



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Date: 4/9/2026

Return Request: 4/17/226

Project: Hot Springs National Park – Rehabilitate Bathhouses – Maurice Bathhouse

Supplier: Sanders Supply

Manufacturer: Varies

Submittal: Plumbing Specialties (Re-Submittal #1)

Submittal Number: 221030.001

Spec Section: 221030, 2.1 through 2.14

Drawing # and Installation Location: P1.0 through P1.4

ARCHITECT

Strata Architecture

1701 Oak Street, Suite 100

Kansas City, Missouri 64108

(816)474-0900

GENERAL CONTRACTOR

Tepa, LLC

2345 Grand Blvd, Suite 700

Kansas City, Missouri 64108

(816)708-1110

ENGINEER

IMEG Corp.

1600 Baltimore Street, Suite 300

Kansas City, Missouri 64108

(816)842-8437

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.

9924 Landers Road

North Little Rock, Arkansas 72117

(501)834-3320

Comments:

CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117



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Spec Section 221030, 2.1.

Clean-Outs (FCO)

FCO-1

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

CO-200-R

Floor Cleanout With Round Top

Specification

Watts CO-200-R epoxy coated cast iron floor cleanout with 5"(127) round adjustable gasketed nickel bronze top, removable gas tight gasketed brass cleanout plug, and no hub (standard) outlet.

Call customer service if you need assistance with technical details.

Pipe Sizing		
Suffix	Description	
2	2"(51) Pipe Size	☐
3	3"(76) Pipe Size	☐
4	4"(102) Pipe Size	☒

Outlet Type		
Suffix	Description	
NH	No Hub (MJ)	☐
P	Push On	☒
X	Inside Caulk	☐

Options		
Suffix	Description	
-C	Membrane Clamp	☐
-6	Vandal Proof	☐
-13	Galvanized Body	☐
-CF	Carpet Clamping Flange	☐
-SO	Side Outlet	☐

Optional Body Material		
Suffix	Description	
-60	PVC Body w/Poly Plug	☐
-61	ABS Body w/Poly Plug	☐

Load Rating

MD

NOTICE

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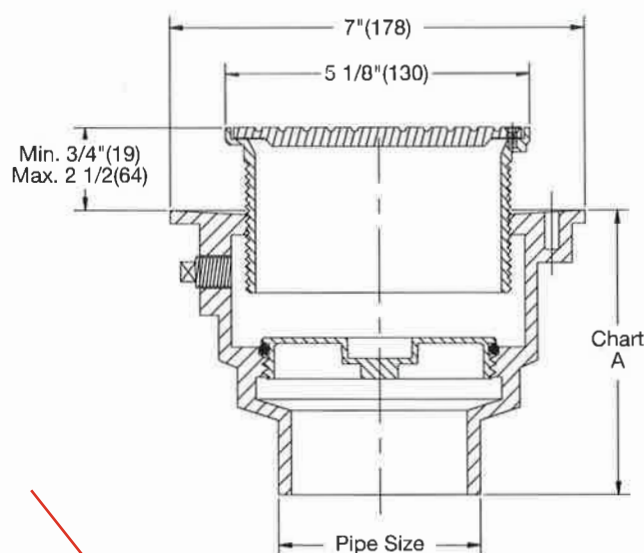


Chart A

Pipe Size	NH	Push On	PVC/ABS
2"(51)	4 3/4"(121)	5 1/2"(140)	4"(102)
3"(76)	4 3/4"(121)	5 1/2"(140)	4"(102)
4"(102)	4 3/4"(121)	5 1/2"(140)	4"(102)

NOTICE

The load classifications are in accordance with the American National Standards ASME A112.36.2M-91(R2012) ASME Ratings are as follows:
 MD - Safe Live Load 2000-4999 lbs. (900-2250 kg)
 The above categories are given as a guide only.
 Please consult factory.



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Spec Section 221030, 2.3.

Trap Seals



MI-GARD®

FLOOR DRAIN TRAP SEAL

Specification: MIFAB® MI-GARD® Series inline floor drain trap seal with UV resistant ABS plastic frame, silicon rubber sealing flapper and four flexible sealing ribs. Tested and certified to the ASSE 1072 Standard and listed with IAPMO and I.P.C. Specify connection size (1 1/2", 2", 3", 3 1/2", 4" or 6"). 10 year warranty is included.

Function: Used in the outlet connections of floor drain bodies, or the inside of floor drain strainers to seal the opening to prevent odors, sewer gases, and insects from entering up through the floor drain grate. The MI-GARD®'s four flexible silicone sealing ribs ensure easy installation into openings that have variations in size. The MI-GARD® will open to allow drainage and close when there is no water flow. MI-GARD can be used independent or in conjunction with trap seal primers for added protection against sewer gases and insects entering up through the floor drain grate. MI-GARD is not designed to substitute the trap seal primers.



BOTTOM OF BODY



TOP OF STRAINER

To be used on 3"
FD-1, FS-1, and FS-2

	MODEL NO.	"A" (PIPE SIZE)	"B" (HEIGHT)
☐	MI-GARD-1.5	1-1/2" (38)	2" (51)
☐	MI-GARD-2	2" (51)	2" (51)
☒	MI-GARD-3	3" (76)	2" (51)
☐	MI-GARD-3.5	3 1/2" (89)	2" (51)
☒	MI-GARD-4	4" (102)	2" (51)
☐	MI-GARD-6	6" (152)	2" (51)
☐	MI-GARD-TS (used with Top Set Drains with 4" outlet)	4" (102)	2" (51)

To be used on 4"
FD-1 and FS-1

Note: The MI-GARD-6 is designed in accordance with industry standards but is not IAPMO listed. All MI-GARD Floor Drain Trap Seals are in compliance with International Plumbing Code (I.P.C.)



MI-GARD-1.5

MI-GARD-3,4 and 6 are I.C.C. and BMEC approved.



MI-GARD® prevents the following from entering through the top of floor drains:

-Odors -Sewer gases -Insects

CALIFORNIA PROPOSITION 65 WARNING. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: Maurice

Page No: _____

Section No: _____

Contractor: CSUSA

Schedule No: _____

Purchase Order No: _____



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Spec Section 221030, 2.4.

Floor Drains (FD-1) and Floor Sinks (FS-1 and FS-2)

FD-1

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

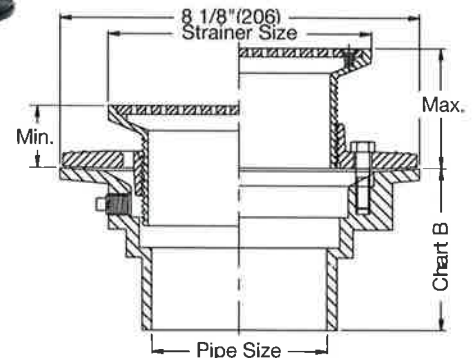
FD-100-A

Floor Drain with Round Strainer

Specification

Watts FD-100-A epoxy coated cast iron floor drain with anchor flange, reversible clamping collar with primary and secondary weepholes, adjustable round heel proof nickel bronze strainer, and no hub (standard) outlet

Call customer service if you need assistance with technical details.



Pipe Sizing	
Suffix	Description
2	2"(51) Pipe Size ☐
3	3"(76) Pipe Size ☒
4	4"(102) Pipe Size ☐
6	6"(152) Pipe Size (NH Only) ☐

Outlet Type	
Suffix	Description
NH	No Hub (MJ) ☐
P	Push On ☒
I	Threaded Outlet ☐
X	Inside Caulk ☐

Strainer	
Suffix	Description
A5	5"(127) Dia., Nickel Bronze ☐
A6	6"(152) Dia., Nickel Bronze ☐
A7	7"(178) Dia., Nickel Bronze ☒
A8	8"(203) Dia., Nickel Bronze ☐
A10	10"(254) Dia., Nickel Bronze ☐

Options	
Suffix	Description
-5	Sediment Bucket ☐
-6	Vandal Proof ☐
-7	Trap Primer Tapping ☒
-8	Backwater Valve (2, 3, 4" Only) ☐
-13	Galvanized Body ☐
-15	Strainer Extension (DD-50) ☐
-F4-50	4" Round Cast Iron Funnel ☐
-F4-1	4" Round Nickel Bronze Funnel ☐
-F6-1	6" Round Nickel Bronze Funnel ☐
-G-50	4" x 9" Oval Cast Iron Funnel ☐
-G-1	4" x 9" Oval Nickel Bronze Funnel ☐
-S0	Side Outlet ☐

Optional Body Material	
Suffix	Description
-60	PVC Body w/Socket Outlet ☐
-61	ABS Body w/Socket Outlet ☐

Load Rating
MD

Strainer Size

Str. Dia.	Min.	Max.	Load Rating	Free Area Sq. In.
5"(127)	13/16"(21)	3 1/4"(83)	MD	8
6"(152)	7/8"(22)	3 3/8"(86)	MD	9
7"(178)	1 1/16"(17)	3 1/4"(83)	MD	12
8"(203)	7/8"(22)	3 1/4"(83)	MD	18
10"(254)	1 1/4"(32)	3 1/4"(83)	MD	28

Chart B

Pipe Size	Std. No Hub	P Push On	T Female Thread	X Inside Caulk	60/61 PVC/ABS
2"(51)	3 5/8"(92)	4 1/4"(108)	4 1/4"(108)	4 1/2"(114)	4"(102)
3"(76)	3 5/8"(92)	4 1/4"(108)	4 1/4"(108)	4 1/2"(114)	4"(102)
4"(102)	3 5/8"(92)	4 1/4"(108)	4 1/4"(108)	4 1/2"(114)	4"(102)
6"(152)	3 1/2"(89)	-	-	-	-

NOTICE

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 MD - Safe Live Load 2000-4999 lbs. (900-2250 kg)
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ES-WD-FD-100-A 2412

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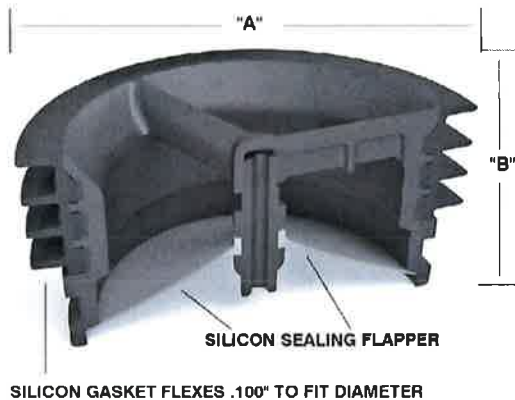



MI-GARD®
FLOOR DRAIN TRAP SEAL

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Function: Used in the outlet connections of floor drain bodies, or the inside of floor drain strainers to seal the opening to prevent odors, sewer gases, and insects from entering up through the floor drain grate. The MI-GARD®'s four flexible silicone sealing ribs ensure easy installation into openings that have variations in size. The MI-GARD® will open to allow drainage and close when there is no water flow. MI-GARD can be used independent or in conjunction with trap seal primers for added protection against sewer gases and insects entering up through the floor drain grate. MI-GARD is not designed to substitute the trap seal primers.


BOTTOM OF BODY

TOP OF STRAINER

MODEL NO.	"A" (PIPE SIZE)	"B" (HEIGHT)
MI-GARD-1.5	1-1/2" (38)	2" (51)
MI-GARD-2	2" (51)	2" (51)
MI-GARD-3	3" (76)	2" (51)
MI-GARD-3.5	3 1/2" (89)	2" (51)
MI-GARD-4	4" (102)	2" (51)
MI-GARD-6	6" (152)	2" (51)
MI-GARD-TS (used with Top Set Drains with 4" outlet)	4" (102)	2" (51)

Note: The MI-GARD-6 is designed in accordance with industry standards but is not IAPMO listed. All MI-GARD Floor Drain Trap Seals are in compliance with International Plumbing Code (I.P.C.)



MI-GARD-3,4 and 6 are I.C.C. and BMEC approved.



MI-GARD® prevents the following from entering through the top of floor drains:

-Odors -Sewer gases -Insects

CALIFORNIA PROPOSITION 65 WARNING. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: Maurice

Page No: _____

Section No: _____

Contractor: CSUSA

Schedule No: _____

Purchase Order No: _____

FS-1

Engineering Specification

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____
 Tag **FS-1**

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

FS-710

8" Square x 6" Deep Sanitary Floor Sink

Specification

Watts FS-710 8"(203) square x 6"(152) deep sanitary floor sink with white acid resistant porcelain enamel coated interior, loose set porcelain enamel coated cast iron grate, polypropylene dome bottom strainer, and no hub (standard) outlet.

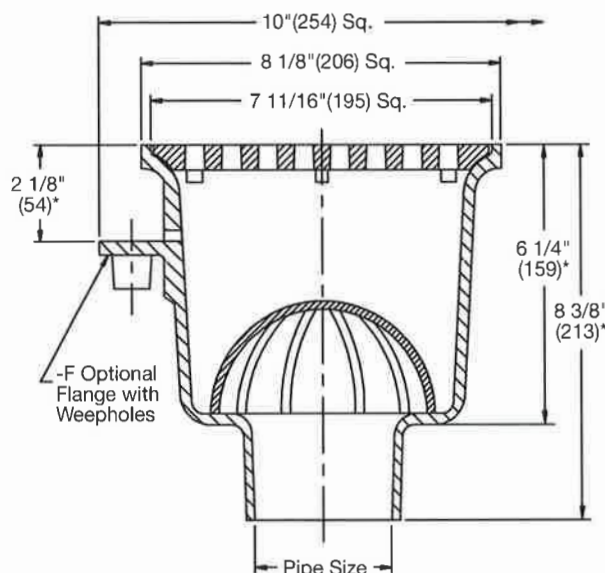


Pipe Sizing		
Suffix	Description	
2	2"(51) Pipe Size	☐
3	3"(76) Pipe Size	☐
4	4"(102) Pipe Size	☒

Outlet Type		
Suffix	Description	
NH	No Hub (MJ)	☐
P	Push-On	☒

Options		
Suffix	Description	
-F	Flange with Weepholes	☐
-FC	Flange w/Weepholes & Flashing Clamp	☐
-1	Nickel Bronze Top	☒
-3	Stainless Rim & Grate	☐
-5	Sediment Bucket	☐
-6	Vandal Proof (-1 Only)	☐
-7	Trap Primer Tapping	☐
-9	Hinged Grate (-1 Only)	☐
-21	Secondary Strainer	☐
-33	Less Grate	☐
-150	1/2 Grate	☐
-175	3/4 Grate	☐
-F4-1	4" Round Nickel Bronze Funnel	☐
-F6-1	6" Round Nickel Bronze Funnel	☐
-G-1	4x9" Oval Nickel Bronze Funnel	☐

Free Area Sq. In.	
Standard Grate	With -1/-3 Grate
16	19



*Add 5/8"(16) for -1 Nickel Bronze Top or -3 Stainless Steel Top

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Please refer to watts.com for BAA information on specific models.

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Canada: T: (888) 208-8927 • F: (905) 481-2316 • Watts.ca

Latin America: T: (52) 55-4122-0138 • Watts.com

ES-WD-FS-710 2127

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Function: Used in the outlet connections of floor drain bodies, or the inside of floor drain strainers to seal the opening to prevent odors, sewer gases, and insects from entering up through the floor drain grate. The MI-GARD®'s four flexible silicone sealing ribs ensure easy installation into openings that have variations in size. The MI-GARD® will open to allow drainage and close when there is no water flow. MI-GARD can be used independent or in conjunction with trap seal primers for added protection against sewer gases and insects entering up through the floor drain grate. MI-GARD is not designed to substitute the trap seal primers.


BOTTOM OF BODY

TOP OF STRAINER

MODEL NO.	"A" (PIPE SIZE)	"B" (HEIGHT)
MI-GARD-1.5	1-1/2" (38)	2" (51)
MI-GARD-2	2" (51)	2" (51)
MI-GARD-3	3" (76)	2" (51)
MI-GARD-3.5	3 1/2" (89)	2" (51)
MI-GARD-4	4" (102)	2" (51)
MI-GARD-6	6" (152)	2" (51)
MI-GARD-TS (used with Top Set Drains with 4" outlet)	4" (102)	2" (51)

Note: The MI-GARD-6 is designed in accordance with industry standards but is not IAPMO listed. All MI-GARD Floor Drain Trap Seals are in compliance with International Plumbing Code (I.P.C.)



MI-GARD-3,4 and 6 are I.C.C. and BMEC approved.



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Job Name: Maurice

Page No: _____

Section No: _____

Contractor: CSUSA

Schedule No: _____

Purchase Order No: _____

FS-2

Engineering Specification

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____
 Tag **FS-2**

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

FS-710

8" Square x 6" Deep Sanitary Floor Sink

Specification

Watts FS-710 8"(203) square x 6"(152) deep sanitary floor sink with white acid resistant porcelain enamel coated interior, loose set porcelain enamel coated cast iron grate, polypropylene dome bottom strainer, and no hub (standard) outlet.

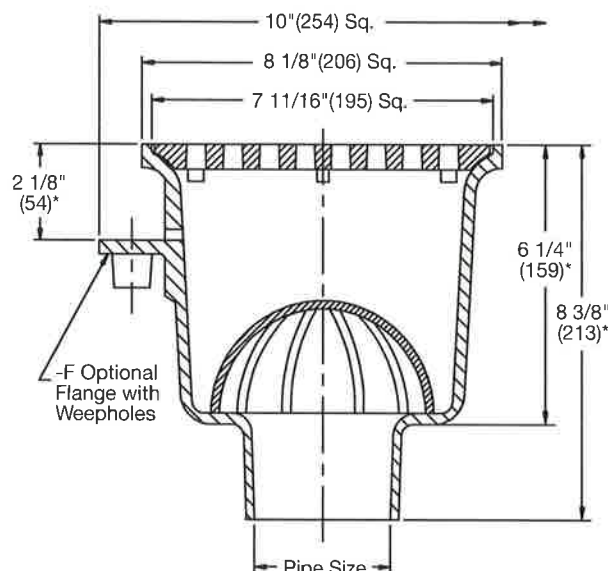


Pipe Sizing		
Suffix	Description	
2	2"(51) Pipe Size	☐
3	3"(76) Pipe Size	☒
4	4"(102) Pipe Size	☐

Outlet Type		
Suffix	Description	
NH	No Hub (MJ)	☐
P	Push-On	☒

Options		
Suffix	Description	
-F	Flange with Weepholes	☐
-FC	Flange w/Weepholes & Flashing Clamp	☐
-1	Nickel Bronze Top	☒
-3	Stainless Rim & Grate	☐
-5	Sediment Bucket	☐
-6	Vandal Proof (-1 Only)	☐
-7	Trap Primer Tapping	☐
-9	Hinged Grate (-1 Only)	☐
-21	Secondary Strainer	☐
-33	Less Grate	☐
-150	1/2 Grate	☐
-175	3/4 Grate	☐
-F4-1	4" Round Nickel Bronze Funnel	☐
-F6-1	6" Round Nickel Bronze Funnel	☐
-G-1	4x9" Oval Nickel Bronze Funnel	☐

Free Area Sq. In.	
Standard Grate	With -1/-3 Grate
16	19



*Add 5/8"(16) for -1 Nickel Bronze Top or -3 Stainless Steel Top

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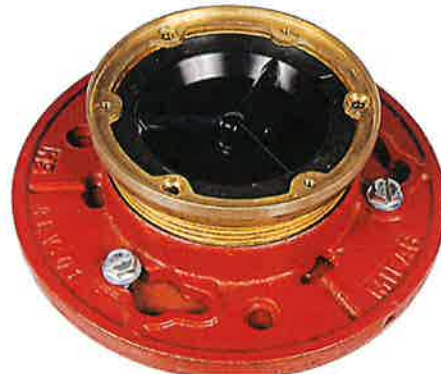
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BOTTOM OF BODY

TOP OF STRAINER

MODEL NO.	"A" (PIPE SIZE)	"B" (HEIGHT)
MI-GARD-1.5	1-1/2" (38)	2" (51)
MI-GARD-2	2" (51)	2" (51)
MI-GARD-3	3" (76)	2" (51)
MI-GARD-3.5	3 1/2" (89)	2" (51)
MI-GARD-4	4" (102)	2" (51)
MI-GARD-6	6" (152)	2" (51)
MI-GARD-TS (used with Top Set Drains with 4" outlet)	4" (102)	2" (51)

Note: The MI-GARD-6 is designed in accordance with industry standards but is not IAPMO listed. All MI-GARD Floor Drain Trap Seals are in compliance with International Plumbing Code (I.P.C.)



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 Job Name: Maurice

Page No: _____

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Phone 501-834-3320

Fax 501-834-5416

Spec Section 221030, 2.6.

Backflow Preventer (BFP-1)

BFP-1

Make-Up Water Backflow Preventer

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

LEAD FREE*

Series LF919 Reduced Pressure Zone Assembly

½" – 2"

Series LF919 Reduced Pressure Zone Backflow assembly protects potable water supplies in accordance with national plumbing codes and water authority requirements. This series can be used in a variety of installations, including prevention of health hazard cross-connections or containment at the service line entrance.

This series features two poppet-style check valves, replaceable check seats, and an intermediate relief valve. Its compact modular design facilitates maintenance and assembly access. Sizes ½" to 1" shutoffs have tee handles. The assembly features Lead Free* construction to comply with Lead Free* installation requirements.

Series LF919 includes a flood sensor to detect excessive water discharges from the relief valve. The sensor is installed on the assembly exterior and does not alter assembly functions or certifications. The sensor relays a signal that triggers notification to facility personnel for corrective action, thus limiting flooding and costly damage.

NOTICE

An add-on connection kit is required to activate the flood sensor. Without the connection kit, the flood sensor is a passive component that has no communication with any other device. (For more information download RP/IS-LF919.)

Features

- Separate access covers for the check valves and relief valve to ease maintenance
- Top entry for easy accessibility to all check internals
- All rubber elastomers of chloramine resistant material
- Check valve poppet assemblies fully steered by innovative plastic seat guide
- Replaceable push-in check valve and relief valve seats to eliminate threads from the water way
- EZ twist relief valve cover quarter-turn locking joint to capture the spring load during repair and to facilitate disassembly
- Innovative check valve plastic cover bushing for trouble-free guiding of the check valve poppet

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.



LF919-QT-FS

- Bottom-mounted relief valve for reduced installation clearances
- Compact, space saving design
- No special tools required for servicing
- Top-mounted test cocks for ease in testing and reduced installation clearances
- Standardly furnished with NPT body connections
- Sensor on the relief valve for flood detection
- Flood alert feature activated with add-on sensor connection kit, compatible with BMS and cellular communication

NOTICE

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts is not responsible for the failure of alerts due to connectivity or power issues.

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Inquire with governing authorities for local installation requirements.

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Specification

A Reduced Pressure Zone assembly shall be installed at each potential health hazard location to prevent backflow due to backsiphonage and/or backpressure. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves. Seats and seat discs shall be replaceable in both check valves and the relief valve without the use of special tools. Service of all internal check valve components shall be through top-mounted access covers threaded to the main valve body. The check valve poppet assembly shall be steered through the use of a corrosion resistant plastic guide. The check valve and relief valve seats shall be push-in type. The relief valve cover shall be secured with stainless steel bolts and shall utilize a quarter-turn locking joint to capture the spring load of the relief valve. The relief valve shall have an internal sensing line to sense the inlet water supply. All rubber elastomers shall be of chloramine resistant material. The assembly shall also include two resilient seated isolation valves, four top-mounted resilient seated test cocks, and an air gap drain fitting. The Lead Free* Reduced Pressure Zone assembly shall comply with state codes and standards, where applicable, requiring reduced lead content. The assembly shall be a Watts Series LF919, and shall include a sensor on the relief valve for flood detection.

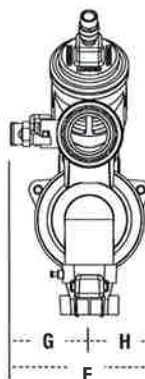
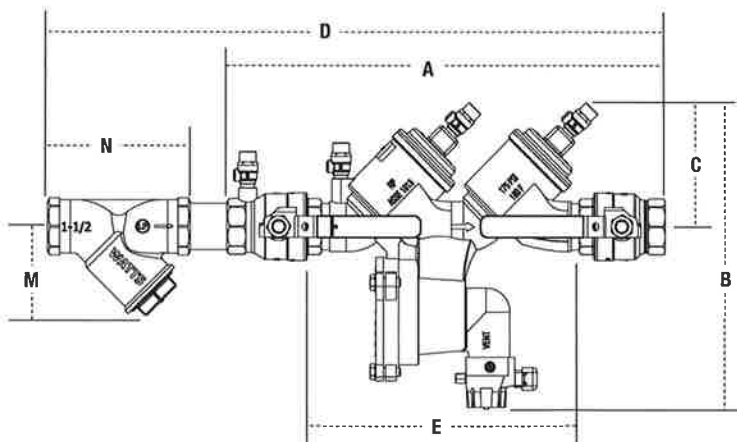
Materials

Body	Lead Free* cast copper silicon alloy
Discs	Silicone rubber
Check Seats	Replaceable polymer
Cover Bolts	Stainless steel

Model/Option

FS	Flood detection sensor
QT	Quarter-turn ball valves
S	Bronze strainer

Dimensions — Weights



SIZE	DIMENSIONS												STRAINER DIMENSIONS				WEIGHT					
	A		B		C		D		E (LF)		F		G		H		M		N		lb	kg
<i>in.</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>		
1/2	9 1/2	241	8 3/8	213	2 7/8	73	12 3/4	324	5 3/4	146	3 3/8	86	1 7/8	48	1 9/16	40	2 3/4	70	2 1/4	57	5.8	2.6
3/4	12 1/8	307	8 15/16	227	3 1/2	88	15 1/2	393	7 11/16	195	3 5/8	92	2 1/16	52	1 9/16	40	1 5/8	41	3 3/16	81	8.3	3.7
1	14 1/2	368	9 1/2	241	3 7/8	98	19 3/16	487	9 3/16	233	4	102	2 7/16	62	1 9/16	40	2 1/8	54	3 3/4	95	11.8	5.4
1 1/4	18 1/8	461	12 15/16	329	5 1/8	129	23 1/4	591	11 11/16	297	5 1/8	130	2 5/8	67	2 1/2	64	2 1/2	64	4 7/16	113	22.3	10.1
1 1/2	18 3/4	476	12 15/16	329	5 1/8	129	25 1/16	637	11 11/16	297	5 5/8	143	3 1/8	79	2 1/2	64	3	76	4 7/8	124	28.3	12.8
2	21 1/16	535	13 9/16	345	5 5/8	142	28 13/16	732	13 3/8	340	5 15/16	151	3 7/16	87	2 1/2	64	3 9/16	90	5 15/16	151	37.3	16.9

Approvals



USC-FCCCHR

Approved by the Foundation for Cross-Connection Control and Research at The University of Southern California, sizes 3/4" to 2".

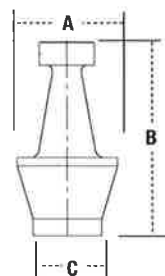
Insulated Enclosure

The WattsBox insulated enclosure is available for this assembly. For more information download ES-WB at watts.com.

Pressure — Temperature

Temperature Range	33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure	175 psi (12.1 bar)

Air Gaps

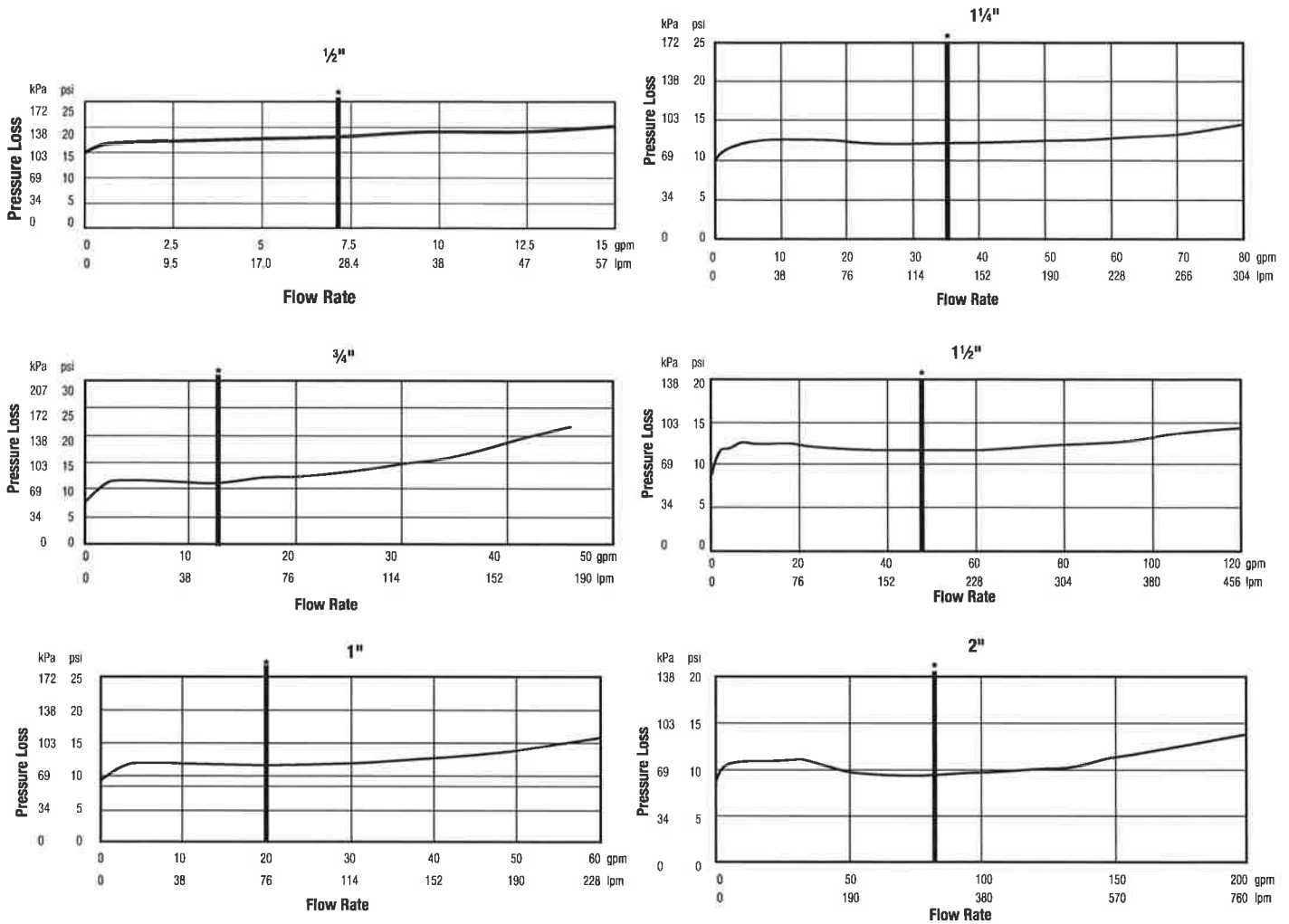


Call customer service if you need assistance with technical details.

MODEL	SIZE	DIMENSIONS						WEIGHT	
		A	B	C (NPT)				lb	kg
		in.	mm	in.	mm	in.	mm		
919AGC	1/2" - 1"	2 3/8	60	3 1/8	79	1/2	13	0.63	0.28
909AGC	1 1/4" - 2"	3 3/4	83	4 7/8	124	1	25	1.50	0.68

Capacity

The asterisk (*) indicates typical maximum system flow rate (7.5 ft/sec; 2.3 m/sec).



USA: T: (978) 689-6066 • Watts.com
 Canada: T: (888) 208-8927 • Watts.ca
 Latin America: T: (52) 55-4122-0138 • Watts.com



For Liquid and Steam Service

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

LEAD FREE*

Series LF777SI, LFS777SI Wye-Pattern, Lead Free Cast Strainers

Sizes: $\frac{3}{8}$ " – 3"

Series LF777SI, LFS777SI Wye-Pattern, Lead Free* cast strainers are designed to protect plumbing system components from dirt, rust and other damaging debris. The Series LF777SI and LFS777SI feature Lead Free* construction to comply with Lead Free* installation requirements.

Features

- Lead Free* cast copper silicon alloy body and cap
- Wye-pattern
- Tapped retainer cap
- Closure plug
- Special flared screen opening on upstream end to provide unrestricted flow through the strainer

Models

LF777SI – $\frac{3}{8}$ " – 3" threaded connections

LFS777SI – $\frac{1}{2}$ " – 2" solder connections

Specifications

A wye-pattern, Lead Free* cast strainer to be installed as indicated on the plans. The strainer must have a tapped retainer cap and closure plug. Strainer shall be rated to 400psi (27.6 bar) WOG; 125psi (8.6 bar) WSP for sizes $\frac{3}{8}$ "-2" and 300psi (20.7 bar) @ 210°F (99°C); 125psi (8.6 bar) WSP @ 353°F (178°C) for sizes 2½"-3". The strainer shall be constructed using Lead Free* cast copper silicon alloy. Lead Free* strainers shall comply with state codes and standards, where applicable, requiring reduced lead content. Strainer shall be a Watts Series LF777SI (threaded ends) or LFS777SI (solder ends).

Materials

Body:	Lead Free* cast copper silicon alloy
Retainer Cap:	Lead Free* cast copper silicon alloy
Plug	Lead Free* brass
Gasket:	EPDM
Standard Screen:	#20 mesh, 304 stainless steel



LF777SI

Pressure – Temperature

Maximum Working Pressure:

$\frac{3}{8}$ "-2"

400psi (27.6 bar) WOG @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

2½"-3"

300psi (20.7 bar) WOG @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

Approvals



NOTICE

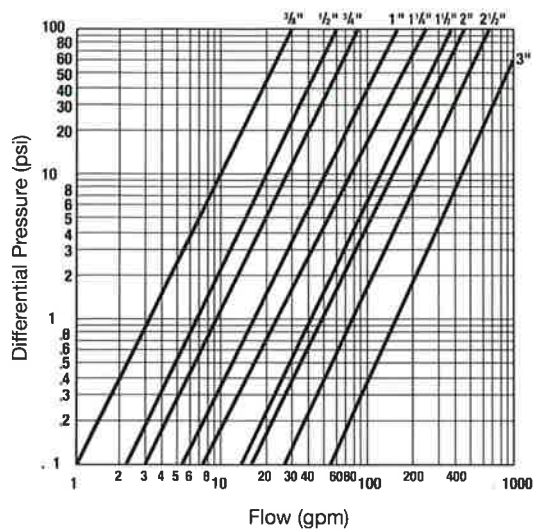
The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

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Performance Data

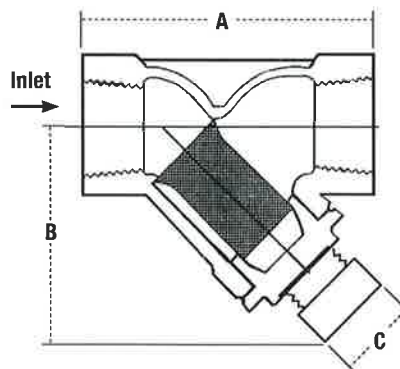


Flow curves show flows (gpm) and pressure drop (psig) through Watts Series 777SI, S777SI using standard 20 mesh screen.

Dimensions — Weights

LF777SI

SIZE		DIMENSIONS						WEIGHT	
in.	in.	mm	in.	mm	in.	mm	lbs.	kgs.	
3/8	2 3/8	60	1 5/16	33	1/4	6	0.4	0.18	
1/2	2 3/4	70	1 3/8	35	1/4	6	0.5	0.23	
3/4	3 3/16	81	1 5/8	42	1/4	6	0.6	0.27	
1	3 3/4	95	2 1/8	54	1/2	13	1.1	0.50	
1 1/4	4 7/16	113	2 1/2	64	1/2	13	1.9	0.86	
1 1/2	4 7/8	124	3	76	3/4	19	2.4	1.09	
2	5 15/16	151	3 9/16	91	1	25	4.4	2.00	
2 1/2	9 1/16	230	5 5/8	149	1 1/2	38	9.8	4.44	
3	10 3/16	259	6 1/4	159	1 1/2	38	13.2	5.99	



LFS777SI

SIZE		DIMENSIONS						WEIGHT	
in.	in.	mm	in.	mm	in.	mm	lbs.	kgs.	
1/2	2 3/4	70	1 3/8	35	1/4	6	0.4	0.18	
3/4	3 3/8	86	1 5/8	42	1/4	6	0.6	0.27	
1	3 3/4	95	2 1/8	54	1/2	13	0.9	0.41	
1 1/4	4 9/16	116	2 1/2	64	1/2	13	1.5	0.68	
1 1/2	5 5/16	135	3	76	3/4	19	1.9	0.86	
2	6 1/8	156	3 9/16	91	1	25	3.3	1.50	



USA: T: (978) 689-6066 • F: (978) 975-8350 • Watts.com
 Canada: T: (905) 332-4090 • F: (905) 332-7068 • Watts.ca
 Latin America: T: (52) 55-4122-0138 • Watts.com

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

Air Gaps, Elbows, and Test Cocks

For Reduced Pressure Zone Assemblies

Air Gaps

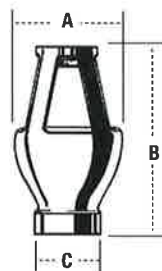
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel.

The installation of an air gap and drain line are recommended.

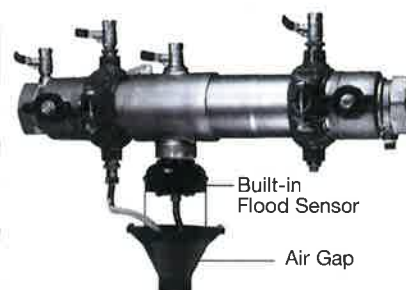
If using an air gap on an assembly equipped with a flood sensor, order the air gap listed for that specific flood sensor assembly model.

Approvals

ANSI/ASME A112.1.2



909 QT/LF909 QT



957 QT

ORDERING		DIMENSIONS									
MODEL	CODE	SIZE/SERIES	FLOOD SENSOR MODEL/SIZE	A		B		C (NPT)		WEIGHT	
				in.	mm	in.	mm	in.	mm	lb	kg
909AGA	0881399	½" – ½" 009/LF009 ¾" 009/LF009M2/M3 ½" – 1" 995	009/LF009 ½" 009/LF009M2/M3 ¾" LF919 ½" – 1"	2⅝	60	3⅜	79	½	13	0.63	0.28
909AGC	0881376	¾" – 1" 009/LF009, 909/ LF909 1" – 1½" 009/LF009M2 1¼" – 2" 995	009/LF009, 909/LF909 ¾" – 1" 009/LF009M2 1" – 1½" LF919 1¼" – 2"	3¼	83	4⅞	124	1	25	1.50	0.68
909AGC-B	0881377	¾" – 1" 909 1" – 1½" 009M2 1½" – 2" 995	—	3¼	88	3¾	95	1	25	1.90	0.86
909AGF	0881378	1¼" – 3" 009/LF009, 909/ LF909 1¼" – 2" 009/LF009M1 2" 009/LF009M2	009/LF009, 909/LF909 1¼" – 3" 009/LF009M1 1¼" – 2" 009/LF009M2 2"	4⅜	111	6¾	171	2	51	3.25	1.47
909AGK	0881385	4" – 6" 909/LF909 4" – 10" 909RPDA 8" – 10" 909/LF909M1	909/LF909 4" – 6" 909RPDA 4" – 10" 909/LF909M1 8" – 10"	6⅝	162	9⅝	244	3	76	6.25	2.83
909AGM	0881387	8" – 10" 909/LF909	—	7⅝	187	11¼	286	4	102	15.50	7.03
919AGC	0881576	¾" – 1" 919/LF919	—	2⅝	60	3⅜	79	½	13	0.63	0.28
919AGF	0881577	1¼" – 2" 919/LF919	—	4⅜	111	8½	216	2	51	3.5	1.6
957-AG	0111764	2½" – 10" 957	957 2½" – 10" 994 2½" – 10"	7½	190	12	304	2	51	1.50	0.68

Splash Guard

994AGK-P	0881397	2 1/2" - 10" 994	—	8	203	11 1/4	286	2	51	1.50	0.68
995-AG	0439190	3" - 6" 995	—	5	127	8	203	2	51	—	—
957-AG SG	0111815	2 1/2" - 10" 957	—	4 3/8	119	2 1/2	62	—	—	0.4	0.18

NOTICE

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BFP-1

Building Service Backflow Preventer

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

LEAD FREE*

Series 957

Reduced Pressure Zone Assembly

2½" – 10" 3"

Series 957 Reduced Pressure Zone assembly provides protection to the potable water system from contamination in accordance with national plumbing codes. The assemblies are normally used in health hazard applications for protection against backsiphonage or backpressure.

The series includes a flood sensor to detect excessive water discharges from the relief valve. The sensor is installed on the assembly exterior and does not alter assembly functions or certifications. The sensor relays a signal that triggers notification to facility personnel for corrective action, thus limiting flooding and costly damage.

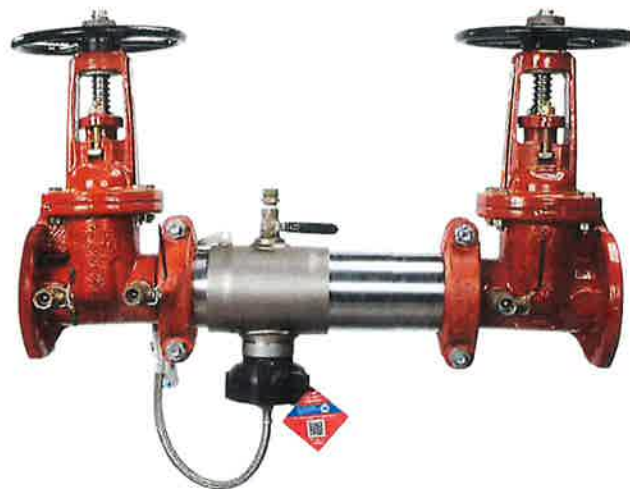
NOTICE

An add-on connection kit is required to activate the flood sensor. Without the connection kit, the sensor is a passive component that has no communication with any other device. (For more information download RP/IS-957/957DCDA.)

Features

- Sizes 2½", 3", and 4" available with quarter-turn ball valve shutoffs
- Replaceable check disc rubber
- Extremely compact design
- 70% Lighter than traditional designs
- 304 (Schedule 40) stainless steel housing and sleeve
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Bottom mounted cast stainless steel relief valve
- Available with grooved butterfly valve shutoffs
- Sensor on relief valve for flood detection
- Flood alerts feature activated with add-on sensor connection kit, compatible with BMS and cellular network communication

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.



957-OSY with Flood Sensor

NOTICE

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts is not responsible for the failure of alerts due to connectivity issues, power outages, or improper installation.

NOTICE

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Inquire with governing authorities for local installation requirements.

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WATTS®

Specification

The Reduced Pressure Zone assembly shall consist of two independent torsion spring check modules, a differential pressure relief valve located between and below the two modules, two drip tight shutoff valves, and required torsion spring check modules and relief valve shall be contained with a sleeve accessible single housing constructed from 304 (Schedule 40) stainless steel pipe with groove end connections. Torsion spring checks shall have replaceable elastomer discs and in operation produce drip tight closure against the reverse flow of liquid caused by backpressure or backsiphonage. The assembly shall be a Watts Series 957, and shall include a flood sensor on the relief valve for flood detection.

Model/Option

ES	Flood sensor on relief valve for flood detection
NRS	Non-rising stem, resilient seated gate valves
OSY	UL Classified and FM Approved outside stem and yoke resilient seated gate valves
N	N-pattern orientation
Z	Z-pattern orientation
BFG	UL Classified and FM Approved grooved gear operated butterfly valves with tamper switch
QT	2½" - 4" quarter-turn ball valves
OSY FxG**	Flanged inlet gate connection and grooved outlet gate connection
OSY GxF**	Grooved inlet gate connection and flanged outlet gate connection
OSY GxG**	Grooved inlet gate connection and grooved outlet gate connection

Materials

Housing & Sleeve	304 (Schedule 40) stainless steel
Elastomers	EPDM, silicone, and Buna-N
Torsion Spring Checks	Noryl®, stainless steel
Check Discs	Reversible silicone or EPDM
Test Cocks	Lead Free* bronze body
Pins & Fasteners	300 Series stainless steel
Springs	Stainless steel

Pressure — Temperature

Temperature Range	33°F – 140°F (0.5°C – 60°C)
Maximum Working Pressure	175 psi (12.1 bar)

**Options for the gate valve:

- Consult factory for dimensions.
- Available with grooved NRS gate valves; consult factory.
- Post indicator plate and operating nut available; consult factory.

Noryl® is a registered trademark of SHPP Global Technologies B.V.

Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCCHR-USC), excluding 10" N-pattern installation as well as 6" and 10" Z-pattern installations
- AWWA C511-97

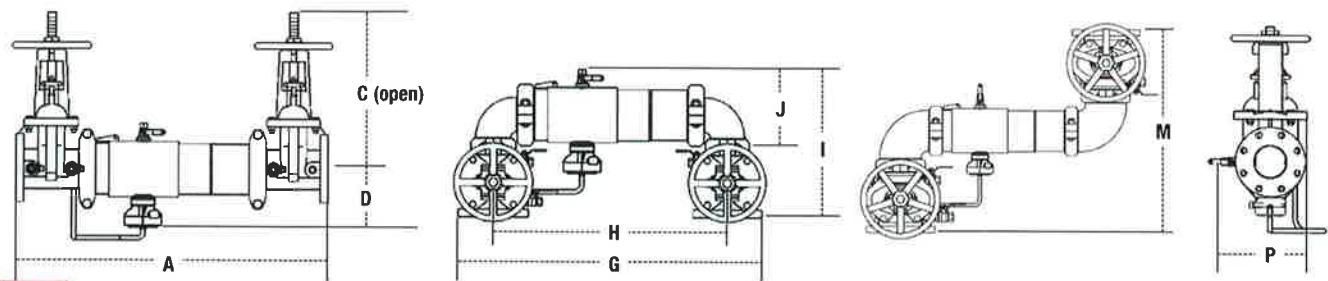


For additional approval information, contact the factory or visit watts.com.

NOTICE

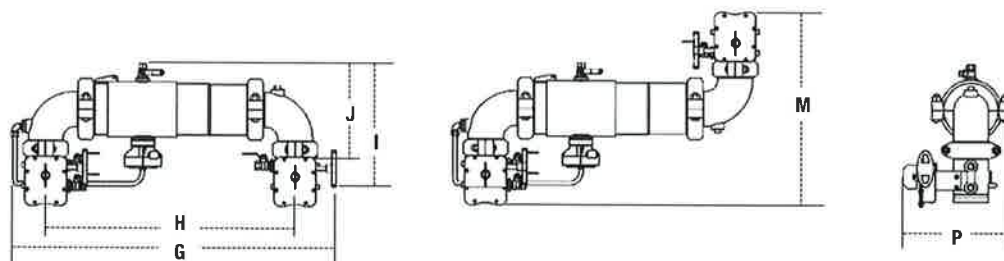
When installing a drain line on Series 957 backflow preventers, use 957AG air gaps. Attach the air gap brackets directly onto the flood sensor. For additional information, refer to ES-AG/EL/TC at watts.com

Dimensions - Weight



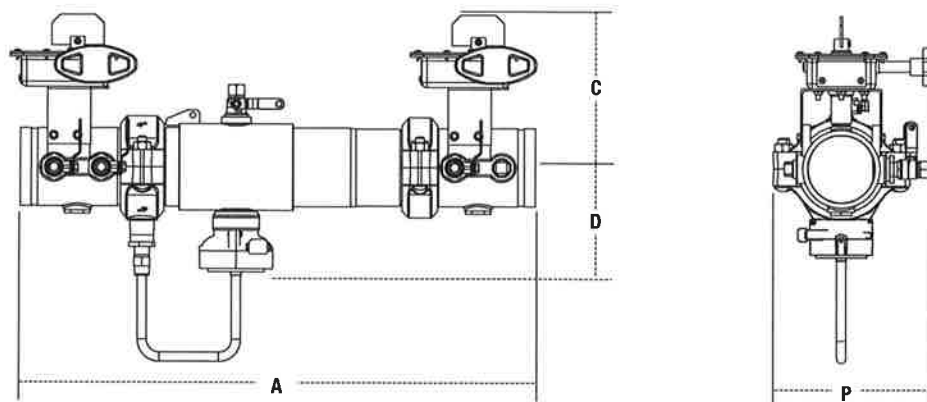
957, 957N, 957Z

SIZE	DIMENSIONS												WEIGHT			
	A	C (OSY)	C (NRS)	D	G	H	I	J	M	P	957NRS	957OSY	957N NRS	957N OSY		
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg	lb	kg	lb	kg
2½	30¾	781	16¾	416	9¾	238	6½	165	29⅞	738	21½	546	15½	393	8⅓	223
3	31¾	806	18¾	479	10¼	260	6⅞	170	30¼	768	22¼	565	17¼	435	9⅞	233
4	33¾	857	22¾	578	12⅞	310	7	178	33	838	23½	597	18½	470	9⅞	252
6	43½	1105	30¾	765	16	406	8½	216	44¾	1137	33½	851	23¾	589	13⅞	332
8	49¾	1264	37¾	959	19⅞	506	9⅞	246	54½	1375	40½	1019	27⅞	697	15⅞	399
10	57¾	1467	45¾	1162	23⅞	605	11¾	285	66	1676	49½	1257	32½	826	17¾	440



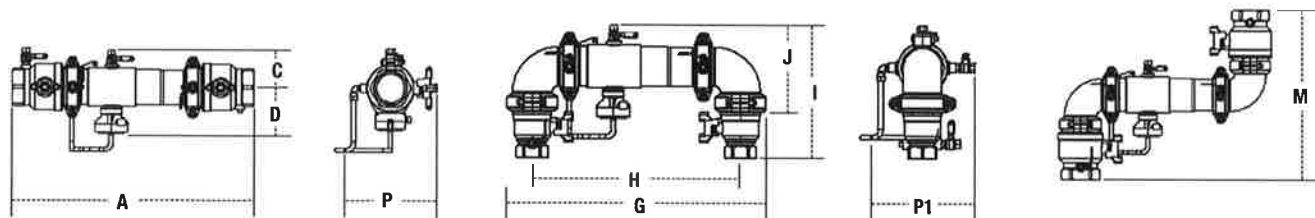
957NBFG, 957ZBFG

SIZE			DIMENSIONS								WEIGHT			
	G		H		I		J		M		P		957N/957Z	
<i>in.</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lb</i>	<i>kg</i>
2½	32½	826	23	584	15½	394	9½	241	19¾	502	11⅜	300	67	30
3	34	864	24	610	16⅝	414	10⅞	256	21¼	540	12½	308	70	32
4	35¾	905	25½	648	17⅞	437	10⅞	279	23½	597	12⅝	321	87	39
6	46½	1181	35¼	895	20½	521	13½	343	27¼	692	15	382	160	73



957 BFG

SIZE		DIMENSIONS								WEIGHT	
	A		C		D		P				
in.	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg	
4	29	737	7 ³ / ₄	197	6 ³ / ₈	162	9 ¹ / ₂	241	66	30	
6	36 ¹ / ₂	927	9 ¹¹ / ₁₆	246	7 ⁷ / ₁₆	189	14 ¹ / ₄	362	122	55	



957QT

SIZE			DIMENSIONS												WEIGHT									
	A		C		D		G		H		I		J		M		P		P1		QT		QTN	
<i>in.</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lb</i>	<i>kg</i>	<i>lb</i>	<i>kg</i>
2½	27½	698	4⅞	124	6⅞	175	30¼	768	21½	546	16⅛	407	11⅜	289	19⅞	505	11⅝	287	11⅝	287	46	21	57	26
3	28	711	4⅞	124	6⅞	175	30¼	768	22¼	565	16⅞	420	11⅜	289	20⅞	531	11⅝	287	11⅝	287	56	25	67	30
4	28¾	730	4⅞	124	6⅞	175	30¼	768	23½	597	18⅞	465	11⅜	289	24⅜	619	11⅝	287	11⅝	287	76	34	87	39

Capacity

Flow curves as tested by Underwriters Laboratories.

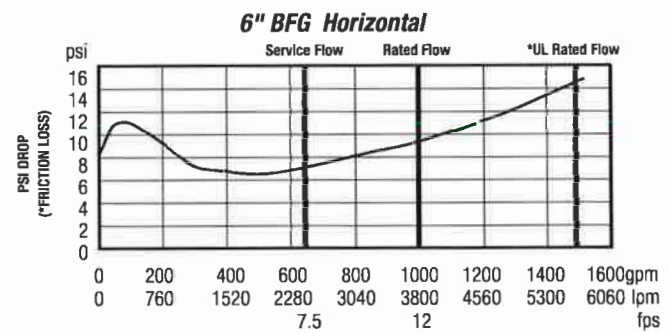
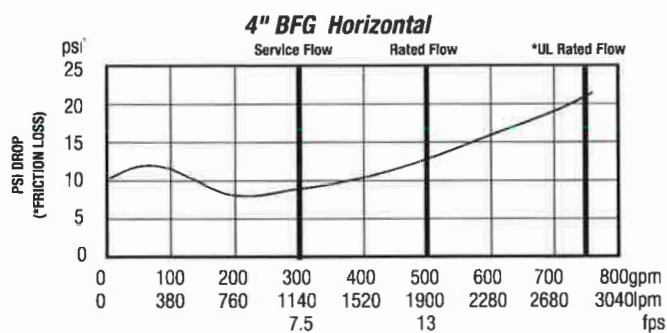
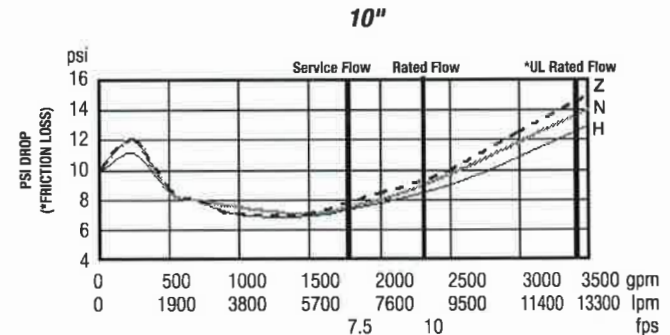
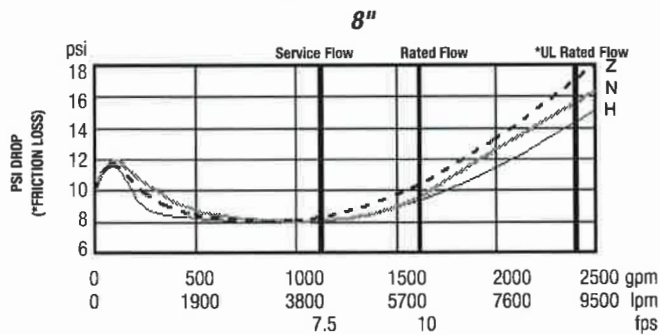
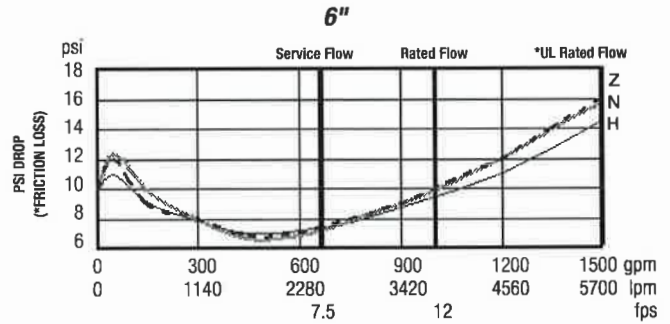
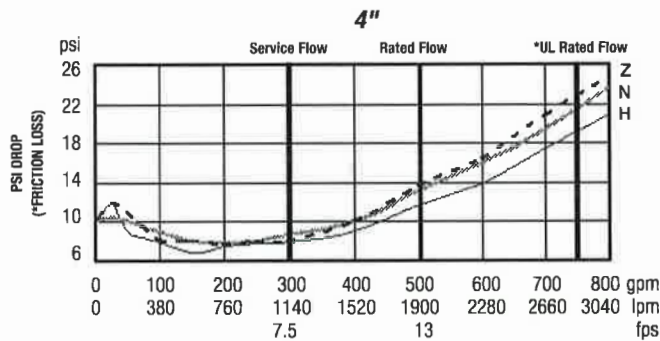
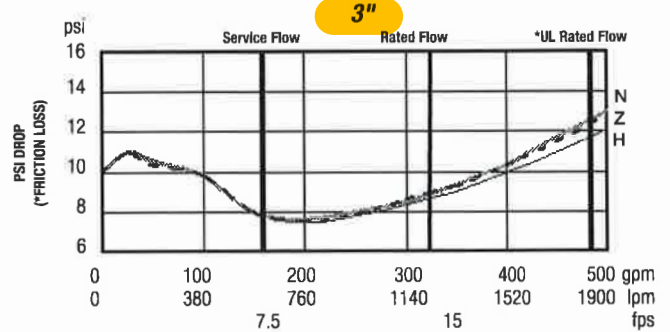
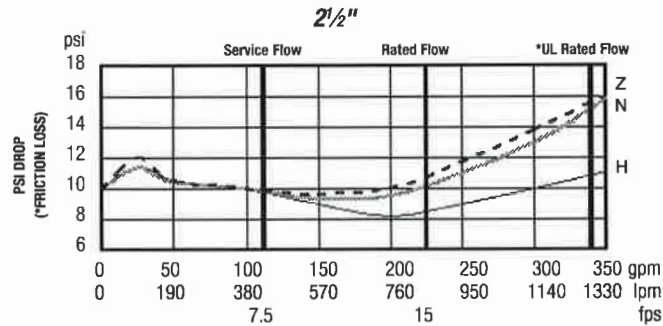
Flow capacity chart identifies valve performance based upon rated water velocity up to 25 fps.

- Service Flow is typically determined by a rated velocity of 7.5 fps based upon schedule 40 pipe.
- Rated Flow identifies maximum continuous duty performance determined by AWWA.

- UL Flow Rate is 150% of Rated Flow and is not recommended for continuous duty.
- AWWA Manual M22 (Appendix C) recommends that the maximum water velocity in services be not more than 10 fps.

Flow characteristics collected using butterfly shutoff valves.

— Horizontal — N-pattern - - - - Z-pattern



USA: T: (978) 689-6066 • Watts.com
Canada: T: (888) 208-8927 • Watts.ca
Latin America: T: (52) 55-4122-0138 • Watts.com

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

LEAD FREE*

Series 77F-DI-125, 77F-DI-FDA-125

Flanged, Wye Pattern, Cast Iron Strainers

2" – 12" **3"**

Series 77F-DI-125, 77F-DI-FDA-125 Flanged, Wye Pattern, Cast Iron Strainers feature 304 stainless steel perforated screens, a cast iron flanged retainer cap and a drain/blowoff connection furnished with a closure plug. Series 77F-DI-FDA-125 also features a double coated, heat fused epoxy coating on the interior and exterior for NSF/ANSI/CAN 61 approved sanitary applications.

Features

- Flanges conform to American National Standards Institute, Class 125 (ANSI B16.1) and WW-S-2739 Type 2
- Lead Free* cast iron body
- 304 Stainless steel perforated screens
- Cast iron flanged retainer cap with gasket tapped for closure plug
- Drain/Blowoff connection furnished with closure plug
- Series 77F-DI-FDA-125 comes with heat fused NSF/ANSI/CAN 61 approved epoxy coating (interior and exterior)

Models

77F-DI-125 — 2" – 12" with flanged connections for water and steam service

77F-DI-FDA-125 — 2" – 12" with flanged connections and double coated, heat fused NSF/ANSI/CAN 61 approved epoxy coating (interior and exterior) for water service only

Specification (77F-DI-125)

A flanged, wye pattern, cast iron strainer to be installed as indicated on the plans. The strainer must have flanges that conform to American National Standards Institute, Class 125, 304 stainless steel perforated screens and a drain/blowoff connection furnished with a closure plug. Pressure rating no less than 200psi (13.8 bar) WOG non-shock and 125psi (8.6 bar) WSP. Strainer shall be a Watts Series 77F-DI-125.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.



77F-DI-FDA-125

Pressure – Temperature

Maximum Operating Pressure:

200psi (13.8 bar) WOG, non-shock, @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

Standard Screens

2" – 5": 1/16" perforation

6" – 8": 1/8" perforation

10" – 12": 3/16" perforation

Screen Options

Wire Mesh Liners: 304 stainless steel (#20, #40, #60, #80, #100)

Perforated Screens: 304 stainless steel (3/64", 1/16", 1/8", 3/16")

Specification (77F-DI-FDA-125)

A flanged, wye pattern, cast iron strainer with a double coated, heat fused, NSF/ANSI/CAN 61 approved epoxy coating on the interior and exterior surfaces for NSF/ANSI/CAN 61 sanitary applications. Flanges to conform to ANSI B16.1 Class 125, 304 stainless steel perforated screens, and a drain/blowoff connection furnished with a closure plug. Pressure rating 200psi (13.8 bar) WOG. Strainer shall be a Watts Series 77F-DI-FDA-125.

NOTICE

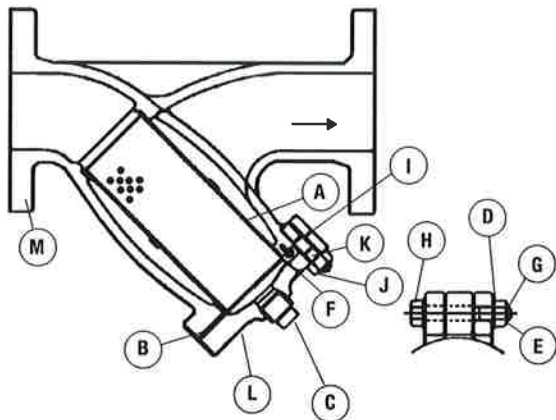
The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

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WATTS®

Materials



A.	Screen	AISI 304SS
B.	Cover Gasket	Graphite
C.	Plug	*ASTM A47
D.	Washer	ASTM A6
E.	Cotter Pin	ASTM A112
F.	Plate	*ASTM A6
G.	Bolt Nut	ASTM A6
H.	Bolt	ASTM A6
I.	Set Screw	ASTM B16
J.	Cover Bolt Nut	ASTM A6
K.	Cover Bolt	ASTM A6
L.	Cover	*ASTM A-126 Class B
M.	Body	*ASTM A-126 Class B

Note:* 77F-DI-FDA-125 component parts epoxy coated internally and externally.

Standards

Tested and Certified by NSF International



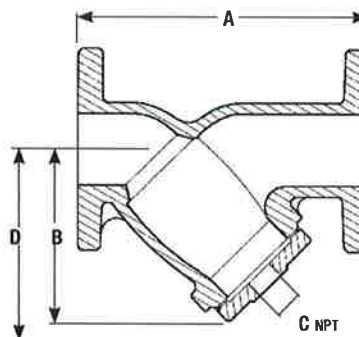
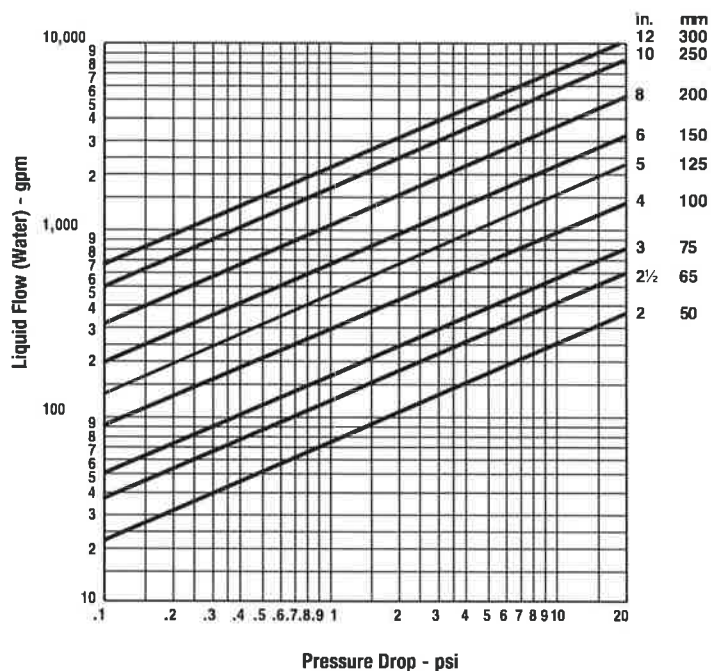
Dimensions – Weights

Call customer service if you need assistance with technical details.

SIZE			DIMENSIONS						WEIGHT		
	A		B		C(NPT)		D*		Screen Area		
in.	in.	mm	in.	mm	in.	mm	in.	mm	sq.in.	lbs.	kgs.
2	7⅞	200	5¼	133	½	13	7	178	36	18	8
2½	10	254	6½	165	1	25	9¼	248	56	28	13
3	10⅞	257	7	178	1	25	10	254	75	34	15
4	12⅞	308	8¼	210	1½	38	12	305	121	60	27
5	15⅞	397	11¼	286	2	51	17	432	210	95	43
6	18½	470	13½	343	2	51	20	508	278	133	60
8	21⅞	551	15½	394	2	51	22¾	578	387	247	112
10	26	660	18½	470	2	51	28	711	577	370	168
12	29⅞	759	21¾	552	2	51	30	762	795	579	262

* D dimension is minimum clearance for screen removal.

Flow/Pressure Drop Chart



USA: T: (978) 689-6066 • Watts.com

Canada: T: (888) 208-8927 • Watts.ca

Latin America: T: (52) 55-4122-0138 • Watts.com

Engineering Specification

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

Air Gaps, Elbows, and Test Cocks

For Reduced Pressure Zone Assemblies

Air Gaps

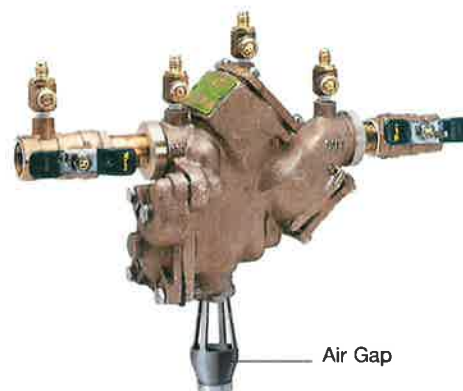
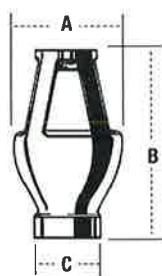
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel.

The installation of an air gap and drain line are recommended.

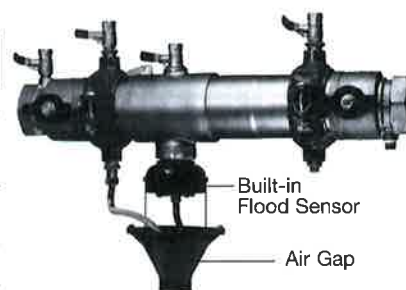
If using an air gap on an assembly equipped with a flood sensor, order the air gap listed for that specific flood sensor assembly model.

Approvals

ANSI/ASME A112.1.2



909 QT/LF909 QT



957 QT

ORDERING			DIMENSIONS								
MODEL	CODE	SIZE/SERIES	FLOOD SENSOR MODEL/SIZE	A		B		C (NPT)		WEIGHT	
				in.	mm	in.	mm	in.	mm	lb	kg
909AGA	0881399	1/2" – 1/2" 009/LF009 3/4" 009/LF009M2/M3 1/2" – 1" 995	009/LF009 1/2" 009/LF009M2/M3 3/4" LF919 1/2" – 1"	2 3/8	60	3 1/8	79	1/2	13	0.63	0.28
909AGC	0881376	3/4" – 1" 009/LF009, 909/ LF909 1" – 1 1/2" 009/LF009M2 1 1/4" – 2" 995	009/LF009, 909/LF909 3/4" – 1" 009/LF009M2 1" – 1 1/2" LF919 1 1/4" – 2"	3 1/4	83	4 7/8	124	1	25	1.50	0.68
909AGC-B	0881377	3/4" – 1" 909 1" – 1 1/2" 009M2 1 1/2" – 2" 995	—	3 1/4	88	3 3/4	95	1	25	1.90	0.86
909AGF	0881378	1 1/4" – 3" 009/LF009, 909/ LF909 1 1/4" – 2" 009/LF009M1 2" 009/LF009M2	009/LF009, 909/LF909 1 1/4" – 3" 009/LF009M1 1 1/4" – 2" 009/LF009M2 2"	4 3/8	111	6 3/8	171	2	51	3.25	1.47
909AGK	0881385	4" – 6" 909/LF909 4" – 10" 909RPDA 8" – 10" 909/LF909M1	909/LF909 4" – 6" 909RPDA 4" – 10" 909/LF909M1 8" – 10"	6 3/8	162	9 5/8	244	3	76	6.25	2.83
909AGM	0881387	8" – 10" 909/LF909	—	7 3/8	187	11 1/4	286	4	102	15.50	7.03
919AGC	0881576	3/4" – 1" 919/LF919	—	2 3/8	60	3 3/8	79	1/2	13	0.63	0.28
919AGF	0881577	1 1/4" – 2" 919/LF919	—	4 3/8	111	8 1/2	216	2	51	3.5	1.6
957-AG	0111764	2 1/2" – 10" 957	957 2 1/2" – 10" 994 2 1/2" – 10"	7 1/2	190	12	304	2	51	1.50	0.68

Splash Guard

994AGK-P	0881397	2 1/2" - 10" 994	—	8	203	11 1/4	286	2	51	1.50	0.68
995-AG	0439190	3" - 6" 995	—	5	127	8	203	2	51	—	—
957-AG SG	0111815	2 1/2" - 10" 957	—	4 3/4	119	2 1/2	62	—	—	0.4	0.18

NOTICE

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Inquire with governing authorities for local installation requirements.

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P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 221030, 2.7.

Strainers

**See BFP-1 Submittals
for Information on the
Backflow Preventer
Wye Strainer.**



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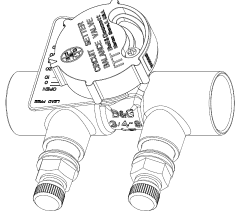
Fax 501-834-5416

Spec Section 221030, 2.9.

Balancing Valves

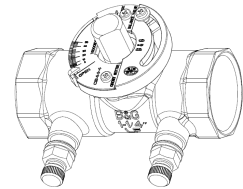
JOB: _____ **REPRESENTATIVE:** _____

UNIT TAG:	ORDER NO.	DATE:
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:



Circuit Setter® Plus

Calibrated Balance Valves
with NPT and Solder Connections
LEAD FREE*


DESCRIPTION

The Bell & Gossett CIRCUIT SETTER PLUS and CIRCUIT SETTER PLUS "RF" calibrated balance valves are a precision machined ball type triple purpose balancing instrument. They are precisely calibrated for use as a presettable balance valve, variable orifice flow meter and positive shut-off service valve.

Valves are furnished with a calibrated nameplate and memory stop indicator which permits a preset to a fixed open position and then closed for service without disturbing valve setting.

Valves are equipped with capped readout valves fitted with internal check valves and 1/4" NPT tapped and plugged drain port.

CONSTRUCTION

Body: Lead-Free Brass*
 Ball: 304 Stainless Steel
 Seat Rings: Glass and Carbon filled TFE
 Readout Valves: Brass with EPT check valves
 Stem "O" Ring: EPDM

MAXIMUM WORKING PRESSURE

NPT Models: 400 psig (2758 kPa)
 Sweat Models: See table below

MAXIMUM OPERATING TEMPERATURE

-4°F(-20°C) to 250°F(121°C)

* Contains less than 0.25% lead content by weight on wetted surfaces. AB1953 and CSA Certified. Vermont 152S, Maryland House Bill HB.372, Senate Bill S.3874, and NSF-61 Annex G Compliant.

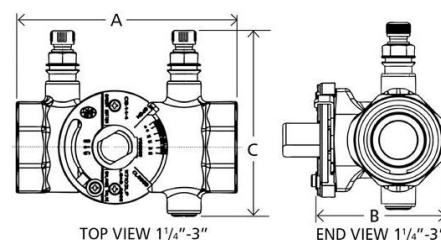
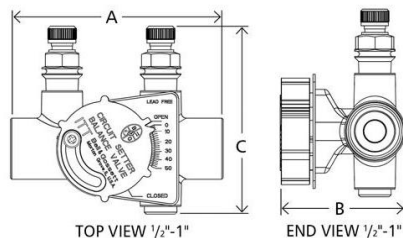
Type Solder	Maximum Pressure Limitations for 1/2"-2" With Solder Connections	
	Pressure PSI (KPa)	Temp °F (°C)
95-5 Tin-Antimony	300 (2068)	200 (93)
	250 (1724)	225 (107)
	200 (1379)	250(121)

SCHEDULE

Model No.	Tagging Information	Quantity
RF-1/2S LF		
RF-3/4S LF		
CB-1/2S LF		
CB-3/4S LF		
CB-1S LF		
CB-1-1/4S LF		
CB-1-1/2S LF		
CB-2S LF		
CB-1/2 LF		
CB-3/4 LF		
CB-1 LF		
CB-1-1/4 LF		
CB-1-1/2 LF		
CB-2 LF		
CB-2-1/2 LF		
CB-3 LF		

LEAD-FREE CIRCUIT SETTER PLUS Calibrated Balance Valves

A-549LFP(E)



DIMENSIONS AND WEIGHTS *

Model Number	Size	Connection Type	DIMENSIONS IN INCHES (MM)			WEIGHT IN LBS. (KG)
			A	B	C	
RF-1/2S LF	1/2"	SWEAT	2.91 (73.9)	1.82 (46.2)	2.85 (72.4)	0.6 (0.27)
RF-3/4S LF	3/4"	SWEAT	3.51 (89.2)	2.05 (52.1)	3.10 (78.7)	0.75 (0.34)
CB-1/2S LF	1/2"	SWEAT	2.91 (73.9)	1.82 (46.2)	2.85 (72.4)	1 (0.45)
CB-3/4S LF	3/4"	SWEAT	3.51 (89.2)	2.05 (52.1)	3.10 (78.7)	1.25 (0.6)
CB-1S LF	1"	SWEAT	4.29 (109)	2.33 (59.2)	3.33 (84.6)	2 (0.9)
CB-1-1/4S LF	1-1/4"	SWEAT	4.91 (124.7)	3.08 (78.2)	3.69 (93.7)	3.5 (1.6)
CB-1-1/2S LF	1-1/2"	SWEAT	5.21 (132.3)	3.27 (83)	3.95 (100.2)	3.8 (1.7)
CB-2S LF	2"	SWEAT	6.31 (160.3)	3.83 (97.4)	4.44 (112.8)	6.2 (2.8)
CB-1/2 LF	1/2"	NPT	2.94 (74.7)	1.98 (50.3)	3.02 (76.7)	1.25 (0.6)
CB-3/4 LF	3/4"	NPT	3.06 (77.7)	2.17 (55.1)	3.12 (79.2)	1.5 (0.7)
CB-1 LF	1"	NPT	3.81 (96.8)	2.47 (62.7)	3.42 (86.9)	2 (0.9)
CB-1-1/4 LF	1-1/4"	NPT	4.41 (112)	3.19 (81)	3.69 (93.7)	3.5 (1.6)
CB-1-1/2 LF	1-1/2"	NPT	4.42 (112.3)	3.37 (85.6)	3.95 (100.2)	3.8 (1.7)
CB-2 LF	2"	NPT	5.13 (130.3)	3.98 (101.1)	4.44 (112.8)	6.2 (2.8)
CB-2-1/2 LF	2-1/2"	NPT	6.00 (152.4)	4.51 (114.6)	4.83 (122.6)	9 (4.1)
CB-3 LF	3"	NPT	6.50 (165.1)	5.12 (130)	5.44 (138.2)	12 (5.4)

All dimensions +/-0.125 (3.2 mm) tolerance. Dimensions are subject to change. Not to be used for construction purposes unless certified.

TYPICAL SPECIFICATION

Furnish and install as shown on plans with manufacturer recommendations Model CB or "RF" calibrated balance valves.

PRE-SET BALANCE FEATURE

Valves to be designed to allow installing contractor to pre-set balance points for proportional system balance prior to system start-up in accordance with pre-set balance schedule.

VALVE DESIGN AND CONSTRUCTION

All valves 1/2" to 3" pipe size to consist of Lead Free Brass** body/SS ball construction with glass and carbon filled TFE seat rings. Valves to have differential pressure read-out ports across valve seat area. Read-out ports to be fitted with internal EPT inserts/check valves. Valve bodies to have 1/4" NPT tapped drain/purge port. Valves to have memory stop feature to allow valve to be closed for service and then reopened to set point without disturbing balance position. All valves to have calibrated nameplates to assure specific valve settings. Valves shall be designed for positive shut-off.

**Contains less than 0.25% lead content by weight on wetted surfaces.

CSA CERTIFIED: AB1953; Vermont S152; Maryland House Bill 372 [statute 12-605]. ANSI/NSF-61 Annex G Compliant.

Xylem Inc.
8200 N. Austin Avenue
Morton Grove, IL 60053
Phone: (847)966-3700 Fax: (847)965-8379
www.bellgossett.com

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DESIGN PRESSURE/TEMPERATURE

A. 1/2" - 3" NPT connections 400 psig (2069 kPa) at 250°F (121°C)

B. 1/2" - 2" Sweat connections (see table page1)

All balance valves to be Xylem Bell & Gossett Model No. CB-_____LF or Model No. RF-_____LF (note sizes).

IMPORTANT:

When monitoring system flow, care must be exercised to avoid direct skin or eye contact with liquids that may escape. Liquids with temperatures in excess of 120°F (49°C) may cause burns.

Bell & Gossett Circuit Setter Balance Valves are not recommended for use with meter connections pointing downward.



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P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 221030, 2.10.

Water Hammer Arrestors

WHA

For Commercial Applications

Job Name **Maurice Bathhouse**

Contractor **Comfort Systems USA**

Job Location **Hot Springs**

Approval _____

Engineer **IMEG**

Contractor's P.O. No. _____

Approval _____

Representative **Sanders Supply**

LEAD FREE*

Series LF15M2 Water Hammer Arrestors

Sizes: 1/2" - 1" 3/4"

What is Water Hammer?

The noise from banging pipes is caused by shocks of high speed water flowing in the piping system when a fixture is suddenly closed. Sudden stoppage of the water (a non-compressible liquid) flowing at a given pressure and velocity causes a surge or spike of water and is called water hammer. When this occurs, a pressure wave travels back through the piping until it finds a point of relief. The LF15M2 and LF15M2S Water Hammer Arrestors are designed to eliminate this effect. The LF15M2 and LF15M2S features Lead Free* construction to comply with Lead Free* requirements.

Dishwashers, clothes washers, fast closing positive shutoff valves incorporated in the system all contribute to creating water shock which is not only annoying but damaging to pipes and appliances. The Watts Series LF15M2 and LF15M2S incorporates a pre-charged, permanent sealed air chamber to absorb the shock. The sealed chamber prevents the loss of air to the water and assures long and trouble-free life.

Features

- NPT solid hex brass adapter or solder end connection for easy installation
- Approved for installation with no access panel required
- May be installed in new or existing plumbing systems with a standard pipe tee vertically, horizontally or at any angle
- ➔ • PDI Listed (PDI WH201)
- Maintenance free – piston is the only moving part
- Air pre-load is 60psi (4.2 bar)
- Factory air charged and permanently sealed

Standards



Standard: Listed by IAPMO, ASSE 1010 approved, ANSI A112.26.1M approved, PDI WH201 approved and certified.



LF15M2



LF15M2S

Pressure – Temperature

Operating Pressure: Designed to operate on all domestic and commercial lines @ 150psi (10.6 bar) working pressure.

Temperature Range: 33°F to 180°F (0.5°C to 82°C).

Materials

Body:	Copper
Piston:	Polypropylene
Threaded Adapter:	Lead Free* Brass
O-ring:	EPDM

NOTICE

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NOTICE

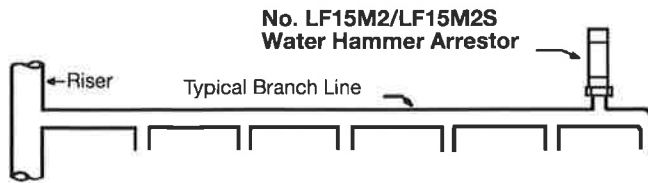
Inquire with governing authorities for local installation requirements

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

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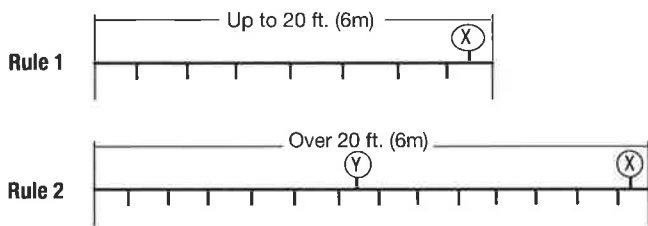


Sizing and Placement



As shown, it has been established that the preferred location for the water hammer arrestor is at the end of the branch line between the last two fixtures served.

The location of the water hammer arrestor shown above applies to branch lines that do not exceed 20 ft. (6m) in length, from the start of the horizontal branch line to the last fixture supply on this branch line. When the branch line exceeds the 20 ft. (6m) length, an additional water hammer arrestor should be used. This practice is best defined by two rules which have been established to cover the placement of water hammer arrestors.



Rule 1 covers multiple fixture branch lines which do not exceed 20 ft. (6m) in length.

Explanation - Fixture-unit sizing and selection table is used to select the required PDI unit (water hammer arrestor).

Rule 2 covers multiple fixture branch lines which do exceed 20 ft. (6m) in length.

Explanation - Fixture-unit sizing and selection table is used to select the required PDI unit (water hammer arrestor). The sum of the fixture units rating of units X and Y shall be equal to or greater than the demand of the branches.

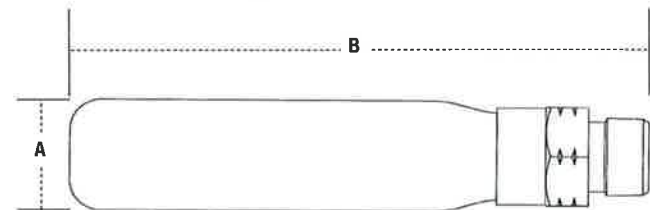
Sizing and Selection Table

SIZE	MODEL	ORDER CODE	MODEL	ORDER CODE	CROSS FIXTURE UNITS	REF. PDI STANDARD
in.	Threaded		Solder			
1/2"	LF15M2-A	0750160	LF15M2-AS	0750150	1-11	A
3/4"	LF15M2-B	0750161	LF15M2-BS	0750151	12-32	B
1"	LF15M2-C	0750162	LF15M2-CS	0750152	33-60	C
1"	LF15M2-D	0750163	LF15M2-DS	0750153	61-113	D
1"	LF15M2-E	0750164	LF15M2-ES	0750154	114-154	E
1"	LF15M2-F	0750165	LF15M2-FS	0750155	155-330	F

Fixture Units Sizing Information

FIXTURE	TYPE OF SUPPLY CONTROL	FIXTURE UNITS					
		TOTAL	PUBLIC C.W.	H.W.	PRIVATE TOTAL	C.W.	H.W.
Water Closet 1.66 PF	Flush Valve	8	8	—	5	5	—
Water Closet 1.66 PF	Flush Tank	5	5	—	2.5	2.5	—
Pedestal Urinal 1.06 PF	Flush Valve	4	4	—	—	—	—
Stall or Wall Urinal	Flush Valve 1.06 PF	4	4	—	—	—	—
Stall or Wall Urinal	Flush Tank 1.06 PF	2	2	—	—	—	—
Lavatory	Faucet	2	1 1/2	1 1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1 1/2	1 1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group	Flush Valve Closet	—	—	—	8	8	3
Bathroom Group	Flush Tank Closet	—	—	—	6	6	3
Separate Shower	Mixing Valve	—	—	—	2	1	2
Service Sink	Faucet	3	3	3	—	—	—
Laundry Tubs (1-3)	Faucet	—	—	—	3	3	3
Combination Fixture	Faucet	—	—	—	3	3	3

Dimensions – Weight



SIZE	DIMENSIONS				WEIGHT	
	A		B		lbs.	kgs
	in.	mm	in.	mm		
Threaded						
1/2" LF15M2-A	1 1/8	28.5	5 15/16	150.9	0.5	0.2
3/4" LF15M2-B	1 3/8	34.9	8 9/16	218.0	0.9	0.4
1" LF15M2-C	1 5/8	41.3	8 13/16	223.5	1.3	0.6
1" LF15M2-D	2 1/8	54.0	9 15/16	252.5	2.0	0.9
1" LF15M2-E	2 1/8	54.0	12 11/16	322.5	2.3	1.1
1" LF15M2-F	2 5/8	66.7	11 5/32	283.5	2.7	1.2
Solder						
1/2" LF15M2-AS	1 1/8	28.5	8 1/4	210.0	0.44	0.2
3/4" LF15M2-BS	1 3/8	28.5	10	254.0	0.54	0.2
1" LF15M2-CS	1 3/8	34.9	12 1/2	317.5	0.92	0.4
1" LF15M2-DS	2 1/8	54.0	11	280.0	1.63	0.7
1" LF15M2-ES	2 1/8	54.0	13 1/2	343.0	1.98	0.9
1" LF15M2-FS	2 1/8	54.0	16	406.5	2.32	1.1



USA: T: (978) 689-6066 • F: (978) 975-8350 • Watts.com
 Canada: T: (905) 332-4090 • F: (905) 332-7068 • Watts.ca
 Latin America: T: (52) 81-1001-8600 • Watts.com



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 221030, 2.11.

Dielectric Union

(Not Applicable)



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Phone 501-834-3320

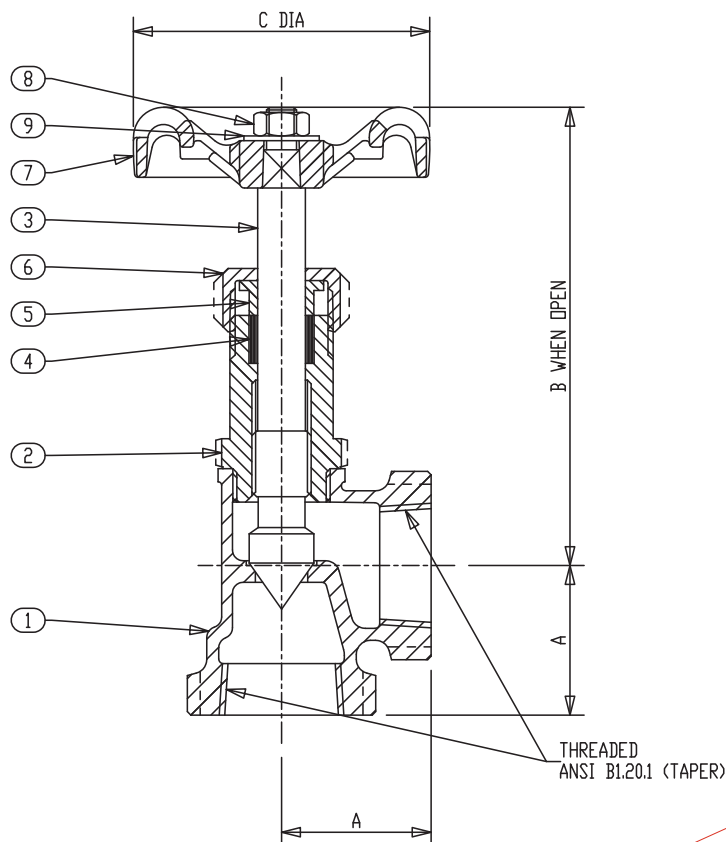
Fax 501-834-5416

Spec Section 221030, 2.12.

Air Vents

Class 200 • Threaded Bonnet • Needle Type Disc • Thrd. Ends

89 Angle Valve



Materials of Construction

No.	Description	Material	ASTM Spec.
1	Body	Bronze	B-62 C83600
2	Bonnet	($\frac{1}{8}$ " - $\frac{3}{8}$ ") Sil. Al. Bronze	BSEN12163 CW301G
		($\frac{1}{2}$ " - $\frac{3}{4}$ ") Brass	BSEN12164 CW614N
3	Stem	Sil. Al. Bronze	BSEN12163 CW301G
4	Packing	Graphite (Asbestos Free)	
5	Gland	Brass	BSEN12164 CW614N
6	Packing Nut	Brass	BSEN12164 CW614N
7	Handwheel	Aluminum	
8	Handwheel Nut	Brass	BSEN12164 CW614N
9	ID Plate		Aluminum

See page 8 for Pressure-Temperature Ratings.

Industry Standards

MSS SP-80, Type 1

Dimensions and Weights

Inches (millimeters) - Pounds (kilograms)

Valve Size	Dimensions			Wt.
	B	C	A	
$\frac{1}{8}$	2.91	1.73	0.59	0.29
	(74)	(44)	(15)	(0.13)
$\frac{1}{4}$	2.87	1.73	0.79	0.33
	(73)	(44)	(20)	(0.15)
$\frac{3}{8}$	3.03	1.73	0.91	0.46
	(77)	(44)	(23)	(0.21)
$\frac{1}{2}$	3.58	2.05	1.06	0.64
	(91)	(52)	(27)	(0.29)
$\frac{3}{4}$	4.09	2.56	1.26	1.01
	(104)	(65)	(32)	(0.46)



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Fax 501-834-5416

Spec Section 221030, 2.13.

Drain Valves

Bronze Ball Valves

Two-Piece Body • Full Port • Stainless Trim • Blowout-Proof Stem • Vented Ball

600 PSI/41.4 bar non-shock cold working pressure
150 PSI/10.3 bar saturated steam*

CONFORMS TO MSS SP-110

MATERIAL LIST

PART	SPECIFICATION
1. Handle Nut	Stainless Steel 300 Series
2. Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3. Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4. Packing	PTFE
5. Stem	Stainless Steel ASTM A 276 Type 316
6. Thrust Washer	Reinforced PTFE
7. Ball (Vented)	Stainless Steel ASTM A 276 Type 316 or ASTM A 351 Type CF8M
8. Seat Ring (2)	Reinforced PTFE
9. Body	Bronze ASTM B 584 Alloy C84400
10. Body End Piece	Bronze ASTM B 584 Alloy C84400

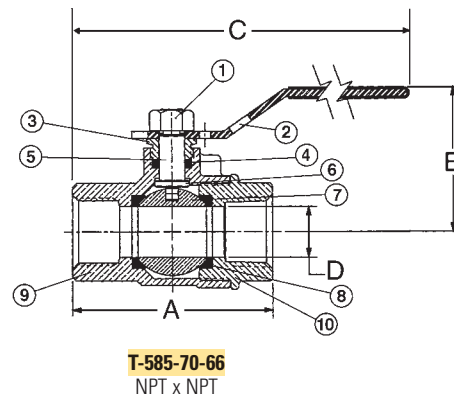
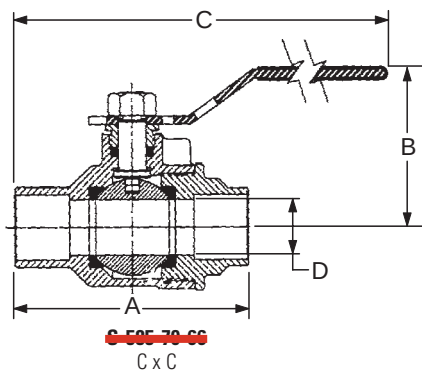
¼" size only has a 304 stainless steel grounding washer.



T-585-70-66
Threaded



~~S-585-70-66~~
Solder



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions																	
		~~T-585-70-66~~ ~~S-585-70-66~~				~~T-585-70-66~~ ~~S-585-70-66~~				~~T-585-70-66~~ ~~S-585-70-66~~							
Size	A		A		B		C		C		D		~~T-585-70-66~~ ~~S-585-70-66~~		~~S-585-70-66~~ ~~T-585-70-66~~		Master
In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	In. mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn. Qty	
¼ 8	2.00	51	1.75	44	1.75	44	5.00	127	4.75	121	.38	10	.45	.21	.42	.19	100
⅜ 10	2.00	51	1.84	47	1.75	44	5.00	127	4.81	122	.38	10	.45	.21	.42	.19	100
½ 15	2.44	62	2.56	65	1.88	48	5.19	132	5.25	133	.50	13	.64	.29	.60	.27	100
¾ 20	2.94	75	3.25	82	2.25	57	6.25	159	6.25	159	.75	19	1.33	.60	1.27	.58	50
1 25	3.34	85	3.75	95	2.38	60	6.44	164	6.63	168	1.00	25	1.79	.81	1.72	.78	40
1¼ 32	4.19	106	5.06	128	3.00	76	6.75	171	7.19	183	1.25	32	3.34	1.52	3.40	1.55	20
1½ 40	4.72	120	5.99	151	3.16	80	9.06	230	9.69	246	1.50	38	4.84	2.20	5.18	2.35	10
2 50	5.16	131	6.72	170	3.50	89	9.25	235	10.06	256	2.00	51	7.41	3.37	7.83	3.56	8

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F.
Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

LEAD FREE*
OPTION
AVAILABLE

OXYGEN
SERVICE
OPTION
AVAILABLE

Visit our website for the most current information.

*Weighted average lead content ≤ 0.25%

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Spec Section 221030, 2.14.

Relief Valves

**See Plumbing Equipment
Submittal 233000.001 for
Water Heater WH-1M
Relief Valve**



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Phone 501-834-3320
Fax 501-834-5416

Spec Section (Not Specified) – Scheduled on Plan Page P0.0

Hose Bibbs (HB-1 and HB-2)

HB-1

Engineering Specification

Job Name Maurice
 Job Location HS
 Engineer IMEG
 Approval _____

Contractor Comfort Systems USA
 Approval _____
 Contractor's P.O. No. _____
 Representative Sanders Supply

HY-725

Non-Freeze Wall Hydrant with NB Box & Integral Vacuum Breaker

Specification

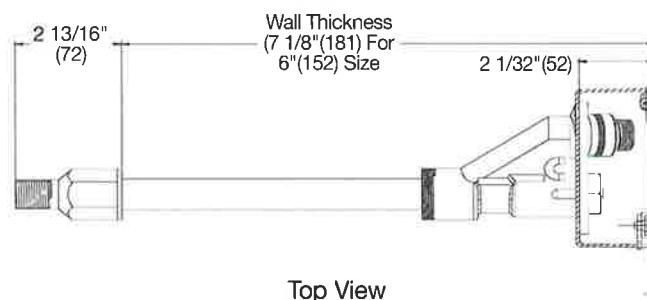
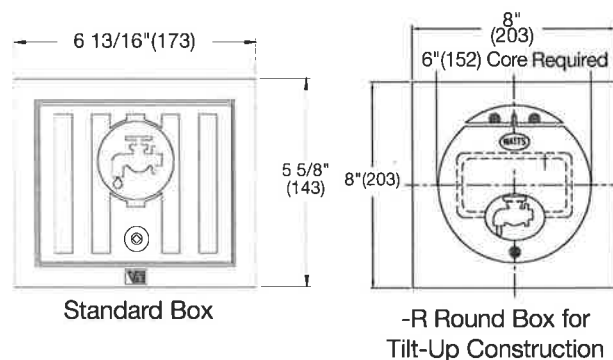
Watts HY-725 concealed non-freeze key operated wall hydrant with nickel bronze box and door, chrome plated hydrant face, integral vacuum breaker, 3/4" hose connection, 3/4" female x 1" male pipe connection, all bronze head, seat casting and internal working parts, bronze wall casing, and loose key. Complies with ASME B1.20.7 and ASSE 1019-2004. UPC/IAPMO listed. Maximum operating pressure 125 psi.

Call customer service if you need assistance with technical details.

Wall Thickness		
Suffix	Description	
-6	6"(152) Thick	☐
-8	8"(203) Thick	☐
-10	10"(254) Thick	☐
-12	12"(305) Thick	☐
-14	14"(356) Thick	☐
-16	16"(406) Thick	☐
-18	18"(457) Thick	☐
-20	20"(508) Thick	☐
-22	22"(559) Thick	☐
-24	24"(610) Thick	☐
Other	Specify _____	☐

Options		
Suffix	Description	
-K	Cylinder Lock	☐
-88	Wall Clamp	☒
-S	Stainless Steel Box	☐
-CIA	Complete Internal Assembly (Repair Kit)	☐
-R	Round Stainless Steel Box	☐

Recommended Wall Opening:
 5 1/4"(133) x 6 1/4"(158)



Top View

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



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Canada: T: (888) 208-8927 • Watts.ca
Latin America: T: (52) 55-4122-0138 • Watts.com

HB-2



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Model No.

B-0736

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

This Space for Architect/Engineer Approval

Job Name _____ Date _____

Model Specified _____ Quantity _____

Customer/Wholesaler _____

Contractor _____

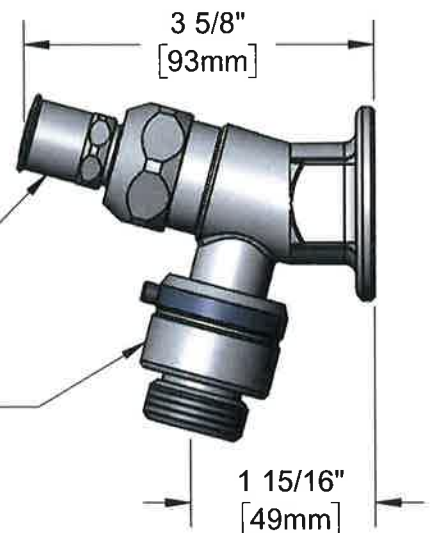
Architect/Engineer _____



Ø 2" [51mm]
Flanges w/
1/2" NPT
Female Inlet

Loose Key
Stop Eterna
Cartridge w/
Spring Check

Vacuum Breaker
w/ Garden Hose
Male Outlet



Product Specifications:

Single Hole Single Temperature Wall Mount Sill Faucet, Loose Key Stop Eterna Cartridge w/ Spring Check, Vacuum Breaker w/ Garden Hose Male Outlet, Rough Chrome Finish & 1/2" NPT Female Inlet

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ASSE 1011 (VB)



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

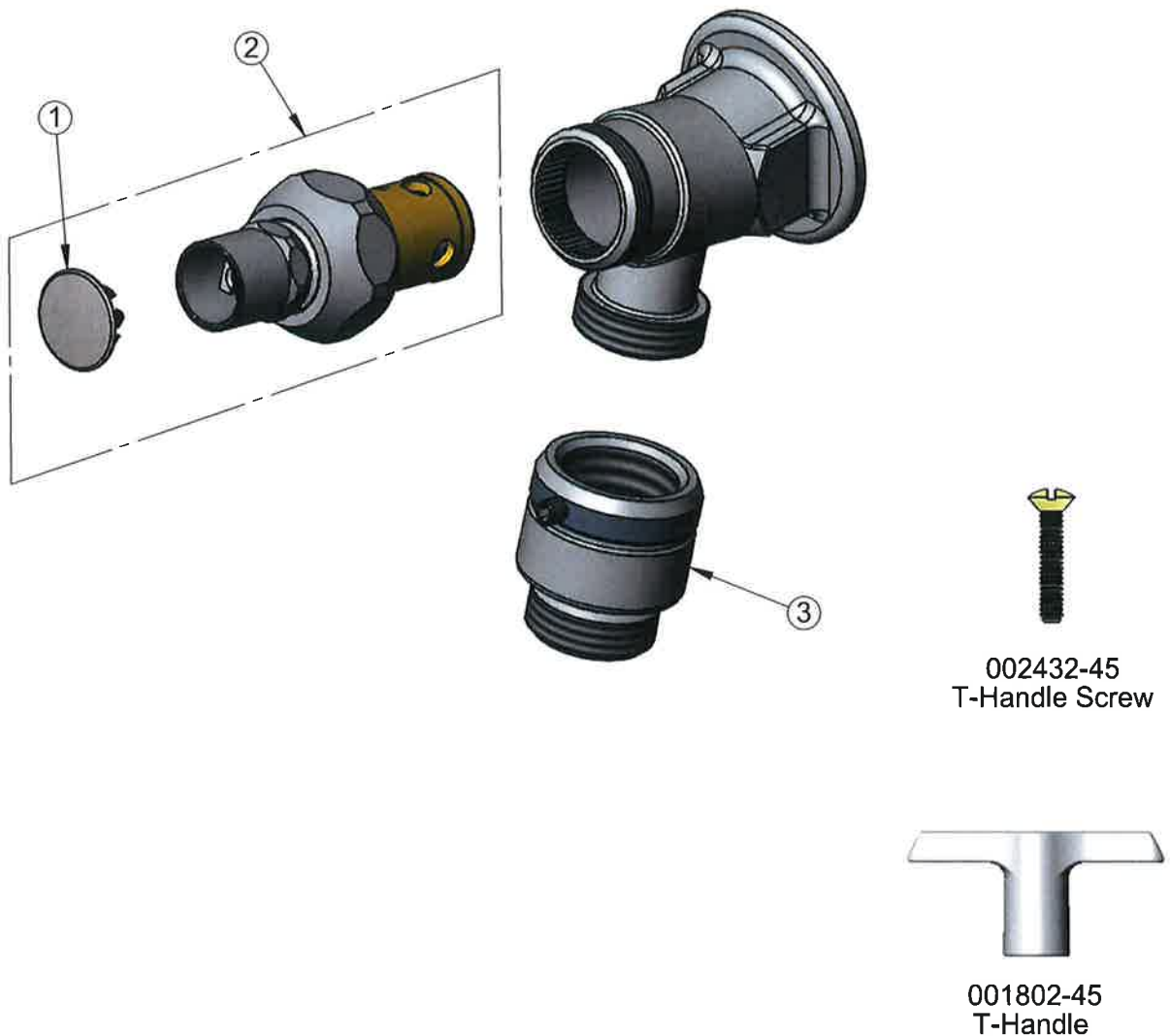
Model No.

B-0736

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

ITEM NO.	SALES NO.	DESCRIPTION
1	001605-45	Cap
2	124A-NS	Loose Key Stop Eterna Cartridge, RTC w/ T-Handle, Screw & Cap
3	B-0972	Vacuum Breaker, 3/4" Garden Hose Male Outlet



Product Specifications:

Single Hole Single Temperature Wall Mount Sill Faucet, Loose Key Stop Eterna Cartridge w/ Spring Check, Vacuum Breaker w/ Garden Hose Male Outlet, Rough Chrome Finish & 1/2" NPT Female Inlet

Product Compliance:

ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)
ASSE 1011 (VB)

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Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

**Spec Section Not Specified) – Scheduled on
Plan Page P0.0**

**Roof Drains and Outlets (RD-1, RD-2, and
RDO)**

RD-1

Engineering Specification

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____
 Tag **RD-1**

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

RD-300-F

Roof Drain with Deck Flange/ Adjustable Extension

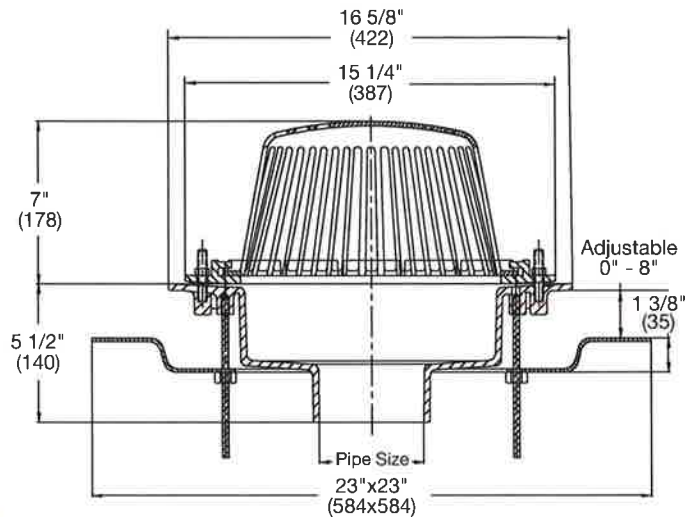
Specification

Watts RD-300-F epoxy coated cast iron roof drain with flashing clamp with integral gravel stop, heavy 10 ga. zinc plated steel deck flange and adjustable extension, self-locking polyethylene dome (standard), and no hub (standard) outlet.

Suffix	Pipe Sizing Description	
2	2"(51) Pipe Size (NH Only)	☐
3	3"(76) Pipe Size	☐
4	4"(102) Pipe Size	☒
5	5"(127) Pipe Size (NH Only)	☐
6	6"(152) Pipe Size	☐
8	8"(203) Pipe Size	☐
10	10"(254) Pipe Size (NH Only)	☐

Suffix	Outlet Type Description	
NH	No Hub (MJ)	☒
P	Push On	☐
X	Inside Caulk	☐

Suffix	Options Description	
-13	Galvanized Body & Clamp	☐
-85	IRMA Perf. SS Extension	☐
-AC	Compression Seal Extension	☐
-AE	Threaded Extension	☐
-D	Underdeck Clamp	☒
-GSS	Stainless Steel Ballast Guard	☐
-K	Ductile Iron Dome	☒
-K13	Galvanized Dome	☐
-K40	Ductile Iron Low Dome (4" High)	☐
-K80	Aluminum Dome	☐
-K81	Rough Bronze Dome	☐
-K83	SS Mesh Covered Dome	☐
-L	Vandal Proof Dome	☐
-R	2" External Water Dam	☐
-W	Adj. Internal Water Dam	☐



Deck Opening 18 1/2"(470))

Free Area
Sq. In.
137

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

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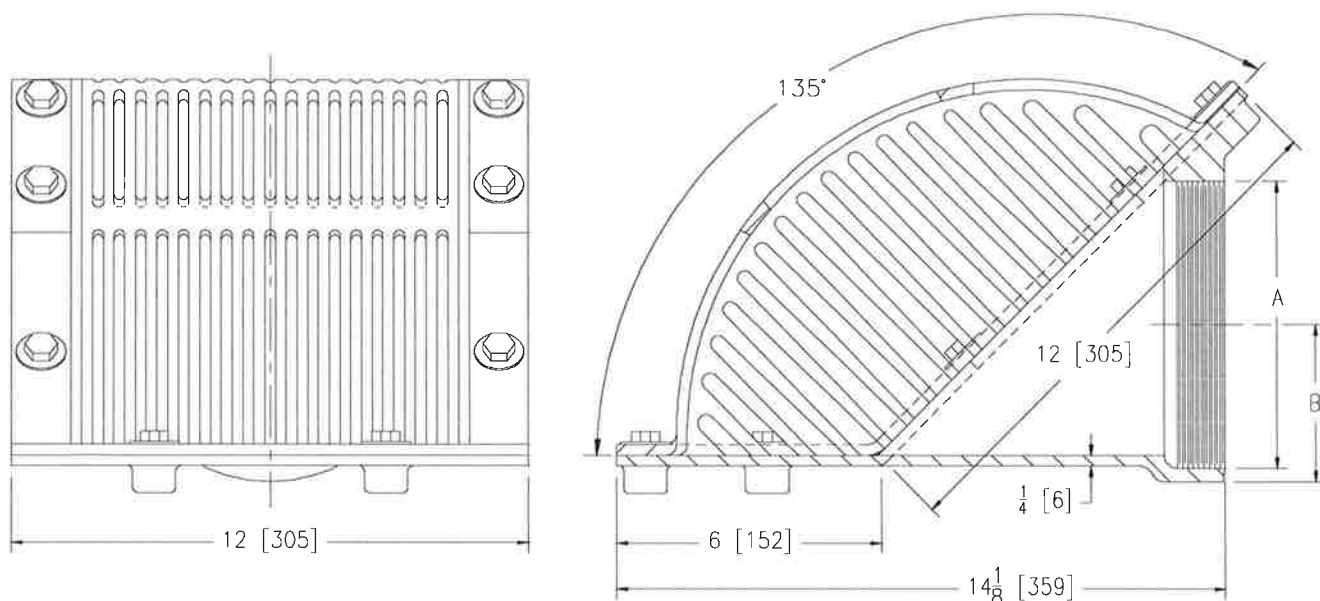
Latin America: T: (52) 55-4122-0138 • Watts.com

ES-WD-RD-300-F 2141

© 2021 Watts

RD-2

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Dimensions in In. [mm]		Approx. Wt. Lbs. [kg]	Grate Open Area Sq. In. [cm ²]
A - Pipe Size	B		
4 [102]	2-9/16 [65]	52 [23]	114 [735]
6 [152]	3-5/8 [92]		

ENGINEERING SPECIFICATION: ZURN ZRB160
135° Scupper drain, Dura-Coated cast iron body, plain bronze grate with integral membrane clamp.

OPTIONS (Check/specify appropriate options)

PIPE SIZE

4, 6 [102, 152]

(Specify size) **OUTLET**
IP Threaded

PREFIXES

ZRB	D.C.C.I. Body with Plain Grate*
ZB	D.C.C.I. Body with Polished Bronze Grate
ZN	D.C.C.I. Body with Polished Nickel Bronze Grate

SUFFIXES

-G Galvanized Cast Iron

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 • Ph. 855-663-9876, Fax 814-454-7929
In Canada | Zurn Industries Limited
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 • Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. E
Date: 09/25/2017
C.N. No. 137807
Prod. | Dwg. No. Z160

RDO-1

Engineering Specification

Job Name **Maurice**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____
 Tag **RDO-1**

Contractor **Comfort Systems USA**
 Approval _____
 Contractor's P.O. No. _____
 Representative **Sanders Supply**

RD-940

Downspout Nozzle

Specification

Watts RD-940 cast nickel bronze downspout nozzle with anchor flange, countersunk mounting holes, and IPS threaded (standard), no hub, or push-on connection.

Options		
Suffix	Description	
-B3	Stainless Steel Bird Screen	☐
-NH	No Hub	☐
-P	Push-On Connection (3, 4, 6, 8" Only) No Add	☐



IPS Threaded Connection

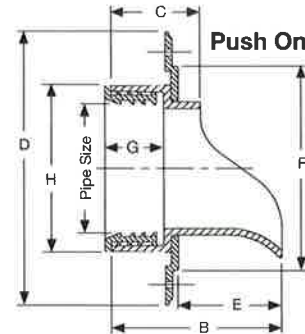
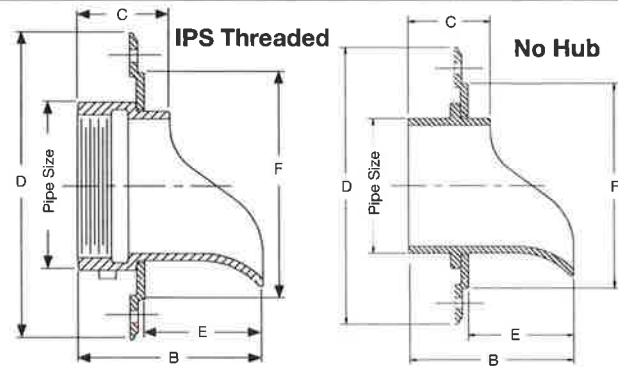
Model	Pipe Size	B	C	D	E	F
RD-942	2"(51)	5 1/4"(133)	2 1/4"(57)	6 3/4"(171)	3 1/2"(89)	4 3/4"(121)
RD-943	3"(76)	5 1/4"(133)	2 1/2"(63)	8 1/4"(210)	3 1/2"(89)	6 3/8"(162)
RD-944	4"(102)	5 1/4"(133)	2 3/4"(70)	9 1/8"(232)	3 1/2"(89)	7"(178)
RD-946	6"(152)	5 1/4"(133)	2 3/4"(70)	11 3/8"(289)	3 1/2"(89)	9"(229)
RD-948	8"(203)	6"(152)	3"(76)	12 1/2"(318)	4"(102)	11"(279)

No Hub Connection

Model	Pipe Size	B	C	D	E	F
RD-942-NH	2"(51)	5 1/4"(133)	2 1/4"(57)	6 3/4"(171)	3 1/2"(89)	4 3/4"(121)
RD-943-NH	3"(76)	5 1/4"(133)	2 1/2"(63)	8 1/4"(210)	3 1/2"(89)	6 3/8"(162)
RD-944-NH	4"(102)	5 1/4"(133)	2 3/4"(70)	9 1/8"(232)	3 1/2"(89)	7"(178)
RD-945-NH	5"(127)	5 1/4"(133)	3"(76)	9 1/4"(235)	3 3/8"(86)	7 1/4"(184)
RD-946-NH	6"(152)	5 1/4"(133)	2 3/4"(70)	11 3/8"(289)	3 1/2"(89)	9"(229)
RD-948-NH	8"(203)	6"(152)	3"(76)	12 1/2"(318)	4"(102)	11"(279)
RD-9410-NH	10"(250)	5 3/4"(146)	3"(76)	15 1/4"(387)	3 3/4"(95)	13 1/16"(332)
RD-9412-NH	12"(305)	6"(152)	3 1/4"(83)	17 1/4"(438)	3 3/4"(95)	15 1/16"(383)

Push-On Connection

Model	Pipe Size	B	C	D	E	F	G	H
RD-943P	3"(76)	5 3/4"(146)	3"(76)	8 1/4"(210)	3 1/2"(89)	6"(152)	1 3/4"(44)	4 3/4"(121)
RD-944-P	4"(102)	5 3/4"(146)	3"(76)	9 1/8"(232)	3 1/2"(89)	6 3/4"(171)	1 3/4"(44)	5 3/4"(146)
RD-946P	6"(152)	6"(152)	3 3/4"(95)	11 3/8"(289)	3 1/2"(89)	8 3/4"(222)	2"(51)	7 3/4"(197)
RD-948P	8"(200)	7"(178)	4"(102)	13 3/8"(340)	34"(864)	10 3/4"(273)	2 1/2"(63)	10"(254)



NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



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Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

**Spec Section Not Specified) – Scheduled on
Plan Page P0.0**

Area Drain (AD-1)

AD-1

Engineering Specification

Job Name Maurice
Job Location HS
Engineer IMEG
Approval _____

Contractor Comfort Systems USA
Approval _____
Contractor's P.O. No. _____
Representative Sanders Supply

FD-870

Large Planting Area Drain

Specification

Watts FD-870 epoxy coated cast iron large planting area drain with membrane clamp, self-locking dome with stainless steel mesh, and no hub (standard) outlet.

Call customer service if you need assistance with technical details.

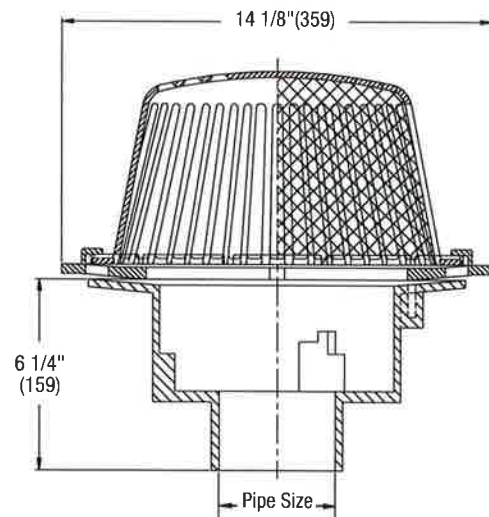
Pipe Sizing		
Suffix	Description	
2	2"(51) Pipe Size	☐
3	3"(76) Pipe Size	☐
4	4"(102) Pipe Size	☒
5	5"(127) Pipe Size (NH Only)	☐
6	6"(152) Pipe Size	☐
8	8"(203) Pipe Size (NH Only)	☐

Outlet Type		
Suffix	Description	
NH	No Hub (MJ)	☐
P	Push On	☒
T	Threaded Outlet	☐
X	Inside Caulk	☐

Options		
Suffix	Description	
-6	Vandal Proof Dome	☐
-13	Galvanized Body & Clamp	☐
-81	Bronze Dome	☐
-SB	Shallow Body 2 3/4" Deep (3, 4, 6" NH/P, 8" NH)	☐
-SO	Side Outlet	☐

Optional Body Material		
Suffix	Description	
-60	PVC Body w/Socket Outlet	☐
-61	ABS Body w/Socket Outlet	☐

Free Area
Sq. In.
136



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ES-WD-FD-870 2432

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