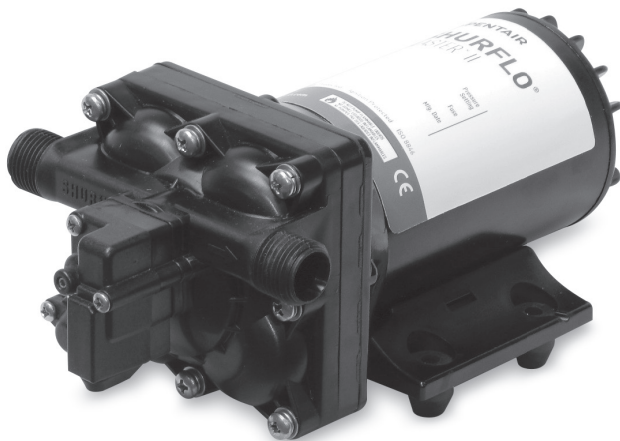


## SHURFLO® BLASTER™ II 3.5 GPM MARINE WASH DOWN PUMP

MODEL SERIES 4238

### SHURFLO BLASTER™ II Designed for the toughest wash down applications.

SHURFLO's BLASTER™ II wash down pump design was created with unique over-molded single-piece diaphragm, assuring long life and top performance in all deck wash down plumbing systems. Designed as the next legendary pump to exceed the expectations of our customers, the BLASTER™ II pumps are designed for the toughest marine wash down applications. SHURFLO's quality reputation has been built on the reliability and dependability of every pump we build. The BLASTER™ II wash down automatic demand pumps are quiet, thermally protected and can run dry without damage.



### FEATURES

- 4 independent chambers
- Co-Molded diaphragm
- Adjustable pressure switch
- Self-priming up to 6 feet
- Sealed switch
- Sealed motor
- Corrosion resistance electro coated motor
- Thermally protected
- Ignition protected, CE

### INSTALLATION TIPS

- Properly sized plumbing
- Properly sized wiring
- Mount in a dry location that allows easy access if maintenance is required
- Mount higher than the outside water level, the pump is capable of 6ft. vertical prime above water line
- Use proper fuse size
- Install strainer on pump inlet
- Minimize plumbing elbows and valves
- Flexible high-pressure hose on inlet and outlet

### OPERATION TIPS

- Pump is design for intermittent operation only
- Turn off power to the pump when boat is unattended
- Maintain your strainer clean for ultimate pump performance
- Pump will perform at best when proper voltage is provided

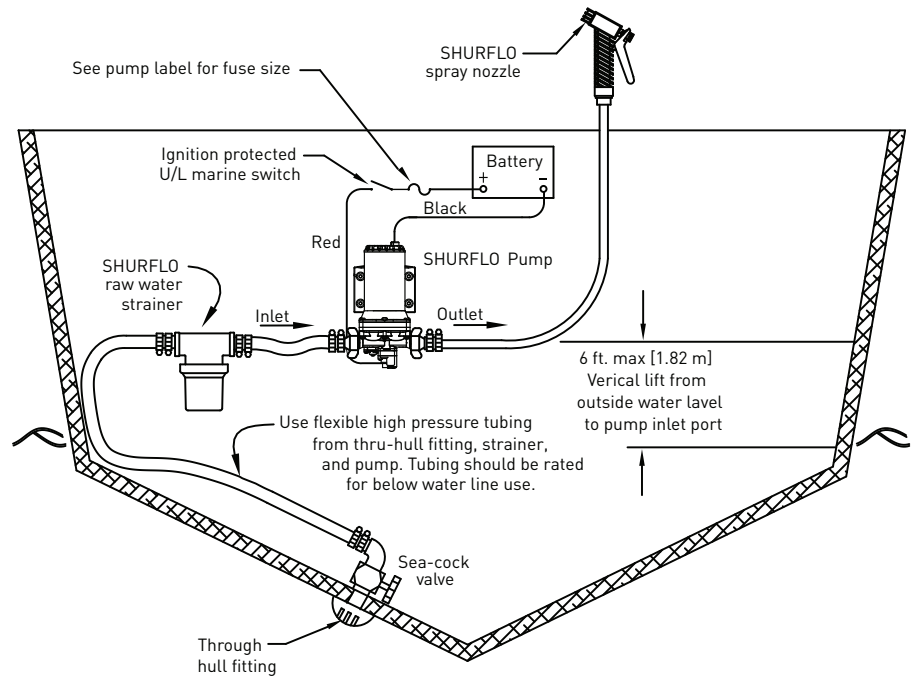
### APPLICATION

- Marine 12V DC or 24V DC systems – see pump label for rated voltage
- Wash Down applications
- General water transfer

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## DUTY CYCLE

Wash down pumps are rated for intermittent duty **ONLY**, as they operate at higher than average pressures. Operating a wash down pump continuously for more than 20 minutes, within an hour period, is **NOT** recommended. Actual duty cycle is determined by amp draw and temperature.



## MOUNTING

■ Consider a DRY location that allows easy access if maintenance is required. The pump should not be located in an area of less than one cubic foot unless adequate ventilation is provided. Excessive heat may trigger the thermal protector and interrupt operation. When the temperature drops the thermal breaker will automatically reset and start operation.

■ Mount higher than the water level. The pump is capable of a 6 ft. [1.82 Meter] vertical prime. The pump can be mounted in any position. If mounting the pump vertically, the pump head should be in the down position.

**CAUTION: Do not** drive screws through the vessels' hull. Use #8 stainless steel screws to fasten the pump. Choose a solid surface (bulkhead or stringer) that will not amplify pump sound. The mounting feet are intended to isolate the pump from the mounting surface; over-tighten, flattening or oversized screws will reduce the mounting ability to isolate vibration and noise.

## ELECTRICAL

■ The pump should be on a dedicated (individual) circuit protected by the specified fuse on the motor label.

■ A UL marine duty switch (ignition protected) rated for 15 amps or higher is recommended, and must interrupt current flow on the positive (+ red) lead.

**■ SHUT OFF POWER TO THE PUMP WHEN LEAVING THE BOAT UNATTENDED.**

Ft. [m]		AWG [mm <sup>2</sup> ]	
0-20	[0-6]	14	[2.5]
20-50	[6-15]	12	[4]
50-70	[15-21]	10	[6]
70-100	[21-30]	8	[8]

Minimum Wire Size for a 10% voltage drop on a 12VDC, 15 Amp Circuit. Length is the distance from the power source to pump and back to ground.

## NOTES

■ To prevent cavitation, through hull fittings should be located at least 12 inches [304 mm] off the centerline of the water pick-up for the motor.

■ The through hull fitting must have a sea-cock valve to shut-off in case of an emergency.

■ Always use high quality non-corrosive fittings, valves and hardware to assure long-term reliability.

■ Properly seal all pipe threads before the strainer to prevent unforeseen leaks. Never use Teflon tape or sealing compounds on SHURFLO pump threads or fittings. Sealer may enter the pump causing a failure not covered under warranty.

## PLUMBING

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■ Installation of a strainer (such as SHURFLO 253 or 255 Series) is required to prevent debris from entering the pump.

■ Avoid any sharp radius in the tubing that may kink over time. Route tubing away from any heat (exhaust manifolds etc.) and fasten securely.

■ Inlet tubing (1/2" [12.7 mm] I.D. minimum) from the seacock valve to the pumps should be rated for vacuum. If rigid pipe is utilized, SHURFLO recommends that the pump inlet port be plumbed with 1ft. [3 Meter] of flexible tubing. Standard garden hose is not suitable as inlet tubing as it may collapse under vacuum, reducing water flow.

■ The pump outlet port should not be connected to rigid (plastic) pipe. Normal oscillation of the pump may transmit through rigid plumbing causing noise and possibly loosen or cracking components. A 1ft. [3 Meter] length of flexible high-pressure tubing is suggested.

## WINTERIZING

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**Refer to the boat owner's manual for specific winterizing instructions.** If water is allowed to freeze in the system, 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 pump and perform the following:

**1.** Drain the water tank. If the tank doesn't have a drain valve, open the spray nozzle allowing the pump to operate until the tank is empty.

**2.** Allow the pump to purge the water from the plumbing, and 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. Turn OFF the power to the pump once the plumbing is emptied. Do not reconnect the pump plumbing. Make a note at tank filler as a reminder: "Plumbing is disconnected."

## STRAINER / FILTRATION

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Installation of a 50-mesh minimum strainer, such as SHURFLO 253 or 255 Series, is recommended to prevent debris from entering the pump. Caution The strainer must be mounted above the outside water line to prevent water from siphoning during cleaning. Mount the strainer where it can be inspected and cleaned easily without closing the seacock valve.

## MAINTENANCE

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Normal pump maintenance is all that is needed: Checking and cleaning of the strainer, normal sanitizing and winterizing and occasionally checking all plumbing hardware and fittings for tightness. Lack of sanitizing is the number one reason for premature pump failure and poor performance over time. Lack of sanitizing will cause scale build-up on the diaphragm and valves, causing low flow and leak back (occasional pump cycling with spray nozzle closed).

## GENERAL SAFETY PRECAUTION

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■ When the vessel is not in use, the main power switch should be off and seacock valves should be **CLOSED**. However, if left afloat, the bilge pump should still have power.

■ Never operate the engine or electrical equipment if fuel vapor is detected. Locate the source and vent properly.

■ Electrical connections should be soldered and insulated to prevent shorts and corrosion. Wiring should be routed away from areas prone to water, heat and excess moisture.

## TROUBLESHOOTING

**Vibration induced by driving can loosen plumbing, strainers and pump hardware. Check for system components that are loose. Also, refer to the chart below for trouble-shooting tips.**

### PUMP WILL NOT START/ BLOWS CIRCUIT

- ✓ Electrical connections, fuse or breaker, main switch, and ground connection.
- ✓ Is the motor hot? Thermal breaker may have triggered; it will reset when cool.
- ✓ Is voltage present at the switch? Bypass pressure sw. Does the pump operate?
- ✓ Charging System for correct voltage ( $\pm 10\%$ ) and good ground.
- ✓ For an open or grounded circuit, or motor; or improperly sized wire.
- ✓ For seized or locked diaphragm assembly (water frozen?).

### WILL NOT PRIME/SPUTTERS (No discharge/Motor runs)

- ✓ Is the strainer clogged with debris?
- ✓ Is there water in the tank, or has air collected in the hot water heater?
- ✓ Is the inlet tubing/plumbing sucking in air at plumbing connections (vacuum leak)?
- ✓ Is inlet/outlet plumbing severely restricted or kinked? Restrictive valves?
- ✓ Proper voltage with the pump operating ( $\pm 10\%$ ).
- ✓ For debris in pump inlet/outlet valves or swollen/dry valves.
- ✓ Pump housing for cracks or loose drive assembly screws.

### RAPID CYCLING

- ✓ For restrictive plumbing and flow restrictions in faucets/shower heads.
- ✓ Water filter/purifier should be on separate feed line.
- ✓ Shut-off pressure set too low.

### PUMP WILL NOT SHUT-OFF / RUNS WHEN NOZZLE IS CLOSED

- ✓ Output side (pressure) plumbing for leaks, and inspect for leaky valves or toilet.
- ✓ For air trapped in outlet side (water heater) or pump head.
- ✓ For correct voltage to pump ( $\pm 10\%$ ).
- ✓ For loose drive assembly or pump head screws.
- ✓ Are the valves held open by debris or is the rubber swollen?
- ✓ Pressure switch operation. By-pass set higher than shut-off.

### NOISY OR ROUGH OPERATION

- ✓ For plumbing which may have vibrated loose.
- ✓ For a restricted inlet (clogged strainer, kinked hose, restrictive valves).

- ✓ Is the pump plumbed with rigid pipe causing noise to transmit?
- ✓ Does the mounting surface amplify noise (flexible)? Does it bang like a drum?
- ✓ For mounting feet that are loose or are compressed too tight.
- ✓ For air in the system. Check all fixtures for air and bleed system.
- ✓ The motor with pump head removed. Is noise from motor or pump head?

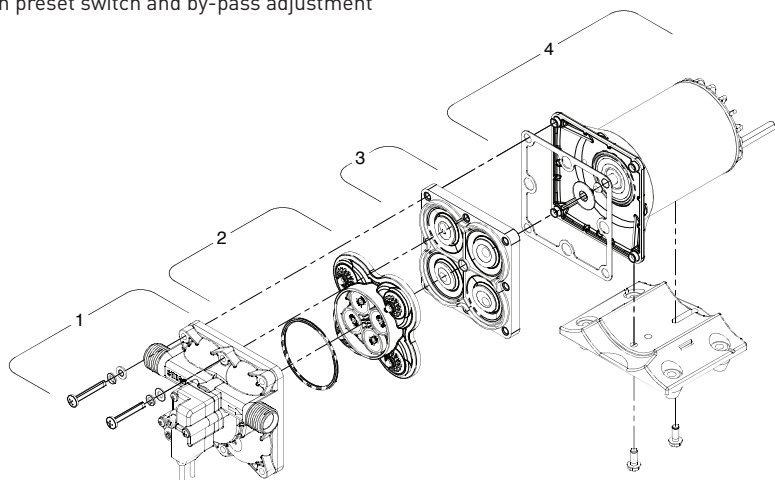
### LEAKS FROM PUMP HEAD OR SWITCH

- ✓ For loose screws at switch or pump head.
- ✓ Switch diaphragm ruptured or pinched.
- ✓ For punctured diaphragm if water is present in drive assembly.

## SERVICE KITS

ITEM	4238-121-X07 PART #	4238-141-X07 PART #
1	94-800-13	94-800-13
2	94-800-01	94-800-01
3	94-800-15	94-800-15
4	94-71-002-07	94-71-001-17
1, 2, 3	94-800-17	94-800-17
Check Valve (not shown)	94-800-03	94-800-03

\*With preset switch and by-pass adjustment



## FILTRATION & PROCESS

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