

WATTS

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Series 700

DOUBLE CHECK VALVE ASSEMBLY

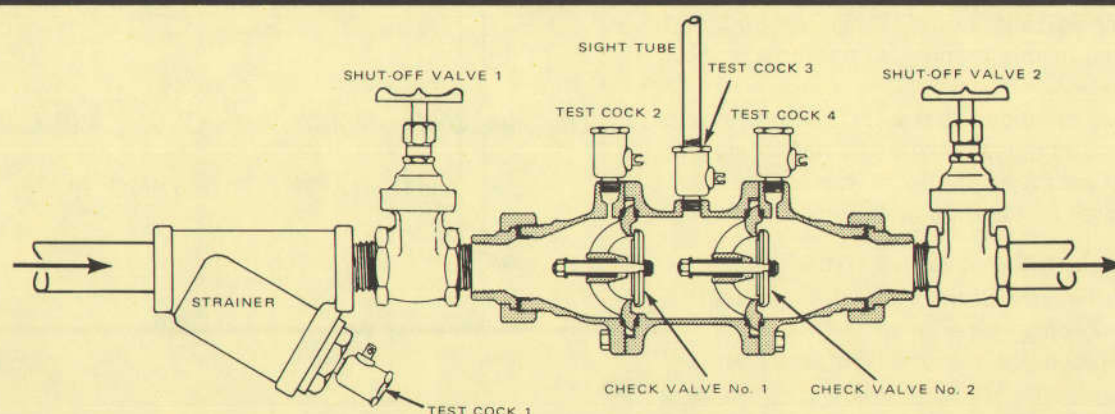
SIZES - 3/4" thru 4"

Approved by I.A.P.M.O. (sizes 3/4" thru 2")

CROSS CONNECTION CONTROL

- **INSTALLATION**
- **FIELD TESTING**
- **MAINTENANCE**

Field Testing Procedure



NOTE: Leaky shut-off valves will give erroneous test results and should be verified before testing the check valves.

A. Test of Check Valve No. 1

PURPOSE:

To test valve No. 1 for tightness against reverse flow.

REQUIREMENT:

Valve must be tight against reverse flow under all pressure differentials.

STEPS:

1. Install sight tube in Test Cock 3. Open Test Cock 3 and allow water to fill the tube to the top. Use a tube length of at least 42 inches. This will provide a head of 1 1/2 PSI. Close Test Cock 3.
2. Close Shut-off Valve No. 2.
3. Close Shut-off Valve No. 1.
4. Open Test Cock 3.
5. Open Test Cock 2. The water should maintain its position in the sight tube. If it slowly drops and runs out through Test Cock 2, the check valve No. 1 is leaking and must be serviced.

B. Test of Check Valve No. 2

PURPOSE:

To test check valve No. 2 for tightness against reverse flow.

REQUIREMENT:

Valve must be tight against reverse flow under all pressure differentials.

STEPS:

1. Install sight tube in Test Cock 4 and fill with water as before.
2. Open Test Cock 4.
3. Open Test Cock 3. The water should maintain its position in the sight tube. If it slowly drops and runs out through Test Cock 3, check valve No. 2 is leaking and must be serviced.

WATTS REGULATOR COMPANY

TORONTO, CANADA

Manufacturers of the largest and most complete line of plumbing and heating safety valves and controls.

LAWRENCE, MASS., U.S.A.

SOESTDUINEN, THE NETHERLANDS

Basic Installation Instructions

A. WATTS Series 700 Double Check Valve may be installed in either a vertical or horizontal position. If installed vertically, the preferable direction of flow would be vertically "down".

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

C. 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 protect discs from unnecessary fouling.

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

D. It is important that Series 700 be tested periodically in compliance with local codes, but at least once a year or more often depending upon system conditions.

E. For indoor installations, it is important that the device be easily accessible to facilitate testing and servicing. Fig. 1.

F. In an area where freezing conditions do **not** occur, Series 700 can be installed outside of a building. The most satisfactory installation is above ground and should be installed in this manner whenever possible. Fig. 2.

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.

G. An optional installation of Series 700 is the use of two or more smaller size devices piped in parallel to serve a larger supply pipe main. This type of installation is employed whenever it is vital to maintain a continuous supply of water and 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 and permits testing or servicing of an individual valve without shutting down the complete line.

For a two-valve installation as shown, the total capacity of the devices should equal or exceed that required by the system. See table 1.

TABLE 1

Table shows number of smaller size devices of same size required to meet capacity of a single large valve.

CAPACITY REQUIRED FOR SYSTEM

50 GPM	100 GPM	150 GPM	200 GPM	250 GPM	350 GPM	450 GPM	640 GPM	1000 GPM
Two ¾" Devices	Two 1" Devices	Two 1¼" Devices	Two 1½" Devices	Two 1½" Devices	Two 2" Devices	Two 2½" Devices	Two 3" Devices	Two 4" Devices

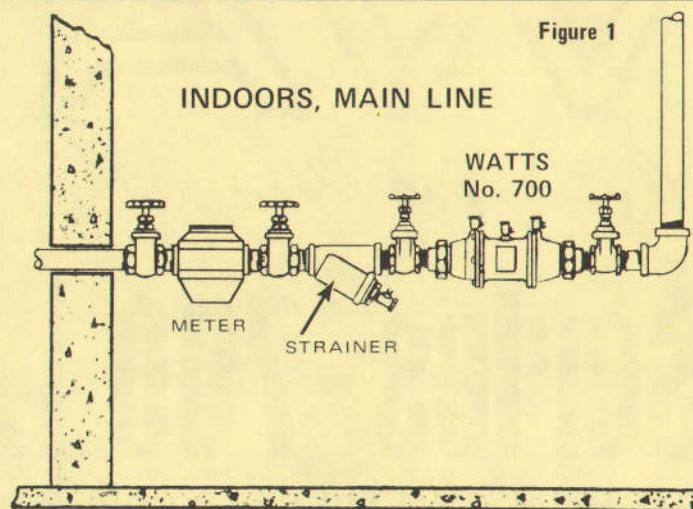


Figure 1

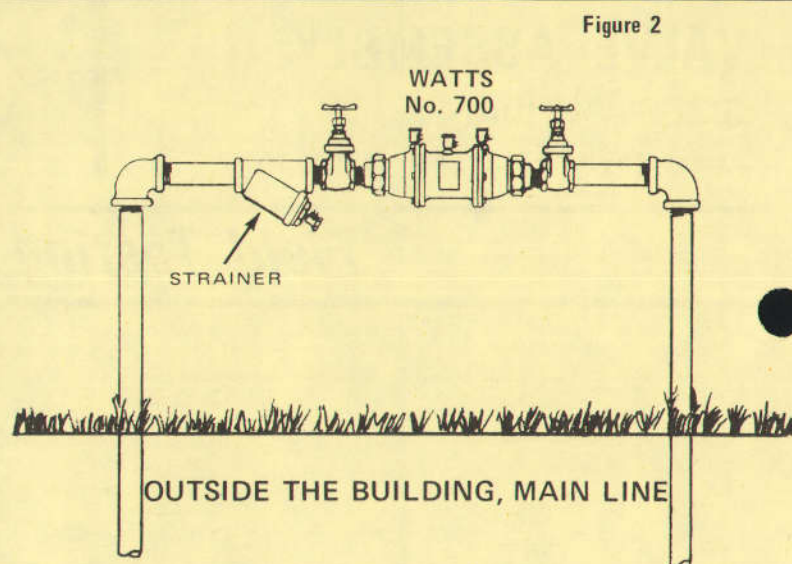


Figure 2

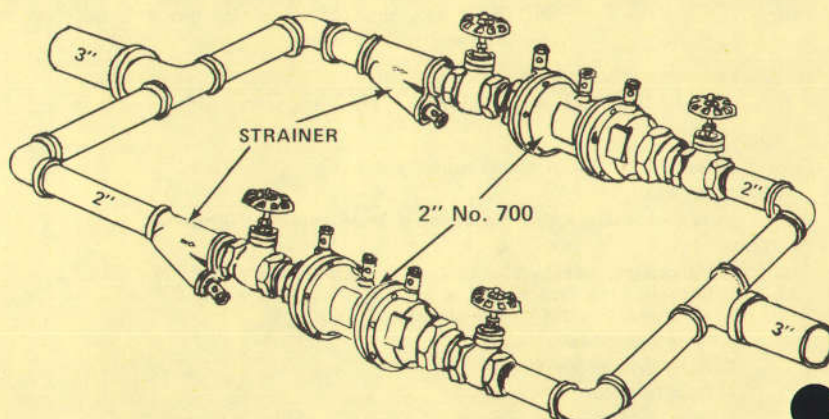
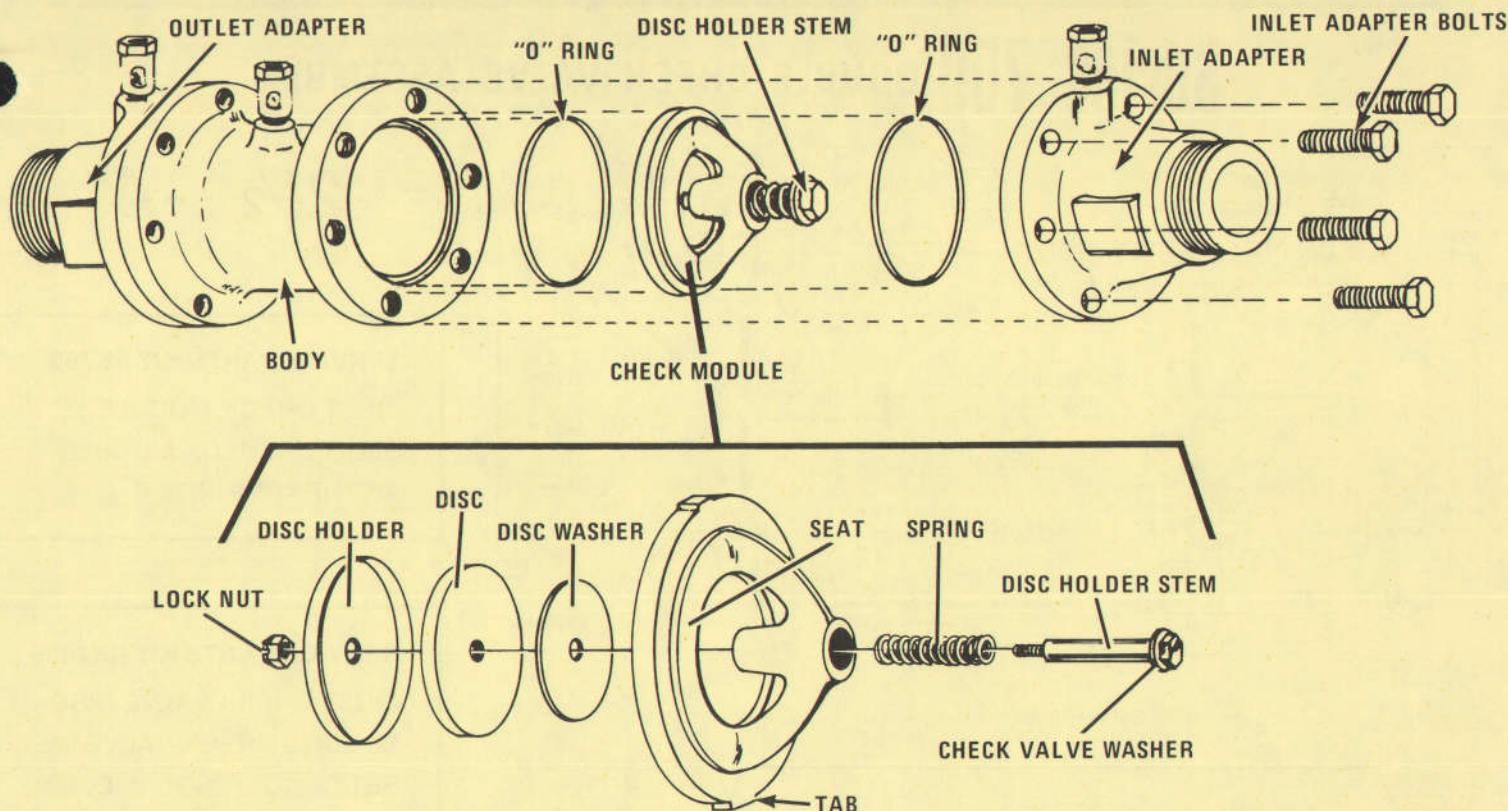


Figure 3



Sizes - $\frac{3}{4}$ " thru 2"

Service, Replacement Parts and Maintenance

DISASSEMBLY OF No. 700:

1. Remove the No. 700 head from the line (union nuts and adapters remain in the line).
2. Remove inlet adapter bolts.
3. Remove the adapter and "O" ring. Lift out the first check module and "O" ring.
4. Disc can be exposed for cleaning by maintaining pressure on disc holder stem to overcome spring preload.
5. To remove the outlet adapter and second check assembly, repeat steps 2 and 3.
6. The check module can be disassembled by removing lock nut while maintaining pressure on the disc holder stem. Disc can now be cleaned, or replaced.

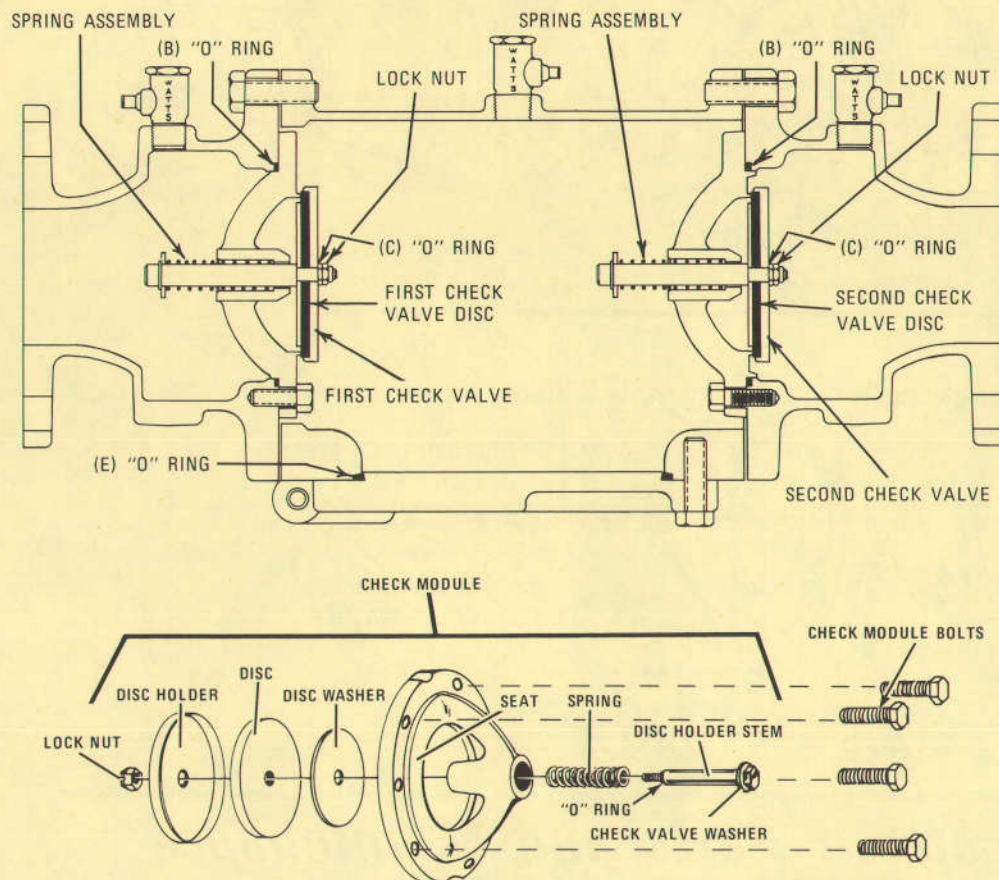
NOTE: First check module and second check module are identical and can be interchanged. Inlet and outlet adapters and "O" rings are also identical and can be interchanged.

REASSEMBLY OF No. 700:

7. Place the check valve washer and spring over the stem, and place the seat casting over the stem. Push down to compress the spring until stem projects beyond the seat ring.
8. With stem projecting out, place the disc washer on the stem. Place the disc holder with the rubber disc on the stem. Thread on the lock nut, tighten the lock nut securely while holding the head of the stem.
9. Repeat steps 7 - 8 for assembling the other check module. To assemble the inlet side of the valve, place the "O" ring in the body, take either check module and align the tabs of the check module with the slots in the body. (**Note:** Tabs on check module prevent misassembly of the check module with relation to the direction of flow). The spring end of the module will be out of the body on the inlet end.
10. In assembling the outlet side of the valve, repeat above procedure. However the spring end of the module will be in the body.
11. Place "O" ring on check module. Place the adapter on the check valve module, insert bolts and tighten.

Service, Replacement Parts and Maintenance

Series 700 DOUBLE CHECK VALVE ASSEMBLY



2 1/2" - 4"

SERVICE PARTS KIT RK700

FIRST CHECK MODULE
SECOND CHECK MODULE
SET OF "O" RINGS B, E

SERVICE PARTS KIT RK700R

FIRST CHECK VALVE DISC
SECOND CHECK VALVE DISC
SET OF "O" RINGS B, C, E

DISASSEMBLY OF No. 700:

2 1/2" - 4"

1. Remove the No. 700 Hatch Cover Bolts.
2. Remove check module bolts.
3. Lift out the first check module and "O" ring.
4. Disc can be exposed for cleaning by maintaining pressure on disc holder stem to overcome spring preload.
5. To remove the second check assembly, repeat steps 2 and 3.
6. The check module can be disassembled by removing lock nut while maintaining pressure on the disc holder stem. Disc can now be cleaned, or replaced.

NOTE: First check module and second check module are identical and can be interchanged, and the "O" rings are also identical and can be interchanged.

REASSEMBLY OF No. 700:

7. Place the check valve washer, the "O" ring and spring over the stem. Push down to compress the spring until stem projects beyond the seat ring.
8. With stem projecting out, place the disc washer on the stem. Place the disc holder with the rubber on the stem. Thread on the lock nut securely while holding the head of the stem.
9. Repeat steps 7 and 8 for assembling the other check module. To assemble the inlet side of the valve, place the "O" ring in the body, take either check module and align the slots of the check module with the tabs in the body. (**NOTE:** Tabs and slots on check module prevent misassembly of the check module with relationship to the direction of flow). The spring end of the module will be on the inlet end. Replace bolts.
10. In assembling the outlet side of the valve, repeat above procedure. However the spring end of the module will be in the body.
11. Be sure "O" ring is on hatch door. Close door, insert bolts and tighten.

WATTS

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Watts Regulator Company

IS-700- 4 8107

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