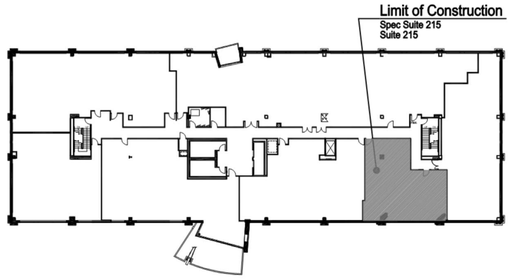


KEY PLAN

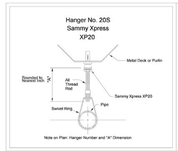
NOT TO SCALE

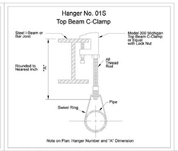
NORTH

HANGER SPACING LEGEND

PER NFPA 13 TABLE 9.2.2.1

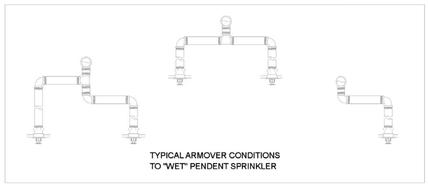
NOMINAL PIPE SIZE (IN.)	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE (NOT THREADED L/W)	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED L/W	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A	N/A

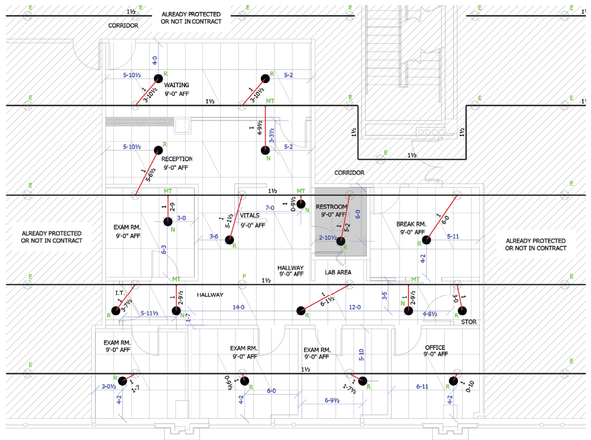




Sprinkler Legend

Symbol	Manufacturer	SIN	Quantity	K-Factor	Type	Size	Response	Finish	Temperature
●	Viking	PEND/VK302	18	5.6	Pendent	½	Quick	Chrome	155°F
			Total = 18						





FT20163 - SPEC SUITE 215
FIRE PROTECTION LAYOUT

1/8"=1'-0"

0' 2' 4' 8' 16'

NORTH

GENERAL NOTES:

1. THIS IS A TENANT FINISH TO THE EXISTING WET PIPE SPRINKLER SYSTEM AT 1444S. POTOMAC CONSISTING OF THE SUITE 215 TENANT IMPROVMENT.

2. NEW AND RELOCATED SPRINKLERS SHALL COMPLY WITH THE AURORA BUILDING DIVISION AND NFPA 13 2013.

3. THE SCOPE OF WORK SHALL CONSIST OF ADDING & RELOCATING NEW SEMI-RECESSED PENDENT SPRINKLERS DUE TO THE REMODEL OF THE EXISTING SPACE.

4. THE EXISTING OVERHEAD SPRINKLER SYSTEM HAS BEEN DESIGNED FOR A .20/1,500 SQ.FT. DENSITY FOR A OH-II OCCUPANCY. THE NEW TENANT (LIGHT HAZARD) DOES NOT EXCEED THE DEMAND FOR THE EXISTING SPRINKLERS AND SHALL NOT NEGATIVELY IMPACT THE HYDRAULIC PERFORMANCE OF THE SPRINKLER SYSTEM.

5. INSTALL PIPE HANGERS PER NFPA 13 2013 SECTION 9.2.2.1

6. SPACING SPACING:
225 SQ. FT. (15x15) SPRINKLER SPACING FOR SPRINKLERS LOCATED IN LIGHT HAZARD AREAS.

7. NEW SPRINKLER FITTINGS AND PIPE ARE AS FOLLOWS:
THREADED ARMOVERS: 1" - BULLMOOSE SCH. 30 WITH THREADED FITTINGS.

8. PLAN KEY:
"R" = RELOCATE EXISTING SPRINKLER TO NEW LOCATION FOR ADEQUATE COVERAGE.
"E" = EXISTING PENDENT SPRINKLER THAT SHALL BE TURNED TO AN UPRIGHT.
"N" = NEW SPRINKLER TO BE ADDED.
"P" = PLUG EXISTING OUTLET.
"MT" = INSTALL A MECHANICAL TEE FOR NEW OUTLET TO A SPRINKLER.

9. ALL PIPE LENGTHS SHOWN REFLECT FITTING TAKE-OUT

10. ALL FIRE ALARM WORK AND WIRING SHALL BE BY OTHERS.

11. FREEDOM FIRE PROTECTION'S SCOPE OF WORK SHALL BEGIN AT THE EXISTING FIRE SPRINKLER PIPING IN THE TENANT SPACE.

12. EXISTING PIPE TO REMAIN SHOWN AS A SOLID BLACK LINE.

NEW PIPE AND SPRINKLERS THAT SHALL BE RELOCATED ARE SHOWN AS RED WITH CUT LENGTHS.

13. ALL PENDENT SPRINKLERS TO BE LOCATED A MINIMUM OF 1'-0" FROM ALL DOWNWARD DISCHARGE MECHANICAL DIFFUSERS.

14. TOTAL NUMBER OF RELOCATED SPRINKLERS: 13
TOTAL NUMBER OF ADDED SPRINKLERS: 5
TOTAL NUMBER OF PLUGGED OUTLETS: 1

City of Aurora
Adopted Codes & Standards for this project:
2015-ICC - 2020-NEC
2013 NFPA 13 - 2013 NFPA 72
Amendments to include Chapters 22 & 66

City of Aurora Building Division
Counter Permit intake by: JLG
Date: Dec 23, 2020
RSN: 1508724
Permit: 2020-1909102-CT
2015 INTERNATIONAL CODES & 2020 NEC Scope of permit to be field verified

FREEDOM FIRE PROTECTION, LLC
"INSTALLING CONFIDENCE"

COMPLETE FIRE SPRINKLER SYSTEMS
FROM DESIGN CONSULTATION
THROUGH FINISHED INSTALLATION

AUTHORITY: AURORA BUILDING DIVISION
15151 E. ALAMEDA PKWY, AURORA, CO

REVISION
DESCRIPTION | DATE | BY

- IMPORTANT -
IT IS THE RESPONSIBILITY OF OWNER TO PROVIDE SUFFICIENT HEATING TO PREVENT WATER IN PIPING FROM FREEZING.

FT20163 - SPEC SUITE 215

PROJECT SUMMARY

SQUARE FOOTAGE PER FLOOR: 1,464
TOTAL SQ. FT.
SPRINKLERS PER FLOOR: 18
TOTAL SPRINKLERS

GENERAL CONTRACTOR
NAME: SBARRA CONSTRUCTION WEST, INC.
ADDRESS: 7275 UPTON CT.
SUPERINTENDENT:
JOB PHONE:

SPEC SUITE 215
1444 S. POTOMAC STE. 215
AURORA, CO 80012

FREEDOM FIRE PROTECTION, LLC
4026 MULLIGAN DRIVE, LONGMONT, CO, 80504
- PHONE 303.827.2060 - FAX 303.827.2070 -
STATE LICENSE #20-S-05265

CHECKED BY: P. MORISON
FILE NUMBER: FT20163

NICET LEVEL III: 109398 EXPIRES: 9/1/21

DATE:	SCALE:	DRAWN BY:	SHEET #
12-19-20	1/8" = 1'	Mike Murphy	FP1

Product Data Index For:

FT20163 - Spec Suite 215

- Sprinkler Heads
- Steel Pipe
- Threaded Fittings
- Hanger Material

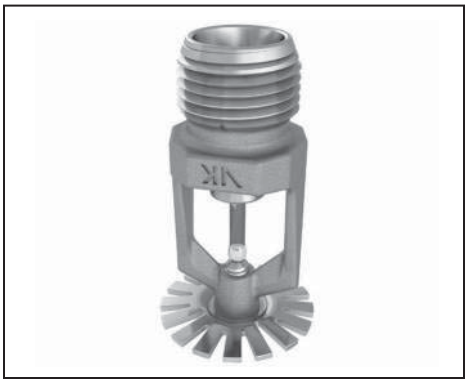
MICROFAST® QUICK RESPONSE PENDENT SPRINKLER VK302 (K5.6)

TECHNICAL DATA

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

1. DESCRIPTION

The Viking Microfast® Quick Response Pendent Sprinkler VK302 is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are Listed and Approved as indicated in the Approval Charts.



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

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approved: Class Series 2000

VdS Approved: Certificates G414009, G414010, G4040095, and 4880045

LPCB Approved: Certificate 096e/06

CE Certified: Standard EN 12259-1, certificate of constancy of performance 0832-CPR-S0021

China Approval: Approved according to China GB standard

MED Certified: Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003

Refer to Approval Chart 1 and Design Criteria cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria for FM Approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Rated to 175 psi (12 bar) water working pressure
Factory tested hydrostatically to 500 psi (34.5 bar)
Thread size: 1/2" NPT, 15 mm BSP
Nominal K-Factor: 5.6 U.S. (80.6 metric**)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)
Overall Length: 2-1/4" (58 mm)

*cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

Material Standards:
Frame Casting: Brass UNS-C84400 or QM Brass
Deflector: Phosphor Bronze UNS-C51000 or Copper UNS-C19500
Bulb: Glass, nominal 3 mm diameter
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Screw: Brass UNS-C36000
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
For Polyester Coated Sprinklers: Belleville Spring-Exposed
For ENT Coated Sprinklers: Belleville Spring-Exposed, Screw and Pipcap - ENT plated.

Ordering Information: (Also refer to the current Viking price list.)
Order Quick Response Pendent Sprinklers by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.
Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, Black Polyester = M-/B, and ENT = JN
Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E, 286 °F (141 °C) = G

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

For example, sprinkler VK302 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 12979AB

Available Finishes And Temperature Ratings: Refer to Table 1.

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

Sprinkler Wrenches:

A. Standard Wrench: Part No. 21475M/B.
B. Wrench for Recessed Pendent Sprinklers: Part No. 13655W/B** (available since 2006)
C. Optional Protective Sprinkler Cap Remover/Escutcheon Installer Tool*** Part No. 15915 (available since 2010)

**A ½" ratchet is required (not available from Viking).

***Allows use from the floor by attaching a length of 1" diameter CPVC tubing to the tool. Ideal for sprinkler cabinets. Refer to Bulletin F_051808.

Sprinkler Cabinets:

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

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

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

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

The Viking Microfast® Quick Response Pendent Sprinkler VK302 is available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE

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

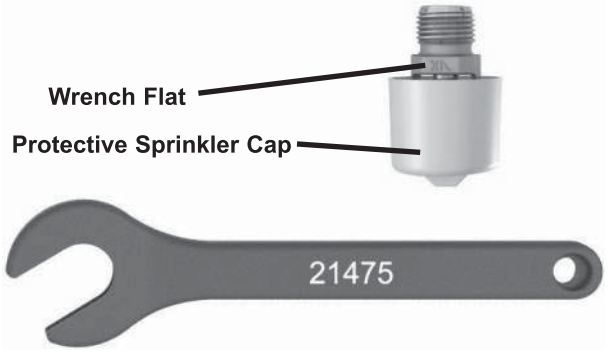


Figure 1:
Standard Sprinkler Wrench 21475M/B

VIKING®

TECHNICAL DATA

MICROFAST® QUICK RESPONSE PENDENT SPRINKLER VK302 (K5.6)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
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TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating[1]	Maximum Ambient Ceiling Temperature[2]	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and ENT

Corrosion-Resistant Coatings[3]: White Polyester, and Black Polyester. ENT in all temperature ratings except 135 °F (57 °C)

Footnotes

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

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

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

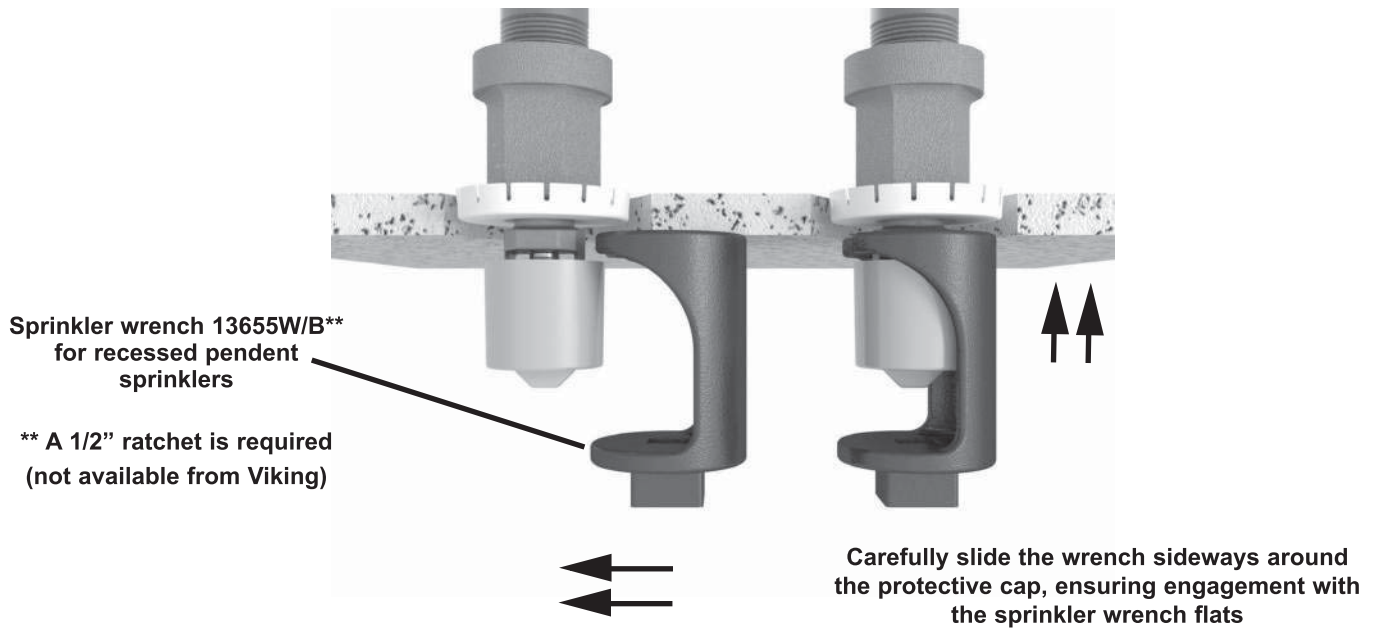

Figure 2: Wrench 13655W/B for Recessed Pendent Sprinklers

VIKING®

TECHNICAL DATA

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Approval Chart 1 (UL)

The Viking Microfast® Quick Response Pendent Sprinkler VK302
Maximum 175 PSI (12 Bar) WWP

KEY: A1X ← Temperature, Finish, Escutcheon (if applicable)

Base Part Number[1]	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals[3] (Refer also to Design Criteria.)					
			NPT	BSP	U.S.	metric[2]	Inches	mm	cULus[4]	VdS	LPCB	CE[7]	[8]	China Approval
12979	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1Z, B1Y, D2, C2X	A1	A1Z, B1Y	D1Z, C1Y	D1	--
21354[9]	VK302	Pendent	--	15 mm	5.6	80.6	2-1/4	58	D3	--	--	--	--	D3
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)														
06662B	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1Z, B1Y, D2, C2X	--	--	--	--	--
18021	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1X, B1Y	A1	A1X, B1Y	D1X, C1Y[7]	D1	--

Approved Temperature Ratings

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

Approved Finishes

1 - Brass, Chrome, White Polyester[5,6], Black Polyester[5,6]
2 - ENT[5]
3 - Chrome

Approved Escutcheons

X - Standard surface-mounted escutcheon or the Viking Micromatic® Model E-1 Recessed Escutcheon
Y - Standard surface-mounted escutcheon or recessed with the Viking Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon
Z - Standard surface-mounted escutcheon

Footnotes

[1] Base part number shown. For complete part number, refer to Viking's current price schedule.
[2] Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
[3] This table shows the listings and approvals available at the time of printing. Other approvals may be in process.
[4] Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
[5] cULus Listed as corrosion-resistant.
[6] Other colors are available on request with the same Listings and Approvals as the standard colors.
[7] CE Certified, Standard EN 12259-1, EC-certificate of constancy of performance 0832-CPR-S0021.
[8] MED Certified, Standard EN 12259-1, EC-0832-MED-1003.
[9] Approved according to China GB Standard.

DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 above.)

cULus Listing Requirements:

The Viking Microfast® Quick Response Pendent Sprinkler VK302 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

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

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

VIKING®

TECHNICAL DATA

MICROFAST® QUICK RESPONSE PENDENT SPRINKLER VK302 (K5.6)

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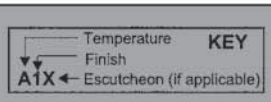
Approval Chart 2 (FM)

The Viking Microfast® Quick Response Pendent Sprinkler VK302
Maximum 175 PSI (12 Bar) WWP



Base Part Number[1]	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		FM Approvals[3] (Refer also to Design Criteria.)
			NPT	BSP	U.S.	metric[2]	Inches	mm	
12979	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1Z, B1Y, D2X, C2
21354[6]	VK302	Pendent	--	15 mm	5.6	80.6	2-1/4	58	C3
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)									
06662B	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1Z, B1Y, D2X, C2
18021	VK302	Pendent	1/2"	15 mm	5.6	80.6	2-1/4	58	A1Z, B1Y

Approved Temperature Ratings

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

Approved Finishes

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

Approved Escutcheons

X - Standard surface-mounted escutcheon or the Viking Micromatic® Model E-1 Recessed Escutcheon
Y - Standard surface-mounted escutcheon or recessed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon
Z - Standard surface-mounted escutcheon

Footnotes

[1] Base part number shown. For complete part number, refer to Viking's current price schedule.
[2] Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
[3] This table shows the FM Approvals available at the time of printing. Other approvals may be in process.
[4] Other colors are available on request with the same Approvals as the standard colors.
[5] FM approved as corrosion resistant.
[6] Approved according to China GB Standard.

DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

FM Approval Requirements:

The Viking Microfast® Quick Response Pendent Sprinkler VK302 is FM Approved as quick response **Non-storage** pendent sprinklers as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

VIKING®

TECHNICAL DATA

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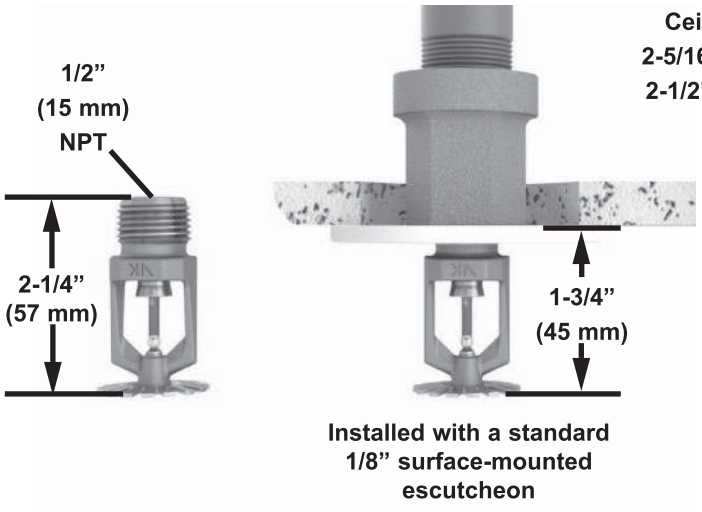

Figure 3: Sprinkler Dimensions with a Standard Escutcheon

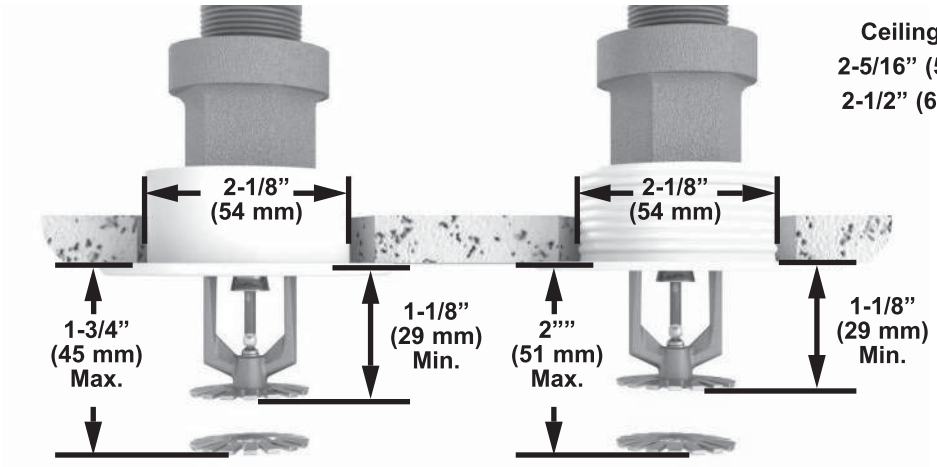

Figure 4: Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons

EDDYTHREAD SPRINKLER PIPE SUBMITTAL DATA SHEET

APPROVALS AND SPECIFICATIONS

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

FINISHES AND COATINGS

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

PRODUCT IDENTIFICATION

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

Nominal Pipe Size (inches)	1	1-1/4"	1-1/2"	2"
O.D. (in)	1.295	1.650	1.900	2.375
I.D. (in)	1.083	1.418	1.654	2.123
Empty Weight (lb/ft)	1.461	2.070	2.547	3.308
Water Filled Weight (lb/ft)	1.860	2.754	3.468	4.842
C.R.R.*	1.00	1.00	1.00	1.00
Pieces per Lift	70	51	44	30

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

SUBMITTAL INFORMATION

Project

Contractor

Engineer

Specification Reference

Date

System Type

Locations

Comments

◯ Eddythread - Black ◯ Eddythread - Hot Dip Galvanized

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45° ELBOW

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

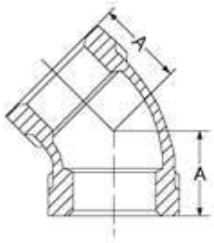
MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

APPROVED

For Listing/Approval Details and Limitations visit our Web Site *www.anvilintl.com* or contact an Anvil® Representative.

45° ELBOW		
Size	A	Weight
in	in	lbs
¼	0.81	0.19
⅜	0.88	1.28
½	1.00	0.43
¾	1.13	0.66
1	1.31	1.00
1¼	1.50	1.70
1½	1.69	2.10
2	2.00	3.40
2½	2.25	5.50
3	2.50	8.10
4	2.81	13.00



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90° ELBOW

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

APPROVED

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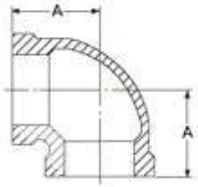
90° ELBOW		
Size	A	Weight
in	in	lbs
⅛	0.94	0.20
¼	1.06	0.29
⅜	1.25	0.47
½	1.44	0.66
1	1.63	1.20
1¼	1.94	1.90
1½	2.13	2.50
2	2.50	4.20
2½	2.94	5.30
3	3.38	9.70
4	4.50	16.00



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90° REDUCING ELBOW

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

FM APPROVED

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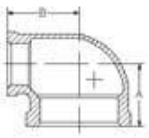
90° REDUCING ELBOW			
Size	A	B	Weight
in	in	in	lbs
½ x ¾	1.19	1.19	0.41
1 x ¾	1.50	1.56	1.00



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CAP

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading:* ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

APPROVED

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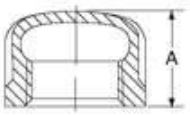
CAP		
Size	A	Weight
in	in	lbs
¼	0.78	0.10
⅜	0.81	0.15
½	1.00	2.23
¾	1.06	0.35
1	1.25	0.58
1¼	1.38	0.94
1½	1.44	1.20
2	1.69	1.90
2½	2.06	3.30
3	2.19	4.70



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REDUCING COUPLINGS

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

APPROVED

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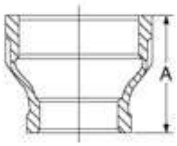

REDUCING COUPLINGS

Size	A	Weight
in	in	lbs
⅛ x ¼	1.44	0.21
⅛ x ⅜	1.69	0.31
¼ x ⅜	1.69	0.34
¼ x ½	1.75	0.47
⅜ x ½	1.75	0.50
1 x ½	2.00	0.71
1 x ¾	2.00	0.79
1¼ x ½	2.38	1.10
1¼ x ¾	2.38	1.20
1¼ x 1	2.38	1.30
1½ x ½	2.69	1.50
1½ x ¾	2.69	1.60
1½ x 1	2.69	1.60
1½ x 1¼	2.69	1.80
2 x ½	3.19	2.40
2 x ¾	3.19	2.40
2 x 1	3.19	2.50
2 x 1¼	3.19	2.70
2 x 1½	3.19	2.70
2½ x 1½	3.69	4.10
2½ x 2	3.69	4.30
3 x 2	4.06	5.80
3 x 2½	4.06	6.50
4 x 3	4.38	10.00

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REDUCING TEE

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

MATERIAL SPECIFICATIONS

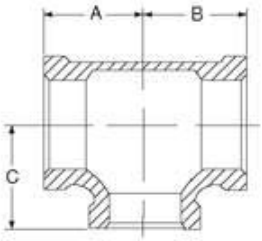
Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

APPROVED

For Listing/Approval Details and Limitations visit our Web Site *www.anvilintl.com* or contact an Anvil® Representative.

REDUCING TEE

Size			A	B	C	Weight
in			in	in	in	lbs
¾	¾	½	1.31	1.31	1.38	0.90
1	1	½	1.44	1.44	1.50	1.30
		¾	1.50	1.50	1.56	1.30
1¼	1¼	½	1.50	1.50	1.69	1.70
		¾	1.63	1.63	1.75	1.90
		1	1.75	1.75	1.81	2.10
1½	1½	½	1.63	1.63	1.81	2.30
		¾	1.69	1.69	1.88	2.50
		1	1.81	1.81	2.00	2.60
		1¼	2.00	2.00	2.06	3.00
2	2	½	1.75	1.75	2.06	3.40
		¾	1.81	1.81	2.13	3.60
		1	2.00	2.00	2.25	4.00
		1¼	2.13	2.13	2.31	4.20
		1½	2.25	2.25	2.38	4.60
2½	2½	2	2.69	2.69	2.75	7.60
3	3	2	2.81	2.81	3.13	9.60



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TEE

SPF/ANVIL

Malleable Iron Screwed Fittings (Class 300)

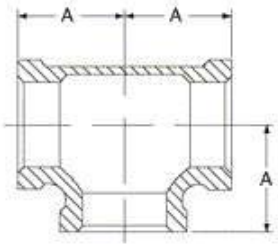
MATERIAL SPECIFICATIONS

Dimensional: Fittings: ASME B16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Material: ASTM A-197
Galvanizing: ASTM A-153 (Hot Dip Galvanizing)
Threading: * ASME B 1.20.1
Pressure Rating: Fittings: ASME B 16.3
Unions: ASME B 16.39
Bushings/Plugs: ASME B 16.14
Pressure Testing: All malleable iron fittings are tested for through wall porosity using an air under water process.
Agency Approvals: All malleable iron fittings and unions are UL Listed and FM Approved.

FM APPROVED

For Listing/Approval Details and Limitations visit our Web Site www.anvilintl.com or contact an Anvil® Representative.

TEE		
Size	A	Weight
in	in	lbs
¼	1.31	0.27
⅜	1.06	0.42
½	1.25	0.65
¾	1.44	1.10
1	1.63	1.60
1¼	1.94	2.50
1½	2.13	3.40
2	2.50	5.20
2½	2.94	8.00
3	3.38	13.00
4	4.50	24.00



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SWIVEL LOOP HANGER 100

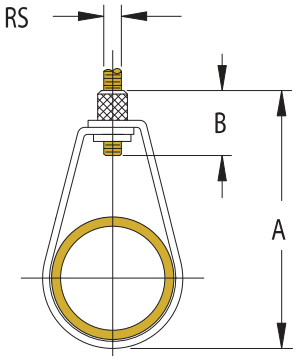
Heavy Duty Adjustable Band Hanger

- Size Range: 1/2" through 8"
- Surface Finish: Electro-zinc plated
- Recommended for the suspension of stationary non-insulated pipe lines
- Features a retained insert nut to ensure that the loop hanger and insert nut stay together
- Conforms with Federal Specification WW-H-171 (Type 10), Manufacturers Standardization Society (MSS) SP-58 and SP-69 (Type 10)

Part Number	Nominal Pipe Size	RS	A	B	Max. Rec. Load (lbs)
1000050EG	1/2"	3/8"	2-3/4"	1"	300
1000075EG	3/4"	3/8"	3-1/16"	1"	300
1000100EG	1"	3/8"	3-5/16"	1"	300
1000125EG	1-1/4"	3/8"	3-9/16"	1"	300
1000150EG	1-1/2"	3/8"	3-13/16"	1"	300
1000200EG	2"	3/8"	4-1/4"	1"	300
1000250EG	2-1/2"	1/2"	5-5/8"	1-1/4"	1000
1000300EG	3"	1/2"	6-9/16"	1-1/4"	1000
1000350EG	3-1/2"	1/2"	7"	1-1/4"	1000
1000400EG	4"	5/8"	7-3/4"	1-5/16"	1100
1000500EG	5"	5/8"	9-1/8"	1-5/16"	1100
1000600EG	6"	3/4"	10-5/8"	1-9/16"	1250
1000800EG	8"	7/8"	13-1/8"	1-5/8"	1250

3/4" - 8" FM APPROVED

1/2" - 8" c UL us



LOOP HANGER SURGE RESTRAINT LHSR6

Heavy Duty Adjustable Band Hanger

- Size Range: fits 1/2" through 2" model 100 loop hangers
- Surface Finish: CADDY® COAT Black
- Restricts the upward surge movement of activated fire sprinkler systems
- Meets NFPA® 13 requirements
- One size fits 1/2" thru 2" sizes of the model 100 loop hanger
- Grips the loop hanger – not the nut – allowing fine tuning for height adjustment
- Installs without tools

c UL us

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HARDWARE THREADED STUD 51

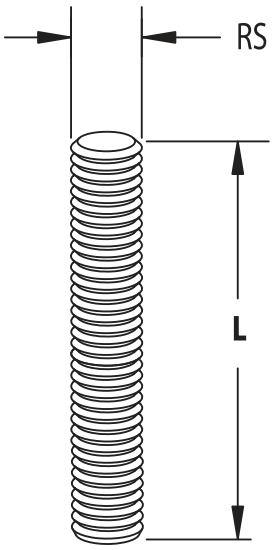
Threaded Studs

- Size Range: 3/8" and 1/2" rod sizes
- Surface Finish: Plain
- Attaches hangers to structural attachments without threading or cutting the rod, UNC Thread Form

NOTE: Low carbon: tensile: 58,000 psi; yield: 36,000 psi

Part Number	RS	L	Max. Rec. Load (lbs)*
0513702PL	3/8"	2"	610
0513703PL	3/8"	3"	610
0513704PL	3/8"	4"	610
0513705PL	3/8"	5"	610
0513706PL	3/8"	6"	610
0515004PL	1/2"	4"	1130
0515005PL	1/2"	5"	1130
0515006PL	1/2"	6"	1130
0515010PL	1/2"	10"	1130
0515012PL	1/2"	12"	1130

*Load based on Max. 650 F

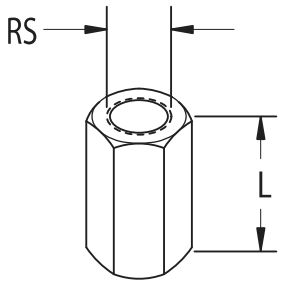


HARDWARE ROD COUPLING 25

Steel Rod Coupling

- Size Range: 1/4" thru 7/8" rod sizes
- Surface Finish: Electro-zinc Plated
- Intermediate accessory designed to join two lengths of similar UNC threaded rod

Part Number	RS	L	Max. Rec. Load (lbs)
0250025EG	1/4"	7/8"	240
0250037EG	3/8"	1-3/4"	610
0250050EG	1/2"	1-3/4"	1130
0250062EG	5/8"	2-1/8"	1810
0250075EG	3/4"	2-1/4"	2710
0250087EG	7/8"	2-1/2"	3770



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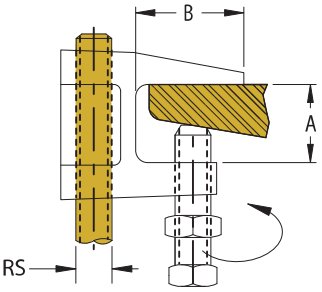
BEAM CLAMP 300

Universal Ductile Iron Beam Clamp

- Size Range: 3/8", 1/2", 5/8", 3/4" and 7/8" rod sizes
- Surface Finish: Black, Electro-zinc plated
- Structural attachment to top or bottom of metal beams, purlins, channel, or angle iron
- Setscrew made of hardened steel
- For retainer straps see Models 300C and 035RS
- Available with a HD finish by special order
- Conforms with Federal Specification WW-H-171 (Type 23), Manufacturers Standardization Society ANSI/MSS-SP-58 (Type 19 & 23), install in accordance with ANSI/MSS-SP-69
- Setscrew must be tightened and torqued onto the sloped side of the I-beam

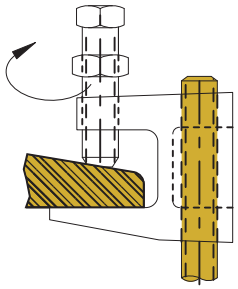
Part Number	RS	A	B	Set Screw	Max. Rec. Load (lbs)	
Plain Finish					Top	Bottom
3000037PL*	3/8	3/4"	1-1/8"	3/8"	500	250
3000050PL*	1/2	3/4"	1-1/8"	7/16"	950	760
3000062PL	5/8	3/4"	1-1/8"	3/8"	950	760
3000075PL	3/4	3/4"	1-1/8"	3/8"	950	760
3000087PL	7/8	3/4"	1-1/8"	3/8"	950	760
Electro-zinc Plated Finish						
3000037EG*	3/8	3/4"	1-1/8"	3/8"	500	250
3000050EG*	1/2	3/4"	1-1/8"	7/16"	950	760
3000062EG	5/8	3/4"	1-1/8"	3/8"	950	760
3000075EG	3/4	3/4"	1-1/8"	3/8"	950	760
3000087EG	7/8	3/4"	1-1/8"	3/8"	950	760

*Theses sizes are FM approved



TOP

May be mounted in either position



BOTTOM

Recommended Torque** (for setscrews):

Setscrew Size	1/4-20	3/8-16	7/16-14	1/2-13	5/8-11	3/4-10
Foot-lbs	4	5	8	11	21	34
Nm	(5)	(7)	(11)	(15)	(28)	(46)

**Recognizing that torque wrenches are generally not used or available on many job sites, the setscrew should be tightened so it contacts the I-beam and then an additional 1/4 to 1/2 turn added.