

SPRING IRRIGATION PRECAUTIONS INSURE DESIGN PERFORMANCE

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With the onset of spring season fast approaching, it is time to start thinking about turning on the irrigation system. The following is a general guide, and in no case should this be construed as specific procedure.

For those of you who do not have a plan of your irrigation system, get one! The person or firm who designed the system should be able to provide you with a copy of the plan. If you do not know who designed the system, contact the contractor that installed the system and ask for the name of the designer or for a copy of the plan. The fee (if any) for this would be minimal (\$5.00 to \$10.00) and would be a worthwhile investment. An "As Built" plan, which should be provided to you once the installation of the system is completed, will show the location of Drain Valves, Manual Valves, Electric Valves, Sprinkler Heads, Piping, etc., along with dimensions from existing structures such as buildings, walks, curbing, etc.

Once you have a plan, study it and become familiar with the system in regard to location of the Water Supply, Drain Valves, Control Valves, Controller, etc. When you are familiar with the above, you will need to close the Manual Drain Valves (see Fig. 2-2), which

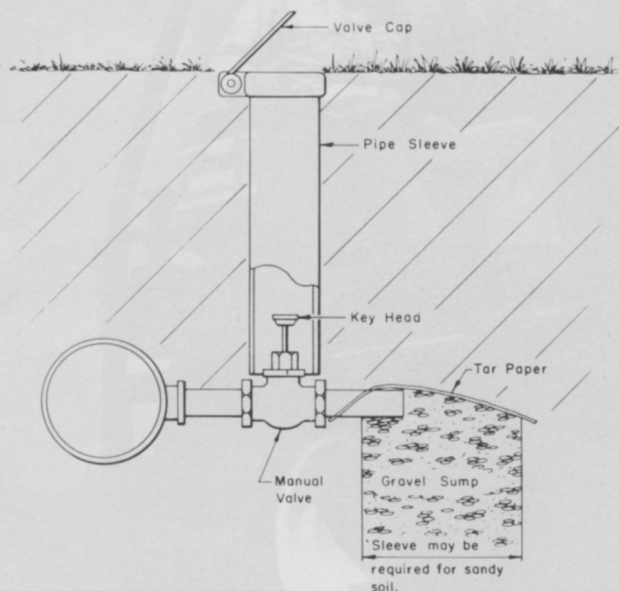


Figure 2-2 Typical Installation of Manual Drain

should have been left open during the winter. If your system is located in an area of the country where it is common to "winterize" by the use of a large air compressor, you may not have any Drain Valves located on the sprinkler main, although there may be some located near the Supply Valve and Control Valves. If you cannot locate any, do not worry; should any be left open they will be obvious when the water is turned on.

After all Drain Valves have been closed, make sure

the Controller is off. Now turn the Supply Valve on only enough to allow a small flow of water into the Main Line. If you turn the valve on too fast, it will create a surge of water rushing into an empty main line and can easily cause a rupture in the sprinkler main.

This small flow of water may take quite some time to fill the sprinkler main, but this time used waiting for the line to fill is better spent than time used to repair or replace a ruptured Main Line. While the Main Line is being filled, walk the site and look for any Drain Valves which may have been left open, or for any leaks.

If you find any leaks, immediately turn off the Supply Valve and reopen the Drain Valves to drain the sprinkler main. Repair or replace the affected portion of the sprinkler main and then follow the above procedures to refill the main line.

After the sprinkler main is filled, inspect each drain valve, and using your valve key, open the drain partially to release any trapped air and also to flush any debris from the valve. Should any of the valve sleeves be filled with dirt, gravel, etc., now is a good time to dig them up and clean out the obstructions; if not done now, it will need to be done before the fall season. It is also a good time to install hinged valve caps with locking covers on those sleeves. This will prevent the cap from being lost or sucked into the power mower and also prevent anyone from opening them and dropping debris down the sleeve.

When you are sure that the sprinkler main is not leaking, go to the Controller and turn on the number one (1) controller station. Leave the Supply Valve only partially open and allow the piping in the number one (1) zone to fill until you can see water discharging from the sprinkler heads. Follow the same procedure for the remaining controller stations; do not open the Supply Valve fully until all zone piping has been filled.

If you detect any leaks, repair them and check the repair before backfilling the area. If any zone in which you find a leak supplies water to "gear-drive" sprinkler heads, remove the heads and flush the lines to remove any sand or debris. This sand or debris may have backwashed into the zone piping due to the leak. If this is not done, the sand and/or debris could damage the internal assemblies of the heads.

Once all the zone piping is filled and you have opened the Supply Valve fully, check all zones for proper operation. It is best to flush lines with the Supply Valve fully open. This will provide adequate pressure and flow to completely remove debris before re-installing any gear-driven heads which you may have removed.

When checking the heads for proper operation, turn a zone on and make a visual inspection:

1. Are all heads discharging approximately the same amount of water?
2. Is the arc of coverage proper? (check plan)
3. Do any nozzles seem to be plugged?
4. Are any heads leaking or broken?
5. Are all heads operating as per plan?

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If any nozzle seems to be plugged, remove the nozzle and turn the zone on momentarily to flush any debris from the head. Reinstall the nozzle and turn the zone on again to check for proper operation. If there still seems to be a blockage, remove the complete sprinkler head and check for an obstruction in the inlet of the head or in the fitting(s) under the head.

Check the wiper seals on the sprinkler heads (see Fig. 2-3); if they are leaking, replace them. A worn

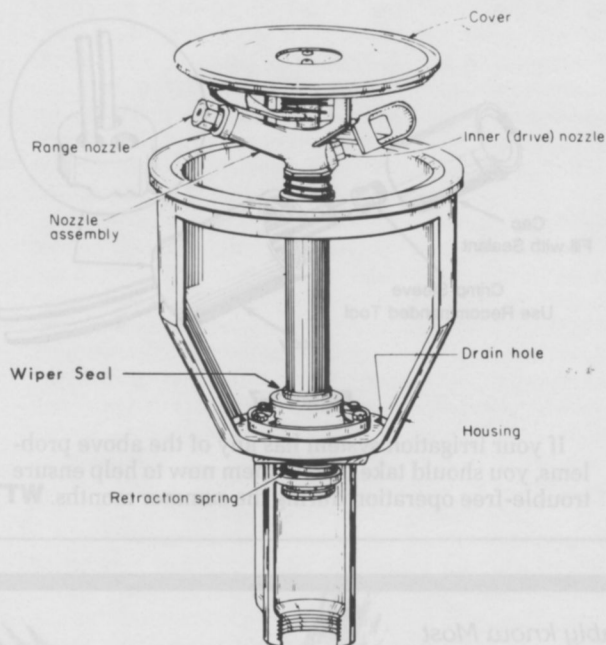


Figure 2-3

wiper seal in only one sprinkler head can waste approximately one thousand (1,000) gallons of water per year.

When turning off zones by the use of the controller, take note of the length of time it takes for the valve to shutoff. This time should be from 2-7 seconds, with the normal being 4-5 seconds. If a valve requires 10 seconds or more to close, the orifice(s) in the valve diaphragm and/or the exhaust fitting may be nearly plugged (see Fig. 2-4). If so, locate the valve and turn off the sprinkler main (Supply Valve) and open the

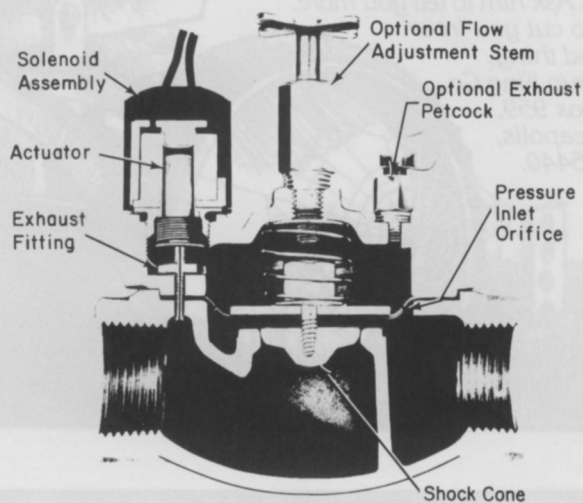


Figure 2-4

Drain Valve. NEVER ATTEMPT TO SERVICE A CONTROL VALVE WITHOUT FIRST MAKING SURE THE SPRINKLER MAIN IS OFF AND PRESSURE HAS BEEN RELEASED. Remove the cover bolts from the valve and lift the cover off. Make sure you keep parts in respective order for reinstalling. Check the diaphragm for cracks, replace if worn or cracked, and cleanse in a pail of clean water along with other parts. Remove the solenoid assembly from the valve cover and clean the actuator and spring. Clean the cover and cover bolts last. Reassemble all parts and bolt the cover back on to the valve body. Beware if you have any leftover parts!

After repairing the valve, close the drain valve and turn the Supply Valve on slowly. Operate the zone and recheck the valve-closing speed. Should the valve continue to close slowly, consult the distributor or manufacturer of the valve.

The Control Valves should be installed in valve boxes which are large enough to permit service without earth excavation (see Fig. 2-5). Should you need to excavate the earth to repair a valve, it would be advisable to obtain a valve box of proper size and use it for

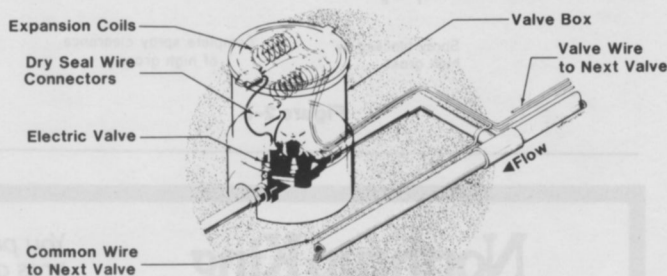


Figure 2-5

accessability for any future service. It will also serve as a good visual location of the valve.

If your system incorporates a booster pump, you should disconnect the power to the pump and follow the same procedures for turning on the system and filling the lines. Once the sprinkler main and zone piping is filled, reconnect the power to the pump and check the system for proper operation. This applies only to systems in which the water is supplied by the city main and the booster pump is used to increase the existing pressure.

If your system is supplied water by the use of a pump, follow the same procedures, although you should open the valve on the discharge side of the pump only about 1/4 to 1/2 open and turn on a controller station when filling the lines. Once all piping is filled, open the valve fully and check system for proper operation. CAUTION: make sure the pump is fully primed before attempting to operate; failure to do so can cause pump damage.

Many irrigation systems require service when turned on in the spring. Even the best system available will require some type of service in its years of operation. With the cost of electricity, water, material, and labor increasing every year, this is the best time to get your irrigation system into proper operating condition. You may spend some money now in doing so, but if you wait, it will only cost more.

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The most common causes of improper system operation are as follows:

1. Sprinkler heads not installed at the proper level (see Fig. 2-6)
2. Worn or broken sprinkler heads

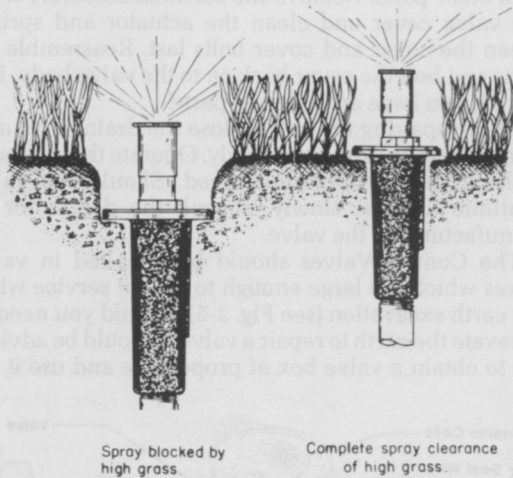


Figure 2-6

3. Improperly installed equipment (valves, heads, controller, pipe, etc.)
4. Valves which are in need of repair or replacement
5. Bad wire connections (see Fig. 2-7 for proper connection)

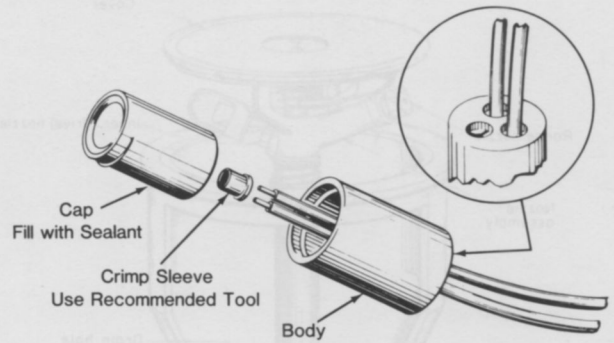


Figure 2-7

If your irrigation system has any of the above problems, you should take care of them now to help ensure trouble-free operation during the summer months. **WTT**

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