Installation, Maintenance, and Repair Manual

Maxim™ Series M200, M300, LFM300

Double Check Valve Assemblies
Double Check Detector Assemblies

2½" – 10"

⚠ 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

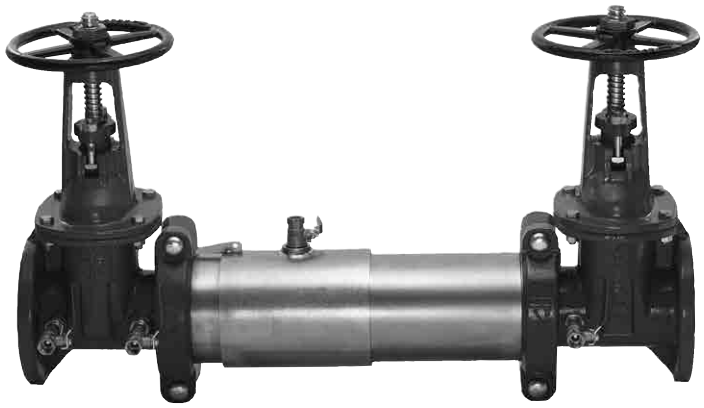
You are required to consult the local building and plumbing codes prior to installation. If the information in this manual is not consistent with local building or plumbing codes, the local codes should be followed. Inquire with governing authorities for additional local requirements.

⚠ 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. All products must be retested once maintenance has been performed. 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.

⚠ WARNING

Do not impede or prevent sleeve movement by installing riser cradle clamps or other obstructive elements on or around the sleeve. Sleeve movement is required to service the backflow.



M200 OSY

NOTICE

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

NOTICE

Due to shipping, storage, and general handling, the Victaulic Coupling for the shutoff valves may have loosened and should be retightened during installation.

Testing

For field testing procedure, download IS-A-ATG-1 at watts.com.

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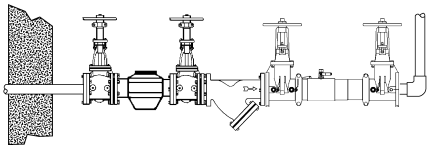
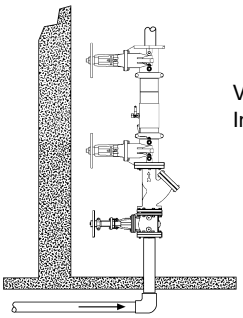
Installation Guidelines

Most field problems occur because dirt and debris present in the system at the time of installation becomes trapped in the check valves. Flush the system before the valve is installed. If the system is not flushed until after the valve is installed, remove both check modules from the valve and open the inlet shutoff to allow water to flow for a sufficient time to flush debris from the water line. If debris in the water system continues to cause fouling, a strainer can be installed upstream of the backflow assembly.

Produced with ASME/ANSI flanged end connections, Series M200 and M300 can be installed in either horizontal or vertical position as long as the backflow assembly is installed in accordance with the direction of the flow arrow on the assembly and the local water authority approves the installation. The assembly should be installed with adequate clearance around the valve to allow for inspection, testing, and servicing. Ensure minimum clearance of 12" between the lower portion of the assembly and the floor or grade.



Horizontal Installation



Vertical Installation

NOTICE

Assembly body should not be painted.

Maintaining the Check Modules

2½" – 4"

Figure A

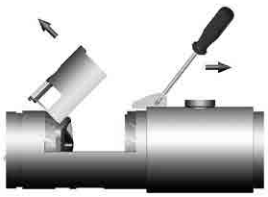


Figure B

Figure C

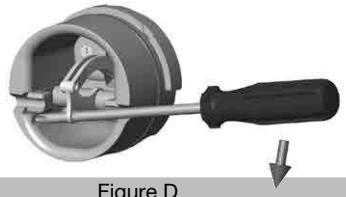


Figure D

Figure E

Figure F

⚠ WARNING

Before servicing any Ames valve, shut down the water system by closing both the inlet and outlet shutoff valves. This is mandatory.

⚠ WARNING

While the spring mechanism is removed for check servicing, never pull the screwdriver out or off the support notches on the arbors. Doing so may cause bodily injuries. Keep fingers out of seat and clapper area.

After shutoff valves are closed, open test cocks No. 2, No. 3, and No. 4 to relieve pressure within the backflow assembly. (For the location of the test cocks, see the diagram in the "Testing" section.)

1. After test cock No. 3 has been opened to relieve pressure, remove the test cock from the housing. (See Figure A.)
2. Insert a #3 screwdriver through the hole on the top of the cover the sleeve and using both hands rotate the cover sleeve approximately a quarter turn clockwise and a quarter turn counterclockwise to break the sleeve O-ring seals. Using the screwdriver, slowly slide the cover sleeve to the downstream side of the housing. (See Figure B.)
3. Remove the stainless steel check retainer from the housing. (See Figure B.)
4. Remove check module No. 1 by inserting two flat blade screwdrivers into the slots on either side of the check module. (See Figure C.) Gently pry the check module toward the open zone.
5. Repeat step 4 to remove check module No. 2. (For servicing 6" checks, see the maintenance instructions for valves sizes 8" to 10".)
6. To clean or inspect either check module, insert a #3 screwdriver through the downstream side of the check module. (See Figures D and E.) When the screwdriver is in place, remove the E-clip and pin connecting the structural members. (See Figure F.) The check clapper opens with no tension.
7. Thoroughly clean the seating area. The sealing disc can be removed, if necessary, by detaching the screws connecting the keeper plate to the clapper. The sealing disc can be reversed and reinstalled if the elastomer is cut or damaged.
8. Wash the check module and O-ring then inspect for any damage. If damaged, install new parts during the reassembly.
9. After the thorough cleaning, lubricate the O-ring with an FDA Approved lubricant, replace the pin and E-clip in structural members, remove screwdriver, and reinstall the check modules. Reverse the order of these steps to reassemble the parts and housing.

Maintaining the Check Modules

6" – 10"

Material/Tool Requirements

- #4 Phillips screwdriver or 3/8" diameter rod, length sufficient to span diameter of check (See Figures A and B.)
- 1/2" – 13 x 5 fully threaded hex bolt (service bolt)
- 3/4" open end or socket wrench

Instructions

⚠ WARNING

Before servicing any Ames valve, shut down the water system by closing both the inlet and outlet shutoff valves. This is mandatory.

After the shutoff valves are closed, open test cocks No. 2, No. 3, and No. 4 to relieve pressure within the backflow assembly. (For the location of the test cocks, see the diagram in the "Testing" section.)

1. After test cock No. 3 has been opened to relieve pressure, remove the test cock from the housing.

   When repairing an 8" or 10" assembly, remove both Victaulic couplers from the body. Slide the downstream Victaulic coupler gasket to the downstream side of the housing. The upstream Victaulic coupler gasket stays in place.
2. Remove the check(s) to be serviced.
3. Locate the service hole and thread in the service bolt by hand until it contacts the linkage. (See Figure A.)
4. Continue to thread in the service bolt with the wrench until the service hole in the linkage is aligned with the service notches on the spring arbors. (See Figure A.)
5. Insert the Phillips screwdriver through the arbors and service hole of the linkage making sure the tip of the screwdriver extends past the ends of the arbors by a minimum of ¼". (See Figure B.)
6. Loosen the service bolt until the load is transferred to the screwdriver. Continue to loosen the service bolt until sufficient clearance is achieved to remove the complete spring mechanism.
7. To disconnect the linkage, remove the retaining clip and pin. (Store the parts in a safe location for reinstallation.)
8. To remove the spring mechanism, grasp the screwdriver at the center and pull the complete assembly straight out and store it in a safe place.
9. Reverse the order of these steps to reassemble the parts and housing.

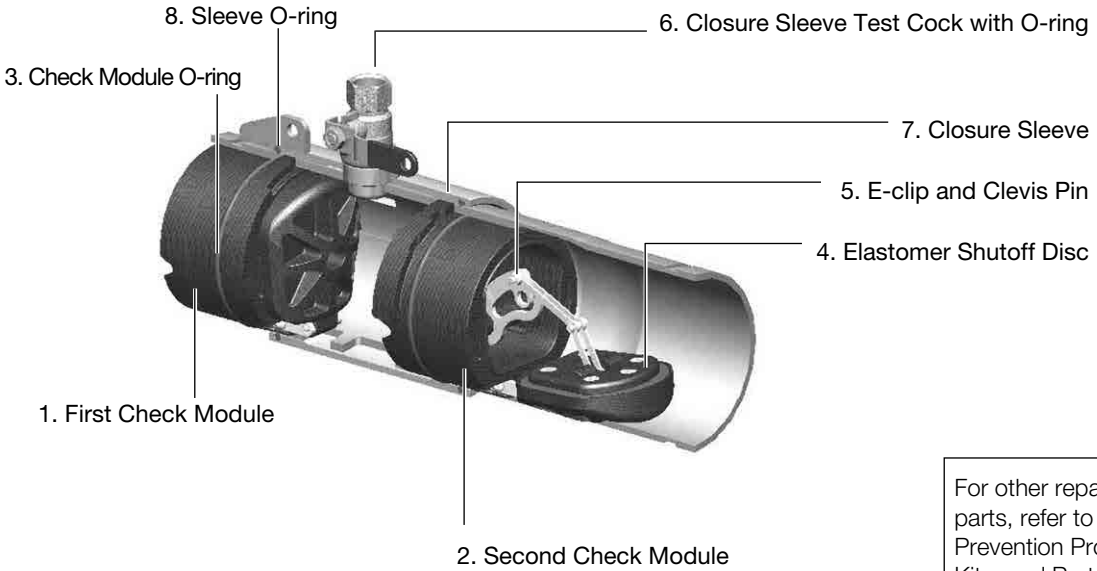
⚠ WARNING

While the spring mechanism is removed for check servicing, never pull the screwdriver out or off the support notches on the arbors. Doing so may cause bodily injuries.

Figure A

Figure B

Parts



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

Testing Double Check Valve Assemblies

Test Check Valve No. 1

1. Ensure shutoff No. 1 is open, and shutoff No. 2 is closed.
2. Connect the high side hose to test cock No. 3, low side to test cock No. 2, and open both test cock No. 2 and test cock No. 3.
3. Open valve C, then open valve A to bleed air from the high side. Close valve A, then open valve B to bleed the low side. Close valve B.
4. Connect the vent hose loosely to test cock No. 1. Open valve A to vent air from the vent hose, Tighten the vent hose at test cock No. 1, then open test cock No. 1.
5. Close shutoff No. 1. Slowly loosen the hose at test cock No. 2 until the differential gauge rises to 2 psi, then retighten the hose. If the differential reading does not decrease, record the check valve as "tight."

Test Check Valve No. 2

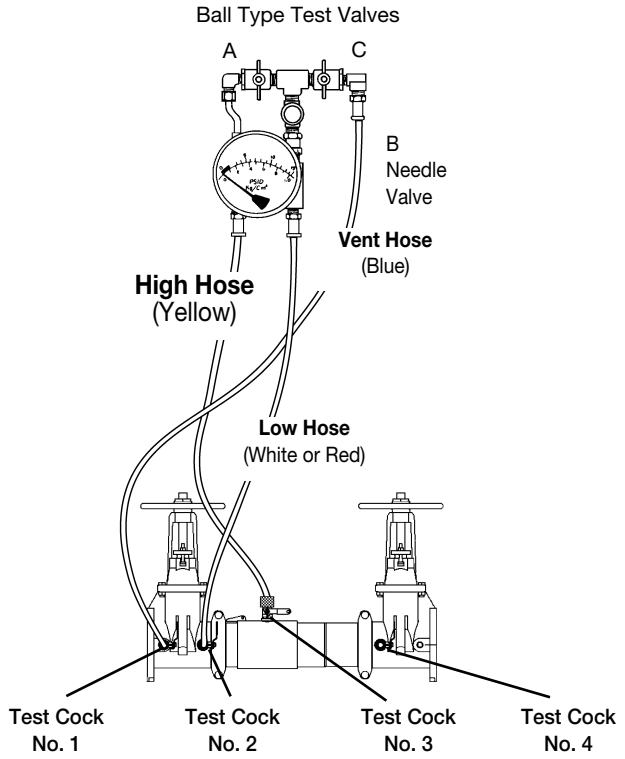
1. Move the high side hose to test cock No. 4, low side to test cock No. 3, then open both test cock No. 3 and test cock No. 4. Remove the vent hose from test cock No. 1, and open shutoff No. 1.
2. Open valve C, then open valve A to bleed air from the high side. Close valve A, then open valve B to bleed the low side. Close valve B.
3. Connect the vent hose loosely to test cock No. 1. Open valve A to vent air from the vent hose. Tighten the vent hose at test cock No. 1, then open test cock No. 1.
4. Close shutoff No. 1. Slowly loosen the hose at test cock No. 3 until the differential gauge rises to 2 psi, then retighten the hose. If the differential reading does not decrease, record the check valve as tight. Remove all hoses and restore valve to original working condition.

NOTICE

The assembly fails both the first and the second check valve tests, if shutoff No. 2 leaks excessively. To test for a leaky shutoff, follow the next procedure.

Test for Leaky No. 2 shutoff

1. Connect the high side to test cock No. 1 and the low side to test cock No. 4. Next open test cock No. 1 and test cock No. 4. Then close shutoffs No. 1 and No. 2.
2. Close valve C. Open valve A, then open valve B with a ½ turn, and loosen the hose at test cock No. 4 to remove air. Retighten the hose.
3. Watch the movement of the differential gauge. If it rises above 0 (zero), there is excessive leakage at shutoff No. 2. Replace the shutoff for proper testing of the assembly.



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