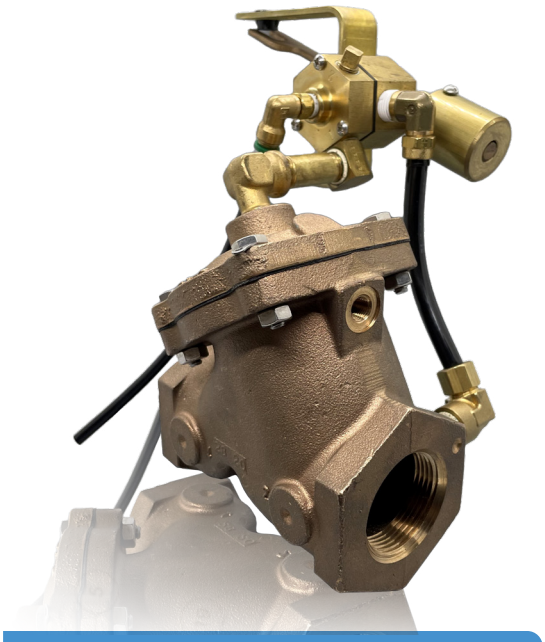
AQMATIC
Valves & Controls

MADE IN THE USA
OF FOREIGN & DOMESTIC PARTS

AQ MATIC FLOAT OPERATED VALVE

Versatile design for a wide variety of applications



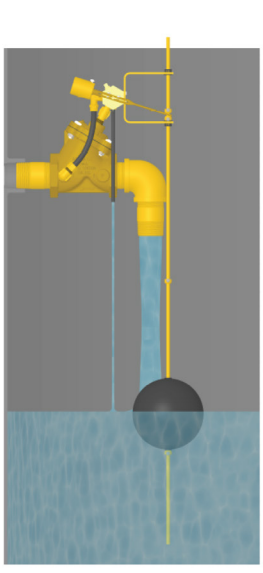
Certified by IAPMO R&T to NSF/ANSI 61 and NSF/ANSI 372 for lead-free compliance.

FEATURES AND BENEFITS

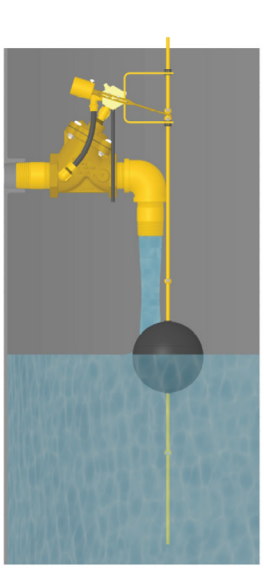
The AQ Matic Float Operated Valve is a pilot-controlled, hydraulically operated Y-pattern diaphragm valve. It is controlled by line pressure and adjustable float height setting which determines the high and low levels of an atmospheric water storage tank. Common applications include cooling tower storage tanks, Reverse Osmosis storage tanks, and other atmospheric water storage tanks.

OPTIONS

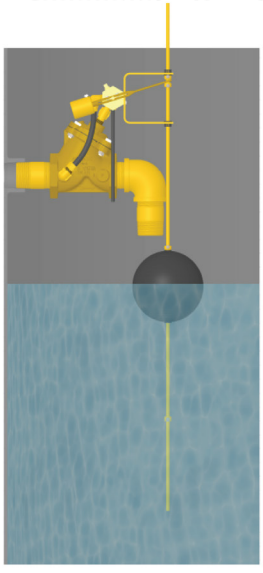
- Positive opening and closing of the valve by pilot pressure.
- Pilot uses fresh water for control pressure.
- Completely automatic opening and closing operation without electricity.



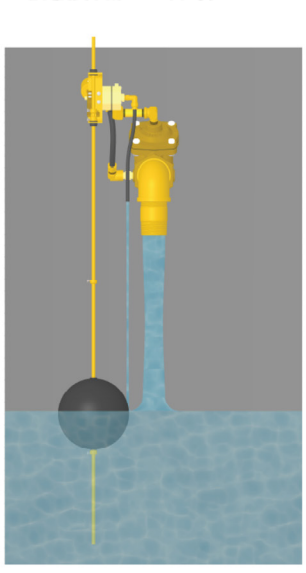
Cap pressure vented to drain tube



Float rises freely until hitting upper stop



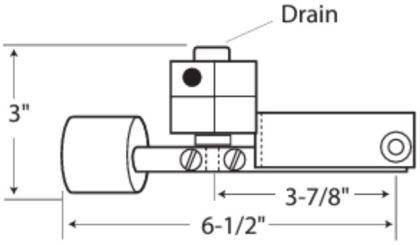
Upon reaching upper stop, float pushes lever to pressurize cap

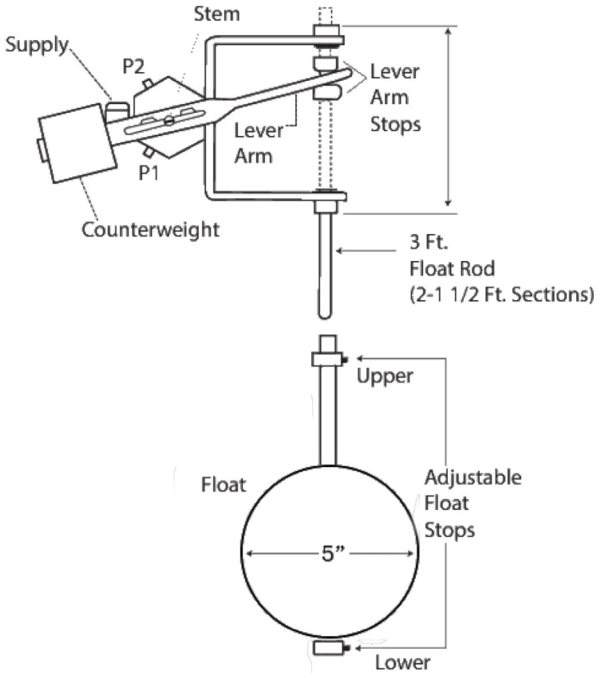


Front View

OPERATION

When water is drawn out of the tank to a predetermined low level, the float ball contacts the lower float stop. The weight of the float ball will cause the lever arm to rotate to the down position. The top of the diaphragm is vented through the pilot assembly drain tube. The volume of water in the upper diaphragm chamber will exhaust out of the pilot assembly drain tube (into the atmospheric tank) then stop. With no pressure on the top of the diaphragm, inlet water pressure pushes the disc of the diaphragm valve to the open position. Water will flow through the valve to fill the tank. At the predetermined upper level, the float ball contacts the upper float stop rotating the lever arm to the up position. Line pressure is directed through pilot assembly port #1 to the top of the diaphragm, closing the diaphragm valve. All water flow into the tank stops until the next draw down cycle.





INSTALLATION

1. Before installation, all pipes should be flushed thoroughly to remove chips, scale, and other foreign matter.
2. Valve should be installed with flow arrow pointing into the tank. Use appropriate pipe sealant for the valve inlet and outlet threads.
3. A length of pipe, and if required an elbow, can be installed on the valve outlet to increase back pressure on the valve. Back pressure will assist the valve closing response.
4. Install plastic bushings into the bracket as shown above.

5. The float rod should be installed as shown above. Assure lever arm stops are installed with rounded side pointing toward the lever arm to prevent binding.
6. Add additional length(s) of rod (sold in 18” long pieces) by threading #12-24 studs between rod sections.
7. The counterweight should be adjusted to balance the weight of the float rod before float ball is installed. To adjust, loosen the counterweight set screw and slide the counterweight in or out on the lever arm as required. Tighten set screw once balanced.
8. The float ball is now installed on the float rod. The spacing between float stops determines the travel or range of the water level in the tank. The upper float stop determines the off position of the valve. The lower float stop determines the level at which the valve will open starting to refill the tank.
9. Once the float stops are set, adjust the lever arm stops as required to finalize the tank upper liquid level.
10. Open water supply line fully to test valve operation. Valve operation during tank high and low level conditions can be simulated by manually rotating the lever arm and holding it in the desired position.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	RESOLUTION
Valve does not close	Lever arm not in up position	• Find and clear any obstructions limiting lever arm stroke • Assure lever arm stops are installed with rounded side facing lever arm • Assure upper float stop is adjusted appropriately • Assure float ball still floats (is not waterlogged). Replace float ball if necessary
	Stem plate inside level control assembly is not aligned to lever arm	Loosen two screws in lever arm that squeeze stem shaft. Using flat tip screwdriver, rotate stem shaft until valve closes. Slot in stem shaft should align with slot in lever arm, Tighten two set screws in lever arm.
	Low pressure	• Find and remove any obstructions upstream of the float valve • Assure all manual valves upstream of the float valve are fully open • Install flow restriction downstream of float valve such as a length of pipe, elbow(s), and/or partially closed manual valve to generate backpressure
	Diaphragm and/or seals are worn	Rebuild valve using diaphragm and seal kit
	Level control assembly plugged or worn	Rebuild using internal parts kit

SYMPTOM	POSSIBLE CAUSE	RESOLUTION
Valve does not open	Lever arm not in up position	• Find and clear any obstructions limiting lever arm stroke • Assure lever arm stops are installed with rounded side facing lever arm • Assure lower float stop is adjusted appropriately
	Level Control Assembly drain tube obstructed	Loosen two screws in lever arm that squeeze stem shaft. Using flat tip screwdriver, rotate stem shaft until valve closes. Slot in stem shaft should align with slot in lever arm, Tighten two set screws in lever arm.
	Stem plate inside level control assembly is not aligned to lever arm	• Find and remove any obstructions upstream of the float valve • Assure all manual valves upstream of the float valve are fully open • Install flow restriction downstream of float valve such as a length of pipe, elbow(s), and/or partially closed manual valve to generate backpressure
	Seals inside valve are swollen	Rebuild valve using diaphragm and seal kit
Constant leak to pilot assembly drain	Stem plate not sealing	Rebuild using internal parts kit

REFERENCE INFORMATION

- See drawing 1078193 for model 348 Level Control Assembly component information
- See drawing 1078190 for model V42 float operated diaphragm valve component information