



CROMWELL

SUBMITTAL REVIEW FORM

1300 East 6th Street
LITTLE ROCK, AR 72202
PHONE: 501-372-2900
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Reviewing is only for conformance with the design concepts of the Project and compliance with the information given in the contract documents. The Contractor is responsible for dimensions to be confirmed or correlated at the site; for information that pertains solely to the fabrication process, or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all other trades

JOB TITLE: City of Sherwood – Public Works
JOB NO: 2023-249
SUBMITTAL NO: 22 10 06-01 Plumbing Piping Specialties
BY: Blake Shahan
DATE: 03-18-2025

Item No.	Description	No Exception Taken	Make Corrections Noted	Revise and Resubmit	Not Accepted	Comments
1	RPZA-1, Watts 1-1/2" #LF009M2QT (Page 3)		X			Per plumbing schedule, ensure assembly comes complete with: <ul style="list-style-type: none"> -QT -- Quarter-turn ball valves (standard) -FS -- Flood detection sensor -S – Strainer
2	Air Gap Fitting, Watts #909AGC (Page 5)	X				
3	Wye-Pattern, Lead Free, Cast Strainer, 1-1/2", Watts #LF777SI (Page 8)	X				
4	WCO, Jay R. Smith #4710 (Page 11)	X				
5	FCO, Jay R. Smith #4034L (Page 13)		X			Specify flashing clamp and flashing flange as indicated by cutsheet.
6	DCOTG, Jay R. Smith #4234L (Page 15)	X				
7	TMV-1, Watts #3/4" LFN170-M3 CSUT (Page 17)	X				

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 2/4/2025

Return Request: 2/14/2025

Project: City Of Sherwood Public Works (Administration Building)

Supplier: Falk

Manufacturer: Various

Submittal: Plumbing Piping Specialties

Submittal Number: 22 10 06-01

Drawing # and Installation: Plumbing Drawings

ARCHITECT

Cromwell
1300 East 6th Street
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501-372-2900

ENGINEER

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GENERAL CONTRACTOR

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MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
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501-834-3320

Notes:

CSUSA PROJECT NO.

24-6084

sean@comfortar.com

9924 Landers Rd.
No. Little Rock, AR 72117

RPZA-1

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

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.

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

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.



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.

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 1/2" to 3".

Materials

1/4" – 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.

2 1/2" – 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

1/4" – 2"

Prefix:

U – Union connections

Suffix:

FS – Flood detection sensor (1/2" – 2")

LF – Without shutoff valves

PC – Internal polymer coating

Press** – Press inlet x press outlet (1/2" – 2")

QT – Quarter-turn ball valves

S – Strainer

2 1/2" – 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

1/4" – 2"

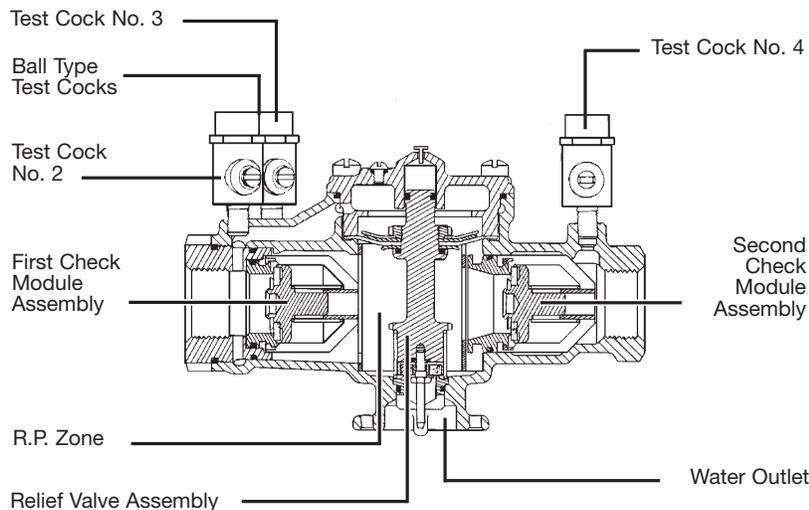
Suitable for supply pressure up to 175 psi (12.1 bar)

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

2 1/2" – 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

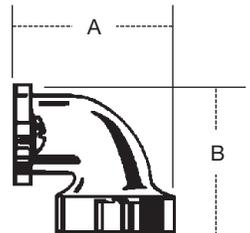
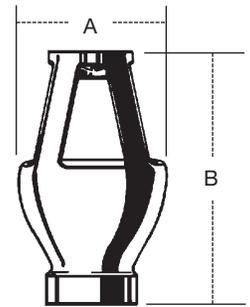
The WattsBox insulated enclosure is available for Series LF009. For more information download ES-WB at watts.com.

Air Gaps and Elbows

Call customer service if you need assistance with technical details.

MODEL	DRAIN OUTLET	DIMENSIONS				WEIGHT			
		A		B		lb	kg		
	For 909, 009, and 993 sizes	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>				
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	9⅝	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	-	-	3⅝	92	3⅝	92	2	0.91
909ELH* Vertical	2½"-3" 009/909	-	-	-	-	-	-	-	-

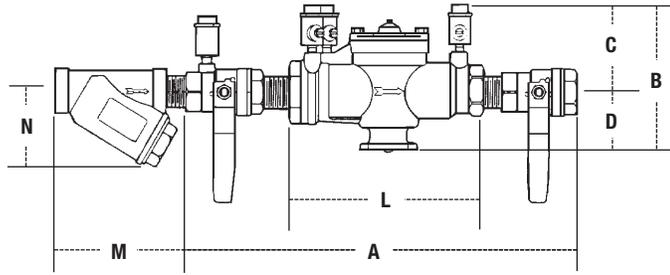
*Epoxy coated



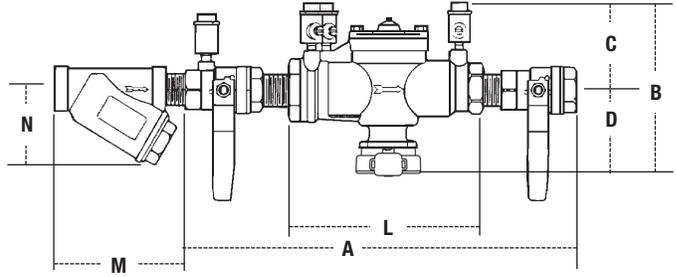
Dimensions – Weight

Call customer service if you need assistance with technical details.

1/4" – 3/8"

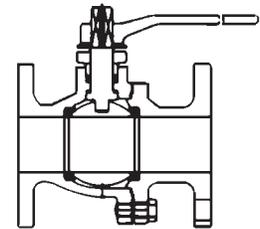
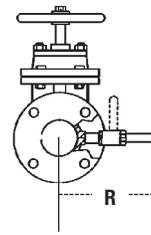
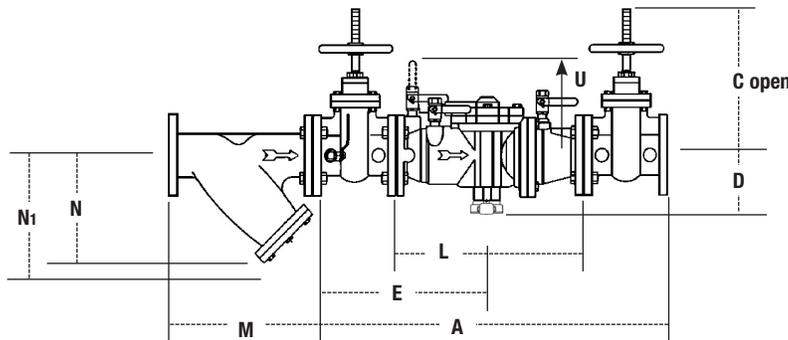


1/2" – 2"



SIZE		DIMENSIONS (APPROX.)										WEIGHT					
in.		A		B		C		D		L		M		N		lb	kg
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
1/4		10	250	4 5/8	117	3 3/8	86	1 1/4	32	5 1/2	140	2 3/8	60	2 1/2	64	5	2
3/8		10	250	4 5/8	117	3 3/8	86	1 1/4	32	5 1/2	140	2 3/8	60	2 1/2	64	5	2
1/2		10	250	5 7/8	149	3 3/8	86	2 1/2	64	5 1/2	140	2 3/4	70	2 1/4	57	5	2
3/4		10 3/4	273	6 1/4	159	3 1/2	89	2 3/4	70	6 3/4	171	3 5/16	81	2 3/4	70	6	3
1		14 1/2	368	6 1/4	159	3	76	3 1/4	83	9 1/2	241	3 3/4	95	3	76	12	5
1 1/4		17 3/8	441	6 3/4	169	3 1/2	89	3 3/4	83	11 3/8	289	4 7/16	113	3 1/2	89	15	6
1 1/2		17 3/8	454	6 3/4	169	3 1/2	89	3 3/4	83	11 3/8	283	4 7/8	124	4	102	16	7
2		21 3/8	543	8 3/4	222	4 1/2	114	4 1/4	108	13 1/2	343	5 5/16	151	5	127	30	13

2 1/2" – 3"



Watts G-4000 Series
QT – Ball Valves

STRAINER SIZE		DIMENSIONS (APPROX.)						WEIGHT	
in.	mm	M		N		N ₁ †		lb	kg
		in.	mm	in.	mm	in.	mm		
2 1/2	65	10	254	6 1/2	165	9 3/4	248	28	12.7
3	80	10 1/8	257	7	178	10	254	34	15.4

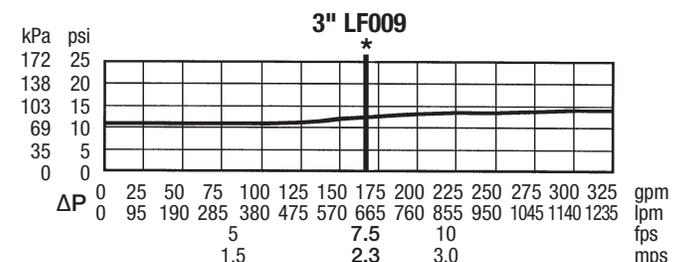
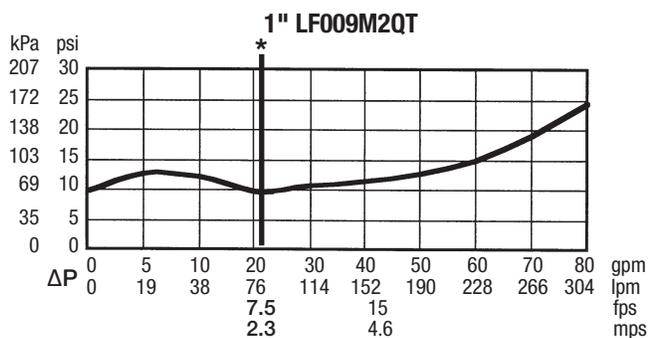
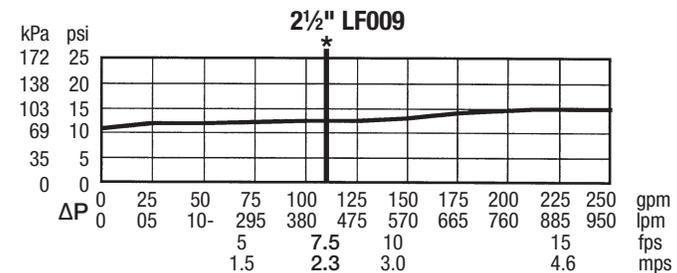
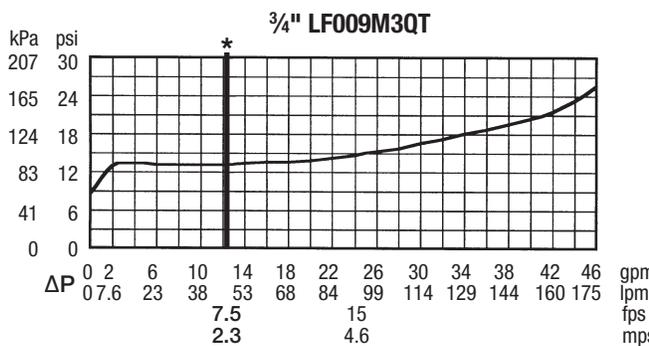
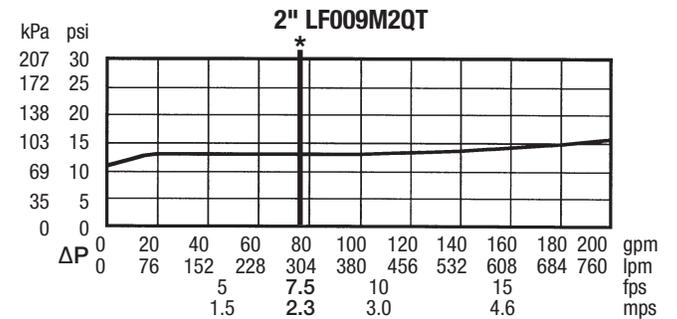
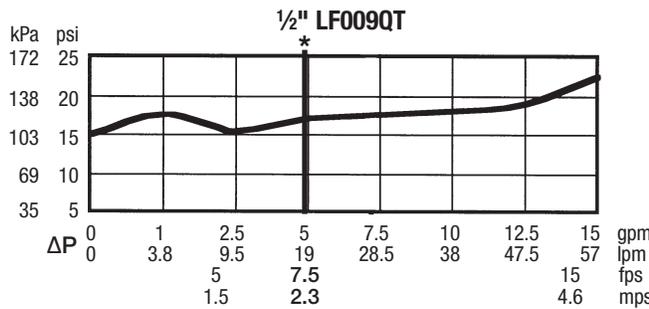
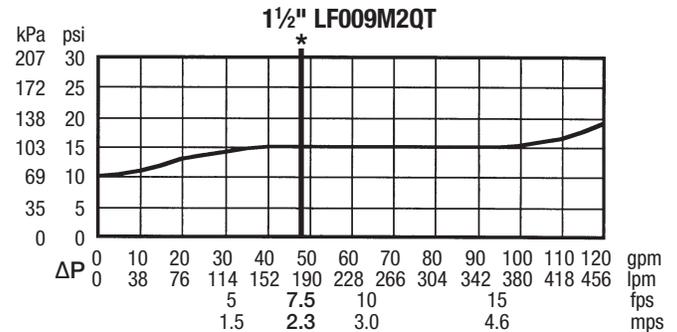
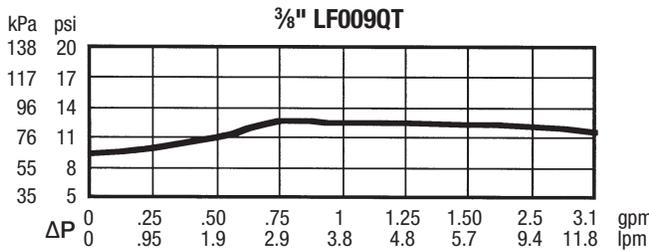
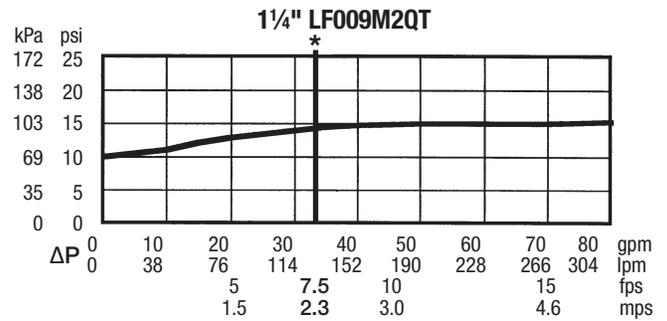
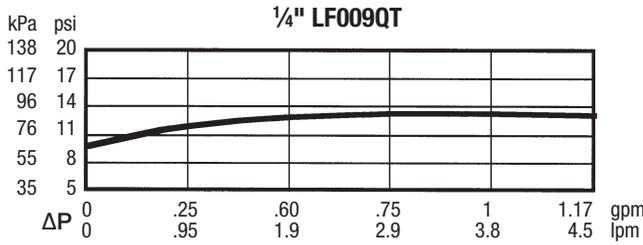
†Clearance for servicing

MODEL	SIZE	DIMENSIONS (APPROX.)										WEIGHT							
		A		C		D		E		L		R		U		lb	kg		
	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
LF009LF	2 1/2	—	—	—	—	5 5/8	143	—	—	18 1/8	460	—	—	10 5/8	270	76	34.5		
LF0090SY	2 1/2	33 3/4	845	15 1/8	403	5 5/8	143	16 3/8	416	18 1/8	460	7 3/4	197	10 5/8	270	166	75.3		
LF009NRS	2 1/2	33 3/4	845	11 3/8	289	5 5/8	143	16 3/8	416	18 1/8	460	7 3/4	197	10 5/8	270	161	73.0		
LF009LF	3	—	—	—	—	5 5/8	143	—	—	18 1/8	460	—	—	10 5/8	270	76	34.5		
LF0090SY	3	34 3/4	870	18 1/2	470	5 5/8	143	16 5/8	422	18 1/8	460	8 3/4	222	10 5/8	270	198	89.8		
LF009NRS	3	34 3/4	870	12 3/4	324	5 5/8	143	16 5/8	422	18 1/8	460	8 3/4	222	10 5/8	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 _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

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



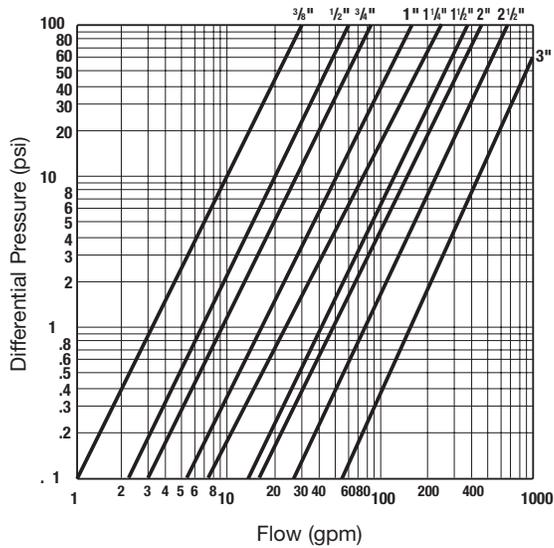
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*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

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Performance Data

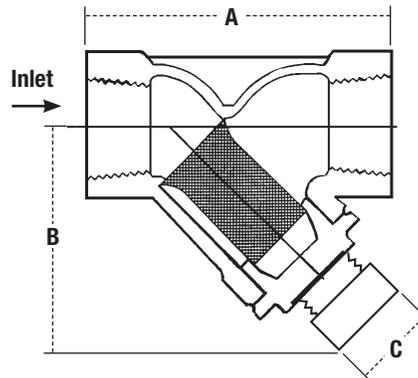


Flow curves show flows (gpm) and pressure drop (psig) through Watts Series 777SI, S777SI using standard 20 mesh screen.

Dimensions — Weights

LF777SI

SIZE	DIMENSIONS						WEIGHT	
	A		B		C		lbs.	kgs.
in.	in.	mm	in.	mm	in.	mm		
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 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	
	A		B		C		lbs.	kgs.
in.	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 9/16	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



WCO

WALL ACCESS COVERS

ROUND FACE-OF-WALL COVER AND SCREW

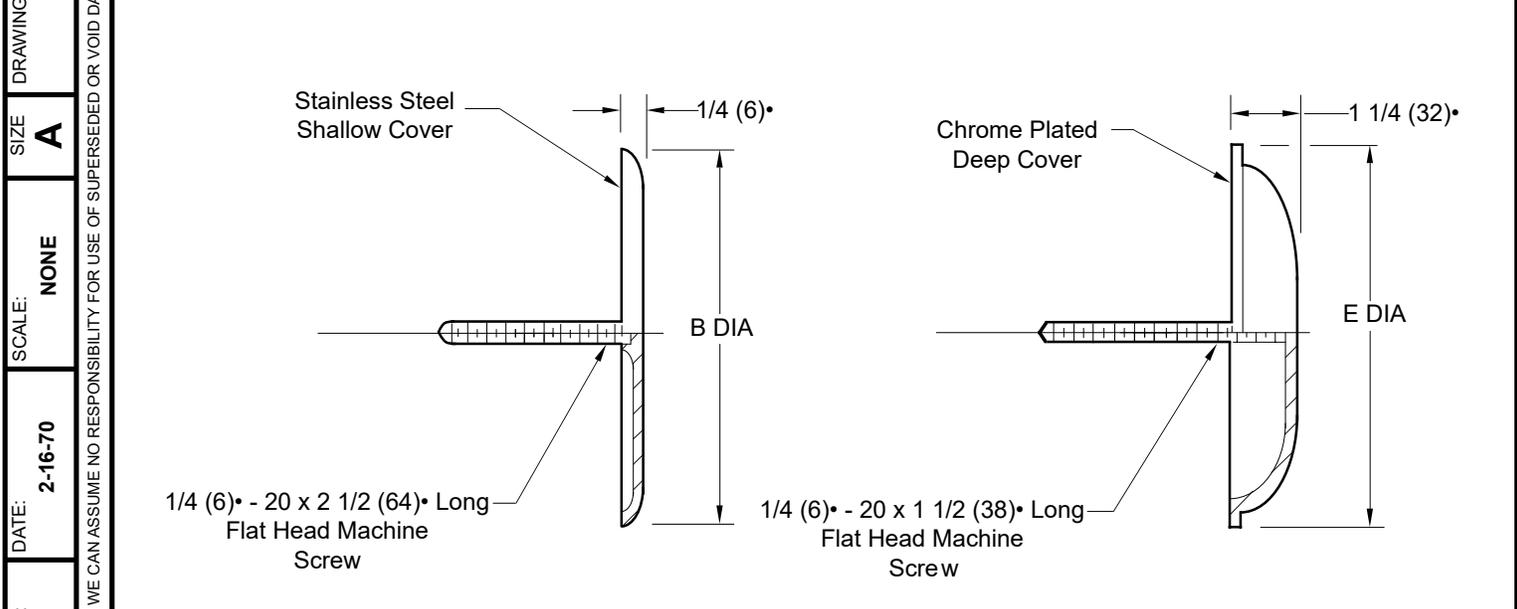


Fig. 4710 ← eg: 4710 (-04)**
 Fig. 4715 eg: 4715 (-07)Δ

Plug Size•	Fig. 4710• B Dia.	Specify FIG.	Fig. 4715• E Dia.	Specify FIG.
1 1/2 (38), 2 (51), 2 1/2 (64)	4 1/4 (110)	4710 (-04)	*7 1/4 (185)	4715 (-07)
3 (76), 3 1/2 (89), 4 (100)	5 1/4 (135)	4710 (-05)	*7 1/4 (185)	4715 (-07)
5 (125)	7 (180)	4710 (-07)	*7 1/4 (185)	4715 (-07)
6 (150)	9 1/4 (235)	4710 (-09)	9 1/4 (235)	4715 (-09)
8 (205), 10 (255)	11 1/4 (285)	4710 (-11)	11 1/4 (285)	4715 (-11)

* = Die Formed SS Cover Only.
 ** Reflects "B" DIA.
 Δ Reflects "E" DIA.
•NOTE: Dimensions shown in parenthesis are in millimeters.

REGULARLY FURNISHED: Stainless Steel Shallow Cover or Chrome Plated Bronze Deep Cover with Center Screw as Indicated by Figure Number Selected.	VARIATIONS: <input type="checkbox"/> Longer Center Screw (Specify Length) <input type="checkbox"/> Vandal Proof Screw -U	OPTIONAL MATERIALS: <input type="checkbox"/> Nickel Bronze -NB (Fig. 4715 only) <input type="checkbox"/> Polished Bronze Cover -PB <input type="checkbox"/> Prime Coated Steel Cover -PC (Fig. 4710 only)
--	--	--

DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

FIGURE NUMBER 4710, 4715	K 8-18-23 J 11-6-12 I 1-19-96 H 8-31-95	Removed Functon Revised table Revised table Chg Table	HS TBW CMD EMB	CL CL BS BS	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER 4710, 4715
REV.	DATE	DESCRIPTION	BY	CKD. BY			

FCO

T

DRAWING NUMBER
S4031

SIZE
A

SCALE:
NONE

DATE:
2-16-70

APPROVED BY:
JM

CHECKED BY:
BH

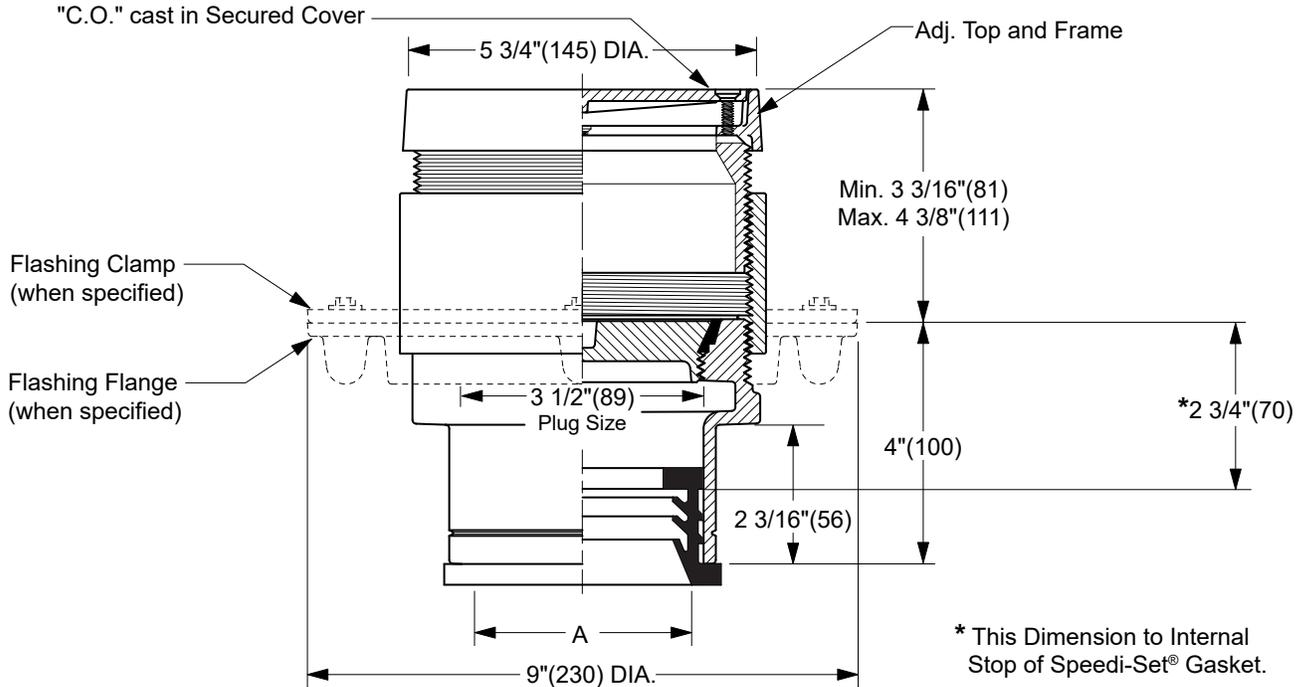
DRAWN BY:
RK

FIGURE NUMBER
4031 SERIES

DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR®" ADJUSTABLE TOPS

ROUND NICKEL BRONZE TOP WITH PUSH-ON SPEEDI-SET® OUTLET



TWIS-TO-FLOOR® ADJUSTMENT

SPEEDI-SET® OUTLET ▲

"A" (Pipe Size) = 02(50), 03(75) or 04(100)

Conforms to ASME A112.36.2/CSA B79.2

- Fig. 4031L.....Gasket Seal - ABS Plug
- Fig. 4032L.....Gasket Seal - Bronze Plug
- Fig. 4033L.....Taper Thread - Bronze Plug
- Fig. 4034L.....Taper Thread - ABS Plug

(Twis-to-Floor® design shown with gasketed plug.)

NOTE: Dimensions shown in parentheses are in millimeters.

REGULARLY FURNISHED:

Duco Cast Iron Cleanout with Round Adjustable Scoriated Secured Nickel Bronze Top. Closure Plug Type as Indicated By Figure Number Selected.

VARIATIONS:

- Flashing Flange -F
- Flange with Flashing Clamp -F-C
- Carpet Clamping Type -X
- Carpet Marker Type -Y
- Vandal Proof Top -U
- Wide Flange (DX)

OPTIONAL MATERIALS:

- Galvanized Cast Iron -G
- Polished Bronze Top -PB
- Stainless Steel Top -NBSS

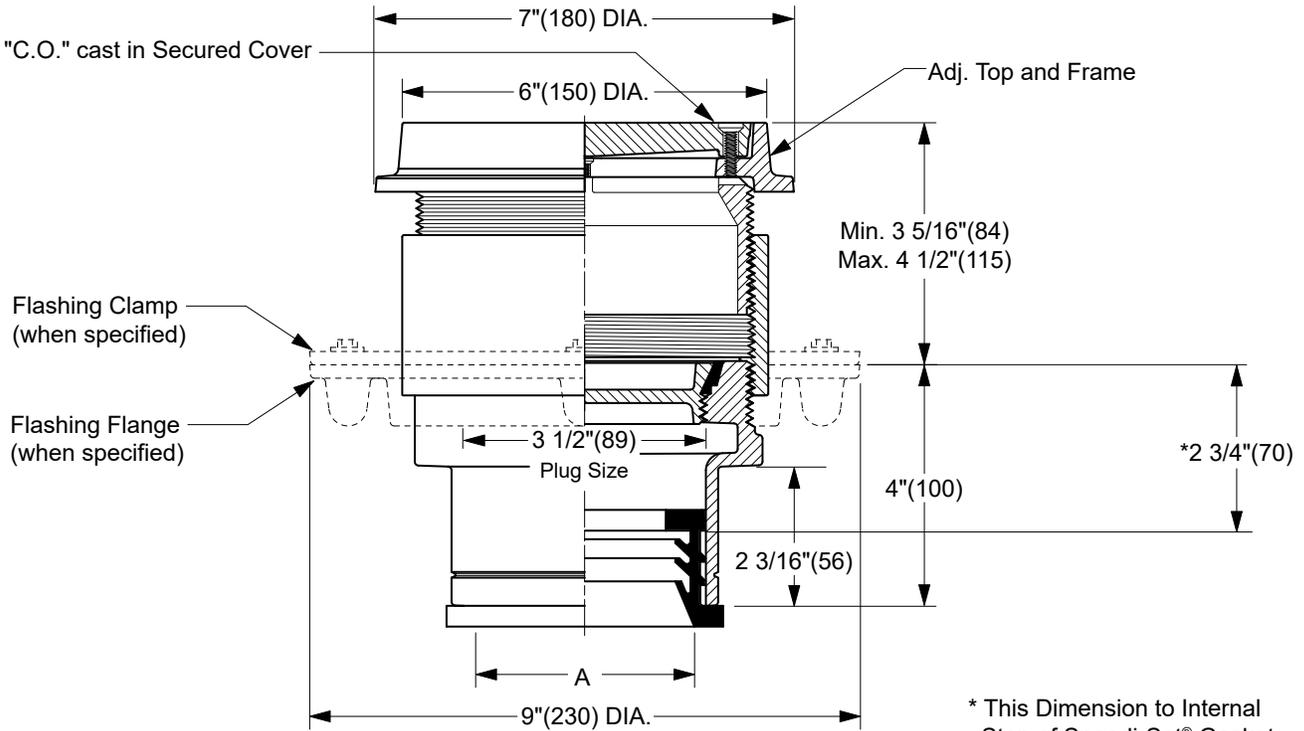
▲ Available in Extra Heavy, Service Weight or NO-HUB.

REV.	DATE	DESCRIPTION	BY	CKD. BY	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER
	11-21-24	Revised Description	HS	CL			4031 SERIES
	4-11-24	Added ASME Note	HS	CL			
	8-11-23	Removed Function	HS	CL			
	3-10-23	Added @ to "Speedi-Set"	KK	CL			

DCOTG

FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR"® ADJUSTABLE TOPS FOR UNFINISHED AREAS

ROUND EXTRA HEAVY DUTY CAST IRON TOP WITH PUSH-ON SPEEDI-SET® OUTLET



TWIS-TO-FLOOR® ADJUSTMENT
SPEEDI-SET® OUTLET ▲

"A" (Pipe Size) = 02(50), 03(75) or 04(100)

Conforms to ASME A112.36.2/CSA B79.2

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | Fig. 4231L.....Gasket Seal - ABS Plug | (Twis-to-Floor® design shown with gasketed plug.)
NOTE: Dimensions shown in parentheses are in millimeters. |
| <input type="checkbox"/> | Fig. 4232L.....Gasket Seal - Bronze Plug | |
| <input type="checkbox"/> | Fig. 4233L.....Taper Thread - Bronze Plug | |
| <input type="checkbox"/> | Fig. 4234L.....Taper Thread - ABS Plug | |

REGULARLY FURNISHED:
Duco Cast Iron Cleanout with Round Adjustable Scoriated Secured Cast Iron Top. Closure Plug Type as Indicated By Figure Number Selected.

- VARIATIONS:**
- | | |
|--------------------------|---------------------------------|
| <input type="checkbox"/> | Flashing Flange -F |
| <input type="checkbox"/> | Flange with Flashing Clamp -F-C |
| <input type="checkbox"/> | Vandal Proof Top -U |
- ▲ Available in Extra Heavy, Service Weight or NO-HUB.

- OPTIONAL MATERIALS:**
- | | |
|--------------------------|-------------------------|
| <input type="checkbox"/> | Galvanized Cast Iron -G |
| <input type="checkbox"/> | Ductile Iron Cover -M |

DRAWING NUMBER **S4231**
SIZE **A**
SCALE: **NONE**
DATE: **2-16-70**
APPROVED BY: **JM**
CHECKED BY: **BH**
DRAWN BY: **RK**
4231 SERIES

WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

REV.	DATE	DESCRIPTION	BY	CKD. BY	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER
	11-25-24 4-11-24 8-17-23 3-14-23	Revised Description Added ASME Note Removed Function Added ® to Speedi-Set	HS HS HS KK	CL CL CL CL			4231 SERIES

TMV-1

For Commercial Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Series LFN170 Hot Water Master Tempering Valves

Watts Series LFN170 hot water master tempering valves are especially designed for use on larger hot water supply systems for mixing hot and cold water for a variety of applications to extend the hot water supply. This series uses paraffin-based thermostat to sense and adjust outlet temperature. The LFN170s feature Lead Free* construction to comply with Lead Free* installation requirements.

Features

- Lead Free* brass body construction
- ASSE 1017 and IAPMO cUPC Listed
- LFN170-M3 uses paraffin-based thermostat to sense and adjust outlet temperature
- Dirt and lime resistant poppet and seat design
- Virtual shutoff if supply pressure fails
- Vandal-resistant locking mechanism to secure temperature setting
- Factory tested

Specifications

Maximum Operating Pressure	125psig (861 kPa)
Maximum Hot Water Temperature	200°F (93°C)
Minimum Hot Water Supply Temperature	5°F (3°C) Above Set Point**
Temperature Adjustment Range***	90 - 180°F (32 - 82°C)
Hot Water Inlet Temperature Range	120 - 180°F (42 - 82°C)
Cold Water Inlet Temperature Range	40 - 80°F (4 - 27°C)
Listing	ASSE 1017, IAPMO CUPC
Approval Standards	ASSE 1017, CSA B125.3

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

** With Equal Pressure

*** Low Limit cannot be less than the cold water temperature. For best operation, hot water should be at least 5°F (3°C) above desired set point.

LFN170-M3



⚠ WARNING

Watts Hot Water Master Tempering Valves cannot be used for tempering water temperature at fixtures. Severe bodily injury (i.e., scalding or chilling) and/or death may result depending upon system water pressure changes and/or supply water temperature changes. ASSE standard 1016, 1069 or 1070 listed devices such as Watts Series LFMMV, LFUSG, or LFL111 valves should be used at fixtures to prevent possible injury.

The Watts Hot Water Tempering Valves are designed to be installed at or near the boiler or water heater. They are not designed to compensate for system pressure fluctuations and should not be used where ASSE standard 1016, 1069 or 1070 devices are required. These Watts valves should never be used to provide "anti-scald" or "anti-chill" service.

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.

NOTICE

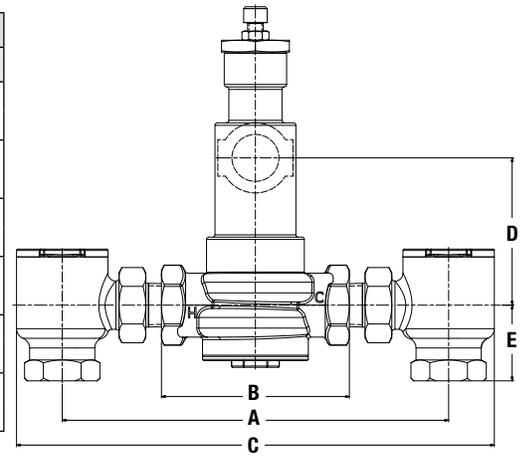
Inquire with governing authorities for local installation requirements

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.

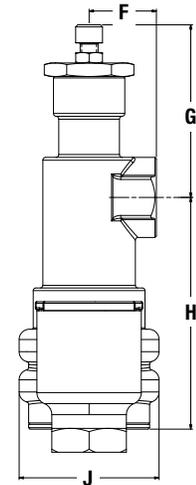
Capacity

Flow Capacity at 50-50 mixed Less Checkstops									
Model	Inlet / Outlet (NPT)	Min. Flow to ASSE 1017	C _v	Pressure Drop Across Valve					
				5psi (34 kPa)	10psi (69 kPa)	20psi (138 kPa)	30psi (207 kPa)	45psi (310 kPa)	60psi (414 kPa)
3/4" LFN170-M3	3/4 x 3/4"	3 gpm 11 lpm	6.70	15 gpm 57 lpm	21 gpm 79 lpm	30 gpm 114 lpm	37 gpm 140 lpm	45 gpm 170 lpm	52 gpm 197 lpm
1" LFN170-M3	1 x 1"	4 gpm 15 lpm	10.13	23 gpm 87 lpm	32 gpm 121 lpm	45 gpm 170 lpm	56 gpm 212 lpm	68 gpm 257 lpm	79 gpm 299 lpm
1 1/4" LFN170-M3	1 1/4 x 1 1/4"	4 gpm 15 lpm	14.16	32 gpm 121 lpm	45 gpm 170 lpm	63 gpm 238 lpm	76 gpm 288 lpm	95 gpm 360 lpm	110 gpm 416 lpm
1 1/2" LFN170-M3	1 1/2 x 1 1/2"	5 gpm 19 lpm	15.65	35 gpm 134 lpm	49 gpm 185 lpm	70 gpm 265 lpm	86 gpm 326 lpm	105 gpm 397 lpm	121 gpm 458 lpm
2" LFN170-M3	2 x 1 1/2 x 2"	7 gpm 26 lpm	18.63	42 gpm 159 lpm	59 gpm 223 lpm	83 gpm 314 lpm	102 gpm 386 lpm	125 gpm 473 lpm	144 gpm 545 lpm

Dimensions



Flow Capacity at 50-50 mixed with Checkstops									
Model	Inlet / Outlet (NPT)	Min. Flow to ASSE 1017	C _v	Pressure Drop Across Valve					
				5psi (34 kPa)	10psi (69 kPa)	20psi (138 kPa)	30psi (207 kPa)	45psi (310 kPa)	60psi (414 kPa)
3/4" LFN170-M3 CSUT	3/4 x 3/4"	3 gpm 11 lpm	6.26	14 gpm 53 lpm	20 gpm 76 lpm	28 gpm 106 lpm	34 gpm 129 lpm	42 gpm 159 lpm	48 gpm 182 lpm
1" LFN170-M3 CSUT	3/4 x 1"	4 gpm 15 lpm	9.54	21 gpm 79 lpm	30 gpm 114 lpm	43 gpm 163 lpm	52 gpm 197 lpm	64 gpm 242 lpm	74 gpm 280 lpm
1 1/4" LFN170-M3 CSUT	1 1/4 x 1 1/4"	4 gpm 15 lpm	13.42	30 gpm 114 lpm	42 gpm 159 lpm	60 gpm 227 lpm	74 gpm 280 lpm	90 gpm 341 lpm	104 gpm 394 lpm
1 1/2" LFN170-M3 CSUT	1 1/4 x 1 1/2"	5 gpm 19 lpm	14.90	33 gpm 125 lpm	47 gpm 128 lpm	67 gpm 254 lpm	82 gpm 310 lpm	100 gpm 379 lpm	115 gpm 435 lpm
2" LFN170-M3 CSUT	1 1/4 x 2"	7 gpm 26 lpm	17.89	40 gpm 151 lpm	57 gpm 216 lpm	80 gpm 303 lpm	98 gpm 371 lpm	120 gpm 454 lpm	139 gpm 526 lpm



MODEL	BODY INLETS		CHECK STOP		BODY OUTLET		DIMENSIONS						WEIGHT											
	NPT	NPT	NPT	NPT	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	lbs.	kgs									
3/4 LFN170-M3	3/4	N/A	3/4	3/4	N/A	4 1/2	114	N/A	3 1/2	89	N/A	1 1/16	36	3 3/8	92	4 7/8	124	2 15/16	75	4.8	2.2			
3/4 LFN170-M3 CSUT	N/A	3/4	3/4	3/4	9 1/4	235	4 1/2	114	11 1/16	291	3 1/2	89	1 13/16	46	1 1/16	36	3 3/8	92	4 7/8	124	2 15/16	75	9.8	4.5
1 LFN170-M3	1	N/A	1	1	N/A	4 9/16	116	N/A	3 1/2	89	N/A	1 1/16	36	3 3/8	92	4 7/8	124	2 15/16	75	4.8	2.2			
1 LFN170-M3 CSUT	N/A	3/4	1	1	10 1/8	264	4 9/16	116	12 9/16	319	3 1/2	89	1 13/16	46	1 1/16	36	3 3/8	92	4 7/8	124	2 15/16	75	10.3	4.9
1 1/4 LFN170-M3	1 1/4	N/A	1 1/4	1 1/4	N/A	6 1/16	154	N/A	3 1/16	87	N/A	1 3/4	44	3 11 1/16	94	5 1/4	133	4 1/2	114	9.4	4.3			
1 1/4 LFN170-M3 CSUT	N/A	1 1/4	1 1/4	1 1/4	12 1/16	306	6 1/16	154	15 1/16	383	3 1/16	87	2 1/2	64	1 3/4	44	3 11 1/16	94	5 1/4	133	4 1/2	114	19.3	8.8
1 1/2 LFN170-M3	1 1/2	N/A	1 1/2	1 1/2	N/A	6 1/16	154	N/A	3 1/16	87	N/A	1 3/4	44	3 11 1/16	94	5 1/4	133	4 1/2	114	9.1	4.1			
1 1/2 LFN170-M3 CSUT	N/A	1 1/4	1 1/2	1 1/2	13 3/4	337	6 1/16	154	16 3/4	413	3 1/16	87	2 1/2	64	1 3/4	44	3 11 1/16	94	5 1/4	133	4 1/2	114	19.8	9.0
2 LFN170-M3	2 (Hot)	1 1/2 (Cold)	N/A	2	N/A	6 7/16	164	N/A	3 3/16	81	N/A	2 1/16	52	3 7/8	98	5 3/8	137	4 1/2	114	10.4	4.7			
2 LFN170-M3 CSUT	N/A	1 1/4	2	2	13 3/4	349	6 7/16	164	16 3/4	425	3 3/16	81	2 1/2	64	2 1/16	52	3 7/8	98	5 3/8	137	4 1/2	114	21.3	9.7

Typical Specification

Master mixing valve shall feature paraffin-based, thermal actuation technology for precise temperature control. Valve shall be listed to ASSE 1017 and cUPC and shall be approved to ASSE 1017 & CSA B125.3 standards. Master mixing valve shall have an approach temperature of 5°F (3°C). Valve shall have an outlet temperature range from 90 – 180°F (32 to 82°C) with a lockable temperature-setting feature. Valve shall be manufactured of corrosion resistant materials and feature a single-seat design for positive shutoff. It shall have a Lead Free* brass body. Body shall be

constructed using Lead Free* brass. Lead Free* master mixing valves shall comply with state codes and standards, where applicable, requiring reduced lead content. Minimum flows to ASSE 1017 shall be 3/4 LFN170-M3 (3.0 gpm, 11 lpm), 1 LFN170-M3 (4.0 gpm, 15 lpm), 1 1/4 LFN170-M3 (4.0 gpm, 15 lpm), 1 1/2 LFN170-M3 (5.0 gpm, 19 lpm), 2 LFN170-M3 (7.0 gpm, 26 lpm).

Master mixing valves shall be of Watts Series LFN170-M3. Any alternate must have a written approval prior to bidding.

