Quality People. Building Solutions.

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Date: 3/9/2023
Return Request: 3/19/2023
Project: Ritz Theater – Phase 3
Supplier: Sanders Supply
Submittal: Plumbing Piping Specialties
Submittal Number: 22 10 06-01
Drawing # and Installation: Plumbing Drawings

ARCHITECT
SCM Architects
1400 Kirk Road, Suite 220
Little Rock, AR 72223
501-224-3055

ENGINEER
Pettit & Pettit
201 E. Markham St, #400
Little Rock, AR 72201
501-374-3731

GENERAL CONTRACTOR
Clark Contractors
15825 Cantrell Rd.
Little Rock, AR 72223
501-868-3133

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

Notes:

CSUSA PROJECT NO.
23-1004
jon@comfortar.com

Ritz Theater Phase 3

Malvern, AR

Comfort Systems USA

North Little Rock, AR

Operation & Maintenance

Sanders Supply 8

Hot Springs, AR

August 7, 2023

P-6

Installation, Maintenance, and Repair Manual

Series 009, 009-FS

Series LF009, LF009-FS

Reduced Pressure Zone Assemblies

¼" – 3"

LF009M2-QT-FS

⚠ WARNING

Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

Keep this Manual for future reference.

⚠ WARNING

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

⚠ WARNING

Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant.

If installed on a fire suppression system, all mechanical checks, such as alarms and backflow preventers, should be flow tested and inspected in accordance with NFPA 13 and/or NFPA 25.

Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal components helps assure maximum life and proper product function.

NOTICE

For Australia and New Zealand, line strainers should be installed between the upstream shutoff valve and the inlet of the backflow preventer.

Testing

For field testing procedure, refer to IS-TK-DL, IS-TK-9A, IS-TK-99E, and IS-TK-99D at watts.com.

For other repair kits and service parts, refer to the Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD at watts.com.

For technical assistance, contact your local Watts representative.

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.

Series 009-FS (½" to 2") and Series LF009-FS (½" to 3") are equipped with an integrated flood sensor that, when activated, triggers notification of potential flood events from excessive relief valve discharges.

NOTICE

An add-on connection kit is required to activate the integrated flood sensor. Without the connection kit, the flood sensor is a passive component and will not communicate with any other device. (A retrofit sensor connection kit is also available for existing installations. See "Add-on and Retrofit Sensor Connection Kits," for ordering details.)

NOTICE

Use of the integrated 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 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.

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®

Installation Guidelines

Indoors

For indoor installations, the assembly needs to be easily accessible to facilitate testing and servicing. If it is located in a line close to a wall, be sure the test cocks are easily accessible. A drain line and air gap should be piped from the relief valve connection as shown in Figure 1. This is where evidence of discharge is clearly visible, signaling the need to protect against water damage. Therefore, never install the assembly in concealed locations. (For more information, download the ES-AG/EL/TC specification at watts.com.)

Outside

In an area where freezing conditions do not occur, the assembly can be installed outside. The most satisfactory installation is above ground; thus, the assembly should be installed in this manner.

Backflow preventers should not be installed in pits unless approved by local codes. In such cases, a modified pit installation is preferred.

NOTICE

In an area where freezing conditions can occur, the assembly should be installed above ground in an insulated enclosure, as shown in Figure 2. (For more information, download the ES-WB specification at watts.com.)

The assembly must be installed in an accessible location to facilitate testing and servicing. A discharge line should be piped from the air gap at the relief valve connection to ensure there is adequate drainage. Never pipe the discharge line directly into a drainage ditch, sewer, or sump. Never install the assembly where any part of the unit could become submerged in standing water.

Parallel

Two or more smaller-sized assemblies can be piped in parallel (when approved) to serve a large supply pipe main, as shown in Figure 3. This type of installation is employed where increased capacity is needed beyond that provided by a single valve and permits testing or servicing of an individual valve without shutting down the complete line.

The number of assemblies used in parallel should be determined by the engineer's judgment based on the operating conditions of a specific installation.

For parallel valve installations, the total capacity of the assemblies should equal or exceed that required by the system.

Figure 1

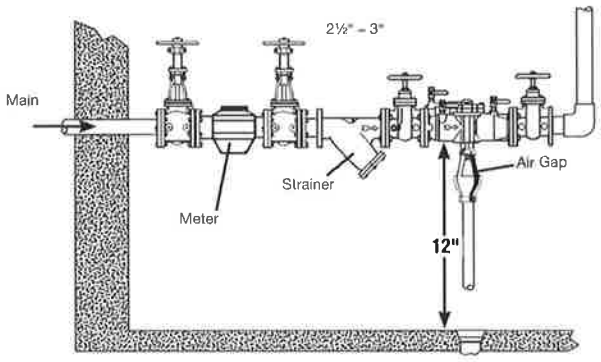


Figure 2

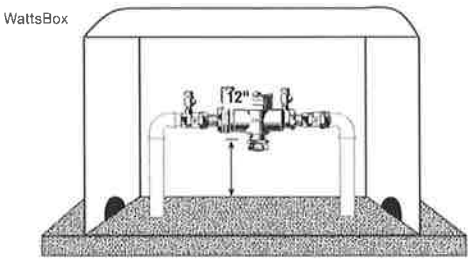
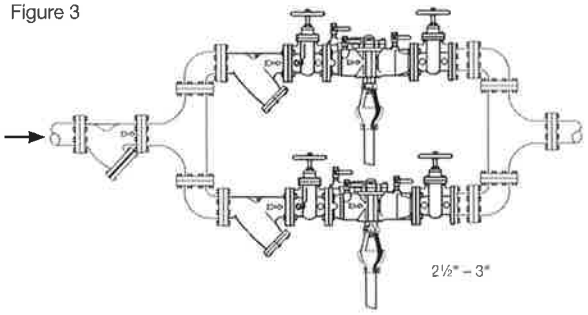


Figure 3



Annual Inspection

Annual inspection of all water system safety and control valves is required and necessary. Regular inspection, testing, and cleaning assures maximum life and proper product function.

NOTICE

Shutoff Valves: When shutoff valves are removed and reassembly is necessary, the shutoff valve with the test cock is to be mounted on the inlet side of the backflow preventer.

A. The assembly should always be installed in an accessible location to facilitate testing and servicing. **Check the state and local codes to ensure that the backflow preventer is installed in compliance, such as the proper height above the ground.**

B. Watts recommends that a strainer be installed ahead of the assembly to protect the internal components from unnecessary fouling.

⚠ CAUTION

Do not add a strainer when the backflow preventer is installed on seldom-used water lines, such as fire sprinkler lines or other lines called upon only during emergencies.

Start Up: The downstream shutoff should be closed. Open the upstream shutoff slowly and fill the valve. When the valve is filled, open the downstream shutoff slowly and fill the water supply system. This is necessary to avoid water hammer or shock damage.

C. Water discharge from the relief valve should be vented in accordance with code requirements. The relief valve should never be solidly piped into a drainage ditch, sewer, or sump. The discharge should be terminated approximately 12" above the ground or through an air gap piped to a floor drain.

NOTICE

Relief Valve Discharge Rates

The installation of an air gap with the drain line terminating above a floor drain handles any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. See Figure 4 for maximum relief valve discharge rates, size, and capacity of typical floor drains.

Do not reduce the size of the drain line from the air gap fitting. Pipe **full** line size.

D. After initial installation, a discharge from the relief valve opening may occur due to inadequate initial flushing of pipe lines to eliminate dirt and pipe compounds. If flushing does not clear, remove the first check valve and clean thoroughly.

NOTICE

Periodic relief valve discharge may occur on dead end service applications, such as boiler feed lines or cooling tower makeup lines due to fluctuating supply pressure during a static or no flow condition. To avoid this discharge, install a spring-loaded rubber seated check valve ahead of the backflow assembly to "lock-in" the downstream pressure.

E. Backflow preventers should never be placed in pits unless absolutely necessary and then only when and as approved by local codes. In such cases, provision should be made to always vent above flood level or for a pit drain to ensure an adequate air gap below the relief port.

F. The backflow preventers must be inspected periodically for any discharge from the relief valve which provides a visual indication of need for cleaning or repair of check valves. Also testing for proper operation of the device should be made periodically in compliance with local codes, but at least once a year or more often, depending upon system conditions.

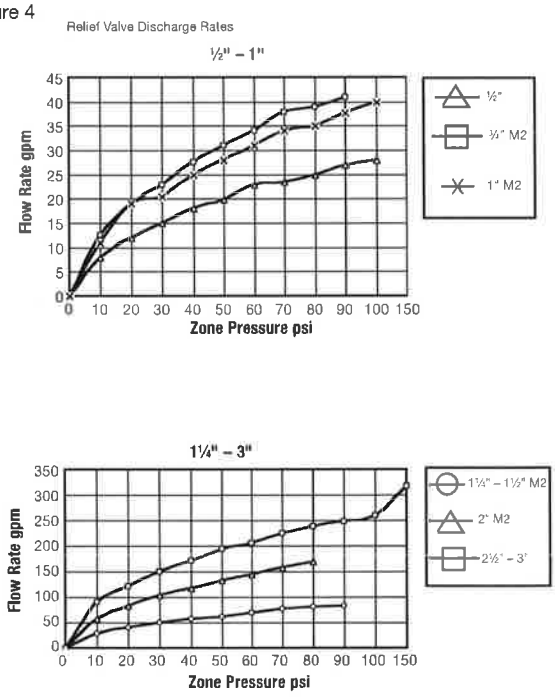
The relief vent discharges water when, during no-flow periods, the first check valve is fouled or the inlet pressure to the device drops sufficiently due to upstream pressure fluctuations to affect the required operating differential between the inlet pressure and reduced pressure zone. Otherwise, such relief (spitting) can occur when the second check is fouled during emergency backflow or resulting from a water hammer condition. (For more information, download Troubleshooting Guide S-TSG at watts.com.)

NOTICE

Special considerations are necessary when testing assemblies installed on Fire Prevention Systems.

Fire Protection System Installations: The National Fire Protection Agency (NFPA) Guidelines require a confirming flow test be conducted whenever a "main line" valve such as a backflow assembly or the shutoff valves have been operated. Certified testers of backflow assemblies must conduct this confirming test.

Figure 4



TYPICAL FLOW RATES AS SIZED BY FLOOR DRAIN MANUFACTURERS	
2" 55 gpm	5" 350 gpm
3" 112 gpm	6" 450 gpm
4" 170 gpm	8" 760 gpm

Servicing the Relief Valve

NOTICE

No special tools are required to service assembly sizes 2½" to 3".

1. Detach the activation module, if installed, from the flood sensor then remove the sensor from the relief valve.
2. Remove the four or six relief valve cover bolts while holding the cover down.
3. Lift the cover straight off. The stem and diaphragm assembly normally remain with the cover as it is removed. The relief valve spring is free inside the body at this point.
4. The relief valve seat is located at the bottom of the body bore, and can be removed, if necessary, for cleaning. The disc can be cleaned without disassembly of the relief valve module. If it is determined that the relief valve diaphragm and/or disc should be replaced, the relief valve module can be readily disassembled without the use of special tools.

NOTICE

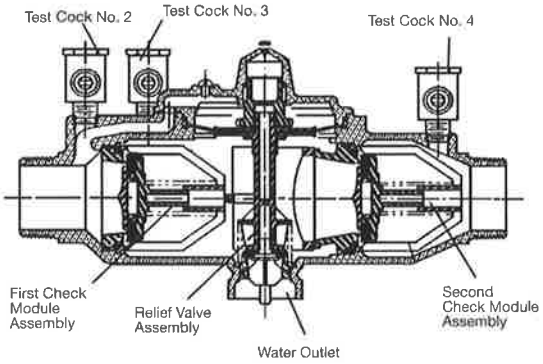
The disc rubber is molded into the disc holder and is supplied as a disc holder assembly.

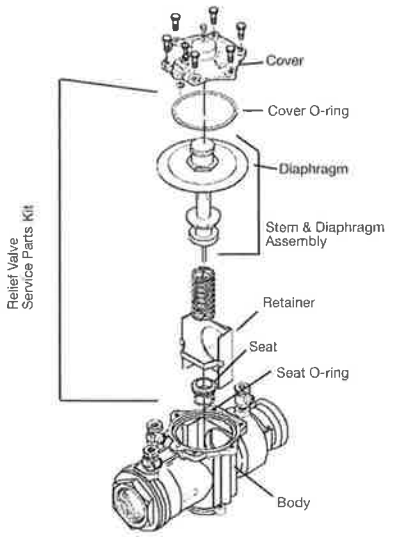
5. To reassemble the relief valve, press the seat firmly into place in the body, center the spring on the seat, and insert the cover and relief valve module as a unit straight into the bore. Press down on the cover to assure proper alignment. Insert and tighten bolts.
6. Reattach the flood sensor to the relief valve and mount the activation module to the sensor.

NOTICE

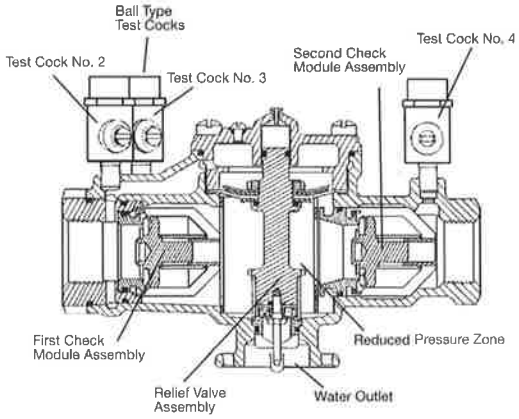
If the cover does not press flat against the body, the stem assembly is crooked and damage can result. Realign the stem and cover before bolts are inserted.

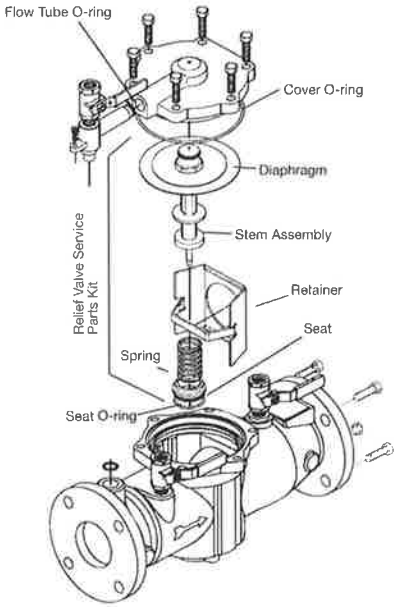
1" - 2"





2½" – 3"





Servicing First and Second Check Valves

1. Remove the relief valve assembly by following the preceding procedure.
2. Remove the retainer from the body bore. The check valve modules can now be removed from the valve by hand or with a screwdriver.

NOTICE

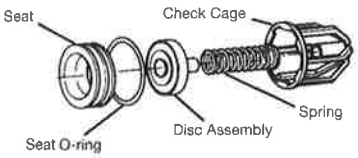
The seats and springs of the first and second check modules are not interchangeable. The heavier spring and smaller diameter seat belong with the first check module.

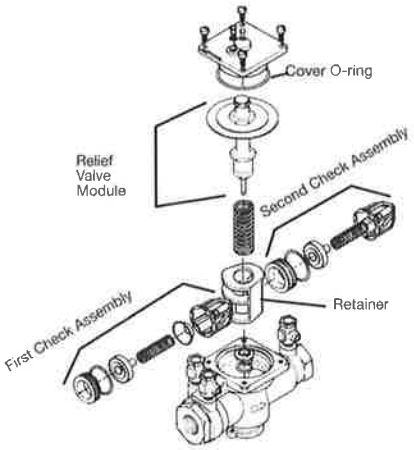
3. The check seats are attached to the cage with a bayonet type locking arrangement. Holding the cage in one hand, push the seat inward and rotate counterclockwise for 2½" to 3"; clockwise for ¼" to 2" against the cage. The seat, spring cage, spring, and disc assembly are now individual components.
4. The disc assembly may now be cleaned and reassembled or, depending on its condition, discarded and replaced with a new assembly from the repair kit. O-rings should be cleaned or replaced as necessary and lightly greased with the FDA-approved silicon grease.
5. Reassemble the check valve modules. Check modules are installed in the valve body with the seat facing the valve inlet. The modules must be securely in place before the retainer can be replaced. Reinstall relief valve assembly as well as flood sensor and activation module.

NOTICE

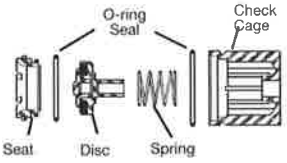
No special tools are required to service assembly sizes 2½" to 3".

CHECK ASSEMBLY 1" - 2"

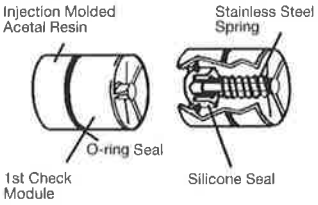




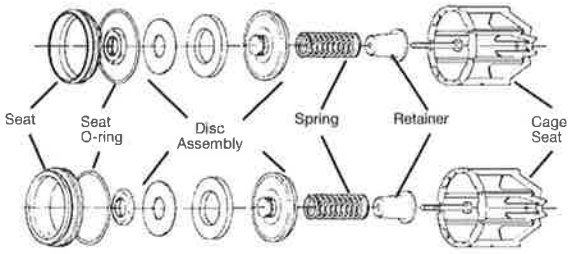
CHECK ASSEMBLY ¾" M3

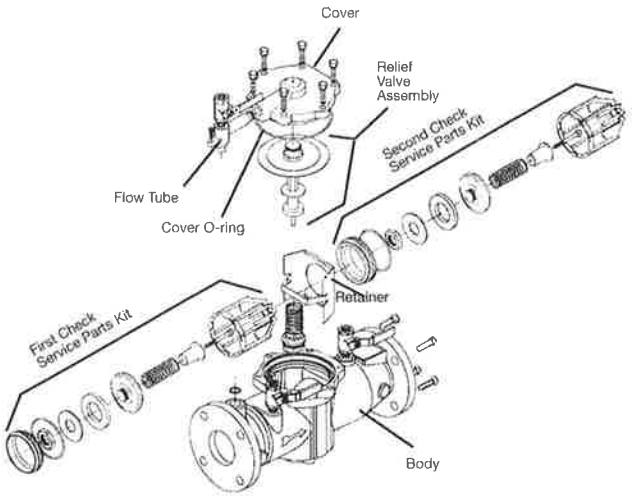


CHECK ASSEMBLY ¼" - ¾"



CHECK ASSEMBLY 2½" - 3"





Troubleshooting

SYMPTOM	CAUSE	SOLUTION
Check valve fails to hold 1.0 PSID minimum	Debris on check disc sealing surface	Disassemble and clean
	Leaking isolation valve	Disassemble and clean or repair
	Damaged seat disc or seat O-ring	Disassemble and replace
	Damaged guide holding check open	Disassemble and clean or replace
	Weak or broken spring	Disassemble and replace spring
Chatter during flow conditions	Worn, damaged or defective guide	Disassemble and repair or replace guide
Low flows passing through mainline valve	Mainline check fouled	Disassemble and clean
	Meter strainer plugged	
	Damaged mainline seat disc or seat	Disassemble and replace
	Broken mainline spring	

Add-on and Retrofit Sensor Connection Kits for Building Management Systems

ORDERING CODE	ADD-ON/RETROFIT KIT		DESCRIPTION
88003056		FP-BF-BMS-1/2-2 BMS Sensor Connection Kit Series 009-FS, LF009-FS, LFU009-FS, SS009-FS, U009-FS Sizes ½" to 3"	Includes sensor activation module with cable, deflectors (4), ground wire, and power adapter. Use this kit to activate the integrated flood sensor and enable flood detection capabilities on the relief valve of a new installation working with a BMS controller (not included).
88003057		FP-RFK-BF-BMS-CFS-1/2-3/4 BMS Sensor Retrofit Connection Kit Series 009, LF009, LFU009, SS009, U009 Sizes ½" to ¾"	Includes flood sensor, deflector, sensor activation module with cable, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with a BMS controller (not included).
88003058		FP-RFK-BF-BMS-CFS-1-11/2 BMS Sensor Retrofit Connection Kit Series 009, LF009, LFU009, SS009, U009 Sizes 1" to 1½"	Includes flood sensor, deflectors (2), sensor activation module with cable, mounting bolts, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with a BMS controller (not included).
88003059		FP-RFK-BF-BMS-CFS-2 BMS Sensor Retrofit Connection Kit Series 009, LF009, LFU009, U009 Sizes 2" to 3"	Includes flood sensor, deflector, sensor activation module with cable, mounting bolts, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with a BMS controller (not included).

Add-on and Retrofit Sensor Connection Kits for Cellular Communication

ORDERING CODE	ADD-ON/RETROFIT KIT	DESCRIPTION
88003060	 FP-BF-CFS-1/2-2 Cellular Sensor Connection Kit Series 009-FS, LF009-FS, LFU009-FS, SS009-FS, U009-FS Sizes ½" to 3"	Includes sensor activation module with cable, deflectors (4), Cellular Gateway with mounting kit, ground wire, and power adapter. Use this kit to activate the integrated flood sensor and enable flood detection capabilities on the relief valve of a new installation working with cellular communication to send alerts by email message, SMS text message, or voice call.
88003061	 FP-RFK-BF-CFS-1/2-3/4 Cellular Sensor Retrofit Connection Kit Series 009, LF009, LFU009, SS009, U009 Sizes ½" to ¾"	Includes flood sensor, deflector, sensor activation module with cable, Cellular Gateway with mounting kit, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with cellular communication to send alerts by email message, SMS text message, or voice call.
88003062	 FP-RFK-BF-CFS-1-11/2 Cellular Sensor Retrofit Connection Kit Series 009, LF009, LFU009, SS009, U009 Sizes 1" to 1½"	Includes flood sensor, deflectors (2), sensor activation module with cable, mounting bolts, Cellular Gateway with mounting kit, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with cellular communication to send alerts by email message, SMS text message, or voice call.
88003063	 FP-RFK-BF-CFS-2 Cellular Sensor Retrofit Connection Kit Series 009, LF009, LFU009, U009 Sizes 2" to 3"	Includes flood sensor, deflector, sensor activation module with cable, mounting bolts, Cellular Gateway with mounting kit, ground wire, and power adapter. Use this kit to install the flood sensor and enable flood detection capabilities on the relief valve of an existing installation working with cellular communication to send alerts by email message, SMS text message, or voice call.

Limited Warranty: Watts (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

WATTS®

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

P-7

IS-25AUB

Installation Instructions • Instrucciones de instalación • Instructions d'installation

Series LF25AUB-Z3

Water Pressure Reducing Valve

Válvula reductora de la presión del agua

Régulateur de pression d'eau

Size: ½" - 2"

Medidas: ½ a 2 pulg.

Tailles : 0.5 à 2" po

LF25AUB-Z3

LF25AUB-DU-QC-Z3

WATTS®

ENGLISH INSTRUCTIONS

⚠ WARNING

Read this Manual BEFORE using this equipment.
Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.
Keep this Manual for future reference.

⚠ WARNING

You are required to consult the local building and plumbing codes prior to installation. If the information in this manual is not consistent with local building or plumbing codes, the local codes should be followed. Inquire with governing authorities for additional local requirements.

Installation Instructions

1. The valve should be installed by a licensed contractor in accordance with local codes and ordinances.
2. This valve should be installed where it is accessible with sufficient clearance for cleaning, service, or adjustment.
3. Before installing the valve, be sure that the pipe ends are reamed and threads are cut to size. For valves with Quick-Connect tail-pieces refer to "Quick-Connect Installation" instructions below.
4. Flush the lines to remove all loose scale, dirt and other foreign matter that can damage or clog the valve.
5. Install the regulator with the arrow on the body pointing in the direction of the flow.
6. Regulator may be installed vertically or horizontally (upright or inverted).
7. Start Up — Open cold water supply then hot water supply. Inspect for leaks.

NOTICE

To tighten valve, first hand tighten followed by ½-1 turn, using wrench.

Product is for interior or exterior applications. Product should not be buried directly in the ground. For exterior applications where the valve will be situated in a vault or pit or be in contact with the ground, the valve should be installed in a meter box/vault, accessible for repair and adjustment, per local code.

⚠ WARNING

Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. Corrosive water conditions, and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal components helps assure maximum life and proper product function.

Maintenance may be required when the water downstream of the product exhibits one or more of the following: excessive water pressure, insufficient water pressure or flow, or inconsistent water pressure.

Maintenance Instructions

⚠ WARNING

Depressurize valve before servicing.

- To clean strainer: shut off inlet water pressure, remove strainer plug (2), remove and clean strainer.
- To replace seat disc: shut off supply, loosen nut (51) and back off adjusting screw (53), remove spring cage (3), spring (52) and washer (62). Remove bottom plug (12) and gasket (101). Insert and hold screw driver in slot on top of stem while loosening seat disc holder (47) from bottom of stem (27).
- To replace diaphragm: loosen lock nut (48) and remove lock washer (46), diaphragm plate (60) and diaphragm (20).
- When reassembling apply a drop of low strength thread lock to disc holder.
- Open inlet water supply slowly.

Adjustment

Regulator is factory preset to 50psi (344 kPa) in a static condition. To adjust pressure setting, loosen the lock nut and turn the adjusting bolt clockwise to increase pressure, counterclockwise to decrease pressure.

⚠ CAUTION

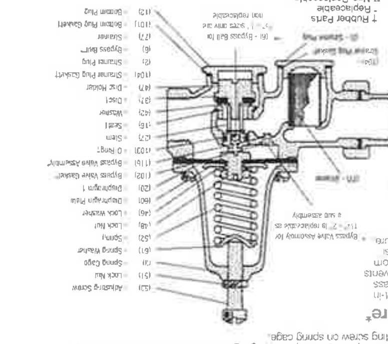
Any time a reducing valve is adjusted, use a pressure gauge to verify correct pressure setting. Do not bottom out adjusting screw on spring cage.

Bypass Feature*

This regulator has a built-in thermal expan-sion bypass feature. This feature prevents downstream pressure from rising to more than 10psi above the supply pressure.

NOTICE

The bypass feature will not prevent the pressure relief valve from opening on the hot water supply system withpressure above 150psi (10.3 bar).



† Rubber Parts
* Replaceable
** Non-Replaceable

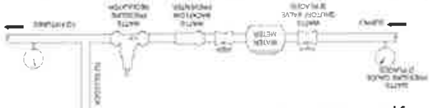
Repair Kits

† Kit for Series LF25AUB-Z3 includes all items shown above

ORDERING CODE	KIT NO.	SIZE in.
0864941	½" LF25AUB-RK	½
0864943	¾" LF25AUB-RK	¾
0864942	1" LF25AUB-RK	1
0864944	1¼" LF25AUB-RK	1¼
0864945	1½" LF25AUB-RK	1½
0864946	2" LF25AUB-RK	2

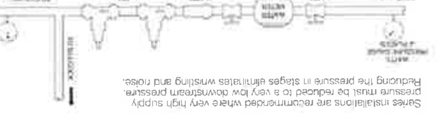
When Ordering, Specify:
1. Ordering Code
2. Size of Valve
3. Type Number
4. Model shown on Nameplate

Typical Installation



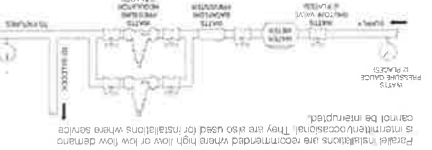
Series Installation

Series installations are recommended where very high supply pressure must be reduced to a very low downstream pressure. Reducing the pressure in stages eliminates whistling and noise.



Parallel Installation

Parallel installations are recommended where high flow or low flow demand is intermittent/occasional. They are also used for installations where service cannot be interrupted.

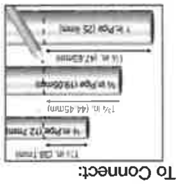


⚠ WARNING

For valves with CPVC or PEX end connections, do not exceed the tubing manufacturers pressure and temperature ratings. Refer to the tubing manufacturers product specifications for that information.

Quick-Connect Installation

To Connect:



1. Mark pipe as shown. This is pipe insertion depth.
2. Clean pipe end.
3. If using PEX tubing, insert pipe stiffener (provided) into end of pipe.
4. Push tubing into tailpiece up to mark.
5. Insert collet clip.

To Disconnect:

1. Remove collet clip.
2. Depress collet.
3. Pull tubing from tailpiece.

⚠ WARNING

Troubleshooting

High System Pressure

If the downstream system pressure is higher than the set pressure under no flow conditions, the cause could be thermal expansion, pressure creep or dirt/debris on the seat.

Thermal expansion occurs whenever water is heated in a closed system. The system is closed when supply pressure exceeds 150psi, or a check valve or backflow preventer is installed in the supply piping.

You must make provisions for pressure relief protection of your plumbing system and components. The use of a relief valve such as the Watts 530C, BRV, Governor 80, or 3L or potable water expansion tank such as the Watts DET, PLT or DETA may be required.

276H300

To determine if this is the result of thermal expansion, try briefly opening the cold water tap. If the increased pressure is caused by thermal expansion, the pressure will immediately be relieved and the system will return to the set pressure. Watts offers a pressure test gauge, model 276H300 to assist you in determining if you have high water pressure.

The 276H300 when attached to a hose bibb registers the highest pressure reading over the period of time it is left on the system.

Limited Warranty: Watts Regulator Co. (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

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USA: T: (978) 689-6066 • F: (978) 975-8350 • Watts.com
Canada: T: (888) 208-8927 • F: (905) 332-7068 • Watts.ca
Latin America: T: (52) 55-4122-0138 • Watts.com

Garantía limitada: Watts Regulator Co. (en adelante, "la Compañía") garantiza, por un período de un año a partir de la fecha de embarque original, que sus productos están libres de defectos en materiales y mano de obra bajo condiciones de uso normal. En caso de que se encuentren tales defectos dentro del período de garantía, la Compañía reemplazará o reacondicionará, a su elección, el producto sin costo alguno.

LA GARANTÍA AQUÍ ESTIPULADA SE OTORGA EN FORMA EXPRESA Y ES LA ÚNICA GARANTÍA OTORGADA POR LA COMPAÑÍA EN RELACIÓN CON EL PRODUCTO. LA COMPAÑÍA NO OTORGA NINGUNA OTRA GARANTÍA, YA SEA EXPRESA O IMPLÍCITA. LA COMPAÑÍA POR LA PRESENTE RENUNCIA ESPECÍFICAMENTE A TODAS LAS DEMÁS GARANTÍAS, EXPRESAS O IMPLÍCITAS, INCLUYENDO SIN LIMITACIÓN, LAS GARANTÍAS IMPLÍCITAS DE APTITUD PARA LA COMERCIALIZACIÓN E IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR.

La solución descrita en el primer párrafo de esta garantía constituirá la única y exclusiva solución por incumplimiento de garantía, y la Compañía no se hará responsable por daños accidentales, especiales o indirectos, incluyendo sin limitación, la pérdida de ganancias o el costo de reparación o reemplazo de otra propiedad que resulte dañada por el mal funcionamiento de este producto, otros costos resultantes por mano de obra, retardos, vandalismo, negligencia, obstrucciones ocasionadas por materiales extraños, daños debidos a condiciones adversas del agua, químicos o cualquier otra circunstancia sobre la cual la Compañía no tenga control. Esta garantía no tendrá validez en cualquier caso de abuso, uso indebido, aplicación incorrecta, instalación inadecuada, o mantenimiento adecuado o alteración del producto.

Algunos Estados no permiten limitaciones en la duración de una garantía implícita y algunos Estados no permiten la exclusión o limitación de daños accidentales o indirectos. Por lo tanto, es posible que las limitaciones anteriores no sean aplicables en su caso. Esta garantía limitada le da derechos legales específicos; usted podría tener también otros derechos que varían según el Estado. Usted debe consultar las leyes estatales aplicables para determinar sus derechos. **EN LA MEDIDA EN QUE SEA CONGRUENTE CON LAS LEYES ESTATALES APLICABLES, CUALQUIER GARANTÍA IMPLÍCITA QUE NO SEA RECHAZADA, INCLUYENDO LAS GARANTÍAS IMPLÍCITAS DE APTITUD PARA LA COMERCIALIZACIÓN E IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR, SE LIMITA EN SU DURACIÓN A UN AÑO A PARTIR DE LA FECHA DEL EMBARQUE ORIGINAL.**

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IS-25AUB 2104 EDP# 1910200 © 2021 Watts

Garantie limitée : Watts Regulator Co. (la « Société ») garantit que chacun de ses produits est exempt de vice de matériau et de fabrication dans des conditions normales d'utilisation pour une période de un an à compter de la date d'expédition d'origine. Dans l'éventualité où de tels vices se manifesteraient pendant la période de garantie, la Société, à sa discrétion, remplacera ou reconditionnera le produit sans frais.

LA PRÉSENTE GARANTIE EST EXPRESSE ET REPRÉSENTE LA SEULE GARANTIE OFFERTE PAR LA SOCIÉTÉ POUR CE PRODUIT. LA SOCIÉTÉ N'OFFRE AUCUNE AUTRE GARANTIE, EXPRESSE OU TACITE. PAR LA PRÉSENTE, LA SOCIÉTÉ REJETTE SPÉCIFIQUEMENT TOUTE AUTRE GARANTIE, EXPRESSE OU TACITE, NOTAMMENT TOUTE GARANTIE TACITE DE QUALITÉ MARCHANDE OU D'ADAPTATION À UN BUT PARTICULIER.

Le recours décrit dans le premier paragraphe de cette garantie constitue le seul recours à toute violation de la présente garantie. La Société ne saurait être tenue responsable de tout dommage accessoire, spécial ou indirect, y compris, de façon non limitative : la perte de profits ou le coût afférent à la réparation ou au remplacement d'autres biens qui seraient endommagés par suite du fonctionnement incorrect dudit produit ; d'autres coûts résultant de frais de main-d'œuvre, de retards, de vandalisme, de négligence, d'une obstruction causée par des matériaux étrangers, de dommages causés par une eau impropre, des produits chimiques ou par tout autre événement échappant au contrôle de la Société. La présente garantie est déclarée nulle et non avenue en cas d'usage abusif ou incorrect, d'application, d'installation ou d'entretien incorrects ou de modification du produit.

Certains États n'autorisent pas les limitations de durée d'une garantie tacite ou l'exclusion ou la limitation des dommages accessoires ou indirects. Les limitations susmentionnées peuvent donc ne pas s'appliquer à vous. Cette garantie limitée vous donne des droits spécifiques et il se peut que vous ayez aussi d'autres droits qui varient d'un État à l'autre. Veuillez vous référer aux lois applicables de l'État pour déterminer vos droits en la matière. **DANS LA MESURE PERMISE PAR LA LOI APPLICABLE DE L'ÉTAT, TOUTES LES GARANTIES TACITES NE POUVANT PAS ÊTRE REJETÉES, Y COMPRIS LES GARANTIES TACITES DE QUALITÉ MARCHANDE ET D'ADAPTATION À UN BUT PARTICULIER, SONT LIMITÉES QUANT À LEUR DURÉE À UN AN À COMPTER DE LA DATE D'EXPÉDITION D'ORIGINE.**

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pettitpettit CONSULTING ENGINEERS, INC

REVIEW OF PLUMBING SUBMITTALS

Project: Phase III Restoration of the Ritz Theater
Location: Malvern, Arkansas **P&P Job No. 22-024**
Date of Receipt: Monday, March 27, 2023
Date of Review: Tuesday, March 28, 2023
Reviewed by: Terry Jacks
Email: tjacks@pettitinc.com

Signed: _____

Checking is for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades.

Item	Approval Status		Comments
Section 22 05 19 –Meters and Gauges	Approved as Corrected	o	-Provide hot water glass thermometers with range 30 degrees - 180 degrees F with 2 degree F scale divisions (0 degrees - 160 degrees Celsius) with 1 degree Celsius scale divisions. -Provide chilled water glass thermometers with range 30 degrees - 100 degrees F with 2 degrees F scale divisions (0 degrees-100 degrees Celsius) with 1 degree Celsius scale divisions. -Provide hot water dial type thermometers with range 0 degrees - 220 degrees F (-10 degrees - 110 degrees C).
Section 22 00 00 -Firestopping	Approved as Corrected	o	- Contractor to verify all sizes, quantities, and coordinate the use of firestopping materials in all fire rated separations. Coordinate fire barriers with architectural drawings. Coordinate the use of appropriate fire stopping materials for the applications and ensure that the UL listed materials are installed per manufacturer's specifications.
Section 22 05 53 -Plumbing Identification	Approved as Corrected	o	-Arrow banding tape shall overlap the pipe lable and fully lap the piping as shown on the product specification sheet.
Section 22 07 19 -Plumbing Piping insulation	Approved as Corrected	o	- Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. High temp insulation inserts not approved.
Section 22 10 05 -Plumbing Piping	Approved	✓	-None
Section 22 10 06 -Plumbing Piping Specialties RPZ	Approved	✓	-None

Section 22 10 06 -Plumbing Piping Specialties PRV	Approved	✓	-None
Section 22 10 06 -Plumbing Piping Specialties FD-1	Approved as Corrected	o	-Provide floor drains with vandal proof installation.
Section 22 10 06 -Plumbing Piping Specialties FCO	Approved	✓	-None
Section 22 10 06 -Plumbing Piping Specialties WCO	Approved	✓	-None
Section 22 30 00 -Plumbing Eqipment WH-1	Approved	✓	-None
Section 22 40 00 -Plumbing Fixtures WC-1	Approved As Corrected	o	- Trip lever to be installed on wide side of room per ADA requirements.
Section 22 40 00 -Plumbing Fixtures L-1	Approved	✓	-None
Section 22 40 00 -Plumbing Fixtures SS-1	Approved	✓	-None
Section 22 40 00 -Plumbing Fixtures EWC-1	Approved	✓	-None
Section 23 00 00 -Electric Unit Heater			-Refer to Mechanical HVAC Submittals for status.

✓ ✗ o ✳

Note:

Submittal Review Comment Transmittal

Date: 3/10/2023
Project Name: Phase II Restoration of the Ritz Theater
Project No.: 19114.02
Owner: Arkansas State University Three Rivers

Contractor: Clark Contractors, LLC
Attn: Terry Jacks

Submittal: 22 10 05 Plumbing Piping

☐ Accepted

☐ Accepted as Noted

☐ Revise and Resubmit

☐ Not Accepted

By: Ryan Biles, AIA

Items Specified:

A. 22 05 19 Meters & Gauges
B. 22 00 00 Firestopping
C. 22 05 53 Plumbing Identification
D. 22 07 19 Plumbing Piping Insulation
E. 22 10 05 Plumbing Piping
F. 22 10 06 Plumbing Piping Specialties
G. 22 40 00 Plumbing Fixtures
H. 23 00 00 Electric Unit Heater

Acceptance is subject to the provisions of the General Conditions of the Contract for Construction AIA Document A201.

Submittal Comments:

- **Please review for compliance with Div. 22 specifications and Plumbing Drawings and return to SCM via email**

Attachments:
23-0310 Division 22 submittals not yet reviewed by architect

By: **Ryan Biles, AIA**

J:\2019\19114.02 Ritz Theater Phase III\1800 Submittals\DIV 22\TO MEP\23-0310_RitzTheaterPh3_SUBMITTAL_Div 22_TO PETTIT.docx

RPZ

Engineering Specification

Job Name Ritz Theater

Job Location Malvern

Engineer Pettit and Pettit

Approval

Contractor Comfort Systems USA

Approval

Contractor's P.O. No.

Representative Sanders Supply

LEAD FREE*

Series LF009, LF009-FS

Reduced Pressure Zone Assemblies

¼" – 3"

Series LF009 and LF009-FS 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.

Both series feature two in-line, independent check valves, captured springs, and replaceable check seats with an intermediate relief valve. Its compact modular design facilitates easy maintenance and assembly access. Sizes ¼" to 1" shutoffs have tee handles.

Series LF009-FS assemblies of sizes ½" to 3" include an integrated flood sensor to detect excessive water discharges from the relief valve. The flood sensor relays a signal that triggers notification to qualified service 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 integrated flood sensor. Without the connection kit, the flood sensor is a passive component and will not communicate with any other device. (For more information, download RP-IS-009/009-FS.)

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†
- Lead Free* cast copper silicon alloy body construction (¼" – 2")

LF009M2-QT-FS

- Fused epoxy coated cast iron body (2½" – 3")
- Ball valve test cocks – screwdriver slotted (¼" – 2")
- Large body passages provides low pressure drop
- Compact, space saving design
- No special tools required for servicing
- Integrated sensor for flood detection (½" – 3")
- Flood alert feature activated with add-on sensor connection kit, compatible with BMS and cellular communication

NOTICE

Use of the integrated 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 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.

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.

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

†Amortek coating applied to the 2½" and 3" models only.

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 an integrated sensor 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	– Integrated sensor for flood detection (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	– Integrated sensor for flood detection
LF	– Without shutoff valves
NRS	– Non-rising stem resilient seated gate valves
OSY	– UL/FM 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.)

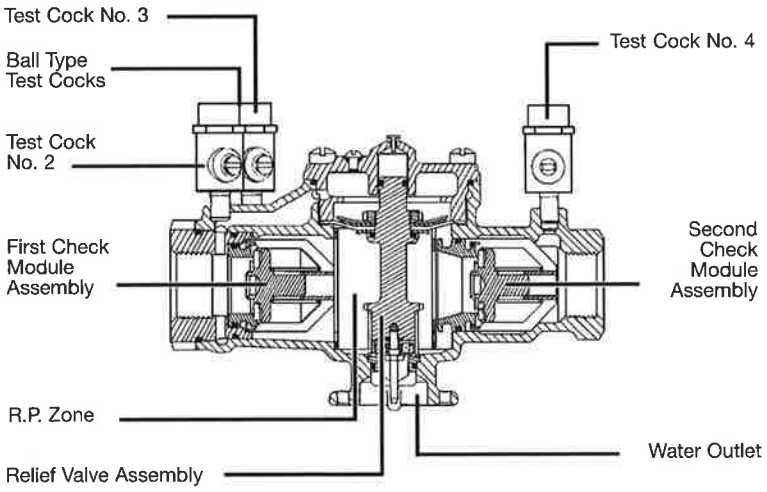
Pressure – Temperature

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

USC-FCCCHR

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

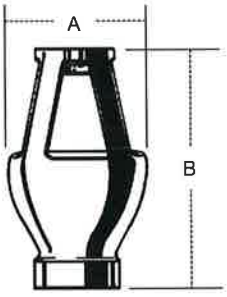
Insulated Enclosure

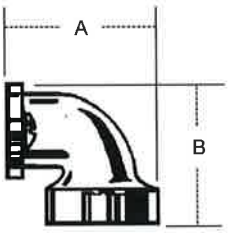
The WattsBox insulated enclosure is available for Series LF009/ LF009-FS. For more information download ES-WB at watts.com.

Air Gaps and Elbows

MODEL		DRAIN OUTLET		DIMENSIONS A		DIMENSIONS B		WEIGHT	
	For 909, 009, and 993 sizes	in.	mm	in.	mm	in.	mm	lb	kg
909AGA	¼"–½" 009, ¾" 009M2/M3	½	13	2⅜	60	3⅛	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	4⅜	111	6¾	171	3.25	1.47
909AGK	4"–6" 909, 8"–10" 909M1	3	76	6⅜	162	9⅝	244	6.25	2.83
909AGM	8"–10" 909	4	102	7⅜	187	11¼	286	15.5	7.03
909ELA	¼"–½" 009, ¾" 009M2/M3	–	–	–	–	–	–	–	–
909ELC	¾"–1" 009/909	–	–	2⅜	60	2⅜	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	–	–	–	–	–	–	–	–

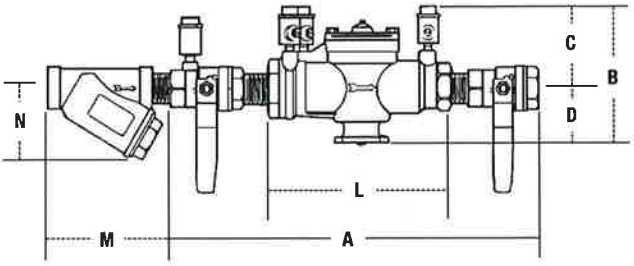
*Epoxy coated



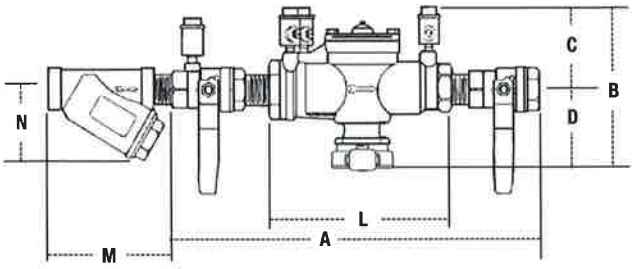


Dimensions – Weight

¼" – ⅜"

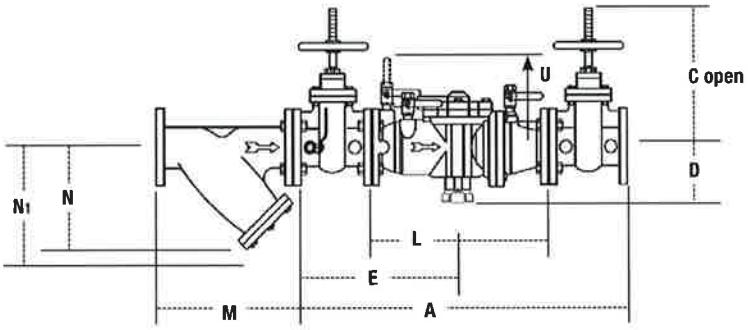


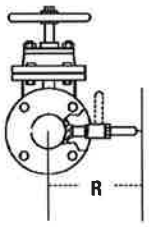
½" – 2"

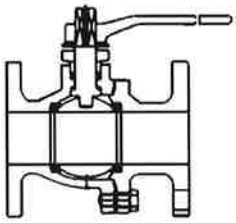


SIZE	DIMENSIONS (APPROX.)														WEIGHT	
	A		B		C		D		L		M		N			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in*	*mm*	*in*	*mm*	*lb*	*kg*
¼	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
⅜	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
½	10	250	5⅞	149	3⅜	86	2½	64	5½	140	2¾	70	2¼	57	5	2
¾	10¾	273	6¼	159	3½	89	2¾	70	6¾	171	3⅜₁₆	81	2¾	70	6	3
1	14½	368	6¼	159	3	76	3¼	83	9½	241	3¾	95	3	76	12	5
1¼	17⅜	441	6¾	169	3½	89	3¼	83	11⅜	289	4⅞₁₆	113	3½	89	15	6
1½	17⅞	454	6¾	169	3½	89	3¼	83	11⅛	283	4⅞	124	4	102	16	7
2	21⅜	543	8¾	222	4½	114	4¼	108	13½	343	5⅝₁₆	151	5	127	30	13

2½" – 3"







Watts G-4000 Series
QT – Ball Valves

STRAINER SIZE		DIMENSIONS (APPROX.)						WEIGHT	
		M		N		N1†			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
2½	65	10	254	6½	165	9¾	248	28	12.7
3	80	10⅛	257	7	178	10	254	34	15.4

†Clearance for servicing

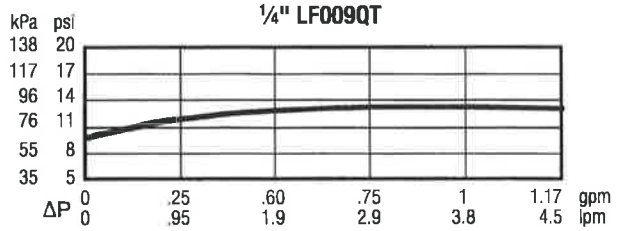
MODEL	SIZE	DIMENSIONS (APPROX.)														WEIGHT	
		A		C		D		E		L		R		U			
	in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
LF009LF	2½	—	—	—	—	5⅝	143	—	—	18⅛	460	—	—	10⅝	270	76	34.5
LF0090SY	2½	33¼	845	15⅞	403	5⅝	143	16⅜	416	18⅛	460	7¾	197	10⅝	270	166	75.3
LF009NRS	2½	33¼	845	11⅜	289	5⅝	143	16⅜	416	18⅛	460	7¾	197	10⅝	270	161	73.0
LF009LF	3	—	—	—	—	5⅝	143	—	—	18⅛	460	—	—	10⅝	270	76	34.5
LF0090SY	3	34¼	870	18½	470	5⅝	143	16⅝	422	18⅛	460	8¾	222	10⅝	270	198	89.8
LF009NRS	3	34¼	870	12¾	324	5⅝	143	16⅝	422	18⅛	460	8¾	222	10⅝	270	191	86.6

Capacity

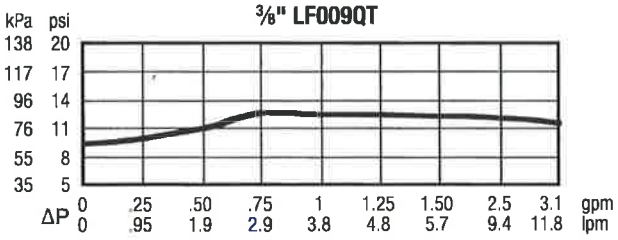
Performance as established by an independent testing laboratory.

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

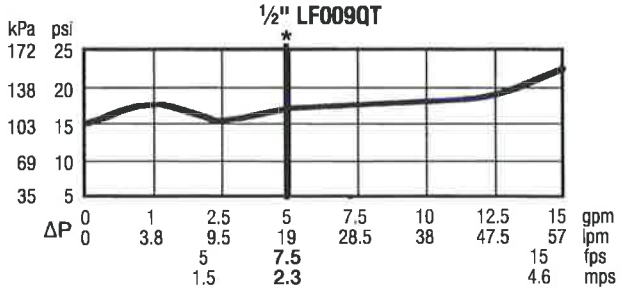
¼" LF009QT



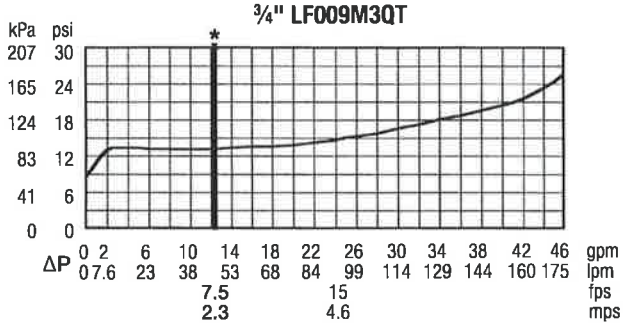
⅜" LF009QT



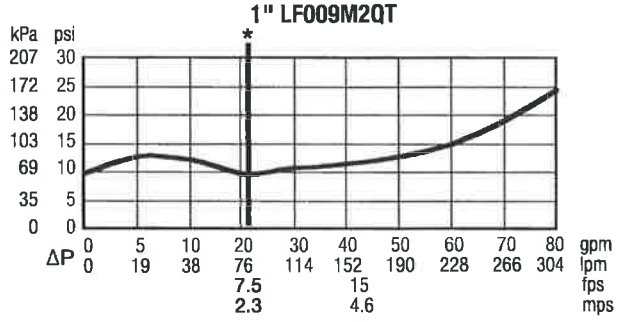
½" LF009QT



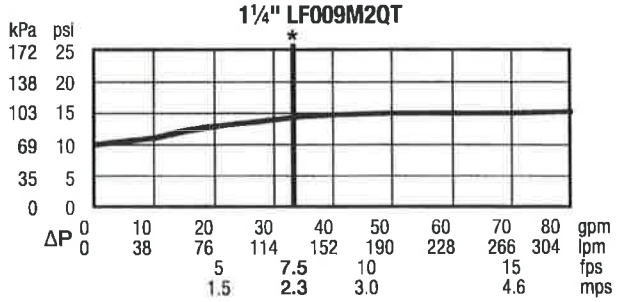
¾" LF009M3QT



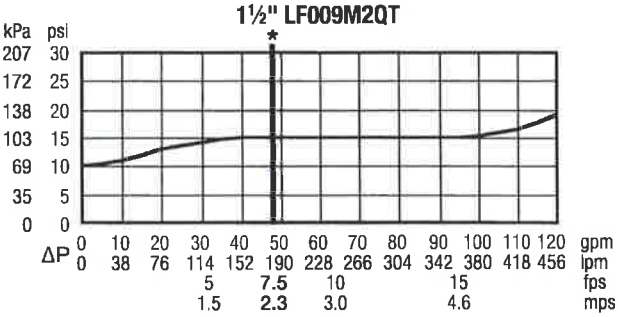
1" LF009M2QT



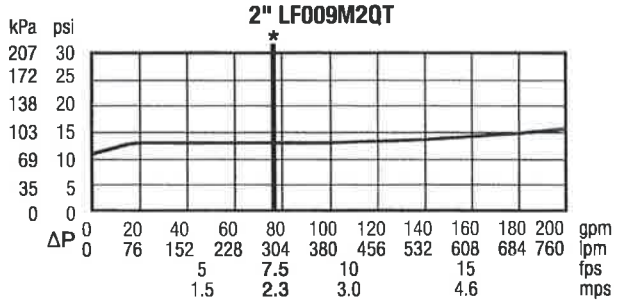
1¼" LF009M2QT



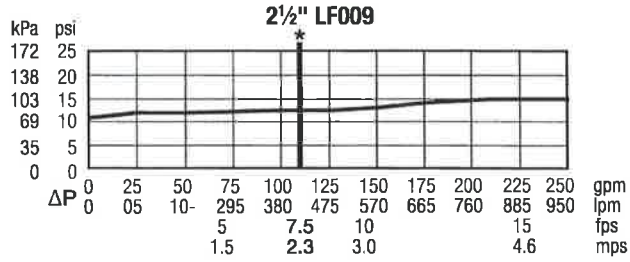
1½" LF009M2QT



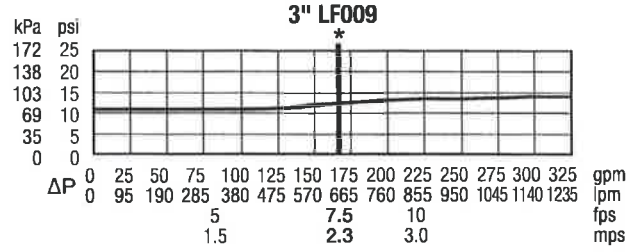
2" LF009M2QT



2½" LF009



3" LF009



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For Liquid and Steam Service

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
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

LF777SI

Sizes: ⅜" – 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 – ⅜" – 3" threaded connections
LFS777SI – ½" – 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 ⅜"-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

Pressure – Temperature

Maximum Working Pressure:

⅜"–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

NSF Certified to NSF/ANSI/CAN 61-G

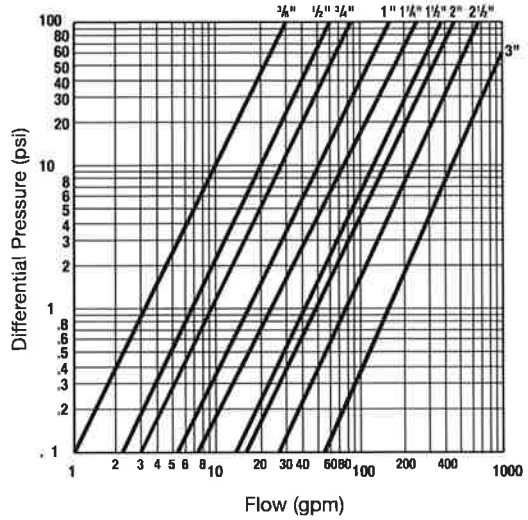
NOTICE

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.**

WATTS®

Performance Data

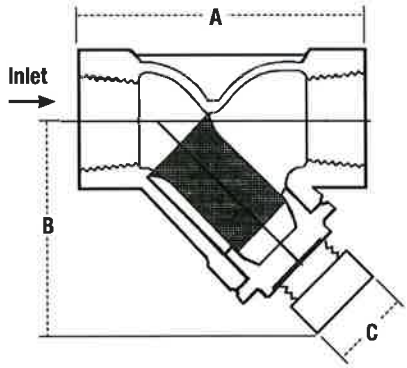


Flow curves show flows (gpm) and pressure drop (psig) through Watts Series 777SI, S777SI using standard 20 mesh screen.

Dimensions — Weights

LF777SI

SIZE	DIMENSIONS						WEIGHT	
	A		B		C			
in.	in.	mm	in.	mm	in.	mm	lbs.	kgs.
3/8	2 3/8	60	15/16	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			
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

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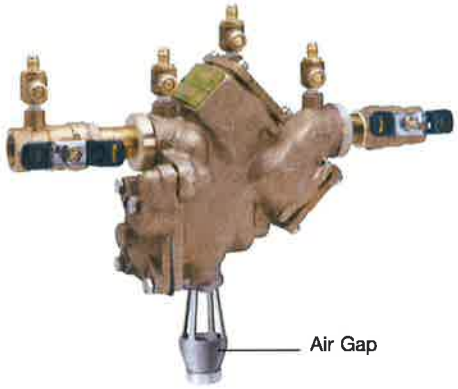
Air Gaps, Elbows and Test Cocks

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
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

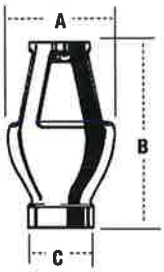


909 QT/LF909 QT

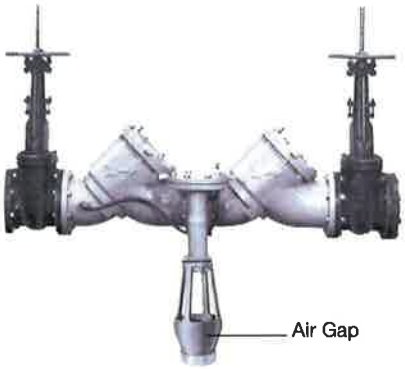
Air Gaps

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.



MODEL	ORDERING CODE	SERIES/ SIZES	DIMENSIONS A in.	A mm	B in.	B mm	C (NPT) in.	C (NPT) mm	WEIGHT lbs	WEIGHT kgs
909AGA	0881399	½" – 1½" 009/LF009 ¾" 009/LF009M2/M3 ½" – 1" 995	2⅜	60	3⅛	79	½	13	.63	.28
909AGC	0881376	¾" – 1" 009/LF009, 909/LF909 1" – 1½" 009/LF009M2 1¼" – 2" 995	3¼	83	4⅞	124	1	25	1.50	.68
909AGF	0881378	1¼" – 3" 009/LF009, 909/LF909 1¼" – 2" 009/LF009M1 2" 009/LF009M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AGK	0881385	4" – 6" 909/LF909 4" – 10" 909RPDA 8" – 10" 909/LF909M1	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
919 AGC	0881576	¾" – 1" 919/LF919	2⅜	60	3⅛	79	½	13	0.63	0.28
919 AGF	0881577	1¼" – 2" 919/LF919	4⅜	111	8½	216	2	51	3.5	1.6
957AG	0111764	2½" – 10" 957	7½	190	12	304	2	51	1.50	.68
Splash Guard										
994AGK-P	0881397	2½" – 10" 994	8	203	11¼	286	2	51	1.50	0.68
995-AG	0439190	3" – 6" 995	5	127	8	203	2	51	–	–
957AG	0111815	2½" – 10" 957	4¾	119	2½	62	–	–	.4	0.18



909 OSY/ LF909 OSY

957 QT

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®

PRV

Engineering Specification

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
Approval

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

LEAD FREE*

Series LF25AUB-Z3

Water Pressure Reducing Valves**

Sizes: ½" – 2"

Series LF25AUB-Z3 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (20.7 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The LF25AUB-Z3 features Lead Free* construction to comply with Lead Free* installation requirements. The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main supply.

Features

- Standard construction includes Z3 sealed spring cage and stainless steel corrosion resistant adjusting & cage screws
- Union inlet connection
- Integral stainless steel strainer
- Replaceable seat module
- Lead Free* cast copper silicon alloy construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure***
- High temperature resistant reinforced diaphragm for hot water

Specifications

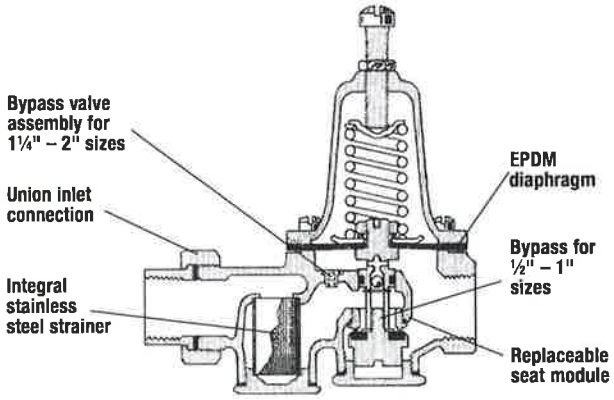
A Water Pressure Reducing Valve with integral strainer shall be installed in the water service pipe near its entrance to the building where supply main pressure exceeds 60psi (413 kPa) to reduce it to 50psi (345 kPa) or lower. The water pressure reducing valve shall be constructed using Lead Free* materials. Lead Free* regulators shall comply with state codes and standards, where applicable, requiring reduced lead content. The valve shall feature a Lead Free* cast copper silicon alloy suitable for water supply pressures up to 300psi (20.7 bar). Provision shall be made to permit the bypass flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main supply. Water Pressure Reducing Valve with built-in bypass check valves will be acceptable. Approved valve shall be listed to ASSE 1003 and IAPMO and certified to CSA B356. Valve shall be a Watts Series LF25AUB-Z3.

NOTICE

Product is for interior or exterior applications. Product should not be buried directly in the ground. For exterior applications where the valve will be situated in a vault or pit or be in contact with the ground, the valve should be installed in a meter box/vault, accessible for repair and adjustment, per local code.

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.

LF25AUB-Z3



Materials

Body:	Lead Free* copper silicon alloy
Seat:	½"–1" Replaceable engineered polymer (10% glass filled Noryl®)
	1¼"–2" Replaceable stainless steel
Integral Strainer:	Stainless steel
Diaphragm:	Reinforced EPDM with PTFE wetted surface
Valve Disc:	EPDM

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

**A water saving test program concluded that reducing the supply pressure from 80-50psi (551-345 kPa) resulted in a water savings of 30%.

***The bypass feature will not prevent the pressure relief valve from opening on the hot water supply system with pressure above 150psi (10.3 bar).

WATTS®

Pressure – Temperature

Temperature Range: 33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure: 300psi (20.7 bar)
Adjustable Reduced Pressure Range: 25–75psi (172 – 517 kPa)
Standard Reduced Pressure Setting: 50psi (345 kPa)

Options

Add Suffix

-" "	Threaded female union inlet x NPT female outlet
-S	Solder union inlet x NPT female outlet
-QC	Quick-Connect union inlet (½", ¾", 1")
-LF	Double union body less fittings (¾", 1", 1¼")
-DU	Double Union – NPT threaded union female inlet and outlet
-S-DU	Double Union –Solder union inlet and outlet
-DU-PEX	Double Union –PEX union inlet and outlet
-DU-QC	Double Union – Quick-Connect inlet and outlet (½", ¾", 1")
-DU-PR	Double Union – Press union inlet and outlet
-DU-CEF	Double Union – PEX CEF (F1960) union inlet and outlet
-G	Gauge tapping, ¼" (½", ¾"), ⅛"(1¼"-2")
-GG	Gauge tapping and 160psi (11 bar) gauge
-HP	High pressure range 75–125psi (5.2 – 8.6 bar) †
-LP	Low pressure range 10–35psi (69 – 241 kPa) †
-Z6	Water meter threaded connections and 7½" (190mm) lay length for new or existing meter box installations, For ⅝", ⅝" x ¾" or ¾" meter setters or resetters

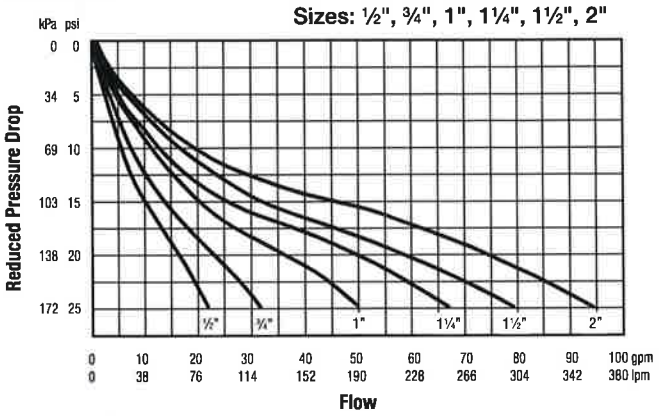
† Not available on G or GG models

Noryl® is a registered trademark of SABIC Innovative Plastics™

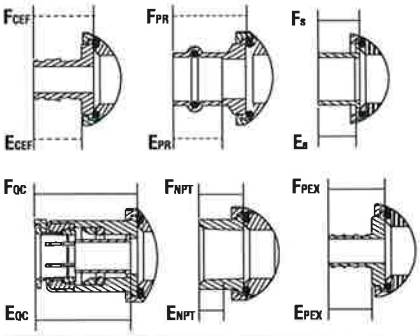
Standards

Meets requirements of ASSE Standard 1003: ANSI A112.26.2: CSA Standard B356; Southern Standard Plumbing Code and listed by IAPMO. Military Standard MIL-V-18146B Type I.

Capacity



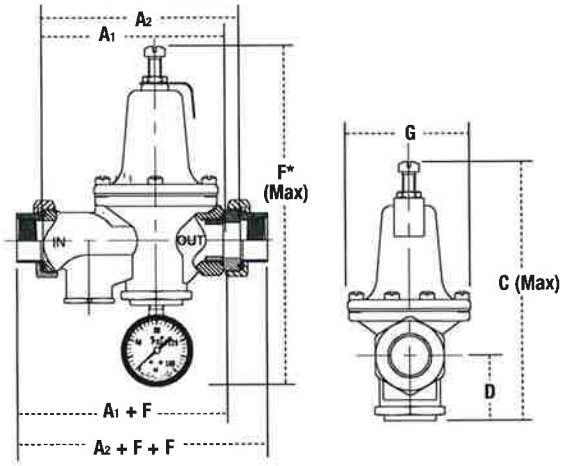
Dimensions — Weights



A1 - SINGLE UNION LF25AUB LESS FITTING
A2 - DOUBLE UNION LF25AUB LESS FITTINGS

VALVES MAY BE ORDERED WITH 0,1,OR 2 UNION CONNECTIONS USING ANY COMBINATION OF NPT, SOLDER, PEX, QUICK CONNECT, CEF (F1960), OR PRESS CONNECTIONS REQUIRED

"E" DIMENSIONS ARE APPROXIMATE ENGAGEMENT LENGTHS



SIZE	A1		A2		C		D		FΔ		G	
in	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
½	5 5/16	135	5 1/16	129	7	178	1½	38	9 7/16	240	3⅛	79
¾	5 5/16	135	5 3/16	132	7	178	1½	38	9 7/16	240	3⅛	79
1	6	152	5¾	146	8	203	1¾	44	10 7/16	265	3⅝	92
1¼	8¼	210	7 15/16	202	9	229	2⅛	54	11 7/16	291	3⅝	92
1½	8¼	210	8 1/16	205	9½	241	2⅜	60	11 15/16	303	4 1/16	103
2	8⅞	225	8 11/16	221	11¼	286	3¼	83	13 11/16	348	4¾	121

SIZE	DIMENSIONS																				WEIGHT	
	FNPT		FS		FPEX		FQC		FPR		FCEF		ENPT		ES		EPEX		EQC		EPR		ECEF			
in	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.	kgs.
½	⅝	16	½	13	⅝	16	1½	38	1¼	32	⅞	22	½	13	½	13	-	-	1⅜	35	1⅛	29	¾	19	3.5	1.6
¾	⅝	16	¾	19	⅝	16	1 1/16	43	1 7/16	37	1⅛	29	9/16	14	¾	19	⅝	16	1 9/16	40	1 3/16	30	15/16	24	3.5	1.6
1	¾	19	15/16	24	13/16	21	1¾	44	1½	38	1 7/16	37	1 1/16	17	15/16	24	13/16	21	1⅝	41	1 3/16	30	1 3/16	30	6.5	3.0
1¼	¾	19	1	25	-	-	-	-	1½	38	1¾	44	1 1/16	17	1	25	-	-	-	-	1 3/16	30	1½	38	10	4.5
1½	⅞	22	1 1/16	27	-	-	-	-	1¾	44	1 15/16	49	1 1/16	17	1 1/16	27	-	-	-	-	1⅜	35	1¾	44	10	4.5
2	15/16	24	1 15/16	33	-	-	-	-	2	51	-	-	¾	19	1 15/16	33	-	-	-	-	1 9/16	40	-	-	15	6.8

Δ Dimension includes optional gauge

Nominal dimensions are shown. Allowances must be made for manufacturing tolerances.

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FD-1

Engineering Specification

Job Name Ritz Theater
Job Location Malvern
Engineer Pettit and Pettit
Approval
Tag FD-1

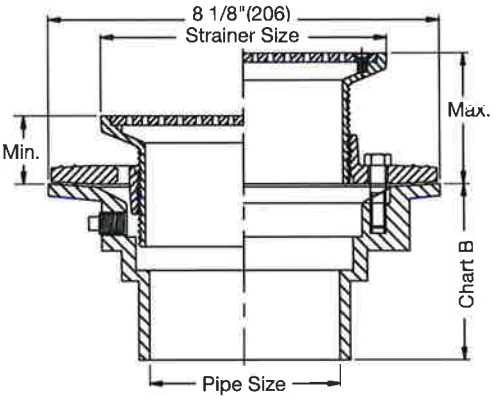
Contractor Comfort Systems USA
Approval
Contractor's P.O. No.
Representative Sanders Supply

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.



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 (M.I.)	☐
P	Push On	☑
T	Threaded Outlet	☐
X	Inside Caulk	☐

Strainer		
Suffix	Description	
A5	5"(127) Dia., Nickel Bronze	○
A6	6"(127) 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	4x9" Oval Cast Iron Funnel	☐
-G-1	4x9" Oval Nickel Bronze Funnel	☐
-SO	Side Outlet	☐

Optional Body Material		
Suffix	Description	
-60	PVC Body w/Socket Outlet (2, 3, 4" Only)	☐
-61	ABS Body w/Socket Outlet (2, 3, 4" Only)	☐

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)	11/16"(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	I Female Thread	X Inside Caulk	60/61 PVC/ ABS
2"(52)	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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Engineering Specification

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
Approval
Tag **FD-1**

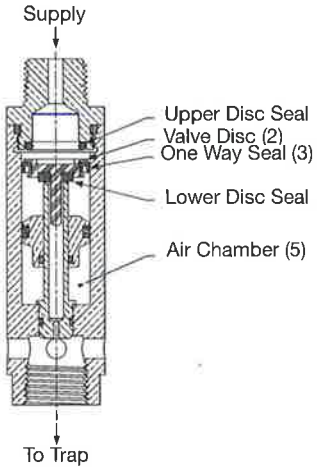
Contractor **Comfort Systems USA**
Approval
Contractor's P.O. No.
Representative **Sanders Supply**

LFTP300-DR

Trap Primer & Distribution Unit

Specification

Watts LFTP300-DR pressure drop activated lead free* brass trap primer with EPDM seals, integral air gap, and 1/2" sweat or NPT threaded connections. Operating pressure 25 psi -125 psi. Tested and approved in conformance with ASSE Standard 1018. Specify Model LFTP300-DU-DR for Distribution Unit.



Flow Chart

Inlet Pressure	25	50	75	100	125
*GPM	1.1	1.6	2.0	2.3	2.4
*LPM	4.2	6.1	7.6	8.7	9.1

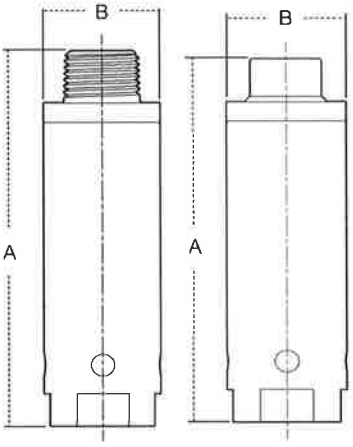
NOTICE

*Minimum cold flow required for proper trap priming.

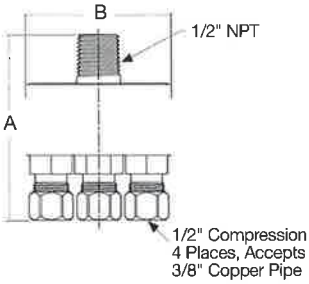
Model LFTP300T-DR

Model LFTP300S-DR

Model LFTP300-DU-DR



Model LFTP300T-DR Model LFTP300S-DR



Model LFTP300-DU-DR

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Model	Size (DN)		Dimensions A		Dimensions B	
	in.	mm	in.	mm	in.	mm
LFTP300T-DR	1/2 Threaded	15	4 5/16	110	1 1/4	32
LFTP300S-DR	1/2 Sweat	15	4 1/4	107	1 1/4	32
LFTP300-DU-DR	1/2	15	3 1/8	79	2 13/16	71

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Canada: T: (888) 208-8927 • F: (905) 481-2316 • Watts.ca
Latin America: T: (52) 55-4122-0138 • Watts.com

FCO

Engineering Specification

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
Approval
Tag **FCO**

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.

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

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

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

Optional Body Material (NH Only)		
Suffix	Description	
-60	PVC Body w/Poly Plug	☐
-61	ABS Body w/Poly Plug	☐

Load Rating
MD

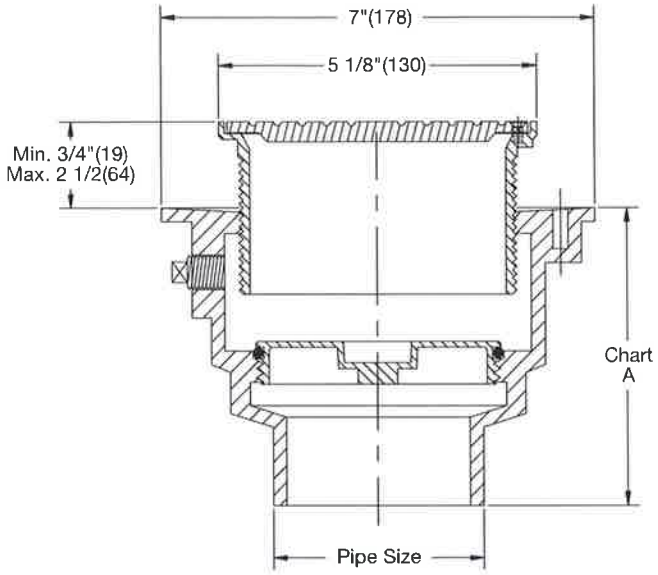

Chart A

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.

NOTICE

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

WCO

Engineering Specification

Job Name **Ritz Theater**
Job Location **Malvern**
Engineer **Pettit and Pettit**
Approval
Tag **WCO**

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

CO-380-RD

Wall Cleanout with Brass Plug and Stainless Steel Cover

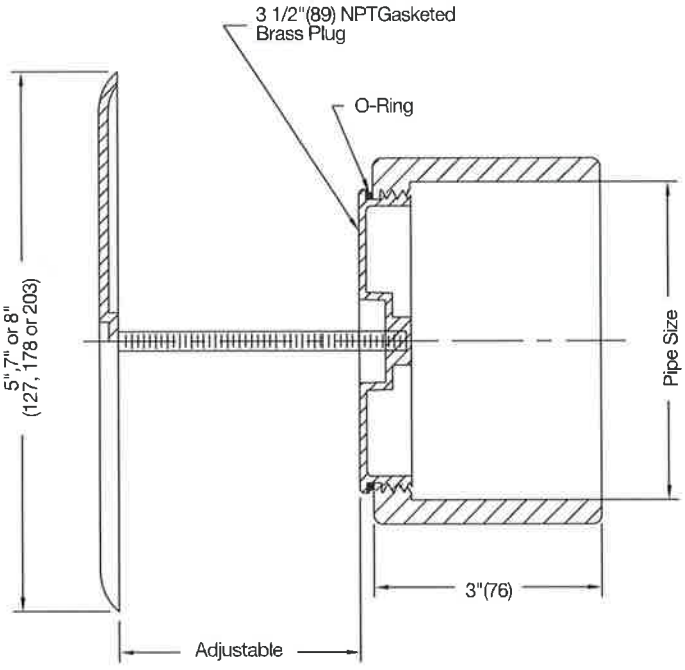
Specification

Watts CO-380-RD cast iron wall cleanout with gasketed brass countersunk plug, stainless steel access cover, vandal proof stainless steel screw, and no hub connection.

PIPE SIZE	COVER SIZE
2"(51)	5"(127)
3"(76)	7"(178)
4"(102)	7"(178)
6"(152)	8"(203)

Load Rating
*MD

* The load classifications are in accordance with the American National Standards ASME A112.21.1M
ASME Ratings are as follows:
MD - Safe Live Load 2000-4999 lbs.(900-2250kg)
The above categories are given as a guide only.
Please consult factory.



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

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