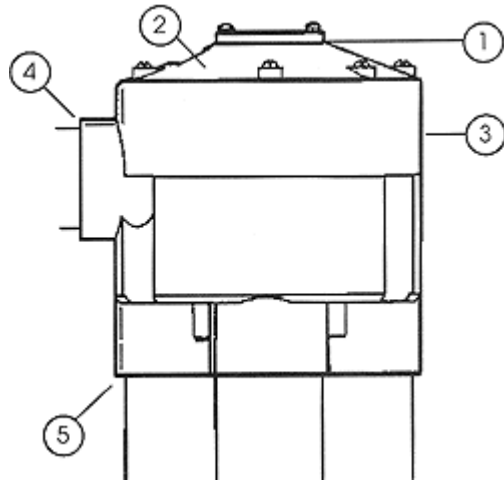


HYDROTEK® 4000**VALVE FUNCTIONS**

1. CAM - Used to index the valve to the next zone and controls how many outlets are to be used. May be changed to increase or decrease number of operating zones. Secured to valve top with two cam retaining screws.

2. VALVE TOP - A high strength ABS plastic top secured with seven valve top retaining screws.

3. VALVE BODY - A high strength ABS plastic housing.

4. INLET - Allows for slip and glue connection of a 1 1/4" pipe

5. OUTLETS - 4 outlet model - 1 1/4" PVC pipe / 6 outlet model 1" PVC pipe

CAM REPLACEMENT INSTRUCTIONS

Replacement cams are available to increase or decrease the number of operating outlets on the HYDROTEK® 4000 Series Valve

BE SURE YOU HAVE THE CORRECT REPLACEMENT CAM. Except for the two zone cam, cams for the four outlet valves and the six outlet valves are NOT interchangeable. The correct bottom to be used is marked on the top of the cam.

To remove cam, remove two cam retaining screws and pry up gently with screwdriver.

To install a new cam, partially insert the cam into the valve top and rotate it counterclockwise while applying gentle downward pressure. This allows the upper lug on the stem in the valve to slip into the cam. The cam should slip into place easily. When installed correctly, the cam should slide down in place with NO tendency to spring back. Improper installation will cause the valve to jam and prevent the valve from advancing properly.

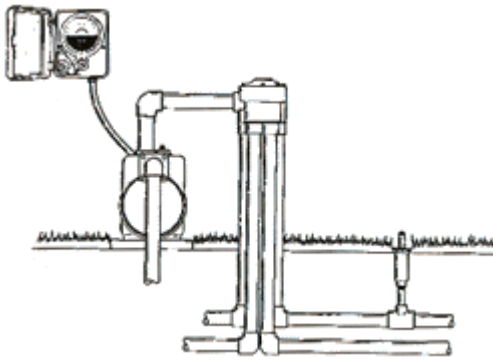
CAUTION

Cams for operation of fewer than the full number of outlets have one or more camming slots blocked. Because of this, it is important to make sure that the cam is lowered in the valve so that the lug on the stem in the valve is inserted into an open cam slot in the cam.

VALVE INSTALLATION INSTRUCTIONS

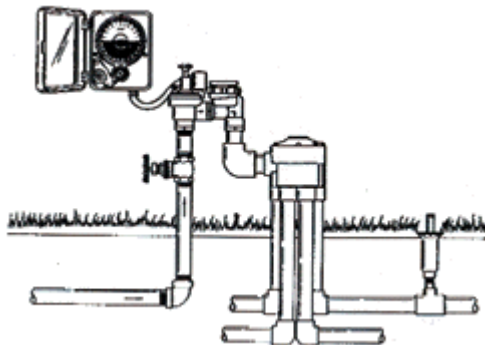
Prior to installation of HYDROTEK 4000® Series Valve, make sure that the system is designed using adequate pipe sizes and control valves to ensure maximum performance of the valve.

For installation with large terrain elevations, or applications with high lift requirements such as overhead systems in greenhouses, the valve should be installed at the highest point in the system, or check-valves should be installed near the valve in the elevated lines to prevent the back flow of water from the higher locations to the lower zones.



Pump Fed Applications: The HYDROTEK 4000® Series Valve can be installed directly off the discharge side of the pump. The valve is cycled as the pump is turned off and on. It is important to install the valve as close to the pump as possible.

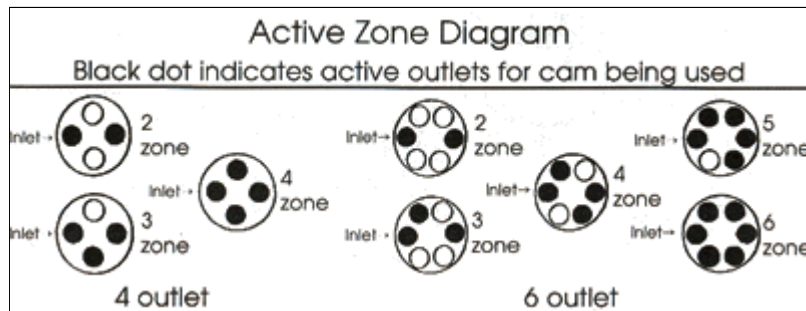
City Water Applications: For city water supplied applications, an inline solenoid valve must be installed between the city water source and the HYDROTEK 4000® Series Valve. Ensure that proper back flow prevention is used in compliance with local codes.



The HYDROTEK 4000® Series Valve may be installed below ground in a valve box or directly buried.

When connecting the lines to the valve outlets, ensure that the correct cam is installed. Install lines to outlets corresponding to the numbers on the cam. See diagram for proper zone hookup of outlets.

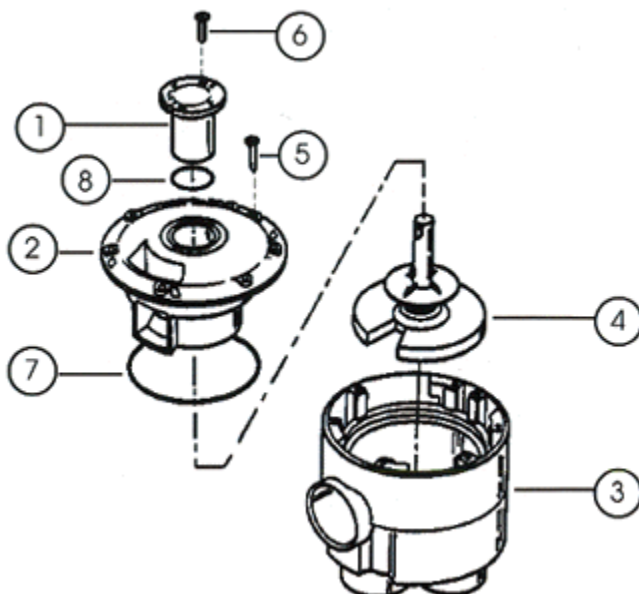
Do NOT turn the valve upside down when gluing the inlet and outlet lines into the valve as glue may run down into the valve and interfere with proper operation. Allow glue to dry for at least two hours before operating or testing the valve. For best results, use a multi-purpose glue.



To seal off any unused outlets, install a piece of PVC pipe at least six inches in length to the outlet and cap the pipe. This will allow additional zones to be used.

In regions of the country where winter temperatures may cause damage to exterior pipes, the HYDROTEK 4000® Series Valve should be winterized. To protect the control valve and other irrigation components from damage, the entire system should be drained or cleared using compressed air. Contact your K-Rain dealer for more information on the winterization requirements in your area.

VALVE DIAGRAM



PARTS LIST

1	Two zone cam for four or six outlet valve Three zone cam for four outlet valve Four zone cam for four outlet valve Three zone cam for six outlet valve Four zone cam for six outlet valve Five zone cam for six outlet valve Six zone cam for six outlet valve	6107042 6107043 6107044 6107063 6107064 6107065 6107066
2	Valve Top	7005000
3	Four outlet valve body Six outlet valve body	7005504 7005506
4	Stem / disk assy. w/.028 spring (white) Light stem / disk assy. w/.025 spring (blue) Heavy stem / disk assy. w/.032 spring (red)	7005507 7005509 7005511
5	Valve top retaining screw set (7) (10 x 1 Phil Pan SS)	7005520
6	Cam retaining screw set (2) (10-24 x 3/4 Phil Pan SS)	6200400
7	Valve Top O-Ring	7005610
8	Cam O-Ring	6000412

TROUBLESHOOTING1. **PROBLEM:** Valve Does Not Change or Cycle to Next Zone or Outlet

CAUSE: The stem and disk assembly is not rotating when the water flow is turned OFF and then back ON.

SOLUTION: Ensure there is no debris inside the cam. Clean and carefully reinstall the cam.

SOLUTION: If fewer than the maximum number of outlets are being used, check the installation of the cam. Ensure that the stem and disk assembly is not being held down by an improperly installed cam. Refer to the Cam Replacement Instructions.

SOLUTION: Remove the valve top and check for proper movement of stem and disk assembly. Check for and remove any debris or foreign objects that may jam or retard the movement of the disk.

SOLUTION: Check for freedom of movement of stem and disk assembly up and down over the center pin in bottom of valve. Scale deposits may build up on the pin and hold stem and disk assembly down. Clean pin and again check for freedom of movement.

SOLUTION: Be sure that all operating outlets are not capped and that the flow to operating zones is not restricted in any manner. This would cause pressure to build up in the valve and lock the stem and disk assembly in the down position.

SOLUTION: The back flow of water from uphill lines may be preventing the

valve from cycling properly. This can happen when the valve is placed too far below an elevated irrigation line. If the valve cannot be placed close to the high point of the system, a check valve should be installed near the valve in the outlet line that runs uphill from the valve.

2. **PROBLEM:** Water Comes Out of all the Valve Outlets

CAUSE: Stem and disk assembly not seating properly on valve outlet.

SOLUTION: Check for sufficient water flow. A minimum of 10 GPM is required to properly seat the disk. For water flow between 6 and 10 GPM, a stem and disk assembly with a lighter spring is available.

SOLUTION: Remove the valve top and check the inside walls to ensure that nothing is interfering with the up and down movement of the stem and disk assembly inside the valve.

CAUSE: Too many sprinkler heads on a zone will cause insufficient pressure for disk to seat over valve outlet.

SOLUTION: Reduce the number of heads on the zone to obtain the proper sprinkler operating pressure.

3. **PROBLEM:** Valve Skips Outlets or Zones

CAUSE: For a pump installation, the pump may be losing its prime, causing the water flow to surge. This will cause the valve to cycle quickly several times, skipping one or more zones. Verify that the flow to the valve is constant by removing the valve top and watch the flow when the pump is turned ON after having been OFF for at least 15 minutes. The flow should be steady and uninterrupted.

SOLUTION: Seal any pump suction line leaks.

SOLUTION: Replace or install suction line check valve to prevent pump from losing its prime.

CAUSE: The stem and disk assembly is being advanced past the desired outlet.

SOLUTION: Ensure that the correct cam for the desired number of zones is installed and that the outlet lines are installed to the correct outlet ports of the valves as indicated by the zone numbers on the top of the cam.

TECHNICAL SPECIFICATIONS

Flow Range:	10-50 gallons per minute Stem and disk assembly for lower flows available (see parts list).
Valve Top and Body Construction:	High strength ABS plastic
Inlet:	Slip and glue connection to 1 1/4" PVC pipe
Outlets:	4 outlet accepts 1 1/4" PVC pipe with slip and glue connection. 6 outlet accepts 1" PVC pipe with slip and glue connection.

FLOW CHARACTERISTICS**4400 Series 4 Outlet Valve**

Flow (GPM)	10	20	30	40	50
Pressure (PSI)	2.0	3.0	4.5	6.4	10.0

4600 Series 6 Outlet Valve

Flow (GPM)	10	20	30	40
Pressure (PSI)	2.5	4.5	7.5	11.5