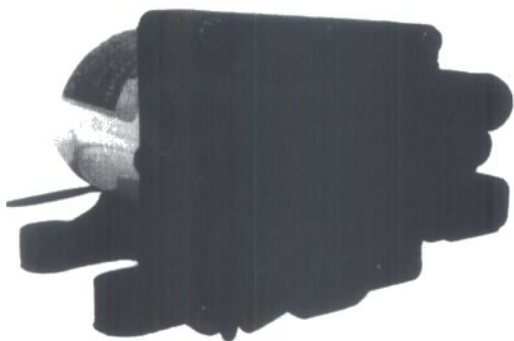




Universal RV Water Pump, 3.0GPM

- Self-Priming, Automatic, On-Demand Water Pump
- “Run-Dry” Protection
- Adjustable Pressure Switch
- 12V Motor



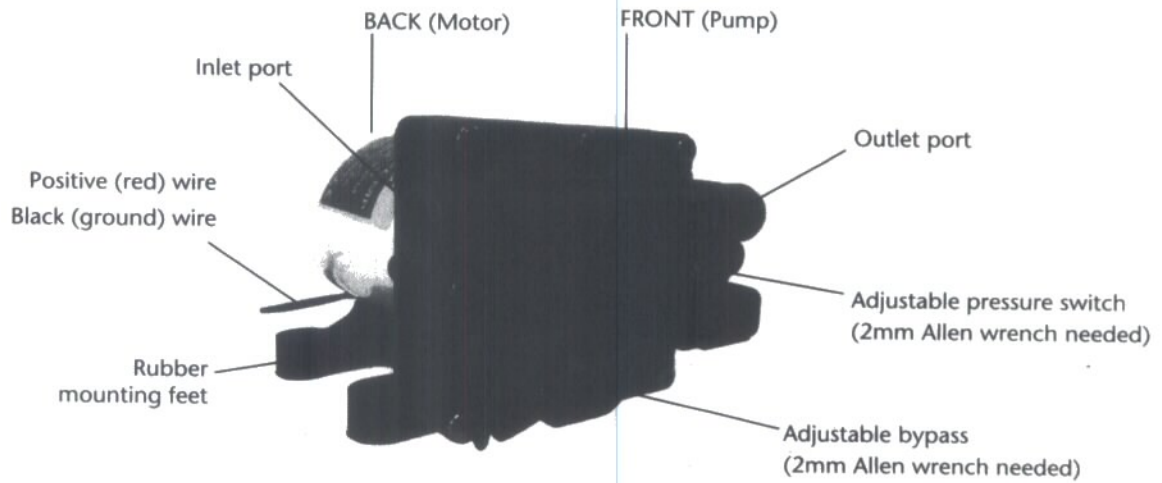
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1 – Introduction

The AquaPro Water Pump (AP3000) is a self-priming 3.0GPM water pump designed to provide a consistent flow of water for on-demand RV water usage. The built-in adjustable pressure switch and bypass functionality reduces noise, strain on pipes, and pump wear.

Figure 1 – Features

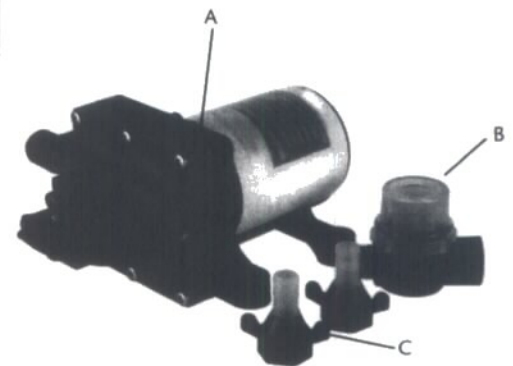


2 – Parts & Assembly

CONTENTS:

Part	Qty	Part No.	Part Description
A	1	21847 21849	3.0GPM Water Pump
B	1	21850	50 Mesh Strainer (not included in bulk pack) Use the strainer on the inlet port to prevent debris from entering and damaging the pump.
C	2	—	½" Barbed Hose Adapter If needed, use the adapters to connect the flexible tubing to the inlet strainer and the outlet port.

Figure 2 – Contents



3 – Specifications

- **Model:** AP3000 – 4-chamber positive displacement diaphragm pump; self-priming; run-dry safe
- **Flow rate:** 3.0GPM
- **Power:** 12V DC, Nominal
- **Current:** 3.5A (8.5A Max)
- **Pressure setting:** 55psi/3.8Bar
- **Vertical suction lift:** up to 6' (1.8m)
- **Level suction:** up to 30' (9.1m)

Pump Usage/Application:

- RV water supply pump
- Pump for non-flammable liquids

Warranty:

- **2-Year Warranty:** Failure to follow warnings and instructions in this document may void the warranty. Failure due to foreign debris is not covered under warranty.

4 – WARNINGS!

- ▲ READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING, OPERATING, OR SERVICING THE WATER PUMP.
- ▲ FAILURE TO FOLLOW THESE INSTRUCTIONS CAN LEAD TO SERIOUS INJURY OR DEATH!
- ▲ Do not pump flammable liquids! Not explosion proof! Not for marine use!
- ▲ Not a submersible or bilge pump. Do not expose motor or wires to water.
- ▲ Do not use incorrect electrical wire size, which creates a fire hazard. (Figure 3 – Minimum Wire Sizes)
- ▲ Do not use pump continuously. Pump is designed for normal, intermittent RV water demands.
- ▲ Turn off the power to the water pump when storing the RV seasonally or for a long term.
- ▲ Always sanitize the water system before storing your RV, and before you use the water system after a period of storage, to avoid ingesting contaminated water.
- ▲ Prevent water from freezing inside your pump and plumbing system or serious damage will occur.

5 – Resources Needed

Mounting

- ✓ 4 mounting screws appropriate to your RV's mounting surface
- ✓ Screwdriver to mount the pump

Plumbing

- ✓ 1/2" inner diameter, flexible high pressure tubing; minimum 12" length for each inlet and outlet port
 - 💡 **TIP:** Flexible tubing is intended to create a flex point, so do not use metal fittings or rigid pipe which could cause unnecessary noise or loose/cracked components.
- ✓ Hose cutter for tubing
- ✓ 4 stainless steel 3/4"-1" hose clamps and screws (when using barbed adapters on fittings)
- ✓ Appropriate pipe fittings (as needed)

Electrical

- ✓ 15A switch
- ✓ 10A inline fuse
- ✓ Use the correct size and length of wire. (See Figure 3 – Minimum Wire Sizes)

Figure 3 – Minimum Wire Sizes

Find your minimum wire size and length for a 10% voltage drop on a 12V DC 10A circuit.

LENGTH		WIRE SIZE	
Feet	Meters	AWG	mm ²
0–25	0–7.6	16	1.3
25–50	7.6–15.2	14	2.1
50–70	15.2–21.3	12	3.3
70–110	21.3–33.5	10	5.3

💡 **TIP:** If there are other devices on the circuit, the fuse and wire sizes need to meet the total amp requirement for all devices on the circuit, including the water pump.

6 – INSTALLATION

Examine the water pump and ensure there are no loose or damaged parts before installation.

▲ **CAUTION:** Read and follow all warnings, and always follow all governing installation codes and standards.

6.1 – Mounting

1. Choose an appropriate location to mount the pump:

💡 **TIPS:**

- Away from living spaces so that noise is minimized.
- Adequate ventilation to prevent overheating. (Approximately 1 cubic foot around pump)
- The pump is self-priming up to 30ft (9.1m) when mounted at the same level as, or below, the water tank.
- The pump is self-priming up to 6ft (1.8m) vertical distance when mounted above the water tank.
- If mounting the pump vertically, ensure the pump is inverted with the pump head down and motor up.

2. Secure the pump's mounting feet to the mounting surface with 4 screws.

💡

TIP: Mounting feet are designed to dampen vibration and noise. Do not over tighten or use oversized screws otherwise vibration will travel more easily to the surface and inhibit noise dampening.

6.2 – Plumbing

💡

TIPS:

- Flexible tubing is intended to create a flex point, so do not use metal fittings or rigid pipe which could cause unnecessary noise or loose/cracked components.
- Do not over-tighten fittings.
- Do not use sealing compounds or thread seal tape, which could release debris into the pump.
- Ensure minimal restrictions to water flow for optimal performance.

1. Install the strainer (Fig. 4-A) directly to the pump inlet with the strainer always in a downward position (Fig. 4-B).
2. Install ½" inner diameter, flexible high pressure tubing to both the inlet and outlet ports, with a minimum of 12" of tube length.

- If needed, install the ½" barbed adapters as shown in Fig. 4-C and 4-D.

Figure 4 – Pump, Strainer, with Adapters (opt.) Assembly



Regardless of the orientation of the water pump, ensure the strainer bowl is always in the downward position.

6.3 – Electrical

💡

TIP: To ensure optimal performance, use the correct size and length of wire. See Figure 3 – Minimum Wire Sizes.

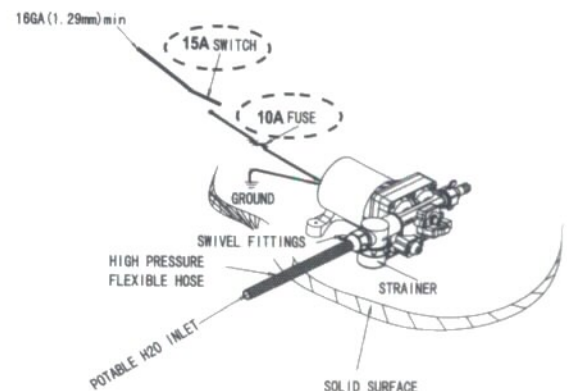
1. Turn off the breaker to the water pump circuit.
2. To ensure adequate overload protection, install a 15A switch on the positive wire and a 10A in-line fuse (circled in Figure 5).

💡

TIP: If there are other devices on the circuit, the fuse and wire size needs to meet the total amp requirement for all devices on the circuit, including the water pump.

3. Connect the red (positive) wire to the electrical system. Connect the black (ground) wire to a known ground, usually the RV battery.
4. Turn on the breaker to the water pump circuit.
5. To test your installation, open a faucet and check for leaks before closing up the install space.

Figure 5 – Electrical Configuration



7 – Adjusting the Bypass Valve and Pressure Switch

TIP: Bypass adjustment should be performed by a professional technician using a proper gauge and equipment. Without the proper equipment, you could mis-adjust the valve or switch causing the pump to work improperly (see Caution below).

About the Bypass Valve

The pump uses a spring-loaded bypass valve to maintain smooth performance as water demands rise and fall. When a faucet is turned on the pump is providing full water flow, so the bypass valve is closed. But when there is little to no water demand, the bypass valve opens to allow water to flow back from the outlet side to the inlet side, keeping a steady flow of water within the pump with almost no cycling.

The bypass valve and pressure switch are factory set for average RV water demands:

- The bypass valve opens at about 40psi, and increases to full bypass at about 62psi.
- The pressure switch on the pump is set to shut off at about 55psi.

Adjusting the Pump's Shut-Off Pressure: (Fig. 6-A)

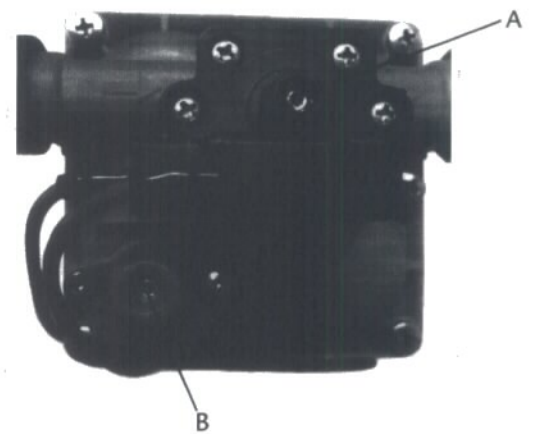
- To raise the shut-off pressure, use a 2mm Allen wrench to turn the pressure switch screw clockwise to the desired pressure.
- To lower the shut-off pressure, use a 2mm Allen wrench to turn the pressure switch screw counter-clockwise to the desired pressure.

Adjusting the Bypass: (Fig. 6-B)

- To raise the pressure at which the bypass starts and raise the full bypass pressure, use a 2mm Allen wrench to turn the bypass screw clockwise to the desired pressure.
- To lower the pressure at which the bypass starts and lower the full bypass pressure, use a 2mm Allen wrench to turn the bypass screw counter-clockwise to the desired pressure.

▲ **CAUTION:** The pressure setting for full bypass must be at least 5psi higher than the shut-off pressure of the pump. If the switch and bypass is adjusted too closely, the bypass and switch shut-off can overlap and the pump will not shut off.

Figure 6 – Pressure Switch (A) and Bypass (B) Screws



8 – Maintenance

Winterizing

Follow your RV's recommended process to completely drain the water from your water system and water pump during seasonal winterizing.

TIPS:

- When storing the RV seasonally or for a long term, it is recommended that you turn off the power to the water pump.
- Non-toxic antifreeze designed for potable water is safe for use with the AP3000 water pump, if recommended by your water system manufacturer.

CAUTIONS:

- ▲ Prevent water from freezing inside your pump and plumbing system or serious damage will occur.
- ▲ To winterize potable water systems, do NOT use automotive antifreeze which is highly toxic and can cause serious injury or death if ingested!

Sanitizing

Follow your manufacturer's recommended process to prepare a sanitizing solution for the potable water system.

- ▲ **CAUTION:** Always sanitize the water system before storing your RV, and before you use the water system after a period of storage, to avoid ingesting contaminated water.

9 – Troubleshooting

Conditions	Possible Causes	Possible Solutions
Pump won't start or trips circuit breaker	Hot motor. Thermal breaker may have triggered.	Allow motor to cool and reset automatically.
	Faulty electrical connections, fuse, breaker, main switch, or ground connection.	Ensure wiring is correct and voltage and ground are correct to the pump.
	Open or grounded circuit or motor. Improperly sized wire.	
Leaks from pump head or switch	The screws are loose on the pump head or switch.	Tighten the screws.
Pump will not prime or sputters	Strainer is clogged with debris.	Remove the strainer and clear the debris. Replace the strainer. See Section 2 for a Parts List.
	There is no water in the tank. Air has collected in the hot water heater.	Fill tank.
	Inlet tubing/plumbing is sucking air into plumbing connections (vacuum leak).	Tighten the connections or replace faulty plumbing parts.
	Inlet/outlet plumbing is severely restricted or kinked.	Replace kinked or faulty parts.
	The pump is not getting the correct voltage.	Ensure wiring is correct and voltage and ground are correct to the pump.
Pump will not shut off, or pump runs when faucet is closed	There are plumbing leaks.	Inspect the plumbing and fixtures on the output side to look for leaks.
	Air is trapped in the outlet side (water heater) or pump head.	Open up all plumbing fixtures to vent air out of the system.
	The pump is not getting the correct voltage.	Ensure wiring is correct and voltage and ground are correct to the pump.
	The screws are loose on the drive assembly or pump head.	Tighten the screws.
	The pressure switch adjustment is not correct.	Have the pressure switch adjusted; see Section 7.
Noisy or rough operation	The pump mounting has come loose.	Tighten the screws on the mounting feet.
	Noise is transmitting through rigid pipe (if used during installation.)	Replace rigid pipe with flexible hose.
	The mounting surface is too flexible for installation, so noise is transmitting through the surface.	Move the pump to a rigid surface and re-mount.
	The pump's mounting screws are too loose or too tight.	If too loose, tighten the screws. If too tight, loosen the screws.
	The pump head-to-motor screws are loose.	Tighten the 8 motor screws.
Rapid cycling	The pressure switch adjustment is incorrect.	Have the pressure switch adjusted; see Section 7.
	There is restrictive plumbing preventing adequate flow.	Remove flow restrictions in the water system and plumbing fixtures.