18802 80th Avenue South
Kent, WA 98032
Phone: (425) 203-9800
Facsimile: (425) 203-9801

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

Fire Protection
Material & Equipment Submittals

Pioneer Park Pavilion
Shinn FP Project No. 23-3828-0085
324 S MERIDIAN
PUYALLUP, WA, 98371

GENERAL CONTRACTOR

Lake Tapps Construction Unlimited.

P.O. Box 1390

Orting WA 98360

360-893-1110

PREPARED BY

Ben Bernard

09/27/2024

FPET NICET #106245 LEVEL IV,MSME

WASHINGTON STATE
CERTIFICATE OF COMPETENCY
FIRE PROTECTION SPRINKLER SYSTEMS
Hussein A. A. Huballa
8321-1119-C Level 3
Shinn Mechanical, Inc.
SHINNMI060QP
10/02/2024
Signature **Date**
Expires 12/31/24

18802 80th Avenue South
Kent, WA 98032
Phone: (425) 203-9800
Facsimile: (425) 203-9801

SUBMITTAL INDEX

A. FITTINGS & PIPE

1. PIPE- WHEATLAND
2. VICTAULIC MECH TEE 922
3. ANVIL CAST IRON THREADED FITTINGS

B. HANGERS AND SWAY BRACING ATTACHMENTS

1. PIPE HANGERS
2. ALL THREAD ROD
3. SAMMY INSERTS

C. FIRE ALARM DEVICES, HOSE CABINET & MISCELLANEOUS COMPONENTS

1. RELIABLE ACD DRUM DRIP

D. SPRINKLER HEADS

1. RELIABLE G4-G5 DRY CONC. SPRINKLER HEADS

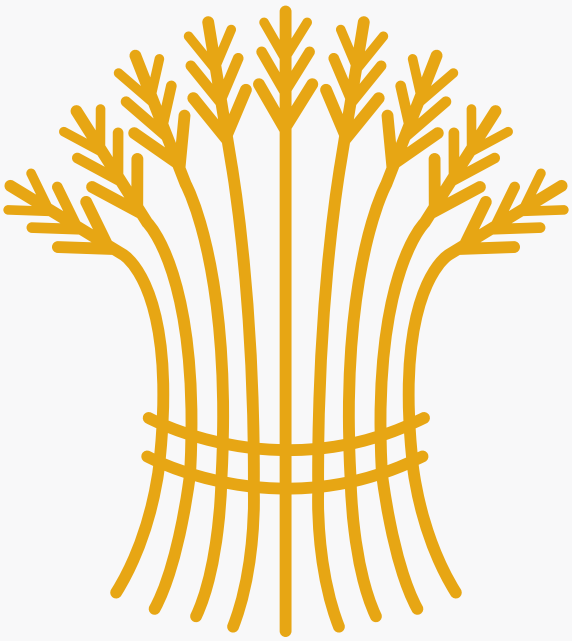
NOTE:

IF A MATERIAL INDICATED IN THIS SUBMITTAL IS NOT USED, AN EQUIVALENT PRODUCT WILL BE REQUESTED TO BE APPROVED FOLLOWING THE MATERIAL SUBSTITUTION REQUEST GUIDELINES OUTLINED IN SPECIFICATION SECTION 210000.

ANY MODIFICATIONS OR ALTERATIONS TO THE SPRINKLER SYSTEM INSTALLED BY SHINN FIRE PROTECTION (SFP) WITHOUT THE WRITTEN CONSENT OR APPROVAL OF "SFP" WILL RESULT IN THE WARRANTY TO BE NULL & VOID.

GENERAL NOTES:

1. All material & installations of this Automatic Fire Sprinkler System conforms to N.F.P.A. #13
2. Twenty-four (24) hour supervision to be provided by others.
3. The entire system to be hydraulically calculated and piping sized accordingly.
4. It is not our intent to write or give formal interpretations of any fire codes. It is rather our intent to provide general information. Under no circumstances should a person who is not qualified to work on Fire Protection Systems to make repair or modifications on the system. By doing so the warranty will be null & void.



Steel Fire Sprinkler Pipe

Wheatland Tube
A DIVISION OF ZEKELMAN INDUSTRIES

Wheatland Tube
Fire Sprinkler Products

Wheatland Tube began producing steel fire sprinkler pipe in 1931, and today offers the most complete line of products in the industry. Engineers and contractors across the continent depend on us for steel fire sprinkler pipe and a number of proprietary products — always in stock and ready to deliver.

100% Compatibility
We guarantee our steel pipe is 100% compatible with fire protection systems that use only steel pipe. Why risk incompatibility? Wheatland's complete line of steel sprinkler pipe makes design easy and brings you peace of mind.*

Accurate and Efficient
Our products help you work safer and smarter — not harder. With our extensive in-house capabilities, we offer the shortest production cycle times in the industry, and we deliver to you accurately and on time, every time.

End Finishes and Coatings
We offer a range of end finishes, including threading, swaging and grooving, and our propietary MIC SHIELD™ antimicrobial coating limits corrosion from microbes.

American-made
Wheatland Tube supports domestic manufacturing. All our fire sprinkler pipe products are proudly made in the USA.

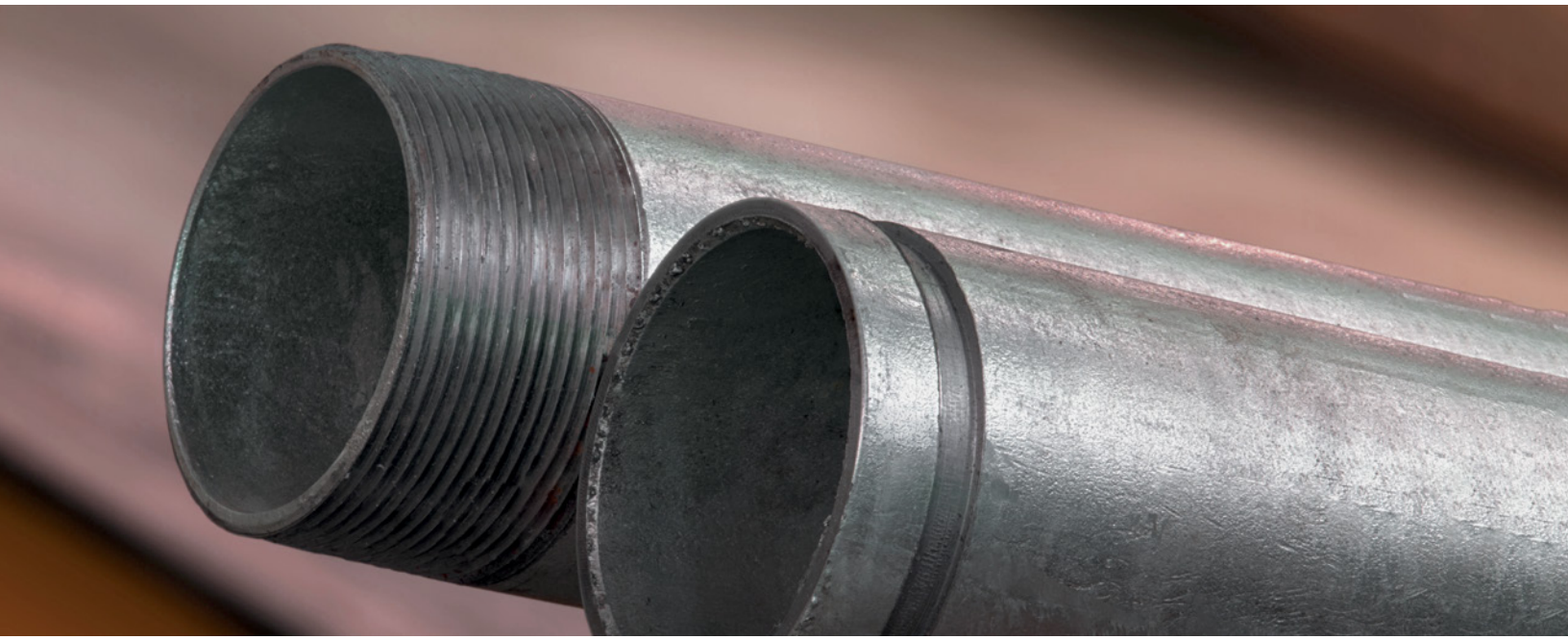
Green and Sustainable
Our steel fire sprinkler pipe contains recycled steel and provides decades of reliable service. At the end of its life, the steel may be almost fully recycled, supporting your green policies.

Zekelman Industries
Wheatland Tube is a division of Zekelman Industries, the largest independent manufacturer of steel hollow structural sections (HSS) and steel pipe in North America. We leverage our 100-plus years of pipe and tube manufacturing experience and expertise to produce over 2 million tons of pipe and tube annually. Backed by Zekelman Industries, you can count on Wheatland for **strength, innovation and service** — bringing exceptional value to your business.

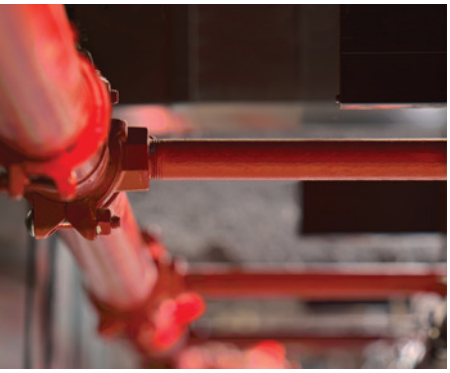
**Wheatland Tube has never warrantied compatibility between its steel pipe products and CPVC products.*

AMERICAN METAL


WHEATLAND USA ASTM A-53



Schedule 10 and Schedule 40



High quality, high performance

Wheatland's Schedule 10 and Schedule 40 steel fire sprinkler pipe are subjected to the toughest possible testing to ensure the highest possible quality — not to mention reliable, long-lasting performance.

- Proprietary mill coating ensures clean, corrosion-resistant surface
- Outperforms and outlasts standard lacquer-coated pipe
- Easily painted, without special preparation
- Available in hot-dip galvanized or black finish

SCHEDULE 10 WEIGHTS AND DIMENSIONS

10 NPS NOW FM APPROVED — ONLY FROM WHEATLAND

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.097	27.9	0.109	2.77	1.405	1.814	70	2065	2360	2459	11.4
1¼	1.660	42.2	1.442	36.6	0.109	2.77	1.807	2.514	61	2315	2645	2756	7.3
1½	1.900	48.3	1.682	42.7	0.109	2.77	2.087	3.049	61	2673	3055	3183	5.8
2	2.375	60.3	2.157	54.8	0.109	2.77	2.640	4.222	37	2051	2344	2442	4.7
2½	2.875	73.0	2.635	66.9	0.120	3.05	3.354	5.895	30	2226	2544	2651	3.5
3	3.500	88.9	3.260	82.8	0.120	3.05	4.336	7.949	19	1730	1977	2060	2.6
4	4.500	114.3	4.260	108.2	0.120	3.05	5.619	11.789	19	2242	2562	2669	1.6
5	5.563	141.3	5.295	134.5	0.134	3.40	7.780	17.309	13	2124	2427	2529	1.5
6	6.625	168.3	6.357	161.5	0.134	3.40	9.298	23.038	10	1953	2232	2325	1.0
8	8.625	219.1	8.249	209.5	0.188	4.78	16.960	40.086	7	2493	2849	2968	1.7
10**	10.750	273.0	10.374	263.5	0.188	4.78	21.230	57.803	2	892	1019	1062	—

SCHEDULE 40 WEIGHTS AND DIMENSIONS

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

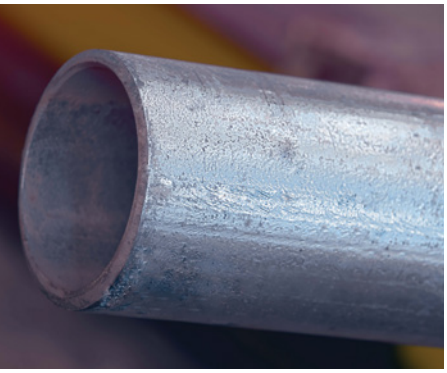
** Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY. The CRR is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).*

*** 8 NPS Schedule 40 and 10 NPS Schedule 10 are FM Approved but not UL Listed.*

Schedule 10 and Schedule 40 Meet or Exceed These Standards:

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

GL Galvanized, Light Wall, Threadable



Ideal for exposed, open areas

Wheatland's GL steel fire sprinkler pipe is an OD galvanized, lighter-wall, threadable product. The nominal OD provides improved hydraulics—resulting in an exceptional value.

- Ideal for branch line use in wet, dry, preaction or deluge systems
- Comparable mechanical strength to Schedule 40
- Readily paintable galvanized exterior
- Available in standard lengths; custom lengths can be ordered

GL GALVANIZED WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.097	27.9	0.109	2.77	1.370	1.701	91	2618	2992	3117	0.61
1¼	1.660	42.2	1.442	36.6	0.109	2.77	1.761	2.365	61	2256	2578	2686	0.39
1½	1.900	48.3	1.682	42.7	0.109	2.77	2.066	2.875	61	2604	2976	3100	0.31
2	2.375	60.3	2.157	54.8	0.109	2.77	2.686	4.142	37	2087	2385	2485	0.25

GL GALVANIZED COMPARISON

NPS	NOMINAL ID		UL		
	in.		CRR*		
	GL	Schedule 40	GL	Schedule 40	Mega-Thread
1	1.097	1.049	0.61	1.00	1.00
1¼	1.442	1.380	0.39	1.00	1.00
1½	1.682	1.610	0.31	1.00	1.00
2	2.157	2.067	0.25	1.00	1.00

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

GL Meets or Exceeds These Standards:

- ASTM A795, Type E, Grade A for fire sprinkler applications up to 300 psi working pressure
- UL and C-UL Listed and FM Approved for wet, dry, preaction and deluge sprinkler systems
- Threaded and welded fittings are approved in accordance with NFPA 13

Mega-Flow

Greater hydraulics, greater value

Wheatland's Mega-Flow is an engineered, light-wall steel sprinkler pipe that offers ID up to 7% larger than Schedule 10 and 11% larger than Schedule 40 for improved hydraulics. With its proprietary mill coating, Mega-Flow is an excellent alternative to standard wall products so you can downsize your entire sprinkler system with the same or greater quality.

- ID up to 7% larger than Schedule 10 and 11% larger than Schedule 40
- Saves freight, labor and installation costs
- Standard hanger spacing (15')
- Available in standard lengths; custom lengths can be ordered
- Roll groove available from mill inventory
- Proprietary mill coating provides superior primer for printing

MEGA-FLOW WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1¼	1.660	42.2	1.528	38.8	0.066	1.7	1.108	1.904	61	1419	1622	1690	1.80
1½	1.900	48.3	1.740	44.2	0.080	2.0	1.556	2.586	61	1993	2278	2373	2.64
2	2.375	60.3	2.215	56.3	0.080	2.0	1.961	3.631	37	1524	1741	1814	2.14
2½	2.875	73.0	2.707	68.8	0.084	2.1	2.504	4.998	30	1578	1803	1878	1.43
3	3.500	88.9	3.316	84.2	0.092	2.3	3.349	7.090	19	1336	1527	1591	1.34
4	4.500	114.3	4.308	109.4	0.096	2.4	4.331	10.669	19	1728	1975	2057	1.00
6	6.625	168.3	6.395	162.4	0.115	2.9	8.000	21.900	10	1680	1920	2000	0.75

MEGA-FLOW COMPARISON

NPS	NOMINAL OD	NOMINAL ID			UL	
	in.	in.			CRR*	
		Mega-Flow	Schedule 10	Schedule 40	Mega-Flow	Schedule 40
1¼	1.660	1.528	1.442	1.380	1.80	1.00
1½	1.900	1.740	1.682	1.610	2.64	1.00
2	2.375	2.215	2.157	2.067	2.14	1.00
2½	2.875	2.707	2.635	2.469	1.43	1.00
3	3.500	3.316	3.260	3.068	1.34	1.00
4	4.500	4.308	4.260	4.026	1.00	1.00
6	6.625	6.395	6.357	6.065	0.75	1.00

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

Mega-Flow Meets or Exceeds These Standards:

- ASTM A795, Type E, Grade A
- UL and C-UL Listed and FM Approved for use with roll grooved, swage grooved, plain-end couplings and welded joints for wet, dry, preaction and deluge systems
- FM Approved for roll grooved, plain-end and welded joints for wet systems
- NFPA 13 and NFPA 14

Mega-Thread

Greater hydraulics, greater value

Wheatland's Mega-Thread is an engineered, light-wall steel sprinkler pipe that offers ID 3.6% larger than Schedule 40 for superior flow. It saves costs in threadable applications and can be joined by screwed, grooved or plain-end fittings, or welded. With its proprietary mill coating, Mega-Thread is an excellent Schedule 40 alternative that threads smoothly and easily so you can downsize your entire sprinkler system with the same or greater quality.

- ID 3.6% larger than Schedule 40
- Saves costs in threadable applications
- Superior flow characteristics
- Can be joined by screwed, grooved or plain-end fittings, or welded
- Threads smoothly and easily; requires no thread warning
- Proprietary mill coating extends shelf life, makes painting quicker and easier
- Approved for standard hanger spacing

MEGA-THREAD WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.079	27.4	0.118	3.00	1.462	1.865	70	2149	2456	2559	1.00
1¼	1.660	42.2	1.410	35.8	0.125	3.18	1.989	2.674	51	2130	2435	2536	1.00
1½	1.900	48.3	1.642	41.7	0.129	3.28	2.370	3.297	44	2190	2503	2607	1.00
2	2.375	60.3	2.109	53.6	0.133	3.38	3.094	4.621	30	1949	2228	2321	1.00

MEGA-THREAD COMPARISON

NPS	NOMINAL OD	NOMINAL ID		UL		
	in.	in.		CRR*		
		Mega-Thread	Schedule 40	Mega-Thread	Schedule 40	L.W.T. Pipe
1	1.315	1.079	1.049	1.00	1.00	0.61
1¼	1.660	1.410	1.380	1.00	1.00	0.39
1½	1.900	1.642	1.610	1.00	1.00	0.31
2	2.375	2.109	2.067	1.00	1.00	0.25

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

Mega-Thread Meets or Exceeds These Standards:

- ASTM A795, Type E, Grade A
- UL and C-UL Listed and FM Approved for wet, dry and preaction sprinkler systems
- Hot-dip galvanized finish meets FM requirements for dry systems
- NFPA 13 and NFPA 14
- Rated 300 psi working pressure

Wheatland Tube
A DIVISION OF ZEKELMAN INDUSTRIES

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Wheatland, PA 16161

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Zekelman Industries

Corporate Office
227 West Monroe Street
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Chicago, IL 60606

312.275.1600
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zekelman.com

About Wheatland Tube

Wheatland Tube, a division of Zekelman Industries, produces a wide range of steel tubular products, including standard steel pipe, galvanized mechanical tubing, fence framework, fire sprinkler pipe, electrical conduit, elbows, couplings and nipples.

For more information, contact Wheatland Tube at:
800.257.8182 or **info@wheatland.com**
Or, visit our website at wheatland.com

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linkedin.com/company/zekelman-industries
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wheatland.com/blog

WFS-072021

FireLock™ Outlet-T
Style 922

10.52

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 2 ½"/DN32 – DN65
- **Threaded Outlet Sizes:** ½"/DN15, ¾"/DN20, and 1"/DN25

NOTE

- IGS Grooved 1"/DN25 Outlets available for this product. See publication 10.54.

Maximum Working Pressure

- 300 psi/2068 kPa/21 Bar

Application

- Provides a convenient method of incorporating outlets for directly connecting sprinklers, drop nipples, sprigs, gauges, drains and other outlet products

Pipe Material

- Carbon steel
- Contact Victaulic for use on additional pipe types and wall thicknesses

2.0 CERTIFICATION/LISTINGS

LPS 1186: Issue 3.1 Cert/LPCB Ref. 491a/27

EN 10311 CPR (EU) No. 305/2011

BS EN 10311 CPR (UK) 2019 No. 465

NOTES

- See Section 7.2 REFERENCE MATERIALS for additional certification information.

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

3.0 SPECIFICATIONS - MATERIAL

Housing: Ductile iron conforming to ASTM A536, Grade 65-45-12. Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

- ☐ Orange coating.
- ☐ Red coating (standard for EMEA-I and Asia Pacific).
- ☐ Optional: Contact Victaulic with your requirements for other coatings.
- ☐ Optional: Hot dipped galvanized.

Gasket[1]:

- ☐ **Grade "E" EPDM (Type A)**

  EPDM (Violet color code) Applicable for wet and dry (oil-free air) sprinkler services only. Listed/Approved for continuous use in wet and dry systems. Listed/Approved for dry systems at -40˚F/-40˚C and above. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.

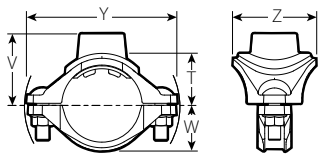
[1] Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Seal Selection Guide for specific gasket service guidelines and for a listing of services which are not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

Bolts/Nuts:

- ☐ Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449 (imperial) and ISO 898-1 Class 9.8 (metric). Carbon steel hex flange nuts meeting the mechanical property requirements of ASTM A563 Grade B (imperial – hex nuts) and ASTM A563M Class 9 (metric – hex nuts). Track bolts and hex flange nuts are zinc electroplated per ASTM B633 Fe/Zn 5, finish Type III (imperial) or Type II (metric).

4.0 DIMENSIONS

Style 922



Style 922

Size						Bolt/Nut		Dimensions					Weight
Nominal Run x Branch FPT[2] inches DN			Actual Outside Diameter inches mm			Qty.	Size inches mm	T[3] inches mm	V inches mm	W inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
1 ¼ DN32	x	½ DN15	1.660 42.4	x	0.840 21.3	2	⅜ x 1 ⅜	1.30 33	1.83 47	1.10 28	3.87 98	2.56 65	1 0.5
		¾ DN20			1.050 26.9	2	⅜ x 1 ⅜	1.28 33	1.83 47	1.10 28	3.87 98	2.56 65	1 0.5
		1 DN25			1.315 33.7	2	⅜ x 1 ⅜	1.52 39	2.18 55	1.10 28	3.87 98	2.56 65	1 0.5
1 ½ 40	x	½ DN15	1.900 48.3	x	0.840 21.3	2	⅜ x 1 ⅜	1.42 36	1.95 50	1.22 31	4.08 104	2.56 65	1 0.5
		¾ DN20			1.050 26.9	2	⅜ x 1 ⅜	1.40 36	1.95 50	1.22 31	4.08 104	2.56 65	1 0.5
		1 DN25			1.315 33.7	2	⅜ x 1 ⅜	1.64 42	2.30 58	1.22 31	4.08 104	2.56 65	1 0.6
2 50	x	½ DN15	2.375 60.3	x	0.840 21.3	2	⅜ x 1 ⅜	1.66 42	2.19 56	1.46 37	4.60 117	2.56 65	1 0.6
		¾ DN20			1.050 26.9	2	⅜ x 1 ⅜	1.64 42	2.19 56	1.46 37	4.60 117	2.56 65	1 0.6
		1 DN25			1.315 33.7	2	⅜ x 1 ⅜	1.88 48	2.54 65	1.46 37	4.60 117	2.56 65	2 0.7
2 ½	x	½ DN15	2.875 73.0	x	0.840 21.3	2	⅜ x 1 ⅜	1.91 49	2.44 62	1.71 43	5.40 137	2.56 65	2 0.7
		¾ DN20			1.050 26.9	2	⅜ x 1 ⅜	1.89 48	2.44 62	1.71 43	5.40 137	2.56 65	2 0.7
		1 DN25			1.315 33.7	2	⅜ x 1 ⅜	2.13 54	2.79 71	1.71 43	5.40 137	2.56 65	2 0.7
DN65	x	½ DN15	3.000 76.1	x	0.840 21.3	2	⅜ x 1 ⅜	1.91 49	2.44 62	1.71 43	5.50 140	2.56 65	2 0.7
		¾ DN20			1.050 26.9	2	⅜ x 1 ⅜	1.89 48	2.44 62	1.71 43	5.50 140	2.56 65	2 0.7
		1 DN25			1.315 33.7	2	⅜ x 1 ⅜	2.13 54	2.79 71	1.71 43	5.50 140	2.56 65	2 0.8

[2] Victaulic female threaded products are designed to accommodate standard NPT or BSPT (optional) male pipe threads only. Refer to the specific literature for these types of special male-threaded products for guidance and possible limitations for use. Failure to verify suitability in advance may result in assembly problems or leakage.

[3] Center of run to engaged pipe end for NPT threads (dimensions are approximate).

5.0 PERFORMANCE

Style 922

Run Size x Outlet Size inches DN			Equivalent Length of 1 inch Schedule 40 Steel Pipe (per UL 213, Section 16) (C=120)[4]	
			Threaded feet meters	**Grooved**[5] feet meters
1 ¼ DN32	x	1 DN25	8.5 2.6	12.5 3.8
1 ½ DN40	x	1 DN25	8.5 2.6	12.5 3.8
2 DN50	x	1 DN25	8.5 2.6	12.5 3.8
2 ½	x	1 DN25	8.5 2.6	12.5 3.8
DN65	x	1 DN25	8.5 2.6	12.5 3.8

4 Hazen-Williams coefficient of friction is 120.
5 1" FireLock™ Innovative Groove System (IGS) outlet

6.0 NOTIFICATIONS

WARNING

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

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

7.0 REFERENCE MATERIALS

	Dimensions	
	Minimum Hole Diameter/ Hole Saw Size inches mm	**Maximum Hole Diameter/ Hole Saw Size** inches mm
All Outlet Sizes	1 3⁄16	1 ¼
	30	32

7.1 REFERENCE MATERIALS

Size	Services Pressures per Regulatory Approvals and Listings[6]					
Nominal inches DN	**UL** psi kPa	**ULC** psi kPa	**FM** psi kPa	**VdS** psi kPa	**LPCB** psi kPa	**CNBOP** psi kPa
1 ¼ x ½ DN32 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ¼ x ¾ DN32 X DN20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ¼ x 1 DN32 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x ½ DN40 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x ¾ DN40 X DN20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x 1 DN40 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x ½ DN50 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x ¾ DN50 X 20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x 1 DN50 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x ½	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x ¾	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x 1	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
DN65 X DN15	–	–	300 2068	232 1600	232 1600	232 1600
DN65 X DN20	–	–	300 2068	232 1600	232 1600	232 1600
DN65 X DN25	–	–	300 2068	232 1600	232 1600	232 1600

6 Pressures listed in this chart are based upon standard wall pipe. Approved and Listed pressures may vary by pipe schedule.

NOTE

- Consult regulatory agency websites for details and the most recent regulatory information.

7.2 REFERENCE MATERIALS

05.01: Victaulic Seal Selection Guide

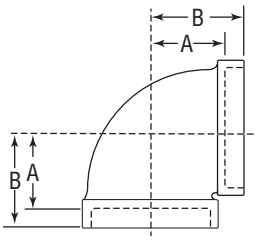
29.01: Victaulic Terms and Conditions of Sale

I-100: Installation Instructions

I-922: Installation Instructions FireLock™ Outlet-T

Class 125 (Standard)

FIGURE 351
90° Elbow



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/4	*8*	1/2	*13*	13/16	*22*	0.16	*0.07*
3/8	*10*	9/16	*14*	15/16	*24*	0.25	*0.11*
1/2	*15*	11/16	*17*	1 1/8	*29*	0.40	*0.18*
3/4	*20*	13/16	*22*	1 15/16	*33*	0.60	*0.27*
1	*25*	15/16	*24*	1 1/2	*38*	0.92	*0.42*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	1.44	*0.65*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	1.95	*0.88*
2	*50*	1 9/16	*40*	2 1/4	*57*	3.13	*1.42*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	4.94	*2.24*
3	*80*	2 3/16	*56*	3 1/8	*79*	7.21	*3.27*
3 1/2	*90*	2 7/16	*62*	3 7/16	*87*	9.67	*4.39*
4	*100*	2 11/16	*68*	3 13/16	*98*	12.17	*5.52*
5	*125*	3 5/16	*84*	4 1/2	*114*	21.46	*9.73*
6	*150*	3 7/8	*98*	5 1/8	*130*	31.33	*14.21*
8	*200*	5 3/16	*132*	6 9/16	*167*	64.56	*29.28*

Note: See following page for pressure-temperature ratings.

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

CAST IRON THREADED FITTINGS

Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME B16.4. Plugs and bushings are manufactured in accordance with ASME B16.14.

NOTE: Figure 367 Concentric Reducers do not meet the overall length requirement of ASME B16.4. All other dimensions are in compliance.

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Cast Iron Threaded Fittings
Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
CAST IRON THREADED FITTINGS					
Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

General Assembly of Threaded Fittings

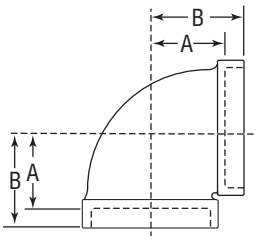
1) Inspect both male and female components prior to assembly.
   - Threads should be free from mechanical damage, dirt, chips and excess cutting oil.
   - Clean or replace components as necessary.

2) Application of thread sealant
   - Use a thread sealant that is fast drying, sets-up to a semi hard condition and is vibration resistant. Alternately, an anaerobic sealant may be utilized.
   - Thoroughly mix the thread sealant prior to application.
   - Apply a thick even coat to the male threads only. Best application is achieved with a brush stiff enough to force sealant down to the root of the threads.

3) Joint Makeup
   - For sizes up to and including 2" pipe, wrench tight makeup is considered three full turns past handtight. Handtight engagement for 1/2" through 2" thread varies from 4 1/2 turns to 5 turns.
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

Class 125 (Standard)

FIGURE 351
90° Elbow



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/4	*8*	1/2	*13*	13/16	*22*	0.16	*0.07*
3/8	*10*	9/16	*14*	15/16	*24*	0.25	*0.11*
1/2	*15*	11/16	*17*	1 1/8	*29*	0.40	*0.18*
3/4	*20*	13/16	*22*	1 15/16	*33*	0.60	*0.27*
1	*25*	15/16	*24*	1 1/2	*38*	0.92	*0.42*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	1.44	*0.65*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	1.95	*0.88*
2	*50*	1 9/16	*40*	2 1/4	*57*	3.13	*1.42*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	4.94	*2.24*
3	*80*	2 3/16	*56*	3 1/8	*79*	7.21	*3.27*
3 1/2	*90*	2 7/16	*62*	3 7/16	*87*	9.67	*4.39*
4	*100*	2 11/16	*68*	3 13/16	*98*	12.17	*5.52*
5	*125*	3 5/16	*84*	4 1/2	*114*	21.46	*9.73*
6	*150*	3 7/8	*98*	5 1/8	*130*	31.33	*14.21*
8	*200*	5 3/16	*132*	6 9/16	*167*	64.56	*29.28*

Note: See following page for pressure-temperature ratings.

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

Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME B16.4. Plugs and bushings are manufactured in accordance with ASME B16.14.

NOTE: Figure 367 Concentric Reducers do not meet the overall length requirement of ASME B16.4. All other dimensions are in compliance.

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Cast Iron Threaded Fittings
Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
CAST IRON THREADED FITTINGS					
Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

General Assembly of Threaded Fittings

1) Inspect both male and female components prior to assembly.
   - Threads should be free from mechanical damage, dirt, chips and excess cutting oil.
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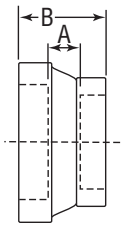
   - For sizes up to and including 2" pipe, wrench tight makeup is considered three full turns past handtight. Handtight engagement for 1/2" through 2" thread varies from 4 1/2 turns to 5 turns.
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

Class 125 (Standard)

☐ **FIGURE 367**
Concentric Reducer



Size				A		B*		Unit Weight Black	
NPS	*DN*	NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
3/4	*20*	1/2	*15*	5/8	*16*	1 9/16	*40*	0.40	*0.18*
1	*25*	1/2 (Hex)	*15*	11/16	*17*	1 11/16	*43*	0.54	*0.24*
		3/4 (Hex)	*20*	7/16	*11*	1 1/2	*38*	0.63	*0.29*
1 1/4	*32*	1/2	*15*	9/16	*14*	1 5/8	*41*	0.84	*0.38*
		3/4	*20*	1	*25*	2 1/8	*54*	0.90	*0.41*
		1	*25*	15/16	*24*	2 1/8	*54*	1.07	*0.49*
1 1/2	*40*	1/2	*15*	1/2	*13*	1 5/8	*41*	1.00	*0.45*
		3/4	*20*	1/2	*13*	1 5/8	*41*	1.20	*0.54*
		1	*25*	1/2	*13*	1 3/4	*44*	1.50	*0.68*
		1 1/4	*32*	1	*25*	2 1/4	*57*	1.45	*0.66*
2	*50*	1/2	*15*	5/8	*16*	2	*51*	2.00	*0.91*
		3/4	*20*	3/4	*19*	2	*51*	1.90	*0.86*
		1	*25*	3/4	*19*	2	*51*	1.83	*0.83*
		1 1/4	*32*	13/16	*22*	2 1/8	*54*	1.78	*0.81*
		1 1/2	*40*	7/8	*22*	2 3/16	*56*	1.98	*0.90*
2 1/2	*65*	1 1/2	*40*	3/4	*19*	2	*51*	3.10	*1.41*
		2	*50*	1	*25*	2 9/16	*65*	2.98	*1.35*
3	*80*	3/4	*20*	15/16	*24*	2 1/2	*64*	4.31	*1.95*
		2	*50*	1 1/16	*27*	2 3/4	*70*	3.96	*1.80*
		2 1/2	*65*	15/16	*24*	2 13/16	*73*	4.40	*2.00*
4	*100*	2	*50*	1 3/16	*30*	2 15/16	*75*	6.50	*2.95*
		2 1/2	*65*	1 3/16	*30*	3 1/8	*79*	7.78	*3.53*
		3	*80*	1 1/16	*27*	3 1/8	*79*	7.01	*3.18*
5	*125*	4	*100*	1 1/16	*27*	3 5/16	*84*	10.48	*4.75*
6	*150*	4	*100*	1 1/8	*29*	3 7/16	*87*	13.83	*6.27*
		5	*125*	1 1/8	*29*	3 9/16	*90*	15.53	*7.04*
8	*200*	6	*150*	1 1/4	*32*	3 7/8	*98*	29.10	*13.20*

* Dimension "B" does not conform to ASME standard.

Note: See following page for pressure-temperature ratings.

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Project:	☐ **Approved**
Address:	☐ **Approved as noted**
Contractor:	☐ **Not approved**
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Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
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Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

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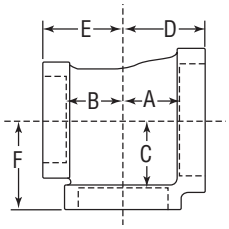
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

Class 125 (Standard)

FIGURE 359
Tee Reducing



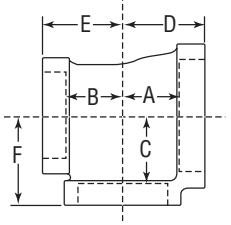
Size						A		B		C		D		E		F		Unit Weight Black	
NPS	DN	NPS	DN	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg
1/2	15	1/2	15	1/4	8	1 1/16	17	11/16	17	13/16	22	1 1/8	29	1 1/8	29	1 1/8	29	0.57	0.26
				3/8	10	1 1/16	17	11/16	17	3/4	19	1 1/8	29	1 1/8	29	1 1/8	29	0.57	0.26
				3/4	20	1 3/16	22	13/16	22	11/16	17	1 1/4	32	1 1/4	32	13/16	22	0.68	0.31
				1	25	1	25	1	25	13/16	22	1 7/16	37	1 7/16	37	1 3/8	35	1.00	0.45
3/4	20	1/2	15	1/2	15	1 1/16	17	11/16	17	13/16	22	13/16	22	1 1/8	29	1 1/4	32	0.64	0.29
				3/4	20	1 3/16	22	13/16	22	13/16	22	15/16	24	1 1/4	32	15/16	24	0.75	0.34
		3/4	20	1/4	8	9/16	14	9/16	14	7/8	22	11/16	17	11/16	17	13/16	22	0.62	0.28
				3/8	10	1 1/16	17	11/16	17	15/16	24	13/16	22	13/16	22	1 1/4	32	0.75	0.34
				1/2	15	1 1/16	17	11/16	17	13/16	22	13/16	22	13/16	22	1 1/4	32	0.76	0.34
				1	25	1 5/16	24	15/16	24	13/16	22	1 7/16	37	1 7/16	37	1 3/8	35	0.99	0.45
1	25	1/4	8	1	25	1 5/16	24	15/16	24	15/16	24	1 1/2	38	1 1/4	32	1 1/2	38	1.08	0.49
		1/2	15	1/2	15	1 1/16	17	3/4	19	15/16	24	1 1/4	32	13/16	22	1 3/8	35	0.90	0.41
				3/4	20	1 3/16	22	13/16	22	15/16	24	1 3/8	35	1 1/4	32	1 7/16	37	0.91	0.41
				1	25	1 5/16	24	15/16	24	15/16	24	1 1/2	38	1 3/8	35	1 1/2	38	1.08	0.49
		3/4	20	1/2	15	1 1/16	17	11/16	17	15/16	24	1 1/4	32	13/16	22	1 3/8	35	0.89	0.40
				3/4	20	1 3/16	22	13/16	22	15/16	24	1 3/8	35	15/16	24	1 7/16	37	1.00	0.45
				1	25	1 5/16	24	15/16	24	15/16	24	1 1/2	38	1 7/16	37	1 1/2	38	1.13	0.51
		1	25	1/4	8	1 1/16	17	11/16	17	1 1/8	29	1 1/8	29	1 1/4	32	1 3/8	35	1.01	0.46
				1/2	15	1 1/16	17	11/16	17	15/16	24	1 1/4	32	1 1/4	32	1 3/8	35	1.01	0.46
				3/4	20	1 3/16	22	13/16	22	15/16	24	1 3/8	35	1 3/8	35	1 7/16	37	1.11	0.50
				1 1/4	32	1 1/8	29	1 1/8	29	15/16	24	1 11/16	43	1 11/16	43	1 9/16	40	1.49	0.68
				1 1/2	40	1 1/4	32	1 1/4	32	1	25	1 13/16	47	1 13/16	47	1 5/8	41	1.84	0.83
				2	50	1 7/16	37	1 7/16	37	1	25	2	50	2	50	1 3/4	44	2.70	1.22

Note: See page 6 for pressure-temperature ratings.

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

Class 125 (Standard)

FIGURE 359
Tee Reducing

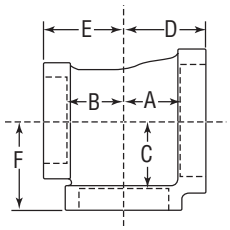


Size						A		B		C		D		E		F		Unit Weight Black	
NPS	DN	NPS	DN	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg
1¼	32	½	15	½	15	13/16	22	13/16	22	1 1/8	29	1 7/16	37	15/16	24	1 5/8	41	1.00	0.45
				1	25	1 5/16	24	15/16	24	1 1/8	29	1 9/16	40	1 3/8	35	1 11/16	43	1.38	0.63
				1¼	32	1 1/8	29	1 1/8	29	1 1/8	29	1 3/4	44	1 9/16	40	1 3/4	44	1.64	0.74
		¾	20	¾	20	13/16	22	13/16	22	1 1/8	29	1 7/16	37	15/16	24	1 5/8	41	1.27	0.58
				1	25	1 5/16	24	15/16	24	1 1/8	29	1 9/16	40	1 7/16	37	1 11/16	43	1.43	0.65
				1¼	32	1 1/8	29	1 1/8	29	1 1/8	29	1 3/4	44	1 5/8	41	1 3/4	44	1.73	0.78
		1	25	½	15	1 1/16	17	11/16	17	1 1/8	29	15/16	24	1 1/4	32	1 9/16	40	1.27	0.58
				¾	20	1 3/16	22	13/16	22	1 1/8	29	1 7/16	37	1 3/8	35	1 5/8	41	1.36	0.62
				1	25	1 5/16	24	15/16	24	1 1/8	29	1 9/16	40	1 9/16	40	1 11/16	43	1.53	0.69
				1¼	32	1 1/8	29	1 1/8	29	1 1/8	29	1 3/4	44	1 11/16	43	1 3/4	44	1.79	0.81
				1½	40	1 1/4	32	1 1/4	32	13/16	22	1 7/8	48	1 13/16	47	1 13/16	47	2.07	0.94
				2	50	1 7/16	37	1 7/16	37	13/16	22	2 1/16	52	2	50	1 7/8	48	2.66	1.21
		1¼	32	½	15	1 1/16	17	11/16	17	1 1/8	29	15/16	24	15/16	24	1 9/16	40	1.47	0.67
				¾	20	1 3/16	22	13/16	22	1 1/8	29	1 7/16	37	1 7/16	37	1 5/8	41	1.57	0.71
				1	25	1 5/16	24	15/16	24	1 1/8	29	1 9/16	40	1 9/16	40	1 11/16	43	1.73	0.78
				1½	40	1 1/4	32	1 1/4	32	13/16	22	1 7/8	48	1 7/8	48	1 13/16	47	2.29	1.04
				2	50	1 7/16	37	1 7/16	37	13/16	22	2 1/16	52	2 1/16	52	1 7/8	48	2.81	1.27
1½	40	½	15	1¼	32	13/16	22	1 1/8	29	1 1/4	32	1 13/16	47	1 9/16	40	1 7/8	48	1.93	0.88
				1½	40	15/16	24	1 1/4	32	15/16	24	1 15/16	49	1 11/16	43	1 15/16	49	2.14	0.97
		¾	20	1½	40	15/16	24	1 1/4	32	15/16	24	1 15/16	49	1 3/4	44	1 15/16	49	2.18	0.99
		1	25	½	15	13/16	22	3/4	19	1 1/4	32	1 7/16	37	15/16	24	1 11/16	43	1.75	0.79
				¾	20	7/8	22	13/16	22	1 1/4	32	1 1/2	38	1 3/8	35	1 3/4	44	1.70	0.77
				1	25	1	25	15/16	24	1 1/4	32	1 5/8	41	1 1/2	38	1 13/16	47	1.72	0.78
				1¼	32	13/16	22	1 1/8	29	1 1/4	32	1 13/16	47	1 11/16	43	1 7/8	48	2.08	0.94
				1½	40	15/16	24	1 1/4	32	15/16	24	1 15/16	49	1 13/16	47	1 15/16	49	2.29	1.04
				2	50	1 1/2	38	1 7/16	37	15/16	24	2 1/8	54	2	50	2	51	2.91	1.32
		1¼	32	½	15	13/16	22	11/16	17	1 1/4	32	1 7/16	37	15/16	24	1 11/16	43	1.67	0.76
				¾	20	7/8	22	13/16	22	1 1/4	32	1 1/2	38	1 7/16	37	1 3/4	44	1.79	0.81
				1	25	1	25	15/16	24	1 1/4	32	1 5/8	41	1 9/16	40	1 13/16	47	1.97	0.89
				1¼	32	13/16	22	1 1/8	29	1 1/4	32	1 13/16	47	1 3/4	44	17/8	48	2.28	1.03
				1½	40	15/16	24	1 1/4	32	15/16	24	1 15/16	49	1 7/8	48	1 15/16	49	2.50	1.13
				2	50	1 1/2	38	1 7/16	37	15/16	24	2 1/8	54	2 1/16	52	2	51	3.07	1.39
		1½	40	½	15	13/16	22	13/16	22	1 1/4	32	1 7/16	37	1 7/16	37	1 11/16	43	1.84	0.83
				¾	20	7/8	22	7/8	22	1 1/4	32	1 1/2	38	1 1/2	38	1 3/4	44	1.95	0.88
				1	25	1	25	1	25	1 1/4	32	1 5/8	41	1 5/8	41	1 13/16	47	2.13	0.97
				1¼	32	13/16	22	13/16	22	1 1/4	32	1 13/16	47	1 13/16	47	1 7/8	48	2.44	1.11
				2	50	1 1/2	38	1 1/2	38	15/16	24	2 1/8	54	2 1/8	54	2	51	3.23	1.46
				2½	65	1 13/16	47	1 13/16	47	15/16	24	2 7/16	62	2 7/16	62	2 3/16	56	4.15	1.88

Note: See page 6 for pressure-temperature ratings.

Class 125 (Standard)

FIGURE 359
Tee Reducing

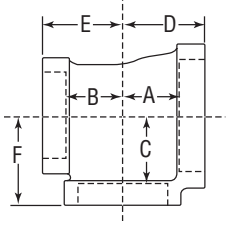


Size						A		B		C		D		E		F		Unit Weight Black	
NPS	DN	NPS	DN	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg
				1 1/2	40	15/16	24	1 3/8	35	1 1/2	38	2	51	1 13/16	47	2 1/8	54	2.95	1.34
		1/2	15	2	50	1 9/16	40	1 7/16	37	1 9/16	40	2 1/4	57	1 7/8	48	2 1/4	57	3.30	1.50
				1 1/4	32	1 3/16	22	1 1/8	29	1 7/16	37	1 7/8	48	1 3/4	44	2 1/16	52	2.50	1.13
		3/4	20	1 1/2	40	1 5/16	24	15/16	24	1 1/2	38	2	51	1 13/16	47	2 1/8	54	3.40	1.54
				2	50	1 9/16	40	1 7/16	37	1 9/16	40	2 1/4	57	1 15/16	49	2 1/4	57	3.31	1.50
				1	25	11/16	17	11/16	17	1 7/16	37	1 3/4	44	1 5/8	41	2	51	2.70	1.22
				1 1/4	32	13/16	22	1 1/8	29	1 1/2	38	1 7/8	48	1 3/4	44	2 1/16	52	2.94	1.33
		1	25	1 1/2	40	15/16	24	1 1/4	32	1 1/2	38	2	51	1 13/16	47	2 1/8	54	2.85	1.29
				2	50	1 9/16	40	1 7/16	37	1 9/16	40	2 1/4	57	2	51	2 1/4	57	3.46	1.57
				2 1/2	65	1 7/8	48	1 13/16	47	1 9/16	40	2 9/16	65	2 3/8	60	2 7/16	62	4.88	2.21
				1/2	15	11/16	17	1	25	1 7/16	37	1 3/4	44	1 5/8	41	2	51	2.48	1.12
				3/4	20	7/8	22	7/8	22	1 7/16	37	1 9/16	40	1 1/2	38	1 15/16	49	2.50	1.13
				1	25	11/16	17	1	25	1 7/16	37	1 3/4	44	1 5/8	41	2	51	2.73	1.24
		1 1/4	32	1 1/4	32	13/16	22	1 1/8	29	1 7/16	37	1 7/8	48	1 3/4	44	2 1/16	52	2.90	1.32
				1 1/2	40	15/16	24	1 1/4	32	1 1/2	38	2	51	1 7/8	48	2 1/8	54	3.13	1.42
2	50			2	50	1 9/16	40	1 7/16	37	1 9/16	40	2 1/4	57	2 1/16	52	2 1/4	57	3.71	1.68
				2 1/2	65	1 7/8	48	1 3/4	44	1 9/16	40	2 9/16	65	2 3/8	60	2 7/16	62	4.54	2.06
				1/2	15	13/16	22	13/16	22	1 7/16	37	1 1/2	38	1 7/16	37	1 7/8	48	2.34	1.06
				3/4	20	7/8	22	7/8	22	1 7/16	37	1 9/16	40	1 1/2	38	1 15/16	49	2.46	1.12
				1	25	11/16	17	1	25	1 7/16	37	1 3/4	44	1 5/8	41	2	51	2.66	1.21
		1 1/2	40	1 1/4	32	13/16	22	13/16	22	1 7/16	37	1 7/8	48	1 13/16	47	2 1/16	52	2.98	1.35
				1 1/2	40	15/16	24	15/16	24	1 1/2	38	2	51	1 15/16	49	2 1/8	54	3.24	1.47
				2	50	1 9/16	40	1 1/2	38	1 9/16	40	2 1/4	57	2 1/8	54	2 1/4	57	3.70	1.68
				2 1/2	65	1 7/8	48	1 15/16	49	1 9/16	40	2 9/16	65	2 9/16	65	2 7/16	62	5.46	2.48
				1/2	15	13/16	22	13/16	22	1 7/16	37	1 1/2	38	1 1/2	38	1 7/8	48	2.74	1.24
				3/4	20	7/8	22	7/8	22	1 7/16	37	1 9/16	40	1 9/16	40	1 15/16	49	2.86	1.30
				1	25	11/16	17	11/16	17	1 7/16	37	1 3/4	44	1 3/4	44	2	51	3.05	1.38
		2	50	1 1/4	32	13/16	22	13/16	22	1 7/16	37	1 7/8	48	1 7/8	48	2 1/16	52	3.38	1.53
				1 1/2	40	15/16	24	15/16	24	1 1/2	38	2	51	2	51	2 1/8	54	3.59	1.63
				2 1/2	65	1 7/8	48	1 7/8	48	1 9/16	40	2 9/16	65	2 9/16	65	2 7/16	62	5.17	2.34
				3	100	3	76	3	76	2 7/16	62	3 11/16	94	3 11/16	94	3 1/2	89	7.87	3.57

Note: See page 6 for pressure-temperature ratings.

Class 125 (Standard)

FIGURE 359
Tee Reducing

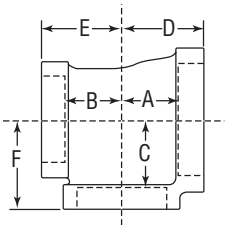


Size						A		B		C		D		E		F		Unit Weight Black	
NPS	DN	NPS	DN	NPS	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg
2 1/2	65	1/2	15	2 1/2	65	1 13/16	47	1 13/16	47	1 13/16	47	2 11/16	68	2 1/4	57	2 11/16	68	5.20	2.36
		3/4	20	2 1/2	65	1 13/16	47	1 3/4	44	1 13/16	47	2 11/16	68	2 1/4	57	2 11/16	68	5.10	2.31
		1	25	2	50	1 9/16	40	1 9/16	40	1 7/8	48	2 7/16	62	2 1/8	54	2 9/16	65	5.03	2.28
				2 1/2	65	1 13/16	47	1 3/4	44	1 13/16	47	2 11/16	68	2 5/16	59	2 11/16	68	5.36	2.43
		1 1/4	32	2	50	1 9/16	40	1 1/2	38	1 7/8	48	2 7/16	62	2 1/8	54	2 9/16	65	4.96	2.25
				2 1/2	65	1 13/16	47	1 3/4	44	1 13/16	47	2 11/16	68	2 3/8	60	2 11/16	68	5.40	2.45
		1 1/2	40	1 1/2	40	15/16	24	15/16	22	1 13/16	47	2 3/16	56	1 15/16	49	2 7/16	62	4.23	1.92
				2	50	1 9/16	40	1 1/2	38	1 7/8	48	2 7/16	62	2 1/8	54	2 9/16	65	4.85	2.20
				2 1/2	65	1 13/16	47	1 13/16	47	1 13/16	47	2 11/16	68	2 7/16	62	2 11/16	68	4.85	2.20
		2	50	1/2	15	3/4	19	13/16	22	1 3/4	44	1 11/16	43	1 1/2	38	2 3/16	56	5.82	2.64
				3/4	20	7/8	22	7/8	22	1 3/4	44	1 3/4	44	1 9/16	40	2 1/4	57	3.62	1.64
				1	25	1	25	11/16	17	1 3/4	44	1 15/16	49	1 3/4	44	2 5/16	59	3.92	1.78
				1 1/4	32	13/16	22	13/16	22	1 3/4	44	2 1/16	52	1 7/8	48	2 3/8	60	4.26	1.93
				1 1/2	40	15/16	24	15/16	24	1 13/16	47	2 3/16	56	2	51	2 7/16	62	4.42	2.00
				2	50	1 9/16	40	1 9/16	40	1 7/8	48	2 7/16	62	2 1/4	57	2 9/16	65	5.17	2.34
				2 1/2	65	1 13/16	47	1 7/8	48	1 13/16	47	2 11/16	68	2 9/16	65	2 11/16	68	6.00	2.72
				3	80	2 1/16	52	2 1/8	54	1 7/8	48	3	80	2 7/8	73	2 13/16	73	7.35	3.33
		2 1/2	65	1/2	15	3/4	19	3/4	19	1 3/4	44	1 11/16	43	1 11/16	43	2 3/16	56	4.00	1.81
				3/4	20	7/8	22	7/8	22	1 3/4	44	1 3/4	44	1 3/4	44	2 1/4	57	4.29	1.95
				1	25	1	25	1	25	1 3/4	44	1 15/16	49	1 15/16	49	2 5/16	59	4.48	2.03
				1 1/4	32	13/16	22	13/16	22	1 3/4	44	2 1/16	52	2 1/16	52	2 3/8	60	4.83	2.19
				1 1/2	40	15/16	24	15/16	24	1 13/16	47	2 3/16	56	2 3/16	56	2 7/16	62	5.14	2.33
				2	50	1 9/16	40	1 9/16	40	1 7/8	48	2 7/16	62	2 7/16	62	2 9/16	65	5.88	2.67
				3	80	2 1/16	52	2 1/16	52	1 7/8	48	3	80	3	80	2 13/16	73	8.09	3.67
				4	100	2 3/4	70	2 13/16	73	2 7/16	62	3 11/16	94	3 11/16	94	3 1/2	89	14.03	6.36
3	80	3/4	20	3	80	2 1/8	54	2 1/8	54	2 1/8	54	3 1/8	79	2 11/16	68	3 1/8	79	8.25	3.74
		1	25	3	80	2 1/8	54	2 1/8	54	2 1/8	54	3 1/8	79	2 11/16	68	3 1/8	79	8.30	3.76
		1 1/4	32	3	80	2 1/8	54	2 1/8	54	2 1/8	54	3 1/8	79	2 13/16	73	3 1/8	79	8.46	3.84
		1 1/2	40	3	80	2 1/8	54	2 3/16	56	2 1/8	54	3 1/8	79	2 13/16	73	3 1/8	79	8.13	3.69
		2	50	1 1/2	40	1 3/8	35	1 1/2	38	2 3/16	56	2 5/16	59	2 3/16	56	2 13/16	73	6.83	3.10
				2	50	1 9/16	40	1 9/16	40	2 3/16	56	2 9/16	65	2 1/4	57	2 15/16	75	7.29	3.31
				2 1/2	65	1 7/8	48	1 15/16	49	2 1/8	54	2 13/16	73	2 9/16	65	3 1/16	78	7.10	3.22
				3	80	2 1/8	54	2 3/16	56	2 1/8	54	3 1/8	79	2 15/16	75	3 1/8	79	8.79	3.99
		2 1/2	65	1	25	1	25	15/16	24	2 1/8	54	2 1/16	52	1 15/16	49	2 11/16	68	5.51	2.50
				1 1/4	32	1 1/4	32	13/16	22	2 1/8	54	2 3/16	56	2 1/16	52	2 3/4	70	5.92	2.68
				1 1/2	40	1 3/8	35	15/16	24	2 3/16	56	2 5/16	59	2 3/16	56	2 13/16	73	6.23	2.83
				2	50	1 9/16	40	1 1/2	38	2 3/16	56	2 9/16	65	2 7/16	62	2 15/16	75	6.81	3.09
				2 1/2	65	1 7/8	48	1 13/16	47	2 1/8	54	2 13/16	73	2 11/16	68	3 1/16	78	7.66	3.47
				3	80	2 1/8	54	2 1/8	54	2 1/8	54	3 1/8	79	3 1/16	78	3 1/8	79	9.13	4.14
		3	80	1/2	15	15/16	24	15/16	24	2 3/16	56	1 7/8	48	1 7/8	48	2 5/8	67	6.08	2.76
				3/4	20	15/16	24	15/16	24	2 1/8	54	1 7/8	48	1 7/8	48	2 5/8	67	6.06	2.75
				1	25	1	25	1	25	2 1/8	54	2 1/16	52	2 1/16	52	2 11/16	68	6.27	2.84
				1 1/4	32	1 1/4	32	1 1/4	32	2 1/8	54	2 3/16	56	2 3/16	56	2 3/4	70	6.75	3.06
				1 1/2	40	1 3/8	35	1 3/8	35	2 3/16	56	2 5/16	59	2 5/16	59	2 15/16	75	7.10	3.22
				2	50	1 9/16	40	1 9/16	40	2 3/16	56	2 9/16	65	2 9/16	65	2 7/8	73	7.75	3.51
				2 1/2	65	1 7/8	48	1 7/8	48	2 1/8	54	2 13/16	73	2 13/16	73	3 1/16	78	8.92	4.05
				4	100	2 11/16	68	2 11/16	68	2 7/16	62	3 11/16	94	3 11/16	94	3 1/2	89	12.80	5.80

Note: See page 6 for pressure-temperature ratings.

Class 125 (Standard)

FIGURE 359
Tee Reducing



Size						A		B		C		D		E		F		Unit Weight Black	
NPS	*DN*	NPS	*DN*	NPS	*DN*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	lbs	*kg*
3 1/2	*90*	3 1/2	*90*	1 1/2	*40*	1 3/8	*35*	1 3/8	*35*	2 7/16	*62*	2 3/8	*60*	2 3/8	*60*	3 1/16	*78*	8.87	*4.02*
				2	*50*	1 5/8	*41*	1 5/8	*41*	2 7/16	*62*	2 5/8	*67*	2 5/8	*67*	3 3/16	*81*	9.94	*4.51*
4	*100*	1	*25*	4	*100*	2 3/4	*70*	2 15/16	*75*	2 3/4	*70*	3 3/4	*95*	3 1/2	*89*	3 3/4	*95*	13.52	*6.13*
		1 1/2	*40*	4	*100*	2 3/4	*70*	2 7/8	*73*	2 3/4	*70*	3 3/4	*95*	3 1/2	*89*	3 3/4	*95*	13.47	*6.11*
		2	*50*	2	*50*	1 11/16	*43*	1 7/8	*48*	2 3/4	*70*	2 11/16	*68*	2 9/16	*65*	3 1/2	*89*	11.34	*5.14*
				4	*100*	2 3/4	*70*	2 3/4	*70*	2 3/4	*70*	3 3/4	*95*	3 1/2	*89*	3 3/4	*95*	13.89	*6.30*
		2 1/2	*65*	2 1/2	*65*	1 7/8	*48*	1 13/16	*47*	2 5/8	*67*	2 15/16	*75*	2 13/16	*73*	3 9/16	*90*	11.78	*5.34*
				4	*100*	2 3/4	*70*	2 3/4	*70*	2 3/4	*70*	3 3/4	*95*	3 5/8	*92*	3 3/4	*95*	15.75	*7.14*
		3	*80*	2 1/2	*65*	1 7/8	*48*	1 7/8	*48*	2 5/8	*67*	2 15/16	*75*	2 13/16	*73*	3 9/16	*90*	11.25	*5.10*
				3	*80*	2 1/4	*57*	2 1/8	*54*	2 11/16	*68*	3 1/4	*83*	3 1/8	*79*	3 5/8	*92*	12.50	*5.67*
				4	*100*	2 3/4	*70*	2 11/16	*68*	2 3/4	*70*	3 3/4	*95*	3 5/8	*92*	3 3/4	*95*	15.04	*6.82*
		4	*100*	1	*25*	13/16	*22*	13/16	*22*	2 3/4	*70*	2 5/16	*59*	2 5/16	*59*	3 5/16	*84*	10.40	*4.72*
				1 1/4	*32*	15/16	*24*	15/16	*24*	2 5/8	*67*	2 5/16	*59*	2 5/16	*59*	3 5/16	*84*	10.38	*4.71*
				1 1/2	*40*	1 7/16	*37*	1 7/16	*37*	2 11/16	*68*	2 7/16	*62*	2 7/16	*62*	3 5/16	*84*	10.75	*4.88*
				2	*50*	1 11/16	*43*	1 11/16	*43*	2 3/4	*70*	2 11/16	*68*	2 11/16	*68*	3 1/2	*89*	11.63	*5.27*
				2 1/2	*65*	2	*51*	2	*51*	2 5/8	*67*	2 15/16	*75*	2 15/16	*75*	3 9/16	*90*	12.85	*5.83*
				3	*80*	2 1/4	*57*	2 1/4	*57*	2 11/16	*68*	3 1/4	*83*	3 1/4	*83*	3 5/8	*92*	14.12	*6.40*
				5	*125*	3 3/8	*86*	3 3/8	*86*	2 13/16	*73*	4 3/8	*111*	4 3/8	*111*	4	*102*	20.88	*9.47*
				6	*150*	3 7/8	*98*	3 7/8	*98*	2 7/8	*73*	4 15/16	*125*	4 15/16	*125*	4 1/16	*103*	26.36	*11.95*
5	*125*	5	*125*	2	*50*	1 3/4	*44*	1 3/4	*44*	3 7/16	*87*	2 15/16	*75*	2 15/16	*75*	4 1/8	*105*	17.43	*7.90*
				3	*80*	2 5/16	*59*	2 5/16	*59*	3 1/4	*83*	3 1/2	*89*	3 1/2	*89*	4 1/4	*108*	20.00	*9.07*
				4	*100*	2 13/16	*71*	2 13/16	*71*	3 3/8	*86*	4	*102*	4	*102*	4 3/8	*111*	23.83	*10.81*
6	*150*	4		4	*100*	2 7/8	*73*	2 13/16	*71*	3 7/8	*98*	4 1/16	*103*	4	*102*	4 15/16	*125*	30.00	*13.61*
		6	*150*	2 1/2	*65*	2	*51*	2	*51*	3 13/16	*97*	3 1/4	*83*	3 1/4	*83*	4 3/4	*121*	25.67	*11.64*
				3	*80*	2 3/8	*60*	2 3/8	*60*	3 13/16	*97*	3 9/16	*90*	3 9/16	*90*	4 13/16	*122*	27.46	*12.45*
				4	*100*	2 7/8	*73*	2 7/8	*73*	3 7/8	*98*	4 1/16	*103*	4 1/16	*103*	4 15/16	*125*	32.44	*14.71*
				5	*125*	3 3/8	*86*	3 3/8	*86*	3 13/16	*97*	4 5/8	*117*	4 5/8	*117*	5	*127*	37.00	*16.78*

Note: See page 6 for pressure-temperature ratings.

CAST IRON THREADED FITTINGS

Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME B16.4. Plugs and bushings are manufactured in accordance with ASME B16.14.

NOTE: Figure 367 Concentric Reducers do not meet the overall length requirement of ASME B16.4. All other dimensions are in compliance.

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

Cast Iron Threaded Fittings
Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
CAST IRON THREADED FITTINGS					
Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

General Assembly of Threaded Fittings

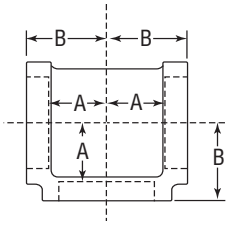
1) Inspect both male and female components prior to assembly.
   - Threads should be free from mechanical damage, dirt, chips and excess cutting oil.
   - Clean or replace components as necessary.

2) Application of thread sealant
   - Use a thread sealant that is fast drying, sets-up to a semi hard condition and is vibration resistant. Alternately, an anaerobic sealant may be utilized.
   - Thoroughly mix the thread sealant prior to application.
   - Apply a thick even coat to the male threads only. Best application is achieved with a brush stiff enough to force sealant down to the root of the threads.

3) Joint Makeup
   - For sizes up to and including 2" pipe, wrench tight makeup is considered three full turns past handtight. Handtight engagement for 1/2" through 2" thread varies from 4 1/2 turns to 5 turns.
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

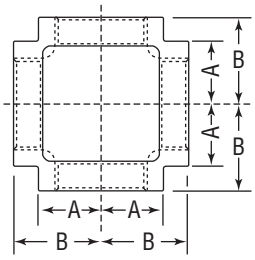
Class 125 (Standard)

FIGURE 358
Tee



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/4	*8*	1/2	*13*	13/16	*22*	0.22	*0.10*
3/8	*10*	5/8	*16*	1	*25*	0.35	*0.16*
1/2	*15*	11/16	*17*	1 1/8	*29*	0.56	*0.25*
3/4	*20*	13/16	*22*	1 5/16	*33*	0.84	*0.38*
1	*25*	15/16	*24*	1 1/2	*38*	1.25	*0.57*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	2.03	*0.92*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	2.70	*1.22*
2	*50*	1 9/16	*40*	2 1/4	*57*	4.23	*1.92*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	6.67	*3.02*
3	*80*	2 3/16	*56*	3 1/8	*79*	10.00	*4.54*
3 1/2	*90*	2 7/16	*62*	3 7/16	*87*	13.29	*6.03*
4	*100*	2 11/16	*68*	3 3/4	*95*	16.33	*7.41*
5	*125*	3 5/16	*84*	4 1/2	*114*	27.33	*12.39*
6	*150*	3 7/8	*98*	5 1/8	*130*	40.85	*18.53*
8	*200*	5 3/16	*132*	6 9/16	*167*	79.00	*35.83*

FIGURE 360
Cross



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/2	*15*	9/16	*14*	13/16	*22*	2.80	*1.27*
3/4	*20*	13/16	*22*	1 5/16	*33*	1.03	*0.47*
1	*25*	15/16	*24*	1 1/2	*38*	1.59	*0.72*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	2.42	*1.10*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	3.21	*1.46*
2	*50*	1 9/16	*40*	2 1/4	*57*	5.28	*2.39*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	8.07	*3.66*
3	*80*	2 3/16	*56*	3 1/8	*79*	11.84	*5.37*
4	*100*	2 3/4	*70*	3 13/16	*98*	19.63	*8.90*

Note: See following page for pressure-temperature ratings.

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

CAST IRON THREADED FITTINGS

Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME B16.4. Plugs and bushings are manufactured in accordance with ASME B16.14.

NOTE: Figure 367 Concentric Reducers do not meet the overall length requirement of ASME B16.4. All other dimensions are in compliance.

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Cast Iron Threaded Fittings
Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
CAST IRON THREADED FITTINGS					
Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

General Assembly of Threaded Fittings

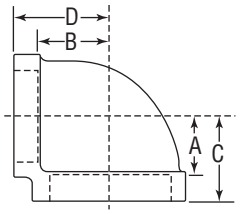
1) Inspect both male and female components prior to assembly.
   - Threads should be free from mechanical damage, dirt, chips and excess cutting oil.
   - Clean or replace components as necessary.

2) Application of thread sealant
   - Use a thread sealant that is fast drying, sets-up to a semi hard condition and is vibration resistant. Alternately, an anaerobic sealant may be utilized.
   - Thoroughly mix the thread sealant prior to application.
   - Apply a thick even coat to the male threads only. Best application is achieved with a brush stiff enough to force sealant down to the root of the threads.

3) Joint Makeup
   - For sizes up to and including 2" pipe, wrench tight makeup is considered three full turns past handtight. Handtight engagement for 1/2" through 2" thread varies from 4 1/2 turns to 5 turns.
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

Class 125 (Standard)

FIGURE 352
90° Elbow, Reducing



Size				A		B		C		D		Unit Weight Black	
NPS	*DN*	NPS	*DN*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	lbs	*kg*
1/2	*15*	1/4	*8*	5/8	*16*	3/4	*19*	1 1/16	*27*	1 1/16	*27*	0.40	*0.18*
		3/8	*10*	5/8	*16*	11/16	*17*	1 1/16	*27*	1 1/16	*27*	0.34	*0.15*
3/4	*20*	1/2	*15*	11/16	*17*	13/16	*22*	1 1/4	*32*	1 1/4	*32*	0.51	*0.23*
1	*25*	1/2	*15*	11/16	*17*	15/16	*24*	1 3/8	*35*	1 3/8	*35*	0.67	*0.30*
		3/4	*20*	13/16	*22*	15/16	*24*	1 7/16	*37*	1 7/16	*37*	0.76	*0.34*
1 1/4	*32*	1/2	*15*	11/16	*17*	1 1/16	*27*	1 1/2	*38*	1 1/2	*38*	1.07	*0.49*
		3/4	*20*	13/16	*22*	1 1/8	*29*	1 5/8	*41*	1 5/8	*41*	1.02	*0.46*
		1	*25*	15/16	*24*	1 1/8	*29*	1 11/16	*43*	1 11/16	*43*	1.21	*0.55*
1 1/2	*40*	1/2	*15*	3/4	*19*	1 1/4	*32*	1 5/8	*41*	1 5/8	*41*	1.53	*0.69*
		3/4	*20*	7/8	*22*	1 5/16	*33*	1 13/16	*47*	1 13/16	*47*	1.55	*0.70*
		1	*25*	1	*25*	1 1/4	*32*	1 13/16	*47*	1 13/16	*47*	1.44	*0.65*
		1 1/4	*32*	1 3/16	*30*	1 1/4	*32*	1 7/8	*48*	1 7/8	*48*	1.74	*0.79*
2	*50*	1/2	*15*	1 3/16	*30*	1 7/16	*37*	1 3/8	*35*	1 3/8	*35*	2.22	*1.01*
		3/4	*20*	1 5/16	*33*	1 1/2	*38*	2	*51*	2	*51*	2.20	*1.00*
		1	*25*	1 1/16	*27*	1 7/16	*37*	2	*51*	2	*51*	2.08	*0.94*
		1 1/4	*32*	1 3/16	*30*	1 7/16	*37*	2 1/16	*52*	2 1/16	*52*	2.33	*1.06*
		1 1/2	*40*	1 5/16	*33*	1 1/2	*38*	2 1/8	*54*	2 1/8	*54*	2.59	*1.17*
2 1/2	*65*	1	*25*	1	*25*	1 3/4	*44*	2 5/16	*59*	2 5/16	*59*	2.93	*1.33*
		1 1/4	*32*	1 3/16	*30*	1 3/4	*44*	2 3/8	*60*	2 3/8	*60*	3.41	*1.55*
		1 1/2	*40*	1 5/16	*33*	1 13/16	*47*	2 7/16	*62*	2 7/16	*62*	3.68	*1.67*
		2	*50*	1 9/16	*40*	1 7/8	*48*	2 9/16	*65*	2 9/16	*65*	4.01	*1.82*
3	*80*	1 1/4	*32*	1 5/8	*41*	2 5/16	*59*	2 15/16	*75*	2 15/16	*75*	5.98	*2.71*
		1 1/2	*40*	1 5/8	*41*	2 5/16	*59*	2 15/16	*75*	2 15/16	*75*	5.65	*2.56*
		2	*50*	1 5/8	*41*	2 1/4	*57*	2 15/16	*75*	2 15/16	*75*	5.25	*2.38*
		2 1/2	*65*	1 7/8	*48*	2 3/16	*56*	3 1/16	*78*	3 1/16	*78*	6.44	*2.92*
4	*100*	2	*50*	2 3/16	*56*	2 15/16	*75*	3 5/8	*92*	3 5/8	*92*	11.89	*5.39*
		2 1/2	*65*	2 3/16	*56*	2 3/4	*70*	3 5/8	*92*	3 5/8	*92*	11.27	*5.11*
		3	*80*	2 3/16	*56*	2 11/16	*68*	3 5/8	*92*	3 5/8	*92*	10.63	*4.82*
5	*125*	4	*100*	2 13/16	*73*	3 5/16	*84*	4 3/8	*111*	4 3/8	*111*	16.47	*7.47*
6	*150*	3	*80*	2 5/16	*59*	3 13/16	*98*	4 13/16	*124*	4 13/16	*124*	19.43	*8.81*
		4	*100*	2 13/16	*73*	3 7/8	*98*	4 15/16	*125*	4 15/16	*125*	23.53	*10.67*
		5	*125*	3 3/8	*86*	3 13/16	*98*	5	*127*	5	*127*	26.66	*12.09*

Note: See following page for pressure-temperature ratings.

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

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NOTE: Figure 367 Concentric Reducers do not meet the overall length requirement of ASME B16.4. All other dimensions are in compliance.

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Cast Iron Threaded Fittings
Pressure - Temperature Ratings

Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Standards and Specifications

	Dimensions	Material	Galvanizing*	Thread	Pressure Rating
CAST IRON THREADED FITTINGS					
Class 125	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
Class 250	ASME B16.4	ASTM A-126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.4
CAST IRON PLUGS AND BUSHINGS					
	ASME B16.14	ASTM A- 126 (A)	ASTM A-153	ASME B1.20.1	ASME B16.14

* ASTM B 633. Type I, SC 4, may be supplied as alternate zinc coating per applicable ASME B16 product standard.

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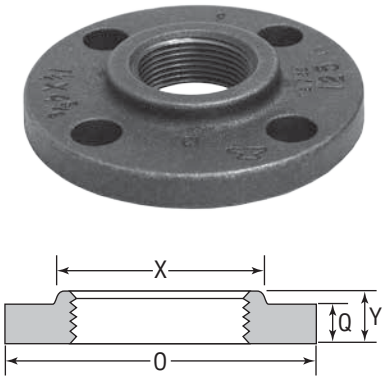
   - For 2 1/2" through 4" sizes, wrench tight makeup is considered two full turns past handtight. Handtight engagement for 2 1/2" through 4" thread varies from 5 1/2 turns to 6 3/4 turns.

CAST IRON FLANGES

Class 125 (Standard)

FIGURE 1011
Companion Flange



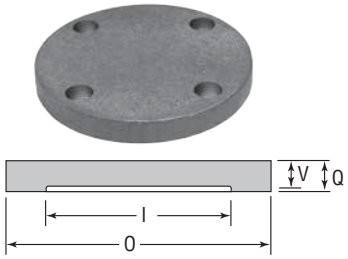
When ordering companion flanges, always give outside diameter as well as nominal pipe size.

Pipe Size		Diameter of Flange O		Min. Flange Thickness Q		Min. Diameter of Hub X		Min. Length Through Hub Y		Unit Weight			
										Black Paint		Galvanized	
NPS	*DN*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	lbs	*kg*	lbs	*kg*
3/4*	*20*	3 7/8	*98*	7/16	*11*	1 3/4	*44*	5/8	*16*	1.50	*0.68*	1.50	*0.68*
1	*25*	4 1/4	*108*	7/16	*11*	1 15/16	*49*	11/16	*17*	1.75	*0.79*	1.75	*0.79*
1 1/4	*32*	4 5/8	*117*	1/2	*13*	2 5/16	*59*	13/16	*22*	2.00	*0.91*	2.00	*0.91*
1 1/2	*40*	5	*127*	9/16	*14*	2 9/16	*65*	7/8	*22*	2.25	*1.02*	2.25	*1.02*
2	*50*	6	*152*	5/8	*16*	3 1/16	*78*	1	*25*	4.00	*1.81*	4.00	*1.81*
2 1/2	*65*	7	*178*	11/16	*17*	3 9/16	*90*	1 1/8	*29*	6.00	*2.72*	6.00	*2.72*
3	*80*	7 1/2	*191*	3/4	*19*	4 1/4	*108*	1 3/16	*30*	7.63	*3.46*	7.63	*3.46*
3 1/2	*90*	8 1/2	*216*	13/16	*21*	4 13/16	*122*	1 1/4	*32*	9.00	*4.08*	–	–
4	*100*	9	*229*	15/16	*24*	5 5/16	*135*	1 5/16	*33*	11.75	*5.33*	11.75	*5.33*
5	*125*	10	*254*	15/16	*24*	6 7/16	*164*	1 7/16	*37*	14.00	*6.35*	14.00	*6.35*
6	*150*	11	*279*	1	*25*	7 9/16	*192*	1 9/16	*40*	16.50	*7.48*	16.50	*7.48*
8	*200*	13 1/2	*343*	1 1/8	*29*	9 11/16	*246*	1 3/4	*44*	26.00	*11.79*	26.00	*11.79*
10	*250*	16	*406*	1 3/16	*30*	11 15/16	*303*	1 15/16	*49*	37.75	*17.12*	37.75	*17.12*
12	*300*	19	*483*	1 1/4	*32*	14 1/16	*357*	2 3/16	*56*	50.50	*22.91*	50.50	*22.91*

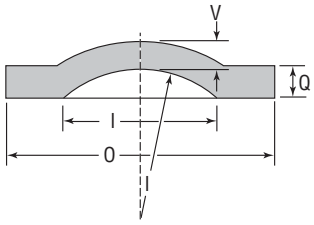
* Anvil size; not covered by ASME B16.1.

FIGURE 1018
Blind Flange

10 x 16 (NPS) and smaller



12 x 19 (NPS) and larger



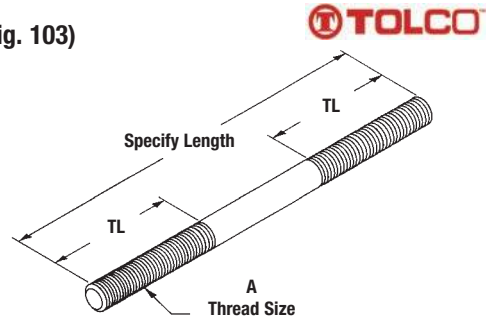
Pipe Size I		Diameter of Flange O		Min. Flange Thickness Q		Wall Thickness V		Unit Weight			
								Black Paint		Galvanized	
NPS	*DN*	in	*mm*	in	*mm*	in	*mm*	lbs	*kg*	lbs	*kg*
1	*25*	4 1/4	*108*	7/16	*11*	3/8	*10*	2.00	*0.91*	2.00	*0.91*
1 1/4	*32*	4 5/8	*117*	1/2	*13*	7/16	*11*	2.25	*1.02*	2.25	*1.02*
1 1/2	*40*	5	*127*	9/16	*14*	1/2	*13*	3.75	*1.70*	–	–
2	*50*	6	*152*	5/8	*16*	9/16	*14*	4.00	*1.81*	4.00	*1.81*
2 1/2	*65*	7	*178*	11/16	*17*	5/8	*16*	6.75	*3.06*	–	–
3	*80*	7 1/2	*191*	3/4	*19*	11/16	*17*	8.00	*3.63*	8.00	*3.63*
3 1/2	*90*	8 1/2	*216*	13/16	*21*	3/4	*19*	11.00	*4.99*	–	–
4	*100*	9	*229*	15/16	*24*	7/8	*22*	14.00	*6.35*	14.00	*6.35*
5	*125*	10	*254*	15/16	*24*	7/8	*22*	18.00	*8.16*	18.00	*8.16*
6	*150*	11	*279*	1	*25*	15/16	*24*	23.00	*10.43*	23.00	*10.43*
8	*200*	13 1/2	*343*	1 1/8	*29*	1 1/16	*27*	40.00	*18.14*	40.00	*18.14*
10	*250*	16	*406*	1 3/16	*30*	1 1/8	*29*	59.00	*26.76*	–	–
12	*300*	19	*483*	1 1/4	*32*	13/16	*21*	88.00	*39.92*	–	–

All Class 125 cast iron standard flanges have a flat face. Blind Flange 12 x 19 NPS supplied dished with inside radius to the pipe diameter. When ordering blind flanges, always give the outside diameters.

Note: See following page for pressure-temperature ratings.

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

Fig. B3205 - Threaded Rod (right-hand threads - both ends) (TOLCO Fig. 103)
Fig. B3205L - Threaded Rod (right & left hand threads)



Size Range: 3/8"-16 thru 3"-4 rod

Material: Steel

Function: Recommended for use as a hanger support in hanger assemblies. Rod is threaded on both ends with right hand threads of the length shown. Also available with left and right hand threads - specify Fig. B3205L when ordering.

Maximum Temperature: 750°F (399°C)

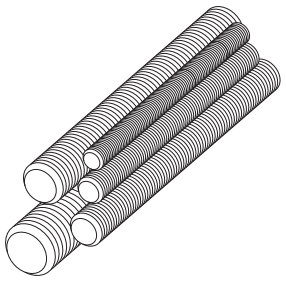
Finish: Plain. Contact Cooper B-Line for alternative finishes and materials.

Order By: Figure number, rod size, length and finish

Part No.	Thread Size A	Standard Thread Length TL		Design Load 650°F (343°C)		Design Load 750°F (399°C)	
		in.	(mm)	Lbs.	(kN)	Lbs.	(kN)
B3205-3/8 x 'L'	3/8"-16	2 1/2"	(63.5)	730	(3.25)	572	(2.54)
B3205-1/2 x 'L'	1/2"-13	2 1/2"	(63.5)	1350	(6.00)	1057	(4.70)
B3205-5/8 x 'L'	5/8"-11	2 1/2"	(63.5)	2160	(9.61)	1692	(7.52)
B3205-3/4 x 'L'	3/4"-10	3"	(76.2)	3230	(14.37)	2530	(11.25)
B3205-7/8 x 'L'	7/8"-9	3 1/2"	(88.9)	4480	(19.93)	3508	(15.60)

For larger sizes consult full line pipe hanger catalog.

Fig. ATR - All Threaded Rod (TOLCO Fig. 99 & Fig. 100)



Size Range: 3/8"-16 thru 1 1/2"-6 rod in 10' (3.05m) lengths

Material: Steel

Maximum Temperature: 750°F (399°C)

Finish: Plain. Contact Cooper B-Line for alternative finishes and materials.

Order By: Figure number, rod size, length and finish

Note: Fig. 99 is cut to length all threaded rod. Fig. 100 is full length.

Part No. & Size	Threads Per Inch	Recommended Load Lbs.	(kN)	Approx. Wt./100 Ft. Lbs.	(kg)
ATR 1/4" x 'L'	20	240	(1.07)	12	(5.44)
ATR 3/8" x 'L'	16	730	(3.24)	29	(13.15)
ATR 1/2" x 'L'	13	1350	(6.00)	53	(24.04)
ATR 5/8" x 'L'	11	2160	(9.60)	89	(40.37)
ATR 3/4" x 'L'	10	3230	(14.37)	123	(55.79)
ATR 7/8" x 'L'	9	4480	(19.93)	170	(77.11)

For larger sizes consult full line pipe hanger catalog.

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

Fig. 200 - "Trimline" Adjustable Band Hanger (Cooper B-Line Fig. B3170NF)
Fig. 200F - "Trimline" Adjustable Band Hanger with Felt Lining (Cooper B-Line Fig. B3170NFF)
Fig. 200C - "Trimline" Adjustable Band Hanger with Plastic Coated (Cooper B-Line Fig. B3170NFC)
Fig. 200S - "Trimline" Adjustable Band Hanger with Non-Captured Nut

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

Material: Steel, Pre-Galvanized to G90 specifications

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

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

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

Maximum Temperature: 650°F (343°C)

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

Order By: Figure number and pipe size

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

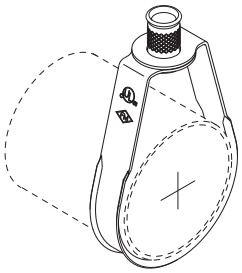


Fig. 200-1 to 200-2

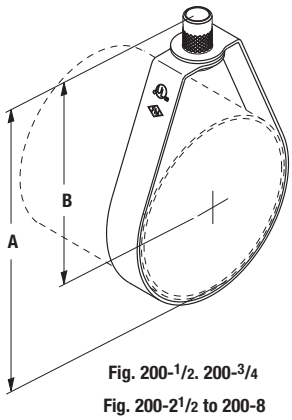


Fig. 200-1/2. 200-3/4
Fig. 200-2 1/2 to 200-8

Fig. 200C

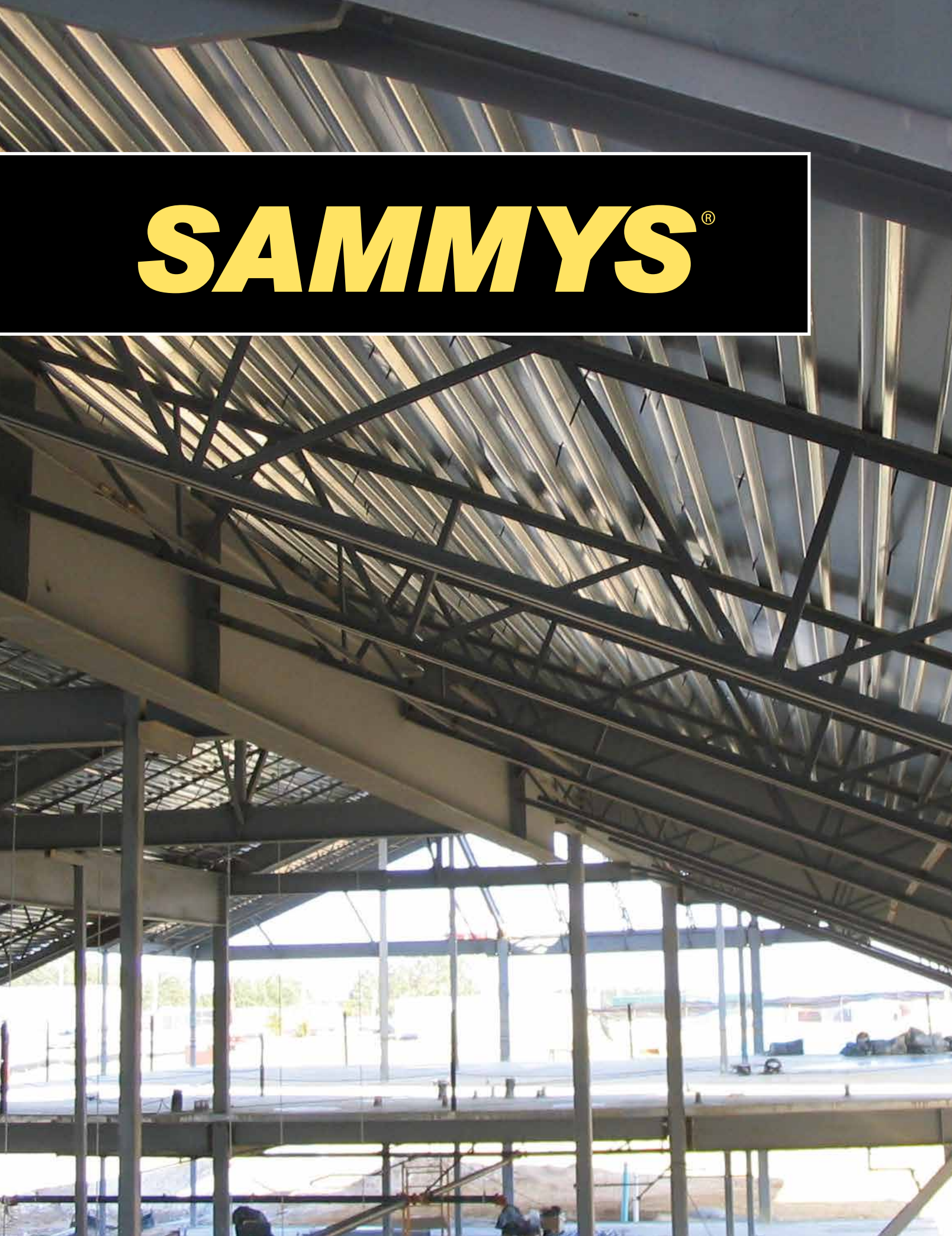
Fig. 200F

Fig. 200

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

Fig. 200S

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


SAMMYS®

Notes

SAMMYS®

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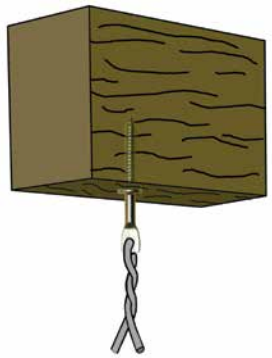


SAMMYS®

Anchors for Wood

Installs into Wood Structures Easily and Quickly!

Available in Vertical and Horizontal

SIDEWINDERS® FOR WOOD HORIZONTAL MOUNT

VERTICAL MOUNT

DESCRIPTION/SUGGESTED SPECIFICATIONS

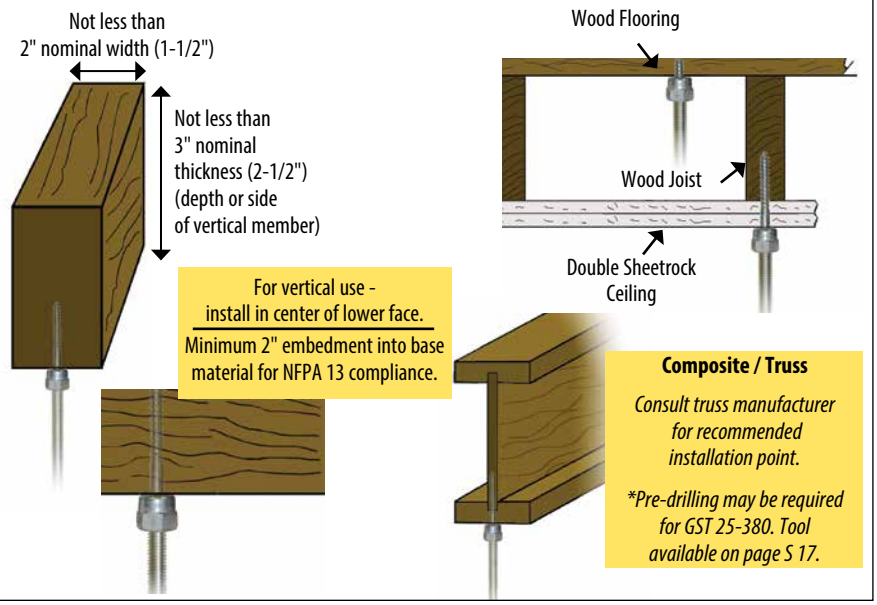
Self drilling & self-tapping into wood—

The Wood Sammy is perfect for Hanging Sprinklers, Pipes, Electrical Fixture or HVAC Equipment to wood joist, 2x4, OSB, plywood and wood beams. It is available in 1/4", 3/8" and 1/2" threaded coupling. The Wood Sammy is available in vertical mount, horizontal mount, and Swivel mount to accommodate all fastening situations.

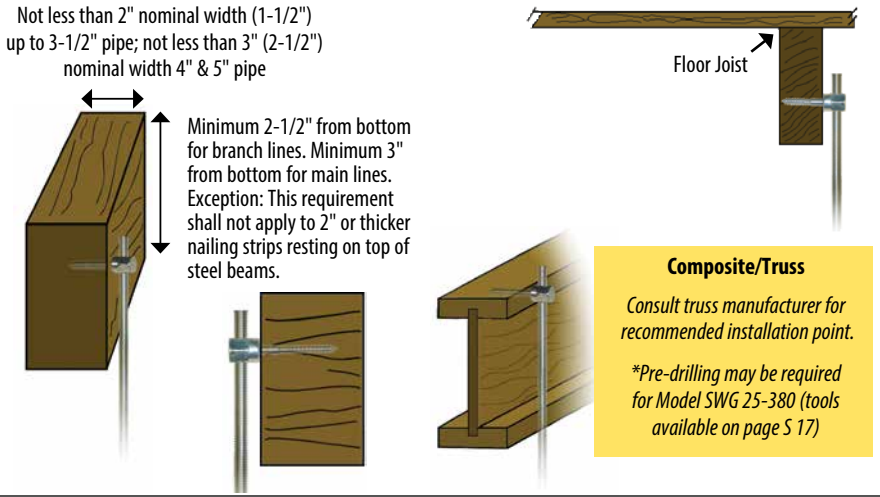
ADVANTAGES

- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with no load speed 2000-2500 rpm, minimum 6 amps drill/driver.
- Saves time from traditional methods.
- Reduces installation cost.
- Made in the U.S.A.

Sammy's Vertical Mount Product Features



Sammy's Sidewinder® Product Features



APPLICATIONS

Sprinkler Systems

Pipes/Plumbing

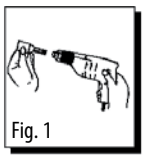
Electrical Lighting and Fixtures

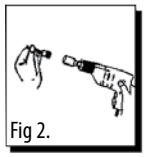
HVAC Equipment and Fixtures

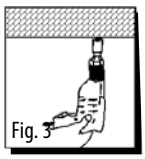
APPROVALS

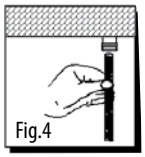
See Selection Chart for items with approvals.

INSTALLATION INSTRUCTIONS VERTICAL MOUNT







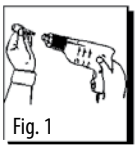


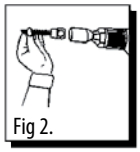
1. Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.
2. Insert the SAMMYS into the #14 (black) nut driver (p/n 8113910). Drill should be in a vertical position.
3. Push the face of the nut driver tight to the member. When the nut driver spins freely on the SAMMYS, stop drill and remove.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

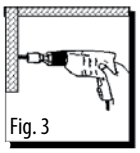
Important Vertical Installation Notes

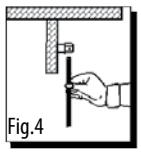
Warranty requires the use of appropriate nut drivers for installation.
Model #14 Nut Driver **Item No:** 100 **Color:** Black Use With Sammys for 1/4" and 3/8" Rod PN 8113910
Eye protection should be worn at all times when installing this product.

INSTALLATION INSTRUCTIONS HORIZONTAL MOUNT









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

Important Horizontal Installation Notes

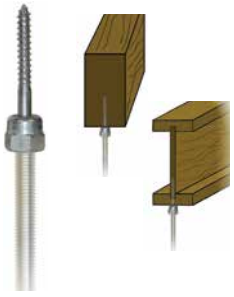
Warranty requires the use of appropriate nut drivers for installation. Sidewinders must be installed using **Model** #14SW (Red) nut driver only. **Item No:** 101 **PN:** 8114910
Eye protection should be worn at all times when installing this product.

SELECTION CHART

■ Part # 8113910

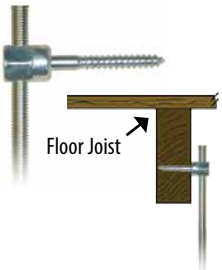
■ Part # 8114910

SAMMYS Vertical Mount



ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS) UL LISTED	TEST LOAD (LBS) FM APPROVED	BOX QTY	CASE QTY	NUT DRIVER
3/8"	8008957	GST 20	1/4 x 2"	1760 (Fir)	850	1475	25	125	Part # 8113910
3/8"	8010957	GST 30	1/4 x 3"	2060 (Fir)	1500	1475	25	125	

SAMMYS Horizontal Mount



ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS) UL LISTED	BOX QTY	CASE QTY	NUT DRIVER
3/8"	8021957	SWG 20	1/4 x 2"	1725 (Fir)	1050	25	125	Part # 8114910

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.

SAMMYS for Wood – Seismic Restraint

Swivels to 45° to ensure proper installation!

TESTED TO ZONE 4 REQUIREMENTS
RICHTER 8.4 SCALE
TESTED TO SEISMIC DESIGN CATEGORIES C,D,E, & F

SIDEWINDER FOR 3/8" RODS

SWG 20 FOR 3/8" ROD

Structural attachment fitting for installation of branch/end of line restraint using 3/8" threaded rod. Designed for use in wood structural member with a minimum thickness of 2" (nominal 1-1/2"). Can be used in composite wood joists; consult manufacturer for recommended installation point. These fastening systems provide a secure and economical attachment to the structure.

The SWG 20 model provide a one-piece upper structural attachment in a wide range of wood thicknesses.

SPECIFICATIONS

Restrained Pipe Size:	Up to Schedule 40 pipe 2" or less
Max Length of Restraint Material:	See Maximum Horizontal Load Tables below.
Maximum Angle:	45° from horizontal
Material:	Carbon Steel
Screw Description:	(SWG 20): 1/4"-10 x 2" wood screw
Finish (both):	Electro-zinc (cap & fastener)
Testing:	BX Report # R-1362
Listing:	UL 203 as a pipe hanger UL 203A pending
Installation:	Must be installed with #14 SW Red Nut Driver (Part No. 8114910)

SELECTION CHART

SAMMYS for Wood – Seismic Restraint

ROD SIZE	PART NUMBER	MODEL	MIN THICKNESS	APPLICATION	BOX QTY	CASE QTY
3/8"	8021957	SWG 20	1-1/2"	Wood, Dim. Lumber, TGI/TJI Joist	25	125

PERFORMANCE TABLES

Maximum Rod Length for l/r=100, 200, 300, and 400

RESTRAINT SHAPE AND SIZE	NOMINAL DIAMETER	AREA (in.²)	LEAST RADIUS OF GYRATION, r (in.)	MAXIMUM ROD LENGTH FOR l/r (ft)			
				l/r = 100	l/r = 200	l/r = 300	l/r = 400*
Rods (all thread)	3/8 in.	0.07	0.075	0.6	1.3	1.9	2.5
	1/2 in.	0.129	0.101	0.8	1.7	2.5	3.4
Rods (threaded at ends only)	3/8 in.	0.11	0.094	0.8	1.6	2.4	3.1
	1/2 in.	0.196	0.125	1.0	2.1	3.1	4.2

Reference: NFPA 13, (2007) * Reference: NFPA 13, (2010)

SAMMYS®

Anchors for Steel

Installs into Steel Structures Easily and Quickly!

Available in Vertical and Horizontal

VERTICAL MOUNT

MADE WITH TEKS

SIDEWINDERS®
FOR STEEL
HORIZONTAL MOUNT

MADE WITH TEKS

DESCRIPTION/SUGGESTED SPECIFICATIONS

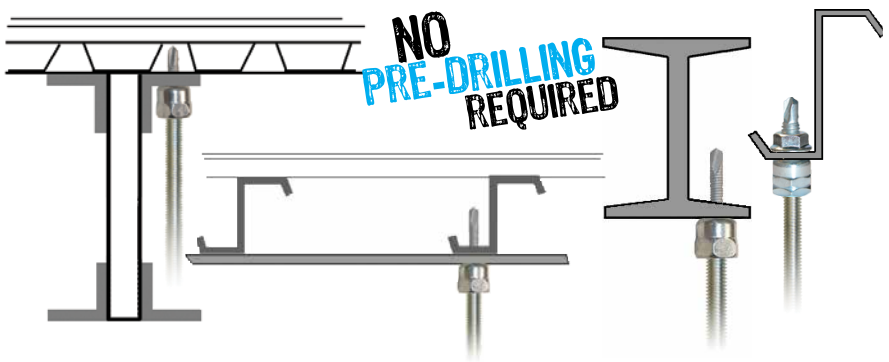
Self drilling & self tapping into steel up to 1/2" thick—

The Steel Sammy is made using Teks® self-drilling fasteners, perfect for Hanging Sprinklers, Pipes, Electrical Fixture or HVAC Equipment to steel purlin, structural beams, and open web joist. The Steel Sammy is available in vertical mount, horizontal mount, and Swivel mount to accommodate all fastening situations.

ADVANTAGES

- Made with Teks® self-drilling fasteners – no pre-drilling required.
- Install into steel range from 22 gauge – 1/2" thickness
- Saves time from traditional methods.
- Reduces installation cost.
- Quick to install using the Sammy Nut Driver with a no load speed 2000-2500 rpm, minimum 6 amps drill/driver.

Sammy's Vertical Mount Product Features



Sammy's Sidewinder® Product Features

NO
PRE-DRILLING
REQUIRED

APPLICATIONS

Sprinkler Systems

Pipes/Plumbing

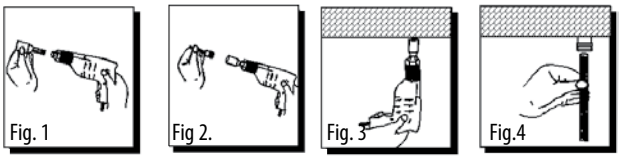
Electrical Lighting and Fixtures

HVAC Equipment and Fixtures

APPROVALS

See Selection Chart for items with approvals.

INSTALLATION INSTRUCTIONS VERTICAL MOUNT

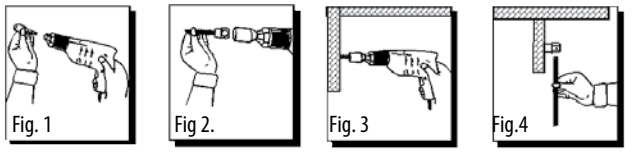


1. Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.
2. Insert the SAMMYS into the #14 (black) nut driver (p/n 8113910). Drill should be in a vertical position.
3. Push the face of the nut driver tight to the member. When the nut driver spins freely on the SAMMYS, stop drill and remove.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

Important Vertical Installation Notes

Warranty requires the use of appropriate nut drivers for installation.
Model #14 Nut Driver **Item No:** 100 **Color:** Black
Use With Sammys for 1/4" and 3/8" Rod PN 8113910
Eye protection should be worn at all times when installing this product.

INSTALLATION INSTRUCTIONS HORIZONTAL MOUNT



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

Important Horizontal Installation Notes

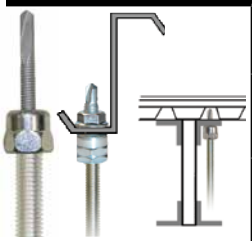
Warranty requires the use of appropriate nut drivers for installation. Sidewinders must be installed using **Model** #14SW (Red) nut driver only. **Item No:** 101 **PN:** 8114910
Eye protection should be worn at all times when installing this product.

■ Part # 8113910

■ Part # 8114910

SELECTION CHART

SAMMYS Vertical Mount



ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS)	TEST LOAD (LBS)	MIN THICKNESS	MAX THICKNESS	BOX QTY	CASE QTY	NUT DRIVER
					c UL us LISTED	FM APPROVED					
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	Part # 8113910
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	

SAMMYS Horizontal Mount

3/8"	8055957	SWDR 1 *	1/4-20 x 1" TEKS 3	1900 (20 ga.)	1500	1475	.036"-20 ga	3/16"	25	125	Part # 8114910
3/8"	8056957	SWDR 516 *	5/16-18 x 1-1/4" TEKS 3	2480 (20 ga.)	1500	1475	.036"-20 ga	1/8"	25	125	

*Includes retaining nut

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.

PERFORMANCE TABLES

Sheet Steel Gauges

GAUGE NO.	26	24	22	20	18	16	14	12	3/16"	1/4"
Nominal Decimal Equivalent	.018	.024	.030	.036	.048	.060	.075	.105	.188	.250

Ultimate Pullout Values
(Avg. Lbs. Ultimate) – SAMMYS

FASTENER			STEEL GAUGE (Lbs.)						
MODEL	DIA.	PT	20	18	16	14	12	3/16"	1/4"
DST 516	5/16"	#3	457	568	1209	1712	2422	-----	-----

Aluminum Curtain Wall Extrusion
Ultimate Pullout Values

(AVERAGE LBS. ULTIMATE)						
FASTENER			THICKNESS			
MODEL	DIA.	PT.	.114	.092	.365	.132
DST 10	1/4	#3	1265	-----	2750	-----

Ultimate Pullout Values
(Avg. Lbs. Ultimate) – SIDEWINDERS

FASTENER			STEEL GAUGE (LBS.)						
MODEL	DIA.	PT	20	18	16	14	12	3/16"	1/4"
SWDR 1"	1/4"	#3	1900	-----	-----	1900	-----	-----	-----
SWDR 516	5/16"	#3	2480	-----	-----	2480	-----	-----	-----

SAMMYS for Steel –Seismic Restraint

DESCRIPTION (SIDEWINDER)

SWDR 516 FOR 3/8" ROD

Structural attachment for installation of branch/end of line restraint using 3/8" threaded rod. Used primarily in purlin, bar joist, or other steel structural members. These fastening systems provide a secure and economical attachment to the structure.

The SWDR 516 model provides upper structural attachment in a range of steel thicknesses, from 20 ga. through 1/8". A retaining nut is included with each fastener.

SPECIFICATIONS

Restrained Pipe Size:	Up to Schedule 40 pipe 2" or less
Max Length of Restraint Material:	See Maximum Horizontal Load Tables below.
Maximum Angle:	45° from horizontal
Material:	Carbon Steel
Screw Description:	(SWDR 1-1/2): 12-24 X 1-1/2" Teks® 5 (SWDR 516): 5/16"-18 X 1-1/4" Teks® 3
Finish (both):	Electro-Zinc (cap) Silver Climaseal® (screw)
Testing:	BX Report # R-1362
Listing:	UL 203 as a pipe hanger UL 203A pending

c UL us LISTED

SELECTION CHART

SAMMYS Sidewinders for Steel – Seismic Restraint

ROD SIZE	PART NUMBER	MODEL	MIN THICKNESS	MAX THICKNESS	APPLICATION	BOX QTY	CASE QTY	INSTALLATION TOOL
3/8"	8056957	SWDR 516	16 ga.	1/8"	Steel Purlin or Bar Joist	25	125	SWDR 516 must be installed with #14 SW Red Nut Driver (Part No. 8114910). No pre-drilling required.

PERFORMANCE TABLES

Maximum Horizontal Loads for Restraint with l/r=100, 200, 300, and 400

RESTRAINT SHAPE AND SIZE	NOMINAL DIAMETER	AREA (in.²)	LEAST RADIUS OF GYRATION, r (in.)	MAXIUMU ROD LENGTH FOR l/r (ft)			
				l/r = 100	l/r = 200	l/r = 300	l/r = 400*
Rods (all thread)	3/8 in.	0.07	0.075	0.6	1.3	1.9	2.5
	1/2 in.	0.129	0.101	0.8	1.7	2.5	3.4
Rods (threaded at ends only)	3/8 in.	0.11	0.094	0.8	1.6	2.4	3.1
	1/2 in.	0.196	0.125	1.0	2.1	3.1	4.2

Reference: NFPA 13, (2007) * Reference: NFPA 13, (2010)

SAMMYS®

Sammy X-Press®

Installs into Metal Deck, Purlin, or Tubular Steel

DESCRIPTION/SUGGESTED SPECIFICATIONS

Sammy X-Press Revolutionizes The Pipe Handing Trades—

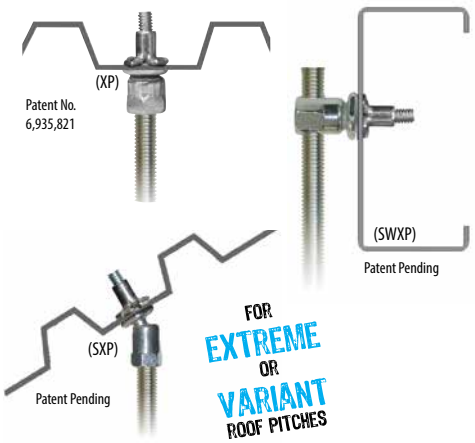
The Sammy X-Press® System is designed to provide direct attachment of threaded rod in metal deck (22-16 gauge) and thin gauge purlin (18-16 gauge), while providing reduced installation costs in terms of time and materials. The X-Press Anchors eliminate the need for costly "armovers" in pipe hanging installations. Current methods offered for thin gauge purlin require use of a time-consuming retaining nut on the threaded portion of the fastener to prevent pullout and are not designed for use in metal deck. In many instances, access to the backside of the installed fastener is prohibited by panel liner or roofing insulation. Sammy X-Press® anchors deliver the performance installers require without the use of a retaining nut!

The patent-pending X-Press Anchors consist of a threaded fastener and expandable sleeve. The X-Press System features an easy-to-install anchor with expanding anchoring strips that collapse to prevent pullout after installation. The Sammy X-Press® It Installation Tool assures a perfect installation every time offering the added convenience of one-tool efficiency – just drill and drive in seconds! SECONDS!

ADVANTAGES

- Installs in seconds, 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.

Sammy's X-Press, Swivel and Sidewinder



The **Sammy X-Press** expands to provide direct vertical attachment in:

- Metal Deck (22-16 gauge)
- Z-Purlin (18-16 gauge)

The **Sammy X-Press Swivel** allows you to hang plumb in extreme roof pitches:

- 89° in Z-Purlin
- 45° in metal deck for 12/12 pitch

The **Sammy X-Press Sidewinder** expands to provide horizontal attachment in:

- 16 ga - 3/16" steel - purlin, tubular steel.

Sammy X-Press

APPLICATIONS

Sprinkler Systems

Pipes/Plumbing

Electrical Lighting and Fixtures

HVAC Equipment and Fixtures

APPROVALS

The X-Press System has earned the 9R21 and 25ES UL Listing.

INSTALLATION INSTRUCTIONS

1. Pre-Drill.

2. Insert Anchor.

3. Install.

INSTALLATION TOOL

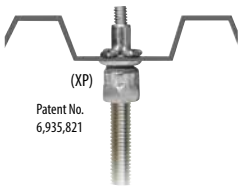
SAMMY X-PRESS IT® INSTALLATION TOOL

PART NUMBER	MODEL	DESCRIPTION	EACH QTY
8194910	UXPIT*	Universal X-Press It Tool	1
8152910	XPDB	25/64" Drill Bit	1

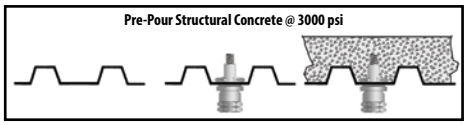
*Tool Includes: Sleeve, Bit Receiver, Hex Wrench, and 25/64" Drill Bit.

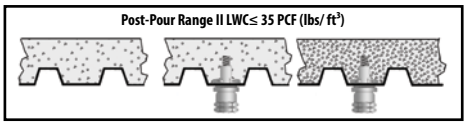
SELECTION CHART

SAMMYS X-Press Vertical Mount



ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS)	UL MIN THICK	TEST LOAD (LBS)	FM MIN THICK	MAX THICK	BOX QTY	CASE QTY	APPLICATION
1/4"	8181922	XP 200	X-Press 200	1146 (22 ga)	185 (Luminaire) 250 (Luminaire)	.027" .056"			.125"	25	125	Metal Deck
3/8"	8150922	XP 20	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	X-Press 35	1783 (16 ga)	1500 (4" Pipe) 85 (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	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)

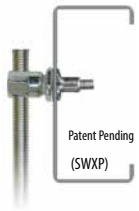




SAMMYS X-Press Swivel Head®

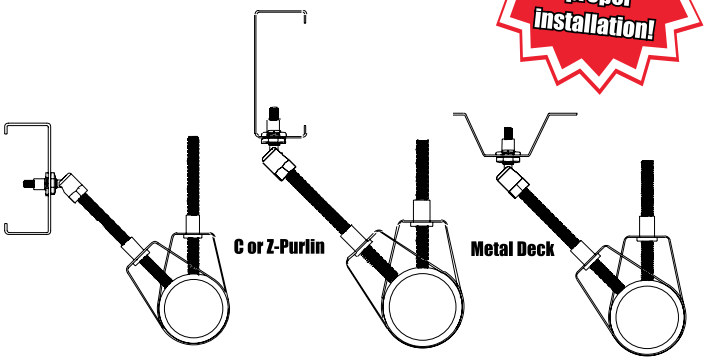
ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS)	UL MIN THICK	TEST LOAD (LBS)	FM MIN THICK	MAX THICK	BOX QTY	CASE QTY	APPLICATION
3/8"	8295922	SXP 35	Swivel X-Press 35	1675 (16 ga Vertical) 1558 (89° Off Vertical)	1250 (3-1/2" Pipe) 250 vertical (Luminaire) 80 @ 90° (Luminaire) 500 vertical (Conduit & Cable) 333 @ 89° (Conduit & Cable)	.059"	635 (2" Pipe)	.029"	.125"	25	125	Purlin

SAMMYS X-Press Horizontal Mount



ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	TEST LOAD (LBS)	TEST LOAD (LBS)	MIN THICK	MAX THICK	BOX QTY	CASE QTY	APPLICATION
3/8"	8293957	SWXP 35	Sidewinder X-Press 35	1798 (16 ga)	1250 (3½" Pipe) 80 (Luminaire) 416 (Conduit & Cable)		.060"	.125"	25	125	Purlin

SAMMYS X-Press for Seismic Restraint



DESCRIPTION

FEATURES

- Structural attachment and restraint component combined; ready for selected rod.
- Access to the back of fastener not required.
- Does not require use of a retaining nut.
- Quick and easy installation.

BENEFITS

- Reduced installation cost.
- Design flexibility.
- Less on site material (GO GREEN).
- Less material coordination.
- Aesthetically pleasing.

FOR 3/8" AND 1/2" RODS

SXP 35 FOR 3/8" ROD

Structural attachment for installation of branch/end of line restraint using 3/8" all thread (.299" OD) or end thread rod (.374" OD).

SXP 35 for 3/8" Rod: Designed for use in steel purlin ranging from 16 ga. through 1/8" in low slope or pitched roof designs (12/12).

The Swivels may be used to attach short length of rod to eliminate lateral sway bracing per NFPA 13, 9.3.5.3.8, (2007).

SPECIFICATIONS

FOR 3/8" ROD

Restrained Pipe Size: Up to Schedule 40 pipe 2" or less

Max Length of Restraint Material: See Maximum Horizontal Load Tables below.

Maximum Angle: 45° from horizontal

Material: Carbon Steel

Screw Description: 1/4"-20 x 1-1/8" with expandable sleeve

Finish: Electro-Zinc

Testing: Tested to GR-63-CORE Standard for performance in structural steel in seismic restraint applications as outlined for use in NFPA 13 (2007), 9.3 at an independent test lab. The calculated force used for the testing was equal to that found in a Zone 4 and an 8.4 Richter scale seismic event.

Listing for 3/8" Rod: UL 203 listed as pipe hanger File EX 5098
- SXP 35 (16 ga.) 0-90° from horizontal - 3-1/2" Schedule 40 pipe

UL 203A File EX 15565

SELECTION CHART

SAMMYS X-Press Swivels – Seismic Restraint

ROD SIZE	PART NUMBER	MODEL	MIN THICKNESS	MAX THICKNESS	APPLICATION	BOX QTY	CASE QTY	INSTALLATION TOOL
3/8"	8295922	SXP 35	16 ga	1/8"	Purlin	25	125	The SWXP 35 must be installed with UXPIT Tool (Part No. 8194910); pre-drilling required.

PERFORMANCE TABLES

Maximum Rod Length for l/r=100, 200, 300, and 400

RESTRAINT SHAPE AND SIZE	NOMINAL DIAMETER	AREA (in.²)	LEAST RADIUS OF GYRATION, r (in.)	MAXIMUM ROD LENGTH FOR l/r (ft)			
				l/r = 100	l/r = 200	l/r = 300	l/r = 400*
Rods (all thread)	3/8 in.	0.07	0.075	0.6	1.3	1.9	2.5
	1/2 in.	0.129	0.101	0.8	1.7	2.5	3.4
Rods (threaded at ends only)	3/8 in.	0.11	0.094	0.8	1.6	2.4	3.1
	1/2 in.	0.196	0.125	1.0	2.1	3.1	4.2

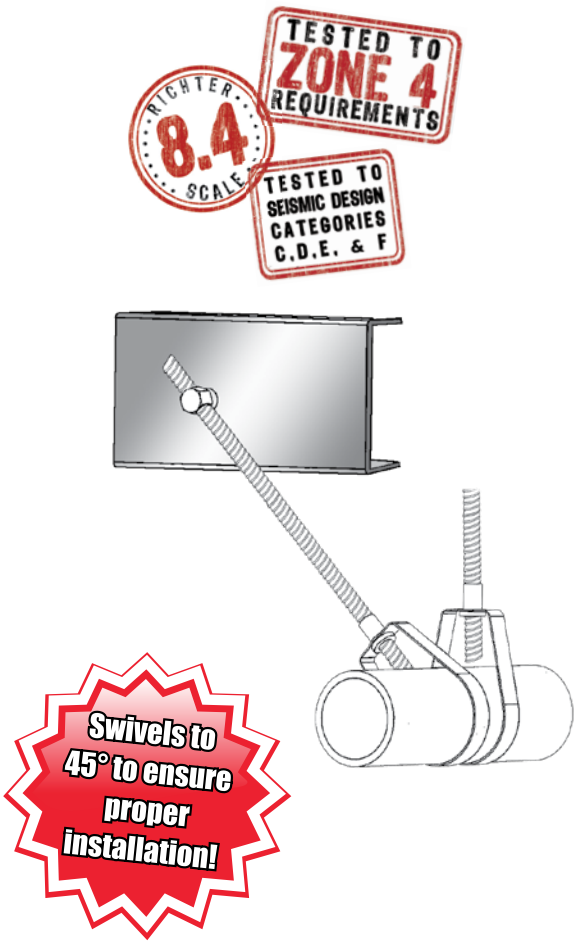
Reference: NFPA 13, (2007) * Reference: NFPA 13, (2010)

DESCRIPTION (SIDEWINDER)

SWXP 35 FOR 3/8" ROD

Structural attachment for installation of branch/end of line restraint using 3/8" threaded rod. Used primarily in purlin, bar joist, or other steel structural members. These fastening systems provide a secure and economical attachment to the structure.

The SWXP 35 model provides upper structural attachment in a range of steel thicknesses, from 16 ga. through 1/8". An expandable sleeve is included with each fastener, eliminating need for retaining nut.



SPECIFICATIONS

Restrained Pipe Size:	Up to Schedule 40 pipe 2" or less
Max Length of Restraint Material:	See Maximum Horizontal Load Tables below.
Maximum Angle:	45° from horizontal
Material:	Carbon Steel
Screw Description:	1/4"-20 X 1-1/8" with expandable sleeve
Finish:	Electro-Zinc (cap & screw)
Testing:	BX Report # R-1362
Listing:	UL 203 as a pipe hanger UL 203A pending

SELECTION CHART

SAMMYS Sidewinders for Steel – Seismic Restraint

ROD SIZE	PART NUMBER	MODEL	MIN THICKNESS	MAX THICKNESS	APPLICATION	BOX QTY	CASE QTY	INSTALLATION TOOL
3/8"	8293957	SWXP 35	16 ga.	1/8"	Steel Purlin or Bar Joist	25	125	The SWXP 35 must be installed with UXPIT Tool (Part No. 8194910); pre-drilling required.

PERFORMANCE TABLES

Maximum Horizontal Loads for Restraint with l/r=100, 200, 300, and 400

RESTRAINT SHAPE AND SIZE	NOMINAL DIAMETER	AREA (in.^{2})	LEAST RADIUS OF GYRATION, r (in.)	MAXIMUM ROD LENGTH FOR l/r (ft)			
				l/r = 100	l/r = 200	l/r = 300	l/r = 400*
Rods (all thread)	3/8 in.	0.07	0.075	0.6	1.3	1.9	2.5
	1/2 in.	0.129	0.101	0.8	1.7	2.5	3.4
Rods (threaded at ends only)	3/8 in.	0.11	0.094	0.8	1.6	2.4	3.1
	1/2 in.	0.196	0.125	1.0	2.1	3.1	4.2

Reference: NFPA 13, (2007) * Reference: NFPA 13, (2010)

SAMMYS®

Anchors for Concrete

Installs into Concrete Structures Easily and Quickly!

Available in Vertical

MADE WITH Tapcon

VERTICAL MOUNT

DESCRIPTION/SUGGESTED SPECIFICATIONS

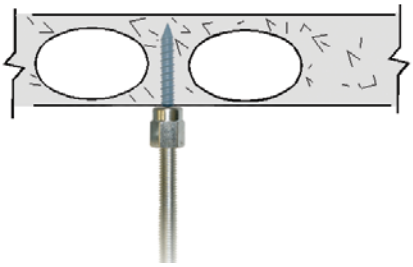
Tapcon Sammy Screw—

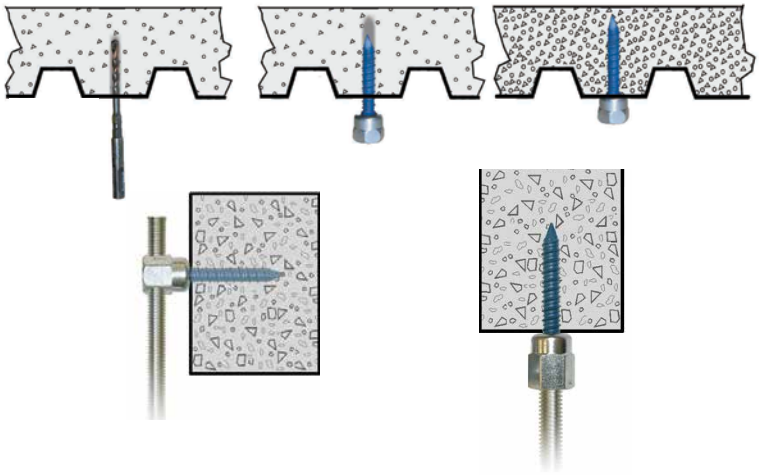
The Concrete Sammy is made using 5/16" Tapcon® Concrete Screws, perfect for Hanging Sprinklers, Pipes, Electrical Fixture or HVAC Equipment to cast in place concrete, precast concrete, and open web joist. The Concrete Sammy is available in vertical mount to accommodate all fastening situations.

ADVANTAGES

Sammy's for Concrete Product Features

- Easy two step process (Drill hole & drive Sammy concrete anchor).
- 1/4" pre-drilled pilot hole required.
- Concrete Installation Tool available for a one tool installation process.





APPLICATIONS

Sprinkler Systems

Pipes/Plumbing

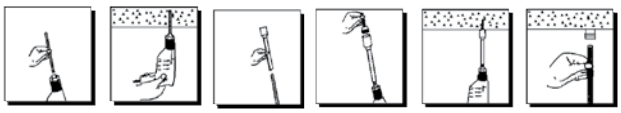
Electrical Lighting and Fixtures

HVAC Equipment and Fixtures

APPROVALS

See Selection Chart for items with approvals.

INSTALLATION INSTRUCTIONS VERTICAL MOUNT



1. Using an SDS 250 carbide tip bit or a HEX RECEIVER with a #250 carbide tip bit, pre-drill the concrete member to a depth of 2" with an electric impact/drill set on impact mode.
2. After pre-drilling has been completed, install the SLEEVE TOOL over the bit (the bit should remain in the drill), and insert the #14 (black) nut driver (p/n 8113910) into the opposite end.
3. Insert the concrete screw into the nut driver.
4. Place tip of screw into the pre-drilled hole, turn impact/drill unit to drill mode and begin insertion. When the nut driver spins free on the screw, installation is complete. Stop and remove drill.
5. The concrete screw is ready to receive 1/4", 3/8", 1/2", or metric all thread rod or bolt stock. (#14SW red nut driver used with 1/2" screw)

NOTE: Use a 1200 maximum RPM drill for installation.

NOTE: Do not install concrete screws while the drill unit is in impact mode — doing so will destroy the pullout factor of the screw.

SELECTION CHART

SAMMYS Vertical Mount

■ Part # 8113910

■ Part # 8114910

ROD SIZE	PART NUMBER	MODEL	DESCRIPTION	ULTIMATE PULLOUT (LBS)	FM APPROVED TEST LOAD (LBS)	BOX QTY	CASE QTY	NUT DRIVE
3/8"	8059957	CST 20	5/16 x 1-3/4"	2400	1475	25	125	Part # 8113910

SAMMYS®

Speedy Pole Tool™

For Ceiling Wire Applications

PRODUCT FEATURES

- Speed your labor by 25%
- Work from the ground up
- No scaffolding, ladders, or lifts
- Perfect for working in tight spaces, thourgh ceiling grid, and high value ceilings
- Works with any Vertical SAMMYS: Wood, Steel, or Concrete

ADVANTAGES

Driver hangs 12 or 9 gauge wire or jack chain

INSTALLATION INSTRUCTIONS

1. Adjust the Pole Tool to length. The adjusting pin must be 18" below the base of the pin may interfere with the rod.
2. Load rod and SAMMYS into the Pole Tool.
3. The socket will spin free when the screw is completely installed. Pull down to remove the Pole Tool

SELECTION CHART

PART NUMBER	DESCRIPTION	BOX QTY
SP4	Speedy Pole 4' - 12'	1

Notes

ITW Construction Products

National Headquarters

120 Travail Road
Markham, Ontario, L3S 3J1

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800-387-9692

Fax: 905-471-7208
800-668-8688

Technical and Customer Service Support

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Bulletin 441 Rev. A

Model ACD
Dry System Auxiliary Condensate Drain with Sight Glass

Features

- **Sight Glass (Optional)**
- **Eliminates field assembly**
- **Ball Valves – quick operation**
- **No assembly required**
- **1” Plug included**

General Description

The Model ACD Dry System Auxiliary Condensate Drain or “Drum Drip Drain” is used in Dry Pipe and preaction sprinkler systems, which meet NFPA 13 (2007) Installation Requirements section 8.16.2.5.3.4.

The material used to construct this assembly is schedule 40 galvanized steel pipe with galvanized malleable iron fittings, brass ball valves and a brass sight glass.

Technical Data

Pressure Rating: 175 psi (12 bar)
Volume: 0.2 gallons (.76 Liters)
Overall Length: 28.5” (724 mm)
Weight: 11 lb

The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523

Dimensional Data

Dimensions in [] are in mm

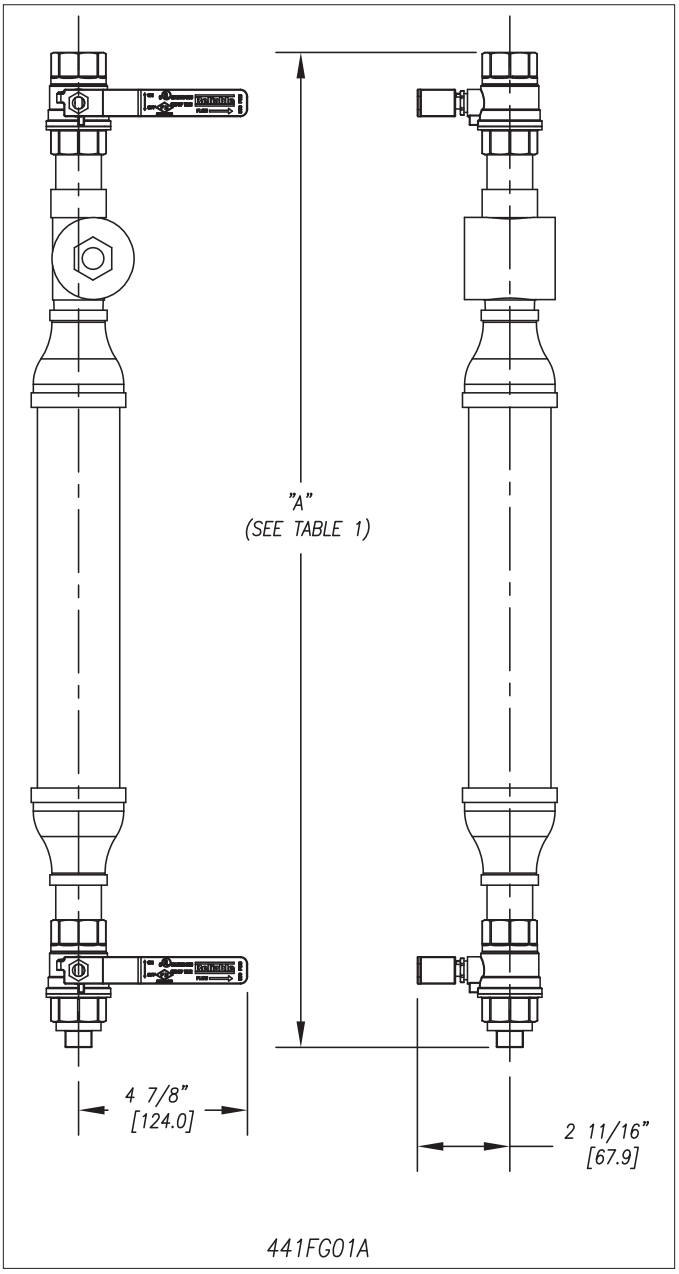


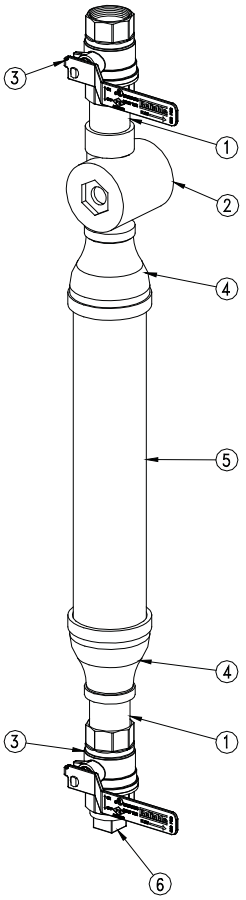
Fig. 1

Table 1	
Assy. P/N	**"A"**
6501190000	28½ [724]
6501190001	25 [635]

Table 2		
Parts list for P/N 6501190000		
Item No.	**Part Description**	**Qty**
1	Nipple, 1" NPT x 2" Long.	2
2	Sight Glass	1
3	Brass Ball Valve, 1" NPT	2
4	Bell Reducer, 1" x 2" NPT	2
5	Galv Pipe, Sch40, 2"x 12" Long	1
6	Plug, 1" NPT	1

Note: Valve type and manufacturer may vary.

(1) For assembly w/o sight glass order P/N 6501190001



P/N 6501190000 Shown

Fig. 2

The equipment presented in this bulletin is to be installed in accordance with the latest pertinent Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for over 80 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

Manufactured by

Reliable®

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Bulletin 051 August 2024

Model G5-56 Dry (SIN RA5114) K5.6 (80 metric) Concealed Dry Pendent Sprinkler

UL Quick Response
FM Standard Response
½" (13mm) Cover plate Adjustment

Features

1. Flat cover plate with threaded attachment.
2. Cover plate available in chrome and white as Standard Finishes.
   Also available in a wide variety of Special Application Finishes.
3. Cover plates with gaskets are available to limit dust and air movement through the ceiling.
4. Available in Ordinary or Intermediate temperature rating.
5. Sprinkler available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1).

Approvals & Listings

1. Listed by Underwriters Laboratories and Certified for Canada (cULus) as a Quick-response sprinkler for Light and Ordinary Hazard occupancies. UL Guide Number VNIV, Sprinklers, Automatic and Open.
2. FM Approved as a Standard-response sprinkler.

Patents

The Model G5-56 Dry is covered by the following patents:
U.S. 5,775,431
U.S. 5,967,240

Application

The Model G5-56 Dry is a cULus Listed Quick Response Concealed Dry Pendent sprinkler intended for use in accordance with NFPA 13. The Model G5-56 Dry sprinkler is cULus Listed for use in Light and Ordinary Hazard occupancies.

The Model G5-56 Dry is FM Approved as a Standard Response Concealed Dry Pendent sprinkler intended for use in accordance with FM Loss Prevention Data Sheet 2.0.

Product Description

The Reliable Model G5-56 Dry sprinkler is a Dry Pendent sprinkler, where the sealing washer is located at the inlet end of the sprinkler assembly. The position of the sealing washer is controlled by a fusible element at the opposite end of the sprinkler assembly. The sprinkler is installed with the fusible element at the ceiling of a protected space that may be subject to freezing temperatures and the inlet orifice located in a heated area above the ceiling. Operation of the fusible element allows the sealing washer to move out of the inlet orifice admitting water from the supply piping. The sprinkler uses a fast-response fusible element with an Ordinary, 165°F (74°C), or Intermediate, 212°F (100°C), temperature classification.

Important! Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.

Model G5-56 Dry Sprinkler

The Model G5-56 Dry sprinkler has a dropdown deflector design that allows the sprinkler to be recessed into the ceiling and concealed by a flat cover plate. The cover plate assembly threads into the sprinkler's cup and provides ½-inch (13mm) of cover adjustment. The cover plate assembly consists of a flat cover plate that is attached to the skirt using either 135°F (57°C) or 165°F (74°C) temperature rated solder. The 135°F (57°C) cover plates are for use with Ordinary temperature classification sprinklers and the 165° (74°C) cover plates are for use with Intermediate temperature classification sprinklers.

The Model G5-56 Dry sprinkler is available in lengths ranging from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1). The length of the sprinkler must be selected to provide the Exposed Minimum Barrel Length in a Heated Area required by Fig. 2.

The Model G5-56 Dry sprinkler is available with 1-inch NPT or ISO 7-1 R1 threaded inlet fittings. The standard inlet fitting includes a long inlet designed to minimize the potential for water, scale, and sediment to accumulate on the sprinkler inlet in wet- and dry-pipe sprinkler systems. For wet-pipe sprinkler system applications where the standard inlet interferes with installation into existing plastic pipe fittings, an inlet fitting is available with a short ("PL") inlet. See Fig. 3 for further information.

Technical Data:

Nominal Orifice Size: ½-inch (15mm)
Thread Size: 1-inch NPT per ANSI B2.1 or ISO 7-1 R1
Nominal K Factor: 5.6 (80 metric)
Maximum Working Pressure: 175 psi (12 bar) – 100% factory hydrostatically tested to 500 psi (34.5 bar)
Sprinkler Installation Wrench: Model FC wrench
Sprinkler Identification Number (SIN): RA5114
Materials: See Fig. 4

Temperature Rating

Classification	Sprinkler	Cover Plate	Max. Ambient Temp.
Ordinary	165°F (74°C)	135°F (57°C)	100°F (38°C)
Intermediate	212°F (100°C)	165°F (74°C)	150°F (66°C)

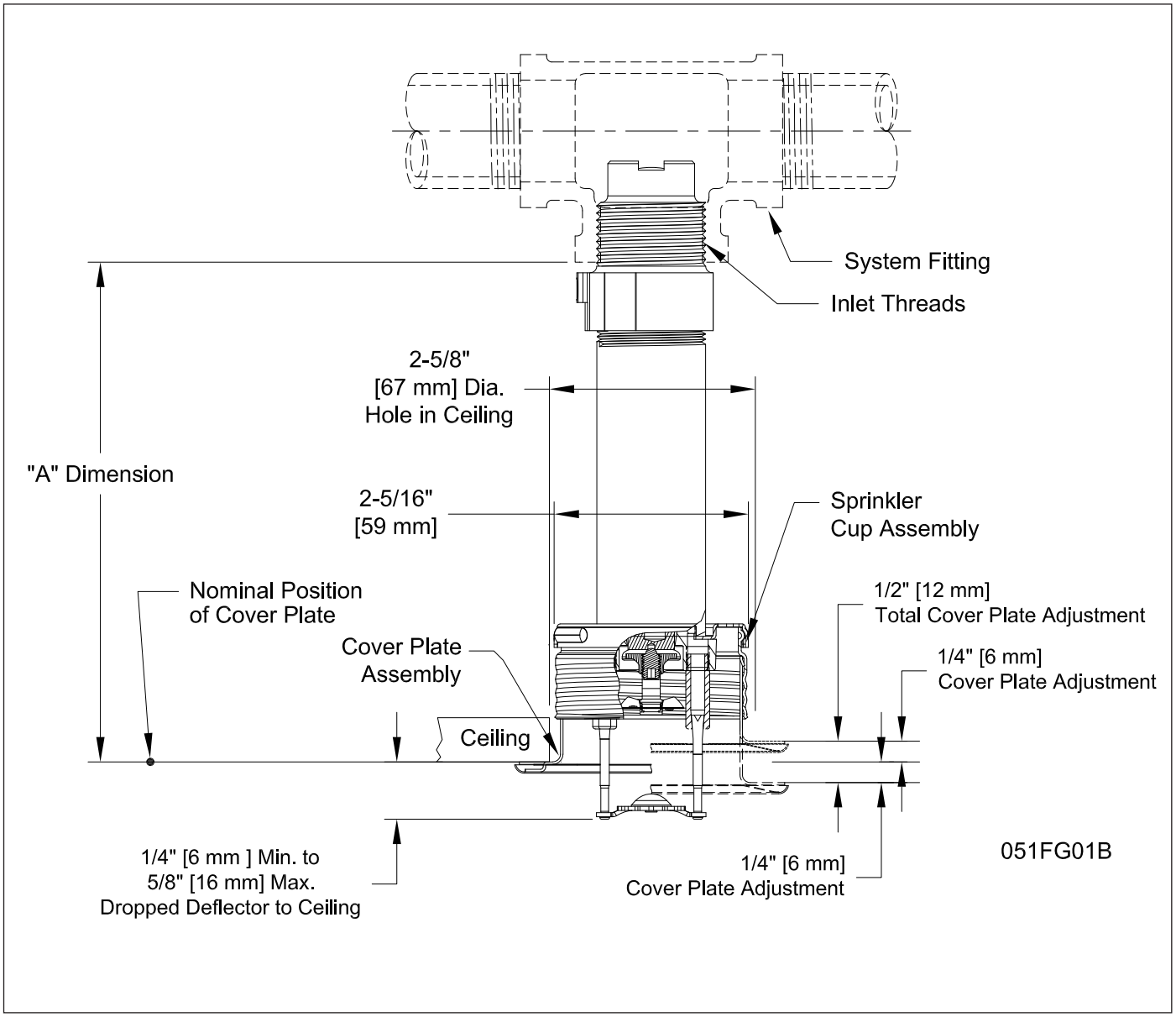


Fig. 1

Note: The "A" dimension is based on a nominally gauged pipe thread "make-up" of 0.600" (15mm) per ANSI B2.1 [7½ threads approximately].

"A" Dim.	4¼" to 48" (108mm to 1219mm) in ¼" (6.35mm) increments

Cover Plate Finishes

Standard Finishes
White Paint
Chrome
Special Application Finishes
Off White Paint
Black Paint
Custom Color Paint – Specify[1]
Raw Brass (Lacquered)
Bright Brass
Finished Bronze
Satin Chrome
Stainless Steel Clad[2]
Custom Printed

Model FC
Sprinkler Wrench

[1] Custom color paint is semi-gloss, unless specified otherwise.

[2] Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Alloy on the back side. Cover plates are not listed or approved as corrosion resistant. Stainless steel clad cover plates are not available perforated.

Optional Cover Plate with Gasket*


Model G4/G5
QR Gasket
Cover Plate
(cULus Listed)


Model G4/G5 SR Gasket
Cover Plate
(FM Approved)

* Model G4/G5 QR Gasket and Model G4/G5 SR Gasket cover plates are sold as assembled units including both the cover plate and gasket. Model G4 /G5 QR Gasket and Model G4 /G5 SR Gasket cover plates and gaskets are not interchangeable.

Installation Instructions

Model G5-56 Dry sprinklers must only be installed in standard (ANSI B 16.3 class 150 and ANSI B 16.4 class 125) pipe tees in the horizontal position, even at branch line ends. DO NOT install dry sprinklers into elbows, couplings (including couplings on drops), welded outlets, mechanical tees, or gasket-sealed CPVC fittings. In all installations, including into CPVC piping, the dry sprinkler shall be installed with protrusion into the fitting in accordance with the installation diagrams in this Bulletin.

Installation of the Model G5-56 Dry sprinkler is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinkler. Do not install Model G5-56 Dry sprinklers with the standard (long) inlet fitting into CPVC adapter fittings or tees that have an internal obstruction (see Fig. 3); this will damage the sprinkler, the fitting, or both. A short inlet ("PL") version of the Model G5-56 Dry sprinkler is available for use in existing installations with CPVC adapter fittings or tees having an internal obstruction; Model G5-56 sprinklers with the short inlet fitting shall not be used on dry-pipe sprinkler systems. The Model G5-56 Dry sprinkler and the cover plate assembly are not intended for installation in corrosive environments, including, but not limited to, those with salt aerosols or chlorine.

Model G5-56 Dry sprinklers must be installed with the Exposed Minimum Barrel Length required by Fig. 2 located in a Heated Area. Do NOT install the sprinkler in ceilings which have positive pressure in the space above.

The following steps must be followed for installation:

1. Cut a $2\frac{5}{8}$-inch (67mm) diameter hole in the ceiling directly in-line with the outlet of the tee.
2. Apply pipe joint compound or Polytetrafluoroethylene (PTFE) tape to the threads of the sprinkler's inlet fitting.
3. A protective cap is provided to protect the drop-down sprinkler deflector from damage which could occur during construction before the cover plate is installed. The cap is factory installed inside the sprinkler cup. Remove the cap to install sprinkler, Step 4, then reinstall cap until the cover plate is installed.
4. Install the sprinkler in the tee using the Model FC wrench. The Model FC wrench has a socket drive which is inserted into the sprinkler's cup and around the body of the sprinkler prior to installation of the sprinkler. Do NOT wrench any of the part of the sprinkler/cup assembly. The sprinkler is then tightened into the pipe fitting to achieve a leak free connection. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m). When inserting or removing the wrench from the sprinkler/cup assembly, care should be taken to prevent damage to the sprinkler. Reinstall the protective cap following installation of the sprinkler, until the cover plate is installed.
   a. Alternatively, where access to the outer tube of the sprinkler is available, the Model G5-56 Dry sprinkler may be installed using a pipe wrench. The protective cap should not be removed to install the sprinkler with a pipe wrench. The pipe wrench shall only be permitted to interface with the steel outer tube portion of the sprinkler (Item #8 in Fig. 4). Do NOT wrench any other portion of the sprinkler/cup assembly. A pipe wrench can install the sprinkler into the fitting with a large amount of torque; consideration should be given to the need for future removal of the sprinklers because the installation torque will have to be matched or exceeded to remove the sprinkler. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m).
5. To install the cover plate, remove the protective cap and install the cover plate by hand turning the cover in the clockwise direction until it is tight against the ceiling. For Model G4 /G5 QR Gasket and Model G4 /G5 SR Gasket cover plates, the gasket should be attached to the flange of the cover plate skirt only. Do not glue the gasket in place or allow the gasket to overlap both the cover plate and the flange of the skirt.

MINIMUM EXPOSED BARREL LENGTH WHEN CONNECTED TO WET PIPE SPRINKLER SYSTEM

AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF TEE TO TOP OF CEILING)		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (100)	0	0
10°F (-12°C)	8 (200)	1 (25)	0
0°F (-18°C)	12 (300)	3 (75)	0
-10°F (-23°C)	14 (350)	4 (100)	1 (25)
-20°F (-29°C)	14 (350)	6 (150)	3 (75)
-30°F (-34°C)	16 (400)	8 (200)	4 (100)
-40°F (-40°C)	18 (450)	8 (200)	4 (100)
-50°F (-46°C)	20 (500)	10 (250)	6 (150)
-60°F (-51°C)	20 (500)	10 (250)	6 (150)

* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MINIMUM EXPOSED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. THE MINIMUM EXPOSED BARREL LENGTH IS BASED ON A PROPERLY SEALED PENETRATION WITH A MAXIMUM WIND VELOCITY ON THE EXPOSED SPRINKLER OF 30 MPH (48 KM/H). LONGER EXPOSED BARREL LENGTHS WILL HELP AVOID FREEZING OF THE WET PIPING WHERE HIGHER WIND VELOCITY IS EXPECTED.

*** THE MINIMUM EXPOSED BARREL LENGTH IS MEASURED FROM THE FACE OF THE FITTING TO THE INSIDE FACE OF THE INSULATION, WALL, OR CEILING LEADING TO THE COLD SPACE, WHICHEVER IS CLOSEST TO THE FITTING.

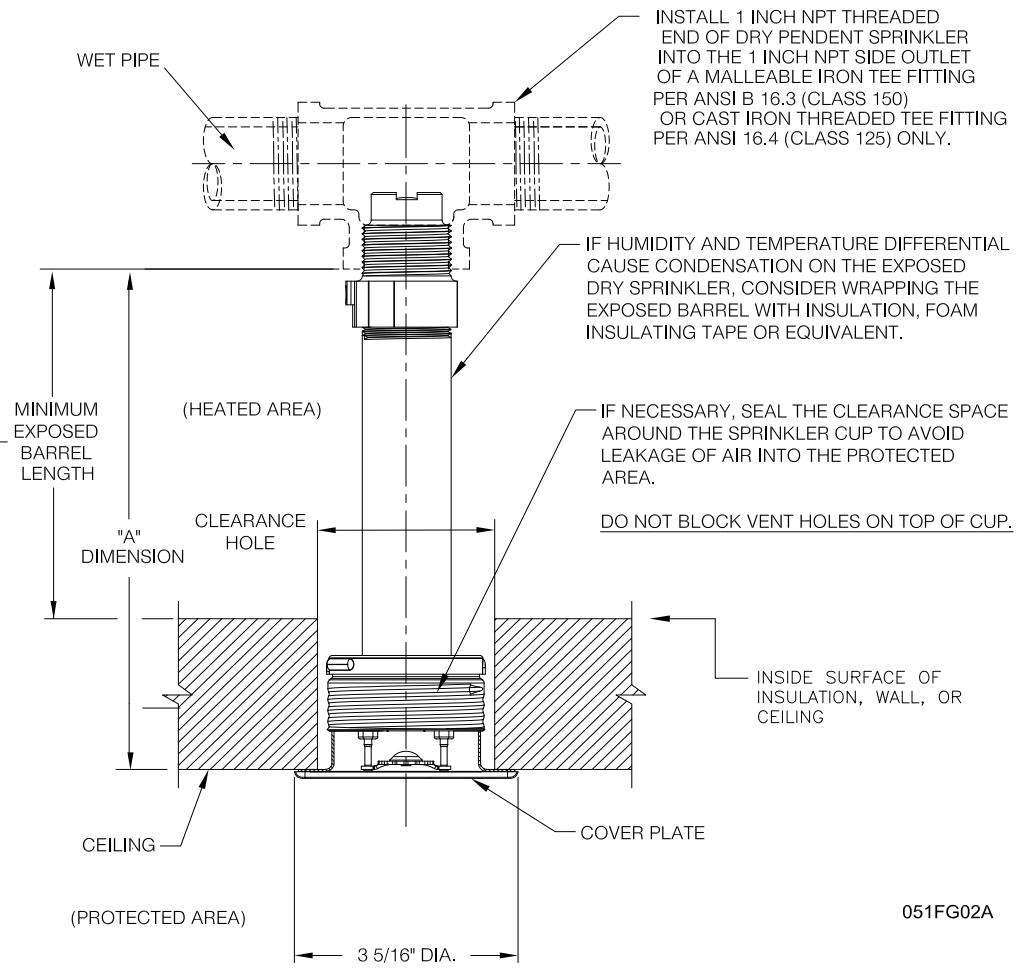


Fig. 2

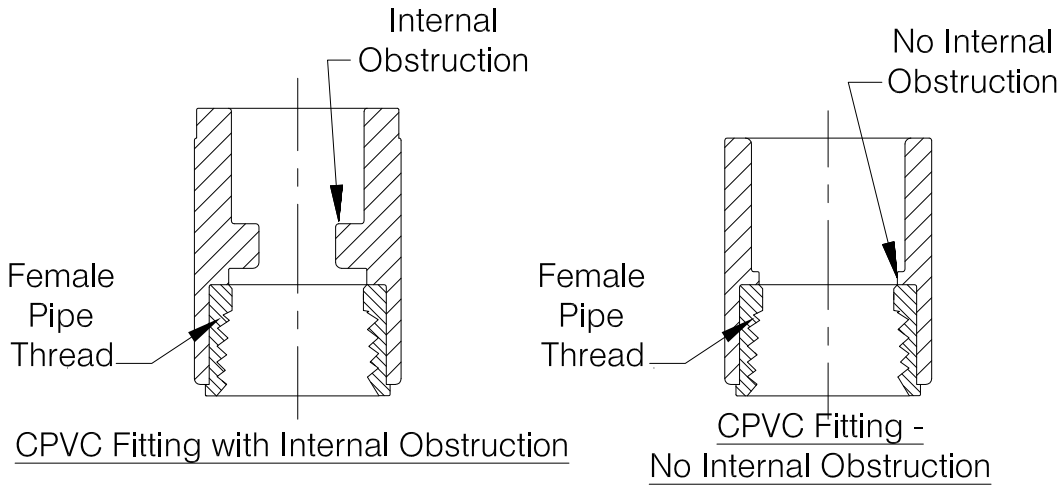
CAUTION

RELIABLE DRY SPRINKLERS MAY BE INSTALLED IN A LISTED CPVC SPRINKLER FITTING, ONLY UPON VERIFICATION THAT THE FITTING DOES NOT INTERFERE WITH THE SPRINKLER'S INLET.

Do not install dry sprinklers with standard inlets into CPVC fittings that have an internal obstruction; this will damage the sprinkler, the fitting, or both.

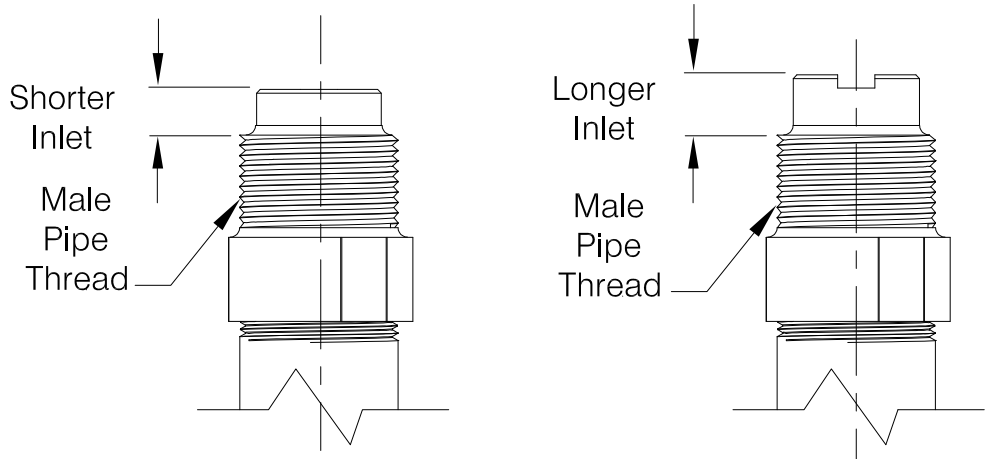
Short inlet ("PL") versions of Reliable dry sprinklers are available that may or may not be compatible with fittings having internal obstructions in existing installations. Sprinklers with the short inlet ("PL") should only be installed in CPVC fittings of wet-pipe systems.

In all cases, verify sprinkler and fitting dimensions prior to installation to avoid interference.



CPVC Fitting with Internal Obstruction

CPVC Fitting -
No Internal Obstruction



Dry Sprinkler
Short Inlet ("PL")

Dry Sprinkler
Standard Inlet

BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

COMDRYDET2

Fig. 3

Maintenance

The Model G5-56 Dry should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Replace any sprinkler that has been painted (other than factory applied) or damaged in any way. Concealed sprinklers cover plates can not be painted in the field, after installation or have any other coating applied other than the factory finish. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinkler should be maintained in the original cartons and packaging to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Engineering Specification

Model G5-56 Dry Pendent Concealed Sprinkler

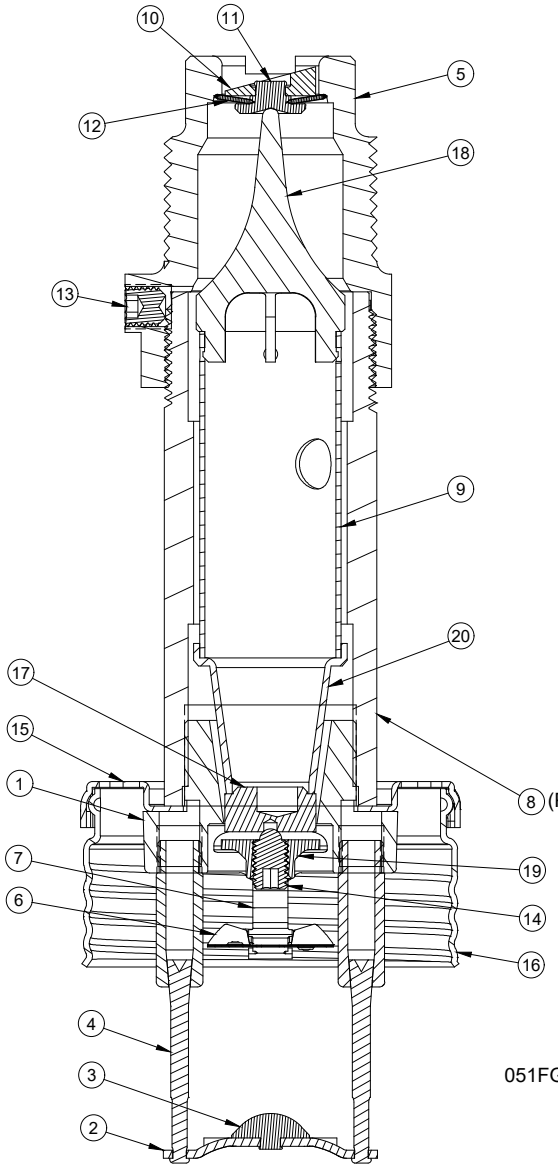
Dry pendent sprinklers shall be dry pendent concealed sprinklers with a flat cover plate. Sprinklers shall be cULus Listed as Quick Response for Light and Ordinary Hazard applications as well as FM Approved as Standard Response. Sprinklers shall be available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments based on face of fitting to finished ceiling distance. Sprinkler length shall be selected to provide the Exposed Minimum Barrel Length based on the minimum design temperature in the protected area and the minimum temperature in the conditioned space where the barrel is located in accordance with the Manufacturer's written installation instructions. Sprinklers shall have [1-inch NPT][ISO 7-1 R1] threaded inlet fittings with [standard length inlets designed for use with wet- or dry-pipe sprinkler systems][short length inlets designed for use with wet-pipe sprinkler systems having pipe fittings with internal obstructions that prevent the insertion of standard length inlets]. Sprinklers shall have a PTFE coated beryllium nickel Belleville spring washer inlet seal and brass alloy cap that prevent water entry from the sprinkler system piping into the sprinkler prior to actuation. Sprinklers shall have a fast-response fusible link that controls the movement of the inlet seal and cap through a mechanism consisting of link arms, a seat adapter, an orifice adapter, an inner tube, and a yoke. Sprinklers shall use a drop down deflector supported by tapered pins. Sprinklers shall have a galvanized steel cup for threaded attachment of the flat cover plate assembly. Cover plate attachment shall provide up to ½-inch (13mm) of adjustment. Sprinklers shall be [Ordinary temperature classification, 165°F (74°C), with 135°F temperature rated cover plates][Intermediate temperature classification, 212°F, with 165°F temperature rated cover plates]. Cover plates shall be [solid][perforated] with factory applied [White][Chrome][Special Application – Specify] finish. Dry pendent concealed sprinklers shall be Reliable Model G5-56 Dry (SIN RA5114).

Ordering Information

Specify:

1. Sprinkler: Model G5-56 Dry
2. Threads: [1-inch NPT - standard][ISO 7/1 R1 - optional]
3. Inlet Length: [Standard][Short ("PL")– for existing wet-pipe installations only]
4. Cover Plate Finish: [White][Chrome][Special Application – Specify]
5. Sprinkler/Cover Plate Temperature Rating: [Ordinary – 165°F sprinkler with 135°F cover plate][Intermediate – 212°F sprinkler with 165°F cover plate]
6. Nominal Sprinkler Length (face of fitting to face of ceiling - "A" Dimension from Fig. 1): [Specify length – Lengths available from 4¼ inches to 48 inches (108mm to 1219mm) in ¼-inch (6.35mm) increments]

MATERIAL SPECIFICATIONS



ITEM #	DESCRIPTION	MATERIAL
1	BODY, MACH.	DZR BRASS
2	DEFLECTOR	COPPER ALLOY
3	DEFL. SPLITTER	BRASS ALLOY
4	DEFL. PIN	STAINLESS STEEL
5	MEGA-INLET	DZR BRASS
6	LINK ASSY.	NICKEL/BERYLLIUM NICKEL
7	LEVER	COPPER ALLOY
8	OUTER TUBE	GALVANIZED STEEL
9	INNER TUBE	BRASS ALLOY
10	FLIP DISK	BRASS ALLOY
11	CAP	BRASS ALLOY
12	WASHER	PTFE COATED BERYLLIUM NICKEL
13	SET SCREW	STAINLESS OR ALLOY STEEL
14	LOAD SCREW	STAINLESS STEEL
15	BOTTOM CUP	GALVANIZED STEEL
16	TOP CUP	GALVANIZED STEEL
17	ADJ. SEAT ADAPTER	BRASS ALLOY
18	YOKE	BRASS ALLOY
19	CLOSURE YOKE	BRASS ALLOY
20	ORIFICE ADAPTER	BRASS ALLOY

(8) (PIPE WRENCH MAY ONLY BE USED ON OUTER STEEL PIPE OF SPRINKLER)

Fig. 4

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

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