


# Installation, Maintenance, & Repair Series 709/LF709/709DCDA

## Double Check Valve Assemblies Double Check Detector Assemblies

Sizes: 3/4" – 10" (20-250mm)

**⚠ 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.**

**THINK SAFETY FIRST**

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.

**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.

**NOTICE**

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

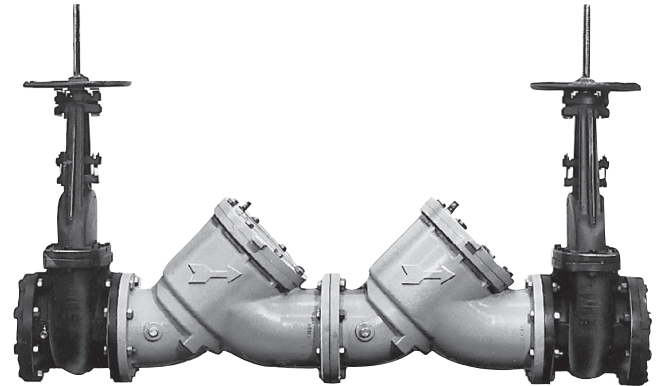
Its important that this device be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. If installed on a fire sprinkler system, all mechanical checks, such as alarm checks and backflow preventers, should be flow tested and inspected internally in accordance with NFPA 13 and NFPA 25.

**Testing**

For field testing procedure, reference IS-TK-DL, IS-TK-7, IS-TK-9A, IS-TK-99E AND IS-TK-99D at [www.watts.com](http://www.watts.com)

For other repair kits and service parts, reference PL-RP-BPD at [www.watts.com](http://www.watts.com)

For technical assistance, contact your local Watts representative.



8" (200mm) 709 OS&Y shown

## Installation Instructions

Watts Series 709 and LF709 Double Check Valve may be installed in either a vertical or horizontal position.

Install valve inline with arrow on valve body pointing in the direction of flow.

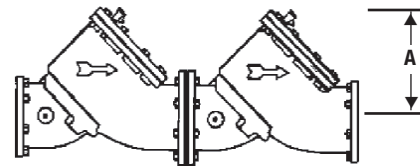
They should always be installed in an accessible location to facilitate testing and servicing.

Pipe lines should be thoroughly flushed to remove foreign material before installing the unit. A strainer should be installed as shown, ahead of backflow preventers to prevent discs from unnecessary fouling.

**⚠ CAUTION**

Do not install with strainer when backflow preventer is used on seldom-used water lines which are called upon during emergencies, such as fire sprinkler lines, etc.

It is important that Series 709 and LF709 be tested periodically in compliance with local codes, but at least once a year or more often, depending upon system conditions. (Reference IS-TK-7 at [www.watts.com](http://www.watts.com)).



### Clearance Required for Servicing

SIZE		DIMENSION	
		A	
in.	mm	in.	mm
2 1/2" – 3	65-80	10	250
4	100	15	380
6	150	15	380
8	200	23	580
10	250	25	640



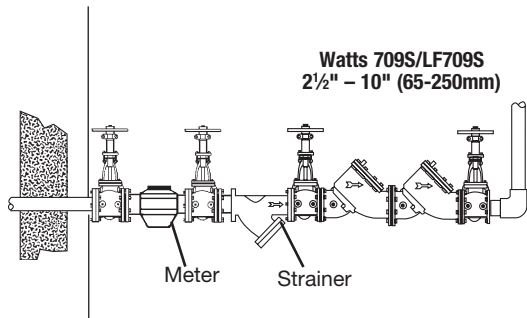
# Installation Instructions

## Series 709/LF709/709DCDA

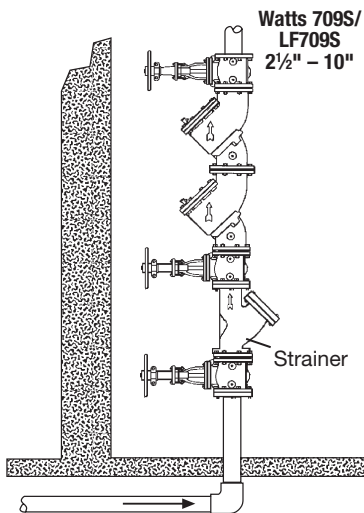
### Indoor Installations

For indoor installations, it is important that the valve be easily accessible to facilitate testing and servicing.

#### Horizontal



#### Vertical

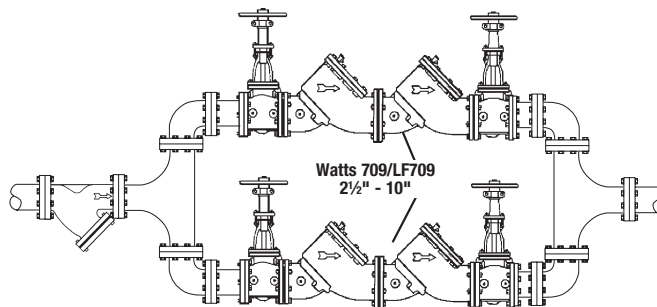


For indoor installations, it is important that the valve be easily accessible to facilitate testing and servicing.

### Parallel Installations

Two or more Series 709 and LF709 devices may be piped in parallel (where approved) to serve a large supply pipe main. This type of installation is employed whenever it is vital to maintain a continuous supply of water where interruptions for testing and servicing would be unacceptable. It also has the advantage of providing increased capacity where needed beyond that provided by a single valve.

For two valve installations the total capacity of the devices should equal or exceed that required by the system. Capacity table shows the size of the Series 709 and LF709 devices required to meet a certain capacity. The quantity of devices used in parallel should be determined by the engineers judgement based on the operating conditions of a specific installation.



#### Capacity Required for System

450 GPM	640 GPM	1000 GPM	2000 GPM	3000 GPM	5000 GPM
Two 2 1/2" Devices	Two 3" Devices	Two 4" Devices	Two 6" Devices	Two 8" Devices	Two 10" Devices

Table shows total capacity provided with dual valve installations of various sizes.

#### NOTICE

### Outdoor Installations

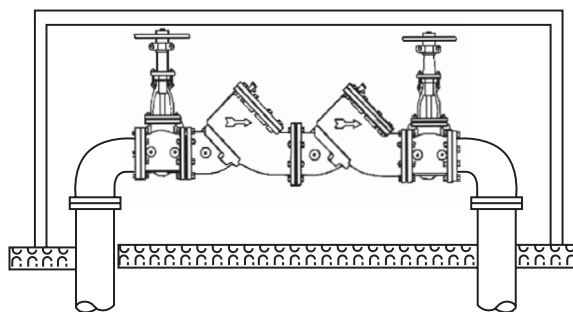
In area where freezing conditions do not occur, Series 709 and LF709 can be installed outside of a building. The most satisfactory installation is above ground and should be installed in this manner whenever possible.

It is generally recommended that backflow preventers never be placed in pits unless absolutely necessary and then only when approved by local codes. In such cases, a modified pit installation is preferred or an above ground insulated enclosure.

#### WattsBox Insulated Enclosure Available in Aluminum or Fiberglass

For more information, reference ES-WB at [www.watts.com](http://www.watts.com)

#### Above Ground Insulated Enclosure



# Service, Replacement Parts and Maintenance

## Series 709/LF709/709DCDA

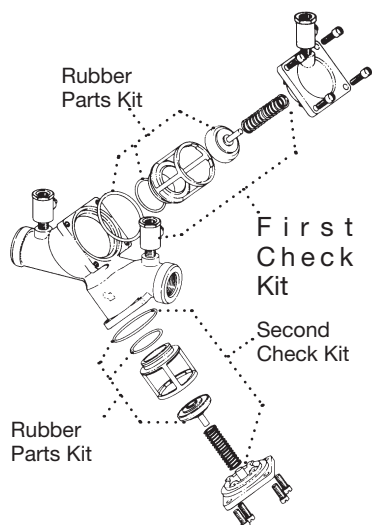
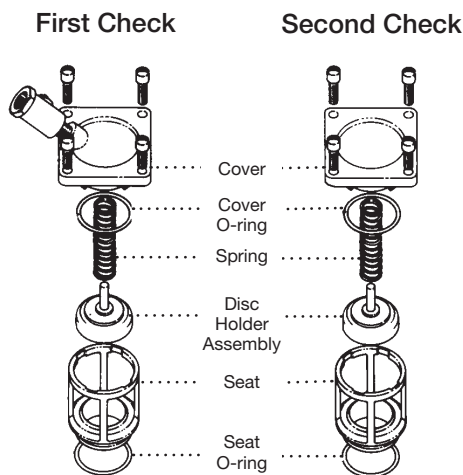
### 3/4" – 2" (20-50mm)

1. After removing the cover screws, the check comes out with the cover.
2. Holding the check Valve module in both hands, rotate the assembly 1/4 turn. This will disengage the disc and spring assembly into individual components. The disc assembly may be cleaned or replaced. O-rings should be cleaned or replaced as necessary and lightly greased with the FDA approved silicon grease. Reassemble the check valve module in the reverse order.

#### NOTICE

The springs of the first and second check valves are interchangeable.

(Before servicing, be certain water is turned off or shutoff valves are closed)



For repair kits and parts, refer to Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD on [www.watts.com](http://www.watts.com)

### 2 1/2" – 10" (65-250mm) and 3" – 10" (80-250mm)

1. Remove hatch cover bolts.

#### NOTICE

The 709 and LF709 is designed so that, when the bolts are backed off 1/2", all the spring load is released from the cover and retained by the check module.

#### CAUTION

Be sure to verify this before removing all the bolts.

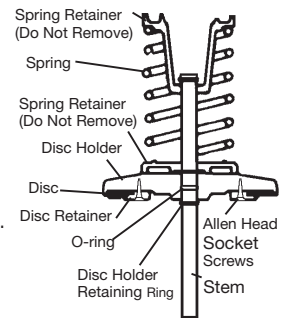
2. Lift check valve module straight out, taking care not to hit and damage seat ring.
3. The seat ring may be removed and replaced by pulling out the two wire retainers. The wire retainers are 10" long. One is drawn out clockwise and the other is drawn out counter-clockwise.
4. With the retainer wires removed, the seat ring can be lifted straight up and removed.

#### CAUTION

The check valve disc and spring assembly are in compression. The spring load is captured by the two spring retainers and the stem. The spring retainers are not to be removed for servicing. If there is a need to replace the spring, spring retainer or stem, replace the disc and spring assembly. If the disc holder has been damaged by freezing or severe water hammer, it can be replaced in the field. Remove the disc holder retaining ring and slide the disc holder off the stem. Remove the o-ring from the stem and replace with a new one. Apply grease to the o-ring and slide the new disc holder into place. Re-install the retaining ring.

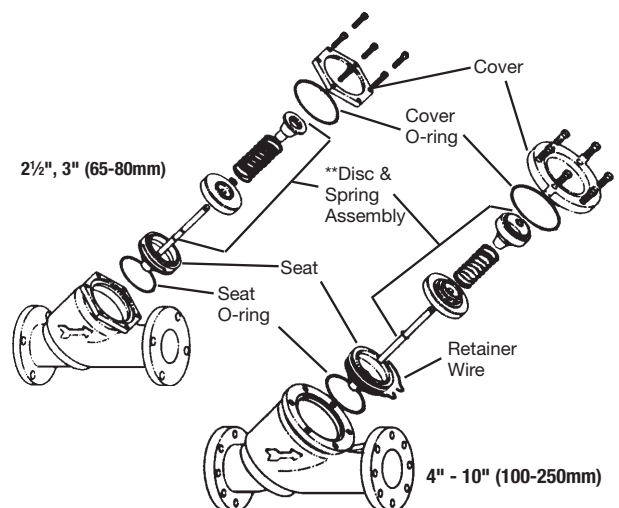
#### NOTICE

The disc holder should not be removed when servicing only the disc, remove allen head screws holding the disc retaining plate and replace disc.



#### WARNING

\*\*Spring assembly is factory assembled. **DO NOT DISASSEMBLE.**



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

# Troubleshooting Guide — Series 709/LF709/709DCDA

Symptom	Cause	Solution
1. Check valve fails to hold 1.0 PSID minimum	a. Debris on check disc sealing surface  b. Leaking gate valve  c. Damaged seat disc or seat o-ring  d. Damaged guide holding check open  e. Weak or broken spring	Disassemble and clean  Disassemble and clean or repair  Disassemble and replace  Disassemble and clean or replace  Disassemble and replace spring
2. Chatter during flow conditions	a. Worn, damaged or defective guide	Disassemble and repair or replace guide
3. Low flows passing through mainline valve	a. Mainline check fouled  b. Meter strainer plugged  c. Damaged mainline seat disc or seat  d. Broken mainline spring	Disassemble and clean  Disassemble and clean  Disassemble and replace  Disassemble and replace

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.  
**For more information:** [www.watts.com/prop65](http://www.watts.com/prop65)

**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.**



A Watts Water Technologies Company



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