Digitally signed by Robert L Hinkle, P.E.
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Wiginton
FIRE SYSTEMS

Wiginton Fire Systems
6363 Greenland Road
Jacksonville, FL 32258
904-262-6107

Job Name	:	US COLD STORAGE RAILDOCK ADDITION
Drawing	:	FP2
Location	:	211 McCLOSKEY AVE LAKE CITY, FL 32055
Remote Area	:	1
Contract	:	101694
Data File	:	1010694 Area 1.wxf

HYDRAULIC CALCULATIONS
for

JOB NAME US COLD STORAGE RAILDOCK ADDITION
Location 211 McCLOSKEY AVE LAKE CITY, FL 32055
Drawing # FP2
Contract # 101694
Date 07-27-22

DESIGN

Remote area # 1
Remote area location RAILDOCK ADDITION
Occupancy classification ORDINARY HAZARD II
Density .20 - Gpm/SqFt
Area of application 2,141 - SqFt
Coverage/sprinkler 256 - SqFt
Type of sprinkler calculated TYCO EC-14 UPRIGHT
 # Sprinklers calculated 10
In-rack demand - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 802.367 - GPM @ 124.096 - Psi
Type of system DRY
Volume of system (dry or pre-action) 175 - Gal

WATER SUPPLY INFORMATION

Test date
Location EXISTING FIRE PUMP
Source of info WIGINTON FIRE SYSTEMS

CONTRACTOR INFO WIGINTON FIRE SYSTEMS
Address 6363 GREENLAND RD JACKSONVILLE, FL 32258
Phone # 904-262-6107
Name of designer KYLE COCHRAN
Authority having jurisdiction COLUMBIA COUNTY
NOTES:

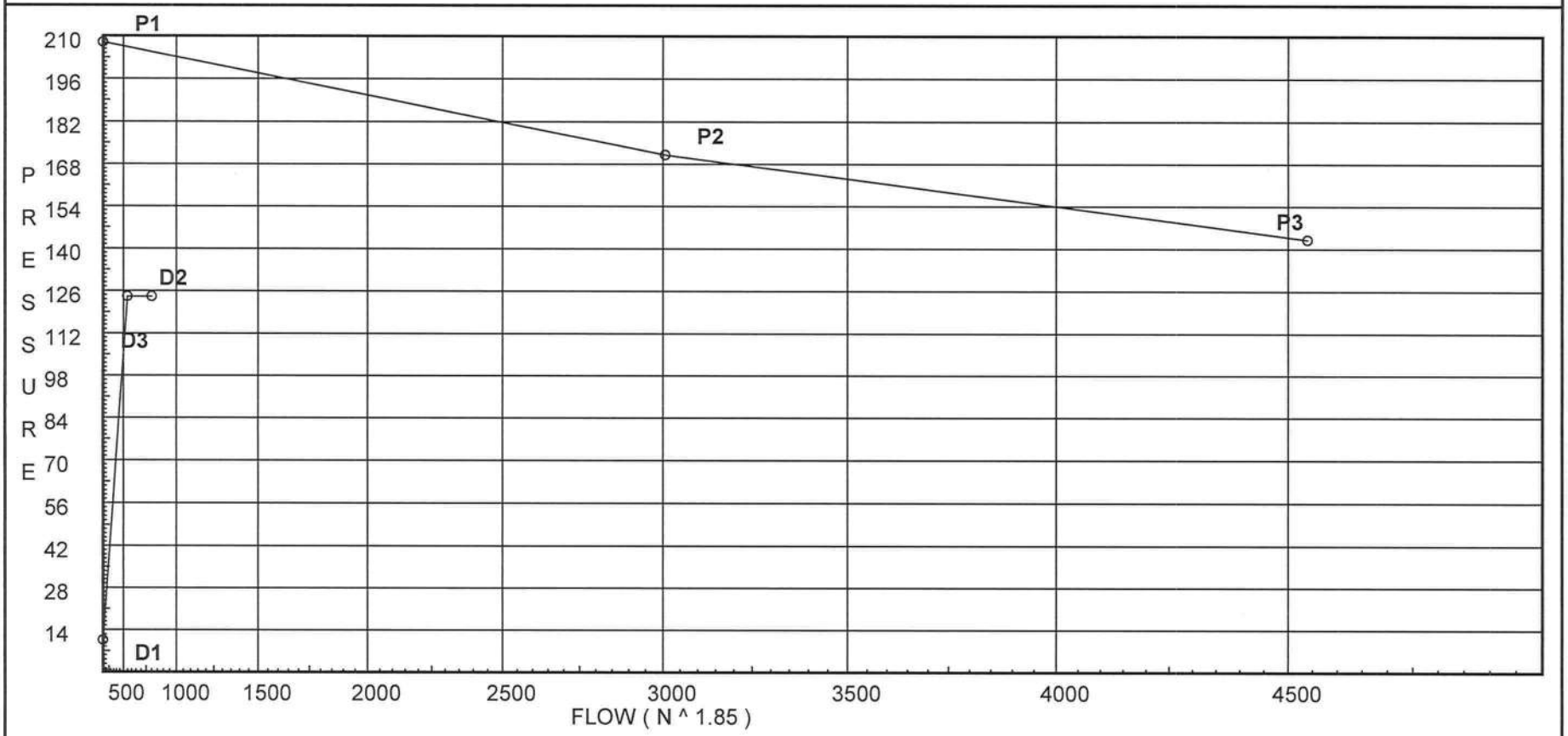
text1(35) - invisible

Pump Data:

P1 - Pump Churn Pressure	: 208
P2 - Pump Rated Pressure	: 171
P2 - Pump Rated Flow	: 3007
P3 - Pump Pressure @ Max Flow	: 143
P3 - Pump Max Flow	: 4540

Demand:

D1 - Elevation	: 10.594
D2 - System Flow	: 552.367
D2 - System Pressure	: 124.096
Hose (Demand)	: 250
D3 - System Demand	: 802.367
Safety Margin	: 80.692



SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
PUMP	See Information on Pump Curve			204.788	802.37	124.096

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes	
1	26.46	14	13.37	51.2	0.2	256
2	26.14	14	15.08	54.36	0.2	256
3	26.12		16.99			
4	24.78		20.9			
5	24.78		21.13			
6	24.75		21.94			
7	24.72		23.68			
8	24.69		26.7			
9	24.29		94.42			
TOR	20.0		106.91			
BOR	1.75		119.68			
STUB	2.0		119.62			
UG1	-8.5		124.23			
EX	-7.0		125.14			
UG2	-7.0		126.34	250.0		
UG3	-7.0		127.65			
ST1	-4.0		126.46			
PUMP	2.0		124.1			
10	26.46	14	13.53	51.49	0.2	256
11	26.14	14	15.24	54.66	0.2	256
13	26.12		17.18			
14	26.46	14	14.06	52.5	0.2	256
15	26.14	14	15.84	55.72	0.2	256
16	26.12		17.84			
17	26.46	14	15.23	54.64	0.2	256
18	26.14	14	17.13	57.95	0.2	256
19	26.12		19.29			
20	26.46	14	17.28	58.2	0.2	256
21	26.14	14	19.4	61.66	0.2	256
22	26.12		21.82			

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	******* Notes ******
1	26.46	14.00	51.20	1.5			15.000	100	13.375	
to									0.139	
2	26.14		51.2	1.682			15.000	0.1041	1.561	Vel = 7.39
2	26.14	14.00	54.36	1.5	E	3.533	1.270	100	15.075	
to							3.533		0.009	
3	26.12		105.56	1.682			4.803	0.3970	1.907	Vel = 15.24
3	26.12		0.0	1.5	T	7.065	1.330	100	16.991	
to							7.066		0.580	
4	24.78		105.56	1.682			8.396	0.3970	3.333	Vel = 15.24
4	24.78		0.0	3			14.000	100	20.904	
to									0.0	
5	24.78		105.56	3.26			14.000	0.0159	0.222	Vel = 4.06
5	24.78		106.14	3			14.000	100	21.126	
to									0.013	
6	24.75		211.7	3.26			14.000	0.0573	0.802	Vel = 8.14
6	24.75		108.22	3			14.000	100	21.941	
to									0.013	
7	24.72		319.92	3.26			14.000	0.1231	1.723	Vel = 12.30
7	24.72		112.59	3			14.000	100	23.677	
to									0.013	
8	24.69		432.51	3.26			14.000	0.2150	3.010	Vel = 16.62
8	24.69		119.86	3	V	4.796	195.050	100	26.700	
to							4.795		0.173	
9	24.29		552.37	3.26			199.845	0.3380	67.543	Vel = 21.23
9	24.29		0.0	3	E	6.714	19.958	100	94.416	
to					V	4.796	11.509		1.858	
TOR	20		552.37	3.26			31.467	0.3380	10.635	Vel = 21.23
TOR	20		0.0	4	T	18.795	18.250	100	106.909	
to					B	11.277	34.769		7.904	
BOR	1.750		552.37	4.26	Dvk	4.699	53.019	0.0919	4.870	Vel = 12.43
BOR	1.750		0.0	8	L	10.897	1.917	100	119.683	
to							10.897		-0.108	
STUB	2		552.37	8.249			12.814	0.0037	0.047	Vel = 3.32
STUB	2		0.0	8	L	20.56	10.500	140	119.622	
to							20.560		4.548	
UG1	-8.5		552.37	8.27			31.060	0.0019	0.060	Vel = 3.30
UG1	-8.5		0.0	8	2G	10.025	580.000	150	124.230	
to					2L	32.58	53.883		-0.650	
EX	-7		552.37	7.68	F	11.278	633.883	0.0025	1.559	Vel = 3.83
EX	-7		0.0	8	2G	10.025	435.000	150	125.139	
to					T	43.857	53.882		0.0	
UG2	-7		552.37	7.68			488.882	0.0025	1.202	Vel = 3.83
UG2	-7	H250	250.00	8	L	16.29	250.000	150	126.341	
to							16.290		0.0	
UG3	-7		802.37	7.68			266.290	0.0049	1.307	Vel = 5.56

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt Pe Pf	******* Notes ******
UG3	-7		0.0	8	L	20.56	9.000	140	127.648	
to							20.560		-1.299	
ST1	-4		802.37	8.27			29.560	0.0039	0.114	Vel = 4.79
ST1	-4		0.0	10	B	34.74	15.000	150	126.463	
to					2L	58.509	193.811		-2.599	
PUMP	2		802.37	10.42	S	100.563	208.811	0.0011	0.232	Vel = 3.02
			0.0							
PUMP			802.37						124.096	K Factor = 72.03
System Demand Pressure									124.096	
Safety Margin									80.692	
Continuation Pressure									204.788	
10	26.46	14.00	51.49	1.5			15.000	100	13.526	
to									0.139	
11	26.14		51.49	1.682			15.000	0.1051	1.577	Vel = 7.43
11	26.14	14.00	54.66	1.5	E	3.533	1.270	100	15.242	
to							3.533		0.009	
13	26.12		106.15	1.682			4.803	0.4012	1.927	Vel = 15.33
13	26.12		0.0	1.5	T	7.065	1.330	100	17.178	
to							7.066		0.580	
5	24.78		106.15	1.682			8.396	0.4011	3.368	Vel = 15.33
			0.0							
5			106.15						21.126	K Factor = 23.09
14	26.46	14.00	52.50	1.5			15.000	100	14.065	
to									0.139	
15	26.14		52.5	1.682			15.000	0.1090	1.635	Vel = 7.58
15	26.14	14.00	55.72	1.5	E	3.533	1.270	100	15.839	
to							3.533		0.009	
16	26.12		108.22	1.682			4.803	0.4158	1.997	Vel = 15.63
16	26.12		0.0	1.5	T	7.065	1.360	100	17.845	
to							7.066		0.593	
6	24.75		108.22	1.682			8.426	0.4157	3.503	Vel = 15.63
			0.0							
6			108.22						21.941	K Factor = 23.10
17	26.46	14.00	54.64	1.5			15.000	100	15.232	
to									0.139	
18	26.14		54.64	1.682			15.000	0.1173	1.760	Vel = 7.89
18	26.14	14.00	57.94	1.5	E	3.533	1.270	100	17.131	
to							3.533		0.009	
19	26.12		112.58	1.682			4.803	0.4472	2.148	Vel = 16.26
19	26.12		0.0	1.5	T	7.065	1.390	100	19.288	
to							7.066		0.606	
7	24.72		112.58	1.682			8.456	0.4474	3.783	Vel = 16.26
			0.0							
7			112.58						23.677	K Factor = 23.14
20	26.46	14.00	58.20	1.5			15.000	100	17.280	
to									0.139	
21	26.14		58.2	1.682			15.000	0.1319	1.979	Vel = 8.40

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
21	26.14	14.00	61.66	1.5	E	3.533	1.270	100	19.398			
to							3.533		0.009			
22	26.12		119.86	1.682			4.803	0.5022	2.412	Vel = 17.31		
22	26.12		0.0	1.5	T	7.065	1.420	100	21.819			
to							7.066		0.619			
8	24.69		119.86	1.682			8.486	0.5022	4.262	Vel = 17.31		
			0.0									
8			119.86						26.700	K Factor = 23.20		

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
Dvk	Dry Viking F1								3		5		49								
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
F	NFPA 13 45' Elbow	1	1	1	1	2	2	3	3	3	4	5	7	9	11	13	17	19	21	24	28
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
L	NFPA 13 Long Turn Elbow	0.5	1	2	2	2	3	4	5	5	6	8	9	13	16	18	24	27	30	34	40
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

FIRE SPRINKLER PRODUCT DATA SUBMITTAL

Wiginton FIRE SYSTEMS

6363 Greenland Rd, Jacksonville, FL 32258
TEL: 904-262-6107 - FAX: 904-268-7268
www.wigintonfiresystems.com

1010694
US Cold Storage Raildock Addition

211 McCloskey Ave.
Lake City, FL 32055

Submittal Revision: 0
Dated: 07/27/2022

The materials submitted in this package...

are intended to describe the type and quality of all materials to be used on this project. This submittal intends that all materials, appliances, pieces, parts, and craftsmanship, will be equal to and/or better than the specific item shown and that actual per foot friction losses will be equal to and/or less than indicated herein.

Some of the items included may be substituted due to common procurement, stocking and supply procedures, scheduling requirements, etc. at the option of WFS, however ALL supplied and installed materials will meet the requirements of the applicable NFPA code in effect at the time of installation.

SPRINKLERS

tyco®

Worldwide Contacts | www.tyco-fire.com

Series EC-11 and EC-14 Sprinklers, 11.2 K and 14.0 K Upright and Pendent Extended Coverage Light and Ordinary Hazard

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

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.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.

docs.jci.com/tycofire/series-ec-11_ec-14

General Description

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers are decorative glass-bulb sprinklers designed for use in light or ordinary hazard occupancies. They are intended for use in automatic sprinkler systems designed in accordance with standard installation rules, such as NFPA 13, for a maximum coverage area of 400 ft² (37,2 m²) as compared to the maximum coverage area of 130 ft² (12,1 m²) for standard coverage sprinklers used in ordinary hazard occupancies, Series EC-11 and EC-14 Extended Coverage Sprinklers feature a UL and C-UL Listing that permits their use with unobstructed or non-combustible obstructed ceiling construction as defined and permitted by NFPA 13, as well as a specific application listing for use under concrete tees.

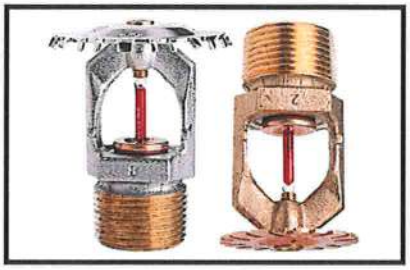
Series EC-11 and EC-14 Extended Coverage Sprinklers have been fire tested to compare their performance to that of standard coverage spray sprinklers. These tests have shown that the protection provided is equal to or more effective than standard coverage spray sprinklers.

Corrosion-resistant coatings, where applicable, help extend the life of copper alloy sprinklers beyond that which occurs when exposed to corrosive atmospheres. Although corrosion-resistant coated sprinklers passed standard corrosion tests of the applicable approval agencies, this 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 corrosion-resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity should be considered, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

NOTICE

Series EC-11 and EC-14 Extended Coverage 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, (NFPA), 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 product manufacturer with any questions.



Sprinkler Identification Numbers

TY5137 . . . . . Upright, 11.2K
TY5237 . . . . . Pendent, 11.2K
TY6137 . . . . . Upright, 14.0K
TY6237 . . . . . Pendent, 14.0K

TY5137 is a re-designation for C5137, G1894, and S2510
TY5237 is a re-designation for C5237, G1893, and S2511
TY6137 is a re-designation for C6137, G1896, and S2610
TY6237 is a re-designation for C6237, G1895, and S2611

Technical Data

Approvals

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers are UL and C-UL Listed. See Table A for complete sprinkler approval information including corrosion-resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.

Series EC-11 and EC-14 Extended Coverage Sprinklers are FM Approved. See Table A for complete sprinkler approval information including corrosion-resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.

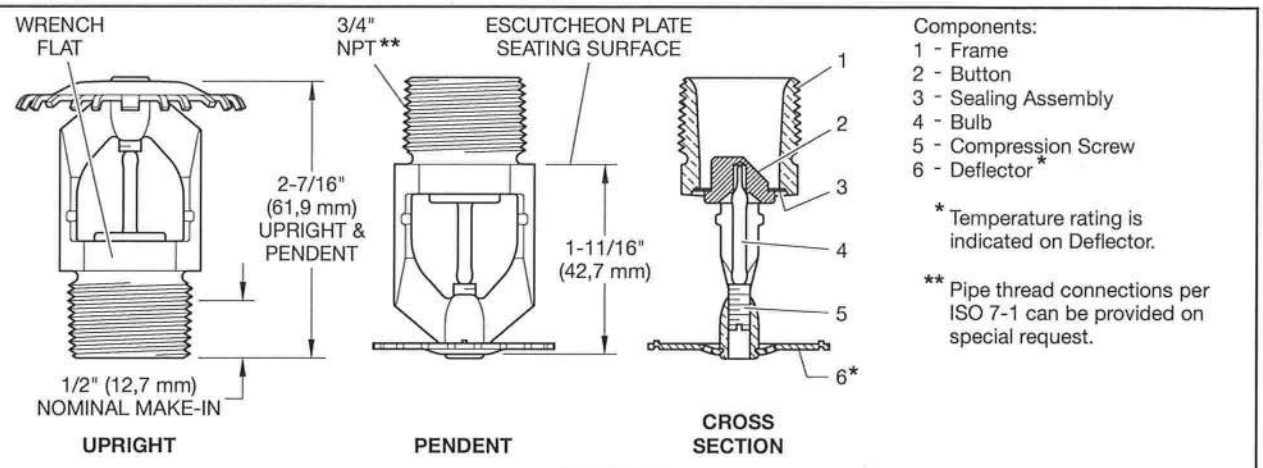


FIGURE 1
SERIES EC-11 AND EC-14 EXTENDED COVERAGE SPRINKLERS
11.2 K-FACTOR UPRIGHT (TY5137) AND PENDENT (TY5237)
14.0 K-FACTOR UPRIGHT (TY6137) AND PENDENT (TY6237)
ASSEMBLY

The Style 60 Two-Piece Flush Escutcheon shown in Figure 4 is UL Listed for use with the Series EC-11 and EC-14 Pendent Sprinklers.

Maximum Working Pressure
175 psi (12,1 bar)

Pipe Thread Connection
3/4 in. NPT

Discharge Coefficients
K = 11.2 GPM/psi½ (161,3 LPM/bar½)
K = 14.0 GPM/psi½ (201,6 LPM/bar½)

Temperature Ratings
See Table A

Finish
Sprinkler: See Table A

Recessed or Flush Escutcheon: White-Coated, Chrome-Plated, and Brass-Plated

Physical Characteristics

Frame	Bronze
Button	Bronze
Sealing Assembly	Beryllium Nickel w/TEFLON
Bulb	Glass (3 mm)
Compression Screw	Bronze
Deflector	Brass

Operation

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

Design Criteria

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers must only be installed in accordance with the applicable UL and C-UL Listing or FM Approval requirements as indicated below. Only Style 30 or 40 Recessed Escutcheons are to be used for recessed installation, as applicable. See Tables A, B, and C, for more information.

UL and C-UL Listing Requirements

1. Series EC-11 and EC-14 Extended Coverage Sprinklers may be used for the coverage areas shown in Table D, based on maintaining the minimum specified flow rate as a function of coverage area and hazard group for all sprinklers in the design area.
2. Series EC-11 and EC-14 Extended Coverage Sprinklers are permitted to be used with unobstructed or non-combustible obstructed ceiling construction as defined and permitted by NFPA 13; for example:
   - Unobstructed, combustible or noncombustible, ceiling construction with a deflector to ceiling/roof deck distance of 1 to 12 in. (25 to 300 mm).
   - Obstructed, non-combustible, ceiling construction with a deflector location below structural members of 1 to 6 in. (25 to 150 mm) and a maximum deflector to ceiling/roof deck distance of 22 in. (550 mm).
3. Series EC-11 and EC-14 Extended Coverage Sprinklers, specifically tested and listed for non-combustible obstructed construction, are permitted to be used within trusses or bar joists having non-combustible web members greater than 1 in. (25,4 mm) when applying the 4 times obstruction criteria rule defined under "Obstructions to Sprinkler Discharge Pattern Development".
4. To prevent cold soldering, the minimum allowable spacing between Series EC-11 and EC-14 Extended Coverage Sprinklers is 8 ft (2,4 m) for upright sprinklers and 9 ft (2,7 m) for pendent sprinklers.
5. Series EC-11 and EC-14 Extended Coverage Sprinklers are to be installed in accordance with all other requirements of NFPA 13 for extended coverage upright and pendent sprinklers; For example, obstructions to sprinkler discharge, obstructions to sprinkler pattern development, obstructions to prevent sprinkler discharge from reaching hazard and clearance to storage.

Hazard	Type	Temperature	Bulb Liquid	Sprinkler Finish (See Note 5)			
				Natural Brass	Chrome Plated	Polyester*	Lead Coated
Light **Table B describes UL and C-UL Sensitivity Rating** **Table C describes FM Sensitivity Rating**	Upright K=11.2 (TY5137) Pendent K=11.2 (TY5237) K=14.0 (TY6237)	135°F (57°C)	Orange	1, 2, 3**, 4			
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green	1, 2, 4			1, 2, 4
		286°F (141°C)	Blue				
	Recessed Pendent K=11.2 (TY5237) K=14.0 (TY6237) With Style 30 Escutcheon	135°F (57°C)	Orange	1, 2, 3, 4			N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow	1, 2, 4			
		200°F (93°C)	Green				
		286°F (141°C)	Blue				
Ordinary **Table B describes UL and C-UL Sensitivity Rating** **Table C describes FM Sensitivity Rating**	Upright K=11.2 (TY5137) K=14.0 (TY6137) Pendent K=11.2 (TY5237) K=14.0 (TY6237)	135°F (57°C)	Orange	1, 2, 3, 4			1, 2, 3, 4
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				1, 2, 4
		200°F (93°C)	Green				
		286°F (141°C)	Blue				
	Recessed Pendent K=11.2 (TY5237) K=14.0 (TY6237) With Style 30 or 40 Escutcheon	135°F (57°C)	Orange	1, 2, 4			N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				

NOTES
1. Listed by Underwriters Laboratories, Inc. (UL)
2. Listed by Underwriters Laboratories, Inc., for use in Canada (C-UL)
3. Approved by Factory Mutual Research Corporation (FM)
4. Approved by the City of New York under MEA 177-03-E
5. Where Polyester Coated or Lead Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion Resistant Sprinklers

N/A = Not Available
* Frame and Deflector only
** Pendent only

TABLE A
LABORATORY LISTINGS AND APPROVALS

Area ft x ft	Style	Light Hazard					Ordinary Hazard				
		135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)	135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)
14 x 14	Upright or Pendent	-	-	-	-	-	QR	QR	QR	QR	QR
	Style 30 Recessed	-	-	-	-	-	QR	QR	QR	QR	QR
	Style 40 Recessed	-	-	-	-	-	QR	QR	QR	QR	QR
16 x 16	Upright or Pendent	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR
18 x 18	Upright or Pendent	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR
20 x 20	Upright or Pendent	QR*	QR*	QR*	SR*	SR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	SR*	SR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR

NOTES
- QR = Quick Response
- SR = Standard Response
- N/A = Not Applicable

* Does not apply to Upright K=14.0

TABLE B
SENSITIVITY RATING FOR UL AND C-UL LISTING OF SERIES EC-11 OR EC-14 SPRINKLERS
(SEE TABLE D FOR PERMITTED K-FACTOR/AREA COMBINATIONS)

HC-1								
Linear Spacing ft		Area Spacing ft		Ceiling Height ft	Ceiling Type	K-factor	Style	Response
Min	Max	Min	Max					
10	20	100	400	Up to 30	Noncombustible Unobstructed, Noncombustible Obstructed, or Combustible Unobstructed	11.2 EC 14.0 EC	Pendent or Upright	Quick
10	20	100	400	Up to 30	Noncombustible Unobstructed, Noncombustible Obstructed, or Combustible Unobstructed	11.2 EC 14.0 EC	Pendent Recessed Style 30	
10	20	100	400	Up to 30	Combustible Obstructed	11.2 EC 14.0 EC	Pendent or Upright	
10	20	100	400	Up to 30	Combustible Obstructed	11.2 EC 14.0 EC	Pendent Recessed Style 30	
10	20	100	400	Over 30 and up to 45	Noncombustible Unobstructed	11.2 EC 14.0 EC	Upright	
HC-2								
Linear Spacing ft		Area Spacing ft		Ceiling Height ft	Ceiling Type	K-factor	Style	Response
Min	Max	Min	Max					
10	20	100	400	Up to 30	Noncombustible Unobstructed, Combustible Unobstructed	11.2 EC	Pendent or Upright	Quick
10	20	100	400	Up to 30		14.0 EC	Pendent or Upright	
10	16	100	256	Over 30 and up to 45		11.2 EC 14.0 EC	Upright	
HC-3								
Linear Spacing ft		Area Spacing ft		Ceiling Height ft	Ceiling Type	K-Factor	Style	Response
Min	Max	Min	Max					
10	16	100	256	Up to 30	Noncombustible Unobstructed, Combustible Unobstructed	11.2 EC	Upright	Quick
10	20	100	400	Up to 30		14.0 EC	Pendent or Upright	
10	16	100	256	Over 30 and up to 45		11.2 EC, 14.0 EC	Upright	

NOTES
- The design for K 11.2 EC (K 160 EC) sprinklers should not include fewer than six sprinklers or have a design pressure of less than 12 psi (0,8 bar); similarly the design for K 14.0 EC (K 200 EC)sprinklers should not include fewer than four sprinklers or have a design pressure of less than 18 psi (1,2 bar).
- For flow criteria, refer to FM Loss Prevention Data Sheet 3-26.
- Refer to FM Loss Prevention Data Sheet 2-0 for permitted K-Factor/Area Combinations.

TABLE C
SENSITIVITY RATING FOR FM APPROVAL OF SERIES EC-11 OR EC-14 SPRINKLERS

UL and C-UL Specific Application Listing Requirements for Installation under Concrete Tees

Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers (TY5137, TY5237, TY6137 and TY6237) have a UL and C-UL Specific Application Listing for use under concrete tees when installed as follows:

1. Stems of the concrete tee construction must be spaced at less than 7.5 ft (2,3 m) on center but more than 3 ft (0,9 m) on center. The depth of the concrete tees must not exceed 30 in. (762 mm). The maximum permitted concrete tee length is 32 ft (9,8 m). However, where the concrete tee length exceeds 32 ft (9,8 m), non-combustible baffles, equal in height to the depth of the tees, can be installed so that the space between the tees does not exceed 32 ft (9,8 m) in length.
2. The sprinkler deflectors are to be located in a horizontal plane at or above 1 in. (25,4 mm) below the bottom of the concrete tee stems.
3. When the sprinkler deflectors are located higher than a horizontal plane 1 in. (25,4 mm) beneath the bottom of the concrete tee stems, the obstruction to sprinkler discharge criteria requirements of NFPA 13 for extended coverage upright and pendent sprinklers applies.

Description	Area ft x ft	Light Hazard 0.10 GPM/ft²		Group I Ordinary Hazard 0.15 GPM/ft²		Group II Ordinary Hazard 0.20 GPM/ft²	
		GPM	PSI	GPM	PSI	GPM	PSI
TY5137 (K=11.2) Upright	14 x 14	30	7.2	30	7.2	39	12.1
	16 x 16	30	7.2	39	12.1	51	20.7
	18 x 18	33	8.7	49	19.1	65	33.7
	20 x 20	40	12.8	60	28.7	80	51.0
TY5237 (K=11.2) Pendent	14 x 14	30	7.2	30	7.2	39	12.1
	16 x 16	30	7.2	39	12.1	51	20.7
	18 x 18	33	8.7	49	19.1	65	33.7
	20 x 20	40	12.8	60	28.7	80	51.0
TY6137 (K=14.0) Upright	14 x 14	N/A	N/A	39	7.8	51	13.3
	16 x 16	N/A	N/A	39	7.8	51	13.3
	18 x 18	N/A	N/A	49	12.3	65	21.6
	20 x 20	N/A	N/A	60	18.4	80	32.7
TY6237 (K=14.0) Pendent	14 x 14	37	7.0	39	7.8	51	13.3
	16 x 16	37	7.0	39	7.8	51	13.3
	18 x 18	37	7.0	49	12.3	65	21.6
	20 x 20	40	8.2	60	18.4	80	32.7

NOTES
- 1 ft = 0,3048 m
- 1 ft² = 0,093 m²
- 1 GPM = 3,785 LPM
- 1 psi = 0,06895 bar
- 1 GPM/ft² = 40,74 mm/min

TABLE D
FLOW CRITERIA FOR UL AND C-UL LISTING OF SERIES EC-11 AND EC-14 SPRINKLERS

FM Approval Requirements
Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers are to be installed in accordance with the applicable FM Loss Prevention Data Sheet for limited use in buildings of specific roof construction and for the protection of certain specific ordinary hazard (non-storage and/or non-flammable or combustible liquid) occupancies. Information provided in the FM Loss Prevention Data Sheets relates to, but is not limited to, hydraulic design, ceiling slope, and obstructions, minimum and maximum allowable spacing, and deflector-to-ceiling distance.

These criteria may differ from UL and/or NFPA criteria. Therefore, the designer should review and become familiar with FM requirements before proceeding with design.

Installation

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent 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 in. (1,6 mm) for the 135°F (57°C) to 3/32 in. (2,4 mm) for the 286°F (141°C) temperature ratings.

A leak-tight 3/4 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 10 to 20 lb-ft (13,4 to 26,8 N·m). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

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

Step 1. Install the sprinkler with the deflector parallel to the mounting surface. Install pendent sprinklers in the pendent position. Install upright sprinklers in the upright position.

Step 2. After installing the Style 30, 40, or 60 mounting plate, or other applicable escutcheon, over the sprinkler pipe threads and with pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 3. For upright or pendent sprinklers, wrench-tighten using only the W-Type 3 (End A) Sprinkler Wrench. For the pendent sprinkler installed with Style 30, 40, or 60 Escutcheon, wrench-tighten the sprinkler using only the W-Type 22 Sprinkler Wrench.

Apply the wrench recess of the applicable sprinkler wrench, Figure 5 and 6, to the sprinkler wrench flats, Figure 1.

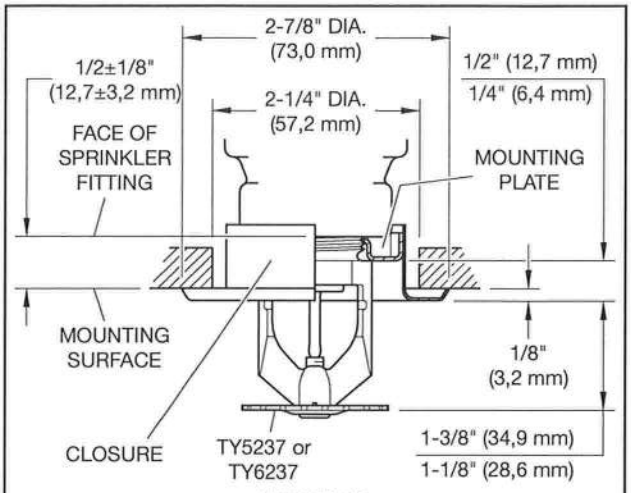


FIGURE 2
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 1/2 IN. TOTAL ADJUSTMENT STYLE 30 RECESSED ESCUTCHEON

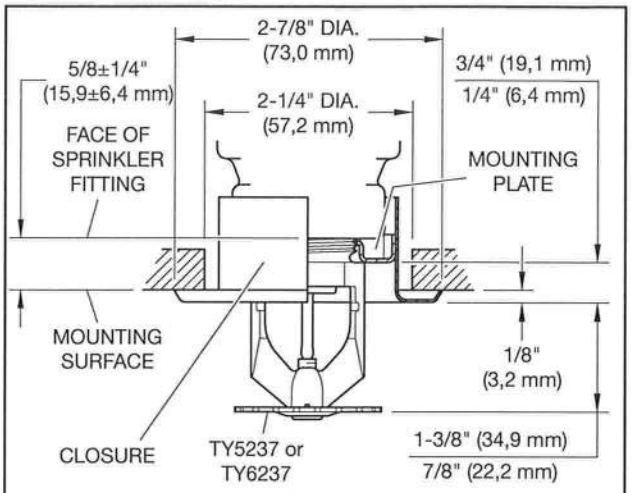


FIGURE 3
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 3/4 IN. TOTAL ADJUSTMENT STYLE 40 RECESSED ESCUTCHEON

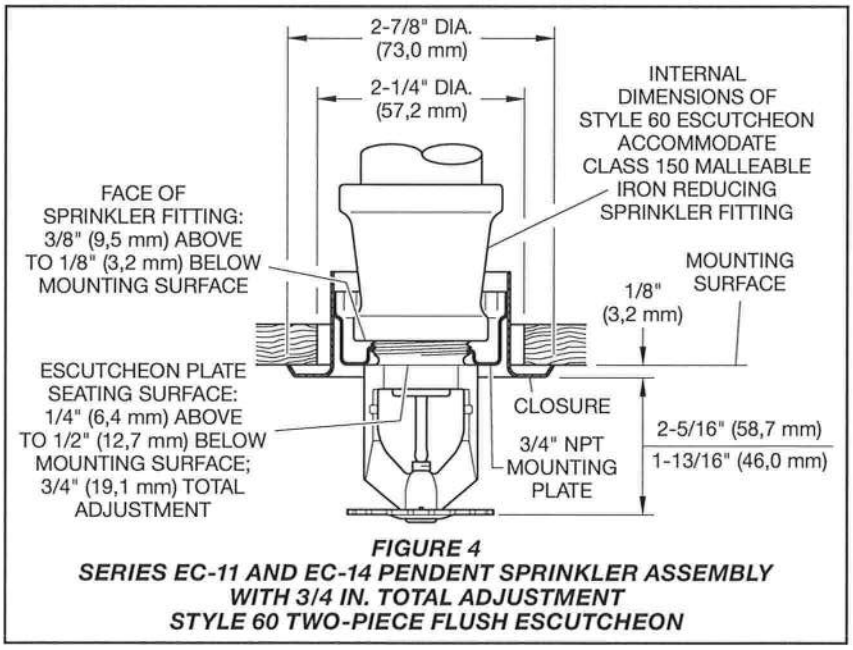


FIGURE 4
SERIES EC-11 AND EC-14 PENDENT SPRINKLER ASSEMBLY WITH 3/4 IN. TOTAL ADJUSTMENT STYLE 60 TWO-PIECE FLUSH ESCUTCHEON

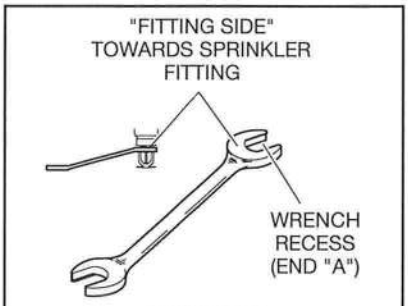


FIGURE 5
W-TYPE 3 SPRINKLER WRENCH

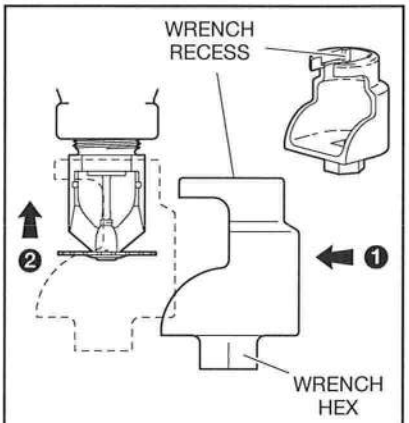


FIGURE 6
W-TYPE 22 RECESSED SPRINKLER WRENCH

P/N 51 – XXX – X – XXX

		SIN
893	11.2K Pendent	TY5237
894	11.2K Upright	TY5137
895	14.0K Pendent	TY6237
896	14.0K Upright	TY6137

	SPRINKLER FINISH[1]
1	NATURAL BRASS
4	SIGNAL WHITE (RAL9003) POLYESTER
5	JET BLACK (RAL9005) POLYESTER
7	LEAD COATED
9	CHROME-PLATED

	TEMPERATURE RATING
135	135°F (57°C)
155	155°F (68°C)
175	175°F (79°C)
200	200°F (93°C)
286	286°F (141°C)
000	OPEN[2]

NOTES:
1. Escutcheon ordered separately.
2. OPEN indicates the sprinkler assembly without glass bulb, button, and sealing assembly.

TABLE E
SERIES EC-11 AND EC-14 UPRIGHT AND PENDENT SPRINKLERS
PART NUMBER SELECTION

Care and Maintenance

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent 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.

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. Refer to the Installation section, for more information.

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 recognized by the Approval agency, such as NFPA 25, in addition to the standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with 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 EC-11 or EC-14 (specify) Sprinkler, SIN (specify), (specify) K-factor, Pendent or Upright (specify) Extended Coverage, (specify) temperature rating, (specify) finish, P/N (from Table E)

Recessed Escutcheon, Two-Piece
Specify: Style (30 or 40) Two-Piece Recessed Escutcheon with (specify) finish, P/N (specify*)

*Refer to Technical Data Sheet TFP770

Flush Escutcheon, Two-Piece
Specify: Style 60 Two-Piece Flush Escutcheon with (specify) finish, P/N (specify**)

**Refer to Technical Data Sheet TFP778

Sprinkler Wrenches
Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001

Specify: W-Type 22 Recessed Sprinkler Wrench, P/N 56-665-7-001

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Johnson Controls

tyco®

Worldwide Contacts | www.tyco-fire.com

Series TY-B – 2.8, 5.6, and 8.0 K-factor Upright, Pendent, and Recessed Pendent Sprinklers Standard Response, Standard Coverage

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

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.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.

docs.jci.com/tycofire/series-ty-b-2-8_5-6-and-8k

General Description

The TYCO Series TY-B 2.8, 5.6, and 8.0 K-factor, Upright, Pendent, and Recessed Pendent Sprinklers described herein are standard response, standard coverage, decorative 5 mm glass bulb-type spray sprinklers. They are designed for use in light, ordinary, or extra-hazard commercial occupancies such as banks, hotels, shopping malls, factories, refineries, and chemical plants.

The TY-B Recessed Pendent Sprinkler, where applicable, is intended for use in areas with a finished ceiling. It uses a two-piece Style 10 (1/2 in. NPT) or Style 40 (3/4 in. NPT) Recessed Escutcheon. The Recessed Escutcheon provides 1/2 in. (12,7 mm) of recessed adjustment or up to 3/4 in. (19,1 mm) of total adjustment 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.

Corrosion-resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond what would be obtained when exposed to corrosive atmospheres. Although corrosion-resistant coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end-user be consulted about 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.

An intermediate level version of the Series TY-B Pendent Sprinkler can be obtained by utilizing the Series TY-B Pendent Sprinkler in combination with the Model S2 Shield.

NOTICE

The Series TY-B 2.8, 5.6, and 8.0 K-factor, Upright, Pendent, and Recessed Pendent 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 (NFPA), 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. Contract the installing contractor or product manufacturer with any questions.

NFPA 13 prohibits installation of 1/2 in. NPT sprinklers with K-factors greater than 5.6 in new construction. They are intended for retrofit in existing sprinkler systems only.

Sprinkler Identification Numbers (SIN)

TY1151 . . . Upright 2.8K, 1/2 in. NPT
TY1251 . . .Pendent 2.8K, 1/2 in. NPT
TY3151 . . . Upright 5.6K, 1/2 in. NPT
TY3251 . . .Pendent 5.6K, 1/2 in. NPT
TY4151 . . . Upright 8.0K, 3/4 in. NPT
TY4251 . . .Pendent 8.0K, 3/4 in. NPT
TY4851 . . . Upright 8.0K, 1/2 in. NPT
TY4951 . . .Pendent 8.0K, 1/2 in. NPT

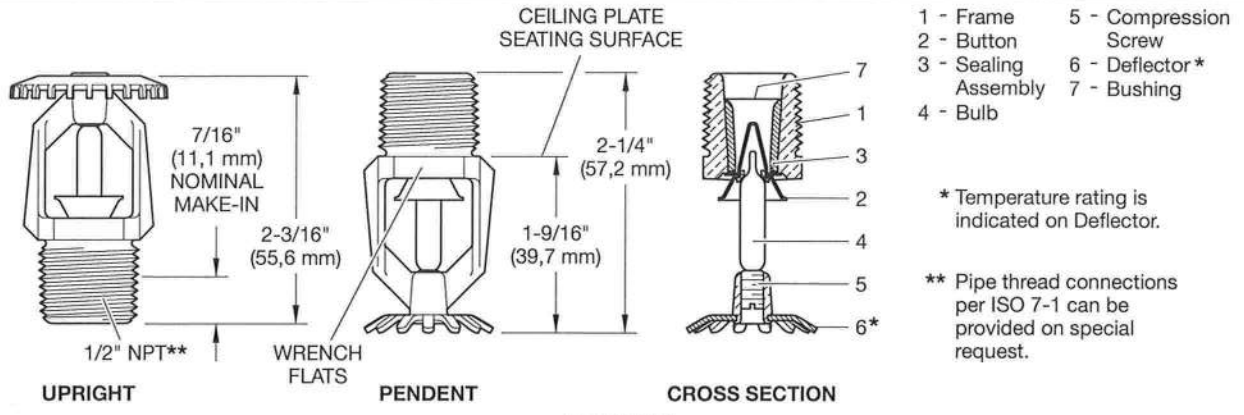


FIGURE 1
SERIES TY-B UPRIGHT (TY1151) AND PENDENT (TY1251) SPRINKLERS
2.8 K-FACTOR, 1/2 IN. NPT, STANDARD RESPONSE

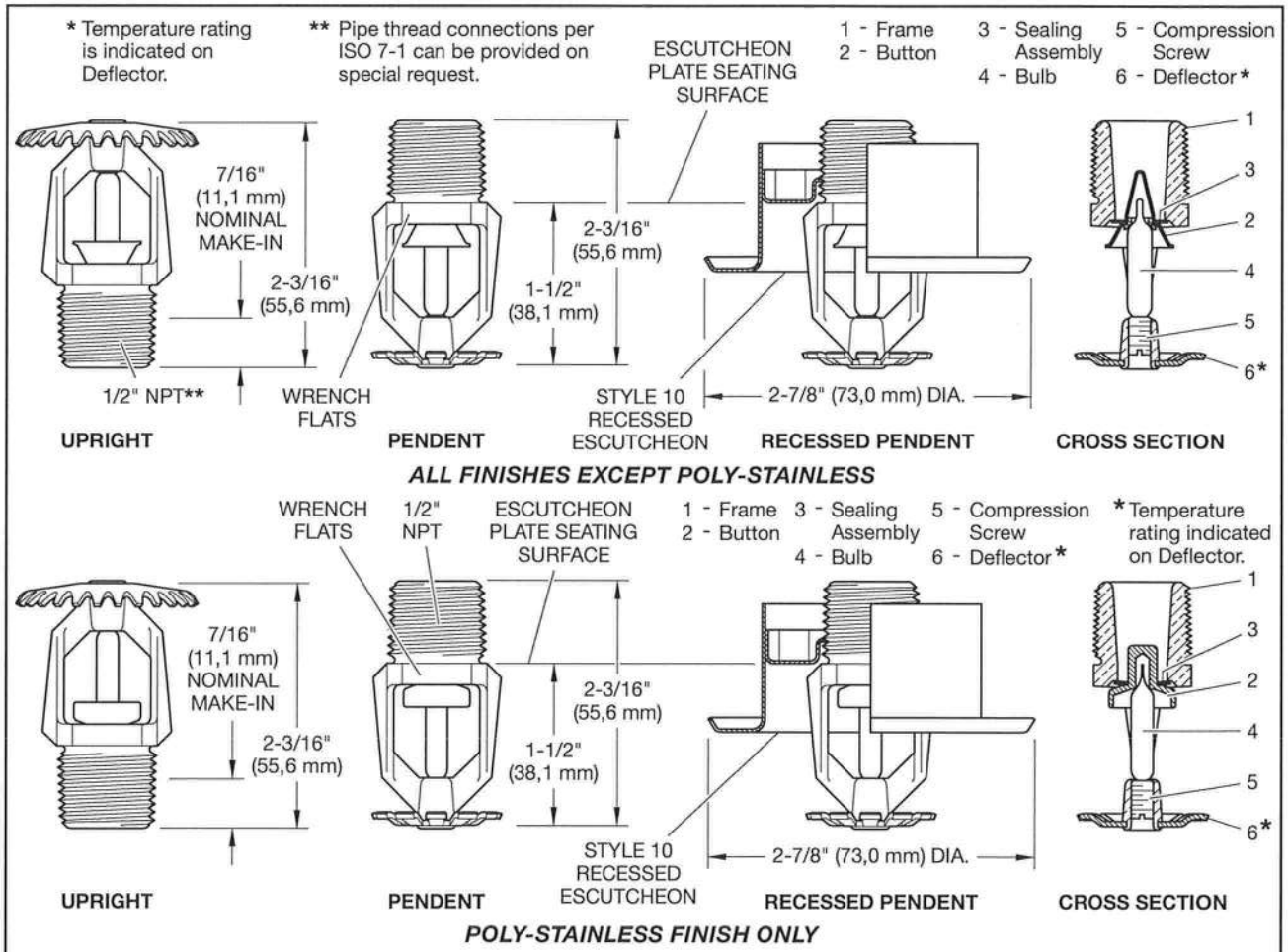


FIGURE 2
SERIES TY-B UPRIGHT (TY3151) AND PENDENT (TY3251) SPRINKLERS
5.6 K-FACTOR, 1/2 IN. NPT, STANDARD RESPONSE

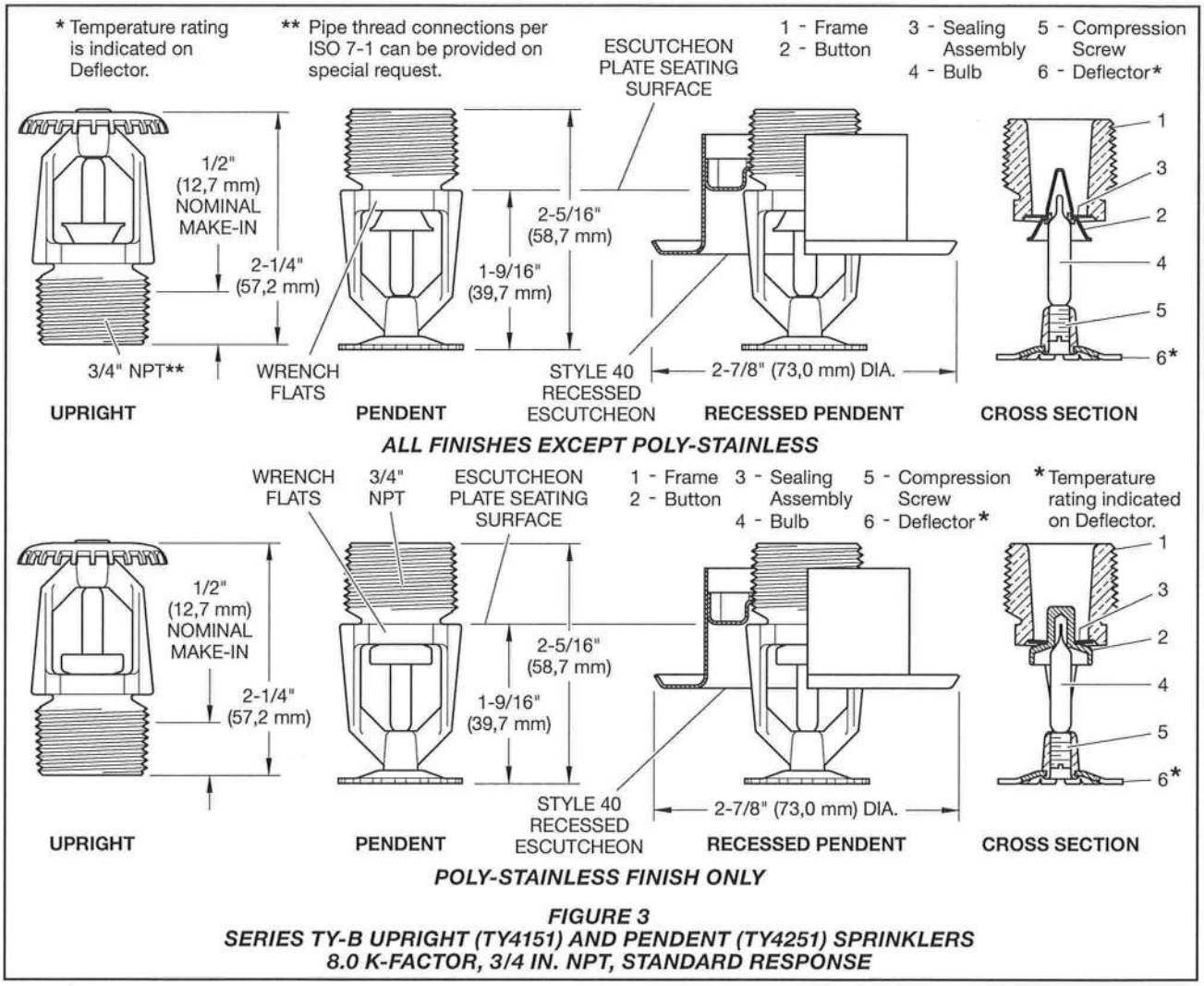


FIGURE 3
SERIES TY-B UPRIGHT (TY4151) AND PENDENT (TY4251) SPRINKLERS
8.0 K-FACTOR, 3/4 IN. NPT, STANDARD RESPONSE

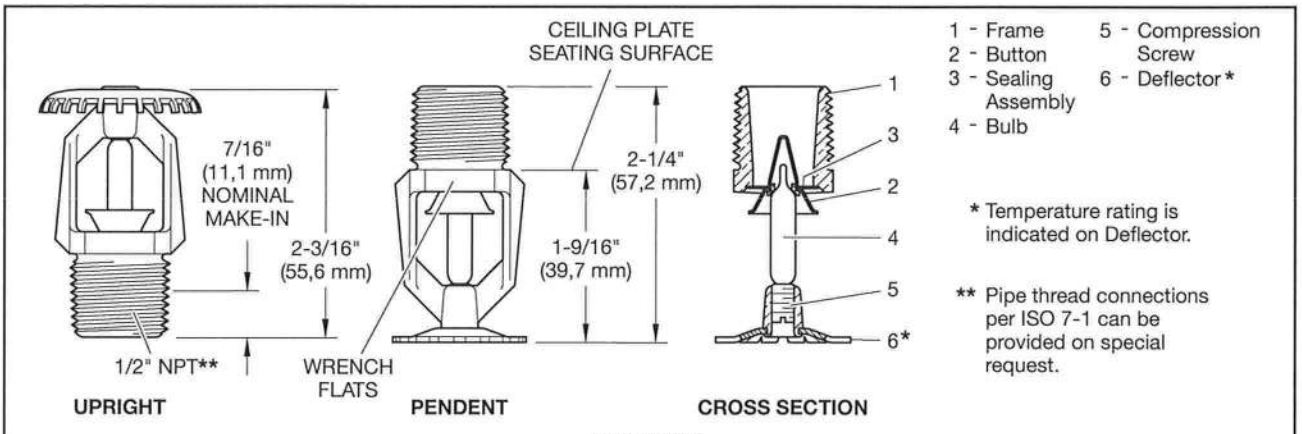


FIGURE 4
SERIES TY-B UPRIGHT (TY4851) AND PENDENT (TY4951) SPRINKLERS
8.0 K-FACTOR, 1/2 IN. NPT, STANDARD RESPONSE

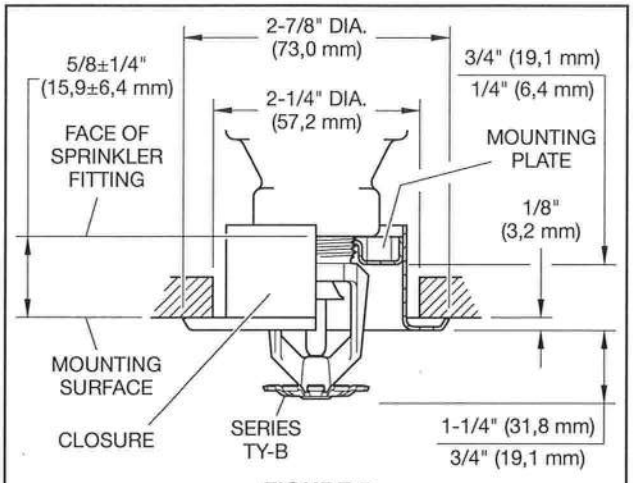


FIGURE 5
SERIES TY-B RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 3/4 IN. TOTAL ADJUSTMENT STYLE 10 RECESSED ESCUTCHEON 5.6 K-FACTOR, 1/2 IN. NPT

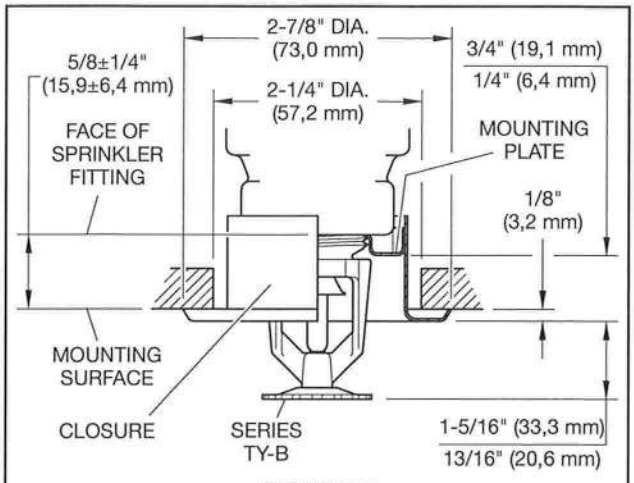


FIGURE 6
SERIES TY-B RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 3/4 IN. TOTAL ADJUSTMENT STYLE 40 RECESSED ESCUTCHEON 8.0 K-FACTOR, 3/4 IN. NPT

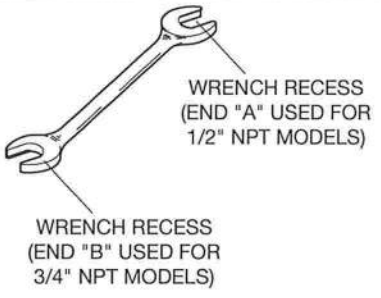


FIGURE 7
W-TYPE 6
SPRINKLER WRENCH

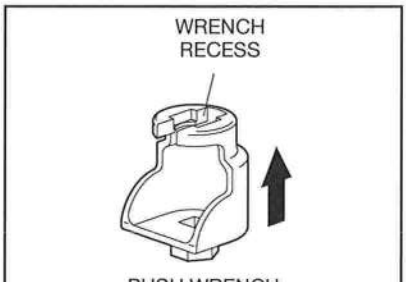


FIGURE 8
W-TYPE 7 RECESSED SPRINKLER WRENCH

Technical Data

Approvals
UL and C-UL Listed
FM, LPCB, VdS, and NYC Approved

See Tables A, B and C for complete approval information, including corrosion-resistant status.

Maximum Working Pressure
See Table D

Discharge Coefficient
K=2.8 gpm/psi½ (40,3 Lpm/bar½)
K=5.6 gpm/psi½ (80,6 Lpm/bar½)
K=8.0 gpm/psi½ (115,2 Lpm/bar½)

Temperature Ratings
See Tables A, B and C

Finishes
Sprinkler: See Table E

Recessed Escutcheon: Signal or Pure White, Grey Aluminum, Jet Black, Chrome Plated, or Natural Brass

Physical Characteristics

Frame	Bronze
Button	Brass/Copper
Sealing Assembly	Beryllium Nickel w/TEFLON
Bulb	Glass
Compression Screw	Bronze
Deflector	Copper
Bushing (K=2.8)	Bronze

Poly-Stainless Physical Characteristics

Frame	Bronze
Button	L316 Stainless Steel*
Bulb	Glass
Compression Screw	L316 Stainless Steel*
Deflector	Copper/Bronze
Sealing Assembly	Gold Plated Beryllium Nickel w/TEFLON

*Type L316 stainless steel (UNS 31603) per ASTM A479/479M or BS EN 1008 WN1.4404.

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-B 2.8, 5.6, and 8.0 K-factor, Upright, Pendent, and Recessed Pendent 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 based on the requirements of NFPA 13 and FM Approval based on the requirements of the FM Global Loss Prevention Data Sheets. Use only the Style 10 or 40 Recessed Escutcheon, as applicable, for recessed pendent installations.

K-Factor	Sprinkler Type	Temperature Rating	Bulb Liquid Color	Sprinkler Finish[8]						
				Natural Brass	Chrome Plated	Polyester[c]	Poly-Stainless[c]	Lead Coated	Wax Coated	Wax-Over-Lead Coated
2.8 1/2 in. NPT	Upright (TY1151) and Pendent (TY1251) Figure 1	135°F (57°C)	Orange	1, 2, 3			N/A	N/A[d]		
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue							
		360°F (182°C)	Mauve	1, 2						

NOTES
1. Listed by Underwriters Laboratories, Inc. (UL).
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
3. Approved by FM Global (FM Approvals).
4. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007k/03).
5. Approved by the City of New York under MEA 354-01-E.
6. VdS Approved. (For details, contact Johnson Controls, Enschede, Netherlands, Tel. 31-53-428-4444 / Fax 31-53-428-3377)
7. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/05)
8. Where Polyester Coated, Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion-Resistant Sprinklers. Where Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as Corrosion-Resistant Sprinklers.

a. Installed with Style 10 (1/2 in. NPT) or Style 40 (3/4 in. NPT) 3/4 in. Total Adjustment Recessed Escutcheon, as applicable
b. 150°F (66°C) maximum ceiling temperature
c. Frame and deflector only
d. Not Applicable (N/A)

TABLE A
SERIES TY-B 2.8 K-FACTOR UPRIGHT AND PENDENT SPRINKLERS
LABORATORY LISTINGS AND APPROVALS

K-Factor	Sprinkler Type	Temperature Rating	Bulb Liquid Color	Sprinkler Finish[8]						
				Natural Brass	Chrome Plated	Polyester[c]	Poly-Stainless[c]	Lead Coated	Wax Coated	Wax-Over-Lead Coated
5.6 1/2 in. NPT	Upright (TY3151) Figure 2	135°F (57°C)	Orange	1, 2, 3, 5, 6			1, 2	1, 2, 3, 5	1, 2, 3, 5	1, 2, 3, 5
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue						1[b], 2[b], 3[b], 5[b]	1[b], 2[b], 3[b], 5[b]
		360°F (182°C)	Mauve						N/A	
	Pendent (TY3251) Figure 2	135°F (57°C)	Orange	1, 2, 3, 5, 6			1, 2	1, 2, 3, 5	1, 2, 3, 5	1, 2, 3, 5
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue						1[b], 2[b], 3[b], 5[b]	1[b], 2[b], 3[b], 5[b]
		360°F (182°C)	Mauve						N/A	
	Recessed Pendent (TY3251)[a] Figure 5	135°F (57°C)	Orange	1, 2, 3, 5			1, 2	N/A		
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue	1, 2						

NOTES
1. Listed by Underwriters Laboratories, Inc. (UL).
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
3. Approved by FM Global (FM Approvals).
4. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007k/03).
5. Approved by the City of New York under MEA 354-01-E.
6. VdS Approved. (For details, contact Johnson Controls, Enschede, Netherlands, Tel. 31-53-428-4444 / Fax 31-53-428-3377)
7. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/05)
8. Where Polyester Coated, Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion-Resistant Sprinklers. Where Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as Corrosion-Resistant Sprinklers.

a. Installed with Style 10 (1/2 in. NPT) or Style 40 (3/4 in. NPT) 3/4 in. Total Adjustment Recessed Escutcheon, as applicable
b. 150°F (66°C) maximum ceiling temperature
c. Frame and deflector only
d. Not Applicable (N/A)

TABLE B
SERIES TY-B 5.6 K-FACTOR UPRIGHT AND PENDENT SPRINKLERS
LABORATORY LISTINGS AND APPROVALS

K-Factor	Sprinkler Type	Temperature Rating	Bulb Liquid Color	Sprinkler Finish[8]						
				Natural Brass	Chrome Plated	Polyester[c]	Poly-Stainless[c]	Lead Coated	Wax Coated	Wax-Over-Lead Coated
8.0 3/4 in. NPT	Upright (TY4151) and Pendent (TY4251) Figure 3	135°F (57°C)	Orange	1, 2, 3, 4, 5, 6, 7			1, 2	1, 2, 5	1, 2, 3, 5	1, 2, 5
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue						[1b], [2b], [3b], [5b]	[1b], [2b], [5b]
		360°F (182°C)	Mauve						N/A	
	Recessed Pendent (TY4251)[a] Figure 6	135°F (57°C)	Orange	1, 2, 3, 4, 5			1, 2	N/A		
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue	1, 2						
8.0 1/2 in. NPT	Upright (TY4851) and Pendent (TY4951) Figure 4	135°F (57°C)	Orange	1, 2, 3, 4, 5, 6			N/A	N/A		
		155°F (68°C)	Red							
		175°F (79°C)	Yellow							
		200°F (93°C)	Green							
		286°F (141°C)	Blue							
		360°F (182°C)	Mauve							

NOTES
1. Listed by Underwriters Laboratories, Inc. (UL).
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
3. Approved by FM Global (FM Approvals).
4. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007k/03).
5. Approved by the City of New York under MEA 354-01-E.
6. VdS Approved. (For details, contact Johnson Controls, Enschede, Netherlands, Tel. 31-53-428-4444 / Fax 31-53-428-3377)
7. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/05)
8. Where Polyester Coated, Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion-Resistant Sprinklers. Where Lead Coated, Wax Coated, and Wax-over-Lead Coated Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as Corrosion-Resistant Sprinklers.

a. Installed with Style 10 (1/2 in. NPT) or Style 40 (3/4 in. NPT) 3/4 in. Total Adjustment Recessed Escutcheon, as applicable
b. 150°F (66°C) maximum ceiling temperature
c. Frame and deflector only
d. Not Applicable (N/A)

TABLE C
SERIES TY-B 8.0 K-FACTOR UPRIGHT AND PENDENT SPRINKLERS
LABORATORY LISTINGS AND APPROVALS

K-Factor	Type	Sprinkler Finish					
		Natural Brass	Chrome Plated	Polyester[1]	Lead Coated	Wax Coated	Wax-Over-Lead Coated
2.8 1/2 in. NPT	**Upright (TY1151) and Pendent (TY1251)**	175 psi (12,1 bar)			N/A[3]		
5.6 1/2 in. NPT	**Upright (TY3151) and Pendent (TY3251)**	250 psi (17,2 bar)[2] or 175 psi (12,1 bar)					
	Recessed Pendent (TY3251)						
8.0 3/4 in. NPT	**Upright (TY4151) and Pendent (TY4251)**	175 psi (12,1 bar)					
	Recessed Pendent (TY4251)	175 psi (12,1 bar)			N/A		
8.0 1/2 in. NPT	**Upright (TY4851) and Pendent (TY4951)**	175 psi (12,1 bar)					

NOTES
1. Frame and deflector only
2. 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.
3. Not Applicable (N/A)

TABLE D
SERIES TY-B UPRIGHT AND PENDENT SPRINKLERS
MAXIMUM WORKING PRESSURE

Installation

The TYCO Series TY-B 2.8, 5.6, and 8.0 K-factor, Upright, Pendent, and Recessed Pendent 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 in. (1,6 mm) for the 135°F (57°C) to 3/32 in. (2,4 mm) for the 360°F (182°C) temperature ratings.

A leak-tight 1/2 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 7 to 14 lb-ft (9,5 to 19,0 N·m). Obtain a leak-tight 3/4 in. NPT sprinkler joint by applying a minimum to maximum torque of 10 to 20 lb-ft (13,4 to 26,8 N·m). Higher levels of torque may distort the sprinkler inlet and cause 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. Readjust the position of the sprinkler fitting to suit.

Series TY-B Upright and Pendent Sprinklers Installation
The Series TY-B 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, see Figure 7. For wax-coated sprinklers, use an 8 or 10 in. adjustable wrench. With reference to Figure 1 to 4, apply the W-Type 6 Recessed Sprinkler Wrench or an adjustable wrench, as applicable, to the sprinkler wrench flats.

Wax Coated Sprinklers
When installing wax-coated sprinklers with an adjustable wrench, take care to prevent damage to the wax coating on the sprinkler wrench flats or frame arms and, consequently, exposure of bare metal to the corrosive environment:

- Open the jaws of the wrench sufficiently wide to pass over the wrench flats without damaging the wax coating.
- Before wrench tightening the sprinkler, adjust the jaws of the wrench to contact only the sprinkler wrench flats.
- After wrench tightening the sprinkler, loosen the wrench jaws before removing the wrench.

After Installation
After installation, complete the following:

- Inspect the sprinkler wrench flats and frame arms and retouch (repair) the wax coating whenever the coating has been damaged and bare metal is exposed.
- Retouch the wax coating on the wrench flats by gently applying a heated 1/8 in. diameter steel rod to the damaged areas of wax, to smooth it back over areas where bare metal is exposed.

NOTICE

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

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

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

Step 1. After installing the Style 10 or 40 Mounting Plate, as applicable, over the sprinkler threads and with pipe thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 2. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench, see Figure 8. With reference to Figure 3 or 4, apply the W-Type 7 Recessed Sprinkler wrench to the sprinkler wrench flats.

Step 3. After the ceiling is installed or the finish coat is applied, slide on the Style 10 or 40 Closure over the Series TY-B Recessed Pendent Sprinkler and push the Closure over the Mounting Plate until its flange contacts the ceiling.

Care and Maintenance

The TYCO Series TY-B 2.8, 5.6, and 8.0 K-factor, Upright, Pendent, and Recessed Pendent 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 system from the proper authorities and notify all personnel who may be affected by this action.

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.

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

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. Replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. See the 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 such as NFPA 25, in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

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

P/N 57 – XXX – X – XXX

	SIN
530	2.8K UPRIGHT (1/2 in. NPT) TY1151
531	2.8K PENDENT (1/2 in. NPT) TY1251
570	5.6K UPRIGHT (1/2 in. NPT) TY3151
571	5.6K PENDENT (1/2 in. NPT) TY3251
590	8.0K UPRIGHT (3/4 in. NPT) TY4151
591	8.0K PENDENT (3/4 in. NPT) TY4251
560	8.0K UPRIGHT (1/2 in. NPT) TY4851
561	8.0K PENDENT (1/2 in. NPT) TY4951

	SPRINKLER FINISH
1	NATURAL BRASS
2	POLY-STAINLESS GREY ALUMINUM (RAL9007)[1] POLYESTER
3	PURE WHITE (RAL9010)[2] POLYESTER
4	SIGNAL WHITE (RAL9003) POLYESTER
5	JET BLACK (RAL9005)[3] POLYESTER
6	WAX COATED 286°F (141°C) MAX
7	LEAD COATED
8	WAX-OVER-LEAD 286°F (141°C) MAX
9	CHROME PLATED

	TEMPERATURE RATING
135	135°F (57°C)
155	155°F (68°C)
175	175°F (79°C)
200	200°F (93°C)
286	286°F (141°C)
360	360°F (182°C)
000	OPEN[4]

NOTES
1. Only available on TY3151, TY3251, TY4151, and TY4251.
2. Eastern Hemisphere sales only.
3. Available in only 8.0K, 155°F (68°C) or 200°F (93°C); requires lead time to manufacture.
4. Available only for 8.0 K-factor TY4151 and TY4251 for use in deluge systems ("OPEN" indicates sprinkler assembly without glass bulb, button, and sealing assembly).

TABLE E
SERIES TY-B UPRIGHT AND PENDENT SPRINKLERS
PART NUMBER SELECTION

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-B (specify SIN), (specify K-factor), (specify Upright or Pendent) Sprinkler with (specify) temperature rating, (specify) finish or coating, P/N (See Table E)

Recessed Escutcheon
Specify: Style (10 or 40) Recessed Escutcheon with (specify*) finish, P/N (specify*)

* Refer to Technical Data Sheet TFP770

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

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

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

Black for 135°F (57°C) . . . . . P/N 56-065-1-135
Red for 155°F (68°C) . . . . . P/N 56-065-1-155
Yellow for 175°F (79°C) . . . . . P/N 56-065-1-175
Blue for 200°F (93°C)
and 286°F (141°C) . . . . . P/N 56-065-1-286

Note: *Each wax stick is suitable for retouching up to 25 sprinklers.*

The wax used for 286°F (141°C) sprinklers is the same as for 200°F (93°C) sprinklers. Therefore, the 286°F (141°C) sprinkler is limited to the same maximum ceiling temperature as the 200°F (93°C) sprinkler which is 150°F (66°C).

1400 Pennbrook Parkway, Lansdale, PA 19446 | Telephone +1-215-362-0700

Johnson Controls

PIPE & FITTINGS

Wiginton Fire Systems
Steel Pipe Submittal

All of the steel pipe to be used on this project meets or exceeds the requirements of one or more of the following standards as required by Section 6.3 of NFPA 13-2016 edition:

ASTM A795	Specification for Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
ANSI/ASTM A 53	Specification for Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe
ASTM A 135	Specification for Electric – Resistance Welded Steel Pipe

Manufacturers may vary. As per Section 6.3.7 of NFPA 13-2016 edition, all piping shallbe marked along its length to properly identify its type, schedule and manufacturing standard.

Additional approvals or listings are <u>not</u> required when:

1. Steel pipe meeting the above referenced ASTM specifications is used and joined by welding or roll-grooved pipe and fittings, the minimum nominal wall thickness for pressures up to 300 psi shall be in accordance with Schedule 10 for sizes up to 6 inches and .188 inches for 8" – 10" pipe.
2. Steel pipe meeting the above referenced ASTM specifications is used and joined by threaded fittings, the minimum wall thickness shall be in accordance with Schedule 40 in sizes less than 8 inches for pressures up to 300 psi.

Exception: Pipe meeting the above referenced ASTM specifications with wall thickness and pressure limitations less than Schedule 40 for threading or Schedule 10 for welding and roll-grooving, which have been investigated for suitability in automatic sprinkler installations and listed for this service, shall be permitted when installed in accordance with their UL or FM listing limitations.

All steel piping is to be installed in strict accordance with the guidelines of NFPA 13 and therefore requires no special submittal of specific manufacturer's installation instructions as noted in paragraph 23.1.4 of NFPA 13-2016 edition.

Wiginton Fire Systems
Threaded and Flanged
Fittings Submittal

All of the threaded or flanged fittings to be used on this project meet or exceed the requirements of one or more of the following standards as required by Sections 6.4 and 6.5 of NFPA 13-2016 edition:

ANSI B16.4 **Cast Iron Fittings Class 125 and 250**

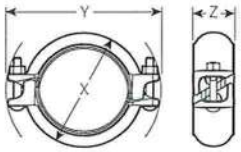
ANSI B16.1 **Cast Iron Pipe Flanges and Flanged Fittings**

ANSI B16.3 **Malleable Iron Fittings, Class 150 and 300**

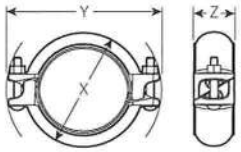
Manufacturers may vary.

Fittings are to be installed in strict accordance with the guidelines of NFPA 13 and therefore require no special submittal of specific manufacturer's installation instructions as noted in paragraph 23.1.4 of NFPA 13-2016 edition.

Style 009N Dimensions:



Style 009N Pre-Assembled (Push On Condition)



Style 009N Joint Assembled

Nominal Size inches mm	Actual Outside Diameter inches mm	Maximum Working Pressure[1] 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
						Pre-assebled (Push On Condition)		Joint Assembled			
						X inches mm	Y inches mm	X inches mm	Y inches mm	Z inches mm	
1¼ 32	1.660 42.4	365 2517	790 3514	0.10 2.54	2 – ⅜ x 2 M – 10 x 2	3.10 79	4.90 124	2.70 69	4.90 124	1.92 49	1.4 0.7
1½ 40	1.900 48.3	365 2517	1035 4604	0.10 2.54	2 – ⅜ x 2 M – 10 x 2	3.30 84	5.10 129	3.00 76	5.10 129	1.92 49	1.5 0.7
2 50	2.375 60.3	365 2517	1616 7193	0.12 3.05	2 – ⅜ x 2 M – 10 x 2	3.90 99	5.60 142	3.50 89	5.60 142	1.95 50	1.9 0.9
2½ 65	2.875 73.0	365 2517	2370 10542	0.12 3.05	2 – ⅜ x 2½ M – 10 x 2½	4.50 114	6.10 155	4.00 102	6.10 155	1.95 50	2.1 1.0
76.1 mm	3.000 76.1	365 2517	2580 11476	0.12 3.05	2 – ⅜ x 2½ M – 10 x 2½	4.56 115.7	6.00 152.5	4.05 102.8	6.06 153.9	1.94 49.2	2.1 1.0
3 80	3.500 88.9	365 2517	3512 15622	0.12 3.05	2 – ⅜ x 2½ M – 10 x 2½	5.10 129	6.70 170	4.60 117	6.70 170	1.95 50	2.3 1.0
4 100	4.500 114.3	365 2517	5805 25822	0.17 4.32	2 – ⅜ x 2½ M – 10 x 2½	5.95 151	7.80 199	5.54 141	7.47 190	2.14 55	2.9 1.3
108.0 mm	4.250 108.0	365 2517	5175 23020	0.17 4.318	2 – ⅜ x 2½	5.56 141	7.39 1.88	5.28 134	7.36 187	2.14 54	3.1 1.4
5 125	5.563 141.3	365 2000	5178 23033	0.17 4.318	2 – ½ x 3	7.19 183	9.25 235	6.7 170	9.11 231	2.19 56	5.0 2.3
133.0 mm	Refer to Submittal 10.61										
139.7 mm	Refer to Submittal 10.61										
165.1 mm	Refer to Submittal 10.61										
6 150	6.625 168.3	365 2000	9997 44469	0.17 4.318	2 – ½ x 3¼	8.32 211	10.29 261	7.82 199	10.13 257	2.17 55	6.0 2.7
8 200	8.625 219.1	365 1620	13730 61074	0.17 4.318	2 – ⅝ x 4	10.89 277	13.31 338	10.22 260	13.1 333	2.5 64	11.4 5.2

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. 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.

2 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.

3 Number of bolts required equals number of housing segments.

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 couplings, use FireLock No. 006 end caps containing the "EZ" marking on the inside face or No. 60 end caps containing the "QV EZ" marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009N couplings. IMPORTANT: Gaskets intended for the Style 009 or Style 009V couplings cannot be used with the Style 009N coupling. There is no interchanging of gaskets or housings between coupling styles.

Use Of Flushseal Gaskets For Dry Pipe Systems

NOTE: 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 similiar benefits as a FlushSeal gasket for dry pipe systems. It should be noted that standard Victaulic 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.

Trademarks
Victaulic, FireLock EZ, and Installation-Ready are registered trademarks of Victaulic Company.

Victaulic® FireLock™ Fittings

10.03

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 8"/DN32 – DN200

Maximum Working Pressure

- Pressure ratings for Victaulic FireLock™ Fittings conform to the ratings of Victaulic FireLock EZ™ Style 009N couplings (refer to publication 10.64 for more information).

Application

- 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.
- Connects pipe, provides change in direction and adapts sizes or components

Pipe Materials

- Carbon steel

2.0 CERTIFICATION/LISTINGS

c UL us LISTED FM LPCB VdS CE CCC

EN 10311
Regulation (EU)
No. 305/2011

3.0 SPECIFICATIONS – MATERIAL

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

Fitting Coating:

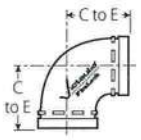
- ☐ Orange enamel.
- ☐ Red enamel in Europe, Middle East, Africa, and India.
- ☐ Optional: Hot dipped galvanized.

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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

4.0 DIMENSIONS



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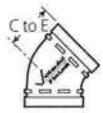

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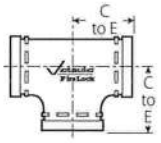


No. 002

No. 006

Nominal Size inches DN	Actual Outside Diameter inches mm	No. 001 90° Elbow C to E inches mm	No. 001 90° Elbow Approximate Weight Each lb kg	No. 003 45° Elbow C to E inches mm	No. 003 45° Elbow Approximate Weight Each lb kg	No. 002 Straight Tee C to E inches mm	No. 002 Straight Tee Approximate Weight Each lb kg	No. 006 Cap T inches mm	No. 006 Cap Approximate Weight Each lb kg
1¼	1.660	—	—	—	—	—	—	0.82	0.3
DN32	42.4	—	—	—	—	—	—	21	0.1
1½	1.900	—	—	—	—	—	—	0.82	0.4
DN40	48.3	—	—	—	—	—	—	21	0.2
2	2.375	2.75	1.7	2.00	1.8	2.75	2.4	0.88	0.6
DN50	60.3	70	0.8	51	0.8	70	1.1	22	0.3
2½	2.875	3.00	3.1	2.25	2.2	3.00	3.6	0.88	1.0
	73.0	76	1.4	57	1.0	76	1.6	22	0.5
	3.000	3.00	3.30	2.25	2.4	3.00	3.8	—	—
DN65	76.1	76	1.5	57	1.1	76	1.7		
3	3.500	3.38	4.0	2.50	3.1	3.38	5.3	0.88	1.2
DN80	88.9	86	1.8	64	1.4	86	2.4	22	0.5
	4.250	4.00	5.7	3.00	5.1	4.00	7.5	—	—
	108.0	102	2.6	76	2.3	102	3.4		
4	4.500	4.00	6.7	3.00	5.6	4.00	8.7	1.00	2.4
DN100	114.3	102	3.0	76	2.5	102	3.9	25	1.1
5	5.563	4.88	12.6	3.25	8.3	4.88	15.7	1.00	4.1
	141.3	124	5.7	83	3.8	124	7.1	25	1.9
	5.500	4.88	12.4	3.25	8.2	4.88	15.4	—	—
DN125	139.7	124	5.6	82.6	3.7	124	6.9		
	6.250	5.50	12.6	3.50	9.2	5.50	17.9	—	—
	158.8	140	5.7	89	4.2	140	8.0		
6	6.625	5.50	18.3	3.50	11.7	5.50	22.7	1.00	5.9
DN150	168.3	140	8.3	89	5.3	140	10.3	25	2.7
	6.500	5.43	17.6	3.50	11.4	5.50	22.0	—	—
	165.1	140	7.9	89	5.2	140	9.9		
8	8.625	6.81	25.5	4.25	20.4	6.94	38.7	1.13	12.7
DN200	219.1	173	11.6	108	9.3	176	17.6	29	5.8
	8.515	6.81	23.1	—	—	6.94	33.6	—	—
	216.3	173	10.5	—	—	176	15.2	—	—

5.0 PERFORMANCE

Flow Data

Size		Frictional Resistance Equivalent of Straight Pipe[1]			
		Elbows		No. 002 Straight Tee	
Nominal Size inches DN	Actual Outside Diameter inches mm	No. 001 90° Elbow feet meters	No. 003 45° Elbow feet meters	Branch feet meters	Run feet meters
1¼	1.660	—	—	—	—
DN32	42.4	—	—	—	—
1½	1.900	—	—	—	—
DN40	48.3	—	—	—	—
2	2.375	3.5	1.8	8.5	3.5
DN50	60.3	1.1	0.5	2.6	1.1
2½	2.875	4.3	2.2	10.8	4.3
	73.0	1.3	0.7	3.3	1.3
	3.000	4.5	2.3	11.0	4.5
DN65	76.1	1.4	0.7	3.4	1.4
3	3.500	5.0	2.6	13.0	5.0
DN80	88.9	1.5	0.8	4.0	1.5
	4.250	6.4	3.2	15.3	6.4
	108.0	2.0	0.9	4.7	2.0
4	4.500	6.8	3.4	16.0	6.8
DN100	114.3	2.1	1.0	4.9	2.1
5	5.563	8.5	4.2	21.0	8.5
	141.3	2.6	1.3	6.4	2.6
	5.500	8.3	4.1	20.6	8.3
DN125	139.7	2.5	1.3	6.3	2.5
	6.250	9.4	4.9	25.0	9.6
	158.8	2.9	1.5	7.6	2.9
6	6.625	10.0	5.0	25.0	10.0
DN150	168.3	3.0	1.5	7.6	3.0
	6.500	9.8	4.9	24.5	9.8
	165.1	3.0	1.5	7.5	3.0
8	8.625	13.0	5.0	33.0	13.0
DN200	219.1	4.0	1.5	10.1	4.0
	8.515	13.0	—	33.0	13.0
	216.3	4.0	—	10.1	4.0

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

6.0 NOTIFICATIONS

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/009N couplings.

7.0 REFERENCE MATERIALS

10.64: Victaulic® FireLock™ Rigid Coupling Style 009N

10.02: Victaulic® FireLock™ Rigid Coupling Style 005H with Vic-Plus™ Gasket System

29.01: Victaulic® Terms and Conditions of Sale

10.03 1539 Rev N Updated 09/2017

Victaulic® Drain Elbow
No. 10-DR

10.05

Approvals/Listings

See Victaulic publication 10.01 for details

Product Description

No. 10-DR drain elbows are specifically designed for use on fire protection standpipes. The drain is drilled and tapped for a 1"/25 mm NPT outlet.

Constructed of durable ductile iron all sizes conform to the ratings of Style 77 couplings. No.10-DR elbows are supplied with grooves or shoulders. These fittings are not intended for use with Victaulic Plain End couplings.

When connecting wafer or lug-type butterfly valves directly to Victaulic drain elbows with Style 741 or 743 Vic-Flange® Adapters or Style 744 FireLock® Flange Adapters, check disc clearance dimensions with the I.D. dimension of the fitting.

Material Specifications

Housing:

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

Housing Coating: (specify choice)

Standard: Orange enamel.

☐ Optional: Hot dipped galvanized and others.

Job/Owner

System No.	
Location	

Contractor

Submitted By	
Date	

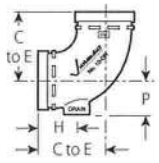
Engineer

Spec Section	
Paragraph	
Approved	
Date	

10.05 1509 Rev E Updated 11/2013

Dimensions

No 10-DR



Fitting Size		Dimensions			Approximate Weight Each
Nominal Size inches mm	Actual Outside Diameter inches mm	C - E inches mm	H inches mm	P inches mm	lbs. kg
2 ½ 65	2.875 73.0	3.75 95	2.75 70	1.68 43	5.2 2.4
3 80	3.500 88.9	4.25 108	2.75 70	2.10 53	5.3 2.4
4 100	4.500 114.3	5.00 127	2.75 70	2.60 66	8.8 4.0
6 150	6.625 168.3	6.50 165	2.75 70	3.65 93	18.7 8.5

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.

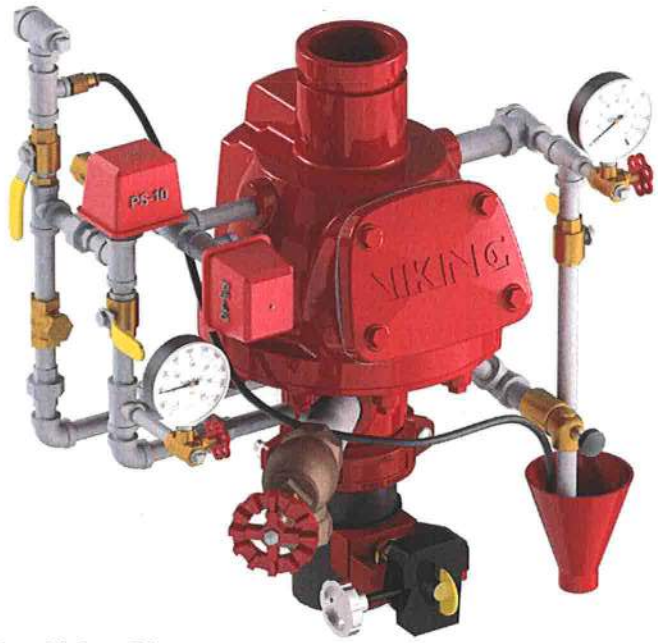
Trademarks
Victaulic®, FireLock and Vic-Flange are registered trademarks of Victaulic Company.

VALVES

VIKING® TECHNICAL DATA

MODEL F2 DRY VALVE (PRETRIMMED)

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



4" Dry Valve Shown

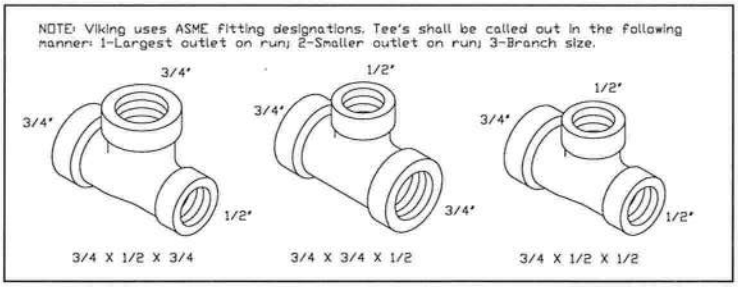
Model F Dry Valve with Trim	
Valve Size	Part Number
3"	13764PTR
4"	13765PTR
6"	13766PTR
Standard Trim Sets include galvanized nipples and fittings.	

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

Notes: For use with Trim Charts on Pages 2-4

General Notes:

- Valve must be trimmed as shown. Any deviation from trim size or arrangement may affect the proper operation of the valve.
- All pipe, 3/4" (20 mm) and smaller, shall be galvanized steel except when other materials are specified in the Technical Data for the system used.
- Dimensions in parentheses are millimeter and may be approximations.
- Viking uses ASME fitting designations. Tees shall be called out in the following order: 1 - Largest outlet on run; 2 - Smaller outlet on run; 3 - Branch size.



Note 1: Water flow alarm connections: 3/4" (20 mm) NPT for Water Motor Alarm (strainer required) and 1/2" (15 mm) NPT for electric Alarm Pressure Switch to activate electric alarm bells.

Note 2: 1" (25 mm) NPT connection for sprinkler.

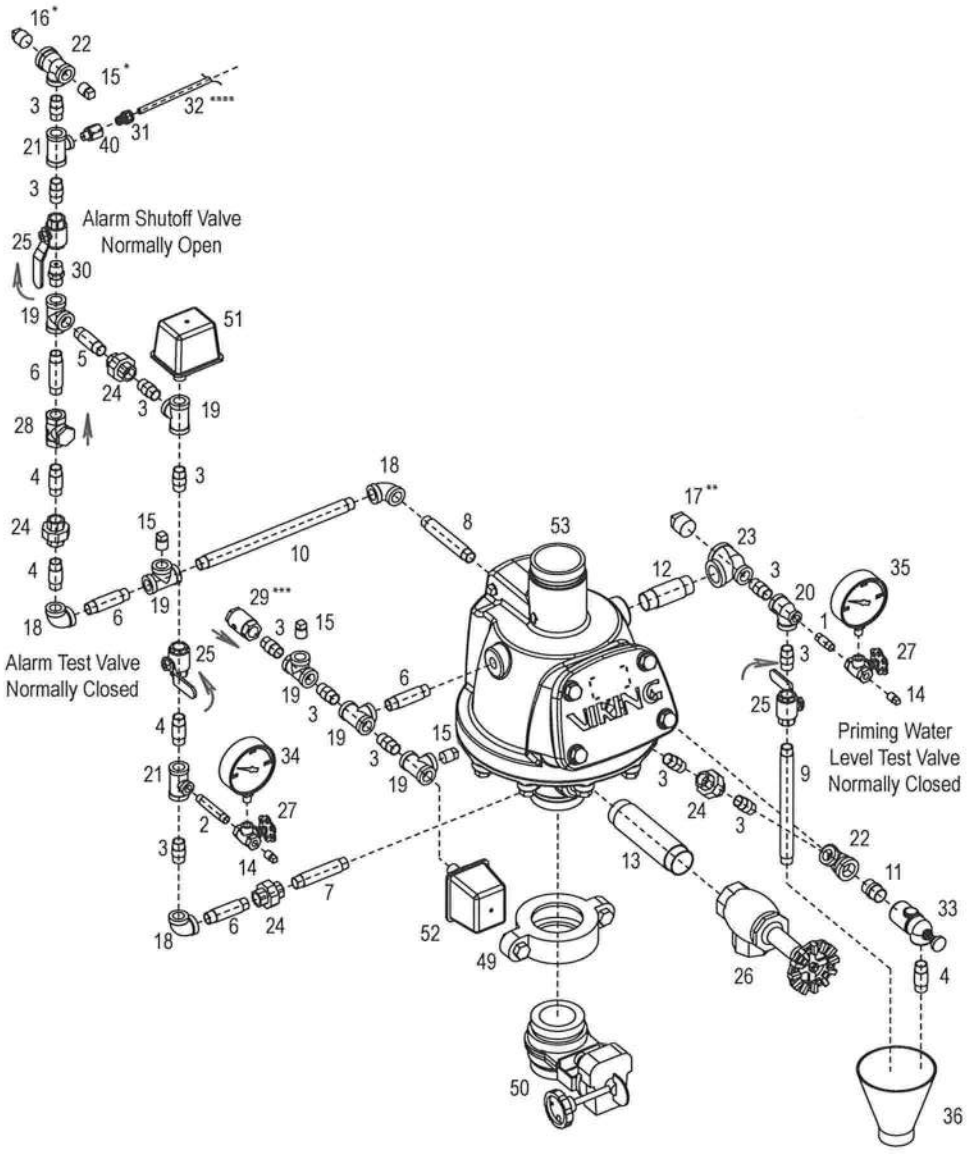
Note 3: Locate listed Air Maintenance Device (order separately) as close to this connection as possible. Refer to installation standards. Recommended location for connection of optional Air Maintenance Compressor.

Note 4: Tube must discharge TO OPEN DRAIN. DO NOT crimp or plug tube. Secure tube to 1/2" x 9" nipple below priming water level test valve with cable tie included in trim kit.

TECHNICAL DATA

MODEL F2 DRY VALVE (PRETRIMMED)

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



* See Note 1
** See Note 2
*** See Note 3
**** See Note 4

Ref.	Description
1	1/4" x 1-1/2" (38 mm)
2	1/4" x 3" (76 mm)
3	1/2" x 1-1/2" (38 mm)
4	1/2" x 2" (51 mm)
5	1/2" x 2-1/2" (64 mm)
6	1/2" x 3" (76 mm)
7	1/2" x 4" (102 mm)
8	1/2" x 5" (127 mm)
9	1/2" x 9" (229 mm)
10	1/2" x 12" (305 mm)
11	3/4" x CL
12	1" x 3-1/2" (89 mm)
13	1-1/2" x 7" (178 mm)
14	1/4" Plug
15	1/2" Plug
16	3/4" Plug
17	1" Plug
18	1/2" Elbow
19	1/2" x 1/2" x 1/2" Tee
20	1/2" x 1/4" x 1/2" Tee
21	1/2 x 1/2" x 1/4" Tee
22	3/4" x 1/2" x 1/2" Tee
23	1" x 1/2" x 1" Tee
24	1/2" Union
25	1/2" Ball Valve
26	1-1/2" Angle Valve
27	Side Outlet Valve
28	Check Valve
29	Spring Loaded Check Valve
30	7/32" Restricted Orifice
31	3/8" Connection
32	3/8" Polyethylene Tube
33	Drip Check
34	Water Gauge
35	Air Gauge
36	Drain Cup
40	1/16" Restricted Orifice
49	Grooved Coupling
50	Butterfly Valve
51	Pressure Switch
52	Pressure Switch
53	F2 Dry Pipe Valve 3"

Figure 1: 3" Model F2 Dry Valve Trim Chart

VIKING®

TECHNICAL DATA

MODEL F2 DRY VALVE (PRETRIMMED)

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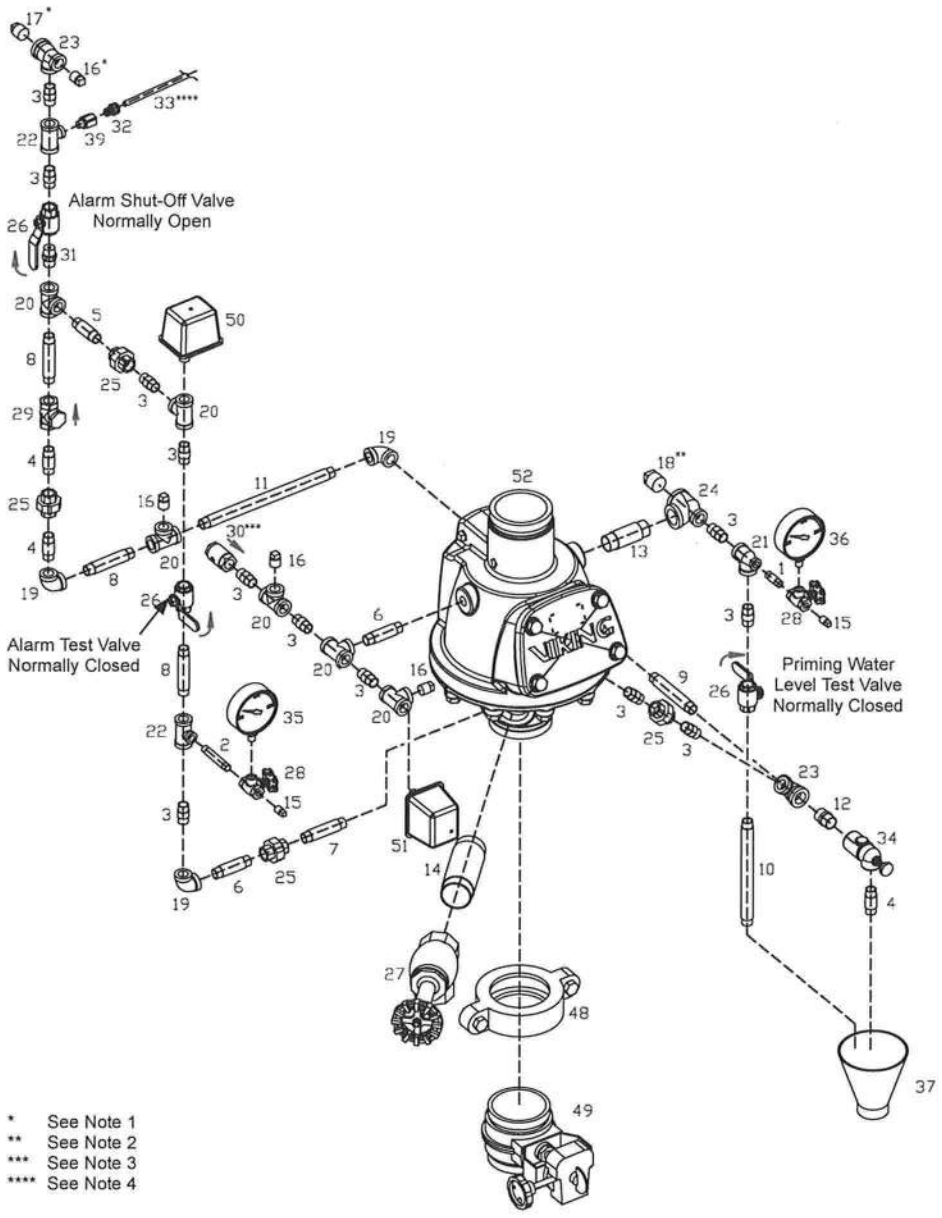

Ref.	Description
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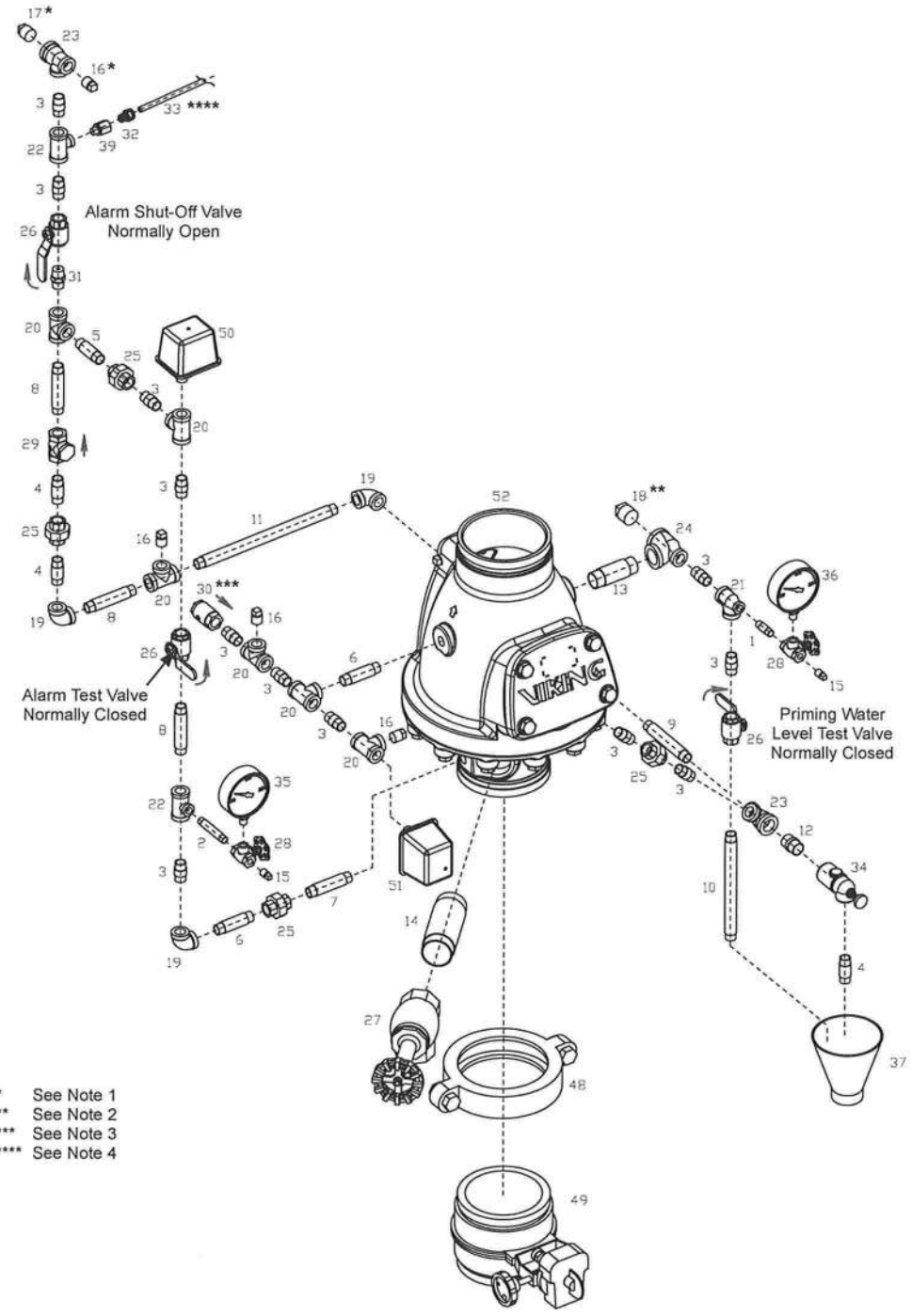
2	1/4" x 3" (76 mm)
3	1/2" x 1-1/2" (38 mm)
4	1/2" x 2" (51 mm)
5	1/2" x 2-1/2" (64 mm)
6	1/2" x 3" (76 mm)
7	1/2" x 3-1/2" (89 mm)
8	1/2" x 4" (102 mm)
9	1/2" x 5" (127 mm)
10	1/2" x 9" (229 mm)
11	1/2" x 11-1/2" (292 mm)
12	3/4" x CL
13	1" x 3-1/2" (89 mm)
14	2" x 6" (152 mm)
15	1/4" Plug
16	1/2" Plug
17	3/4" Plug
18	1" Plug
19	1/2" Elbow
20	1/2" x 1/2" x 1/2" Tee
21	1/2" x 1/4" x 1/2" Tee
22	1/2 x 1/2" x 1/4" Tee
23	3/4" x 1/2" x 1/2" Tee
24	1" x 1/2" x 1" Tee
25	1/2" Union
26	1/2" Ball Valve
27	2" Angle Valve
28	Side Outlet Valve
29	Check Valve
30	Spring Loaded Check Valve
31	7/32" Restricted Orifice
32	3/8" Connection
33	3/8" Polyethylene Tube
34	Drip Check
35	Water Gauge
36	Air Gauge
37	Drain Cup
39	1/16" Restricted Orifice
48	Grooved Coupling
49	Butterfly Valve
50	Pressure Switch
51	Pressure Switch
52	F2 Dry Pipe Valve 4"

Figure 2: 4" Model F2 Dry Valve Trim Chart

TECHNICAL DATA

MODEL F2 DRY VALVE (PRETRIMMED)

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



Ref.	Description
1	1/4" x 1-1/2" (38 mm)
2	1/4" x 3" (76 mm)
3	1/2" x 1-1/2" (38 mm)
4	1/2" x 2" (51 mm)
5	1/2" x 2-1/2" (64 mm)
6	1/2" x 3" (76 mm)
7	1/2" x 3-1/2" (89 mm)
8	1/2" x 4" (102 mm)
9	1/2" x 5" (127 mm)
10	1/2" x 9" (229 mm)
11	1/2" x 12" (305 mm)
12	3/4" x CL
13	1" x 3-1/2" (89 mm)
14	2" x 6" (152 mm)
15	1/4" Plug
16	1/2" Plug
17	3/4" Plug
18	1" Plug
19	1/2" Elbow
20	1/2" x 1/2" x 1/2" Tee
21	1/2" x 1/4" x 1/2" Tee
22	1/2 x 1/2" x 1/4" Tee
23	3/4" x 1/2" x 1/2" Tee
24	1" x 1/2" x 1" Tee
25	1/2" Union
26	1/2" Ball Valve
27	2" Angle Valve
28	Side Outlet Valve
29	Check Valve
30	Spring Loaded Check Valve
31	7/32" Restricted Orifice
32	3/8" Connection
33	3/8" Polyethylene Tube
34	Drip Check
35	Water Gauge
36	Air Gauge
37	Drain Cup
39	1/16" Restricted Orifice
48	Grooved Coupling
49	Butterfly Valve
50	Pressure Switch
51	Pressure Switch
52	F2 Dry Pipe Valve 6"

Figure 3: 6" Model F2 Dry Valve Trim Chart

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

The Series 705 Butterfly Valve features a weatherproof actuator housing Approved for indoor or outdoor use, a ductile iron body and disc with Nitrile seats. Designed for fire protection services only. Victaulic FireLock Series 705 Butterfly Valve is cULus Listed, LPCB Listed, FM and VdS Approved for 300 psi/2068 kPa service. Contact Victaulic for details of agency approvals.

APPROVALS AND LISTINGS

	Approval/Listing Service Pressures Series 705 Butterfly Valve			
	cULus	FM	VdS	LPCB
2"/50mm	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa	up to 300psi/2068kPa
2 1/2"/65mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
76.1mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
3"/80mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
4"/100mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
5"/125mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
139.7mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
6"/150mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
165.1mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
8"/200mm	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa	up to 300psi/2068kPa
10"/250mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa
12"/300mm	up to 300psi/2068kPa	up to 300psi/2068kPa	n/a	up to 300psi/2068kPa

JOB/OWNER
System No. _____
Location _____

CONTRACTOR
Submitted By _____
Date _____

ENGINEER
Spec Sect _____ Para _____
Approved _____
Date _____

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

MATERIAL SPECIFICATIONS

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

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

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

Coating: Black alkyd enamel

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

Seat:

- **Grade "E" EPDM**

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless Steel with TFE lining

Stem Seals: EPDM

Stem Retaining Ring: Carbon steel

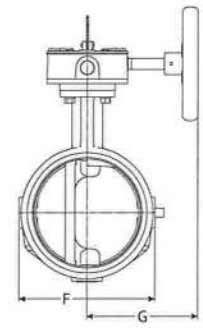
Actuator:

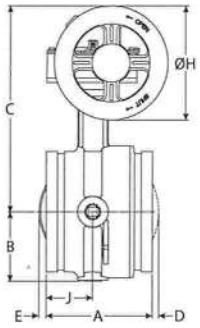
- 2 - 8"/50 - 200mm: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing
- 10 - 12"/250 - 300mm: Steel worm and cast iron quadrant gear, in a cast iron housing

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

DIMENSIONS –





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

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

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

PERFORMANCE

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

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

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

PERFORMANCE

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

Formulas for C_V Values:

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

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

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

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

Formulas for K_V Values:

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

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

Where:
ΔP = Pressure Drop (psi)
K_v = Flow Coefficient

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

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

SWITCH AND WIRING

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

   10 amps @ 125 or 250 VAC/60 Hz

   0.50 amps @ 125 VDC

   0.25 amps @ 250 VDC

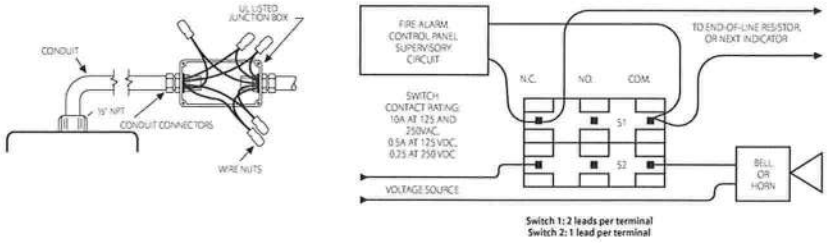
3. **Switches supervise the valve in the "OPEN" position.**
4. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate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

   Switch #1 = S1 For connection to the supervisory circuit of a UL Listed alarm control panel

   Switch #2 = S2 Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

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

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



NOTE: The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully open. When the valve is fully open, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).

Only S1 (two leads per terminal) may be connected to the fire alarm control panel.

The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

FireLock® Butterfly Valve

SERIES 705
WITH WEATHERPROOF ACTUATOR

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.

INSTALLATION

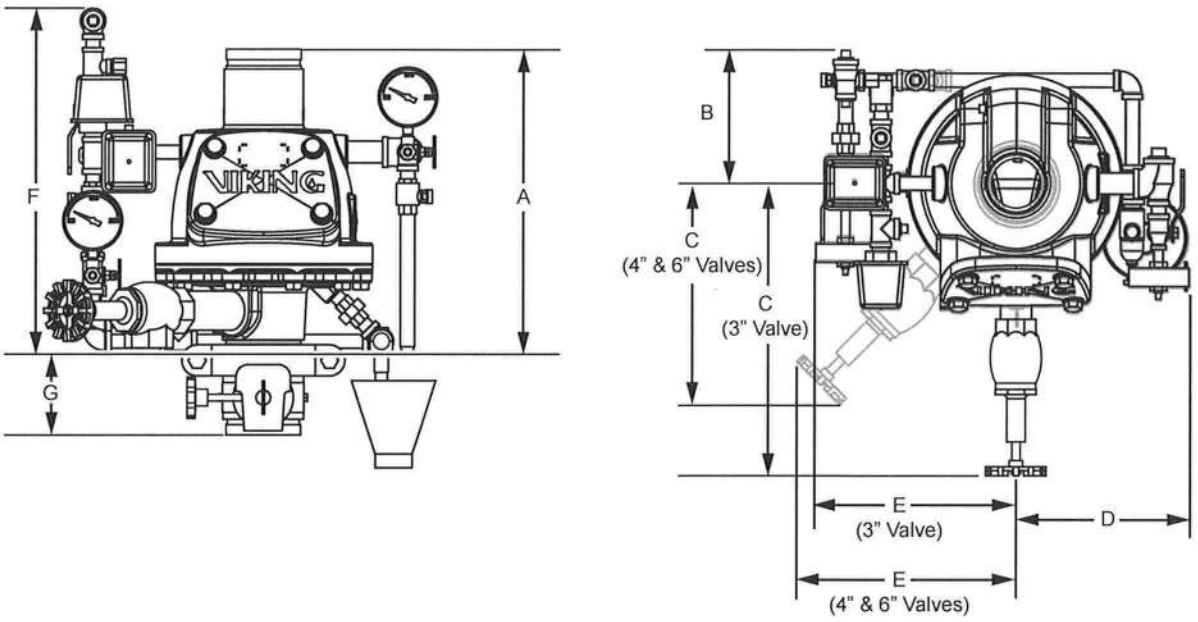
Reference should always be made to the installation sheet included with the valve. Verify you have the latest revision by visiting our website at www.victaulic.com. Further reference can be found in the I-100 Victaulic Field Installation Handbook.

10.81 5662 REV D UPDATED 03/2013

TECHNICAL DATA

MODEL F2 DRY VALVE (PRETRIMMED)

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



Valve Size	A	B	C	D	E	F	G
3"	18-3/8" (467)	8-1/16" (205)	17-3/4" (451)	10-9/16" (268)	12-3/16" (309)	19-7/8" (506)	3-15/16" (100)
4"	18-7/16" (469)	7-7/8" (200)	13-1/2" (343)	10-1/2" (267)	13-5/16" (338)	20-15/16" (532)	4-13/16" (123)
6"	19-1/4" (488)	7-7/8" (200)	13-1/2" (343)	10-15/16" (278)	13-5/16" (338)	20-9/16" (523)	6-1/2" (166)

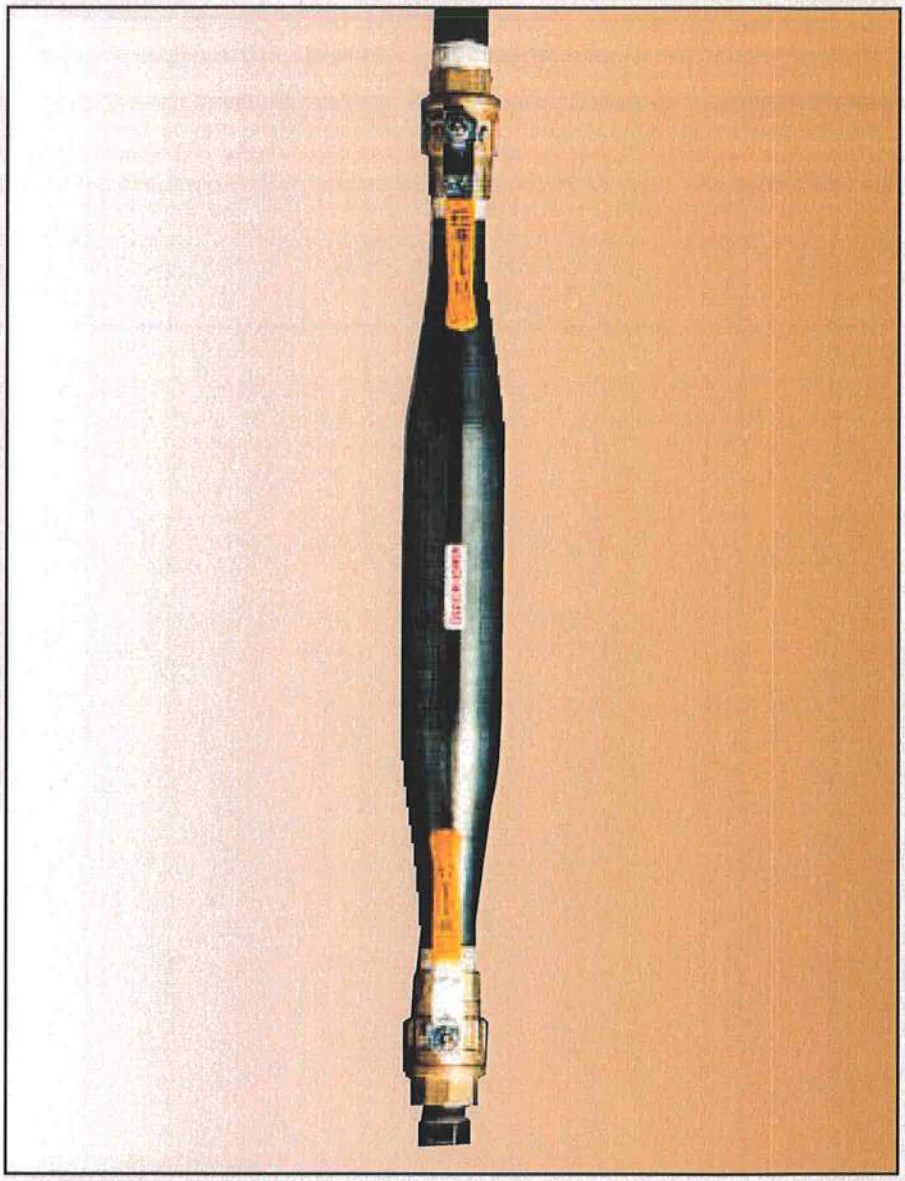
Figure 4 - Dry Valve with Conventional Trim with No Accelerator

tyco

Fire Products

MODEL DD-1

Wiliag™ Condensate Drain



Features and Benefits

- *Ready to Install*
- *No Power Machine for Repair*
- *Eliminates Searching for Materials*
- *Eliminates Potential Leaks*
- *Eliminates Labor of Fabrication*
- *Classic Look of a Professional Job*
- *Net Weight Only 6.25 lbs.*
- *Overall Length 24" (615 mm)*
- *Turning Radius 2.5" (64 mm)*

General Description

The DD-1 Condensate Drain is a pre-manufactured drum drip for installation in Dry-Pipe, Deluge and Pre-Action Automatic Sprinkler Systems.

The DD-1 Condensate Drain is made from Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing. ASTM A513. After the machining process is complete, the 1" male outlets shall have a wall thickness greater than or equal to 0.133 inches and an O.D. of 1.315 inches.

Other drains are usually constructed from various parts that must be assembled at the time of installation.

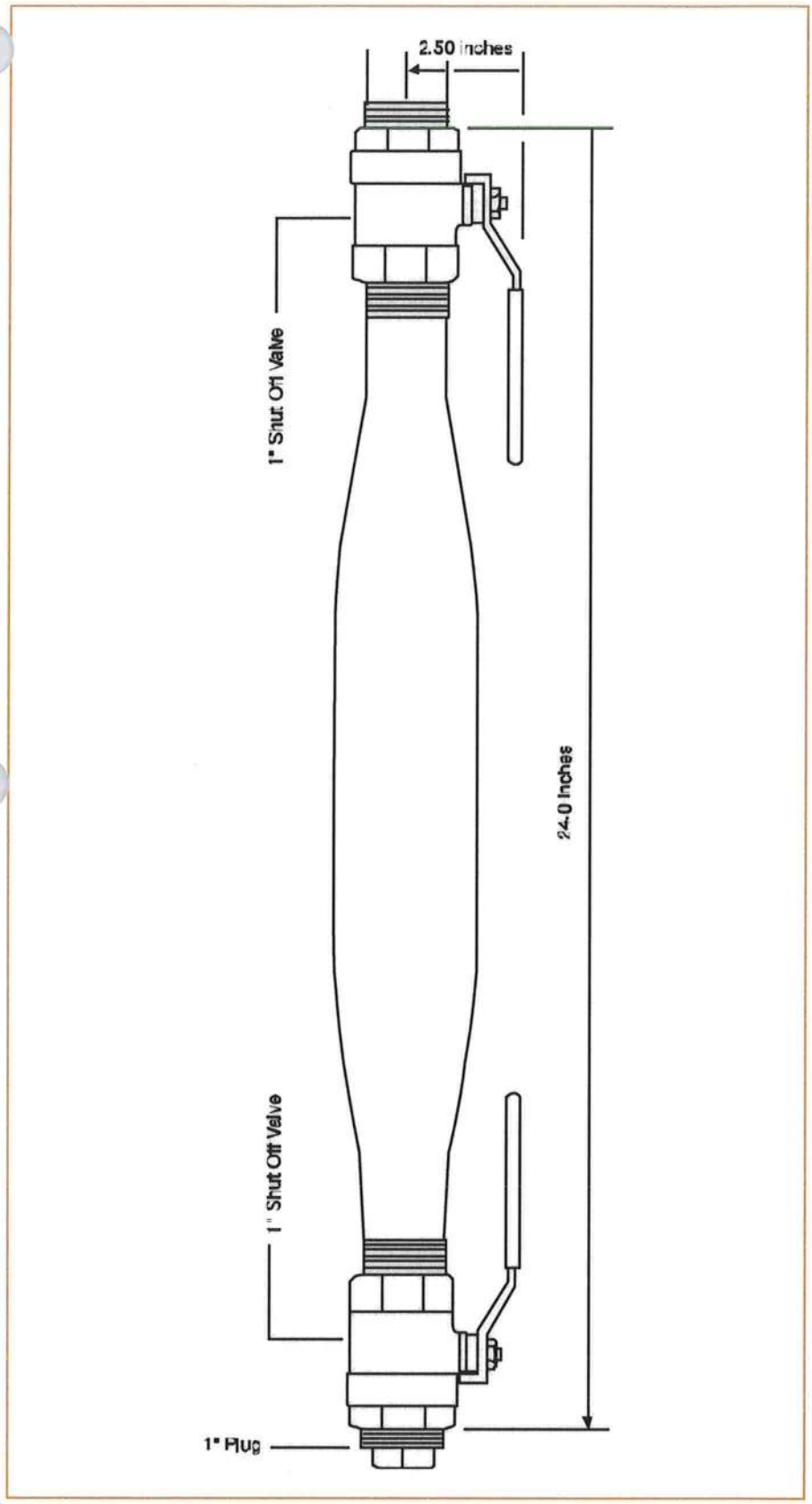
There is no comparison in the quality and look of the DD-1 Condensate Drain and it is quick and easy to install.

Technical Data

- Volume: 0.1875 gallons
- Standard Working Pressure of 175 psi
- Valve type and manufacturer may vary
- Length: 24" (615 mm)
- Turning radius 2.5" (64 mm)
- Shipping weight: 6.26 pounds
- U.S. Patent number 6,102,066

(Always refer to Technical Data Sheet for complete description of all Listing criteria, design parameters, installation instructions, care and maintenance guidelines, and our Limited Warranty.)

MODEL DD-1



The Wiliag™ Condensate Drain includes:

- One condensate barrel
- Two 1" shut off valves (valve manufacturer may vary)
- One 1" plug

Ordering Procedure

Contact your local distributor for availability.

Model DD-1:
Specify: Model DD-1
Condensate Drain
P/N 52-380-1-001

Traditional Field Generated Drum-Drip

tyco
Fire Products

Tyco Fire Products
Technical Services
Ph: 800-791-9312
Fax: 800-791-5500
www.Tyco-Fire.com

Printed in USA /DD-1/4M/CPI/09-04

DEVICES

GENERAL AIR PRODUCTS

Complete Dry Sprinkler System Filling Solutions

OL Plus Series — Oil-Less, Riser Mount Air Compressors for Dry Pipe & Pre-Action Sprinkler Systems

General Air Products newly improved OL Plus Series Oil Less Riser Mount Fire Protection Air Compressors are UL 1450-VDUR Listed and specifically designed to fill dry pipe and pre-action fire sprinkler systems to 40 PSI within 30 minutes per NFPA 13.

- **UL 1450-VDUR Listed**
- **Oil-Less Piston Compressor**
- **UL Listed, Pre-Set Pressure Switch**
- **Fully Automatic, Direct Drive**
- **ASME Pressure Safety Valve**
- **Bubble Tight Air Check Valve**
- **Pre-Wired & Pre-Tested**
- **Lifetime Technical Support**
- **Includes Riser Mounting Bracket, 30" Stainless Steel Flex Hose & Union**

System Capacity* (gal) @ 40 PSI	Model Number	Average CFM**	Motor HP	Voltage (volts)	Amperage (amps)		Recommended Wire Size (gage)			Unit Weight (lbs)
					FLA	Start Up	25' Run	50' Run	100' Run	
120	OLR12016AC	1.46	1/6	115	3.5	25	12	12	12	29
				208-230	1.9	13.3	12	12	12	
250	OLR25033AC	3.03	1/3	115	4.3	30.1	12	12	10	33
				208-230	2.3	16.1	12	12	12	
400	OLR40050AC	4.85	1/2	115	9.4	65.8	12	10	6	45
				208-230	4.9	34.3	12	12	12	
430	OLR43075AC	5.21	3/4	115	11.6	81.2	12	10	6	48
				208-230	5.8	40.6	12	12	12	
615	OLR615100AC+	7.46	1	115	18	126	12	10	6	48
				208-230	9	63	12	12	12	
915	OLR915150AC+	11.10	1 1/2	115	16.6	116.2	12	12	6	60
				208-230	8.3	58.1	12	12	12	
1225	OLR1225200AC+	14.85	2	208-230	11.6	81.2	12	12	10	70

* System Capacity based on 30min fill at 40 PSIG and 70°F system temperature.

⚠ WARNING: Cancer and Reproductive Harm - www.p65warnings.ca.gov

** CFM is based on the average free air delivery as the system fills from 0 to 40 PSIG.

+ Compressor has a capacity above 5.5 CFM at 10 PSIG. Air Maintenence Device required per NFPA 13.

Note: All information is subject to change without notice. Consult factory for most up-to-date product details.

Fire Protection Air Compressor Accessories

Air Maintenance Device - *Part # AMD-1*

The AMD-1 regulates the volume of air being delivered to the sprinkler system by the air compressor.

Per NFPA 13 - An Air Maintenance Device is required on every dry system unless the air compressor has a capacity less than 5.5 ft³/min at 10 PSI.

Motor Line Starter - *Thermal Overload Protection*

SINGLE PHASE MOTOR LINE STARTERS				
MAX HP	115V	208/230V	Size	Model
	½ HP	1 HP	00	MG00A
	1 HP	2 HP	0	MGX0A
	2 HP	3 HP	1	MG01A
	3 HP	5 HP	1P	MG15A

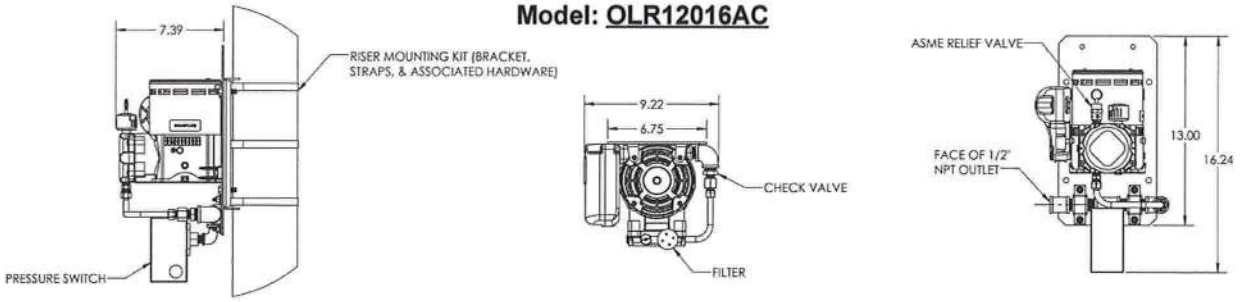
When Ordering a Motor Starter you must specify HP, Voltage & Phase.

GENERAL AIR PRODUCTS

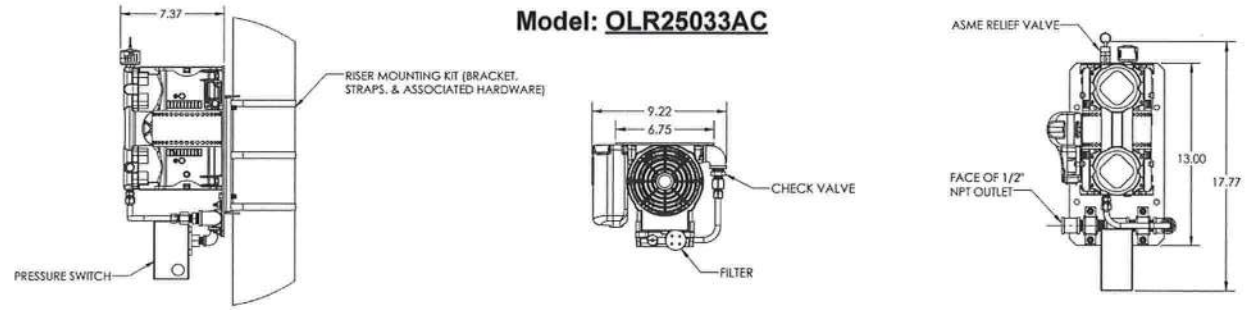
Complete Dry Sprinkler System Filling Solutions

OL Plus Series - Riser Mount Fire Protection Air Compressors

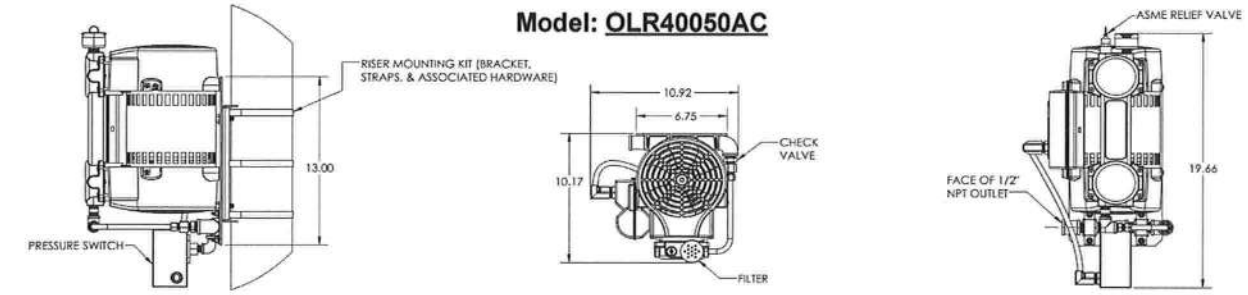
Model: OLR12016AC



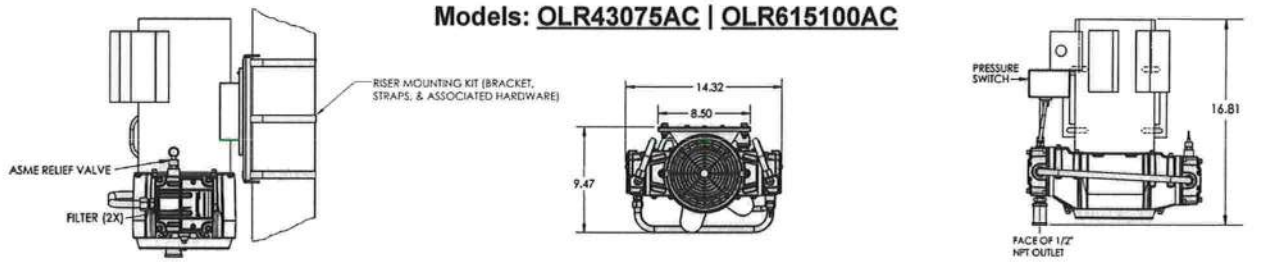
Model: OLR25033AC



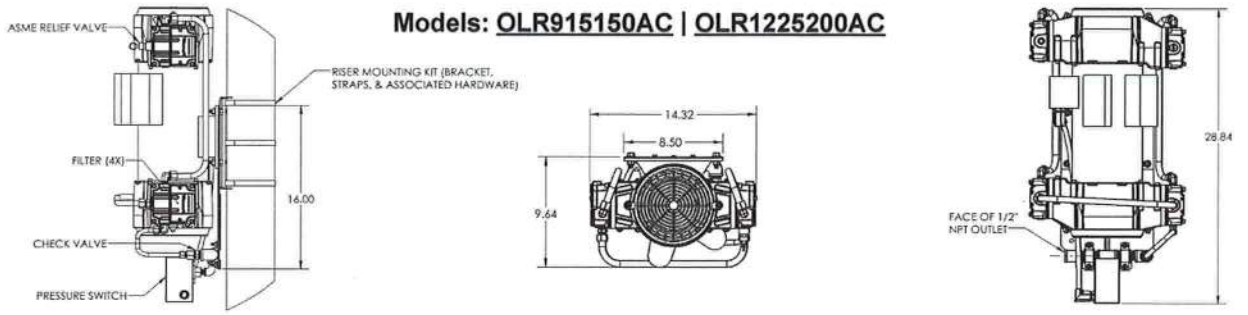
Model: OLR40050AC



Models: OLR43075AC | OLR615100AC



Models: OLR915150AC | OLR1225200AC



POTTER
The Symbol of Protection

PS10 Series
Pressure Switch

Features

- One or two switch models available
- Independent switch adjustment on two switch models, no tools needed
- Two 1/2" conduit/cable entrances
- Separate isolated wiring chambers
- Non-corrosive pressure connection
- VdS version available
- Non-Conductive enclosure

NOTICE

This document contains important information on the installation and operation of PS10 pressure switches. Please read all instructions carefully before beginning installation. A copy of this document is required by NFPA 72 to be maintained on site.

SIGNALING c UL us LISTED — FM APPROVED — CE — LPCB

Installation

The Potter PS10 Series Pressure Actuated Switches are designed for the detection of a waterflow condition in automatic fire sprinkler systems of particular designs such as wet pipe systems with alarm check valves, dry pipe, preaction, or deluge valves. The PS10 is also suitable to provide a low pressure supervisory signal; adjustable between 4 and 15 psi (0,27 and 1,03 bar).

1. Apply Teflon tape to the threaded male connection on the device. (Do not use pipe dope)
2. Device should be mounted in the upright position (threaded connection down).
3. Tighten the device using a wrench on the flats on the device.

Wiring Instructions

1. Remove the tamper resistant screw with the special key provided.
2. Carefully place a screwdriver on the edge of the knockout and sharply apply a force sufficient to dislodge the knockout plug. See Fig 9.
3. Run wires through an approved conduit connector and affix the connector to the device. NEMA 4 rated conduit and fittings are required for outdoor use.
4. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2,4,5, and 6. See Fig. 7 for two switch, one conduit wiring.

Technical Specifications

Conduit Entrances	Two knockouts for 1/2" conduit provided. Individual switch compartments and ground screw suitable for dissimilar voltages
Contact Ratings	SPDT (Form C) 10.1 Amps at 125/250VAC, 2.0 Amps at 30VDC One SPDT in PS10-1, Two SPDT in PS10-2
Cover Tamper	Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device.
Differential	2 psi (0,13 bar) typical
Dimensions	3.78"(9,6cm)Wx3.20"(8,1cm)Dx4.22"(10,7cm)H
Enclosure	Cover: Weather/UV/Flame Resistant High Impact Composite Base: Die Cast All parts have corrosion resistant finishes
Environmental Limitations	-40° F to 140°F (-40°C to 60°C) NEMA 4/IP66 Rated Enclosure indoor or outdoor when used with NEMA 4 conduit fittings
Factory Adjustment	4 - 8 psi (0,27 - 0,55 bar)
Maximum System Pressure	300 psi (20,68 bar)
Pressure Connection	Nylon 1/2" NPT male
Pressure Range	4-15 psi (0,27 - 1,03 bar)
Service Use	NFPA 13, 13D, 13R, 72

*Specifications subject to change without notice.

Testing and Adjustment

NOTE: Testing the PS10 may activate other system connected devices. The operation of the pressure alarm switch should be tested upon completion of installation and periodically thereafter in accordance with the applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently). There should be no need to adjust the PS10 when it is used as a pressure type waterflow indicator. It is factory set to comply with UL and FM standards.

Wet System

Method 1: When using PS10 and control unit with retard - connect PS10 into alarm port piping on the input side of retard chamber and electrically connect PS10 to control unit that provides a retard to compensate for surges. Insure that no unsupervised shut-off valves are present between the alarm check valve and PS10.

Method 2: When using the PS10 for local bell application or with a control that does not provide a retard feature - the PS10 must be installed on the alarm outlet side of the retard chamber of the sprinkler system.

Testing: Accomplished by opening the inspector's end-of-line test valve. Allow time to compensate for system or control retard.

NOTE: Method 2 is not applicable for remote station service use, if there is an unsupervised shut-off valve between the alarm check valve and the PS10.

Wet System With Excess Pressure

Connect PS10 into alarm port piping extending from alarm check valve. Retard provisions are not required. Insure that no unsupervised shut-off valves are present between the alarm check valve and the PS10.

Testing: Accomplished by opening the water by-pass test valve or the inspector's end-of-line test valve. When using end-of-line test, allow time for excess pressure to bleed off.

Dry System

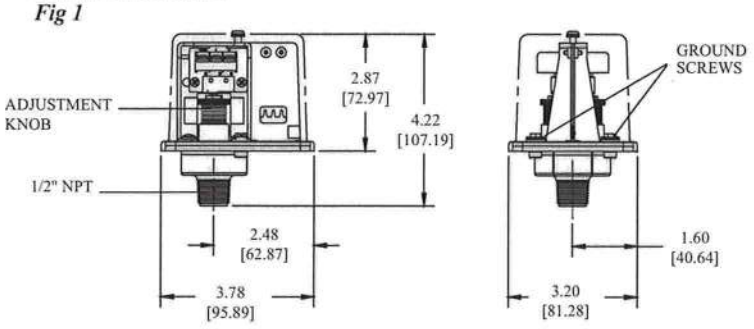
Connect PS10 into alarm port piping that extends from the intermediate chamber of the alarm check valve. Install on the outlet side of the in-line check valve of the alarm port piping. Insure that no unsupervised shut-off valves are present between the alarm check valve and the PS10.

Testing: Accomplished by opening the water by-pass test valve.

NOTE: The above tests may also activate any other circuit closer or water motor gongs that are present on the system.

Dimensions

Fig 1

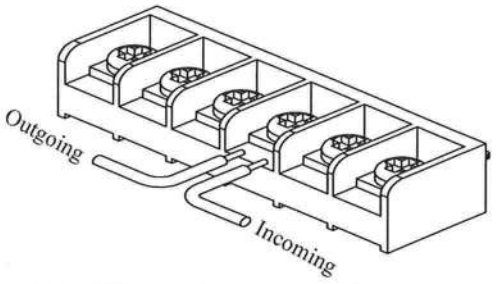


NOTE: To prevent leakage, apply Teflon tape sealant to male threads only.

DWG# 930-1

Switch Clamping Plate Terminal

Fig 2

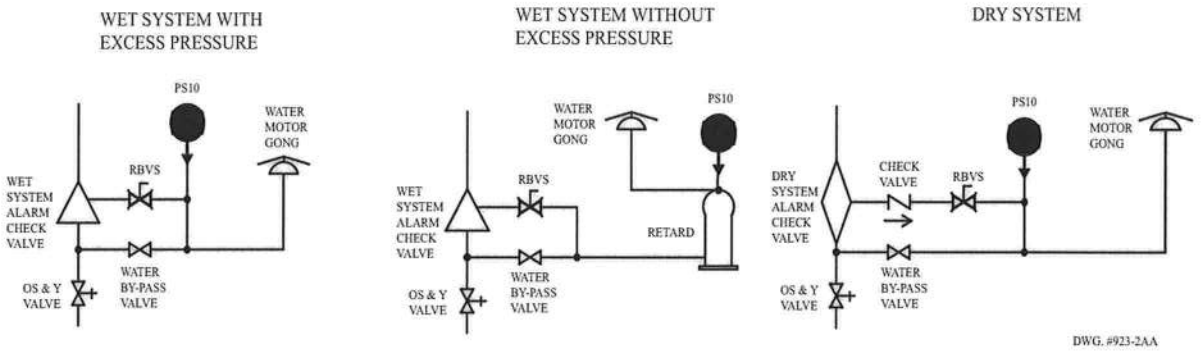


⚠ WARNING

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 becomes dislodged from under the terminal.

Typical Sprinkler Applications

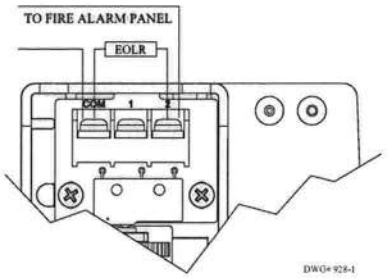
Fig 3



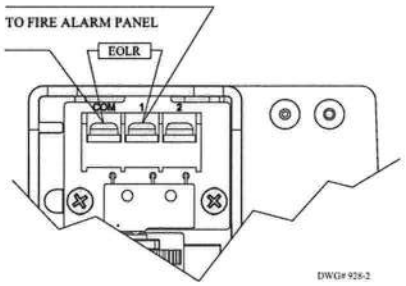
⚠ CAUTION

Closing of any shutoff valves between the alarm check valve and the PS10 will render the PS10 inoperative. To comply with NFPA-72 any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

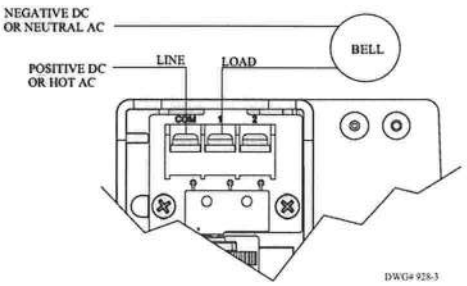
Low Pressure Signal Connection
Fig 4



Waterflow Signal Connection
Fig 5



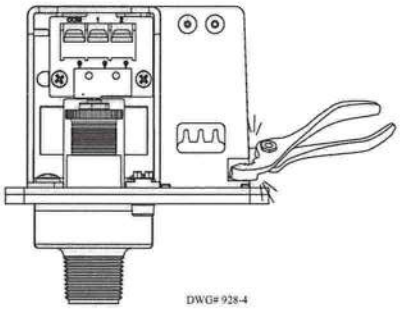
Local Bell For Waterflow Connection
Fig 6



One Conduit Wiring

Fig 7

Break out thin section of divider to provide path for wires when wiring both switches from one conduit entrance.

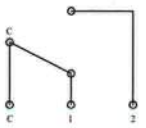


Switch Operation

Fig 8

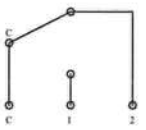
Terminal
C: Common
1: Closed when installed under normal system pressure.
2: Open when installed under normal system pressure. Closes on pressure drop. Use for low pressure supervision.

W/ PRESSURE APPLIED



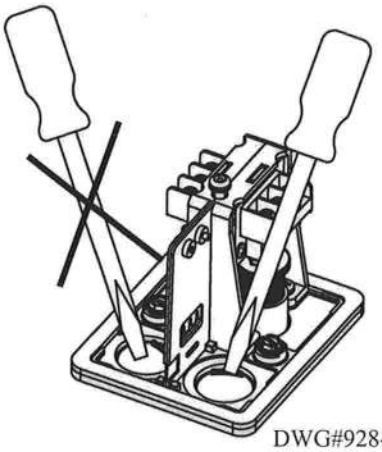
Terminal
1: Open with no pressure supplied. Closes upon detection of pressure. Use for waterflow indication.
2: Closed with no pressure applied.

W/O PRESSURE APPLIED



Removing Knockouts

Fig 9



DWG#928-5

Engineer/Architect Specifications Pressure Type Waterflow Switch

Pressure type waterflow switches; shall be a Model PS10 as manufactured by Potter Electric Signal Company, St Louis MO., and shall be installed on the fire sprinkler system as shown and or specified herein.

Switches shall be provided with a ½" NPT male pressure connection and shall be connected to the alarm port outlet of; Wet Pipe Alarm Valves, Dry Pipe Valves, Pre-Action Valves, or Deluge Valves. The pressure switch shall be actuated when the alarm line pressure reaches 4 - 8 psi (0,27 - 0,55 bar).

Pressure type waterflow switches shall have a maximum service pressure rating of 300 psi (20,68 bar) and shall be factory adjusted to operate on a pressure increase of 4 - 8 psi (0,27 - 0,55 bar)

Pressure switch shall have one or two form C contacts, switch contact rating 10.1 Amps at 125/250 VAC, 2.0 Amps at 30 VDC.

Pressure type waterflow switches shall have two conduit entrances one for each individual switch compartment to facilitate the use of dissimilar voltages for each individual switch.

The cover of the pressure type waterflow switch shall be Weather/UV/ Flame Resistant High Impact Composite with rain lip and shall attach with one tamper resistant screw. The Pressure type waterflow switch shall be suitable for indoor or outdoor service with a NEMA 4/IP66 rating.

The pressure type waterflow switch shall be UL Ulc and CSFM listed, FM and LPC approved and NYMEA accepted.

⚠ 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.
- Read all instructions carefully and understand them before starting installation. Save instructions for future use. Failure to read and understand instructions could result in improper operation of device resulting in serious injury or death.
- Risk of explosion. Not for use is hazardous locations. Serious injury or death could result.

⚠ CAUTION

- Do not tighten by grasping the switch enclosure. Use wrenching flats on the bushing only. Failure to install properly could damage the switch and cause improper operation resulting in damage to equipment and property.
- To seal threads, apply Teflon tape to male threads only. Using joint compounds or cement can obstruct the pressure port inlet and result in improper device operation and damage to equipment.
- Do not over tighten the device, standard piping practices apply.

Ordering Information

Model	Description	Part Number
PS10-1	Pressure switch with one set SPDT contacts	1340103
PS10-2	Pressure switch with two sets SPDT contacts	1340104
Hex Key		5250062
Cover Tamper Switch Kit		0090200

Tamper

Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device. For optional cover tamper switch kit, order Stock No. 0090200. See bulletin #5401200 PSCTSK.

NOTICE

Pressure switches have a normal service life of 10-15 years. However, the service life may be significantly reduced by local environmental conditions.

POTTER
The Symbol of Protection

PS40 Series

Supervisory Pressure Switch

Features

- One or two switch models available
- Independent switch adjustment on two switch models, no tools needed
- Two 1/2" conduit/cable entrances
- Separate isolated wiring chambers
- Non-corrosive pressure connection
- Non-Conductive Enclosure
- Vds version available

NOTICE

This document contains important information on the installation and operation of PS40 pressure switches. Please read all instructions carefully before beginning installation. A copy of this document is required by NFPA 72 to be maintained on site.

Installation

The Potter PS40 Series Supervisory Pressure Actuated Switches are designed primarily to detect an increase and/or decrease from normal system pressure in automatic fire sprinkler systems. Typical applications are: air/nitrogen supervision in dry pipe and pre-action systems, pressure tanks, air supplies, and water supplies. The PS40-1 has one switch and is factory set to activate at approximately 30 psi (2,1 bar) on a decrease in pressure. The PS40-2 has two switches. The Low switch is factory set to activate at approximately 30 psi (2,1 bar) on a decrease in pressure. The High switch is factory set to activate at approximately 50 psi (3,5 bar) on an increase in pressure. NFPA 72 requires a supervisory signal if the pressure increases or decreases by 10 psi from normal. The PS40 is factory set for a normal air pressure of 40 psi. See section heading Adjustments and Testing if other than factory set point is required.

1. Connect the PS40 to the system side of any shutoff or check valve.
2. Apply Teflon tape to the threaded male connection on the device. (Do not use pipe dope)
3. Device should be mounted in the upright position. (Threaded connection down)
4. Tighten the device using a wrench on the flats on the device.

Technical Specifications

Conduit Entrances	Two knockouts for 1/2" conduit provided. Individual switch compartments and ground screw suitable for dissimilar voltages
Contact Ratings	SPDT (Form C) 10.1 Amps at 125/250 VAC, 2.0 Amps at 30 VDC One SPDT in PS40-1, Two SPDT in PS40-2
Cover Tamper	Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device.
Differential	Typical 1 lb. at 10 psi (,07 at ,7 bar) 4 lbs at 60 psi (,28 at 4,1 bar)
Dimensions	3.78"(9,6cm)Wx3.20"(8,1cm)Dx4.22"(10,7cm)H
Enclosure	Cover: Weather/UV/Flame Resistant High Impact Composite Base: Die Cast All parts have corrosion resistant finishes
Environmental Limitations	-40° F to 140°F (-40°C to 60°C) NEMA 4/IP66 Rated Enclosure indoor or outdoor when used with NEMA 4 conduit fittings
Factory Adjustment	PS40-1 operates on decrease at 30 psi (2,1 bar) PS40-2 operates on increase at 50 psi (3,5 bar) and on decrease at 30 psi (2,1 bar)
Maximum System Pressure	300 psi (20,68 bar)
Pressure Connection	Nylon 1/2" NPT male
Pressure Range	10-60 psi (,7-4,1 bar)
Service Use	NFPA 13, 13D, 13R, 72

*Specifications subject to change without notice.

Wiring Instructions

1. Remove the tamper resistant screw with the special key provided.
2. If it is necessary to remove the sealed knockouts, carefully place a screwdriver on the edge of the knockout and sharply apply a force sufficient to dislodge the knockout plug. See Fig. 9.
3. Run wires through an approved conduit connector and affix the connector to the device. A NEMA-4 rated conduit fitting is required for outdoor use.
4. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2,4,5 and 6. See Fig. 7 for two switch one conduit wiring.

Adjustment and Testing

NOTE: Testing the PS40 may activate other system connected devices. The operation of the pressure supervisory switch should be tested upon completion of installation and periodically thereafter in accordance with the applicable local, national and NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

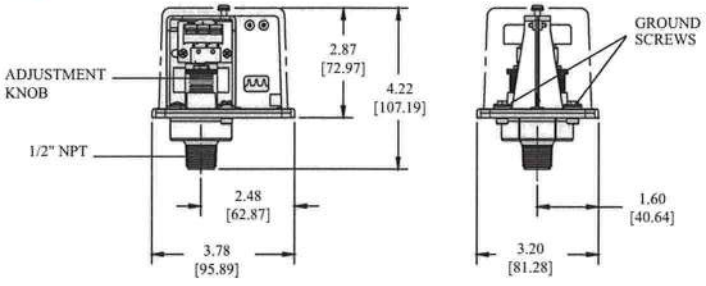
The use of a Potter BVL (see product bulletin 5400799 for details) is recommended to facilitate setting and testing of the PS40 pressure switch. When a BVL (bleeder valve) is used, the pressure to the switch can be isolated and bled from the exhaust port on the BVL without affecting the supervisory pressure of the entire system. See Fig. 3.

The operation point of the PS40 Pressure Switch can be adjusted to any point between 10 and 60 psi (0,7 - 4,11 bar) by turning the adjustment knob(s) clockwise to raise the actuation point and counter clockwise to lower the actuation point. In the case of the PS40-2, both switches operate independent of each other. Each switch may be independently adjusted to actuate at any point across the switch adjustment range. If the pressure needs to be adjusted from the factory settings, adjust the system pressure to the desired trip point. Use an ohmmeter on the appropriate contact (COM and 2 for pressure decrease and COM and 1 for pressure increase). Adjust the knurled knob until the meter changes state. At that point the switch is set for that particular pressure. Final adjustments should be verified with a pressure gauge.

The position of the top of the adjustment knob across to the printed scale on the switch bracket can be used to provide an approximate visual reference of the pressure switch setting.

Dimensions

Fig 1

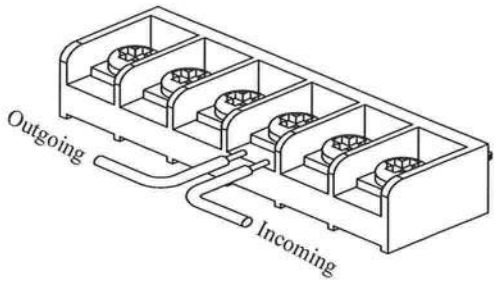


NOTE: To prevent leakage, apply Teflon tape sealant to male threads only.

DWG# 930-1

Switch Clamping Plate Terminal

Fig 2

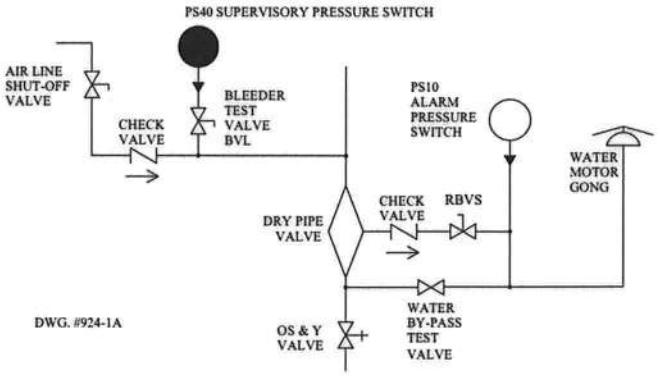


⚠ WARNING

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 becomes dislodged from under the terminal.

Typical Sprinkler Applications

Fig 3

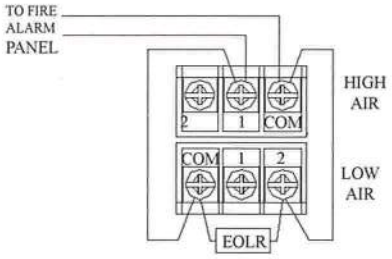


⚠ CAUTION

Closing of any shutoff valves between the alarm check valve and the PS10 will render the PS10 inoperative. To comply with IBC, IFC, and NFPA-13, any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

Typical Electrical Connections

Fig 4

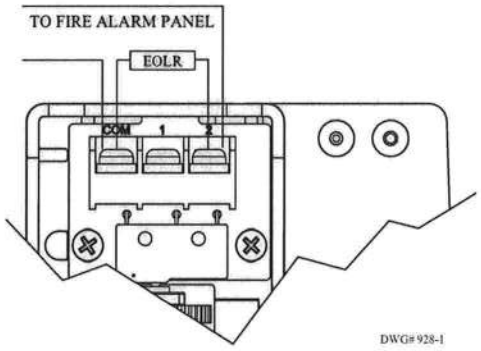


WITH NORMAL SYSTEM PRESSURE APPLIED HIGH - TERMINAL 1 WILL CLOSE ON PRESSURE INCREASE.

WITH NORMAL SYSTEM PRESSURE APPLIED LOW -TERMINAL 2 CLOSES ON PRESSURE DROP.

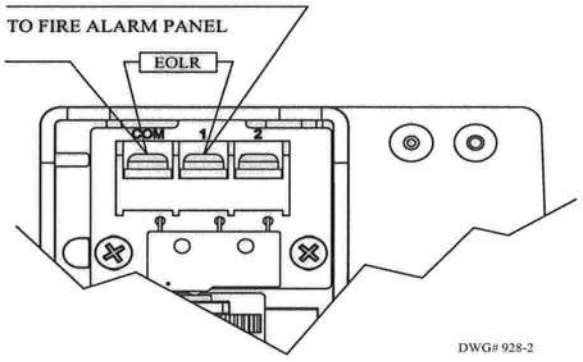
Low Pressure Signal Connection

Fig 5



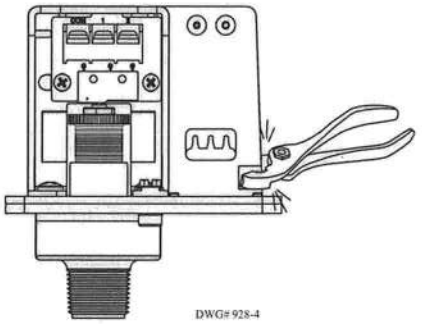
High Pressure Signal Connection

Fig 6



One Conduit Wiring

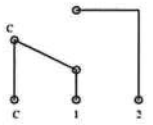
Fig 7



Changing Pressure

Fig 8

Low Pressure Switch

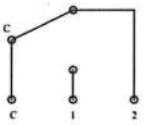


Terminal

C: Common

1. Closed when installed under normal system Pressure.
2. Open when installed under normal system pressure. Closes on pressure drop. Use for low air signal.

High Pressure Switch

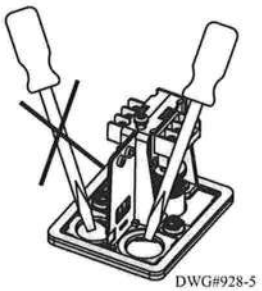


Terminal

1. Open when installed under normal system pressure. Closes on increase in pressure. Use for high air signal.
2. Closed under normal system pressure.

Removing Knockouts

Fig 9



POTTER
The Symbol of Protection

PS40 Series

Supervisory Pressure Switch

Engineer/Architect Specifications Pressure Type Waterflow Switch

Pressure type supervisory switches; shall be a Model PS40 as manufactured by Potter Electric Signal Company, St. Louis, MO., and shall be installed on the fire sprinkler system as shown and or specified herein.

Switches shall be provided with a 1/2" NPT male pressure connection to be connected into the air supply line on the system side of any shut-off valve. A Model BVL bleeder valve as supplied by Potter Electric Signal Company of St. Louis, MO., or equivalent shall be connected in line with the PS40 to provide a means of testing the operation of the supervisory switch. (See Fig. 3)

The switch unit shall contain SPDT (Form C) switch(es). One switch shall be set to operate at 30 psi (2,1 bar) on a pressure decrease. If two switches are provided, the second switch shall be set to operate at a 50 psi (3,5 bar) on a pressure increase.

Switch contacts shall be rated at 10.1 Amps at 125/250VAC and 2.0 Amps at 30VDC. The units shall have a maximum pressure rating of 300 psi (20,68 bar) and shall be adjustable from 10 to 60 psi (0,7 to 4,1 bar).

Pressure switches shall have two conduit entrances, one for each individual switch compartment to facilitate the use of dissimilar voltages for each individual switch.

The cover of the pressure switch shall be Weather/UV/Flame Resistant High Impact Composite with rain lip and shall attach with one tamper resistant screw. The pressure switch shall be suitable for indoor or outdoor service with a NEMA-4/IP66 rating.

The pressure switch shall be UL, ULC, and CSFM listed, FM and LPC approved and NYMEA accepted.

⚠ 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.
- Read all instructions carefully and understand them before starting installation. Save instructions for future use. Failure to read and understand instructions could result in improper operation of device resulting in serious injury or death.
- Risk of explosion. Not for use is hazardous locations. Serious injury or death could result.

⚠ CAUTION

- Do not tighten by grasping the switch enclosure. Use wrenching flats on the bushing only. Failure to install properly could damage the switch and cause improper operation resulting in damage to equipment and property.
- To seal threads, apply Teflon tape to male threads only. Using joint compounds or cement can obstruct the pressure port inlet and result in improper device operation and damage to equipment.
- Do not over tighten the device, standard piping practices apply.
- Do not apply any lubricant to any component of the pressure switch.

Ordering Information

Model	Description	Stock No.
PS40-1	Pressure Switch with one set SPDT contacts	1340403
PS40-2	Pressure Switch with two sets SPDT contacts	1340404
	Hex Key	5250062
BVL	Bleeder Valve	1000018
	Optional Cover Tamper Switch Kit	0090200

NOTICE

Pressure switches have a normal service life of 10-15 years. However, the service life may be significantly reduced by local environmental conditions.

LANSDALE
VALVE & MANUFACTURING
www.LansdaleValve.com

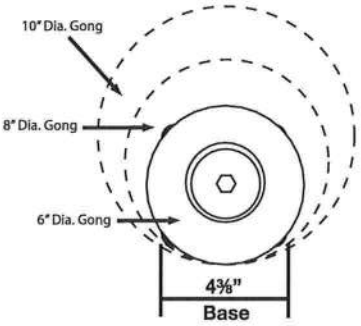
BELLS & BACK BOX

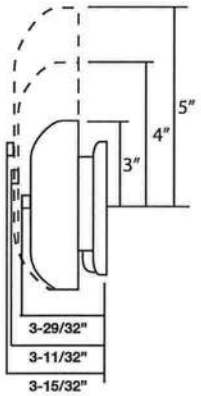
MODEL LVBBB

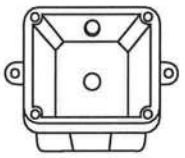
File S35937

FEATURES:

- 120 VAC: 6" 8" 10"
- 24 VAC: 6" 10"
- Four Wire, 120 and 24 Volt
- Indoor and Outdoor Installation
- Weatherproof back box





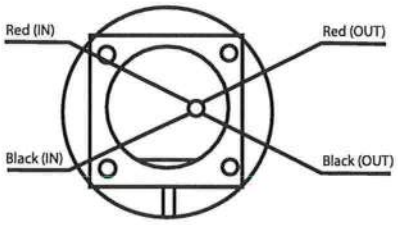


Back Box

RATING	6" GONG SIZE		8" GONG SIZE		10" GONG SIZE	
VOLTAGE	RATED CURRENT	SOUND LEVEL AT 1 METER	RATED CURRENT	SOUND LEVEL AT 1 METER	RATED CURRENT	SOUND LEVEL AT 1 METER
6VDC	250mA	95dB	250mA	95dB	250mA	95dB
12VDC	180mA	95dB	180mA	95dB	180mA	95dB
24VAC	100mA	95dB	100mA	95dB	100mA	95dB
120VAC	25mA	95dB	25mA	95dB	25mA	95dB
220VAC	20mA	95dB	20mA	95dB	20mA	95dB

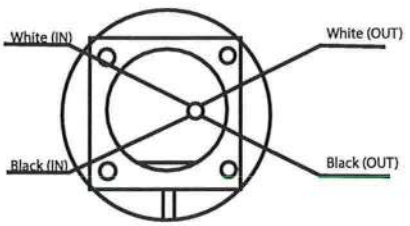
WIRING INSTRUCTIONS

D.C. BELLS (observe polarity)



When electrical supervisor is required use in and out leads as shown.
1. Observe polarity to ring DC Bells
2. Red wires positive(+)
3. Black wires negative (–)

A.C. BELLS



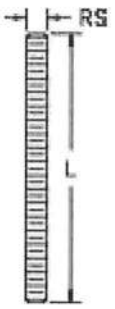
When electrical supervisor is required use in and out leads as shown.
1. When using AC bells, terminate each extra wire separately after last bell.
2. End-of-line resistor is not required on AC Bells

PROJECT	APPROVAL STAMP
PROJECT:	☐ APPROVED
ADDRESS:	☐ APPROVED AS NOTED
ENGINEER:	☐ NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

Revision: 4/2020

HANGERS

Model #50
All Thread Rod



APPLICATION: To attach hangers to structural attachments without threading the rod. (UNC Thread Form)

NOTE: Low carbon: tensile: 58,000 psi; yield: 36,000 psi.
Available in SS for 3/8 and 1/2 rod size.

Part No.	RS	L	Max. Recom. Load (lbs.)†	Finish*
0502506EG	1/4	6'	240	EG
0502506PL	1/4	6'	240	PL
0502510EG	1/4	10'	240	EG
0502510PL	1/4	10'	240	PL
0502512EG	1/4	12'	240	EG
0502512PL	1/4	12'	240	PL
0503706EG	3/8	6'	610	EG
0503706PL	3/8	6'	610	PL
0503710EG	3/8	10'	610	EG
0503710PL	3/8	10'	610	PL
0503712EG	3/8	12'	610	EG
0503712PL	3/8	12'	610	PL
0505006EG	1/2	6'	1130	EG
0505006PL	1/2	6'	1130	PL
0505010EG	1/2	10'	1130	EG
0505010PL	1/2	10'	1130	PL
0505012EG	1/2	12'	1130	EG
0505012PL	1/2	12'	1130	PL
0506206EG	5/8	6'	1810	EG
0506206PL	5/8	6'	1810	PL
0506210EG	5/8	10'	1810	EG
0506210PL	5/8	10'	1810	PL
0506212EG	5/8	12'	1810	EG
0506212PL	5/8	12'	1810	PL
0507506EG	3/4	6'	2710	EG
0507506PL	3/4	6'	2710	PL
0507510EG	3/4	10'	2710	EG
0507510PL	3/4	10'	2710	PL
0507512EG	3/4	12'	2710	EG
0507512PL	3/4	12'	2710	PL
0508706EG	7/8	6'	3770	EG
0508706PL	7/8	6'	3770	PL
0508710EG	7/8	10'	3770	EG
0508710PL	7/8	10'	3770	PL
0508712EG	7/8	12'	3770	EG
0508712PL	7/8	12'	3770	PL

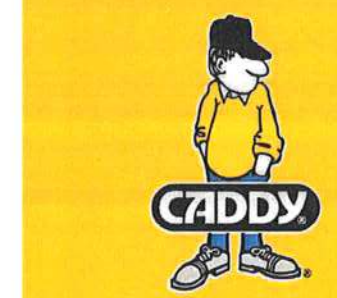
†Load Based on Max. 650°F.

All dimensions are in inches unless otherwise noted.
*See page 2 for finish and material descriptions. All material is Carbon Steel unless otherwise noted.

CADDY®

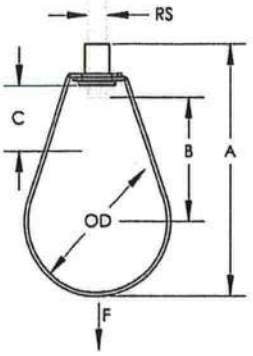
Features

- 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 and SP-69 (Type 10)



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.



Material: Steel
Finish: Pre-galvanized

FM APPROVED c UL us

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

Surge Restraint

Features

- Surge restraint for 115 standard duty loop hangers

Specifications

Material: Steel
Finish: CADDY® ARMOUR

UL

Part Number	Pipe Size
SR6	1/2" – 2"

www.erico.com

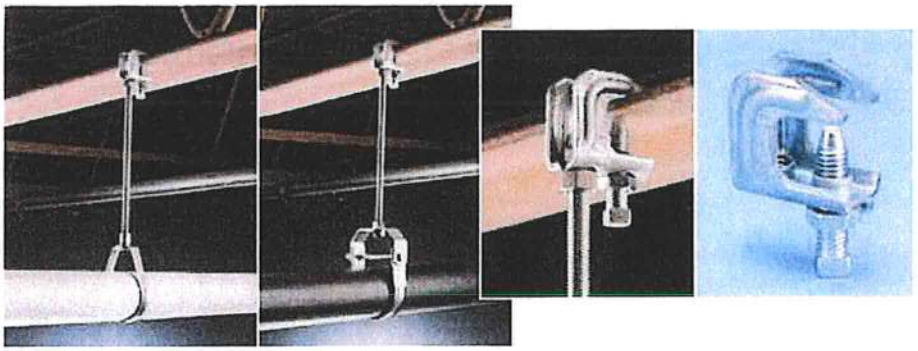
ERICO®

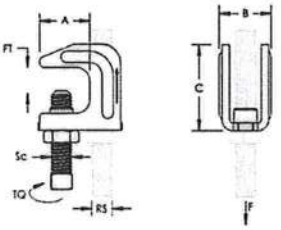
CADDY®

SBC Stamped Beam Clamp, Top Mount

Features

- Made in the USA
- Allows structural attachment to metal beams, bar joist, channel, or angle iron in top mount position only unless used on a parallel flange
- Lightweight, one-piece stamped body provides superior strength and eliminates deficiencies associated with castings
- Spins onto threaded rod and allows for easy adjustment
- Conforms with Federal Specification WW-H-171 (Type 23), Manufacturers Standardization Society ANSI®/MSS-SP-58 (Type 19 & 23), install in accordance with ANSI/MSS-SP-69





Material: Steel
Finish: Pre-galvanized

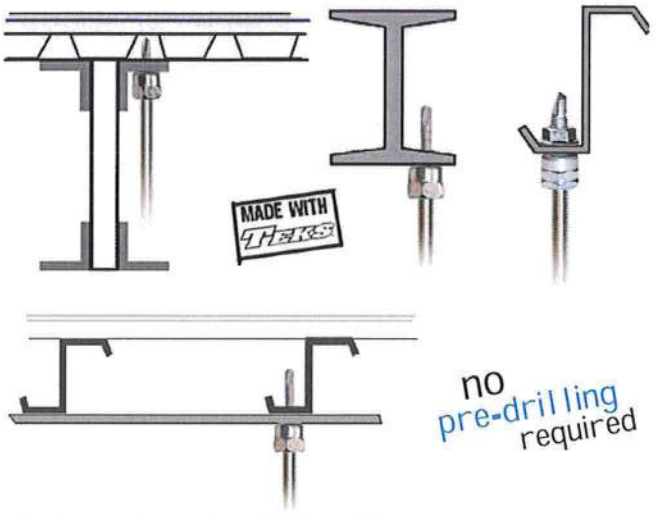
c UL us FM APPROVED

Part Number	Rod Size RS	Flange Thickness FT	A	B	C	Screw Diameter Sc	Torque TQ	Static Load F
SBC037	3/8"	3/4" Max	0.925"	0.85"	1.58"	3/8"	5 ft lb	500 lb

Set screw must be tightened and torqued onto the sloped side of the I-beam, channel, or angle iron flange.
Recognizing that torque wrenches are generally not used or available on many job sites, the setscrew should be tightened so it contacts the I-beam and then an additional 1/4 to 1/2 turn added.

SAMMYS® FOR STEEL - Vertical Application

Application



Product Features

- Made with Teks® self-drilling fasteners - no pre-drilling required.
- Installs into steel range from 20 gauge – 1/2" thicknesses.
- Saves time from traditional methods.
- Reduces installation costs.
- Quick to install using the Sammys Nut Driver with an 18V cordless drill/driver.
- A standard screwgun with a depth sensitive nosepiece should be used to install Teks. For optimal fastener performance, the screwgun should be a minimum of 6 amps and have an RPM range of 0-2500.
- Made in the U.S.A.

Watch a video demonstration at www.itwbuildex.com

#14 Black Nut Driver Part # 8113910

#14 SW Red Nut Driver Part # 8114910

Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	FM Test Load (lbs)	Min Thick	Max Thick	Box Qty	Case Qty
VERTICAL MOUNT											
	1/4"	8024957	DSTR 100 *	1/4-20 x 1" TEKS 3	1510 (20 ga.)			.036"-20 ga	3/16"	25	125
	1/4"	8025957	DST 100	1/4-14 x 1" TEKS 3	446 (20 ga.)			.036"-20 ga	3/16"	25	125
	1/4"	8026957	DST 150	1/4-14 x 1-1/2" TEKS 3	970 (16 ga.)			.036"-20 ga	3/16"	25	125
	1/4"	8027957	DST 200	1/4-14 x 2" TEKS 3	446 (20 ga.)			.036"-20 ga	3/16"	25	125
	1/4"	8030957	TEK 500	12-24 x 1-1/2" TEKS 5	3125 (3/16")			.188"-3/16"	1/2"	25	125
	3/8"	8038957	DSTR 1 *	1/4-20 x 1" TEKS 3	1510 (20 ga.)	1500	1475	.036"-20 ga	3/16"	25	125
	3/8"	8037957	DSTR 1-1/2 *	12-24 x 1-1/2" TEKS 5	1510 (3/16")	1500	1475	.060"-16 ga.	1/2"	25	125
	3/8"	8039957	DSTR 516 *	5/16-18 x 1-1/4" TEKS 3	2200 (20 ga.)	1500	1475	.036"-20 ga	3/16"	25	125
	3/8"	8040957	DST 10	1/4-14 x 1" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8077925	DST 10-SS	1/4-14 x 1" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8041957	DST 15	1/4-14 x 1-1/2" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8078925	DST 15-SS	1/4-14 x 1-1/2" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8042957	DST 20	1/4-14 x 2" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8043957	DST 25	1/4-14 x 2-1/2" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8044957	DST 30	1/4-14 x 3" TEKS 3	446 (20 ga.) 970 (16 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8045957	DST 516	5/16-18 x 1-1/4" TEKS 3	1500 (3/16")	1500	1475	.125"-1/8"	3/16"	25	125
	3/8"	8046957	TEK 50	12-24 x 1-1/2" TEKS 5	3125 (3/16")	1500	1475	.250"-1/4"	1/2"	25	125
	1/2"	8031925	DST 2.0	1/4-14 x 2" TEKS 3	446 (20 ga.) 970 (16 ga.)			.188"-3/16"	1/4"	25	125
	1/2"	8033925	DSTR 1.0 *	1/4-20 x 1" TEKS 3	1510 (20 ga.)			.036"-20 ga	3/16"	25	125
	1/2"	8034925	DSTR 5.16 *	5/16-18 x 1-1/4" TEKS 3	2220 (20 ga.)			.036"-20 ga	3/16"	25	125
	1/2"	8035925	DST 5.16	5/16-18 x 1-1/4" TEKS 3	1500 (3/16")			.125"-1/8"	3/16"	25	125
	1/2"	8036925	TEK 5.0	12-24 x 1-1/2" TEKS 5	3125 (3/16")			.188"-3/16"	1/2"	25	125

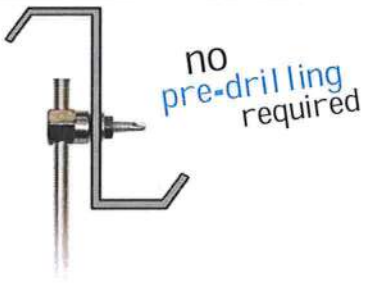
*Includes retaining nut

MADE IN U.S.A. RoHS Compliant

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

SIDEWINDER® FOR STEEL - Horizontal Application

Application



Product Features

- Made with Teks® self-drilling fasteners - no pre-drilling required.
- Installs into steel range from 20 gauge – 1/2" thicknesses.
- A standard screwgun with a depth sensitive nosepiece should be used to install Teks. For optimal fastener performance, the screwgun should be a minimum of 6 amps and have an RPM range of 0-2500.
- Saves time from traditional methods.
- Reduces installation costs.
- Quick to install using the Sammys Nut Driver with an 18V cordless drill/driver.
- Made in the U.S.A.

Watch a video demonstration at www.itwbuildex.com

Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	FM Test Load (lbs)	Min Thickness	Max Thickness	Box Qty	Case Qty
HORIZONTAL MOUNT											
	1/4"	8047957	SWD 100	1/4-14 x 1" TEKS 3	1477 (16 ga.)			.060"-16 ga	3/16"	25	125
	1/4"	8049957	SWDR 100 *	1/4-20 x 1" TEKS 3	1900 (20 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8050957	SWD 10	1/4-14 x 1" TEKS 3	1477 (16 ga.)			.060"-16 ga	3/16"	25	125
	3/8"	8080925	SWD 10-SS	1/4-14 x 1" TEKS 3	1477 (16 ga.)			.060"-16 ga	3/16"	25	125
	3/8"	8051957	SWD 15	1/4-14 x 1-1/2" TEKS 3	1477 (16 ga.)			.060"-16 ga	3/16"	25	125
	3/8"	8052957	SWD 20	1/4-14 x 2" TEKS 3	1477 (16 ga.)			.060"-16 ga	3/16"	25	125
	3/8"	8053957	SWD 516	5/16-18 x 1-1/4" TEKS 3	2480 (20 ga.)			.036"-20 ga	3/16"	25	125
	3/8"	8055957	SWDR 1 *	1/4-20 x 1" TEKS 3	1900 (20 ga.)	1500	1475	.036"-20 ga	3/16"	25	125
	3/8"	8054957	SWDR 1-1/2 *	12-24 x 1-1/2" TEKS 5	2375 (3/16")	1500	1475	.188"-3/16"	1/2"	25	125
	3/8"	8056957	SWDR 516 *	5/16-18 x 1-1/4" TEKS 3	2480 (20 ga.)	1500	1475	.036"-20 ga	3/16"	25	125
	3/8"	8057957	SWT 15	12-24 x 1-1/2" TEKS 5	2375 (3/16")			.188"-3/16"	1/2"	25	125

#14 SW Red Nut Driver Part # 8114910

*Includes retaining nut

SAMMYS SWIVEL HEAD™ FOR STEEL - Swivel Application

Application

Product Features

- Eliminates distortion of threaded rod in sloped roof applications.
- Accommodates 3-1/2 x 12 pitch.
- Installs into angled z-purlin; allows threaded rod to hang plumb.
- Allows 17° deflection from vertical.
- Made in the U.S.A.

Watch a video demonstration at www.itwbuildex.com

Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	FM Test Load (lbs)	Min Thick	Max Thick	Box Qty	Case Qty
SWIVEL MOUNT											
	3/8"	8137957	SH-DSTR 1*	1/4-20 X 1" TEKS 3	3220 (3/16")	1500	1475	.035"	3/16"	25	125
	3/8"	8268957	SH-TEK 50	12-24 x 1-3/4" TEKS 5	2368 (1/2" steel Vertical) 1306 (45° off Vertical) 2281 (3/16" HSS) 1585 (3/16" HSS 45° off Vertical)	1500 (Vertical) 850 (45° off Vertical)	4" 2-1/2"	3/16"	1/2"	25	125
	1/2"	8270957	SH-TEK 5.0	12-24 x 1-3/4" TEKS 5	2368 (1/2" steel Vertical) 1306 (45° off Vertical) 2281 (3/16" HSS) 1585 (3/16" HSS 45° off Vertical)			3/16"	1/2"	25	125

#14 Black Nut Driver Part # 8113910

#14 SH Orange Nut Driver Part # 8273910

*Does not comply with ROHS requirements / Includes retaining nut

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

SAMMY X-PRESS® - Vertical Application

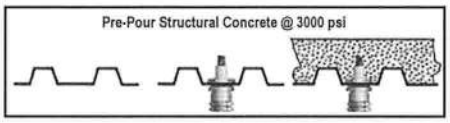
Application

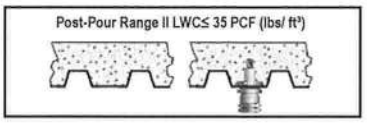
Product Features

- 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. ie. 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.

Watch a video demonstration at www.itwbuildex.com

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													
	1/4"	8181922	XP 200	Sammy X-Press 200	1146 (22 ga)	185 (Luminaire) 250 (Luminaire)	.027" .056"			.125"	25	125	Metal Deck
	3/8"	8150922	XP 20	Sammy X-Press 20	1146 (22 ga)	850 (2½" 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
	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
	3/8"	8150922	XP 20	Sammy X-Press 20	1146 (22 ga)	850 (2½ Pipe)		Pre-Pour Structural Concrete@ 3000 psi Post-Pour Range II LWC≤ 35 PCF (lbs/ft³)			25	125	Metal Deck (Pre-Pour) Metal Deck (Post-Pour)





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; ie. 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.

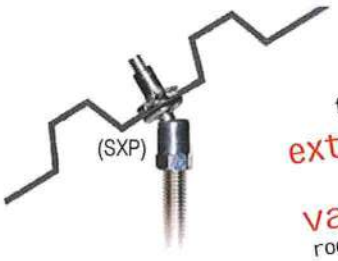
Watch a video demonstration at www.itwbuildex.com

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												
	3/8"	8293957	SWXP 35	Sidewinder X-Press 35	1798 (16 ga)	1250 (3½" Pipe) 80 (Luminaire) 416 (Conduit & Cable)	.059"		.125"	25	125	Purlin

MADE IN U.S.A.

SWIVEL X-PRESS™ - Swivel Application

Application



Product Features

- The ***Swivel X-Press*** allows you to hang plumb in extreme roof pitches:
  - 89° in z-purlin
  - 45° in metal deck for 12/12 pitch
- 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. ie. 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.

Watch a video demonstration at www.itwbuildex.com

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
SWIVEL MOUNT													
	3/8"	8294922	SXP 20	Swivel X-Press 20	1061 (22 ga Vert) 829 (45° Off Vert)	750 (2" Pipe) 170 Vertical (Luminaire) 80 @ 45° (Luminaire) 283 Vertical (Conduit & Cable) 233 @ 45° (Conduit & Cable)	.029"	635 (2" Pipe)	.029"	.125"	25	125	Metal Deck
	3/8"	8295922	SXP 35	Swivel X-Press 35	1675 (16 ga Vert) 1558 (89° Off Vert)	1250 (3-1/2" Pipe) 250 Vertical (Luminaire) 80 @ 90° (Luminaire) 500 Vertical (Conduit & Cable) 333 @ 89° (Conduit & Cable)	.059"	635 (2" Pipe)	.029"	.125"	25	125	Purlin
	1/2"	8272957	SXP 2.0	Swivel X-Press 2.0	1061 (22 ga Vert) 829 (45° Off Vert)		.027"	.125"			25	125	Metal Deck
	1/2"	8271957	SXP 3.5	Swivel X-Press 3.5	1675 (16 ga Vert) 1558 (89° Off Vert)		.060"	.125"			25	125	Purlin

SAMMY X-PRESS IT® Installation Tool

Application

Product Features

- The ***Sammy X-Press*** expands to provide direct vertical attachment in:
  - metal deck (22-16 gauge)
  - z-purlin (18-16 gauge)
- Made in the U.S.A.

Watch a video demonstration at www.itwbuildex.com

Part Number	Model	Description	Qty
8194910	UXPIT*	Universal X-Press It Tool	1
8152910	XPDB	25/64" Drill Bit	1

*Tool Includes: Sleeve, Bit Receiver, Hex Wrench, and 25/64" Drill Bit.

ACCESSORIES

PipeFit® Thread Sealing Paste

INSIST ON FPPI®

Description

Pipefit® Thread Sealing Paste with PTFE is a premium non-hardening PTFE filled pipe thread sealing paste designed specifically for the fire sprinkler industry. Pipefit is suitable for use on all threadable materials commonly used in fire sprinkler systems, including CPVC. Pipefit's unique blend of materials provides superior thread sealing qualities over other similarly priced sealants. The particulate PTFE also helps prevent leaks by accumulating in the voids of damaged or defective threads of the pipe or fittings. Additionally, the lubricating qualities of the PTFE and other materials in the sealing paste improve thread seating during pipe and fitting assembly. Pipefit® also adheres well to hot oily pipe present in "high speed' fabrication operations.

Design Criteria/Data

Recommended Use

Water	Air
Refrigerants	Natural Gas
Mild caustics	Steam
Kerosene	LP Gases
Acids	Gasoline
Diesel Fuel	Ammonia

Use for threaded connections on steel, aluminum, brass, PVC, CPVC and ABS. Operating temperature ranges -50 f to 500 f.

FBC SYSTEM COMPATIBLE

*FBC™ System Compatible indicates this product has been tested by Lubrizol Advanced Materials and is monitored on an on going basis to assure chemical compatibility with FlowGuard Gold®, BlazeMaster®, and Corzan® pipe and fittings.

Installation

Make sure that the threads are free from burs and other debris. Apply Pipefit® liberally to the male pipe threads. Make sure that the thread sealant is brushed into the "root" of the threads. Do not wipe off excess material until fitting has been "made on" to the pipe thread. The threading action of the fitting to the pipe will allow the proper amount of sealant to remain in the connection. Wipe off excess sealant. Pipefit® will not dry out under normal conditions. Never use dope and tape together. Keep covered when not in use to avoid contamination. Some settling of the product may occur. Occasional stirring may be necessary. Two year shelf life.

Disclaimer

DO NOT ALTER THE CONSISTENCY OF THIS PRODUCT. Use as is directly from the container. Keep away from your mouth and eyes. If eye contact occurs, flush with water for 5 minutes. If discomfort persists get medical attention.

Specifications

Appearance:
Dense, paste-like consistency, off white in color.

Packaging:
16 oz. brush in cap
32 oz.
32 oz. BIC
1 gl.
5 gl.
55 gl.

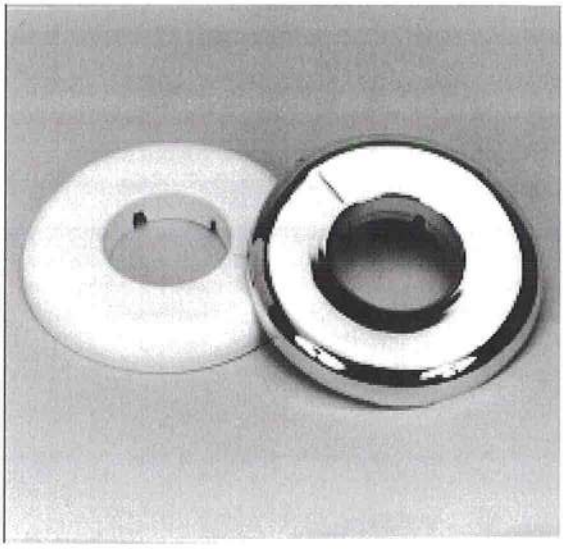
CAUTION: See MSDS for first aid instructions. Wash hands thoroughly after each use.

See Material Safety Data Sheet for additional safety and disposal information at www.fppi.com

3198 LIONSHEAD AVE
CARLSBAD, CA 92010
TEL + 1 760 599-1168
+ 1 800 344-1822
FAX + 1 800 344-3775

MADE IN U.S.A.

Plastic Wall Plates (Floor/Ceiling)



Description

FPPI Plastic Floor and Ceiling Plates are manufactured from light weight injection molded plastic and are of single piece construction and rustproof. They are suitable for both interior and exterior uses and are highly recommended in corrosive environments. Available in IP sizes 1/2" through 8". Made in the USA.

Installation

The plastic wall plates may be installed by two methods. The first is by placing the wall plate over the pipe while the pipe is being installed. The second is by splitting the wall plate at the area on the back of the wall plates that has been molded to break apart. Carefully bend the wall plate a this weakened area until fully separated. Then carefully twist the wall plate open just enough to be placed around the pipe. Allow the two ends of the separated wall plate to "spring" back into shape. Slide the wall plate up against the base material to finish the installation. The wall plates should not be painted. Certain chemicals contained in paint may cause the wall plates to deteriorate.

Specs

Size(IP)*	ID	OD
1/2"	.827	2.787
3/4"	1.037	2.997
1"	1.298	3.210
1 1/4"	1.640	3.580
1 1/2"	1.900	3.900
2"	2.380	4.450
2 1/2"	2.900	5.280
3"	3.535	5.925
4"	4.575	6.935
5"	5.655	9.655
6"	6.740	9.820
8"	8.790	13.010

Depth:
3/16"

Finish:
Chrome
White
Brass (special order)

*Some copper sizes also available.

For questions:
1 800 344-1822
1 800 344-3775 fax
http://www.fppi.com

LANSDALE
VALVE & MANUFACTURING

www.breccocorp.com

MATERIAL SAFETY DATA SHEET

SECTION 1

IDENTITY

Tombo #9082 Naflon Seal Tape (PTFE Thread Seal Tape)
Tombo #9082 Naflon Seal Tape (PTFE Thread Seal Tape) Pink Tape

DESCRIPTION

Naflon Seal Tape is a polytetraflourcethlene unsintered tape.

SECTION 2 - Hazardous Ingredients/Identity Info rmation

INGREDIENT	CAS No	Wt%	TLV	PEL
Polytetrafluoroethylene (PTFE)	900284-0	90-100	not estab. (a)	not estab.

(a)Thermal decomposition of the fluorocarbon chain in air leads to the formation of oxidized products containing carbon, fluorine and oxygen. Because these products decompose in part by hydrolysis in alkaline solution, they can be quantitatively provided an index of exposure. No TLVs are recommended at this time, but air concentration should be controlled as low possible.

Hazard Data Source: ACGIH Threshold Limit Values for 2011

SECTION 3 – Physical/Chemical Characteristics

Boil ing Point:	N/A	ODOR:	No odor
Melting Point(° C):	322 -332	Appearance:	Tape, White
Solubility in Water:	Insoluble	Density (/ ³):	4 types available (0.4,0.7,0.8,1.2)
Service Temperature(C °): Max. 260			

SECTION 4 – Fire and Explosion Hazard Data

Flash Point (Method used):	non-flammable (Complies with U.L. 94V-0
Explosion Point (Method used):	None
Extinguishing Media:	Use that which is appropriate for the surrounding fire.
Special Fire and Fighting Procedures:	Persons exposed to thermal decomposition products of this material Should wear self-contained breathing apparatus, full protective equipment, and also gloves made of chloroprene rubber.

ThreadFit® CLEAR Thread Cutting Oil

INSIST ON FPPI®

Description

ThreadFit® CLEAR Thread Cutting Oil for Sprinkler Pipe is an excellent heavy duty, light colored cutting oil for all types of ferrous metal. It's special combination of anti-wear and anti-weld additives provides all the necessary lubricity and cooling modern pipe threading operations require. This balanced combination of additives will help improve die life and thread quality over other cutting oils and is Chlorine free. ThreadFit Clear's low smoke/ low odor formulation makes it ideal for use in high speed threading applications.

Features

- Heavy Duty Cutting Oil
- Excellent Tool Life
- Chlorine Free
- All types of ferrous metal or pipe
- Improved Surface Finish
- Low Odor
- Low Smoke

FBC SYSTEM COMPATIBLE

*FBC™ System Compatible indicates this product has been tested by Lubrizol Advanced Materials and is monitored on an on going basis to assure chemical compatibility with FlowGuard Gold®, BlazeMaster®, and Corzan® pipe and fittings.

SPEARS

Spears® Compatible indicates that ThreadFit® CLEAR has been tested by Spears® Manufacturing to be compatible with Flameguard® pipe and fittings.

Installation

ThreadFit® can be used in automatic and hand held applicators. Fill oil reservoir according to equipment manufacturers specifications. Mixing of different types of threading oils is not recommended. DO NOT ALTER THE CONSISTENCY OF THIS PRODUCT. Use as is directly from the container. Change oil regularly for optimum performance. Contains petroleum oil. Avoid breathing mists or vapors. Avoid eye contact and prolonged or repeated contact with skin. Wear safety glasses or goggles. Use good personal hygeine. Dispose of used oil in accordance with all local, State and Federal ordinances and regulations. Consult Material Safety Data Sheets for additional safety and handling information. DO NOT MIX WITH OTHER THREAD CUTTING OILS OR CONTAMINANTS.

Specifications

Appearance:
Clear amber liquid.
Packaging:
1 gl. (6/case)
5 gl. Pail
55-gl drum
275-gl tote

CAUTION: Skin contact: wash thoroughly with soap and water. Eye contact: flush eyes with water for at least 15 minutes and seek medical attention. Ingestion: consult a physician immediately. Inhalation: move affected person(s) to fresh air and seek medical attention. See MSDS for first aid instructions.

Spill or Leak: Soak up with an oil absorbent compound. Follow all state, local, Federal regulations for disposal. Don't pollute. Conserve our resources-Please recycle this container.

See Material Safety Data Sheet for additional safety and disposal information at www.fppi.com

This product is registered with CHEMTREC, a 24-hour emergency hotline. They may be reached at 1 800 424-9300.

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MADE IN U.S.A.