Tailgate Spot Sprayer

R.R. #3, 1402 Fourth Avenue, St. Catharines, ON L2R 6P9 Canada
1-800-461-1041 Local (905) 684-8122 Fax (905) 684-1382
Website: www.mkrittenhouse.com Email: contact@mkrittenhouse.com

www.mkrittenhouse.com

INTRODUCTION

Congratulations on your choice of a high quality Rittenhouse sprayer. Your sprayer is constructed of the finest materials available and with proper maintenance will give you years of trouble free service.

To ensure it's best possible use, establish a good maintenance and safety program. Know your spraying requirements and how this machine can meet them. Please read the following instructions carefully.

We strongly recommend that you contact your local government department or other competent authority with regard to the spray program that will best suit your requirements.

To the extent that the law permits, M.K. Rittenhouse & Sons Ltd. disclaims any responsibility for loss of time or use of the product, or any other indirect, incidental or consequential damage, inconvenience or any damage due to faulty application of chemicals.

The advanced design of the Rittenhouse spray unit facilitates ease of use and convenient maintenance procedures. The pumps direct drive configuration eliminates the need for many troublesome belts and pulleys.

The tanks are made of two different corrosion-free materials, fiberglass or polyethylene. Brass, nylon, stainless steel and epoxy-coated aluminum are used extensively throughout the spraying system in order to practically eliminate clogging due to corrosion.

MAINTENANCE

PLASTIC TANK

a) Clean out after use. Do not leave chemicals in tank.

b) Ensure air vent in lid is kept clear and operational. Damage to the tank can occur if this is not done.

c) Store in covered area out of sunshine or cover tank when not in use with opaque material such as a canvas tarpaulin.

SUCTION LINE AND STRAINER

a) Ensure suction hoses and fittings between the tank and the pump is airtight.

b) The suction filter is removed by unscrewing the nylon bowl. Running clean water over it may clean the stainless steel screen. While the filter bowl is removed, check seal on bowl to ensure it is in good condition. Replace seal on bowl if it appears worn, cracked or misshapen. When reinstalling filter bowl, take care not to cross the threads on the bowl and only tighten by hand.

c) If the tank has liquid in it when the filter needs to be inspected, shut off the valve leading to the strainer from the tank. THIS VALVE MUST ALWAYS BE **OPEN** WHEN THE PUMP IS IN OPERATION OR DAMAGE TO THE PUMP COULD OCCUR.

SHUT DOWN

1. After each spray or when changing chemicals, flush out the pump, lines and gun by running the sprayer with clean water in the tank.

2. Open the drain valve and remove screen from the suction filter. Allow water to drain, then hose out the inside of the tank until clean. Clean strainer in suction filter and replace. Do not leave chemical mixture in tank.

3. If there is possibility of freezing temperatures, be sure to winterize machine.

SHURflo 2088 Industrial Series Pumps

Installation and Operation Manual

Shurflo offers various pump models for different applications. The information outlined by this manual is general and not specific to all 2088 series pumps. Be certain the pumps' materials will be compatible with the fluid being pumped. 2088 series pumps are intended for intermittent or continuous duty when the proper operating criteria are met. If unsure of the chemical compatibility contact your chemical supplier.

CAUTION: "Intermittent Duty" is defined as; operated and/or frequently started within a period of time that would cause the motor to reach its maximum thermal limits. Once the maximum thermal limit is obtained, the motor must be allowed to return to ambient temperature before resuming operation.

CAUTION: DO NOT use to pump flammable liquids. Never operate the pump in an explosive environment. Arcing from the motor brushes, switch or excessive heat from an improperly cycled motor may cause an explosion.

CAUTION: DO NOT assume fluid compatibility. If the fluid is improperly matched to the pumps' elastomers, a leak may occur. Pumps used to transfer hazardous or hot (max. temperature 170°F Viton only) chemicals must be in a vented area to guard against the possibility of injury due to harmful or explosive liquid/vapors.

CAUTION: DO NOT operate the pump at pressures, which cause the motor to exceed the amperes rating indicated on the nameplate. Various pump models are equipped with thermal breakers to interrupt operation due to excessive heat. Once the temperature of the motor is within proper limits it will automatically reset, and the pump will start operation without warning.

CAUTION: To prevent electrical shock, disconnect power before initiating any work. In the case of pump failure, the motor housing and/or the pumped fluid may carry high voltage to components normally considered safe.

Pressure Switch Operation:

The pressure switch reacts to outlet pressure and interrupts power at the preset shut-off pressure indicated on the pump label. When outlet pressure drops below a predetermined limit (typically 15-20 psi less than the shut-off pressure), the switch will close and the pump will operate until the shut-off (high) pressure is achieved. The shut-off pressure is set to factory-calibrated standards. See the motor label and Product Data Sheet for specific pump specifications.

CAUTION: Improper adjustment of pressure switch may cause severe overload or premature failure. Failures due to improper adjustment of the pressure switch will not be covered under limited warranty.

If the plumbing is restrictive or the flow rate is very low, the pump may re-pressurize the outlet faster than the fluid is being released causing rapid cycling (on/off within 2 seconds). If the pump is subjected to rapid cycling during normal operation, or for infrequent periods, damage may occur. Applications, which exhibit rapid cycling, should have restrictions in the outlet minimized. If not feasible consider a SHURflo accumulator or a SHURflo “bypass” model pump.

Bypass Operation:

A bypass pump may be used for applications that normally induce frequent start/stop of the motor, and thereby create a potential for overheating. Models equipped with an internal bypass are designed to pump at high pressure while a t low flow rates. Bypass models equipped with a switch may operate for several seconds even though the outlet side has been closed off.

Mounting:

- The 2088 series pumps are self-priming. Horizontal and vertical prime vary depending on the fluid viscosity and pump configuration.

- The pump should be located in an area that is dry and provides adequate ventilation. If mounted within an enclosure, provisions to cool the motor may be necessary. Heat sinks, which attach to the motor, are available from Rittenhouse if increased heat dissipation is necessary.

CAUTION: DO NOT locate the motor near low temperature plastics or combustible materials. The surface temperature of the motor may exceed 250°

- The pump may be mounted in any position. However, if mounting the pump vertically the pump head should be in the down position so that in the event of a leak, fluid will not enter the motor.
- Secure the rubber feet with # 8 hardware. DO NOT compress the feet; doing so will reduce their ability to isolate vibration/noise.

Plumbing:

- Flexible high-pressure tubing compatible with the fluid should be used to connect the inlet/outlet ports. Tubing should be either 3/8" or ½" I.D., and at least 18" in length is suggested to minimize stress on the fitting/ports and reduce noise. Allow for the shortest possible tubing route and avoid sharp bends that may kink over time.

- Note: Restrictions on the inlet may cause vacuum levels to reach the fluid vapor pressure, causing cavitation, degassing, vapor lock and a loss in performance. Inlet pressure **must** not exceed 30-psi maximum.

- ½" Male threaded models: Are intended to be used with SHURflo swivel barb fittings which seal with an internal taper when hand tightened. Standard ½" NPT fittings may be used when tightened to a maximum torque of 3.7 ft/Lb.

NOTE: SHURflo does not recommend the use of metal fittings or rigid pipe to plumb the inlet/outlet ports. Standard plastic male and female threaded fittings can be acquired at commercial plumbing supply stores.

CAUTION: Sealers and Teflon tape may act as a lubricant causing cracked housing or stripped threads due to over tightening. Care should be used when applying sealers. Sealers may enter the pump inhibiting valve action, causing no prime or no shut-off. **Failures due to foreign debris are not covered under warranty.**

- Installation of a 50-mesh strainer is recommended to prevent foreign debris from entering the pump.

- If a check valve is installed in the plumbing, it must have a cracked pressure of no more than 2 psi.

Electrical:

CAUTION: a qualified electrician, in accordance with all local electrical codes, should perform electrical wiring.

The pump should be on a dedicated (individual) circuit, controlled with a double pole switch rated at or above the fuse ampere indicated by the pump motor label. Depending on distance of the power source from the pump and amperage load on the circuit, wire may need to be heavier than indicated by the chart.

CAUTION: All 115 VAC and 230 VAC pump motors and systems, must be ground per local and state electrical codes.

Improper duty cycle and/or rapid start & stop conditions may cause the internal breaker (if equipped) to trip, or can result in premature motor failure due to excessive heat.

Voltage	**Wire Leads**	Wire Size	**Fuse Rating**
12, 24 & 36 DC	Red (positive +) Black (negative -)	#14 AWG or heavier	See pump/motor label
115 AC	Black (common) White (neutral) Green (ground)	#16 AWG or heavier	See pump/motor label
230 AC	Brown (common) Blue (neutral) Grn/Yellow (ground)	#16 AWG or heavier	See pump/motor label

CAUTION: Circuit protection is dependent on the individual application requirements. Failure to provide proper overload/thermal devices may result in motor failure, which will not be covered under warranty.

TROUBLESHOOTING

Pump will not start:

- ✓ Fuse or breaker
- ✓ For correct voltage (± 10%) and electrical connections.
- ✓ Pressure switch operation and correct voltage at switch or motor wires.
- ✓ Rectifier or motor for open or grounded circuit.
- ✓ For locked drive assembly.

Will not prime:

- ✓ Out of product.
- ✓ Strainer for debris.
- ✓ Inlet tubing/plumbing for severe vacuum leak.
- ✓ Debris in pump inlet/outlet valves.
- ✓ Proper voltage with the pump operating (± 10%)
- ✓ Pump housing for cracks.

Leaks from pump head or switch:

- ✓ For loose screws at switch or pump head.
- ✓ Switch diaphragm ruptured or pinched.
- ✓ For punctured diaphragm if fluid is present at bottom drain.

Pump will not shut-off (Pressure switch equipped)

- ✓ Output line closed and no leaks.
- ✓ For air trapped in outlet line or pump head.
- ✓ For correct voltage to pump (± 10%)
- ✓ Inlet/outlet valves for debris or swelling.
- ✓ For loose drive assembly or pump head screws.
- ✓ Pressure switch operation/adjustment incorrect.

Noisy/Rough Operation:

- ✓ Mounting feet that are compressed to tight.
- ✓ Does the mounting surface multiply noise (flexible)
- ✓ For loose pump head or drive screws.
- ✓ Is the pump plumbed with rigid pipe causing noise to transmit.

Service Kits are readily available to repair standard 2088 series pumps.

Repair kits include simple illustrated instructions allowing easy installation. To ensure that the correct kit is received the model number and all nameplate data must be included with the order. You will find the pump and parts breakdown on our website www.mkrittenhouse.com

PRECAUTIONS

1. Check all fluid levels regularly.

2. Keep suction line clear and suction filter clean.

3. DO **NOT** RUN UNIT WITH SUCTION VALVE CLOSED.

4. If oil is milky and white in sight glass on diaphragm pump, shut machine down immediately.

5. Keep air vent in tank lid operational.

6. Ensure no liquids other than anti-freeze are in machine if there is possibility of freezing temperatures. Perform winterizing steps.