



AP08xx 2.2 GPM
AP12xx 3.6 GPM
AP18xx 4.8 GPM

12v DC Agri-Pump Installation and Operation Manual

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Mounting of the Pump:

1. Locate the pump with adequate ventilation and no more than 10 feet from the tank.
2. The pump can be mounted horizontally or vertically, and it is preferred that the pump be below the tank.
3. The motor feet positions are adjustable to allow replacement of other pump types.

Electrical Connections:

1. Use an appropriately fused power supply (refer to motor label).
2. Connect the red wire to the positive lead and the black to the negative lead. The recommended wire size is AWG 12 for the 3.6 and 4.8 pumps, and AWG 14 for the 2.2 pump.
3. If not using a speed controller, use a properly rated power switch to operate the pump.
4. Note: To prevent motor damage from the pump running continuously or cycling on/off too often, turn off the power when the sprayer is left unattended.

Pump Use and Performance Notes:

1. The duty cycle of the motor is dependent upon motor load (amp draw) and ambient temperature. A maximum motor shell temperature of 158° F (70° C) must not be exceeded for continuous use, and variations of the above conditions that increase the shell temperature above 158° F will govern how long the motor can run between rest periods.
2. Use of orifices/nozzles in the spraying system that are too small will cause the pump pressure switch to cycle off/on too often, which creates a pulsating flow from the pump. This can cause damage to the switch and/or motor, and should be avoided.
3. Failure to flush the pump out after use is a common cause of a non-functioning pump. This happens because the last solution used gums up the valves and/or diaphragm. Be sure to flush and clean the pump before contacting your distributor about any issues.
4. The maximum allowed liquid temperature is 140° F (60° C).

Plumbing Connections:

1. Use of a strainer (*which is provided on quick connect models*) at the pump head inlet is required to keep large particles out of the system. The minimum required mesh size is 20.
2. Check the pump flow direction (as indicated on the pump head cover).
3. Never use thread sealing tape on pipe threaded models, as the tape may enter the pump and cause valve failure.
4. Note that the use of check valves may affect the priming ability of the pump, and the cracking pressure of the valves must be kept to a minimum.

Storage and Cleaning:

1. After use, flush the pump and let it operate a few minutes at working pressure with a solution that will neutralize the liquid last pumped (*refer to the manufacturer's instructions*).
2. Empty the pump, so that the pressure drops to zero ("0") and then let the pump run without liquids for two minutes.
3. To protect pump from freezing, flush pump per instructions above (after use) to dilute, and then flush with straight RV-antifreeze.

Service Kits:

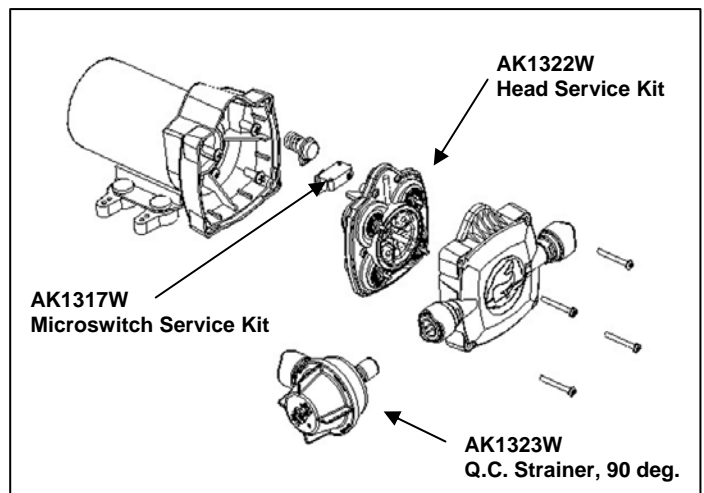


Figure 1: Service Kit Details (Quick-connect model shown)

Troubleshooting:

Problem	Cause	Solution
Motor does not run	Pump head gummed up with last fluid used	Flush pump and clean valves/diaphragm
	No power to pump	Check power supply with meter Re-attach leads/clean connections Check fuse
	Blockage in plumbing	Check plumbing for kinks
Motor runs but no fluid appears	No fluid getting to pump	Check that tank is not empty Check that strainer is not blocked Check all connections from tank to inlet of pump are secure (any air leaks will prevent prime)
Motor runs and will not switch off	Fluid leaking at outlet side of pump	Check plumbing/fittings for leaks Check that system drain plugs are closed
	No fluid getting to pump	See solutions above for: "No fluid getting to pump"
Motor cycles on and off periodically when valve(s) are closed	Fluid leaking at outlet side of pump	Check plumbing/fittings for leaks Check for a partially opened (leaking) valve Check that system drain plugs are closed
Motor cycles on and off excessively when valve(s) are open	Excessive back pressure	Check plumbing for kinks, and check nozzles, filters, and orifices for blockage Verify that orifices and nozzles are not undersized
Noisy pump operation	Pump drawing air	See solutions above for: "No fluid getting to pump"
	Noise created by vibration	Check that pump is secured to a solid surface Check that the pump body is not in contact with a hard surface (relocate if necessary) Check that plumbing is securely supported

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