

## **GENERAL INFORMATION**

The *Whisper King*™ operates when water pressure within outlet plumbing drops below a predetermined pressure. A drop in pressure occurs when a faucet or a toilet valve is opened. When the faucet is closed the pump shuts off as soon as the system is re-pressurized. If a faucet is opened slightly, allowing water to flow slowly, the pump may pressurize the plumbing faster than the water is released. Depending on the plumbing and faucets installed in the RV, the pump may react by cycling rapidly (ON/OFF within 1 sec.). Rapid cycling may not indicate a problem with the pump; however, cycling should be minimized (see "Plumbing"). Installing a SHURflo Accumulator will ensure smooth, even water flow, and appropriate pump operation.

Included in the *Whisper King*™ package is an in-line Strainer (P/N 170-060), which will prevent debris and foreign particles from entering the pump. The clear housing allows inspection at a glance. The strainer is opened by a simple twist, and the screen can be removed for cleaning (see System Maintenance). Failure of the pump due to debris or foreign material is not covered under warranty.

SHURflo realizes that in many instances the *Whisper King*™ is being installed as a replacement pump within an existing system. The following guidelines should be considered to achieve optimum pump operation.

### **Mounting**

- The *Whisper King*™ can be at the same level or below the water tank. The pump may be positioned above the water tank if needed as it is capable of a 6 ft. [1.8 M] vertical prime. Horizontal inlet tubing will allow priming to 30 ft. [9 M].
- Consider a location that allows easy access when maintenance is required. The pump should not be located in an area less than one cubic foot unless adequate ventilation is provided. Excessive heat may trigger the integral thermal breaker and interrupt operation. When the temperature drops the breaker will automatically reset.
- The pump may be mounted in any position. If mounting the pump vertically the pump head should be in the down position so that in the unlikely event of a leak, water will not enter the motor.
- The motor cradle mounting pads should be fastened to a **solid** surface (thick plywood) that will not amplify pump operation. The mounting pads are intended to isolate the pump from the mounting surface. Over tightening, flattening, or use of screws other than those provided will reduce the mounting pads ability to isolate vibration/noise.
- Wire size (gauge/Mm<sup>2</sup>) is based on the distance from the power source to the pump. For wire lengths up to 20 ft.[6M] the minimum wire size is #14 gauge [2.5 Mm<sup>2</sup>]. Use #12 gauge [4 Mm<sup>2</sup>] for lengths of 20-50 ft.[6-15M].
- The pump must be grounded to a "known ground" (coach frame). The ground wire must be the same size as the positive wire.

### **Plumbing**

- SHURflo recommends at least 1 ft.[3M] of  $\frac{1}{2}$ "[13mm] I.D. flexible high pressure tubing to plumb both ports. Ideally, the connections at the pumps' ports/strainer **should not** be to rigid plastic pipe. The pump's normal oscillation may transmit through rigid plumbing causing noise, and possibly loosening or cracking components.
- SHURflo swivel barb fittings (included) provide easy removal if maintenance or access is required. The Strainer and fittings are designed with a "taper-seal", creating a water tight connection. Always secure barb tubing connections with properly sized stainless steel clamps to prevent leaks. **Never** use Teflon tape or sealing compounds on threads. Sealer may enter the pump causing a failure not covered under warranty.
- Rapid cycling as described earlier may be caused by excessive back pressure created by one or more of the following within a plumbing system:
  - Water filters and purifiers
  - Flow restrictors in faucets and shower heads.
  - Small I.D. lines. Pipe/tubing should be at least  $\frac{1}{2}$ "[13mm] I.D. for main lines.
  - Restrictive fittings and connections (elbows, "T's", feeder lines to faucets, etc.)

### **Electrical**

- The pump should be on a dedicated (individual) circuit **protected by the specified "slow blow" fuse indicated on the motor label.**
- A switch rated at or above 15 amps is recommended, and must interrupt current flow on the positive (+ red) lead.
- The total current draw on the circuit **must not** exceed 15 amps. If the pump is used in conjunction with other components, over load current protection (fuse or circuit breaker) and wire size must be for the total amp requirement of all devices on the circuit.

## **REMOVAL AND REPLACEMENT PROCEDURE**

The diversity of RV designs makes it impractical to provide a detailed procedure for every particular coach. The following outlines a general procedure to assist with the installation.

**CAUTION:** All electrical devices in the vicinity should be turned OFF to avoid the possibility of electrical shock if water is spilled.

1. Turn OFF power to the pump.
2. Before loosening **any** plumbing the water storage tank should be shut off or drained to prevent water from siphoning out. Drain water from pressurized plumbing by opening (slightly) all valves (Hot&Cold) and leave open, allowing the plumbing to vent.
3. Disconnect electrical connection at the pump and remove mounting screws.
4. The procedure above should purge most of the water within the plumbing. A pan should be used to collect the remaining water. Disconnect the plumbing fittings and remove the pump.
6. Position the pump in its mounting location. Determine what changes (if any) are necessary to the adapt the present plumbing to the pumps' inlet and outlet ports. SHURflo recommends at least 1 ft.[3M] of flexible tubing with swivel barb fittings to connect plumbing to pump ports.
7. Mount the pump to a **solid** surface with the screws provided. **Hand-tighten** swivel barb fitting to the inlet/outlet ports.

**NOTE:** Over-tightening, flattening, or use of screws other than those provided will reduce the mounting pad's ability to isolate vibration/noise.

8. Determine if the electrical circuit is properly fused and adequate for a 15 amp load. Connect the positive (+ red) and negative (- black) wires to the pump. The connection should be water resistant and made in an area that is not subject to moisture.
9. Fill the tank with enough water to perform a check of the system (or open shut-off valve). With all faucets open, run the pump allowing the air to purge from the plumbing. The water heater and toilet will have to fill before the pump will shut-off. Close all the valves and check the plumbing/ pump for leaks.

### **Installing the Whisper King™**

5. **Hand-tighten** the strainer to the inlet port until snug, (max. torque 3 in/lb. [.3 Nm]).

**CAUTION:** Do not use thread sealer or Teflon tape on pump fittings. Failure due to debris or foreign material in the pump is not covered under warranty.

## **WATER SYSTEM MAINTENANCE**

When properly installed the *Whisper King™* provides years of trouble-free operation. RV potable water systems do require periodic maintenance to deliver a consistent flow of fresh water. Depending on use and the environment system is subject to; the following procedures should be performed when needed.

### **Sanitizing**

Sanitizing is recommended prior to storing and before using the water system after a period of storage. Systems with new components, or ones that have been subjected to contamination, should also be disinfected as follows:

#### **Materials Required:**

- Household bleach (Sodium Hypochlorite solution; 5.25%) or equivalent
- A clean (1) gallon [3.8 L] plastic container
- Measuring cup
- Large capacity funnel

**NOTE:** If the water in the tank is contaminated, drain the tank prior to starting this procedure.

## Sanitizing Procedure:

1. Use one of the following methods to determine the amount of bleach needed to sanitize the tank.
    - A) Multiply "gallons of tank capacity" by 0.13; result is the ounces of bleach needed to sanitize the tank.
    - B) Multiply "Liters of tank capacity" by 1.0; result is the milliliters of bleach needed to sanitize the tank.
  2. Mix into solution the proper amount of bleach within a full container of water.
  3. Pour the solution (water/bleach) into the tank and fill the tank with potable water.
  4. Run the water at all faucets (Hot&Cold) until the distinct odor of chlorine can be detected.
  5. The standard solution must have four (4) hours of contact time to ensure complete disinfecting. Doubling the solution concentration allows for contact time of one (1) hour.
  6. When the contact time is completed, drain the tank. Refill with potable water and purge the plumbing of all sanitizing solution.
- NOTE:** The sanitizing procedure outlined above is in conformance with the approved procedures of US Public Health Service.

## Winterizing

If water in the system is allowed to freeze, serious damage to the plumbing and pump may occur. Failures of this type will void the warranty. The best guarantee against damage is to completely drain the water system. However, *non-toxic antifreeze for potable water*, available at local RV centers, may be used.

**CAUTION:** *Do not use Automotive Antifreeze* to winterize potable water systems. Such solutions are highly toxic. Ingestion may cause serious injury or death.

To properly drain the system perform the following:

1. Drain the water tank. If the tank doesn't have a drain valve, open all faucets allowing the pump to operate (15 minutes ON/15 minutes OFF) until the tank is empty.
2. Open all the faucets (including the lowest valve or drain in the plumbing) and allow the pump to purge the water from the plumbing, then turn the pump OFF.
3. Using a pan to catch the remaining water, remove the plumbing at the pump's inlet/outlet ports. Turn the pump ON, allowing it to operate until the water is expelled. **Do not** reconnect pump plumbing. Make a note at tank filler as a reminder: "Plumbing is Disconnected".
4. All faucets must be left open to guard against any damage.

## Strainer Cleaning

Periodic inspection and cleaning of the strainer will guard against low flow or high inlet vacuum which may cause pump damage.

1. Close the valve at the water tank or drain the tank completely. Turn OFF power to the pump. Use a pan to collect any remaining water.
2. Support the filter while turning the "ears" counter-clockwise, until the tabs align in the notches. Carefully wiggle the cover out of the housing to overcome the seal of the O-ring.
3. The strainer screen can be removed to aid cleaning.
4. Reinstall the screen in the housing. Lubricate the O-ring with petroleum jelly to assure a positive seal.
5. Align the locking tabs in the notches of the housing. Push together then turn clockwise until in the "locked" position.
6. Open the water valve and switch ON any power turned off previously. Open the faucets and allow the pump to operate, to purge air. Inspect the strainer and connections for leaks.

## System Inspection

A general inspection of the plumbing and electrical circuit should be performed at regular intervals or to troubleshoot possible system or pump problems. Check the following items along with other particulars of your system.

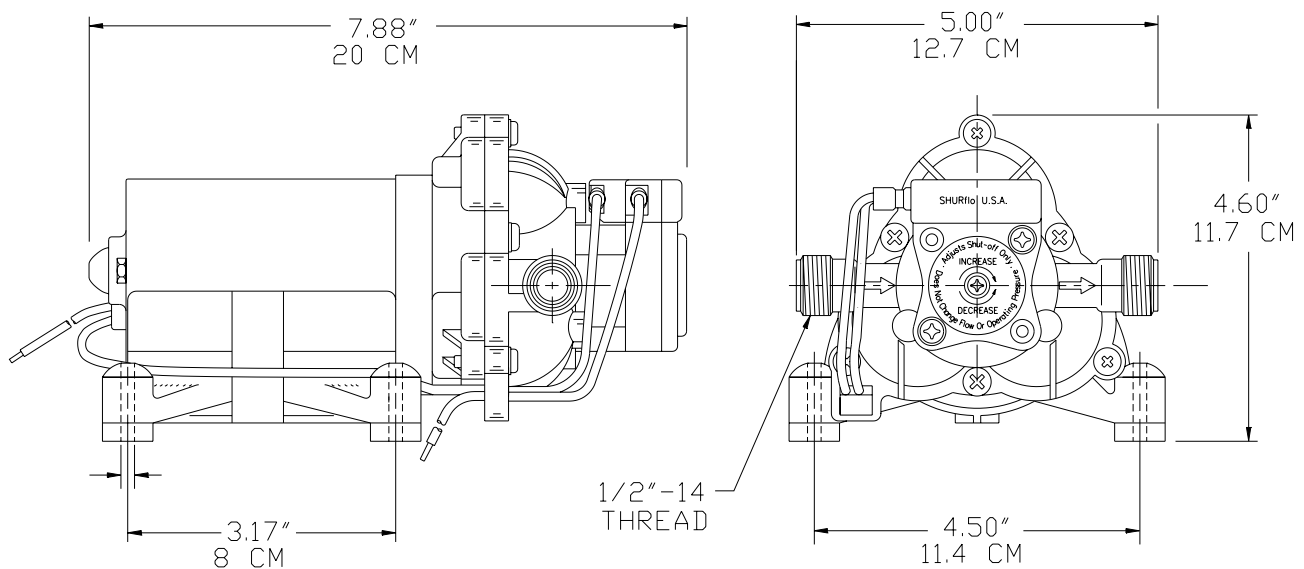
- ✓ Plumbing connections and clamps for leaks or flexible tubing that is swollen, deteriorated, or stiff.
- ✓ Fuse, electrical connections and ground wire should be tight with no corrosion. Inspect batteries for proper voltage/charging.
- ✓ For debris in the faucet, shower nozzles and water heater. Inspect toilet tank and shut-off valves for leaks.
- ✓ Pump mounting screws and pump head fasteners that may have become loose and induce symptoms that are resolved by simply re-tightening hardware.

If the *Whisper King*™ exhibits problems not outlined by this manual, please contact SHURflo by calling one of the 800 numbers on the last page of this document. A service associate will be available to answer questions regarding pump operation. Many concerns regarding the system and pump may only require brief discussion to locate and resolve the cause of a problem.

In the event that a non-warranty failure occurs various kits are available through local SHURflo dealers to repair the *Whisper King*™. SHURflo offers repair kits containing all necessary components, insuring that other parts that may also be damaged do not cause a second failure.

## TECHNICAL SPECIFICATIONS

<b>MODEL NUMBER:</b>	2093-204-414 / 2093-204-114 O.E.M.
<b>APPLICATION:</b>	Multi-Fixture; Intermittent Duty
<b>OPEN FLOW RATE:</b>	2 G.P.M. [7 L.P.M.]
<b>CURRENT DRAW:</b>	5.5 AMP max. at 45 psi.[3 bar]
<b>PRESSURE SWITCH:(ON/OFF)</b>	25 / 45 psi. [1.7 - 3 bar]
<b>MOTOR DESIGN:</b>	12 vdc Permanent Magnet; Thermally Protected
<b>FUSE:</b>	Refer to motor label for recommended fuse
<b>SELF-PRIME:</b>	6 ft. [2.1 M] vertical / 30 ft. [9M] horizontal
<b>INTERNAL CHECK VALVE:</b>	200 psi. [13.8 bar]
<b>WEIGHT:</b>	3.95 Lb. [1.8 Kg]



## ***Whisper King™* 5 YEAR LIMITED WARRANTY**

SHURflo warrants its *Whisper King™* pump to be free from material and workmanship defects (under normal use and service) for a period of five (5) years from the date of manufacture.

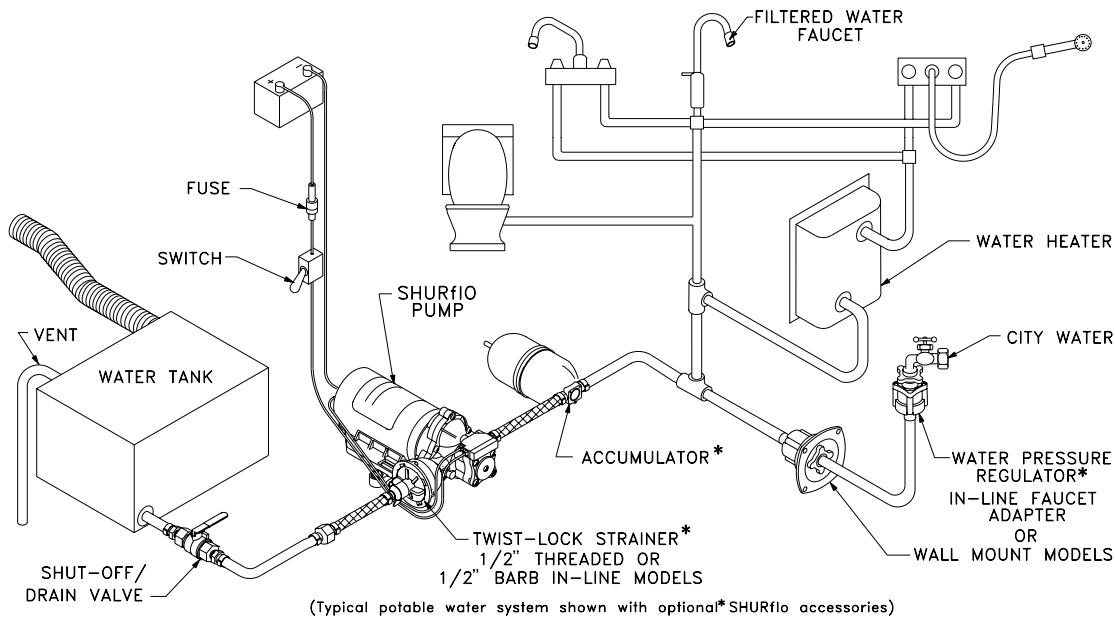
The limited warranty will not apply to pumps that were improperly installed, misapplied, or incompatible with components not manufactured by SHURflo. Pump failure due to foreign debris is not covered under the terms of this limited warranty. SHURflo will not warrant any pump that is physically damaged, or altered outside the SHURflo factory.

Warranty claims may be resolved by the nearest authorized dealer service center, or by either SHURflo service center (Garden Grove, CA; Elkhart, IN). To locate the nearest service center please call 1-800-854-3218 (West Coast) or 1-800-762-8094 (East Coast). All returns are to be shipped with charges pre-paid. Package all returns carefully. SHURflo will not be responsible for freight damage incurred during shipping to a service center.

SHURflo's obligation under this warranty policy is limited to the repair or replacement of the *Whisper King™*. Pumps found not defective (under the terms of this limited warranty) are subject to charges to be paid by the returnee for the testing and packaging of "tested good" units. Warranty returns will be shipped on a freight allowed basis. SHURflo reserves the right to choose the method of transportation.

SHURflo is not responsible nor will it reimburse for labor necessary to remove and reinstall a pump, if found defective.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on SHURflo's behalf. SHURflo shall not be liable for any labor, damage or other expense, nor shall SHURflo be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product or part. This limited warranty covers products distributed within the United States of America. Other world market areas should consult with the distributor for any deviation from this document.



★ ISO Certified Facility



**SHURflo reserves the right to update specifications, prices, or make substitutions.**

### **SHURflo, LLC ★**

5900 Katella Ave.  
Cypress, CA 90630  
(800) 854-3218 (562) 795-5200  
FAX (562) 795-7564

Shipping UPS: 5900 Katella Ave. Bldg. C  
Cypress, CA 90630

### **SHURflo, LLC East**

52748 Park Six Court  
Elkhart, IN 46514-5427  
(800) 762-8094  
(574) 262-0478  
FAX (574) 264-2169  
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### **SHURflo Ltd.**

Unit 5 Sterling Park  
Gatwick Road, Crawley  
West Sussex, RH10 2QT  
United Kingdom  
+44 1293 424000  
(800) 854-3218  
FAX +44 1293 421880



# **WHISPER KING™ MODEL 2093**

## **Installation and Operation Manual**

SHURflo, an original equipment manufacturer for the RV Industry, incorporates 26 years of experience in the development of the *Whisper King*™. The model 2093 potable water pump is engineered to be the quietest and most reliable ever.

The *Whisper King*™ joins our patented and proven Tri-a-gram® design. Constructed with advanced materials and newest technology the model 2093 will establish the benchmark for the RV industry.

SHURflo's confidence in the *Whisper King*<sup>™</sup> is expressed by its exclusive ***Five Year Limited Warranty***, which is superior to any in the industry.