

AMH1K-7ODRXT1 & AMH1K-RODRXT1 AquaMotion “Aqua-Shield™” On Demand, One Pipe, Outdoor Installation and Operating Instructions
NSF/ ANSI 372 Approved, UL, ULC Listed

The Aqua-Shield™ **On Demand, One Pipe, Outdoor Circulators** are designed to be mounted outside in covered areas* with the timer box facing upwards. They are intended for use with outdoor tankless water heaters without dedicated return lines in warmer climates or in outdoor summer seasonal facilities that are shut down and drained in the off season.

Safety Instructions

“Warning” warns of hazards that can cause serious personal injury, death or significant property damage if ignored.

“Caution” warns of hazards that can or will cause minor personal injury or property damage if ignored.

*Mounting locations should be protected from direct rain or sprinklers.

General Safety

Read and follow the following safety instructions.

Maintain safety labels, replace missing or damaged labels.

- 1) Follow all local and national plumbing, building and electrical codes when installing the pump and control. Use rigid pipe.
- 2) **“Warning” Hazardous Pressure.** Do not use this pump with inlet pressure greater than 80 psi. If not already in the plumbing system, install a pressure relief valve in the pump discharge piping capable of passing the full pump flow at 125 psi. If local code requires installation of a pressure relief valve capable of passing the full flow of the pump at a pressure less than 125 psi, follow the code requirements.
- 3) **Never run the pump dry.** This can damage internal parts of the pump or cause the pump to overheat and void the warranty.
- 4) **“Warning” Risk of fire and explosion.** To avoid risk of fire and explosion, **Pump Water Only** with this pump. Do not pump flammable liquids or chemicals. Do not use the pump near gas pilot lights or where chemical or gas fumes are present. Use of an electric pump with liquids other than water or in an atmosphere containing chemical or gas fumes may ignite those liquids or gases and cause injury or death due to explosion or fire.
- 5) **“Warning” Burn Hazard.** If water is trapped in the pump during operation it may turn to steam. Trapped steam can lead to an explosion and burns. Never run the pump with the outlet closed or obstructed.
- 6) **“Caution” Do not touch an operating motor.** Modern motors operate at high temperatures. To avoid burns when servicing the pump, allow it to cool for 20 minutes after shutting down before handling.
- 7) **“Warning” Risk of electric shock.** This pump has not been investigated for use in swimming pool or marine areas.

Electrical Safety

“Warning” Hazardous Voltage. Can shock, burn or cause death. Ground the pump before connecting it to a power supply. Shut power off to the pump prior to doing any work on the pump or motor.

Do not allow water to come in contact with the motor, pump, internal wiring or power cords.

Allow the pump to cool after it is unplugged.

Plug the pump into a GFCI protected outlet.

General Information

- Pump only clear water
- The water supply line to the pump should be 1/2” or larger
- Mount the pump securely and level to minimize movement and vibration
- Protect your system with a pressure relief set at or below 125psi. System must be capable of sustaining the pressure relief setting.

Warning: Risk of Electrical Shock. Only install with the outdoor box cover facing upwards when the cover is in the closed position.

Circulator Installation

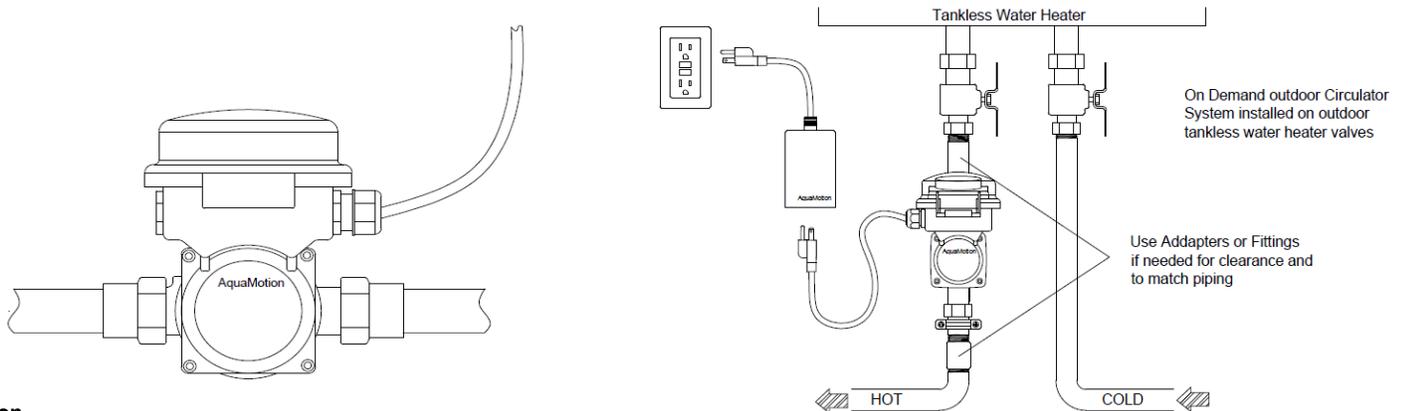
Choose a location in the **hot outlet line of the tankless heater** that will not experience direct water spray and that has access to a GFCI outlet. Orient the pump to ease plumbing connections and which will allow the timer cover to be opened. Decide where and how the incoming piping will be connected and what additional fittings may be required to attach the homes plumbing to the circulator. To avoid a prolonged period for the home to be without water, source these items prior to proceeding with the installation.

1. Turn off the power to your tankless water heater at the circuit breaker.
2. Shut off the cold water supply line to the tankless water heater. If there is no valve on the cold water supply shut off the main water supply valve to the home.
3. Open a faucet to relieve the pressure on the system. Close the faucet.
4. Attach a hose to the drain valve on the cold water inlet to the tankless heater and run the hose to a drain or other suitable drainage location.
5. Drain the system by opening the highest faucet in the home to allow air to enter and open the drain valve on the cold inlet to the tankless.
6. Separate your dedicated return piping in a location where the piping and circulator will be supported by pipe hangers or stand offs and that will allow space enough for the circulator and fittings.
7. Installing shut off valves on the circulator inlet and discharge will ease the installation and any future maintenance.
8. Attach the shut off valves (if used) or fittings to each end of the separated piping allowing space for the circulator between them.

9. Using the gaskets supplied with the kit or those supplied with the shut off valves (if used) mount the circulator between the attached valves or fittings.
10. Close the faucets that were opened.
11. **“Caution”** Do not use flexible hoses to connect the pump to the homes plumbing. Use only ridged piping.
12. When all piping has been connected and sealed pressurize the system by opening the water supply valve and check for leaks.
13. If a leak occurs shut off the water supply valve, drain the system and repair the leak.
14. To clear air from the pump and the system open a faucet and allow water to flow until the stream becomes steady. Close the faucet.
15. Plug in the pump into a GFCI outlet. The timer switch is set in the on position. Do not change this setting if the On Demand transmitter receiver are being used.
16. Recheck for leaks and correct as necessary.

Mounting Orientation

To protect the circulator from water intrusion the box must always be mounted facing upwards as shown



Operation

The circulator will run based on the activation of the wireless button. When the temperature of the water being pumped reaches 92° F the ODR valve will adjust itself to maintain the temperature at the fixture. The circulator will continue to run for 5 minutes. The length of time that the circulator runs can be extended by reprogramming the receiver for 15 or 30 minutes if hot water needs to be maintained for a longer period. Pressing the wireless button while the circulator is running will reset the run time for 5 minutes or the reprogrammed time you selected. If the circulator is not running and the fluid temperature approaches freezing the circulator will start and run to protect the circulator from freezing.

Valve Installation Installation and Operating Instructions

Warning: This is not an anti-scald valve.

AMK-ODR Valve Installation

Note: Pipe dope and Teflon tape are **Not** required for any of the valve threads.

The valve is normally installed at the faucet that is furthest away from the hot water tankless heater. If there are separate hot water branches in the residence, additional valves may be required.



- 1) Close both the hot and cold angle shut off valves under the sink.
- 2) Open both the hot and cold water faucets to relieve the water pressure.
- 3) Place a pan or rag below the connections to catch any water that may leak from the risers.
- 4) Disconnect the riser pipes or hoses from the angle shut off valves.
- 5) Install the ODR valve onto the **Cold Water Angle Stop** using the 3/8" compression nut on the ODR valve.
- 6) Attach the cold water riser to the ODR valve.
- 7) Install the Tee from the kit to the Hot Water Angle Shut Off valve using the 3/8" compression nut on the Tee.
- 8) Attach the 1/2" hose from the kit between the 1/2" connection on the ODR valve and the 1/2" connection on the Tee.
- 9) Open the hot water angle shut off valve and the cold water faucet to purge air from the line and valve.
- 10) Close the cold water faucet and open the cold angle stop valve.

Note: The spacing dimensions between angle shut offs vary. Position the valve and Tee hose connections to suit your system.

***See AMK-WB Instructions for On Demand installation.**

