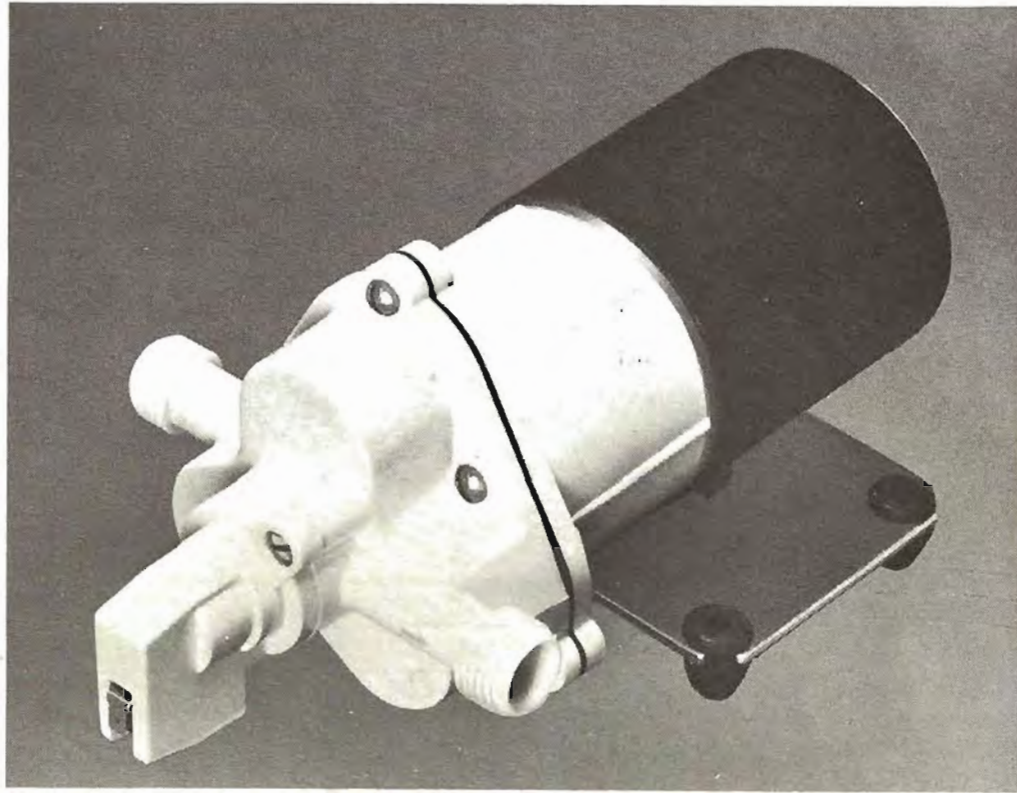


THE TRI-A-FRAM PUMP

IMPORTANT
See warranty
procedure and list
of authorized service
centers on back page.



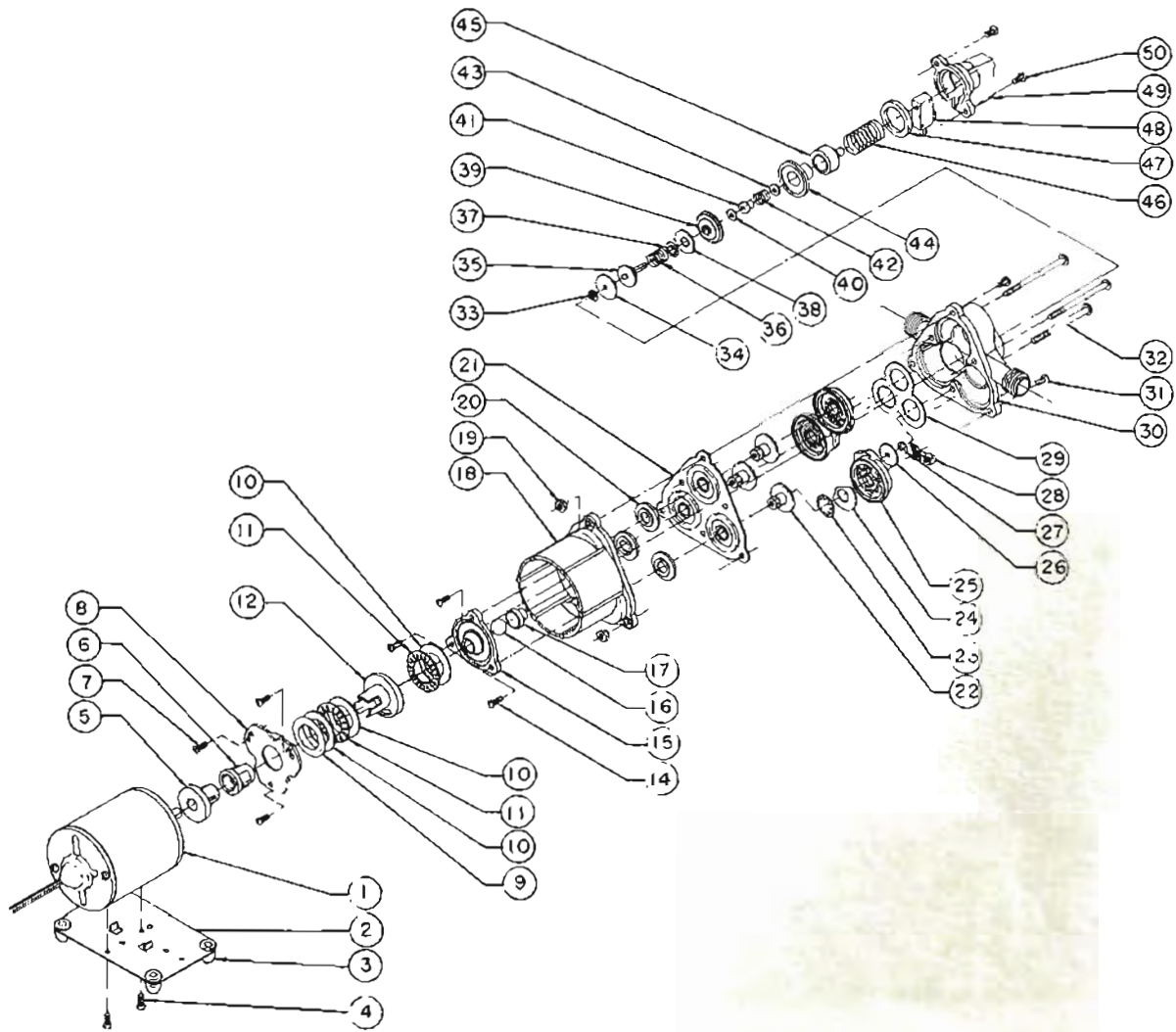
MODEL SERIES 200

The manufacturer of your coach has knowingly selected what many people believe to be the finest pump available to him today. He could have bought a lesser brand for less money but he felt you should have the best. Please read this manual to get the greatest possible satisfaction from his choice.

INSTALLATION & OPERATION MANUAL

SHURflo

EASTERN OFFICE NATIONAL HEADQUARTERS
1740 MARKEL ST. 1400 CERRITOS AVE. EAST
ELKHART, INDIANA 46514 ANAHEIM, CALIFORNIA 92805
(219) 294-7581 (714) 533-7700



| | | | | |
|-----|--------|----------------|---|---------|
| 1. | 11-008 | Motor | 1 | \$25.00 |
| 2. | 30-014 | Base Plate | 1 | .75 |
| 3. | 7-001 | Rubber Foot | 4 | .10 |
| 4. | 1-026 | Screw | 2 | .10 |
| 5. | 35-003 | Coupling | 1 | 2.00 |
| 6. | 41-008 | Bushing | 1 | .48 |
| 7. | 1-005 | Screw | 3 | .10 |
| 8. | 35-004 | Support Plate | 1 | 2.75 |
| 9. | 23-008 | Mylar Shim | 2 | .10 |
| 10. | 6-025 | Bearing Cover | 1 | .10 |
| 11. | 6-024 | Bearing | 1 | 2.75 |
| 12. | 35-002 | Drive Coupling | 1 | 2.25 |
| 14. | 1-005 | Screw | 3 | .10 |
| 15. | 35-001 | Wobble Plate | 1 | 2.85 |
| 16. | 6-023 | Ball, Steel | 1 | .75 |
| 17. | 33-003 | Bushing | 1 | .75 |
| 18. | 21-090 | Lower Housing | 1 | 3.50 |
| 19. | 3-011 | Nut, Hex | 3 | .10 |
| 20. | 21-094 | Piston Bottom | 3 | .55 |
| 21. | 41-009 | Diaphragm | 1 | 3.10 |
| 22. | 21-093 | Piston Top | 3 | .25 |
| 23. | 6-008 | Retainer Ring | 3 | .30 |
| 24. | 40-038 | Inlet Valve | 3 | .25 |
| 25. | 21-092 | Valve Chamber | 3 | 1.55 |
| 26. | 40-037 | Outlet Valve | 3 | .15 |

| | | | | |
|-----|--------|---------------|---|--------|
| 27. | 6-005 | Retainer Ring | 3 | \$.10 |
| 28. | 30-047 | Filter Screen | 3 | .10 |
| 29. | 40-036 | Gasket | 1 | .65 |
| 30. | 21-091 | Upper Housing | 1 | 4.10 |
| 31. | 1-052 | Screw | 3 | .10 |
| 32. | 1-053 | Screw | 3 | .15 |
| 33. | 6-007 | Retainer Ring | 1 | .10 |
| 34. | 40-020 | Check Valve | 1 | .15 |
| 35. | 21-069 | Valve Stem | 1 | .25 |
| 36. | 32-010 | Spring | 1 | .45 |
| 37. | 6-013 | Retainer Ring | 1 | .10 |
| 38. | 40-014 | Seal Washer | 1 | .35 |
| 39. | 21-071 | Valve Plate | 1 | .55 |
| 40. | 22-002 | Seal Washer | 1 | .15 |
| 41. | 21-068 | Poppet | 1 | .30 |
| 42. | 32-013 | Spring | 1 | .35 |
| 43. | 22-002 | Seal Washer | 1 | .15 |
| 44. | 41-002 | Diaphragm | 1 | .75 |
| 45. | 21-070 | Plunger | 1 | .45 |
| 46. | 32-015 | Spring | 1 | .65 |
| 47. | 21-067 | Bridge Ring | 1 | .30 |
| 48. | 10-113 | Switch | 1 | 1.55 |
| 49. | 21-076 | Switch Cap | 1 | 1.65 |
| 50. | 1-006 | Screw | 2 | .10 |

INSTALLATION TECHNIQUE

INSTALL THE PUMP IN A READILY ACCESSIBLE LOCATION

THE SERIES 200 PUMPS HAVE EXCEPTIONAL PRIMING CHARACTERISTICS. If required the pumps may be located several feet from the tank. The pump may be located above the tank, even with the tank, or below the tank.

Secure the mounting plate in the desired location with at least two screws (no 10 X 1¼) placed diagonally. Do not compress the rubber feet. To do so prevents the shock absorber effect.

The water supply tank must be vented so air can enter as water is removed. The most satisfactory arrangement is to vent to the outside of the coach. Down thru the floor is excellent.

It is essential that a filter be used in the pump input line to keep large particles out of the system. The most satisfactory is a tank filter because it protects the hose also. But a filter in the line is acceptable. Shurflo makes both types.

ELECTRICAL WIRING REQUIREMENTS

| Pump Series | Wire Gauge | | | Fuse Requirement |
|-------------|------------|-------------|-------------|------------------------------|
| Model | 14 Gauge | 12 Gauge | 10 Gauge | 10 to 15 Amp in-line fuse |
| 200 | 0 - 20 ft. | 20 - 50 ft. | Over 50 ft. | |

The pump should be on a circuit of its own. Do not use a skin ground. Run the ground back to the source or to a ten gauge wire common ground.

The Model 200 is not affected by polarity. But, it is preferable to attach the positive line to the pump switch.

In an accessible location install a 10 amp or greater wall-mounted switch. This switch is used to shut off the pump when traveling, when the coach is unattended, or in an emergency such as running out of water.

PLUMBING TUBING - HOSE - AND PIPE

A special hose is available for installing the pump. It is a high pressure potable water hose. The length used depends on the installation situation. However, the output hose should not exceed 24 inches in code approval installations. Any length may be used on the input side or non-pressure side.

AVOID KINKS IN THE HOSE. Kinks will prevent proper operation. Use clamps at both ends of each hose. Clamps prevent air leaks into the water line. Air leaks prevent proper priming. Remember the output hose may see high water pressure when the coach is hooked up to city water sources.

The internal diameter (I.D.) of the plumbing lines is of the utmost importance. Lines that are too small increase the back pressure and reduce the flow. Excessive pump cycling results. The main lines should be at least 1/2" I.D. and risers or short lines to one fixture at least 3/8". The water passage within the faucet should be at least 3/8" also. Filter screens should be removed from faucets. They clog up and create problems.

CHECK VALVES used in the system must be a free flow design. If you can blow thru in the direction of flow the check valve is suitable. If you cannot it may present excessive restriction.

FITTINGS used to join sections of plumbing should have the same flow diameter as the lines. Do not use pipe dope of any kind between the tank and the end of the output hose. Pipe dope may get into the pump mechanism and create problems.

WATER PURIFIERS must be on a separate line. They create a high back pressure.

CHECK OUT PROCEDURE

PRELIMINARY CHECK. Examine the installation. Is it complete ..clamps tight.. no kinks in the hose.. fuse good.. etc?

12 volts DC must be provided for the check-out. Use a fully charged battery or a 12 volt DC converter of at least 10 amps capacity. **caution.** . . a 110 volt AC to 12 volt AC is **not** suitable.

INITIAL OPERATION

- 1** Fill the tank with water.
- 2** Open all faucets — hot and cold.
- 3** Switch pump to ON position. Allow time for the hot water tank to fill. Shut off each faucet as the flow becomes steady and free of air.

With the hot water tank filled and all the air expelled from the system shutting off the last faucet should cause the pump to shut off.

CHECK FOR LEAKS

This can be done visually but many connections are hidden. We recommend a positive pressure check with a pressure gauge. This will indicate any leaks by a drop in the gauge. Even a tiny leak will cause the pump to cycle on and off. And, in transit, even a small leak can become a big leak.

TROUBLE SHOOTING

IF MOTOR DOES NOT OPERATE. Make the following checks. Is the battery charge too low? Are the wires disconnected or terminals corroded? Is the switch in the ON position? Is the fuse good? Is the pump head frozen? If so, thaw with a lamp bulb placed near the pump.

IF PUMP RUNS BUT WATER DOES NOT APPEAR. Is there water in the tank? Are there kinks in the inlet hose? Is air leaking in at the inlet fittings? Tighten or add clamps. Is there a plugged-up inlet line? Remove the output hose and try again. If water appears the problem is further into the system.

IF MOTOR RUNS BUT WATER SPATTERS. Air is getting into the lines. Check or add clamps on the input side of the pump. Restart and try again. Allow time to clear air from the hot water tank and lines.

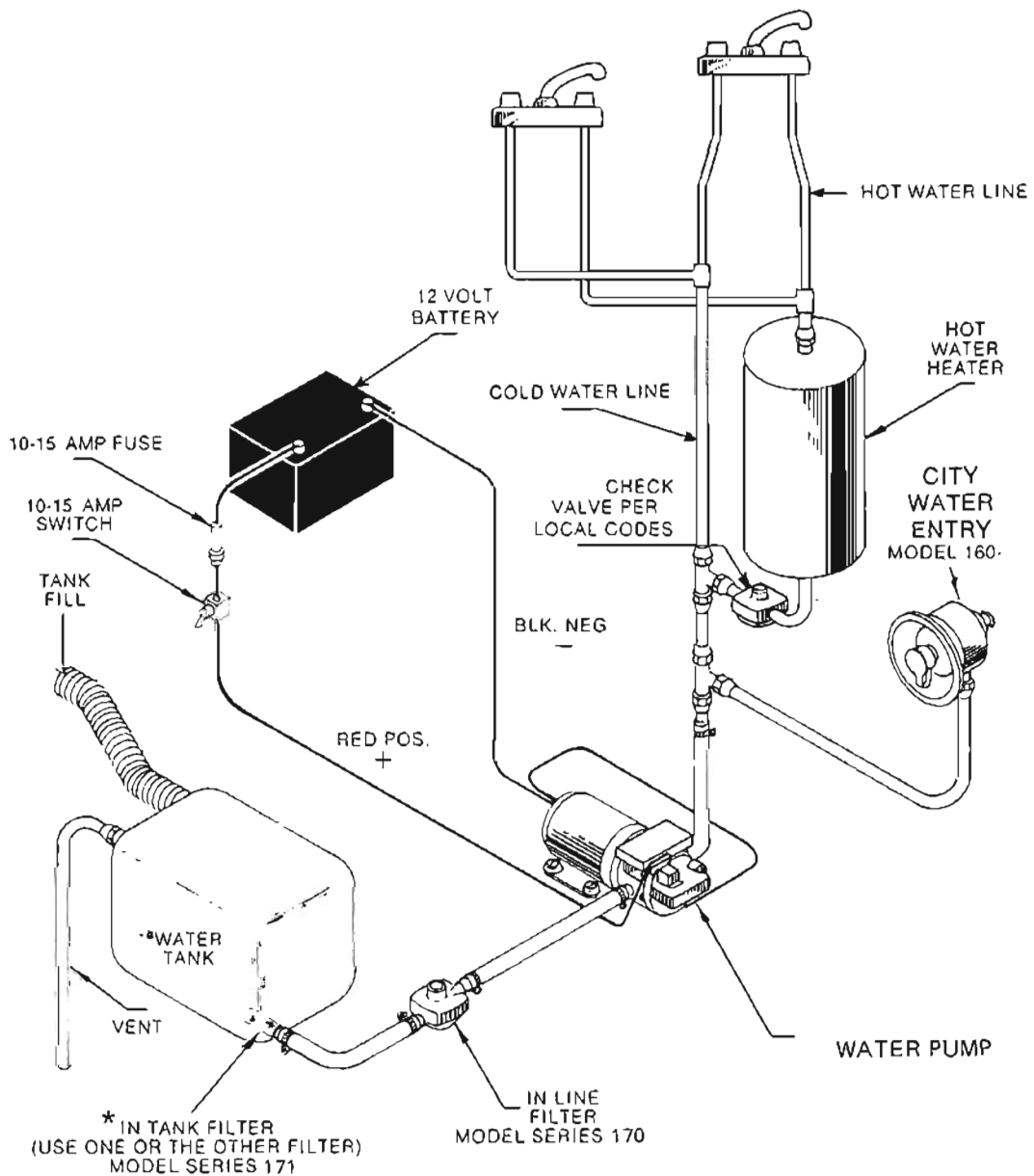
PUMP CYCLING a rapid on and off condition.

Normal — and not harmful to the pump. The model 200 has been set to flow water just like home. However, many times water conservation is important and faucets are opened only a little bit. Under these conditions — high pump output and low faucet flow — the pump will cycle on and off in a rhythmic interval. This is normal and will not harm the pump.

Abnormal cycling — If the pump cycles on and off when all faucets are closed something is wrong. Most likely there is a leak somewhere. Check faucets for dripping and especially the toilet valve. Correct any leak no matter how small.

If no leak can be detected shut the pump off. Remove the output hose where it joins the system (not at the pump). Insert a plug in the hose and clamp it. (You can make a perfect plug from a barb fitting, 1/2" size with a cap tightly screwed on the threads. It must not leak.) Turn the pump switch on. The pump should come on, run a few seconds, and then shut off. If it remains off — the problem is not the pump. The problem is in the system. If, however, the pump goes on and off there may be a problem in the pump. There may be an internal pump leak which allows water to escape from the high pressure area back into the low pressure inlet area. Look for a valve held open or a crack in the casting. Although this can happen it is not common.

IF PUMP DOES NOT SHUT OFF. The wall switch may be used for temporary control of the pump. A low battery charge may be the cause. Or the switch mechanism may be stuck. Try tapping the switch cap on the end of the pump with the handle of a screw driver. If you decide to open the switch mechanism be sure to note the assembly sequence of the parts. The cap retains a spring. Hold the cap when removing the screws.



WINTERIZING YOUR WATER SYSTEM

Satisfactory winterizing requires the draining of water from the entire system. Because of the check valve mechanism built into the pump, blowing the lines will not remove the water from the pump and tank. Proceed as follows:

Drain the tank through the drain provided. If none is provided open a faucet and turn the pump on to pump the tank dry. Then drain the lines by opening the lowest outlet or drain in the system.

Remove the output hose at the pump. Turn the pump on and pump out any remaining water — about a cupful. Use a towel or rag to catch the water. If you feel the lines should be blown apply the air nozzle to the system lines where the hose was removed.

Attach the hose now or later as you feel necessary. The system is now winterized. It's a lot easier to use the new potable antifreeze solutions. Merely follow the directions.

With reasonable care your Shurflo pump should do a good job for many years. Please feel free to communicate with our service engineers for any additional advice or information you may need. They will be pleased to assist you.

WARRANTY AND WARRANTY PROCEDURE

Shurflo warrants its pump to be free of defects in workmanship and materials for one year beginning with the purchase date of the coach or in the absence of proof of the purchase date then one year from the date of manufacture as shown on the pump.

Each and every pump has been operated and tested before being shipped from the Shurflo factory. In the event you feel the pump is not operating correctly we suggest:

You communicate with the Shurflo factory by phone or letter. You will be asked to return the pump to the factory or if more appropriate to the nearest Shurflo Official Service Center.

Upon inspection, if the pump itself is found to be faulty the pump will be repaired or replaced. During the warranty period there will be no charge for parts or labor used in the repair of the pump. However, we have no control over the location of the pump in the coach, how it is installed, nor its accessibility for repair. There may be a charge for removal and reinstallation of the pump. We are not responsible for such charges.

If you wish to repair the pump yourself you may do so without voiding the warranty provided you use Shurflo parts and assemble the pump correctly.

Or, you may send the pump to us for prompt repair. Package it carefully to avoid shipping damage — enclose your name and address, the date of purchase of your coach and the Brand name of the coach — plus Two Dollars for return postage. We will process the pump and have it on the way back within 48 hours.

The above represents our warranty policy. Under no circumstances will we assume nor accept responsibility for unauthorized expenditures.