

**U.S. PATENT No: 8,083,500 B1 • 8,303,184 B1 • 9,863,647 B1 • 11,713,562**

Thank you for choosing the **AQUA-FLASH® AMH1K-3UV Hot Water Recirculation Kit** — an award-winning, innovative plumbing solution designed to deliver hot water efficiently in single-pipe indoor tank water heater systems. The **AQUA-FLASH® Valve** is a compact, quiet brass and stainless steel valve designed for hot water recirculation systems. It is installed at the fixture farthest from the water heater and works together with a pump and a plug-in timer to deliver hot water efficiently. Mounted beneath the fixture between the hot and cold water supply lines, the **AQUA-FLASH® Valve** redirects cooled water from the hot line into the cold line, sending it back to the water heater. As hot water arrives, the valve gradually closes. Once the water temperature reaches 95°F [35°C], the valve automatically adjusts to maintain that temperature. It does not require electricity under the sink.

AquaMotion Hot Water Recirculation kits include a separate 24-hour plug-in mechanical timer, rather than a built-in version. This design offers easier operation and greater convenience for the end user. AquaMotion gives you flexibility with a variety of system control solutions. Please visit us at [www.AquaMotionHVAC.com](http://www.AquaMotionHVAC.com) for more details.

### KIT INCLUDES

- (1) AM3-SNLT Stainless Pump (6.5 FT. Line Cord)
- (1) AQUA-FLASH® Undersink Bypass Valve
- (1) 1/2" NPS X 3/8" Comp x 3/8" Comp. Tee
- (1) 3/4" NPT Female Tailpiece
- (1) 1-1/4" Union Nut
- (1) Flat Round Gasket
- (1) 1/2" NPS x 24" Stainless Braided Hose
- (1) AMK-T15 Mechanical Timer
- (1) Installation & Warranty Sheet

### REQUIRED TOOLS

- (1) Teflon Tape or Pipe Thread Sealant
- (2) Pipe Wrenches (2" Opening)
- (1) 5/8" Open End Wrench
- (1) Adjustable Wrench (1" Opening)

### SPECIFICATIONS

Electrical: See Pump Nameplate (Round Label)

Max. Water Temperature: 230°F [110°C]

Max. Operating Pressure: 125 PSI [8.6 bar]

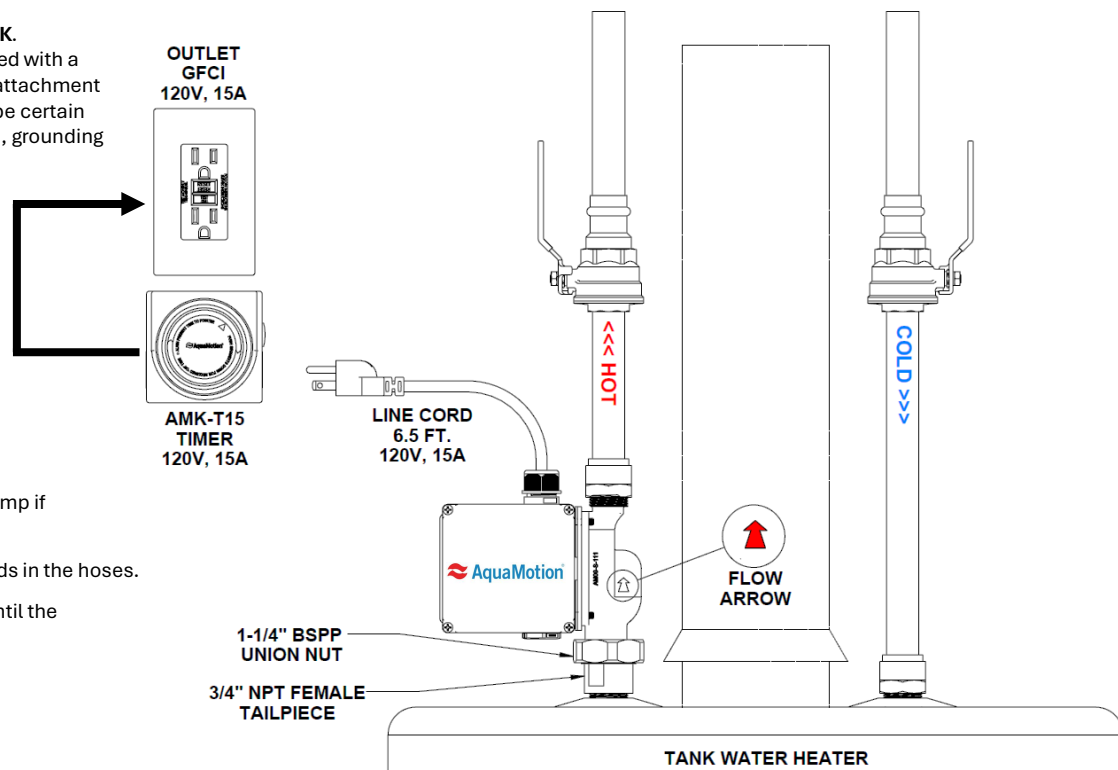
Min. Operating Pressure: 20 PSI [1.4 bar]

Max. Ambient Temperature: 104°F [40°C]

### PUMP INSTALLATION – Please read and follow all instructions and safety precautions

#### **⚠ WARNING: RISK OF ELECTRIC SHOCK.**

This pump and mechanical timer is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected to a properly grounded, grounding type receptacle.



**⚠ WARNING:** Turn off power to the pump if water will be off for an extended time.

**⚠ WARNING:** Do not make sharp bends in the hoses.

**⚠ WARNING:** Do not operate pump until the system is filled and pressurized.

## PUMP INSTALLATION – Please read and follow all instructions and safety precautions

1. Turn off the **COLD** water supply to the water heater. The shutoff valve may be located on the cold supply line above the tank or where the water line enters the residence.
2. Open a **HOT** water faucet in the home and allow the water to run until it stops. Leave the faucet open until the installation is complete.
3. Disconnect the **HOT** water line from the water heater at the threaded outlet pipe located on top of the tank.
4. Slide the large union nut over the threaded outlet pipe on the tank, then thread the ¾" NPT tailpiece onto the outlet pipe.
5. Place the union gasket onto the tailpiece and thread the large union nut onto the circulator.
6. Reconnect the **HOT** water line removed in Step 3 to the circulator (Fitting/hose not included).
7. Apply pipe dope or Teflon tape to seal threaded connections. If flexible hoses are used at this connection, pipe dope or Teflon tape is not required.
8. Reopen the **COLD** water supply valve to the water heater. Allow water to run at the open faucet to purge air from the lines.
9. Once air has been purged, close the faucet.
10. Connect the mechanical timer into a properly grounded 120V outlet. Follow the instructions provided with the timer for setup.
11. Connect the circulator to an outlet on the mechanical timer.

### ⚠ WARNING: HIGH PRESSURE HAZARD

Do not operate this pump with inlet pressure exceeding **80 psi**. Install a **pressure relief valve** rated for at least **125 psi** or as required by **local codes**.

### ⚠ WARNING: RISK OF ELECTRIC SHOCK.

This pump and mechanical timer is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected to a properly grounded, grounding type receptacle.

### ⚠ WARNING: HOT SURFACE

Do not touch the pump while it's running — it can be **very hot**. Wait at least **20 minutes** after shutdown before **servicing** or **handling** the pump.

⚠ WARNING: Follow all **local building, electrical, and plumbing codes** during installation and use.

⚠ WARNING: Disconnect power before servicing.

### ⚠ WARNING: FIRE OR EXPLOSION HAZARD

Do **not** pump flammable liquids or chemicals. Keep the pump **away from gas pilot lights** and **areas with gas fumes**.

⚠ WARNING: Do not operate pump until the system is filled and pressurized.

⚠ WARNING: For indoor use only

**AVERTISSEMENT:** Pour l'intérieur uniquement

⚠ WARNING: This is not an anti-scald device

⚠ WARNING: This pump has not been evaluated for use in swimming pools, jacuzzies, or other marine areas.

⚠ WARNING: Turn off power to the pump if water will be off for an extended time.

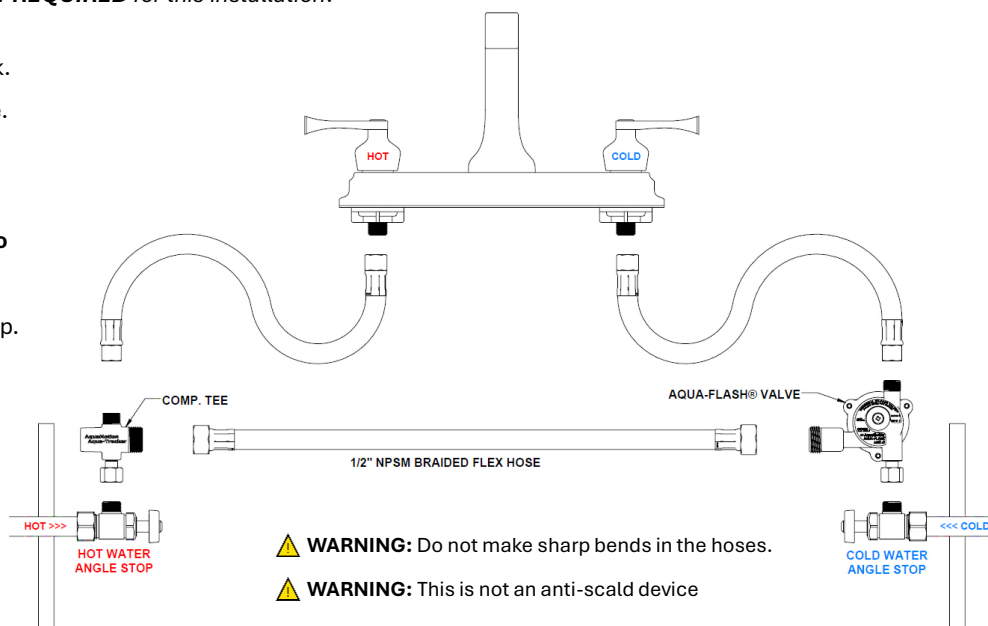
⚠ WARNING: Do not make sharp bends in the hoses.

⚠ WARNING: This pump is for water only. Using chemicals or petroleum products voids the warranty.

## BYPASS VALVE INSTALLATION – Please read and follow all instructions and safety precautions

**NOTE:** Pipe Thread Sealant or Teflon Tape are **NOT REQUIRED** for this installation.

1. Close **HOT & COLD** angle stops under the sink.
2. Open **HOT & COLD** faucets to relieve pressure.
3. Place a bucket under connections.
4. Disconnect riser pipes/hoses.
5. **Connect COLD riser to valve; attach valve to COLD angle stop.**
6. Install 3/8" compression tee on **HOT** angle stop.
7. Connect ½" braided hose between ODR valve and compression tee.
8. Open **HOT** angle stop.
9. Open **COLD** faucet to purge air, then close faucet.
10. Open **COLD** angle stop.

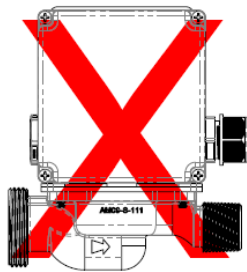


⚠ WARNING: Do not make sharp bends in the hoses.

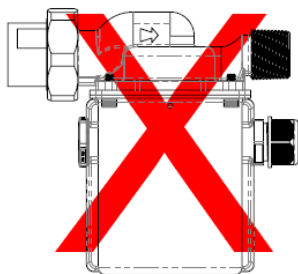
⚠ WARNING: This is not an anti-scald device

**NOTE:** Position the bypass valve, compression tee, and hoses to match your system, as angle stops may differ in spacing and location..

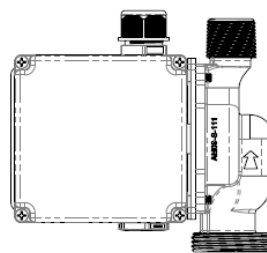
## MOUNTING POSITIONS – Please follow these guidelines for efficient pump operation



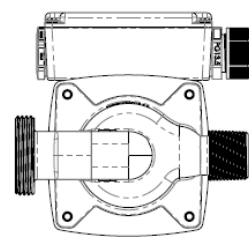
**DO NOT MOUNT  
MOTOR IN UP POSITION**



**DO NOT MOUNT  
MOTOR IN DOWN POSITION**



**TOP CONNECT  
PREFERRED POSITION**



**SIDE CONNECT  
PREFERRED POSITION**

**MOTOR MUST REMAIN PARALLEL TO FLOOR**

## APPROVALS & CERTIFICATIONS



**DRINKING WATER SYSTEM COMPONENTS**  
ANSI/NSF 61 & ANSI/NSF 372  
MH60565



**WATER CIRCULATING PUMPS**  
E243560



## TROUBLESHOOTING GUIDE

| SYMPTOM                        | POSSIBLE CAUSE                                                                                                                                                                                                   | REMEDY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No instant hot water at faucet | <ol style="list-style-type: none"> <li>Heater Malfunction</li> <li>Outlet Wiring Malfunction</li> <li>Pump Timer Malfunction</li> <li>Pump Internal Malfunction</li> <li>Undersink Bypass Malfunction</li> </ol> | <ol style="list-style-type: none"> <li>Heater Malfunction <ol style="list-style-type: none"> <li>Open the HOT water faucet that does not have the undersink bypass valve installed.</li> <li>Is there hot water at the faucet? <ol style="list-style-type: none"> <li>NO, there is a malfunction with the heater. Consult your heater's manufacturer.</li> <li>YES, shut off faucet and proceed to next cause.</li> </ol> </li> </ol> </li> <li>Outlet Wiring Malfunction <ol style="list-style-type: none"> <li>Disconnect the pump and connect a corded device (i.e. Lamp) to the same outlet.</li> <li>Does this device turn ON ? <ol style="list-style-type: none"> <li>NO, check the circuit breaker or wiring for that outlet.</li> <li>YES, disconnect the lamp, reconnect the pump and proceed to next cause.</li> </ol> </li> </ol> </li> <li>Pump Timer Malfunction <ol style="list-style-type: none"> <li>Switch the Timer to the ON position.</li> <li>Wait 5 minutes <b>DO NOT USE HOT WATER WHILE WAITING.</b></li> <li>Is there hot water after 5 minutes at the faucet? <ol style="list-style-type: none"> <li>NO, proceed to the next cause.</li> <li>YES, there is an internal malfunctions with the timer. Contact Customer Support.</li> </ol> </li> </ol> </li> <li>Pump Internal Malfunction: <ol style="list-style-type: none"> <li>Is the pump warm? <ol style="list-style-type: none"> <li>NO, there is an internal wiring malfunction . Contact Customer Support.</li> <li>YES, proceed to the next cause.</li> </ol> </li> <li>Is the pump making a noise or hum? <ol style="list-style-type: none"> <li>NO, proceed to next cause.</li> <li>YES, see "Noisy pump" symptom.</li> </ol> </li> </ol> </li> <li>5A – Undersink Bypass Malfunction: Purge Air <ol style="list-style-type: none"> <li>At the faucet with the undersink bypass valve, close the COLD angle stop under the sink.</li> <li>Open the COLD faucet and let the water flow for 10 sec.</li> <li>Close the COLD faucet and wait 10 min. <b>DO NOT USE HOT WATER WHILE WAITING.</b></li> <li>Is there hot water at the faucet? <ol style="list-style-type: none"> <li>NO, proceed to next cause.</li> <li>YES, no further actions are required.</li> </ol> </li> </ol> </li> <li>5B – Undersink Bypass Malfunction: Functional Check <ol style="list-style-type: none"> <li>Place an ice pack or sealable bag with ice water on top of the undersink bypass valve.</li> <li>Wait 5 min. <b>DO NOT USE HOT WATER WHILE WAITING.</b></li> <li>Is there hot water at the faucet? <ol style="list-style-type: none"> <li>NO, there is an internal malfunction with the undersink bypass valve. Contact Customer Support.</li> <li>YES, no further actions are required.</li> </ol> </li> </ol> </li> </ol> |

## TROUBLESHOOTING GUIDE – cont.

| SYMPTOM                                  | POSSIBLE CAUSE                                                                                                                                                                                                                  | REMEDY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heater does not turn on                  | <ol style="list-style-type: none"> <li>1. Heater Malfunction</li> <li>2. Outlet Wiring Malfunction</li> <li>3. Pump Timer Malfunction</li> <li>4. Pump Internal Malfunction</li> <li>5. Undersink Bypass Malfunction</li> </ol> | See symptom “No instant hot water at faucet”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Noisy pump<br>Discolored Water at Faucet | <ol style="list-style-type: none"> <li>1. Cartridge malfunction</li> </ol>                                                                                                                                                      | <ol style="list-style-type: none"> <li>1 - Replace Cartridge               <ol style="list-style-type: none"> <li>1. Contact Customer Support for warranty replacements.</li> <li>2. Purchase replacement for warranty expired products. <b>Part No. CT04</b></li> </ol> </li> </ol> <p><b>NOTE: AquaMotion does not sell directly to consumers.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| No Cold water at faucet                  | <ol style="list-style-type: none"> <li>1. Outlet Wiring Malfunction</li> <li>2. Undersink Bypass Malfunction</li> </ol>                                                                                                         | <ol style="list-style-type: none"> <li>1 – Outlet Wiring Malfunction               <ol style="list-style-type: none"> <li>1. Disconnect the pump and connect a corded device (i.e. Lamp) to the same outlet.</li> <li>2. Does this device turn ON ?                   <ol style="list-style-type: none"> <li>a) NO, check the circuit breaker or wiring for that outlet.</li> <li>b) YES, disconnect the lamp, reconnect the pump and proceed to next cause.</li> </ol> </li> </ol> </li> <li>2 – Undersink Bypass Malfunction               <ol style="list-style-type: none"> <li>1. At the faucet with the undersink bypass valve, close the COLD angle stop under the sink.</li> <li>2. Wait 10 min. <b>DO NOT USE COLD WATER WHILE WAITING.</b></li> <li>3. Are the pipes WARM or COLD?                   <ol style="list-style-type: none"> <li>a) COLD, there is a malfunction with the undersink valve. Contact Customer Support.</li> <li>b) WARM, keep the COLD angle stop closed and proceed to next cause.</li> </ol> </li> </ol> </li> </ol> |

## LIMITED WARRANTY STATEMENT

AquaMotion Inc. warrants its product to the original user against defects in material and workmanship for a period of one (1) year from date of original shipment. Complete pump warranty is three (3) years from date of shipment. Valves, timers, On Demand devices and receivers carry a one (1) year warranty from date of shipment. Aqua-Max Pressure Booster warranty is one (1) year from date of shipment. In the event of a defect within the warranty period, AquaMotion Inc. will, at its option, replace or recondition the product without charge, FOB AquaMotion factory. This shall constitute the exclusive remedy for breach of warranty, and AquaMotion Inc. shall not be responsible for any cost of removal, installation, transportation or any charges which arise in connection with the warranty claims and shall not be responsible for any incidental or consequential damages, including without limitation, damages or other cost resulting from labor charges, delays, or vandalism, negligence, fouling caused by foreign materials, damage from adverse water conditions, freezing, chemicals, certain additives, petroleum-based fluids, or any other circumstances over which AquaMotion Inc. has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation or maintenance of the product. AquaMotion Inc. makes no other warranties express or implied except as provided in this limited warranty. Consult the product instruction sheets for proper use and installation. Contact the factory with any questions. To obtain service under this warranty, the defective product must be returned to the distributor or dealer of AquaMotion products from which it was purchased together with proof of purchase, installation date, and supporting installation data. Unless otherwise provided, the distributor or dealer will contact AquaMotion Inc. or an authorized service station for instructions. Any defective product to be returned to AquaMotion Inc. or an authorized service station shall be sent freight prepaid; documentation supporting the warranty claim and/or Return Material Authorization must be included, if so instructed.

**AQUAMOTION INC. WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, OR EXPENSES ARISING FROM INSTALLATION, USE, OR ANY OTHER CASES. THERE ARE NOT EXPRESS OR IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTEND BEYOND THOSE WARRANTIES DESCRIBED OR REFERRED TO ABOVE.**

## PRODUCT CHANGE STATEMENT

AquaMotion Inc. reserves the right to change or modify product design or construction without prior notice and without incurring any obligations to make such changes and modifications on products previously or subsequently sold. AquaMotion Inc. shall have no responsibility whatsoever with respect to changes made by the manufacturer in products or their packaging sold but not manufactured by AquaMotion Inc. This warranty gives the purchaser specific rights, and the purchaser may have other rights which vary from State to State. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, therefore, these limitations or exclusions may not apply.

## CUSTOMER SUPPORT INFORMATION

AquaMotion, Inc. 88C Jefferson Blvd. Warwick, RI 02888

(401) 785-3000

info@AquaMotionHVAC.com

www.AquaMotionHVAC.com

When contacting customer support, please provide:

- Photo(s) of the installation(s)
- Copy of sales receipt (must include date of purchase)

