

# Installation, Maintenance, and Repair Manual

## Colt™ Series C200, C300, LFC300

Double Check Valve Assemblies  
 Double Check Detector Assemblies

Sizes: 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.

**THINK SAFETY FIRST**

**⚠ 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**

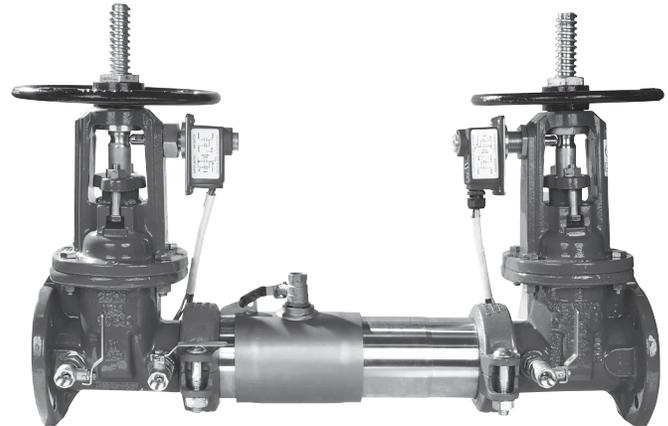
**Need for Periodic Inspection/Maintenance:** This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. If installed on a fire suppression system, all mechanical checks, such as alarms and backflow preventers, should be 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.

### Testing

For field testing procedure, refer to Ames installation sheets IS-A-ATG-1 at watts.com..

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

For technical assistance, contact your local Ames representative.



C200-OSY-TS  
 Integrated supervisory tamper switches on gate valves add protection against fire

**NOTICE**

Inquire with governing authorities for local installation requirements.

**NOTICE**

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

It is 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.

**NOTICE**

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



# Basic Installation Instructions

Most field problems occur because dirt and debris present in the system at the time of installation becomes trapped in the check valves. The system should be flushed 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.

Series C200 and C300 may 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. A minimum clearance of 12" is needed between the lower portion of the assembly and the floor or grade.

The control valves on the OSY-TS model have integrated supervisory tamper switches that require connection to a fire alarm control panel.

## NOTICE

Assembly body should not be painted.

# Wiring the Tamper Switch

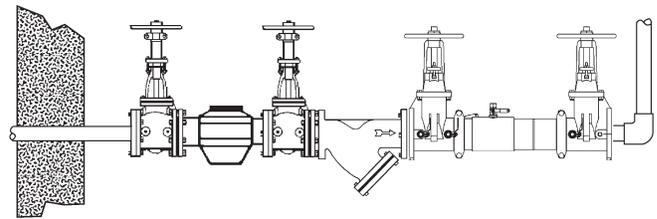
The supervisory tamper switch consists of two SPDT switches. The device is designed to send a signal when the valve is closed and when the switch is removed from the valve. In the neutral position, the switch indicates the valve is fully open. Closing the valve causes the switch rod to come out of the valve stem groove, activating the switch. Removing the device also activates the switch.

Use the schematic diagram and the wiring notes for proper wiring of the tamper switch to a fire alarm control panel. (For more information refer to Tamper Switch Wiring Instructions at watts.com.)

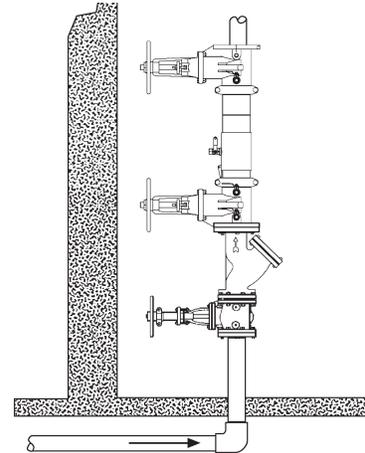
## CAUTION

**Before wiring supervisory switches in fire protection systems, refer to the following standards:**

- NFPA 13: Standard for the Installation of Sprinkler Systems
- NFPA 25: Inspection, Testing, Maintenance of Water-based Fire Protection Systems
- NFPA 70: National Electrical Code
- NFPA 72: National Fire Alarm Code
- CSA C22.1 NO.1 Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations Section 32
- CAN/ULC-S524, Standard for Installation of Fire Alarm Systems



Horizontal Installation



Vertical Installation

## WARNING

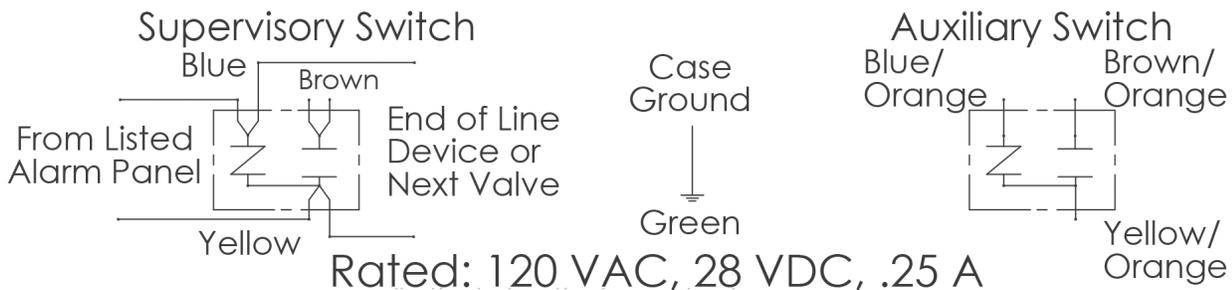
Metallic conduit required by NEC for proper grounding conduit joint must be sealed with a conductive sealant.

Install switch in accordance with National Electrical Code and/or local ordinances.

Wiring methods shall be in accordance with CSA C22.1, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, Section 32 and CAN/ULC-S524, Standard for Installation of Fire Alarm Systems Assure All Devices Are Properly Grounded.

# Wiring Notes

- Connection to power limited circuitry is required.
- The auxiliary switch is for supplemental use only and shall not be used for fire alarm signaling applications.
- Switch functions are checked at the factory. Checking the switch after field installation is strongly advised. Check continuity with the valve fully open. Switch functions activate within two (2) turns from open.



# Maintenance Instructions 2½" – 6"

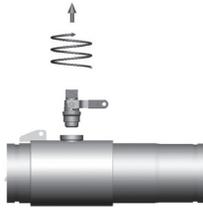


Figure A

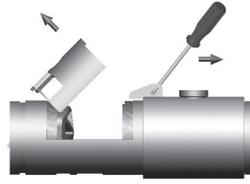


Figure B



Figure C



Figure D



Figure E



Figure F

## **⚠ WARNING**

Before servicing any Ames valve, it is mandatory to shut down the water system by closing both the inlet and outlet shutoff valves. After the shutoff valves are closed, open test cocks No. 2, No. 3, and No. 4 to relieve pressure within the backflow assembly.

1. After test cock No. 3 has been opened to relieve pressure, remove it from the housing. (See Figure A.)
2. Insert a No. 3 screwdriver through the hole on the top of the cover sleeve and using both hands rotate the cover sleeve approximately 1/4-turn clockwise and 1/4-turn counter-clockwise 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 the No. 1 check module by inserting two flat blade screwdrivers into the slots on either side of the check module and gently pry the check module toward the open zone. (See Figure C.)
5. Repeat step 4 to remove check module No. 2. (For servicing 6" checks, see the maintenance instructions for 8"-10" checks on p. 4.)
6. To clean or inspect either check module, insert a No. 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 member. The check clapper opens with no tension. (See Figure F.)
7. Thoroughly clean the seating area. The sealing disc can be removed, if necessary, by detaching the screws that connect the keeper plate to the clapper. The sealing disc may be reversed and reinstalled if the elastomer is cut or damaged.
8. Wash the check module and O-ring and inspect for any damage. If damaged, reinstall new parts.
9. Apply an FDA-approved lubricant to the O-ring, next replace the pin and E-clip in the structural members, then remove the screwdriver and reinstall the check modules. Assemble the housing by reversing the order of these instructions.

# Maintenance Instructions 8" – 10"

## Material/Tool Requirements

- No. 4 Phillips screwdriver or  $\frac{3}{8}$ " diameter rod, length sufficient to span diameter of check (See Figures A and B.)
- $\frac{1}{2}$  – 13" x 5" fully threaded hex bolt (Service bolt)
- $\frac{3}{4}$ " open end or socket wrench

## Instructions

### **⚠ WARNING**

Before servicing any Ames valve, it is mandatory to shut down the water system by closing both the inlet and outlet shutoff valves. After shutoff valves are closed, open test cock No. 2, No. 3, and No. 4 to relieve pressure within the backflow assembly.

1. After test cock No. 3 has been opened to relieve pressure, remove test cock No. 3 from the housing. When repairing an 8" or 10" device, 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 checks requiring maintenance.
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 ensuring that the tip of the screwdriver extends past the ends of the arbors by a minimum of  $\frac{1}{4}$ ". (See Figure B.)
6. Back out the service bolt until the load is transferred to the screwdriver. Continue to back out 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 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. Reinstall by reversing the order of these instructions.

### **⚠ 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.

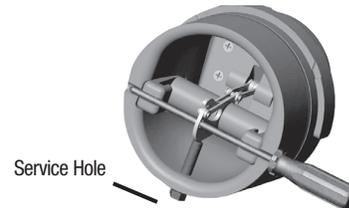


Figure A



Figure B

# 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, the 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 A to bleed air from the high side. Close valve A, then open B to bleed 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, and 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 2psi and retighten the hose. If the differential reading does not decrease, record the check valves as "tight."

## Test Check Valve No. 2

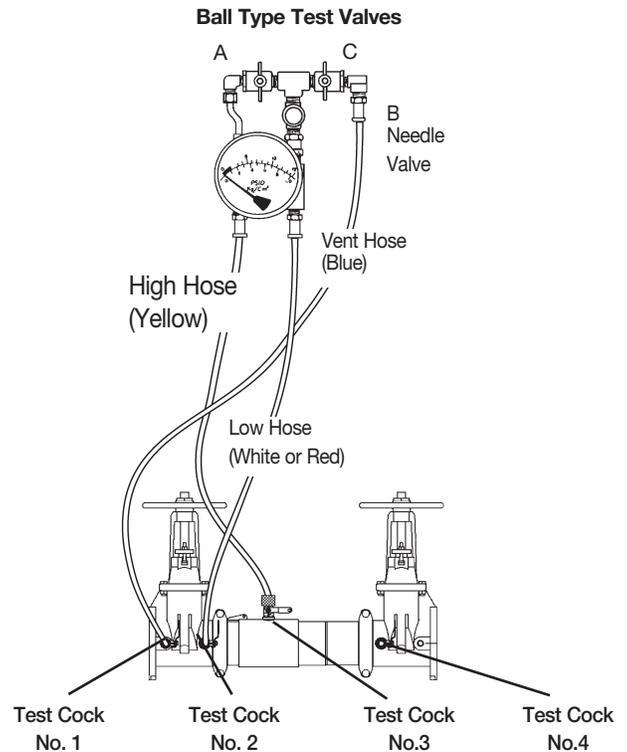
1. Move the high side hose to test cock No. 4, the low side to test cock No. 3, and open both test cock No. 3 and test cock No. 4. Remove the vent hose from test cock No. 1, and open shutoff No. 1.
2. Open valve C, then open valve A to bleed air from the high side. Close valve A, then open valve B to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

### **⚠ WARNING**

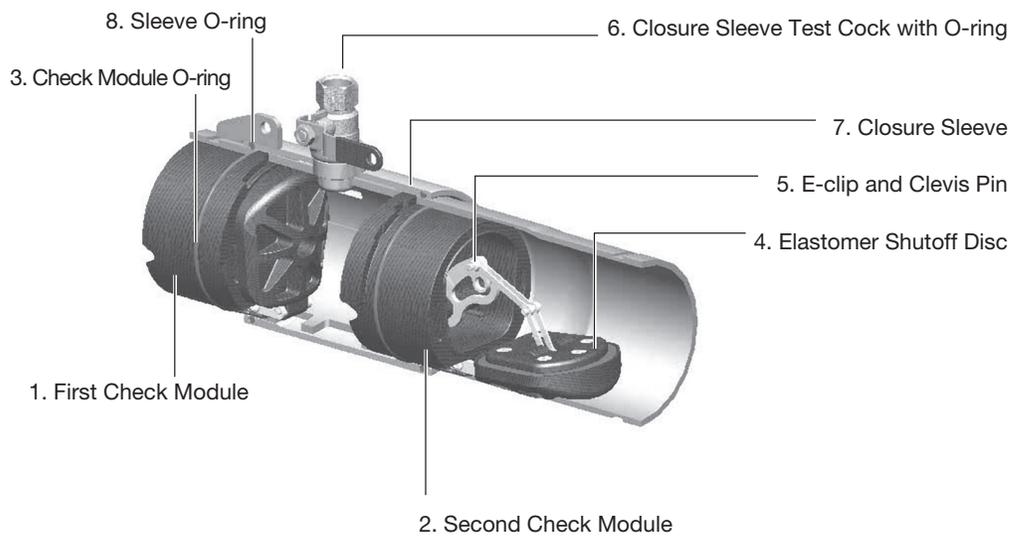
The assembly will fail both the first and second check valve tests above, if shutoff No. 2 leaks excessively. To test for a leaky No. 2 shutoff, use the following procedure.

## Test for Leaky No. 2 shutoff

1. Connect the high side to test cock No. 1, the low side to test cock No. 4. Open test cock No. 1 and test cock No. 4. Close shutoffs No. 1 and No. 2.
2. Close valve C. Open valve A, next open valve B 1/2 turn, then loosen the hose at test cock No. 4 to remove air. Retighten the hose.
3. If the differential gauge rises above 0 (zero), there is excessive leakage at shutoff No. 2. The shutoff must be replaced to test the assembly.



# Parts



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



**Limited Warranty:** Ames Fire & Waterworks (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 Brand**

**USA: Backflow** T: (978) 689-6066 • F: (978) 975-8350 • AmesFireWater.com

**USA: Control Valves** T: (713) 943-0688 • F: (713) 944-9445 • AmesFireWater.com

**Canada:** T: (888) 208-8927 • F: (905) 481-2316 • AmesFireWater.ca

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