

The following article was provided compliments of Paul Bando, Representative for Sprinkler Irrigation Supply Co., Addison, Illinois

EDITOR

Have you taken the necessary steps to prevent freezing and costly repair of your sprinkler irrigation system?

BEFORE YOU START

Check these important points before you start draining your system.

1. Shut down early - before freezing temperatures become a threat.

2. Plan in advance - a systematic step-by-step procedure will assure the best drainage and makes sure all parts of the system are covered.

3. Have all the tools available to do the job (i.e.: compressor, wrenches, hose and hose adapters, water main keys, etc.)

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4. Have replacement drain valves and fittings to cover any valves that have caused trouble before.

5. Check your irrigation system plan or layout, for location of the manual drains in the system. Can they be located? Are the drain sleeves centered over the valves so they can be operated from above ground at grade level?

6. Check the operation of the master shut-off valve from the present city main. Will it seal off the water and not let it bleed into the sprinkling system during the winter months.

7. Do you have any gravel drains which you know should be re-built? Drains built in heavy soils will fill in with time and will not absorb the water quickly.

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DRAINAGE BY GRAVITY

If the system was installed to grade and manual drain valves have provided good drainage in the years past, continue the same procedure. The following steps will be helpful in setting up a new procedure or serve as a checklist to your present procedure.

1. Turn off the pumping plant (or water service) and depressurize the system by bleeding off the main and pressure tank.

2. Insert couplers at the higher elevations and allow the air to bleed back into the system during the drainage procedure. Bleed out as much water as possible through outlets above the ground. Now, open the manual drain valves at the low points.

3. Allow sufficient time for the water to drain out of the pipe and for the water to be absorbed by the gravel sump. The time required is dependent on the amount of water, condition of the gravel sump, size of the drain, and depth of the water table. Allow 2-3 days for drainage on light sandy soils and 5-7 days on heavier soils. Be sure the water has drained from the line.


4. Open the in-line manual control valves at each tee and green to allow the water to flow to the low area.

5. **After complete drainage of the line**, close off the drain valves to prevent the re-entry of water due to the rising water table, flooding conditions or melting snow.

6. Remove the couplers from the quick coupling valves at the higher elevations.

7. Any sprinkler heads which are in low flood areas should be sealed off and if necessary, removed from the riser and capped shut.

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8. In low areas where the water table is too near the surface and drainage is not possible, a "pump-out" type sump will be required.



USING AIR TO BLOW OUT THE SYSTEM

1. The air compressor must be of adequate size to keep the water moving down to the end of each lateral section. For golf courses a 250 CFM (cubic/foot min.) air compressor would be needed.

2. Inject the air at the pump house location, through the main trunk lines to each branch lateral line.

3. Plan for the removal of water out of each branch lateral line and on automatic systems sequence and operate each valve station until air displaces the water.

4. Repeating the procedure is important. Water will drain and collect again in the low areas of piping (4 or 5 times may be necessary).

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5. After you think you have removed all the water from the pipelines then crack open the drains and blow out until only air escaped.

6. When the water has been removed the drain valve should be closed to prevent the re-entry of water due to flooding, rising water table or melting snow.

ELECTRIC CONTROLLERS

Special attention to automatic controllers:

1. Leave the electric current on each of the field controllers during the winter season. Keeping the timing motors energized will add heat to the cabinet and help to lower the relative humidity and reduce moisture and condensation.

2. Seal off any holes in the panel enclosure so that rodents will not nest in these locations and cause any shorting out.

3. Program a short time intervals to activate each valve station during the months of inactivity. (2-1/2 to 5 minutes timing at each station once a day.)



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PUMPS AND PUMPING PLANT

1. Secure electric controls to "off" - lock in "off" position or remove fuses.

2. Remove water from mechanical piping, pumps, check valves and pressure tanks.

3. Disconnect suction line, or open drain in suction piping to prevent breakage. (Caution: Drain valve must be below frost level.)

4. Cover any openings in pumps, suction piping and discharge piping to prevent entrance of rodents, or having foreign objects fall into the lines.

5. Particular attention to remove and drain the regulator pilot control valves on pressure regulating valve.

6. Remove any water from air compressor lines, pressure switches, and pressure gauges.

7. Pay special attention to drain Numatic air chargers. They must be disconnected and stored in non-freeze building.

8. Most of the centrifugal pumps used for irrigation have a stuffing box. Loosen up the stuffing box and distribute the grease. Back off and loosen the gland for winter storage.

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9. Spray a rubber preservative on any rubber suction gaskets, diaphragms, and foot valves to keep them from drying out and cracking over the winter months.

10. Special guidelines should be followed to protect gas driven pumps. Follow the manufacturers recommendations to protect the cooling system, cylinders, battery and pump castings. Vacuum pumps and vacuum primers should be removed and stored in a cool dry place.

To keep your drains operating and serviceable, keep in mind the following:

1. Use at least a 3/4" size drain valve, one that will operate easily and has the features of a strong stem and cross handle.
2. When replacing any drain valve check that you are providing an adequate gravel sump that will absorb the water.
3. Provide a valve box. These valve box enclosures will provide a straight solid sleeve to assure remote operation of the valve from grade level.



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