



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

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Date: 8/21/2025

Return Request: 9/4/2025

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

Supplier: Sanders Supply

Manufacturer: Watts

Submittal: Plumbing Piping Specialties (BFP-1 Backflow Preventer)

Submittal Number: 221006.001

Spec Section: 221006, 2.4, B

Drawing # and Installation Location: M4-1

ARCHITECT

Kenneth Hahn Architects, Inc.

1343 S. 75th Street

Omaha, Nebraska 68124

(402)391-2111

GENERAL CONTRACTOR

Tepa, LLC

2345 Grand Blvd, Suite 700

Kansas City, Missouri 64108

(816)708-1110

ENGINEER

Alvine Engineering

1201 Cass Street

Omaha, Nebraska 68102

(402)346-7007

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.

9924 Landers Road

North Little Rock, Arkansas 72117

(501)834-3320

Comments:

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CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117

BFP-1

Engineering Specification

Job Name HS Bathhouses
 Job Location HS
 Engineer IMEG
 Approval _____

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

LEAD FREE*

3/4" Make-Up Water RPZ

Series LF009 Reduced Pressure Zone Assemblies

1/4" – 3"

Series LF009 Reduced Pressure Zone assemblies are designed to protect potable water supplies in accordance with national plumbing codes and water authority requirements. These series are used in a variety of installations, including the prevention of health hazard cross-connections in piping systems or for containment at the service line entrance. They are also used in irrigation systems, boiler feed, water lines, and other installations requiring maximum protection. The body construction is fused with ArmorTek™ coating technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate.* The series also features Lead Free* construction to comply with Lead Free* installation requirements.

The series features two in-line, independent check valves, captured springs, and replaceable check seats with an intermediate relief valve. Its compact modular design facilitates maintenance and assembly access. Sizes 1/4" to 1" shutoffs have tee handles.

Series LF009 assemblies of sizes 1/2" to 3" include 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 who can take corrective action, thus avoiding the possibility of ruinous 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-009.)

Features

- Single access cover and modular check construction for ease of maintenance
- Top entry to all internals for immediate accessibility
- Captured springs for safe maintenance
- Internal relief valve for reduced installation clearances
- Replaceable seats for economical repair
- ArmorTek™ coating technology to resist internal corrosion†

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

†ArmorTek coating applied to the 2 1/2" and 3" models only.



LF009M2-QT-FS

- Lead Free* cast copper silicon alloy body construction (1/4" – 2")
- Fused epoxy coated cast iron body (2 1/2" – 3")
- Ball valve test cocks — screwdriver slotted (1/4" – 2")
- Large body passages provides low pressure drop
- Compact, space saving design
- No special tools required for servicing
- Sensor on the relief valve for flood detection (1/2" – 3")
- Flood alerts feature activated with add-on sensor connection kit, compatible with BMS and cellular communication

NOTICE

Use of the flood sensor does not replicate the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including Watts® is not responsible for the failure of alerts due to connectivity or power issues.

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.

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.

WATTS®

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 an internal pressure differential relief valve located in a zone between two positive seating check modules with captured springs and silicone seat discs. Seats and seat discs shall be replaceable in both check modules and the relief valve. There shall be no threads or screws in the waterway exposed to line fluids. Service of all internal components shall be through a single access cover secured with stainless steel bolts. Body and shutoffs shall be constructed using Lead Free* cast copper silicon alloy materials. Lead Free* reduced pressure zone assembly shall comply with state codes and standards, where applicable, requiring reduced lead content.

The assembly shall also include two resilient seated isolation valves, four resilient seated test cocks, and an air gap drain fitting. The valve body shall utilize a coating system with built-in electrochemical corrosion inhibitor and microbial inhibitor.† The assembly shall meet the requirements of USC; ASSE Std. 1013; AWWA Std. C511; CSA B64.4. Shall be a Watts Series LF009, and shall include a sensor on the relief valve for flood detection on sizes ½" to 3".

Materials

¼" – 2"

Lead Free* cast copper silicon alloy body construction, silicone rubber disc material in the first and second check plus the relief valve. Replaceable polymer check seats for first and second checks. Removable relief valve seats. Stainless steel cover bolts.

Standardly furnished with NPT body connections. Model LF009QT furnished with quarter-turn, full port, resilient seated, Lead Free* cast copper silicon alloy body ball valve shutoffs.

2½" – 3"

- FDA-approved epoxy-coated cast iron unibody with plastic seats
- Relief valve with stainless steel seat and trim
- Lead Free* cast copper silicon alloy body ball valve test cocks

Model/Option

¼" – 2"

Prefix:

U – Union connections

Suffix:

FS – Flood detection sensor (½" – 2")

LF – Without shutoff valves

PC – Internal polymer coating

Press** – Press inlet x press outlet (½" – 2")

QT – Quarter-turn ball valves

S – Strainer

2½" – 3"

Suffix:

FS – Flood detection sensor

LF – Without shutoff valves

NRS – Non-rising stem resilient seated gate valves

OSY – UL Classified and FM Approved outside stem and yoke resilient seated gate valves

S-FDA – FDA epoxy coated strainer

NOTE: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. (For more information download ES-AG/EL/TC at watts.com.)

Pressure – Temperature

¼" – 2"

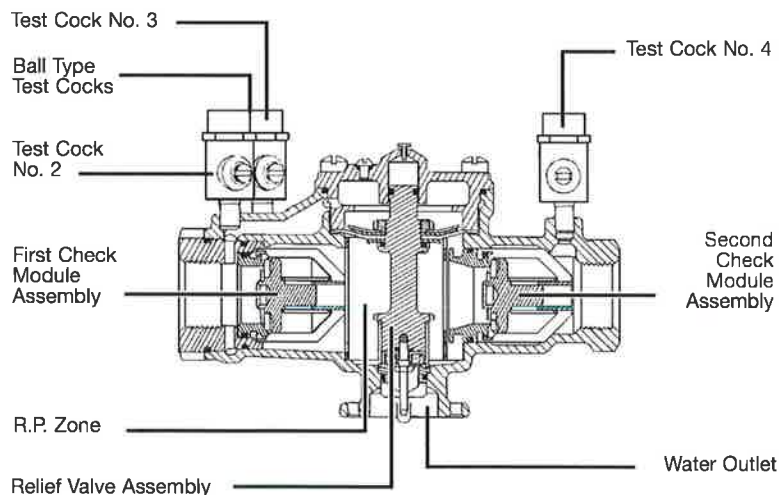
Suitable for supply pressure up to 175 psi (12.1 bar)

Water temperature: 33°F – 180°F (0.5° – 82°C)

2½" – 3"

Suitable for supply pressures up to 175 psi (12.1 bar)

Water temperature: 110°F (43°C) continuous; 140°F (60°C) intermittent



** Viega ProPress® connections are optional factory-installed fitting on each end of the approved/certified assembly.

Standards

USC

ASSE No. 1013

AWWA C511

CSA B64.4

IAPMO File No. 1563

Approvals



ASSE, AWWA, CSA, IAPMO

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California

Approval models NRS, OSY, PC, QT

UL Classified

2½" – 3" with OSY gate valves

¾" – 2" without shutoff valves (-LF), except LF009M3LF

Insulated Enclosure

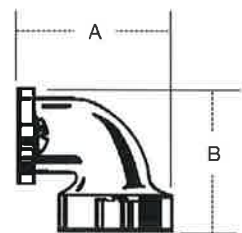
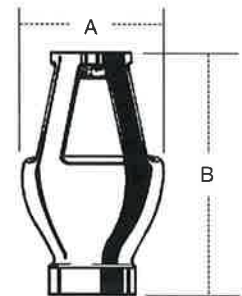
The WattsBox insulated enclosure is available for Series LF009. For more information download ES-WB at watts.com.

Air Gaps and Elbows

Call customer service if you need assistance with technical details.

MODEL		DRAIN OUTLET		DIMENSIONS				WEIGHT	
				A		B			
	For 909, 009, and 993 sizes	in.	mm	in.	mm	in.	mm	lb	kg
909AGA	¼"-½" 009, ¾" 009M2/M3	½	13	2⅝	60	3⅞	79	0.625	0.28
909AGC	¾"-1" 009/909, 1"-1½" 009M2	1	25	3¼	83	4⅞	124	1.5	0.68
909AGF	1¼"-2" 009M1, 1¼"-3" 009/909, 2" 009M2, 4"-6" 993	2	51	4⅞	111	6¾	171	3.25	1.47
909AGK	4"-6" 909, 8"-10" 909M1	3	76	6⅞	162	9⅞	244	6.25	2.83
909AGM	8"-10" 909	4	102	7⅞	187	11¼	286	15.5	7.03
909ELA	¼"-½" 009, ¾" 009M2/M3	—	—	—	—	—	—	—	—
909ELC	¾"-1" 009/909	—	—	2⅝	60	2⅝	60	0.38	0.17
909ELF*	1¼"-2" 009M1, 1¼"-2" 009/909, 2" 009M2, 4"-6" 993	—	—	3⅞	92	3⅞	92	2	0.91
909ELH*	2½"-3" 009/909	—	—	—	—	—	—	—	—
Vertical									

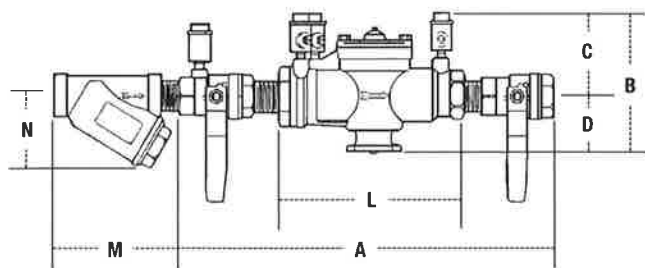
*Epoxy coated



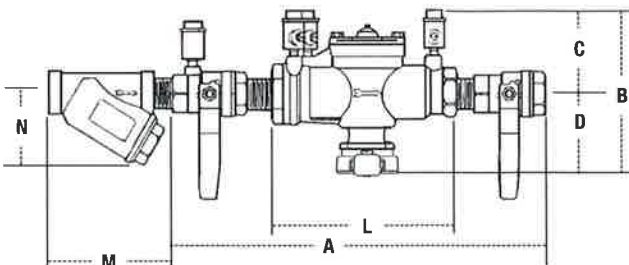
Dimensions – Weight

Call customer service if you need assistance with technical details.

1/4" – 3/8"

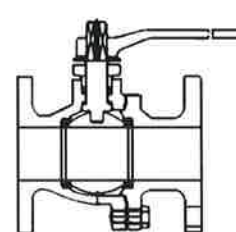
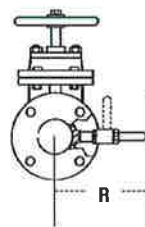
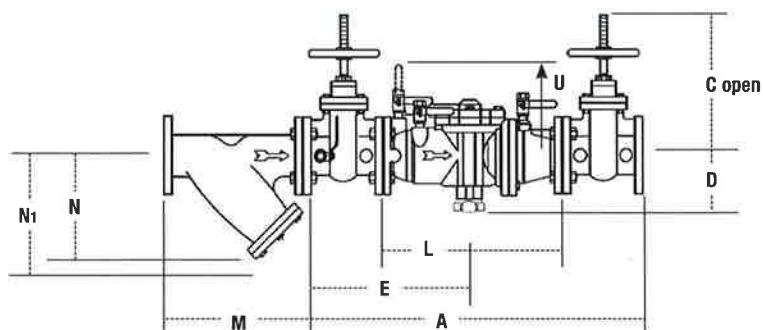


1/2" – 2"



SIZE		DIMENSIONS (APPROX.)												WEIGHT		
	A		B		C		D		L		M		N			
<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>lb</i>	<i>kg</i>
¼	10	250	4⅝	117	3⅝	86	1¼	32	5½	140	2⅝	60	2½	64	5	2
⅜	10	250	4⅝	117	3⅝	86	1¼	32	5½	140	2⅝	60	2½	64	5	2
½	10	250	5⅞	149	3⅝	86	2½	64	5½	140	2¾	70	2¼	57	5	2
➡ ¾	10¾	273	6¼	159	3½	89	2¾	70	6¾	171	3⅜	81	2¾	70	6	3
1	14½	368	6¼	159	3	76	¾	83	9½	241	¾	95	3	76	12	5
1¼	17¾	441	6¾	169	¾	89	¾	83	11¾	289	4⅞	113	¾	89	15	6
1½	17¾	454	6¾	169	¾	89	¾	83	11¾	283	4⅞	124	4	102	16	7
2	21¾	543	8¾	222	4½	114	4¼	108	13¾	343	5⅞	151	5	127	30	13

2 1/2" – 3"



Watts G-4000 Series
QT – Ball Valves

STRAINER SIZE		DIMENSIONS (APPROX.)						WEIGHT	
		M		N		N1†			
<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	65	10	254	6½	165	9¾	248	28	12.7
3	80	10⅞	257	7	178	10	254	34	15.4

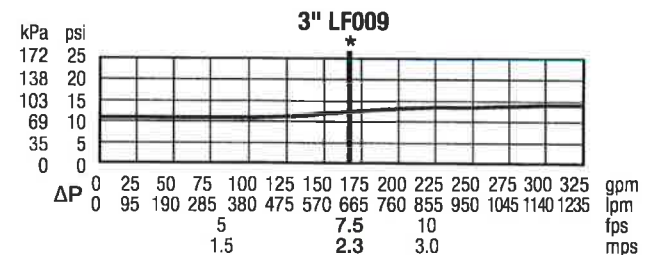
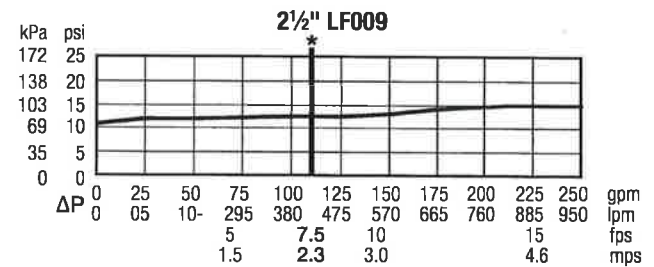
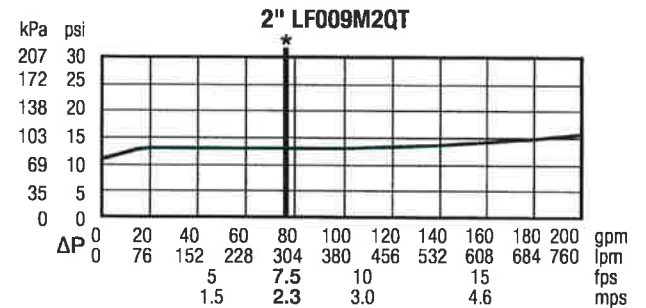
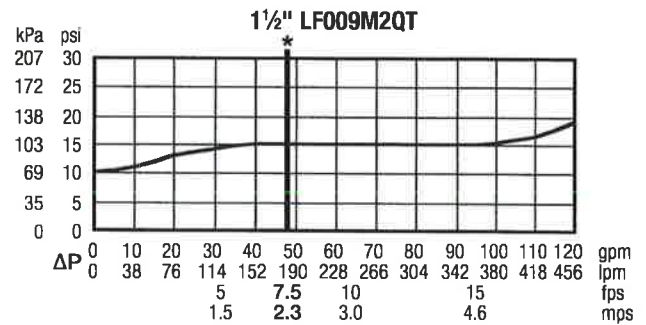
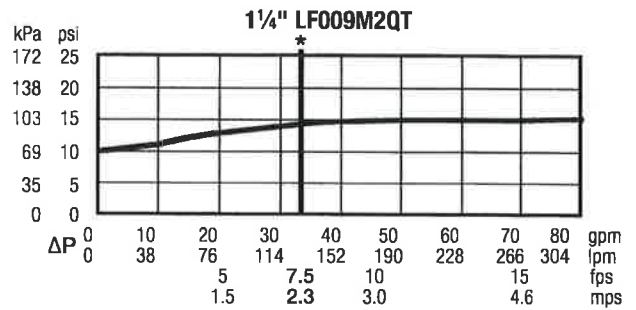
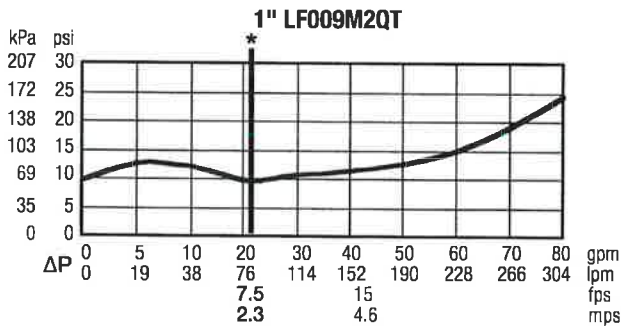
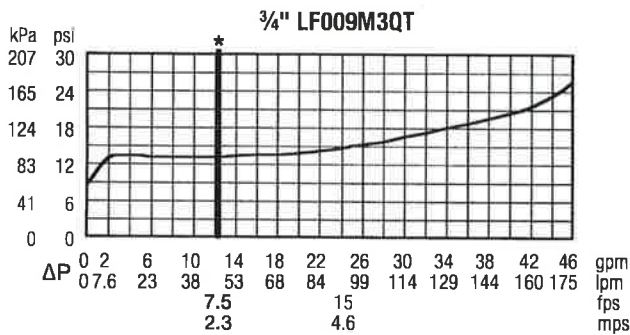
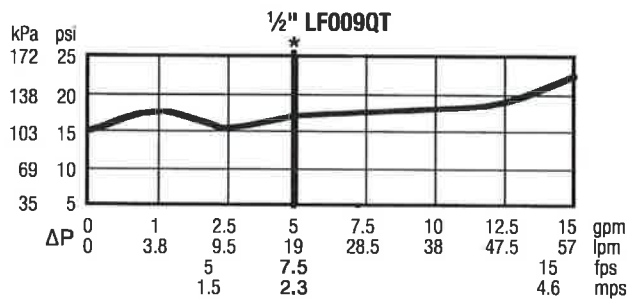
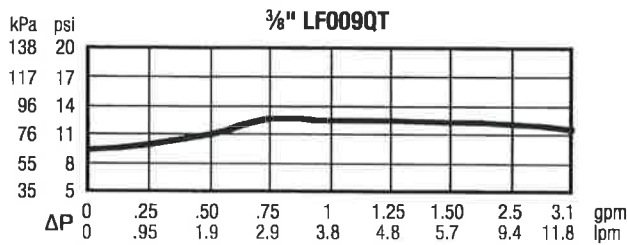
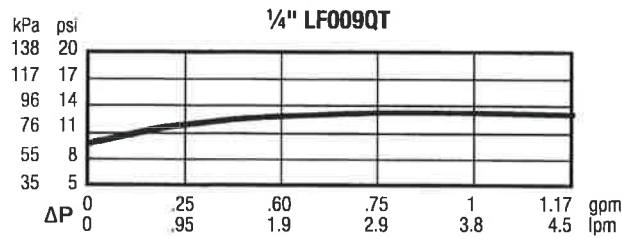
†Clearance for servicing

MODEL	SIZE	DIMENSIONS (APPROX.)												WEIGHT			
		A		C		D		E		L		R		U			
	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
LF009LF	2½	—	—	—	—	5⅝	143	—	—	18⅞	460	—	—	10⅞	270	76	34.5
LF009OSY	2½	33¼	845	15⅝	403	5⅝	143	16⅞	416	18⅞	460	7¾	197	10%	270	166	75.3
LF009NRS	2½	33¼	845	11⅞	289	5⅝	143	16⅞	416	18⅞	460	7¾	197	10%	270	161	73.0
LF009LF	3	—	—	—	—	5⅝	143	—	—	18⅞	460	—	—	10%	270	76	34.5
LF009OSY	3	34¼	870	18½	470	5⅝	143	16⅞	422	18⅞	460	8¾	222	10%	270	198	89.8
LF009NRS	3	34¼	870	12¾	324	5⅝	143	16⅞	422	18⅞	460	8¾	222	10%	270	191	86.6

Capacity

Performance as established by an independent testing laboratory.

The asterisk (*) indicates the typical maximum system flow rate (7.5 ft/s, 2.3 m/s).



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 **HS Bathhouses**
 Job Location **HS**
 Engineer **IMEG**
 Approval _____

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

LEAD FREE*

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

Sizes: 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 – 3/8" – 3" threaded connections
 LFS777SI – 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 3/8"-2" and 300psi (20.7 bar) @ 210°F (99°C); 125psi (8.6 bar) WSP @ 353°F (178°C) for sizes 2 1/2"-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:

3/8"–2"

400psi (27.6 bar) WOG @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

2 1/2"–3"

300psi (20.7 bar) WOG @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

Approvals



NOTICE

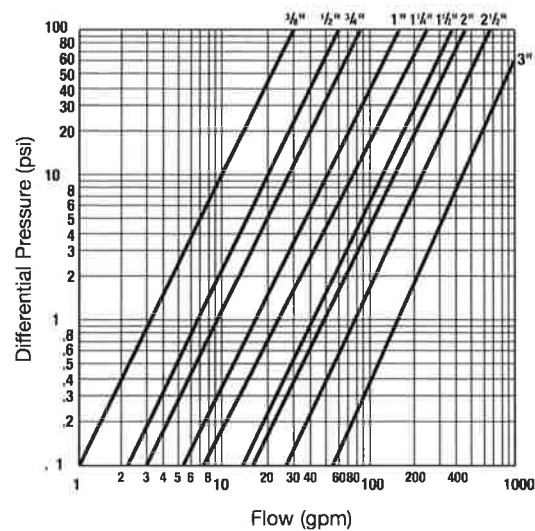
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WATTS®

Performance Data

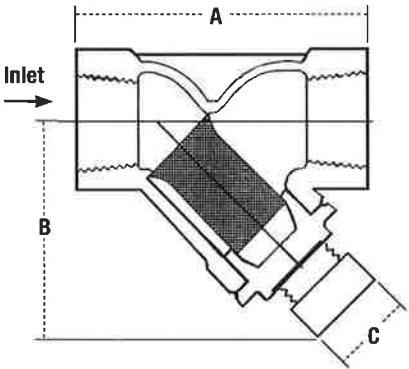


Flow curves show flows (gpm) and pressure drop (psig) through Watts Series 777SI, S777SI using standard 20 mesh screen.

Dimensions — Weights

LF777SI

SIZE		DIMENSIONS						WEIGHT	
in.		A		B		C		lbs.	kgs.
3/8	in.	mm	in.	mm	in.	mm			
3/8	2 3/8	60	1 9/16	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 3/8	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 7/8	149	1/2	13	9.8	4.44	
3	10 3/16	259	6 1/4	159	1/2	13	13.2	5.99	



LFS777SI

SIZE		DIMENSIONS						WEIGHT	
in.		A		B		C		lbs.	kgs.
1/2	in.	mm	in.	mm	in.	mm			
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 7/16	116	2 1/2	64	1/2	13	1.5	0.68	
1 1/2	5 1/16	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 **HS Bathhouses**
 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

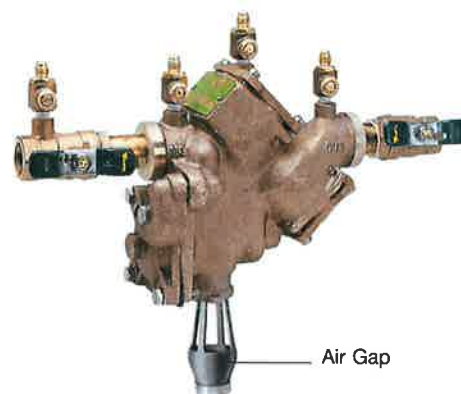
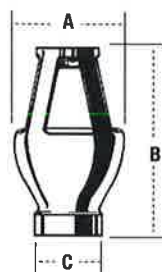
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel.

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

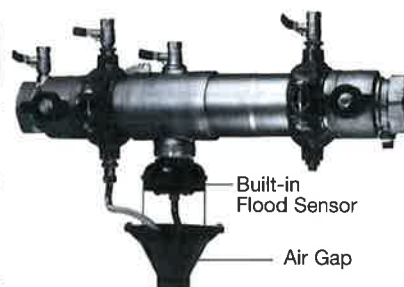
If using an air gap on an assembly equipped with a flood sensor, order the air gap listed for that specific flood sensor assembly model.

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"	2¾	60	3¼	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"	6⅜	162	9⅝	244	3	76	6.25	2.83
909AGM	0881387	8" – 10" 909/LF909	—	7⅜	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 3/4	119	2 1/2	62	—	—	0.4	0.18

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.

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.

