Model 51S, 53S

INSTALLATION INSTRUCTIONS

rule® 1500/2000 AUTOMATED PUMP

• SUBMERSIBLE • IGNITION PROTECTED

FOR INSTALLATIONS WITH WIRING TO A PANEL SWITCH

CONGRATULATIONS!

You have just purchased one of the finest quality bilge pumps available in the industry. It was developed after years of experience, research, and testing by our research staff. Its motor and its shaft seals were specially designed and are manufactured by Rule Industries to give years of reliable trouble-free performance.

Most early pump failures are due to improper installation and wiring. Please read and follow the instructions carefully and your pump will provide you with maximum output and the life for which it was designed.

This pump is "Ignition Protected."

ALL RETURNS MUST BE SHIPPED TO:
RULE INDUSTRIES, INC.
CAPE ANN INDUSTRIAL PARK
GLOUCESTER, MA 01930

A WRITTEN EXPLANATION OF RULE'S ONE YEAR LIMITED WARRANTY POLICY IS AVAILABLE UPON REQUEST BY CALLING:

RULE CUSTOMER SERVICE
978-281-0573

Performance Data

1500			
	GPH @ 0'	GPH @ 3.35' (10K pa)	GPH @ 6.7' (20K pa)
13.6 volts	1500 (5678 LPH)	1200 (4542 LPH)	804 (3043 LPH)
12.0 volts	1350 (5110 LPH)	1000 (3785 LPH)	500 (1893 LPH)
2000			
	GPH @ 0'	GPH @ 3.35' (10K pa)	GPH @ 6.7' (20K pa)
13.6 volts	2000 (7570 LPH)	1620 (6132 LPH)	1300 (4921 LPH)
12.0 volts	1740 (6586 LPH)	1450 (5488 LPH)	1160 (4391 LPH)

rule®

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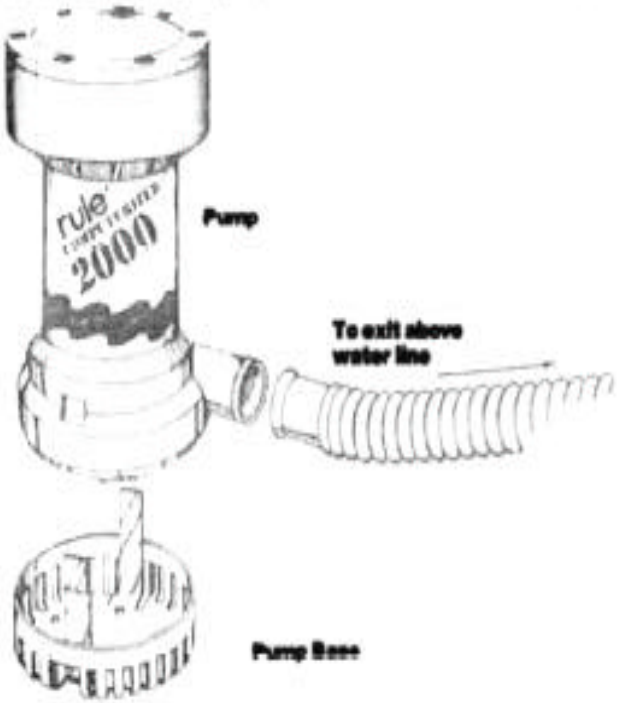
INSTRUCTIONS

STEP 1 Remove the strainer from the bottom of the pump by depressing the lock tabs on both sides of the pump



STEP 2 Determine the desired location for the pump. If only one pump is used, it is usually where the water is deepest in the bilge while the boat is at rest. The installation must allow for complete drainage of the hose. All water pockets must be eliminated by having the hose running level or continuously upward. See illustration in Step 7.

STEP 3 Position the strainer so that the pump nozzle is in the proper position to connect to the discharge hose.

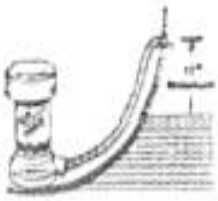
STEP 4 Mounting the Strainer

A. If attaching the strainer to wood, fasten with stainless steel screws.
B. If attaching the strainer to metal or fiberglass, first mount a wooden block, then fasten the strainer to the wooden block.

STEP 5 Mount the pump on the strainer so that both lock-tabs "snap" into place. (The pump may be reversed on these tabs as so desired.)

STEP 6 Attach 1 1/8" I.D. hose to the discharge nozzle and fasten with a stainless steel clamp. Rule flexible hose (Model #60) is recommended because it will not kink when making sharp bends.

STEP 7 Thru-hull Fittings



A. For most installations install a 1 1/8" I.D. thru-hull fitting (Rule® Model #60) to achieve the rated flow of the Rule® 1500 or 2000 pump. Locate the thru-hull fitting at least 12" above the water line to prevent water from flowing back into the hull when the pump is off.

B. For stern installations, place the thru-hull fitting high enough in the stern so that submergence of the fitting will not occur under any conditions.

STEP 8 Wiring

In order to prevent electrolysis and corroded wire connections, it is essential that all wire ends and terminals be sealed with Rule® Heavy Duty Marine Sealant and located above the highest possible water level by fastening with insulated staples or plastic straps.

When installing your pump, 16 gauge wire should be used. However, if your installation is over 10' from the battery source, the wore size should be increased to 14 gauge. Using a wire which is too small causes undesirable heat in the wires and results in a voltage drop and lower performance of the pump.

STEP 9 Fusing

To protect your electrical wiring from possible overload install a fuse in the positive (+) lead from the battery. The fuse should be sized according to the following chart.

PUMP	2000 12 volts	1500 12 volts
AMP DRAW	8.4 amp	4.8 amp
FUSE	15 amp	9 amp

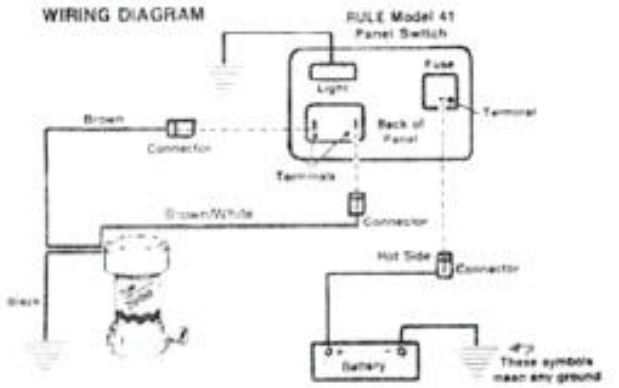
If wiring directly to a circuit panel with a fuse holder, check to see that the proper fuse is being used.

STEP 10 ELECTRICAL INSTALLATION

The computerized, automatic system assures that the vessel is always pumped out and that the pump does not run needlessly. The proper wiring polarity must be observed with the brown and brown/red leads separately connected to the terminals of the panel switch.

When using the Rule model 41 panel switch, the proper wiring is as shown:

WIRING DIAGRAM



The plain brown lead should be connected to the automatic position on the switch and the brown/red lead should be connected to the manual position.

When placed in water and the switch turned on to the automatic position, the pump will begin pumping immediately. After pumping the vessel dry, the pump will automatically stop, and begin pumping again, when water is again present. The pump will start and run continuously when turned on to the manual position, even if there is no water present, but of course, no water will emerge. (The automatic operation of the pump may be restarted and/or tested at any time by turning off the power, waiting 5 seconds, and then turning the switch to the automatic position. If no water is present the pump will only run momentarily. If water is present the pump will continue to run until the water is pumped out.) Once the pump has power and the switch is in the automatic position, starting and stopping is completely computerized. No further adjustment is necessary or possible.

STEP 11 Polarity is important. On the Rule® 1500 or 2000 pump, the correct polarity will be obtained when the **BROWN and BROWN/WHITE** wires of the pump are connected through the panel switch to the POS or + side of the battery.

Caution: Pump **must always be properly attached to the strainer before running the unit.**

Storage

The pump may be left in the bilge all winter without damage, but must be disconnected from the battery. Even if the pump is subjected to freezing temperatures, no damage will occur. **DO NOT** try to turn the pump ON if pump is embedded in ice.

TROUBLE-SHOOTING SECTION

Symptom	Possible Cause	Cure
Reduced Flow	Plugged strainer	Clean outside of strainer and clean debris from around impeller.
	Low battery voltage	Check battery condition and charge if necessary.
	Kinked discharge hose	If hose is kinked because of a sharp bend, convert to Rule #80 hose which will not kink at bends.
No water pumped	Wire connections	Make sure wire connections are not corroded. Visual check is not enough —a slight pull on each wire will indicate if the wire is still joined. Check to be sure no wire joints are hanging down into the water.
	Blown fuse	Check fuse to see that it is the correct size according to the chart in step 9. If fuse size is correct and fuse still blows, check impeller through inlet opening to be sure it is not jammed or stuck with debris.
Wires over-heated. Melted insulation	Fuse size or Jammed Impeller	Be sure impeller is clean of debris and is free to rotate. Reduce fuse to proper size shown in chart in step 9. Replace damaged wiring.
Repeated blown fuse	Fuse size or Jammed impeller	Be sure fuse has amp rating shown in chart in step 9. Check impeller to see that it is not bound up by fish line, etc.

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