

ANTI SIPHON VALVES FOR BACKFLOW PREVENTION:

How to Select the Right Valve Size

The valve size (3/4 or 1") is determined by the water flow (measured in gallons per minute, or GPM) of the main line or the sprinkler circuit. 3/4" valves: 13 GPM or less. 1" valves: 14 GPM or more. 1" valves and pipes allow longer runs and more sprinkler heads per circuit, as well as possible reduce the total number of valves required.

Assembly of Sprinkler Valves to Pipe

A sprinkler system is made up of one or more groups of sprinklers (called circuits) each operated by it's own control valve.

1. Before connecting and testing the assembly, thoroughly flush the main line to prevent debris from damaging the valves.
2. On the inlet side of the control valve use galvanized steel pipe or thick wall, schedule 40 pvc (white) plastic pipe, as this pipe is under constant pressure. On the outlet side of the control valve, thin wall pvc pipe or flexible polyethylene pipe may be used.
3. To assure a watertight connection, use only one to two turns of Teflon tape on the threaded valve to pipe connections. Do not use pipe solvent or pipe dope. This may damage the valve. Do not over tighten. Screw adapters into place finger tight. Tighten adapters one to two additional turns.
4. Install a master shutoff valve before all electric valves so that the water can be conveniently turned off if a valve needs servicing.
5. When grouping valves, allow sufficient spacing between valves to unscrew the valve from the pipe, about 6 inches.
6. Do not connect the outlet side (piping to sprinkler heads) without testing for leaks first. If the outlet side is connected and there is a leak, the pipe would have to be cut to tighten the connection.

Valve Operation

Your Rain Bird valve offers two features with which you should be familiar. **FLOW CONTROL** - This feature allows you to control the amount of water, turn the black knob clockwise. If you keep turning, you can turn the valve all the way off. In this case, the valve will not open.

MANUAL CONTROL - This allows you to override your automatic controller and turn your sprinklers on at the valve. The valve can be turned on manually with the external bleed screw or with the internal solenoid bleed. The solenoid (black cylinder with wires) is wired to your controller and turns the valve off and on electrically. To operate manually with the internal bleed turn the solenoid 1/4 turn counterclockwise. This opens the valve. The sprinklers will continue to run until you turn the solenoid back in the clockwise direction - snugly, but do not over tighten. To turn on the valve with the external bleed, turn the external bleed screw counterclockwise, 1/2 turn. Water will exit the external bleed while the valve is on. To turn off the valve, turn the external bleed screw clockwise until snug. Do not over tighten.

Connection, Testing and Wiring these Valves

1. Shut off the water main or the master shutoff valve and connect the valve or valve assembly to the main supply pipe. Be sure the water lines are flushed and clean.
2. Test the pipe and valve connections for water tightness as follows:
 - A. Turn the flow control clockwise (down) to off before turning the water supply on.
 - B. Turn on the water and check for leaks.
3. Now complete the hookup by connecting the outlet pipes from the valves to the sprinklers.
4. Set flow control adjustment before making wiring connections.
5. Wire connections: Use 18 gauge wire to connect the wires to the controller. Wiring is to be buried alongside the pipes should be approved for underground use and for all splices use water tight connectors.

Each valve has two wires. Either one may serve as the hot wire which is connected directly to a station output terminal in the controller. The other wire is common and may be joined to the common wires of other valves with one wire running to the common terminal of the controller. Check operation using the controller.

PRS-D PRESSURE REGULATOR

Installation:

1. Turn off water supply to the valve and turn flow control handle clockwise until closed.
2. Remove solenoid and adapter from bonnet with an adjustable wrench.
3. Remove the Schrader valve cap.
4. Thread PRS-D housing into valve bonnet until hand tight.
5. Loosen slightly to align latch between ribs on plastic valves or hole on brass valves, then push down latch to snap in place.
6. Thread PRS-D cartridge into housing until hand tight, then thread adapter and solenoid into top of housing.
7. Keep the flow control handle closed, then turn on water supply to the valve and proceed with adjustment.

Adjustment:

1. Remove the PRS-D cap by pulling away from the housing. Verify setting is 100 psi (6,9 bars)
2. Attach pressure hose gauge to Schrader valve.
3. Turn solenoid counter-clockwise 1/4 turn to manually open the valve or activate the solenoid from the controller. Do not use external bleed.
4. Turn flow control handle counter-clockwise until pressure gauge indicates 15 psi (1 bar) above desired down stream pressure.
5. Turn PRS-D adjustment knob until pressure gauge indicates the desired outlet pressure, then replace PRS-D and Schrader valve caps.
6. Turn solenoid clockwise to close the valve or deactivate the solenoid from the controller.

DV & DVF VALVES

Before installation

1. Make sure you have sufficient water supply, pressure, and flow. Connect pipes to primary water source.
2. Install master valves, pressure regulators, and backflow preventers as needed.
3. Flush system thoroughly until the water from the sub main runs clear.

Connect Adapters to Valve

4. To make a water tight seal, wrap 1 1/2 to 2 turns of Teflon tape around the threads on two male x slip adapters or on the male threads of the valve.
5. Screw the adapters into the valve water ports and hand tighten .
6. Carefully tighten the adapters one to two additional turns past hand-tight. Do not overtighten the adapters.

Connect Valve to Pipes

7. Carefully apply a small amount of solvent cement to the inside of the adapter or valve inlet port. Apply a small amount of cement to the outside of the water supply pipe. Then attach the valve to the pipe. The valve solenoid must be on the downstream side.
8. Cement the lateral pipe to the adapter or valve outlet port.
9. To attach an MB model valve to low-density polyethylene pipe, cut the pipe square and clean. Slip one or two clamps over the poly pipe

Connect Valve Wires

10. Select a wire gauge that meets electrical specifications. Multi strand, direct burial wire is recommended. Refer to local building codes for additional requirements.
11. Use a water tight connector to connect one lead on each valve to a common wire. Either lead may be used. All valves on the same controller can share the same common wire.
12. Connect the shared common wire to the common terminal on the controller. Connect one power wire from each valve to a station terminal on the controller.

Operate Valve Manually

13. To open the internal bleed turn the solenoid handle counterclockwise 1/4 to 1/2 turn. Be sure to retighten the solenoid completely. Always use the solenoid handle, which is designed to shut the valve off completely and keep it from weeping. To reduce the flow, turn the flow control stem clockwise. Use your fingers or a slot head screwdriver. To increase flow, turn the stem clockwise. To open the external bleed, turn the bleed screw counterclockwise two turns. Use the external bleed to flush the valve when you first start the system. Turn the screw clockwise to close it.