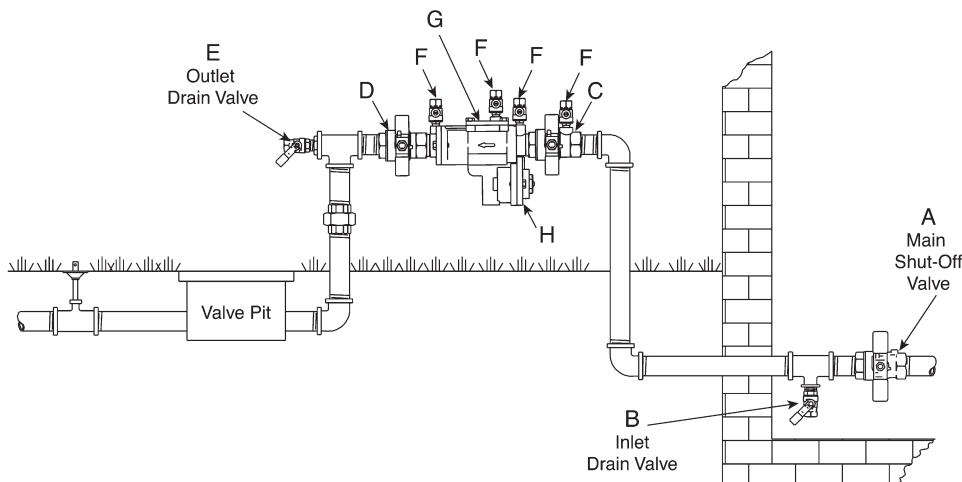


FREEZE PROTECTION SERIES 850, LF850, 860 AND LF860 1/2" - 2" (15 - 50 mm)

Draining Procedure for Freeze Protection

**WARNING**

You are required to thoroughly read all installation instructions and product safety information before beginning. **FAILURE TO COMPLY WITH PROPER INSTRUCTIONS COULD RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE AND/OR PERSONAL INJURY.**

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.

Damage from freezing will be costly. FEBCO products are not warranted against freeze damage. The following instructions will protect against freezing of Double Check Assemblies (DC) and Reduced Pressure Zone Assemblies (RP).

Freeze Protection Guidelines

Backflow prevention assemblies must be protected against freezing for the winter in areas where freezing temperatures may occur. If the water inside the assembly freezes, damage to the assembly and the system may occur. Proper draining, insulation using heat tape and heated protective enclosures are all acceptable methods of freeze protection. In areas with freezing temperatures the 850U, 860U, LF850U and LF860U with union end ball valves might be considered. The union end ball valve allows the body of the device to be removed.

When draining an assembly to prevent freezing, several important points must be remembered:

1. The assembly cannot be adequately drained through the test cocks. For proper draining follow the instructions detailed in the Drain Procedure section.
2. Drain valves must be added on the inlet and outlet sides of the assembly, below the assembly (and preferably below the freeze line if the remainder of the system is to be drained).

Drain Procedure

1. Close the main shut-off valve (A).
2. Open the inlet drain valve (B).
3. Open the inlet and outlet ball valves (C & D) 45° (half open, half closed).
4. Open all testcocks (F).
5. Open the outlet drain valve (E).
6. Remove the cover (G) and inlet check module until all water inside valve drains back out through inlet drain valve (B).
7. If you "blowout" the piping downstream of the backflow assembly using compressed air:
 - Connect the air supply to the outlet drain valve (E) and close the outlet ball valve (D).
 - After clearing the system with air, partially open the outlet ball valve (D).
 - Leave all drain valves (E & B), test cocks (F) and ball valves (C & D) in a half open, half closed position for the winter. (See the ball valve freeze protection instructions for more details.)
 - Make sure the main shut-off valve (A) remains closed and does not leak.
8. (RP UNITS ONLY) Loosen the relief valve cover (H) to drain. Tighten when draining is completed.

Spring "Start-up" Procedure

When there is no more chance of freeze damage:

1. Close all drain valves (E & B), testcocks (F) and ball valves (C & D).
2. Retighten the relief valve cover (H), then slowly open the main shut off valve (A) and the inlet ball valve (C).
3. Slightly open, and then close, all testcocks (F) one at a time to empty air from the device.
4. Slowly open the outlet ball valve (D) and refill the system.



Ball Valve Draining Procedure for Freeze Protection

Ball valves should be drained for the winter in areas where freezing temperatures may occur. Water will become trapped between the ball and valve body if the valve is left in either the full open or full closed position. If water should freeze between the ball and valve body, damage to the ball valve will occur.

After draining procedures on the backflow prevention assembly have been completed, all ball valves must be left in a half open / half closed (45°

degree) position as shown in Figure A. Open the ball valve approximately 45° degrees while draining the pipeline and assembly to allow water between the ball and valve body to drain as shown in Figure B. Leave the ball valve in this position for the winter to prevent freeze damage.

The valve must be closed before the system can be repressurized.

NOTE: Open and close ball valves slowly at all times to prevent damage to the system.

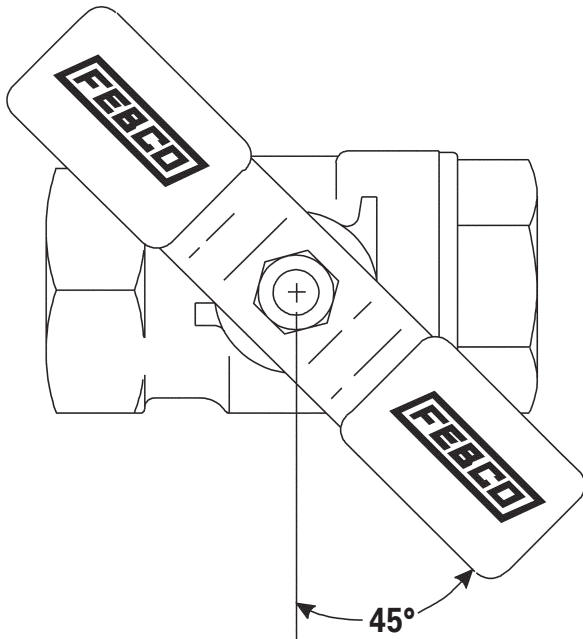


Figure A: Ball Valve in half open/half closed 45° degree position

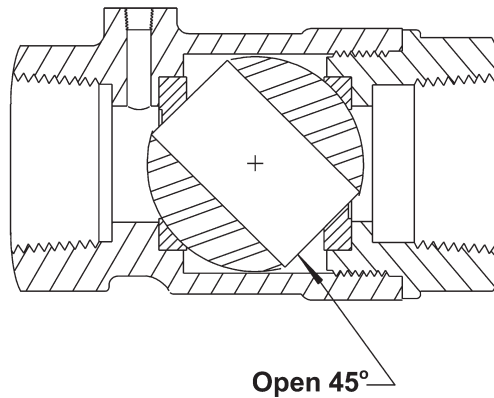


Figure B: Cutaway drawing displaying ball valve in half open/half closed position

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: FEBCO (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.

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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.

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