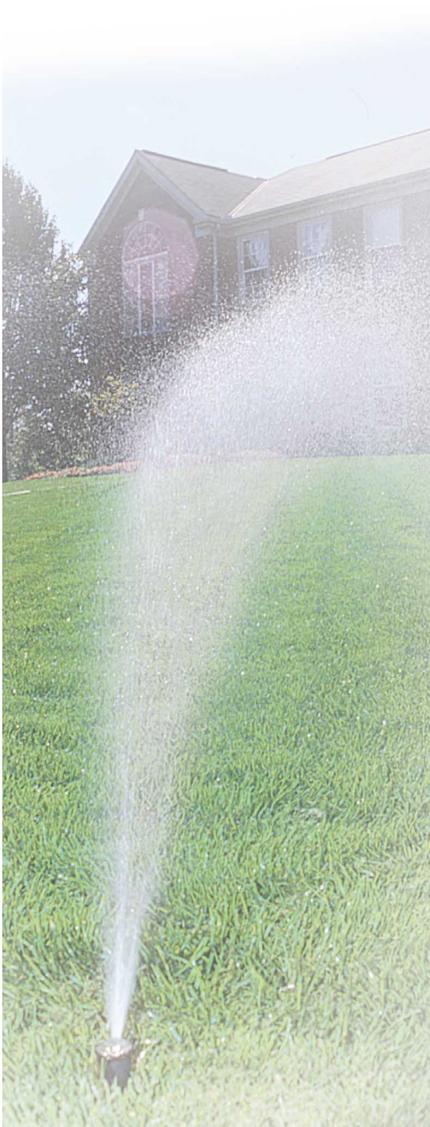


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Electronic version is also available.



Property photos compliments of Kathi Hiatt

Protect Your Irrigation System From Winter Damage

Your Guide to Winterization

If freezing temps are in your forecast, the time to act is now!

Winterizing your sprinkler system – removing water from the pipes, valves and sprinkler heads – is essential before freezing occurs. It's the best way to protect your irrigation investment from potentially serious damage this winter. You can choose from three winterization techniques:

- the manual drain valve method
- the automatic drain valve method or
- the compressed air blow-out method.

Read about each to determine the method best for your system.

IMPORTANT! No matter which method you choose, be sure to reference the **Protecting Your Controller in Winter** section on page 5 to complete the winterization process!

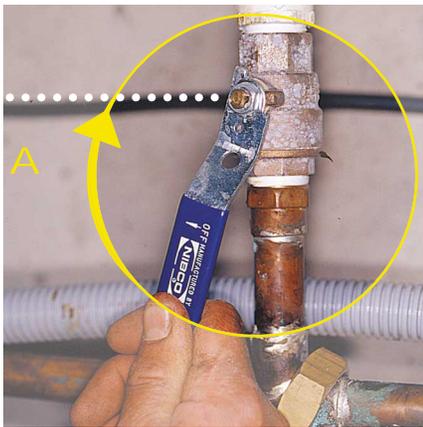
Manual Drain Valve Method

Design: To use this method, your system must be properly designed. Make sure the manual drain valve is installed at the lowest point on your system's mainline. Additional manual drain valves should be installed if your mainline has multiple low points where water may collect. A ball valve, gate valve, "Stop and Waste" valve or simple threaded pipe with a cap can provide drainage. Make sure piping is properly

sloped to drain. If the valve is outdoors, it should be installed over a “dry well” (underground pit filled with gravel) to drain water away from the piping. If the valve is installed indoors, make sure you can drain a volume of water without flooding or overflow.

Procedure:

NOTE: Be sure to wear proper eye protection and follow these steps carefully. The manual drain valve or drain cap is pressurized and can cause injury if opened before the pressure is relieved.



- 1 Turn off the sprinkler system mainline shut-off valve (A).
- 2 Open one of the sprinkler system control valves, either manually or electrically from the controller, to relieve pressure on the sprinkler system mainline.
- 3 **Slowly** open the manual drain valve (B).
- 4 Repeat this procedure for all manual drain valves on the sprinkler system mainline.

NOTES ABOUT REMOTE CONTROL VALVES: Draining valves using gravity or activating the valves manually does not remove water captured inside the valves. Valves must be disassembled to remove standing water (unless they are winterized using blown compressed air). Manual valves should be left in the open position throughout winter to

prevent repressurization.

Some sprinkler heads have both side and bottom pipe inlets. If you use the side inlet, install a drain valve on the bottom inlet to prevent the case from freezing. Sprinkler heads with built-in check valves to prevent low head drainage must be disassembled or blown out with air.

Now refer to the **Protecting Your Controller in Winter** section on page 5.

Automatic Drain Valve Method

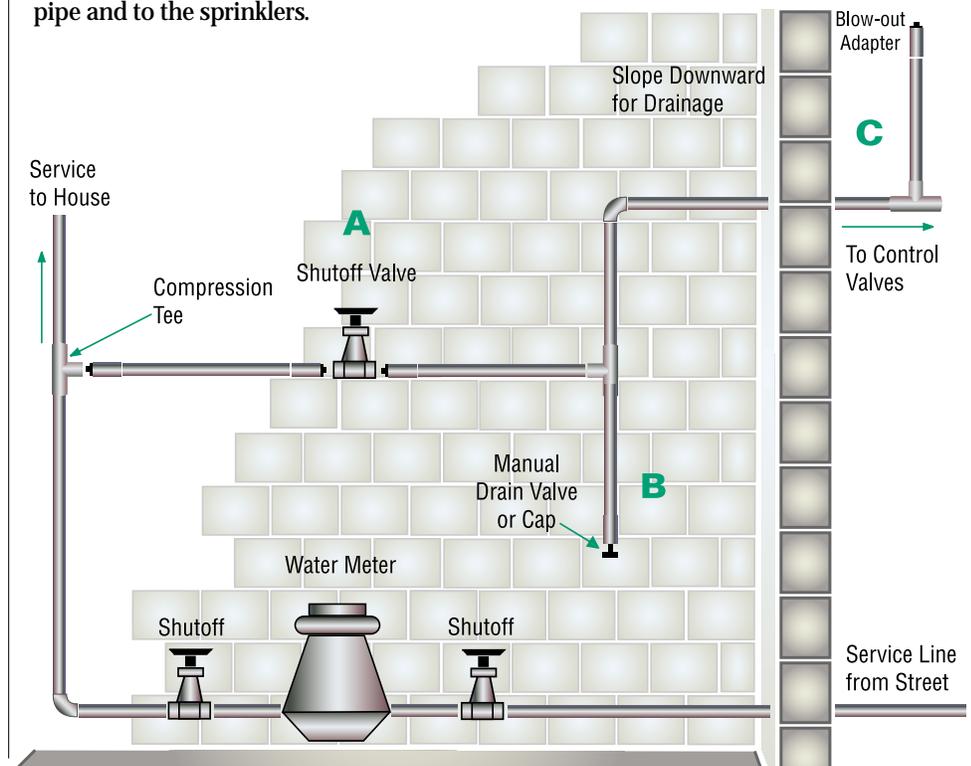
NOTE: You **MUST** use the Manual Drain Valve method for winterization of a mainline. Never install automatic drain valves on a sprinkler system mainline!

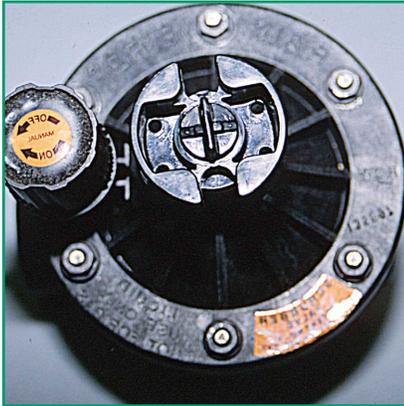
Description: The automatic drain valve is a spring-loaded device installed on sprinkler heads or lateral pipes. The drain valve opens every time the system is shut off and drains all water from the pipe. When the system is pressurized, water presses against the sealing mechanism, shutting the valve and allowing water to flow through the pipe and to the sprinklers.

Design: Automatic drains should be installed after or downstream of the sprinkler control valves at the low points in the sprinkler lines. Usually one or two drains per line are adequate. The drain valves simply screw on using 1/2 or 3/4" male pipe threads. Teflon tape wrapped two or three times around the connection ensures a proper seal. A small dry well directly beneath the drain assists with drainage for poorly draining soil.

Procedure: Because automatic drain valves remove water every time the system is shut off, no manual intervention is required for this stage of winterizing. Simply check for excessive puddling on the soil surface, which may indicate that one of the drains has become stuck open during sprinkler operation.

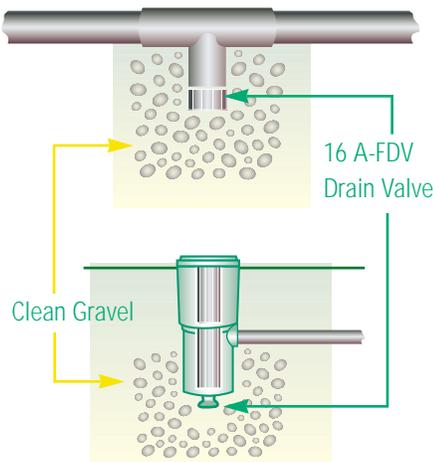
As with the manual method, draining or activating remote control valves electrically from the controller does not remove water captured inside the valves. Valves must be disassembled to remove standing water (unless you winterize using blown compressed air).





• **Diaphragm-style valves** – remove the bonnet, solenoid and diaphragm assembly; drain or sponge any standing water; then reassemble. Leave the solenoid in open position for winter.

• **Actuator-type valves** – remove the stem and solenoid assembly. Leave all valves in the manual open position all winter to prevent repressurization. Open by turning the bleed screw or solenoid counterclockwise.



NOTE: If your sprinkler heads are using the side inlet, or if you have built-in check valves (SAM) on your sprinklers, see automatic drain valve method (pg. 2).

Reminder! Now refer to the **Protecting Your Controller in Winter** section to complete winterization.

Compressed Air Blow-Out Method

Protect Your System! Protect Yourself!

CAUTION: WEAR PROPER EYE PROTECTION AND STAND CLEAR!

Use extreme care when blowing out the system. Excessive pressure (above 50 psi) can damage valves or sprinkler pipe or cause physical injury from flying debris. Never stand over irrigation pipes, sprinklers or valves during this process.

Description: This method uses compressed air to clear water from the mainline pipe, sprinkler control valves, lateral pipes and sprinkler heads. Local irrigation contractors usually offer this service for a reasonable fee, which may also include start-up in the spring. Depending on the size and type of equipment used in your system, you may want to choose a professional who is fully equipped to provide this service.



Selecting the Right Air Compressor

To obtain proper air volume, use a compressor capable of providing 10 to 25 cubic feet per minute (CFM) of air volume. It is very important to rent or buy the right air compressor for the job. Some small shop compressors (2 hp) may not be adequate.

CAUTION: Air pressure must not exceed 50 pounds per square inch (psi) during the blow-out procedure. Use a pressure-regulating valve to avoid overpressurization. Air volume should be high and air pressure low to minimize the potential for damage.

Do not try to use an air compressor with high pressure (120 psi) and low volume to evacuate water from the system. Do not compensate for a small compressor by filling the compressor's holding tank while the mainline is closed to create a surge of pressure to blow the line clean when you open the sprinkler control valve. This dangerous practice places very severe stresses on all components of the system. **Never run the compressor without at least one sprinkler control valve open.**

NOTE: Even if the system can withstand 120 psi of water pressure, similar air pressure will damage the system. The viscosity of air is much lower than water, generating much higher stresses.

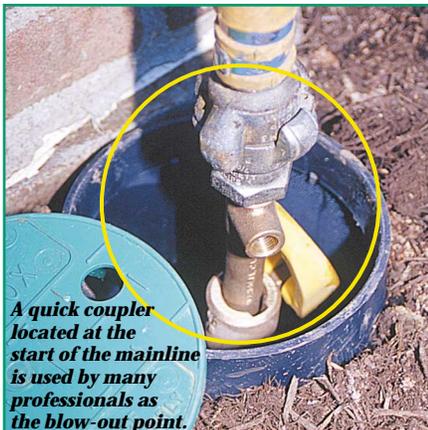
Design: Your sprinkler system mainline should offer a separate quick-connect fitting, manual gate valve, plugged "tee," or capped pipe in the line specifically for the air hose (C in the diagram on page 2). This connection should be located as close to the water source as possible. Check with your air compressor manufacturer for the correct procedure and equipment hookup.

Procedure: Blow-out using a timer is safer than activating the valves manually. If your system has a timer, follow the guidelines described first.

Blow-out procedure activating sprinkler control valves USING THE CONTROLLER:

CAUTION: Wear proper eye protection and never stand over irrigation pipes, sprinklers or valves during this process.

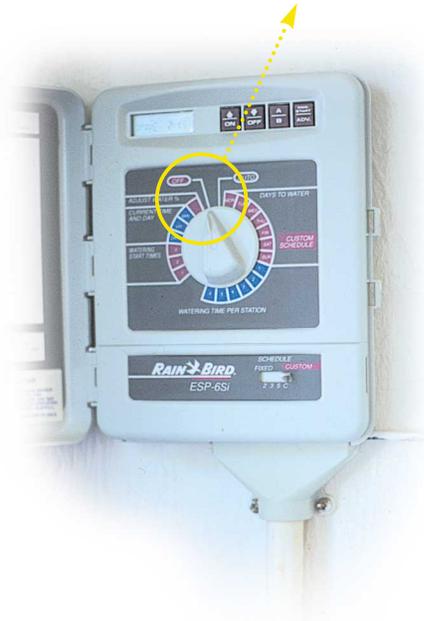
- 1 Close mainline sprinkler shut-off valve (A).
- 2 Relieve the water pressure on the mainline by activating a circuit or zone from your controller. Activate the circuit that is furthest from the air connection before letting air into the piping. Always keep a sprinkler zone control valve open, from start-up to compressor shutdown.



- 3 Attach the compressor hose to the blow-out adapter (C).
- 4 Set the pressure-regulating valve on the compressor to 50 pounds per square inch (psi). **Never exceed 50 psi.**
- 5 Turn on the compressor. Gradually increase the flow of air until all the sprinkler heads pop up. The amount of flow or volume required will depend on the length of pipe and number of heads.
- 6 **Do not blow any circuit more than 2 minutes at a time.** Sustained heat from the compressed air may damage pipe and sprinkler drive mechanisms that use water for lubrication and cooling. Switch to another station or zone by advancing the controller to the

next circuit. Do not turn the controller off at any time during this operation unless the compressor is first shut off.

- 7 To ensure that lines adequately drain, repeat the cycle two or more times, activating each zone from the controller until nothing more than a fine mist appears from the heads.
- 8 After blowing out all the zones, leave one zone on while shutting down the compressor. You may then unhook the compressor from the mainline.
- 9 Turn the controller to **“OFF.”**



Blow-out procedure activating sprinkler control valves MANUALLY:

NOTE: Use this option only if your system **DOES NOT** have electric remote control valves.

Always, if your system **does** have electric remote control valves, activate the valves from the controller. Using remote controls is safer since you are not close to irrigation components which can discharge debris during blow-out.

Always wear eye protection and never stand over irrigation pipes, sprinklers or valves during this process.

To activate valves manually for the blow-out:

- 1 Close main sprinkler shutoff valve (A).
- 2 Relieve the water pressure on the mainline by slowly opening the manual shut-off handle on one of your irrigation zone control valves.
- 3 Attach the compressor hose to the blow-out adapter (C).
- 4 Set the pressure regulating valve on the compressor to 50 psi. (Never exceed this setting!)
- 5 Manually open the irrigation station you want to blow out **BEFORE** turning on the compressor.
- 6 Gradually increase the flow of air from the compressor flow valve (not from the sprinkler control valve) until sprinkler heads pop up. The flow or volume required will depend on the length of the pipe and the number of heads.
- 7 Do not blow any circuit more than 2 minutes at a time. Sustained heat from the compressed air may damage pipe and other components. After 2 minutes, turn the compressor off and allow the air to completely purge from the compressor tank and sprinkler system.
- 8 Turn on the next irrigation control valve you wish to winterize before turning off the irrigation control valve you have just blown out.
- 9 Repeat steps until you have blown out each zone at least twice and only a fine mist is blowing from each station.
- 10 After turning the compressor off, allow any air in the storage tank or irrigation components to disperse before approaching the air hose or valves.
- 11 Unhook the compressor from the adapter to the sprinkler mainline.

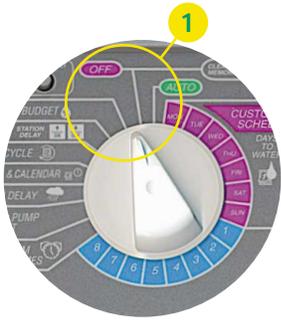
Reminder! Now refer to the **Protecting Your Controller in Winter** section.

continued on back flap

Protecting Your Controller in Winter

After draining the system by the appropriate method, you need to protect the system's controller to complete the winterization process. Read the following descriptions to determine which option is best for your system.

NOTE: Systems with water pumps require special attention. See item 3 on page 6 if your system uses a water pump.

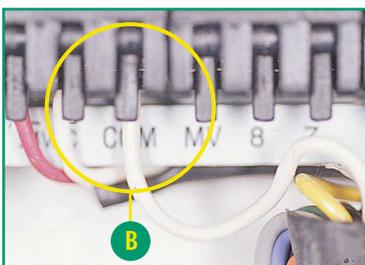


1 If your sprinkler system controller has a PROGRAMMING DIAL or a mechanical ON/OFF switch:

A Turn the controller to the "OFF" position, but leave the controller and backup battery plugged in. This keeps your watering program intact and retains heat inside the unit, warding off condensation which can harm the circuit board.

Remember, mechanical models simply "turned off" may be reactivated by accident. You may want to disconnect common wires (see below) for further protection.

NOTE: If your system uses a water pump, you must disconnect the common wire(s) as described in the next section.



2 If your controller is FULLY DIGITAL and has a "keypad" only (such as the EZ-1, CRC or ISC models):

A Turn the system to "SYSTEM/OFF" or "AUTO/OFF." This leaves the program in the memory. A single digit flashing in the display indicates the system is interrupted.

B You must now disconnect the common wire(s) that connect the controller to valves and/or the pump start relay. A power surge or prolonged power failure could cause the controller to default to the automatic mode, sending a signal to the control valves or pump to come on.

C You may decide to unplug the controller and disconnect power before completing this process. THIS WILL ERASE PROGRAMS and you will have to reprogram next spring. If you are unsure, contact an experienced, qualified irrigation contractor.

- On indoor models, unplug the transformer (small black box at the end of the power cord) from the power source. Use gloves to avoid burns from hot transformers!
- On outdoor models, turn off the power to the controller at the main circuit breaker. **DO NOT**

attempt to disconnect hardwires that run through the conduit directly to your electrical system. This can cause electrical shock and burns.

- Verify that the power is completely off by removing the backup battery. Wait for 2 minutes.

D Now, disconnect the wire or wires marked COMMON, COM, or C on the controller terminal strip. (There may be two terminals marked "common wire.") Twist a wire nut or place a piece of electrical tape over any loose wire ends to prevent the wire(s) from touching each other and causing a short circuit.

NOTE: Many Rain Bird mechanical controllers have a valve wiring harness that may simply be unplugged to disconnect the common and station wires altogether. This is usually a white multi-pin "snap" connector (Molex type) located behind the face panel, inside the cabinet.

E If you turned power off, reconnect the backup battery and turn power back on.

F Set the controller to "OFF" and set all stations to zero minutes to prevent operation. In spring, reconnect the



(Top Left)
The start of normal irrigation operation



(Middle)
Air/water mixture as compressor forces water out of the heads



(Right)
Mostly air out of the head as the last of the water surges out



common wires (and reprogram the controller if you turned off power during this process).

3 *If your sprinkler system has a water pump*, you must disconnect the common wire(s) (See photo B in column 2 on page 5). This ensures your system will not default to a running position during power surges or power failure. Running the pump dry could seriously damage it. Check with the pump manufacturer's instructions for further winterization.

4 *If you have a Backflow Preventer*, check with the manufacturer for winterization techniques. Leave the shut-off valves open after draining the unit. "Ball"-type shut-off valves should be left at a 45 degree angle to prevent water from entering the seal. Under extreme conditions, insulate the device or use heat tape to prevent damage.

Taking the time to winterize all parts of your sprinkler system will not only protect it this winter, but will also extend the life of your irrigation components so they can serve your needs for years to come!



Our special thanks to **Greg Tepe** at **Tepe Irrigation** for his assistance with this newsletter. He can be contacted at sales@TepeServices.com or 513-941-4500.

New PRS-Dial Pressure Regulating Module Keeps a Consistent Flow



Precisely regulate outlet pressure at the valve regardless of incoming pressure fluctuations with Rain Bird's new PRS-Dial Pressure Regulating Module. This rugged tool optimizes performance by automatically maintaining a constant outlet pressure between 15 and 100 psi (1,0 and 6,9 bars) with an accuracy of plus or minus 3 psi (0,1 bar). Improvements in the design allow precise fine-tuning in increments as small as 1/2 psi.

Other improvements in spike reduction help reduce the potential of damage from water hammer and surges. To operate properly, the PRS-Dial (PRS-D) should be used in areas where the inlet

pressure is at least 15 psi (1 bar) higher than the desired outlet pressure.

The PRS-D fits all Rain Bird PGA, ESCB, GB, EFB-CP, BPE and BPES series valves. A dial cartridge is also sold separately for retrofitting existing PRS-B units.

The PRS-Dial's visible scale assists with quick, easy installation. Field installation can be completed by hand with an adjustable wrench. The PRS dial is designed to simply thread underneath the solenoid and adapter. A Schrader valve can be ordered separately to connect a pressure hose gauge.

The PRS-D combines an ergonomic design with a waterproof cartridge that eliminates fogging, corrosion-resistant glass-filled nylon construction and a snap-tight cover to prevent vandalism.

For more information on this and other new Rain Bird products, check out the Rain Bird Web site at www.rainbird.com.

