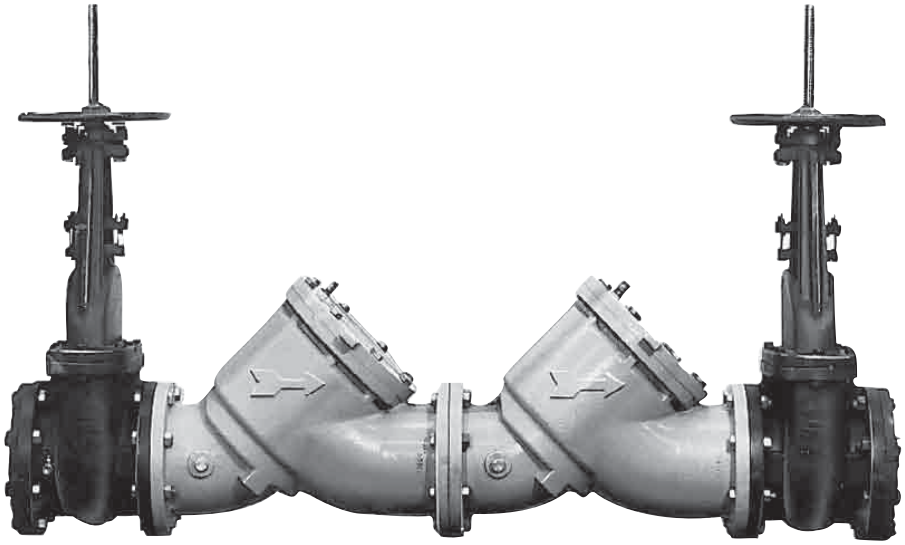
Installation, Maintenance, & Repair Series 709/LF709/709DCDA

Double Check Valve Assemblies
Double Check Detector Assemblies

Sizes: ¾" – 10" (20-250mm)



8" (200mm) 709 OS&Y shown

⚠ WARNING

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product. **FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS COULD RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.** Watts is not responsible for damages resulting from improper installation and/or maintenance.

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.

Replace internal components every 5 years.

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.

NOTE: 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, send for IS-TK-DL, IS-TK-7, IS-TK-9A, IS-TK-99E AND IS-TK-99D.

For other repair kits and service parts, send for PL-RP-BPD.

For technical assistance, contact your local Watts representative.

WATTS®

Installation Instructions

Series 709/LF709/709DCDA

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.

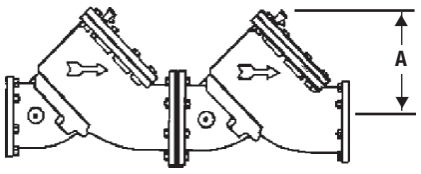
CAUTION:

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. (Send for IS-TK-7).

Indoor Installations

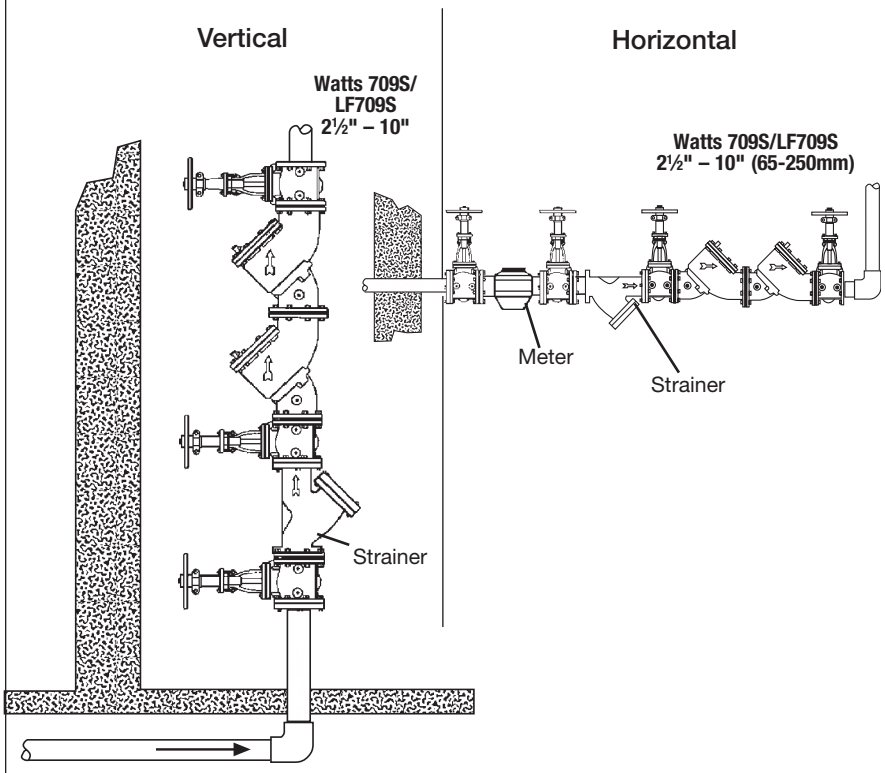
For indoor installations, it is important that the valve be easily accessible to facilitate testing and servicing.



Clearance Required for Servicing

	mm	A	mm
2½" – 3"	65-80	10"	250
4	100	15"	380
6	150	15"	380
8	200	23"	580
10	250	25"	640

Indoor Installations



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

Installation Instructions (cont.)

Series 709/LF709/709DCDA

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.

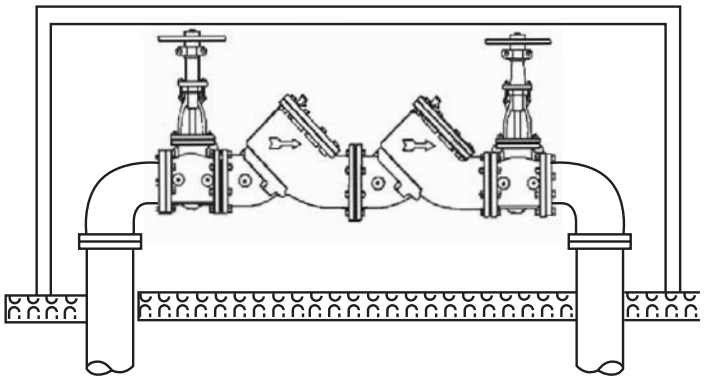
It is generally recommended that backflow preventers never be placed in pits unless absolutely necessary and then only when approved by local codes. In such cases, a modified pit installation is preferred or an above ground insulated enclosure.

WattsBox Insulated Enclosure Available in Aluminum or Fiberglass

For more information, send for ES-WB.

Outdoor Installations

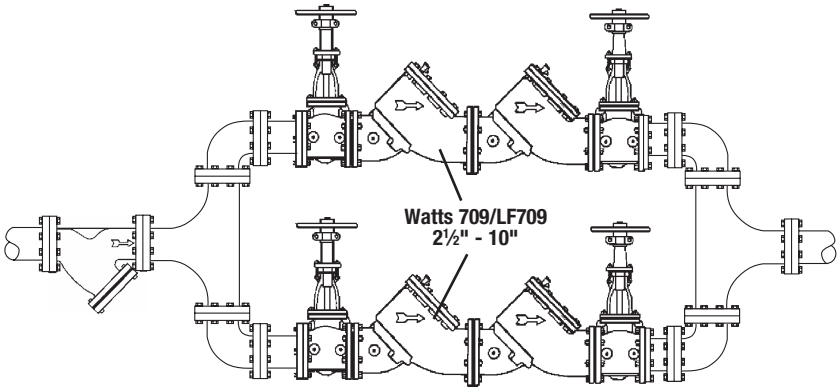
Above Ground Insulated Enclosure



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	640GPM	1000GPM	2000GPM	3000GPM	5000GPM
Two 2½" 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.

Service, Replacement Parts and Maintenance

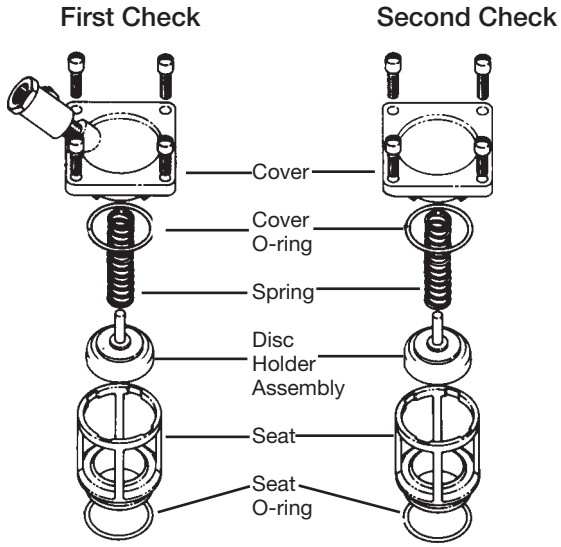
Series 709/LF709/709DCDA

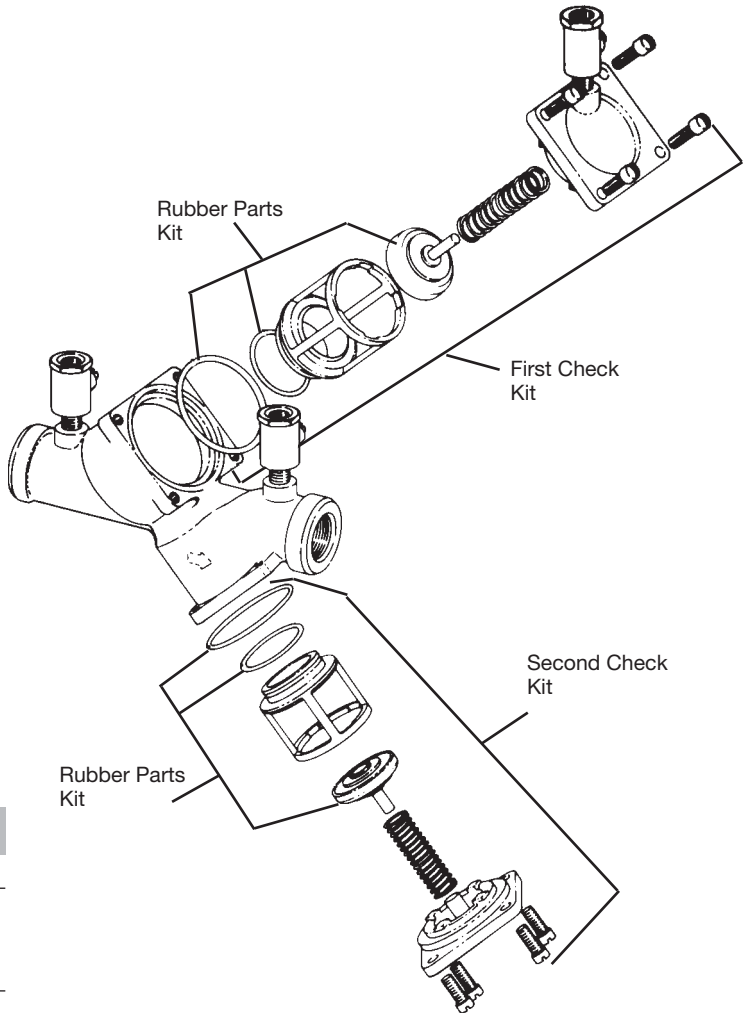
3/4" – 2" (20-50mm)

1. After removing the cover screw, the check comes out with the cover.
2. Holding the check Valve module in both hands, rotate the assembly ¼ 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.

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

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





Repair Kits

**Stainless Steel

3/4" – 2" (20 - 50 mm)

ORDERING CODE	KIT NO.	SIZE in.	SIZE mm
First or Second Check Kits:			
0887150	RK 709 CK4	¾ – 1	20-25
0887151	RK 709 CK4	1½ – 2	32-50
0887154	RK 709 CK4SS**	¾ – 1	20-25
0887155	RK 709 CK4SS**	1½ – 2	32-50
Kit includes: Disc assembly, Spring, Seat, Seat O-ring and Cover O-ring.			
Complete Rubber Parts:			
LEAD FREE* 0887152	RK 709 RT	¾ – 1	20-25
0887153	RK 709 RT	1½ – 2	32-50
Kit includes: Diaphragm, Disc assembly, Seat O-ring and Cover O-ring.			
Seat Kits:			
0887160	RK 709 S4	¾ – 1	20-25
0887161	RK 709 S4	1½ – 2	32-50
0887162	RK 709 S4SS**	¾ – 1	20-25
0887163	RK 709 S4SS**	1½ – 2	32-50
Kit includes: Seat Kits			
Cover Kits:			
0887156	RK 709 C1	¾ – 1	20-25
0887157	RK 709 C1	1½ – 2	32-50
0887158	RK 709 C2	¾ – 1	20-25
0887159	RK 709 C2	1½ – 2	32-50
Kit includes: Cover and Cover O-ring.			

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

Service, Replacement Parts and Maintenance

Series 709/LF709/709DCDA

2½" – 10" (65-250mm)

1. Remove hatch cover bolts. **NOTE:** 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.

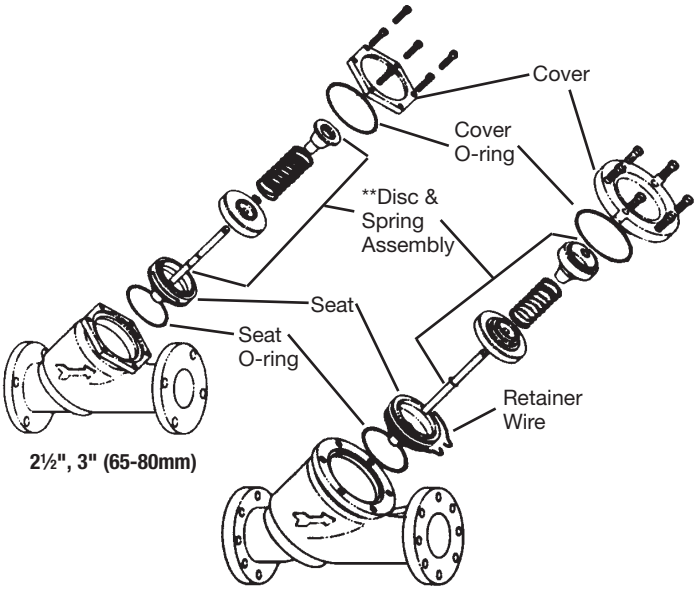
2. Lift check valve module straight out, taking care not to hit and damage seat ring.
3. The seat ring may be removed and replaced by pulling out the two wire retainers. The wire retainers are 10" long. One is drawn out clockwise and the other is drawn out counter-clockwise.
4. With the retainer wires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



2½", 3" (65-80mm)

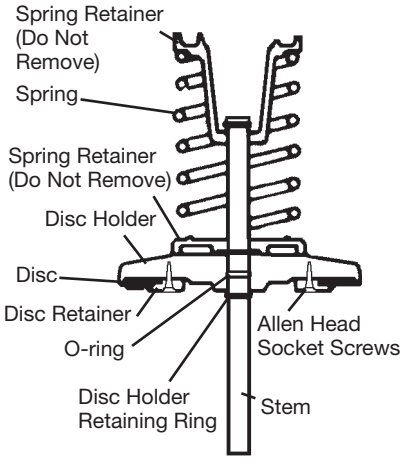
***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Repair Kits 709/LF709

2½" – 10" (65-250mm)

ORDERING CODE	KIT NO.	SIZE in.	SIZE mm
First or Second Check Kits:			
0887900	RK 709 CK4	2½ – 3	65-80
0887901	RK 709 CK4	4	100
0887902	RK 709 CK4	6	150
0887903	RK 709 CK4	8	200
0887904	RK 709 CK4	10	250
LEAD FREE* 0794014	LFRK 709 CK4	2½ – 3	65-80
0794015	LFRK 709 CK4	4	100
0794016	LFRK 709 CK4	6	150
0794017	LFRK 709 CK4	8	200
0794018	LFRK 709 CK4	10	250
Kit includes: Disc & spring assembly and Cover O-ring.			
Rubber Parts (for one check):			
LEAD FREE* 0887905	RK 709 RC4	2½ – 3	65-80
0887906	RK 709 RC4	4	100
0887907	RK 709 RC4	6	150
0887908	RK 709 RC4	8	200
0887909	RK 709 RC4	10	250
Kit includes: Disc and Cover O-ring.			
Complete Rubber Parts:			
LEAD FREE* 0887915	RK 709 RT	2½ – 3	65-80
0887916	RK 709 RT	4	100
0887917	RK 709 RT	6	150
0887918	RK 709 RT	8	200
0887919	RK 709 RT	10	250
Kit includes: Two discs and Two Cover O-rings.			
Seat Kits:			
0887910	RK 709S	2½ – 3	65-80
0887911	RK 709S	4	100
0887912	RK 709S	6	150
0887913	RK 709S	8	200
0887914	RK 709S	10	250
LEAD FREE* 0794019	LFRK 709S	2½ – 3	65-80
0794020	LFRK 709S	4	100
0794021	LFRK 709S	6	150
0794022	LFRK 709S	8	200
0794023	LFRK 709S	10	250
Kit includes: Seat, Seat O-ring, Retainer Wire and Cover O-ring.			
Cover Kits:			
LEAD FREE* 0887920	RK 709 C	2½ – 3	65-80
0887921	RK 709 C	4	100
0887922	RK 709 C	6	150
0887923	RK 709 C	8	200
0887924	RK 709 C	10	250
Kit includes: Cover and Cover O-ring.			

4" - 10" (100-250mm)

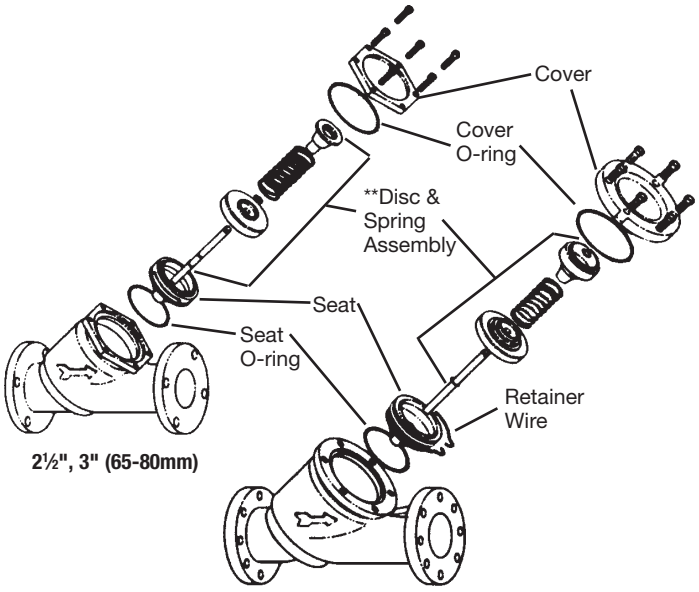


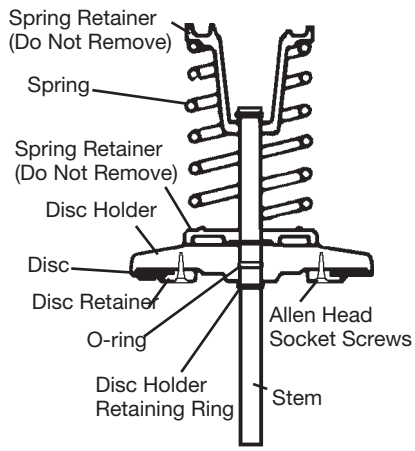
Service, Replacement Parts and Maintenance

Series 709/LF709/709DCDA

3" – 10" (80-250mm)

****WARNING:**
Spring assembly is factory assembled. DO NOT DISASSEMBLE.





Repair Kits 709DCDA

3" – 10" (80-250mm)

ORDERING CODE	KIT NO.	SIZE in.	SIZE mm
First Check Kits:			
0887930	RK 709DCDA CK1	3	80
0887931	RK 709DCDA CK1	4	100
0887932	RK 709DCDA CK1	6	150
0887933	RK 709DCDA CK1	8	200
0887934	RK 709DCDA CK1	10	250
Second Check Kits:			
0887935	RK 709DCDA CK2	3	80
0887936	RK 709DCDA CK2	4	100
0887937	RK 709DCDA CK2	6	150
0887938	RK 709DCDA CK2	8	200
0887939	RK 709DCDA CK2	10	250
Kit includes: Disc assembly, Spring assembly and Cover O-ring.			
Rubber Parts (for one check):			
LEAD FREE* 0887940	RK 709DCDA RC4	3	80
LEAD FREE* 0887941	RK 709DCDA RC4	4	100
LEAD FREE* 0887942	RK 709DCDA RC4	6	150
LEAD FREE* 0887943	RK 709DCDA RC4	8	200
LEAD FREE* 0887944	RK 709DCDA RC4	10	250
Kit includes: Disc and Cover O-ring.			
Seat Kits:			
0887945	RK 709DCDA S	3	80
0887946	RK 709DCDA S	4	100
0887947	RK 709DCDA S	6	150
0887948	RK 709DCDA S	8	200
0887949	RK 709DCDA S	10	250
Kit includes: Seat, Retainer Wire and Cover O-ring.			
Cover Kits:			
LEAD FREE* 0887950	RK 709DCDA C	3	80
LEAD FREE* 0887951	RK 709DCDA C	4	100
LEAD FREE* 0887952	RK 709DCDA C	6	150
LEAD FREE* 0887953	RK 709DCDA C	8	200
LEAD FREE* 0887954	RK 709DCDA C	10	250
Kit includes: Cover and Cover O-ring.			
Complete Rubber Parts:			
0887956	RK 709DCDA RT	3	80
0887957	RK 709DCDA RT	4	100
0887958	RK 709DCDA RT	6	150
0887959	RK 709DCDA RT	8	200
0887960	RK 709DCDA RT	10	250
Kit includes: Two Discs and Two Cover O-rings.			

***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	Disassemble and clean
	b. Leaking gate valve	Disassemble and clean or repair
	c. Damaged seat disc or seat o-ring	Disassemble and replace
	d. Damaged guide holding check open	Disassemble and clean or replace
	e. Weak or broken spring	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	Disassemble and clean
	b. Meter strainer plugged	Disassemble and clean
	c. Damaged mainline seat disc or seat	Disassemble and replace
	d. Broken mainline spring	Disassemble and replace

For additional cross-connection control information, send for F-50 brochure.

CALIFORNIA PROPOSITION 65 WARNING

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

(California law requires this warning to be given to customers in the State of California.)

For more information: 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.**

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