

PETERS AND RUSSELL, INC., SPRINGFIELD, OHIO

Model 5800-B PRESSURE MASTER

NOTE: No. 5800-B Pump shown —
No. 5850-B Pump same except includes No. 5350-HL Dry Tank Switch

INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS

These Instructions Pertain To All Pumps of This Model
Built After Serial No. F-155-14

CONVERSION OF AIR PRESSURE TYPE WATER SYSTEM TO PAR PUMP TYPE PRESSURE WATER SYSTEM

System may be converted as follows:

1. Important: Remove pressure type filler cap and replace with vented type.
2. Cut supply lines between tank and system. Install PAR pump as per the following instructions.

MOUNTING

1. Unit is self-priming, therefore may be located in any convenient dry place not subject to spray or drip.
2. Mount pump above (preferred) or slightly below tank with a maximum suction lift of 5 ft. and a maximum discharge head of 12 ft. above pump.
3. Mount pump in upright position and screw to solid base through vibration pads which may be rotated to facilitate installation.

WIRING

To avoid motor burnouts (not covered in our warranty) the following wire sizes must be strictly adhered to.

1. Wire sizes for 12 and 32 volt systems. Up to 30 ft. from power source to pump, use 12 gauge wire. Over 30 ft., use 10 gauge wire. Use a minimum of 10 gauge wire for 6 volt systems, with a maximum of 15 ft. between power source and pump.
2. Install a switch in hot side of line to turn off unit when not in use.

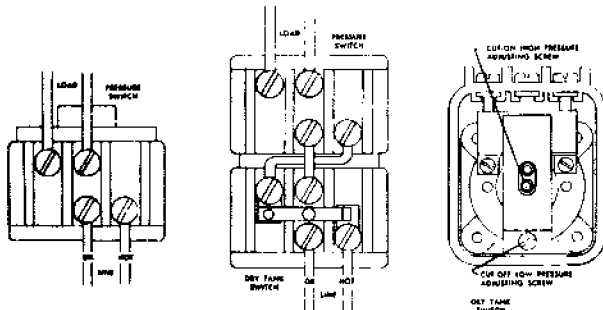


FIG. 1

FIG. 2

FIG. 3

3. Attach power leads to switch as shown in Figure 1 for 5800-B or Figure 2 for 5850-B.

4. After installation check voltage across motor leads under full load. If voltage is less than 5½ volts on a 6 volt system, 11 volts on a 12 volt system, or 30 volts on a 32 volt system with a fully charged battery, check wires for bad connections (or corrosion in older installations) which will cause a decrease in voltage.

WARNING: Pumps will not operate properly if run on voltages lower than stated above and motor burnout which we cannot be responsible for may result. Therefore, it is very important to run the unit on a fully charged battery at all times.

PLUMBING

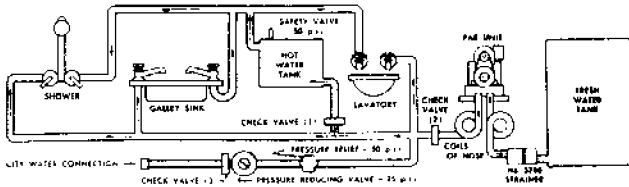
This pump was designed for unlimited service to supply hot or cold water to four outlets and is of rugged construction. It must though, like any other piece of equipment, not be expected to function properly if placed under severe conditions such as high back pressures caused by excessive undersize plumbing, or incorrect installation of hot water heater, filters, etc. Keeping this in mind the following plumbing instructions must be followed closely.

1. Connect inlet to water supply and exhaust to plumbing with hose clamps, being sure to use both lengths of hose supplied to prevent transmission of noise and vibration.

PERFORMANCE AND CAPABILITY RATING

Service: Unlimited; supply 3 outlets simultaneously.
Delivery and current consumption (12 v.) at 3-ft. lift:
3 g.p.m. @ 7 p.s.i., 4.9 amps. 2 g.p.m. @ 30 p.s.i., 6.0 amps.
2.5 g.p.m. @ 20 p.s.i., 5.4 amps. Cutoff at 35 p.s.i.
Dry suction lift, maximum 5 ft.
Discharge head above pump, maximum 12 ft.
Combination suction lift, plus discharge head, maximum 17 ft. above source.

2. A good grade of ½" I.D. plastic or neoprene hose may be used for balance of system. If copper tubing or pipe is preferred, use a



minimum of ½" O.D. tubing or ⅜" pipe. This includes valves, elbows, tees, etc.

3. System must not be connected to city water unless pump is protected from high pressures by installing a PAR #4344 or #5027 check valve or gate valve as shown in diagram (2). It is also recommended as further protection to install a pressure regulator (Cosh Acme Type "A-31" or equivalent) as shown in diagram to reduce city pressure to a maximum of 40 p.s.i.
4. Use standard household faucets. If aerator type faucets are used screen must be removed due to high restriction. Do not use self-closing faucets.
5. Crystalline or porous ceramic filters must not be used (due to high back pressure) unless connected to separate tap for drinking water only. A screen type strainer PAR #5280 may be placed in intake line to prevent slag or drass accumulated in tank from getting into system.
6. Unit must not be installed in system with hot water heater unless a check valve (PAR #4344 or #5027) is installed to prevent backflow of hot water into cold water line (1). A safety valve must be mounted in top of tank above water level and regulated to a pop-off pressure of 50 p.s.i. If an instant type heater is used it should be regulated to operate at lowest pressure to avoid back pressuring pump.
7. Hot water heater must not be installed in system with check valve or pressure regulator in water supply line unless a pressure relief valve (Webster #111 or equivalent) is used as shown in diagram and regulated to pop off at 50 p.s.i. required by California Division of Housing, Code Title 8, paragraph 16310.35.

FOR INITIAL STARTING or if pump has not operated for some time:

1. Check fresh water tank level.
2. Be sure all valves and strainers between fresh water tank and unit are open.
3. To start Model 5800-B open outlet and turn on switch.
4. To start Model 5850-B turn on switch and push red button on top of dry tank switch and hold approximately one minute until enough pressure is built up in unit to hold switch in, then release. If switch does not hold in, read paragraph 1 on "Switch opens stopping pump." This procedure must be repeated each time the unit is turned off and pressure drops below 2 p.s.i.

For both pumps: Keep outlet open until air is cleared from lines and water comes from outlet. Turn off outlet and pump is ready for operation.

PRESSURE SWITCH

The pressure switch has been adjusted at the factory to turn the unit on at 25 p.s.i. and off at 35 p.s.i. Do not readjust if higher or lower pressures are requested. Switch must be replaced with #5345 (15-25 p.s.i.) or #5355 (35-45 p.s.i.) on 5800-B pump or #5345-HL (15-25 p.s.i.) or #5355-HL (35-45 p.s.i.) on 5850-B pump.

DRY TANK SWITCH

The dry tank switch (on 5850-B pump only) has been regulated at the factory to hold in at 5 p.s.i. and turn unit off at 2 p.s.i. Due to differences in installation the settings may require changing if the following symptoms occur.

SYMPTOM: SWITCH OPENS, STOPPING PUMP WHEN FAUCET IS OPEN OR PUMP HAS BEEN MANUALLY TURNED OFF FOR SOME TIME.

- CURE:**
1. Check system for leaks which will allow a drop in pressure.
 2. Check pump valves for foreign material which would hold them open and not allow the unit to develop enough pressure.
 3. Check voltage. Low voltage will not allow the unit to develop enough pressure to hold the switch in.
 4. If it is found that the trouble is other than the above then the switch must be adjusted as follows: Remove cover and turn high pressure screw (socket head) out or counterclockwise until pump will run with all faucets open. After making this adjustment if pump does not turn off when tank is out of water turn low pressure screw (large slotted) clockwise until it does. See Figure 3.

INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS -- Continued

SYMPTOM: PUMP DOES NOT TURN OFF WHEN SUPPLY IS EXHAUSTED

CURE: Remove cover and turn low pressure screw (large slotted) clockwise until pump turns off when supply is exhausted. See Figure 3. The length of time required for pump to turn off is dependent on size of system. An example is the pump on a larger system will run longer after the tank is dry than a smaller system due to length of time required for pressure to drop to 2 p.s.i.

MAINTENANCE AND TROUBLE-SHOOTING

The PAR Pressure Master Water Systems have been designed to provide automatic trouble free pressurized water, with a minimum amount of maintenance which can, in the majority of cases, be performed without disconnecting the plumbing or electrical connection to the unit.

SYMPTOM: PUMP DOES NOT PRIME

CURE: 1. Check level of fresh water tank.

2. Check system for leaks (especially intake side).
3. Be sure all valves and strainers are open.
4. Check power supply and see that voltage is up.
5. Dismantle unit and check valve assemblies to make certain no foreign matter is between the valve and valve seat causing loss of suction. This is done without disturbing plumbing as follows:
 - a. Remove 4 slotted hex head screws, Part #4674.
 - b. Lift motor, drive, and diaphragm assembly off base.
 - c. Lift valve assemblies from pockets and clean all foreign matter from valve and valve seat.
 - d. Replace valve assemblies back in same pockets, being sure rubber valve is UP on INTAKE side and DOWN on EXHAUST side.
 - e. Replace top assembly and bolt back together, being careful to tighten evenly.

SYMPTOM: PRESSURE DROPS AND PUMP KICKS ON PERIODICALLY WHEN WATER IS NOT BEING DRAWN

CURE: 1. Check all connections and faucets for leaks. One drop of water per minute will cause the pump to run every two hours.
2. Check valves for foreign matter, as per above paragraph.

SYMPTOM: PUMP IS ROUGH AND HAS EXCESSIVE NOISE

CURE: 1. Check plumbing and strainer (if used) for restriction.
2. Be sure both pieces of hose have been used as per paragraph 2 in installation instructions.
3. After several months of operation, under certain conditions, the flow of the pump may become rough. If this happens, the flow may be smoothed out again as follows:

Turn pump off, close inlet and open outlet and with a PAR air pump, force air into system through the snifter valve, located on exhaust side about middle of the unit, until air comes from the outlet. Recap snifter, open intake and restart unit as per starting instructions.

Periodic attention should be given to snifter valve to see that valve core works freely and that hole in cover is kept open.

SYMPTOM: RADIO INTERFERENCE CAUSED BY PUMP

CURE: 1. Reverse motor leads.
2. If reversing of leads does not suppress noise, then a .1 MFD condenser should be placed in the line with pigtail to hot side of line, and the case grounded.

SYMPTOM: DECREASE IN BELT LIFE

CURE: Too much or too little belt tension will decrease belt life. It has been found that the belt has proper tension if it can be moved in and out on one side a total of 1/4" at a point halfway between pulleys.

ADJUST BELT AS FOLLOWS: Loosen #4681 nuts on end of motor and slide motor up or down until desired tension is gained, and re-tighten nuts.

FALL LAY-UP

Whenever possible, it is preferable to store PAR Water Systems in a warm, dry place free from freezing, condensation, and corrosion which are the enemies of any electrical apparatus.

In doing this, the complete unit need not be removed, only the motor, diaphragm, and valve assemblies. This is done as follows:

1. Pump system dry as possible through faucets.
2. Remove (4) #4674 screws.
3. Remove motor leads from pressure switch.
4. Lift motor and diaphragm assembly from pump.
5. Remove valves from pockets and clean.
6. Store in warm dry place.

When removal and warm winter storage is not possible, the unit should at least be drained as follows to prevent freezing:

1. Pump tank and plumbing dry through faucets.

2. Leave faucets open and turn pump off.
3. Disconnect outlet connections.
4. Start pump and allow to run until all water is expelled from unit.
5. Do not reconnect unit until warm weather unless plumbing is completely void of water.

WHEN ORDERING REPAIR PARTS, ALWAYS
GIVE THE FOLLOWING:

- | | |
|---------------|--------------|
| 1. PUMP No. | 3. PART No. |
| 2. SERIAL No. | 4. PART NAME |
- Price Each

4543 BELT, 4 to 1 Ratio	4.00
4684-1 SET SCREW	.10
4522 SMALL PULLEY	2.50
4684 SET SCREW	.10
4681 MOTOR NUT	.10
4628 D.C. MOTOR MOUNT	1.95
4809 A.C. MOTOR MOUNT	1.95
4674 TIE DOWN SCREW	.15
5148 MOTOR, 12 Volts D.C.	15.00
(State Voltage) 32 Volts D.C.	17.50
4741 " " " 115 Volts A.C.	45.00
4741-1 BRUSHES FOR 115 VOLT MOTOR	ea. 2.50

5464 CONNECTING ROD SCREW	.30
5465 CONNECTING ROD ASSEMBLY	6.00

4523 LARGE PULLEY, 4 to 1 Ratio	3.25
4676 JACK SHAFT SCREW	.10
5466 JACK SHAFT ASSEMBLY	12.75
4936-1 SNIFFER CAP	.10
4936 SNIFFER CORE	.20
4601 DIAPHRAGM	1.75
4636 DIAPHRAGM PLATE (Top & Bottom same)	.50
4679 DIAPHRAGM SCREW	.25

5174 DIAPHRAGM RING	3.00
4743 SCREW	.10
5172-2 SURGE CHAMBER	12.00
5211 SURGE CHAMBER GASKET	.45
5264 VALVE ASSEMBLY (Intake & Exhaust same) pr.	2.25
5171-1 BASE	11.50

ACCESSORIES	Ea.
5470 Webster #111 Pressure Relief Valve, Set at 50-60 p.s.i.	3.50
5471 Calk Anne A-21 Pressure Reducing and Regulating Valve	13.50

4677 SCREW	.10
4743 SCREW	.10
5432 VIBRATION PAD	.35

