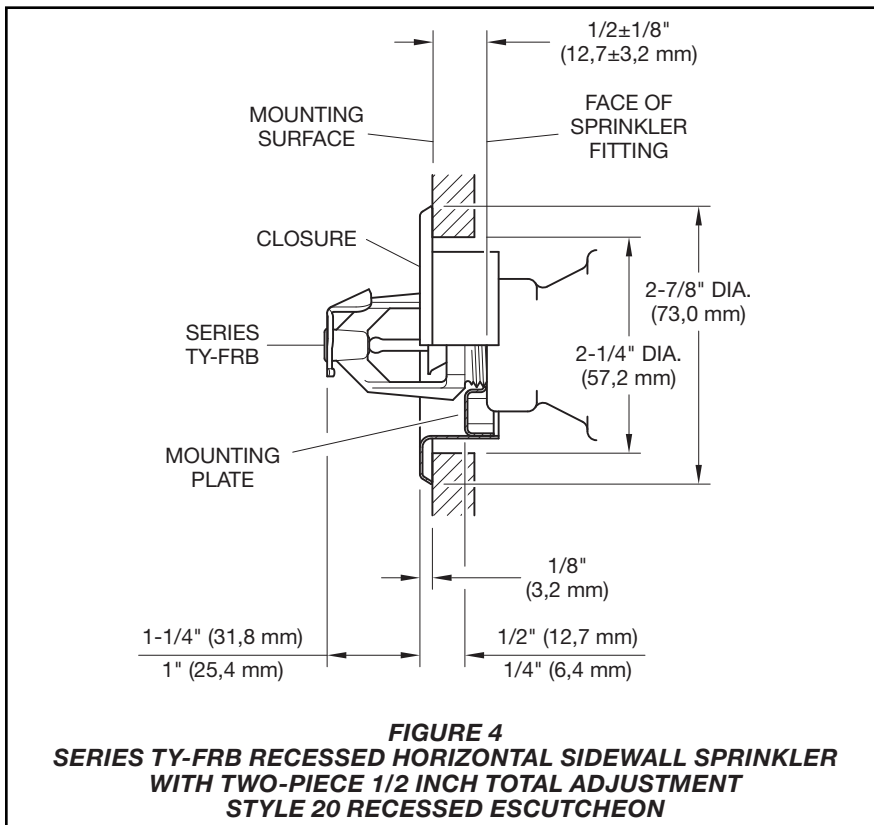
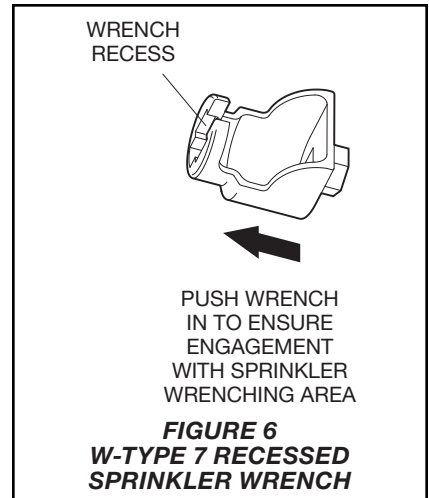
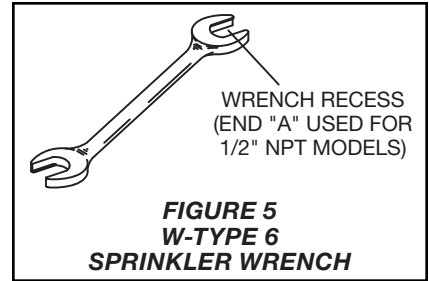
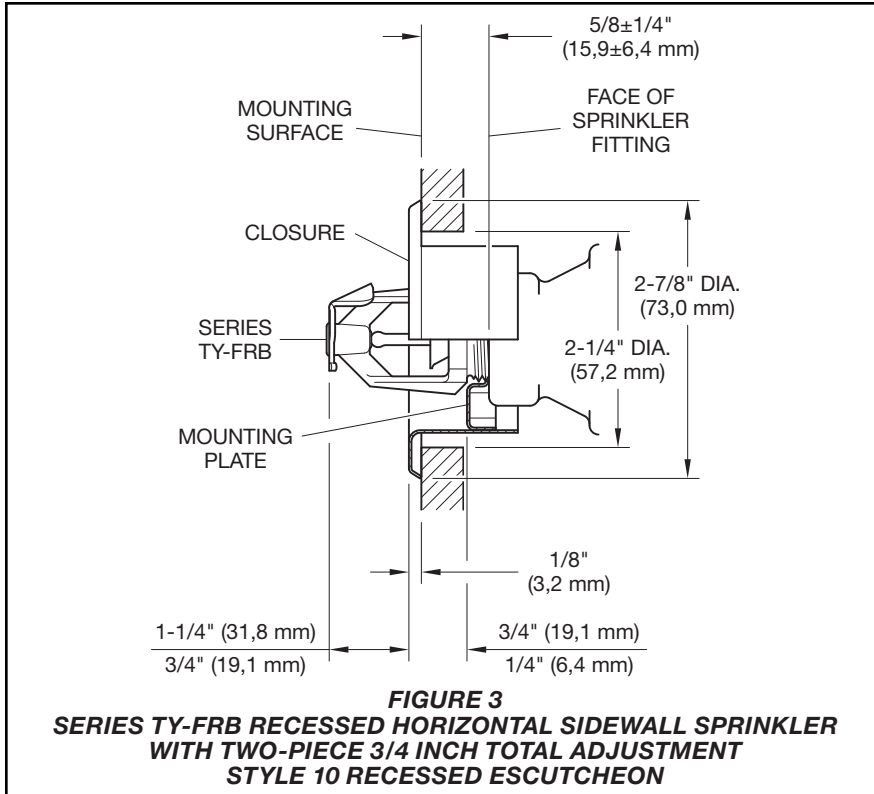
Care must be exercised to avoid damage to the sprinklers before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. (Ref. Installation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

The owner must assure that the sprinklers are not used for hanging any objects and that the sprinklers are only cleaned by means of gently dusting with a feather duster; otherwise, non-operation in the event of a fire or inadvertent operation may result.

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 codes.



K	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 11)			
				NATURAL BRASS	CHROME PLATED	POLYESTER***	LEAD COATED
5.6 1/2" NPT	HORIZ. SIDEWALL (TY3331)	135°F (57°C)	Orange	1, 2, 3, 4, 9, 10		1, 2, 3, 9	1, 2, 3, 9
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				
	RECESSED HORIZ. SIDEWALL (TY3331)* Figure 3	135°F (57°C)	Orange	1, 2, 4, 9, 10		1, 2, 9	N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				
	RECESSED HORIZ. SIDEWALL (TY3331)** Figure 4	135°F (57°C)	Orange	1, 2, 3, 4, 9			N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				
5.6 1/2" NPT	VERTICAL SIDEWALL (TY3431) Installed Pendent or Upright	135°F (57°C)	Orange	5, 6, 7, 8, 9		5, 6, 7, 9	
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				
		286°F (141°C)	Blue				

NOTES:

- Listed by Underwriters Laboratories, Inc. (UL) as Quick Response Sprinklers for use in Light and Ordinary Hazard Occupancies at a 4 to 12 inch (100 to 300 mm) top of deflector to ceiling distance.
- Listed by Underwriters Laboratories Inc. for use in Canada (C-UL) as Quick Response Sprinklers for use in Light and Ordinary Hazard Occupancies at a 4 to 12 inch(100 to 300 mm) top of deflector to ceiling distance.
- Approved by Factory Mutual Research Corporation (FM) as Quick Response Sprinklers for use in Light Hazard Occupancies at a 4 to 12 inch (100 to 300 mm) top of deflector to ceiling distance.
- Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007a/04) at a 4 to 6 inch (100 to 150 mm) top of deflector to ceiling distance. The LPC does not rate the thermal sensitivity of horizontal sidewall sprinklers.
- Listed by Underwriters Laboratories, Inc. as Quick Response Sprinklers for use in Light and Ordinary Hazard Occupancies.
- Listed by Underwriters Laboratories for use in Canada (C-UL) as Quick Response Sprinklers for use in Light and Ordinary Hazard Occupancies.
- Approved by Factory Mutual Research Corporation (FM) as Quick Response Sprinklers for use in Light Hazard Occupancies.
- Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/06 & 007a/04) as Quick Response Sprinklers.
- Approved by the City of New York under MEA 354-01-E.
- Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/06) at a 4 to 6 inch (100 to 150 mm) top of deflector to ceiling distance. The LPC does not rate the thermal sensitivity of horizontal sidewall sprinklers.
- Where Polyester Coated and 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 Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as Corrosion Resistant Sprinklers.

* Installed with Style 10 (1/2" NPT) 3/4" Total Adjustment Recessed Escutcheon.

** Installed with Style 20 (1/2" NPT) 1/2" Total Adjustment Recessed Escutcheon.

*** Frame and deflector only.

TABLE A
LABORATORY LISTINGS AND APPROVALS

K	TYPE	SPRINKLER FINISH			
		NATURAL BRASS	CHROME PLATED	POLYESTER	LEAD COATED
5.6 1/2" NPT	HORIZONTAL SIDEWALL (TY3331)	250 PSI (17,2 BAR) or 175PSI (12,1 BAR) (SEE NOTE 1)			
	RECESSED HORIZ. SIDEWALL (TY3331)				
	VERTICAL SIDEWALL (TY3431)	175 PSI (12,1 BAR)			

NOTES:

- The maximum working pressure of 250 psi (17,2 bar) only applies to the Listing by Underwriters Laboratories, Inc. (UL); the Listing by Underwriters Laboratories, Inc. for use in Canada (C-UL); and, the Approval by the City of New York.

TABLE B
MAXIMUM WORKING PRESSURE

P/N 57 - XXX - X - XXX

SIN			SPRINKLER FINISH		TEMPERATURE RATINGS	
378	HORIZONTAL SIDEWALL	TY3331	1	NATURAL BRASS	135	135°F (57°C)
375	VERTICAL SIDEWALL	TY3431	3	PURE WHITE (RAL9010)* POLYESTER	155	155°F (68°C)
			4	SIGNAL WHITE (RAL9003) POLYESTER	175	175°F (79°C)
			5	JET BLACK (RAL9005)** POLYESTER	200	200°F (93°C)
			7	LEAD COATED	286	286°F (141°C)
			9	CHROME PLATED		

* Eastern Hemisphere sales only.
** Available in 155°F (68°C) or 200°F (93°C) temperature rating only.

TABLE C
PART NUMBER SELECTION
SERIES TY-FRB HORIZONTAL AND VERTICAL SIDEWALL SPRINKLERS

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Sprinkler Assemblies with NPT Thread Connections:

Specify: Series TY-FRB (specify SIN), (specify K-factor), (specify) Horizontal Sidewall or Vertical Sidewall Sprinkler, Standard Response, Standard Coverage, (specify) temperature rating, (specify) finish or coating, P/N (specify from Table C)

Recessed Escutcheon

Specify: Style (10 or 20) Recessed Escutcheon with (specify*) finish, P/N (specify*).

* Refer to Technical Data Sheet TFP770

Sprinkler Wrench

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

Specify: W-Type 7 Sprinkler Wrench, P/N 56-850-4-001

Series TY-FRB, 5.6 K-factor Upright, Pendent, and Recessed Pendent Sprinklers Quick Response, Standard Coverage

General Description

The TYCO Series TY-FRB, 5.6 K-factor, Upright (TY313) and Pendent (TY323) Sprinklers described in this data sheet are quick response, standard coverage, decorative 3 mm glass bulb-type spray sprinklers designed for use in light or ordinary hazard, commercial occupancies such as banks, hotels, and shopping malls.

The recessed version of the Series TY-FRB Pendent Sprinkler, where applicable, is intended for use in areas with a finished ceiling. This recessed pendent sprinkler uses one of the following:

- A two-piece Style 15 Recessed Escutcheon with recessed adjustment up to 5/8 inch (15,9 mm) from the flush pendent position.
- A two-piece Style 20 Recessed Escutcheon with recessed adjustment up to 1/2 inch (12,7 mm) from the flush pendent position.

The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut.

Intermediate level versions of Series TY-FRB Sprinklers are described in Technical Data Sheet TFP357. Sprinkler guards and shields are described in Technical Data Sheet TFP780.

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.

NOTICE

The TYCO Series TY-FRB 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.

Sprinkler Identification Number (SIN)

TY313 Upright 5.6K, 1/2" NPT
TY323 Pendent 5.6K, 1/2" NPT

Technical Data

Approvals

UL and C-UL Listed
FM, LPCB, and VdS Approved
CE Certified

Sprinklers with Polyester Finish are UL and C-UL Listed as Corrosion-Resistant Sprinklers.

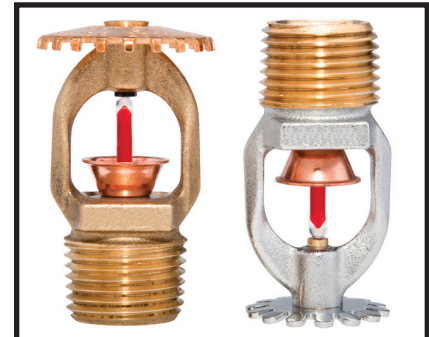
Maximum Working Pressure

175 psi (12.1 bar)
250 psi (17.2 bar)*

* The maximum working pressure of 250 psi (17.2 bar) only applies to the listing by Underwriters Laboratories, Inc. (UL).

Discharge Coefficient

K=5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})



Temperature Rating

135°F (57°C)
155°F (68°C)
175°F (79°C)
200°F (93°C)
286°F (141°C)

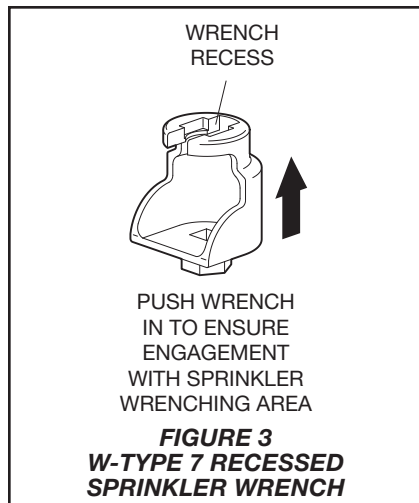
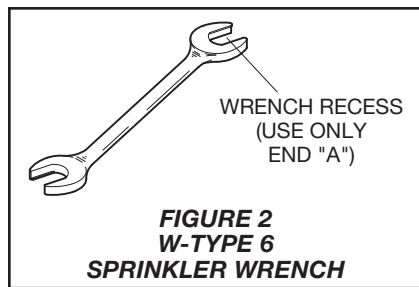
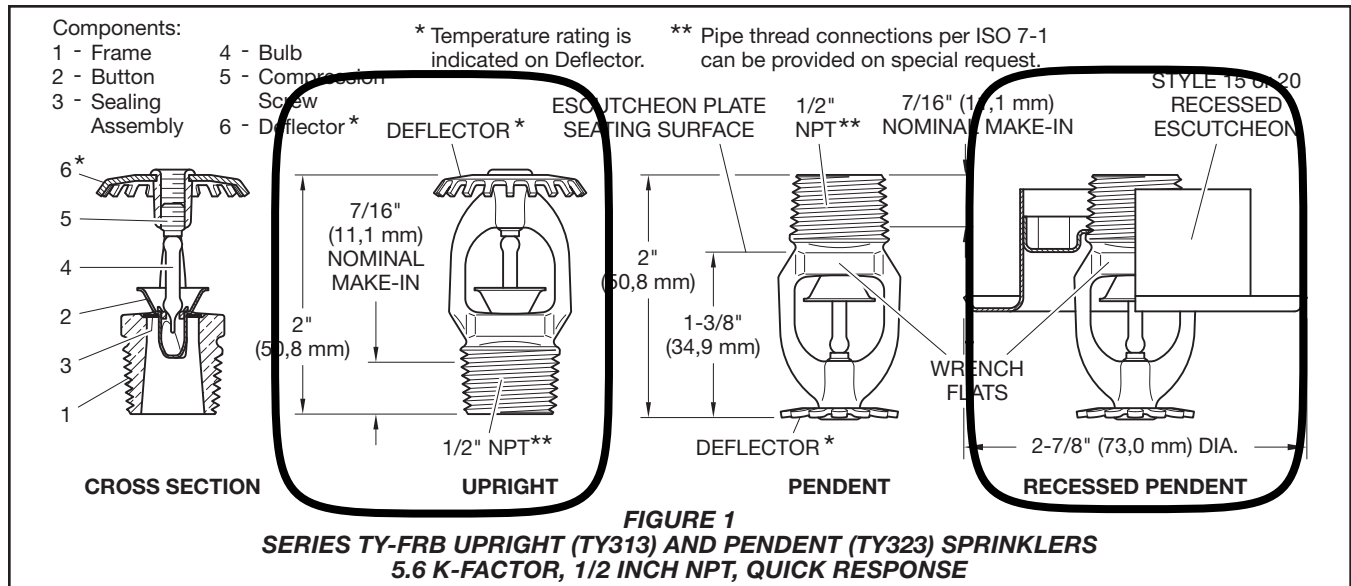
Finishes

Sprinkler: Refer to Table A

Recessed Escutcheon: White Coated, Chrome Plated, or Brass Plated

Physical Characteristics

Frame Bronze
Button Brass/Copper
Sealing Assembly Stainless Steel w/TEFLON
Bulb Glass
Compression Screw Bronze
Deflector Bronze



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 TYCO Series TY-FRB, 5.6 K-factor, Upright (TY313) and Pendent (TY323) Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (such as, 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). Only the Style 15 or Style 20 Recessed Pendent installations.

Installation

The TYCO Series TY-FRB, 5.6 K-factor, Upright (TY313) and Pendent (TY323) Sprinklers must be installed in accordance with this section.

General Instructions

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) and 3/32 inch (2,4 mm) for the 286°F (141°C) temperature ratings.

A leak-tight 1/2 inch NPT sprinkler joint should be obtained by applying a minimum to maximum torque of 7 to 14 ft.-lbs. (9,5 to 19,0 Nm). Higher levels of torque can distort the sprinkler Inlet with consequent leakage or impairment of the sprinkler.

Do not attempt to compensate for insufficient adjustment in the Escutcheon Plate by under- or over-tightening the sprinkler. Re-adjust the position of the sprinkler fitting to suit.

Upright and Pendent Sprinklers

The Series TY-FRB Upright and Pendent Sprinklers must be installed in accordance with the following instructions.

Step 1. Install Pendent sprinklers in the pendent position. Install upright sprinklers in the upright position.

Step 2. With pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Figure 2). With reference to Figure 1, apply the W-Type 6 Sprinkler Wrench to the wrench flats. Torque sprinklers 7 to 14 ft.-lbs. (9,5 to 19,0 Nm).

Recessed Pendent Sprinklers

The Series TY-FRB Recessed Pendent Sprinklers must be installed in accordance with the following instructions.

Step A. After installing the Style 15 or Style 20 Mounting Plate over the sprinkler threads, and with pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step B. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Figure 3). With reference to Figure 1, apply the W-Type 7 Recessed Sprinkler Wrench to the sprinkler wrench flats. Torque sprinklers 7 to 14 ft.-lbs. (9,5 to 19,0 Nm).

Step C. After ceiling installation and finishing, slide on the Style 15 or Style 20 Closure over the Series TY-FRB Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

Care and Maintenance

The TYCO Series TY-FRB, 5.6 K-factor, Upright (TY313) and Pendent (TY323) Sprinklers must be maintained and serviced in accordance with this section.

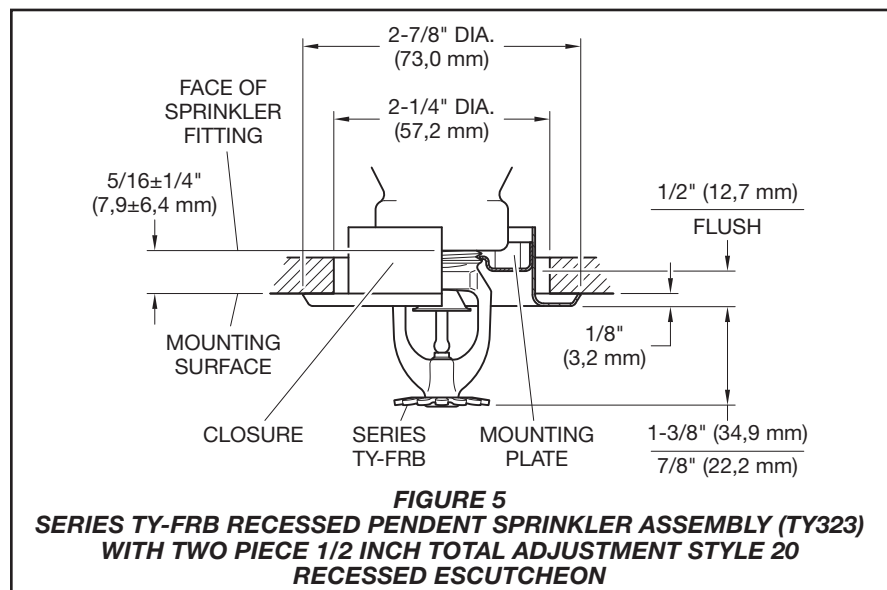
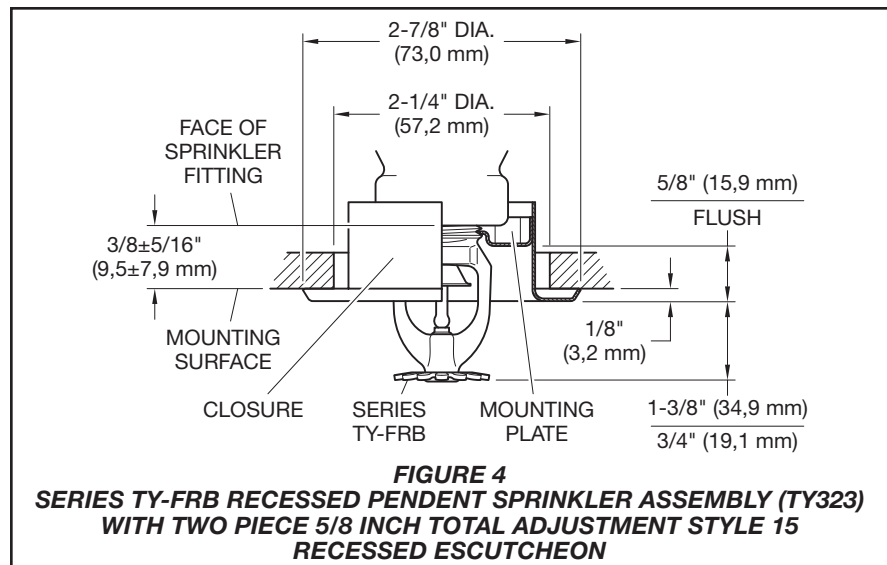
Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection systems from the proper authorities and notify all personnel who may be affected by this action.

Absence of the outer piece of an escutcheon, which is used to cover a clearance hole, can delay sprinkler operation in a fire situation.

The owner must assure that the sprinklers are not used for hanging any objects and that the sprinklers are only cleaned by means of gently dusting with a feather duster; otherwise, non-operation in the event of a fire or inadvertent operation may result.

Sprinklers which 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.



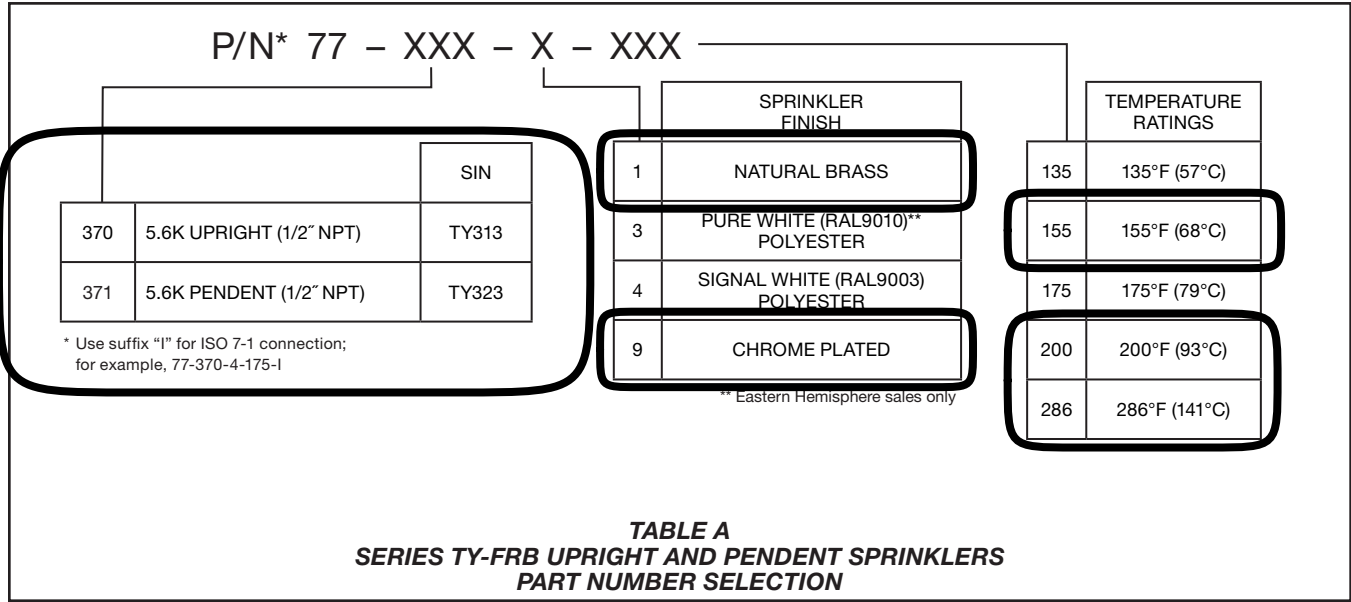
Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

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.)

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. Contact the installing contractor or sprinkler manufacturer regarding any questions.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.



Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Sprinkler Assemblies with NPT Thread Connections

Specify: Series TY-FRB Upright or Pendent (specify) Sprinkler, SIN (specify), K=5.6, Quick Response, (specify) temperature rating, (specify) finish, P/N (specify, refer to Table A).

Recessed Escutcheon

Specify: Style 15 Recessed Escutcheon with (specify*) finish, P/N (specify*)

Specify: Style 20 Recessed Escutcheon with (specify*) finish, P/N (specify*)

* Refer to Technical Data Sheet TFP770

Sprinkler Wrench

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

Specify: W-Type 7 Sprinkler Wrench, P/N 56-850-4-001

90° ELBOW



Ductile Iron



MATERIAL SPECIFICATIONS

Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3

Threads are NPT per ANSI/ASME B1.20.1.

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

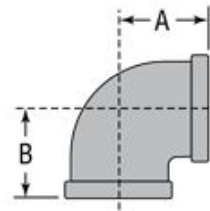


For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

90° ELBOW

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

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





MATERIAL SPECIFICATIONS

Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.14

Threads are NPT per ANSI/ASME B1.20.1.

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



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CAP

Nominal Size	Max. Working Pressure▲	Dimensions	Approx. Wt. Each
		A	
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 25	500 3450	1.16 29.46	0.32 0.15
1¼ 32	500 3450	1.28 32.51	0.43 0.20
1½ 40	500 3450	1.33 33.78	0.60 0.27
2 50	500 3450	1.45 36.83	0.91 0.41

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

REDUCING 90° ELBOW



Ductile Iron



MATERIAL SPECIFICATIONS

Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3

Threads are NPT per ANSI/ASME B1.20.1.

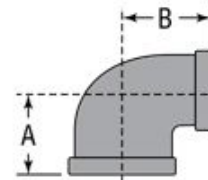
NOTICE: Ductile iron fittings have higher tensile strength than that of steel pipe. Therefore, over tightening can cause damage to pipe threads which may cause leakage. Ductile iron fittings should be tightened three turns beyond hand tight, but no more than four turns.



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REDUCING 90° ELBOW

Nominal Size	Max. Working Pressure [▲]	Dimensions		Approx. Wt. Each
		A	B	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	Lbs. (kg)
1 x 1/2 25 x 15	500 3450	1.26 32.00	1.36 34.54	0.44 0.20
1 x 3/4 25 x 20	500 3450	1.37 34.79	1.45 36.83	0.52 0.24
1 1/4 x 1/2 32 x 15	500 34550	1.34 34.03	1.53 38.86	0.64 0.29
1 1/4 x 3/4 32 x 20	500 3450	1.45 36.83	1.62 41.14	0.72 0.33
1 1/4 x 1 32 x 25	500 3450	1.58 40.13	1.67 42.41	0.75 0.34
1 1/2 x 1 40 x 25	500 3450	1.65 41.91	1.80 45.72	0.92 0.42
1 1/2 x 1 1/4 40 x 32	500 3450	1.82 46.22	1.88 47.75	1.08 0.49
2 x 1/2 50 x 15	500 3450	1.49 37.84	1.88 47.75	1.08 0.49
2 x 3/4 50 x 20	500 3450	1.60 40.64	1.97 50.03	1.24 0.56
2 x 1 50 x 25	500 3450	1.73 43.94	2.02 51.30	1.40 0.64
2 x 1 1/4 50 x 32	500 3450	1.90 48.26	2.10 53.34	1.52 0.70
2 x 1 1/2 50 x 40	500 3450	2.02 51.30	2.16 54.86	1.65 0.75



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



REDUCING COUPLING



Ductile Iron



MATERIAL SPECIFICATIONS

Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3

Threads are NPT per ANSI/ASME B1.20.1.

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



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

REDUCING COUPLING

Nominal Size	Max. Working Pressure [▲]	Dimensions	Approx. Wt. Each
		A	
<i>In. (mm)</i>	<i>PSI (kPa)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
1 x 1/2 25 x 15	500 3450	1.69 42.92	0.39 0.18
1 x 3/4 25 x 20	500 3450	1.69 42.92	0.53 0.24



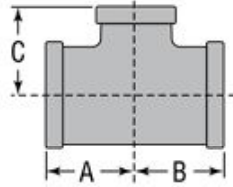
▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, and FM pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.



REDUCING TEE



Ductile Iron



MATERIAL SPECIFICATIONS

Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3

Threads are NPT per ANSI/ASME B1.20.1.

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



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

REDUCING TEE

Nominal Size	Max. Working Pressure [▲]	Dimensions			Approx. Wt. Each
		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1 x 1/2 x 1	500	1.50	1.36	1.50	0.64
25 x 15 x 25	3450	38.10	34.54	38.10	0.29
1 x 3/4 x 1	500	1.50	1.45	1.50	0.73
25 x 20 x 25	3450	38.10	36.83	38.10	0.33
1 x 1 x 1/2	500	1.26	1.26	1.36	0.71
25 x 25 x 15	3450	32.00	32.00	34.54	0.32
1 x 1 x 3/4	500	1.37	1.37	1.45	0.76
25 x 25 x 20	3450	34.80	34.80	36.83	0.34
1 x 1 x 1/4	500	1.67	1.67	1.58	0.98
25 x 25 x 32	3450	42.41	42.41	40.13	0.44
1 x 1 x 1/2	500	1.80	1.80	1.65	1.16
25 x 25 x 40	3450	45.72	45.72	41.91	0.53
1/4 x 1 x 1/2	500	1.34	1.26	1.53	0.82
32 x 25 x 15	3450	34.04	32.00	38.86	0.37
1/4 x 1 x 3/4	500	1.45	1.37	1.62	0.90
32 x 25 x 20	3450	36.83	34.80	41.15	0.41
1/4 x 1 x 1	500	1.58	1.50	1.67	1.00
32 x 25 x 25	3450	40.13	38.10	42.42	0.45
1/4 x 1 x 1/4	500	1.75	1.67	1.75	1.08
32 x 25 x 32	3450	44.45	42.42	44.45	0.49
1/4 x 1 x 1/2	500	1.88	1.80	1.82	1.42
32 x 25 x 40	3450	47.75	45.72	46.22	0.64
1/4 x 1/4 x 1/2	500	1.34	1.34	1.53	0.86
32 x 32 x 15	3450	34.04	34.04	38.86	0.39
1/4 x 1/4 x 3/4	500	1.45	1.45	1.62	0.92
32 x 32 x 20	3450	36.83	36.83	41.15	0.42
1/4 x 1/4 x 1	500	1.58	1.58	1.67	0.95
32 x 32 x 25	3450	40.13	40.13	42.42	0.43
1/4 x 1/4 x 1/2	500	1.88	1.88	1.82	1.45
32 x 32 x 40	3450	47.75	47.75	46.22	0.66
1/4 x 1/4 x 2	500	2.10	2.10	1.90	1.75
32 x 32 x 50	3450	53.34	53.34	48.26	0.79
1/2 x 1 x 1/2	500	1.41	1.34	1.66	0.95
40 x 25 x 15	3450	35.81	34.04	42.16	0.43
1/2 x 1 x 3/4	500	1.52	1.37	1.75	1.14
40 x 25 x 20	3450	38.61	34.80	44.45	0.52
1/2 x 1 x 1	500	1.65	1.50	1.80	1.17
40 x 25 x 25	3450	41.91	38.10	45.72	0.53
1/2 x 1 x 1/4	500	1.82	1.67	1.88	1.34
40 x 25 x 32	3450	46.23	42.42	47.75	0.61
1/2 x 1 x 1/2	500	1.94	1.80	1.94	1.45
40 x 25 x 40	3450	49.28	45.72	49.28	0.66
1/2 x 1/4 x 1/2	500	1.41	1.34	1.66	1.05
40 x 32 x 15	3450	35.81	34.04	42.16	0.48
1/2 x 1/4 x 3/4	500	1.52	1.45	1.75	1.15
40 x 32 x 20	3450	38.61	36.83	44.45	0.5
1/2 x 1/4 x 1	500	1.65	1.58	1.80	1.25
40 x 32 x 25	3450	41.91	40.13	45.72	0.57
1/2 x 1/4 x 2	500	2.16	2.10	2.02	1.90
40 x 32 x 50	3450	54.86	53.34	51.30	0.86
1/2 x 1/2 x 1/2	500	1.41	1.41	1.16	1.15
40 x 40 x 15	3450	35.81	35.81	29.46	0.52

REDUCING TEE

Nominal Size	Max. Working Pressure [▲]	Dimensions			Approx. Wt. Each
		A	B	C	
In. (mm)	PSI (kPa)	In. (mm)	In. (mm)	In. (mm)	Lbs. (kg)
1/2 x 1/2 x 3/4	500	1.52	1.52	1.75	1.24
40 x 40 x 20	3450	38.61	38.61	44.45	0.56
1/2 x 1/2 x 1	500	1.65	1.65	1.80	1.30
40 x 40 x 25	3450	41.91	41.91	45.72	0.59
1/2 x 1/2 x 1/4	500	1.82	1.82	1.88	1.48
40 x 40 x 32	3450	46.23	46.23	47.75	0.67
1/2 x 1/2 x 2	500	2.16	2.16	2.02	1.98
40 x 40 x 50	3450	54.86	54.86	51.30	0.90
2 x 1 x 2	500	2.25	2.02	2.25	2.15
50 x 25 x 50	3450	57.15	51.31	57.15	0.98
2 x 1/4 x 2	500	2.25	2.10	2.25	2.30
50 x 32 x 50	3450	57.15	53.34	57.15	1.04
2 x 1/2 x 1/2	500	1.49	1.41	1.88	1.50
50 x 40 x 15	3450	37.85	35.81	47.75	0.68
2 x 1/2 x 3/4	500	1.60	1.52	1.97	1.62
50 x 40 x 20	3450	40.64	38.61	50.04	0.73
2 x 1/2 x 1	500	1.73	1.65	2.02	1.64
50 x 40 x 25	3450	43.94	41.91	51.31	0.74
2 x 1/2 x 1/4	500	1.90	1.82	2.10	1.80
50 x 40 x 32	3450	48.26	46.23	53.34	0.82
2 x 1/2 x 1/2	500	2.02	1.94	2.16	2.00
50 x 40 x 40	3450	51.31	49.28	54.86	0.91
2 x 1/2 x 2	500	2.25	2.16	2.25	2.35
50 x 40 x 50	3450	57.15	54.86	57.15	1.07
2 x 2 x 1/2	500	1.49	1.49	1.88	1.60
50 x 50 x 15	3450	37.85	37.85	47.75	0.73
2 x 2 x 3/4	500	1.60	1.60	1.97	1.68
50 x 50 x 20	3450	40.64	40.64	50.04	0.76
2 x 2 x 1	500	1.73	1.73	2.02	1.85
50 x 50 x 25	3450	43.94	43.94	51.31	0.84
2 x 2 x 1/4	500	1.90	1.90	2.10	2.04
50 x 50 x 32	3450	44.45	42.42	44.45	0.93
2 x 2 x 1/2	500	2.02	2.02	2.16	2.18
50 x 50 x 40	3450	44.45	42.42	44.45	0.99
2 x 2 x 2/2	500	2.60	2.60	2.39	3.61
50 x 50 x 65	3450	44.45	42.42	44.45	1.64
2/2 x 2 x 3/4	500	1.74	1.60	2.32	2.28
65 x 50 x 20	3450	44.45	42.42	44.45	1.03

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



STRAIGHT TEE



Ductile Iron



MATERIAL SPECIFICATIONS

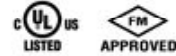
Ductile iron threaded fittings are UL & ULC Listed & FM Approved for 500 psi service.

Ductile iron per ASTM A536 Class 65-45-12.

Dimensions conform to ASME B16.3

Threads are NPT per ANSI/ASME B1.20.1.

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

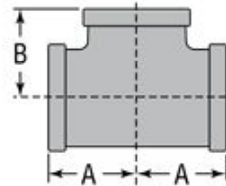


For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

STRAIGHT TEE

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

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



Model BFV-N Butterfly Valve Grooved End 2-1/2 to 10 Inch (DN65 to DN250)

General Description

The Model BFV-N Grooved End Butterfly Valves (Ref. Figure 1) are indicating type valves designed for use in fire protection systems where a visual indication is required as to whether the valve is open or closed. They are used, for example, as system, sectional, and pump water control valves. They have cut groove inlet and outlet connections that are suitable for use with grooved end pipe couplings that are listed and approved for fire protection systems.

For applications requiring supervision of the open position of the valve, the Gear Operators for the Model BFV-N Butterfly Valves are provided with two sets of factory installed internal switches each having SPDT contacts (Ref. Figure 2). The supervisory switches transfer their electrical contacts when there is movement from the valve's normal open position during the first two revolutions of the handwheel.

NOTICE

The Model BFV-N Grooved End Butterfly Valves 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. Contact the installing contractor or sprinkler manufacturer with any questions.

Technical Data

Approvals

UL and C-UL Listed
FM Approved

Listed by California State Fire Marshall
under Listing No. 7770-1670:100

All laboratory listings and approvals are
for indoor and outdoor use.

Maximum Working Pressure

- **2-1/2 to 8 Inch (DN65 to DN200)**
300 psi (20,7) bar
- **10 Inch (DN250)**
175 psi (12,0) bar

Materials of Construction

- **Body**
Ductile iron conforming to ASTM A-395
- **Body Coating**
Polyamide
- **Disc**
Ductile iron conforming to ASTM A-395
- **Disc Seal**
Grade EPDM "E" encapsulated rubber conforming to ASTM D-2000
- **Upper & Lower Stem**
Type 416 Stainless Steel conforming to ASTM 582
- **Lower Plug**
PVC
- **Operator**
Gear operator with iron housing



Nominal Valve Sizes Inches (DN)	Pipe OD Inches (mm)	Nominal Installation Dimensions Inches (mm)								Weight Lbs. (kg)
		A	B	C	D	E	F	G	H	
2-1/2 (65)	2.88 (73.0)	3.85 (98.0)	11.94 (303.3)	3.25 (83.0)	5.67 (144.0)	5.90 (149.9)	5.82 (147.8)	2.13 (54.1)	0	22 (10.0)
3 (80)	3.50 (88,9)	3.85 (98,0)	12.48 (317,0)	3.54 (90,0)	5.94 (150,9)	5.90 (149,9)	5.82 (147,8)	2.13 (54,1)	0	23 (10,4)
4 (100)	4.50 (114,3)	4.56 (116,0)	14.18 (360,2)	4.35 (110,0)	6.31 (160,3)	5.90 (149,9)	7.64 (194,1)	2.13 (54,1)	0	28 (12,7)
5 (125)	5.56 (141,3)	5.86 (149,0)	15.17 (385,3)	4.84 (123,0)	7.32 (185,9)	5.90 (149,9)	7.64 (194,1)	2.13 (54,1)	0	31 (14,1)
6 (150)	6.63 (168,3)	5.86 (149,0)	17.54 (445,5)	5.93 (151,0)	8.62 (218,9)	5.90 (149,9)	7.64 (194,1)	2.13 (54,1)	0.67 (17,0)	41 (18,6)
8 (200)	8.63 (219,1)	5.26 (134,0)	19.42 (493,3)	6.87 (174,0)	9.80 (248,9)	9.80 (248,9)	7.91 (200,9)	2.13 (54,1)	5.86 (148,8)	53 (24,1)
10 (250)	10.75 (273,1)	6.29 (160,0)	24.03 (610,4)	9.17 (233,0)	11.61 (294,9)	18.00 (457,2)	9.49 (241,0)	3.03 (77,0)	7.41 (188,2)	88 (40,0)

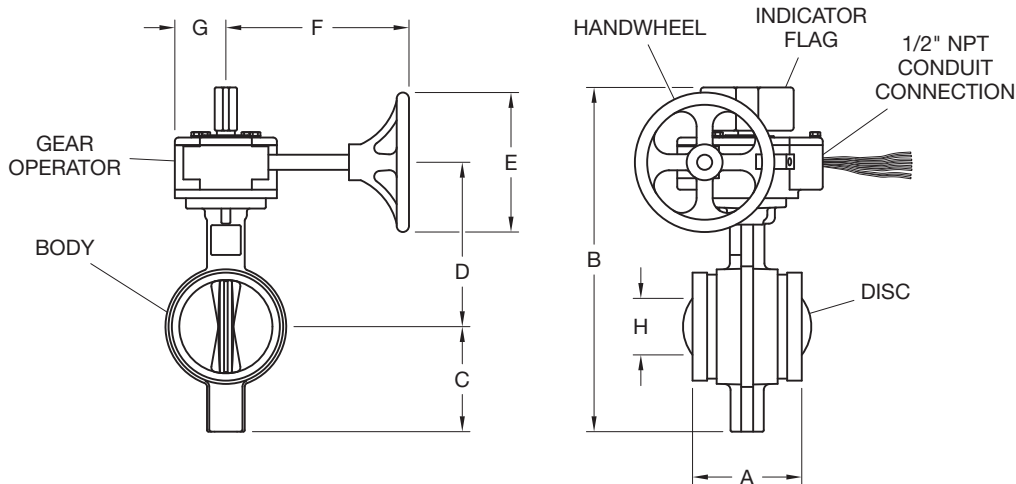


FIGURE 1
MODEL BFV-N GROOVED END BUTTERFLY VALVE
NOMINAL DIMENSIONS

Installation

The Model BFV-N Grooved End Butterfly Valves may be installed with flow in either direction and can be positioned either horizontally or vertically.

The grooved end pipe couplings used with the Model BFV-N must be listed or approved for fire protection service and installed in accordance with the manufacturers instructions.

The Model BFV-N Butterfly Valve may be installed with any schedule of pressure class of pipe or tubing that is listed or approved for fire protection.

As applicable, refer to Figure 2 for the internal switch wiring diagram.

Conduit and electrical connections are to be made in accordance with the authority having jurisdiction and/or the National Electrical Code. With reference to Figure 2, the “supervisory

switch” is intended for connection to the supervisory circuit of a fire alarm control panel in accordance with NFPA 72. The “auxiliary switch” is intended for the unsupervised connection to auxiliary equipment in accordance with NFPA 70, National Electric Code.

NOTE: For outdoor applications with internal supervisory switches, it is recommended that wiring connections be made at a temperature above 15°F (-9°C), in order to insure sufficient flexibility of the wire lead insulation.

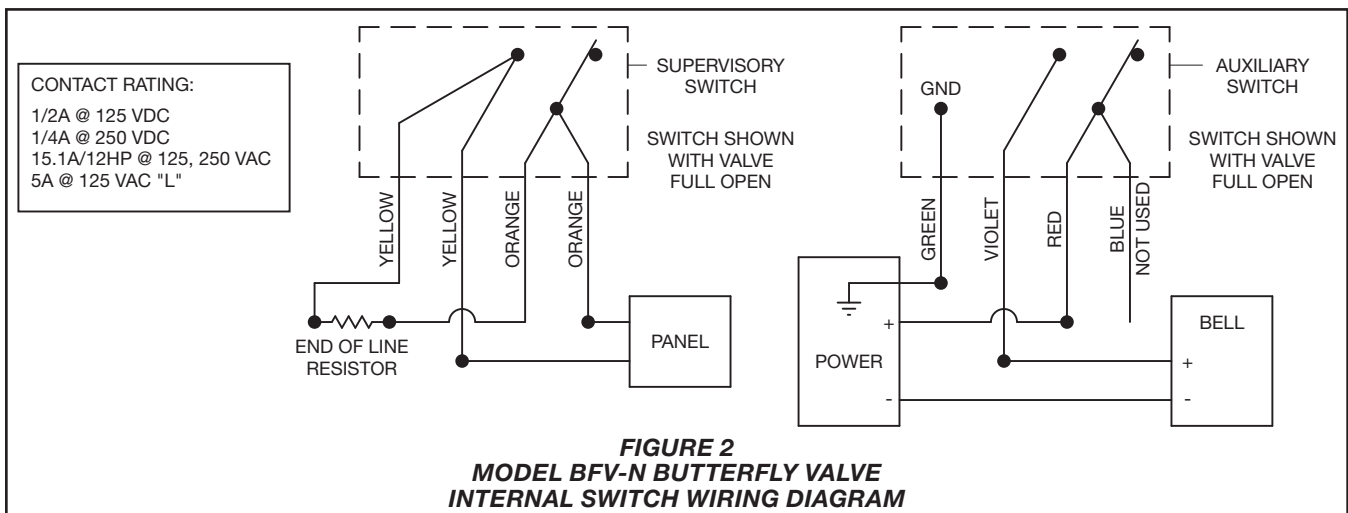
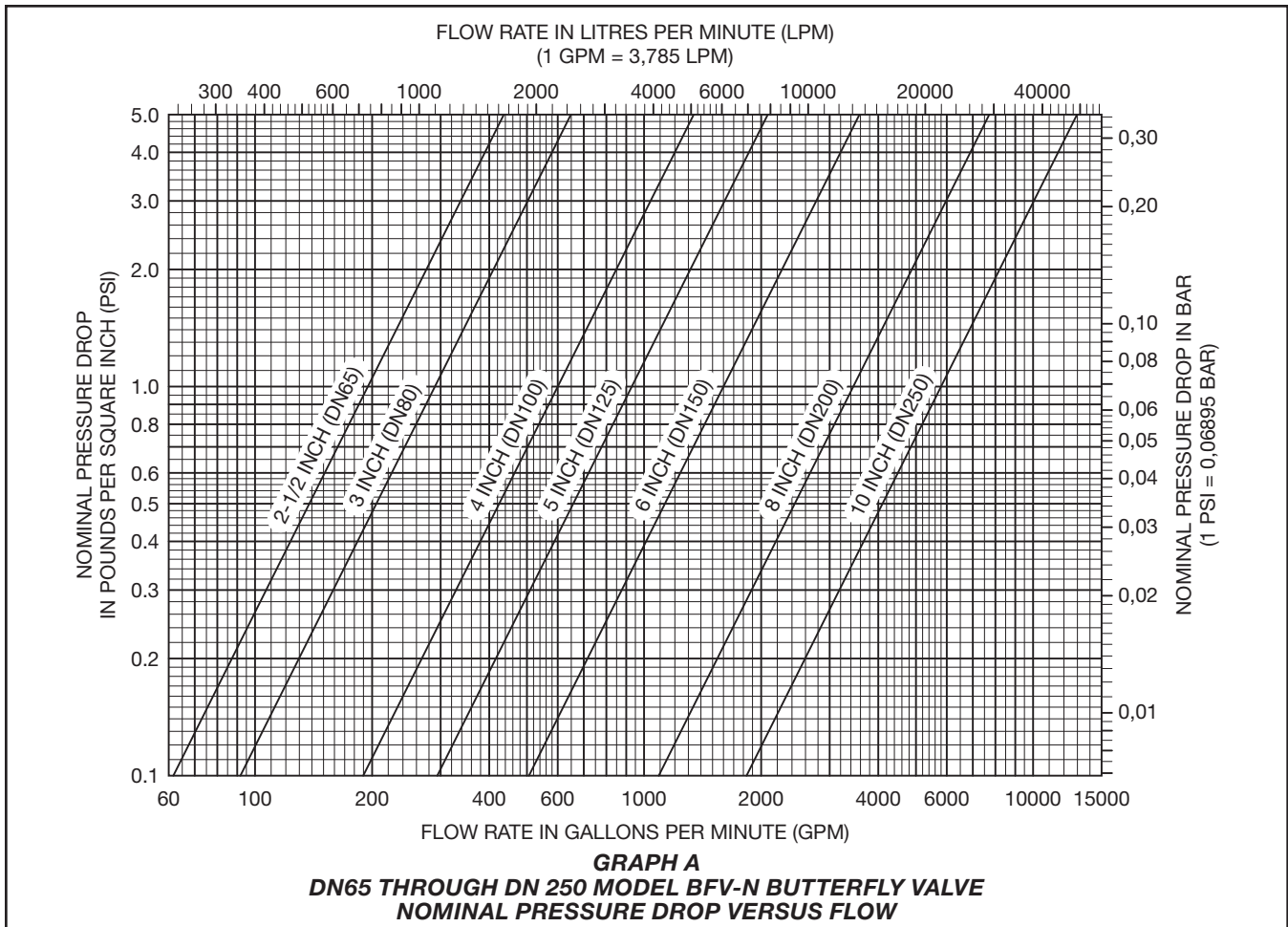
Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in accordance with the applicable standards of the National Fire Protec-

tion Association (e.g., NFPA25), in addition to the standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairment must be immediately corrected.

NOTE: Before closing a fire protection system control valve for maintenance or inspection work on either the valve or fire protection system which it controls, permission to shut down the affected fire protection systems must be obtained from the proper authorities and all personnel who may be affected by this decision must be notified.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified inspection service.



Limited Warranty

For warranty terms and conditions,
visit www.tyco-fire.com.

Ordering Procedure

Grooved End Butterfly Valves:

Specify: (specify inch size) Model
BFV-N Grooved End Butterfly Valve
with internal supervisory switches,
P/N (specify).

Valve Size	Valve Part Number
2-1/2	59-300-F-025N
3.....	59-300-F-030N
4.....	59-300-F-040N
5.....	59-300-F-050N
6.....	59-300-F-060N
8.....	59-300-F-080N
10.....	59-300-F-100N

Model CV-1FR Riser Check Valves 2 to 12 Inch (DN50 to DN300)

General Description

The TYCO Model CV-1FR Riser Check Valve is a compact and rugged swing-type unit that allows water flow in one direction and prevents flow in the opposite direction. A resilient elastomer seal facing on the spring-loaded clapper ensures a leak-tight seal and non-sticking operation. The Model CV-1FR Check Valves are designed to minimize water hammer caused by flow reversal.

The Model CV-1FR Riser Check Valve is furnished with grooved ends and can be installed using GRINNELL Grooved Couplings or GRINNELL Figure 71 Flange Adapters. The Model CV-1FR Valves have been designed with a removable cover for ease of field maintenance. These valves can be installed horizontally (with cover in the upward position) or vertically with the flow in the upward direction. Refer to Figure 6.

To facilitate their use in wet-type automatic sprinkler system risers, the Model CV-1FR Riser Check Valves are provided with threaded outlets for pressure gauges and a drain connection. They provide a more compact and economical alternative to an alarm check valve where a water motor alarm is not required. Provisions must be made for a local alarm using an approved flow switch (not included).

The Model CV-1FR Riser Check Valve is also Listed for use in conjunction with the TYCO Model DV-5 Deluge Valve in Preaction Systems under air pressure without the use of prime water.

The Model CV-1FR Riser Check Valves are a redesign for the Central Figure 590FR and GRINNELL Figure 590FR.

NOTICE

Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do so may result in serious personal injury, property damage, and/or impaired device performance.

The Model CV-1FR Riser Check Valve described herein must be installed and maintained in compliance with this document and with the applicable standards of the National Fire Protection Association, in addition to the standards of any authorities having jurisdiction. Failure to do so may impair the performance of this device.

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

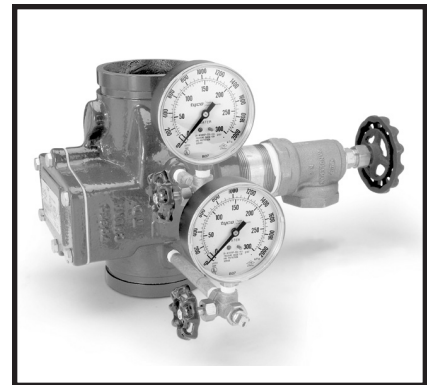
Technical Data

Approvals
UL, C-UL, and FM

Sizes
2 to 12 Inch (DN50 to DN300)

Maximum Working Pressure
300 psi (20,7 bar)

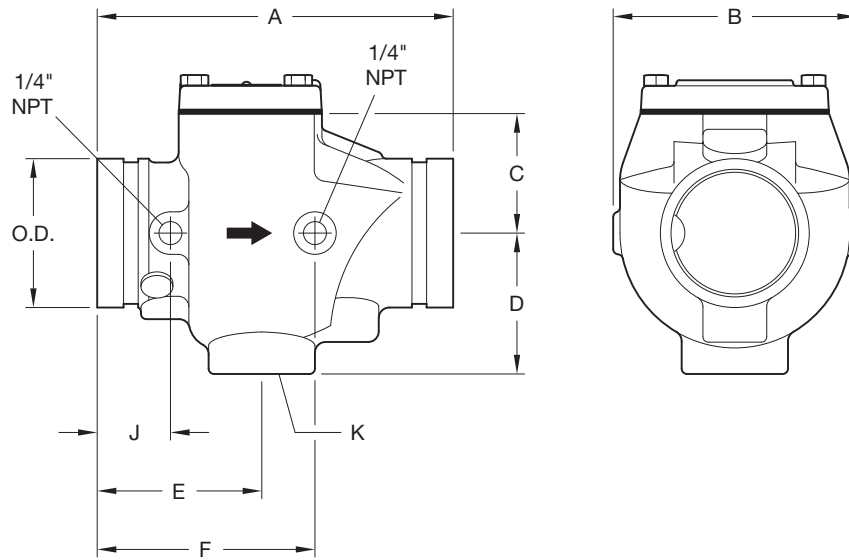
Valve Assembly Finish
Red, non-lead paint



Installation

The Model CV-1FR Riser Check Valves are to be installed in accordance with the following instructions:

1. The arrow cast on the Body must point in the direction of the flow.
2. Valves installed vertically must be positioned with the flow in the upward direction.
3. Valves installed horizontally must be positioned with the Cover facing up. Refer to Figure 6.
4. Grooved end pipe couplings used with the Model CV-1FR Riser Check Valve must be installed in accordance with manufacturer's instructions.



Nominal Pipe Size		Nominal Dimensions Inches (mm)								Cover Bolt Torq. Lbs.-ft. (Nm)	Approx. Weight Lbs. (kg)
ANSI Inches DN	O.D. Inches (mm)	A	B	C	D	E	F	J	K NPT		
2 DN50	2.375 (60,3)	6.75 (171,5)	4.38 (111,3)	2.55 (64,8)	2.57 (65,3)	3.25 (82,3)	15 (21)	9.0 (4,5)	1	18 (25)	9.0 (4,5)
2-1/2 DN65	2.875 (73,0)	8.00 (203,2)	5.42 (136,7)	3.41 (86,6)	3.09 (78,5)	3.88 (98,6)	39 (54)	10.0 (4,5)	1-1/4	39 (54)	10.0 (4,5)
76.1 DN65	- (76,1)	8.00 (203,2)	5.42 (136,7)	3.41 (86,6)	3.09 (78,5)	3.88 (98,6)	39 (54)	10.0 (4,5)	1-1/4	39 (54)	10.0 (4,5)
3 DN80	3.500 (88,9)	8.38 (212,9)	5.76 (146,3)	3.60 (91,4)	3.31 (84,1)	3.88 (98,6)	39 (54)	11.0 (5,0)	1-1/4	39 (54)	11.0 (5,0)
4 DN100	4.500 (114,3)	9.63 (245,6)	6.74 (171,2)	4.61 (117,1)	3.63 (92,2)	4.53 (115,4)	39 (54)	25.0 (11,3)	2	50 (69)	25.0 (11,3)
139.7 DN125	- (139,7)	10.50 (266,7)	7.50 (190,5)	5.29 (134,4)	4.13 (104,9)	4.90 (124,5)	39 (54)	29.0 (13,2)	2	39 (54)	29.0 (13,2)
5 DN125	5.563 (141,3)	10.50 (266,7)	7.50 (190,5)	5.29 (134,4)	4.13 (104,9)	4.90 (124,5)	39 (54)	29.0 (13,2)	2	39 (54)	29.0 (13,2)
165.1 DN150	- (165,1)	11.50 (292,1)	8.05 (204,4)	5.75 (146,1)	4.50 (114,3)	5.00 (127,0)	60 (82)	47.0 (21,3)	2	60 (82)	47.0 (21,3)
6 DN150	6.625 (168,3)	11.50 (292,1)	8.05 (204,4)	5.75 (146,1)	4.50 (114,3)	5.00 (127,0)	60 (82)	47.0 (21,3)	2	60 (82)	47.0 (21,3)
8 DN200	8.625 (219,1)	14.00 (355,6)	10.25 (260,4)	7.75 (196,9)	5.62 (142,7)	5.45 (138,4)	120 (164)	66.0 (30,0)	2	120 (164)	66.0 (30,0)
10 DN250	10.750 (273,1)	18.00 (457,2)	13.00 (330,2)	10.21 (259,3)	6.38 (162,1)	7.50 (190,5)	120 (164)	109.7 (49,4)	2	130 (178)	109.7 (49,4)
12 DN300	12.750 (323,9)	21.0 (533,4)	14.28 (362,7)	11.31 (287,2)	7.26 (184,4)	7.62 (193,5)	120 (164)	151.0 (68,0)	2	130 (178)	151.0 (68,0)

FIGURE 1
MODEL CV-1FR RISER CHECK VALVES
NOMINAL DIMENSIONS

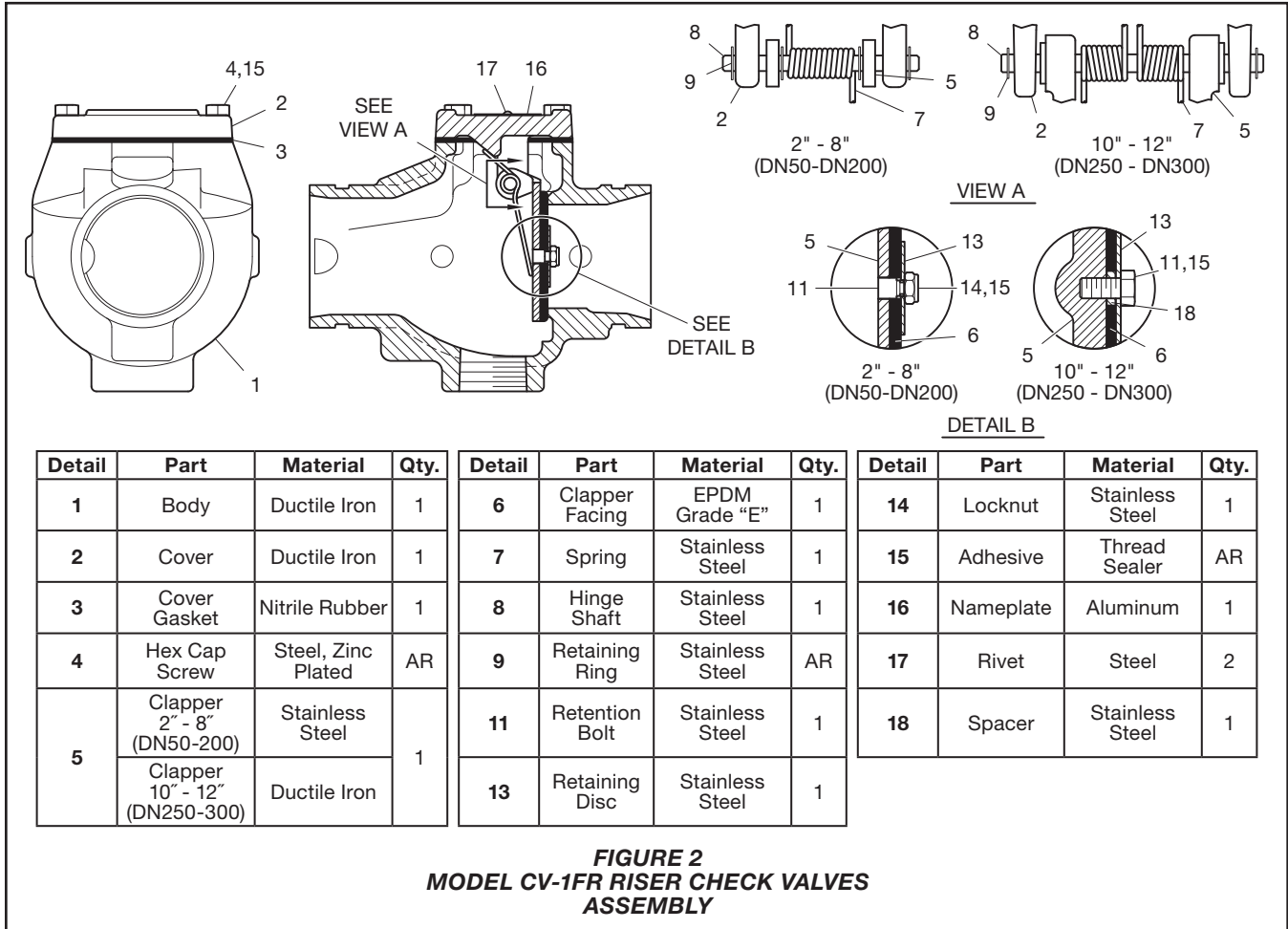
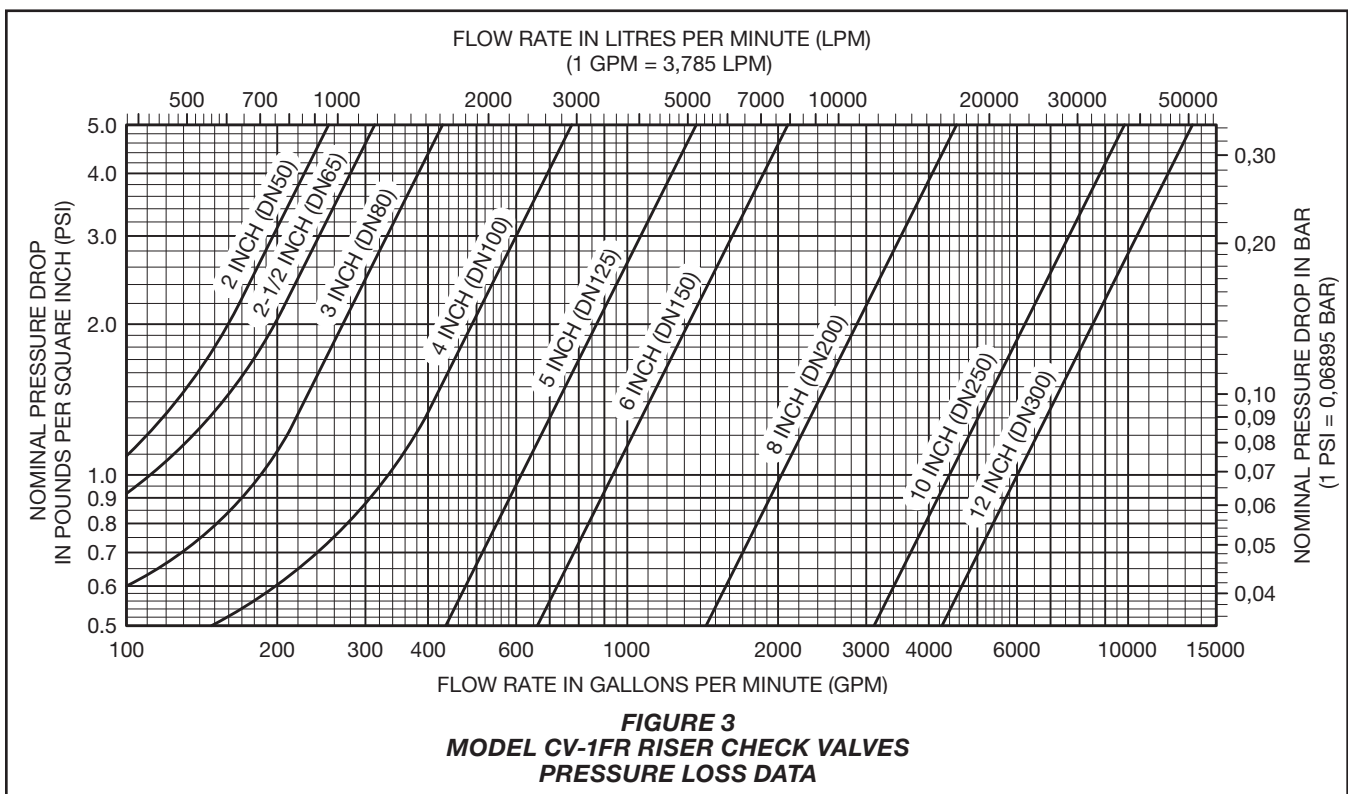
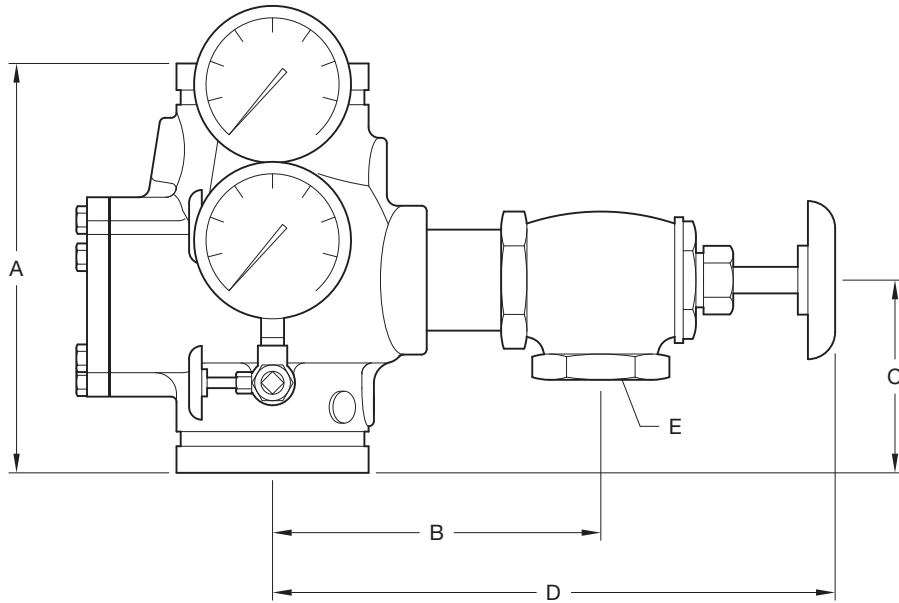


FIGURE 2
MODEL CV-1FR RISER CHECK VALVES
ASSEMBLY





Nominal Pipe Size		Nominal Dimensions Inches (mm)				
ANSI Inches DN	O.D. Inches (mm)	A	B	C	D	E Inches NPT
2 DN50	2.375 (60,3)	6.75 (171,5)	6.50 (165,1)	3.25 (82,6)	10.13 (257,2)	1
2-1/2 DN65	2.875 (73,0)	8.00 (203,2)	6.56 (166,7)	3.88 (98,6)	11.13 (282,6)	1-1/4
76,1 DN65	- (76,1)	8.00 (203,2)	6.56 (166,7)	3.88 (98,6)	11.13 (282,6)	1-1/4
3 DN80	3.500 (88,9)	8.37 (212,6)	6.81 (173,0)	3.88 (98,6)	11.13 (282,6)	1-1/4
4 DN100	4.500 (114,3)	9.63 (244,6)	7.75 (196,9)	3.88 (98,6)	13.25 (336,6)	2
139,7 DN125	- (139,7)	10.50 (266,7)	8.25 (209,6)	5.00 (127,0)	13.81 (350,8)	2
5 DN125	5.563 (141,3)	10.50 (266,7)	8.25 (209,6)	5.00 (127,0)	13.81 (350,8)	2
165,1 DN150	- (165,1)	11.50 (292,1)	8.56 (217,5)	5.00 (127,0)	14.13 (358,8)	2
6 DN150	6.625 (168,3)	11.50 (292,1)	8.56 (217,5)	5.00 (127,0)	14.13 (358,8)	2
8 DN200	8.625 (219,1)	14.00 (355,6)	9.75 (247,7)	5.50 (139,7)	15.25 (387,4)	2
10 DN250	10.750 (273,1)	18.00 (457,2)	10.70 (271,8)	7.50 (190,5)	16.25 (412,8)	2
12 DN300	12.750 (323,9)	21.00 (533,4)	11.50 (292,1)	7.65 (194,3)	17.00 (431,8)	2

FIGURE 4
MODEL CV-1FR RISER CHECK VALVE WITH TRIM COMPONENTS
NOMINAL DIMENSIONS

P/N 59-591-1-020
2 Inch (DN50)

NO.	DESCRIPTION	QTY.	P/N
1	300 psi/ 2000 kPa Water Pressure Gauge	2	92-343-1-005
2	1/4" Gauge Test Valve	2	46-005-1-002
3	1/4" Plug	2	CH
4	1" Angle Valve	1	46-048-1-006
5	1/4" x 2" Nipple	1	CH
6	1/4" x 5" Nipple	1	CH
7	1" x 3" Nipple	1	CH

P/N 59-591-1-030
2-1/2 Inch (DN65) through 3 Inch (DN80)

NO.	DESCRIPTION	QTY.	P/N
1	300 psi/ 2000 kPa Water Pressure Gauge	2	92-343-1-005
2	1/4" Gauge Test Valve	2	46-005-1-002
3	1/4" Plug	2	CH
4	1-1/4" Angle Valve	1	46-048-1-007
5	1/4" x 2" Nipple	1	CH
6	1/4" x 5" Nipple	1	CH
7	1-1/4" x 3" Nipple	1	CH

P/N 59-591-1-080
4 Inch (DN100) through 12 Inch (DN300)

NO.	DESCRIPTION	QTY.	P/N
1	300 psi/ 2000 kPa Water Pressure Gauge	2	92-343-1-005
2	1/4" Gauge Test Valve	2	46-005-1-002
3	1/4" Plug	2	CH
4	2" Angle Valve	1	46-048-1-009
5	1/4" x 2" Nipple	1	CH
6	1/4" x 5" Nipple	1	CH
7	2" x 3" Nipple	1	CH

NOTES:

1. All Fittings and Nipples are galvanized (Standard Order).
2. CH: Common Hardware.

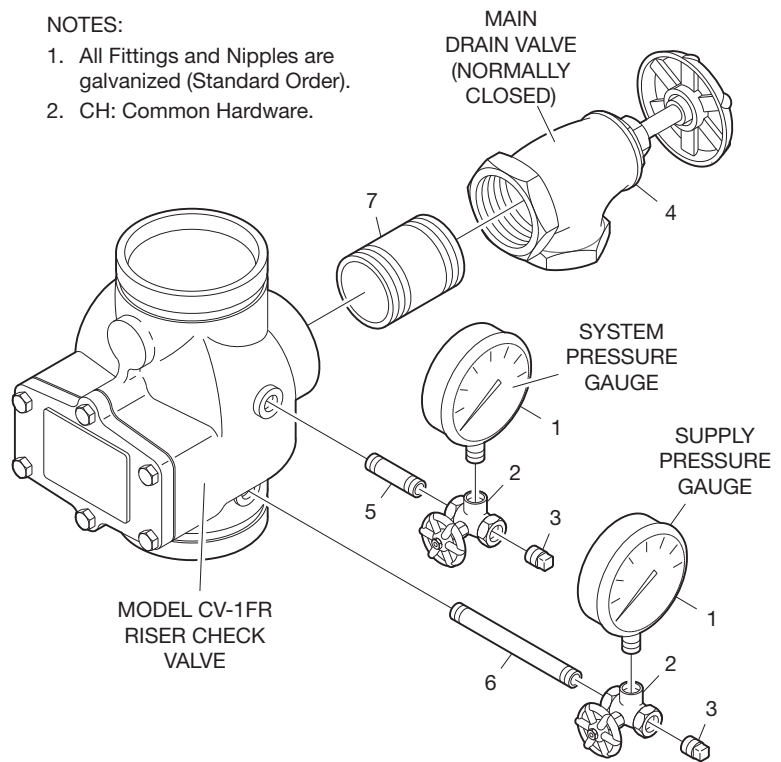


FIGURE 5
MODEL CV-1FR RISER CHECK VALVES
TRIM PARTS LIST

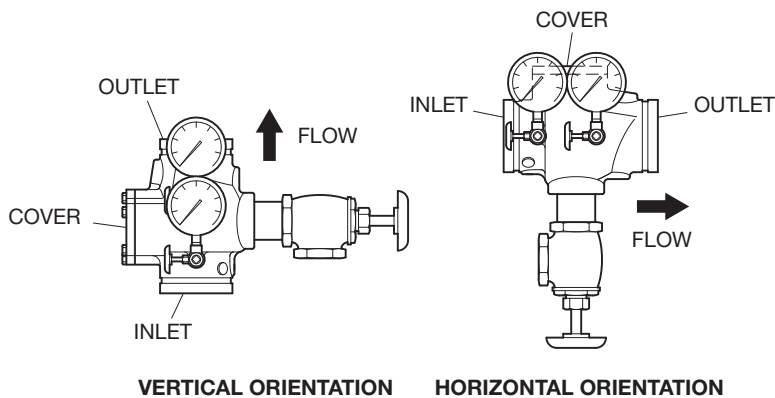


FIGURE 6
MODEL CV-1FR RISER CHECK VALVES
INSTALLATION

Care and Maintenance

NOTICE

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

After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Owners are 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 (for example, NFPA 25), in addition to the standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairments must be immediately corrected.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

Limited Warranty

Products manufactured by Tyco Fire Suppression & Building Products (TFSBP) 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 TFSBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFSBP 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 TFSBP to be defective shall be either repaired or replaced, at TFSBP's sole option. TFSBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFSBP 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 TFSBP 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 TFSBP was informed about the possibility of such damages, and in no event shall TFSBP's 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.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Model CV-1FR Check Valves

Specify: Size and P/N (below).

2" (DN50)	P/N 59-590-1-020
2-1/2" (DN65)	P/N 59-590-1-025
76,1 mm (DN65)	P/N 59-590-1-076
3" (DN80)	P/N 59-590-1-030
4" (DN100)	P/N 59-590-1-040
139,7 mm (DN125)	P/N 59-590-1-139
5" (DN125)	P/N 59-590-1-050
165,1 mm (DN150)	P/N 59-590-1-165
6" (DN150)	P/N 59-590-1-060
8" (DN200)	P/N 59-590-1-080
10" (DN250)	P/N 59-590-1-100
12" (DN300)	P/N 59-590-1-120

Model CV-1FR Riser Check Valve Trim Assembly

Specify: Size and P/N (below).

2" (DN50)	P/N 59-591-1-020
2-1/2" (DN65)	P/N 59-591-1-030
76,1 mm (DN65)	P/N 59-591-1-030
3" (DN80)	P/N 59-591-1-030
4" (DN100)	P/N 59-591-1-080
139,7 mm (DN125)	P/N 59-591-1-080
5" (DN125)	P/N 59-591-1-080
165,1 mm (DN150)	P/N 59-591-1-080
6" (DN150)	P/N 59-591-1-080
8" (DN200)	P/N 59-591-1-080
10" (DN250)	P/N 59-591-1-080
12" (DN300)	P/N 59-591-1-080