AQUA PAK

MIAQ-AP-50X

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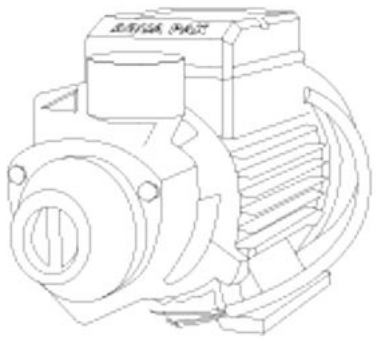
1. INTRODUCTION

• Ideal for small hydropneumatic systems, for pumping water to the rooftop tank, drawing water from the cistern, etc.

• Use only for clean water.

• Single-phase motors are protected against overload by a thermal device, which is located in the motor winding.

MODEL AP-50	MODEL AP-50X
	

CAUTION

This equipment must not be used by individuals with reduced capabilities or lack of experience, unless they have adequate supervision or training.

CAUTION

Children should be supervised to ensure they do not play with the appliance.

CAUTION

If the power cord is damaged, it must be replaced by the manufacturer, their authorized service agent, or qualified personnel in order to avoid a hazard.

2. SURFACE PUMPS FOR DOMESTIC USE

This manual describes the instructions for the proper use and maintenance of AP50 series motor pumps.

AP series motor pumps are horizontal peripheral pumps with an integrated electric motor, designed to work with clean water. They are primarily focused on supplying water to homes, for installation in small hydropneumatic systems, and for pumping water to rooftop tanks.

Before installing and starting to use the motor pump, carefully read the instructions included in this manual. In the event of accidents or damages caused by not following the instructions described herein and those indicated on the motor pump's data plate, the manufacturer is exempt from all responsibility due to improper use of the equipment. We recommend keeping this manual in a safe place for future reference.

2.1. Motor Pump Description

· The AP series motor pump is supplied in a corrugated cardboard box, which includes an installation manual and a warranty policy. AP motor pumps have the following features and advantages that provide them with greater robustness and efficiency:

· Impeller made of bronze alloy, with radial peripheral vanes.

· Shaft made of 416 stainless steel.

· Mechanical seal made of ceramic and graphite.

· Motor with built-in thermal protection, closed, fan-cooled, and designed for continuous operation.

· IP44 Protection.

2.2. Additional Advantages of the AP-50X

· Waterproof ON/OFF switch.

· Power cord and plug.

· The pump body features an anti-blocking stainless steel insert.

· Oversized motor to withstand voltage variations.

· High starting torque.

3. PRELIMINARY INSPECTION

Unpack the motor pump and inspect it thoroughly for any signs of damage. Any dents or impacts could affect its performance. Afterward, check the information on the nameplate. If you find any irregularities, immediately contact your supplier to report the nature of the defect.

3.1. WARNING

· When storing, do not place heavy objects on the motor pump's box.

· Keep the motor pump out of reach of children.

· Protect the electrical installation and the motor pump from floods, excessive heat, and hazardous substances.

· The AP-50 and AP-50X motor pumps are designed to work with clean water, free of solids, and the temperature of the liquid to be pumped should not exceed 60^{o}C (140^{o}F).

3.2. SAFETY

· When transporting the motor pump, never suspend its weight by the electrical power cord.

· Before installing the motor pump, ensure the power supply is appropriate and in conformity with the specifications on the equipment's nameplate.

· Before removing the motor pump for maintenance, disconnect the system and remove the power cord from the electrical connection.

· Repairs or modifications to the equipment performed by personnel not authorized by the manufacturer will void the warranty, as will operation with unsafe and potentially dangerous equipment.

3.3. ATTENTION

· If you have any doubts about the motor pump's safety, seek advice from your installer.

3.4. CONDITIONS OF USE

· The following conditions must be observed when using the motor pump:

· Maximum suction lift: 3 m.

· Suitable liquid temperature range for pumping: from 10^{o}C to 60^{o}C.

· The motor pump is not suitable for pumping flammable liquids or for operating in locations where there is a risk of explosion.

· The maximum permitted voltage variation is ±10%.

4. INSTALLATION

Installation can be complex. That's why commissioning must be carried out by a competent and authorized installer.

4.1. LOCATION

The pump should be installed on a solid, horizontal base. The pump must be secured with screws, preferably stainless steel. The pump's base is provided with holes specifically for its mounting and fixation.

The pump must be installed in a dry place, free from humidity and dust, and with good ventilation.

4.2. PIPING

The suction piping must have a diameter equal to or greater than that of the pump's inlet connection. It should also maintain a minimum upward slope of 2% to prevent air bubbles.

For the discharge piping, it's recommended to use pipes with a diameter equal to or greater than the pump's discharge connection. This helps to reduce head losses over long pipe runs.

It is recommended that the weight of the piping does not rest on the pump.

Install the pump as close as possible to the water level. Use piping of the same diameter as the pump's suction (do not use reducers). If the suction head exceeds 4 meters, you should use a larger diameter pipe.

To prevent turbulence, ensure the submergence of the suction pipe is at least half a meter.

Don't forget to mount a foot valve at the bottom of the suction pipe.

It's recommended to install a union nut to facilitate maintenance. Before that, it's also advisable to install a non-return valve or check valve to prevent water hammer if the pump stops unexpectedly.

Always support the piping to prevent transmitting stress to the pump.

Avoid overtightening the piping.

During installation, apply all regulations provided by the competent authority for the site where the motor pump will be installed.

4.3. IMPORTANT

Always keep in mind the dangers of infection and the necessary hygienic and sanitary rules.

Provide the motor pump with a fixed and immovable base for greater equipment safety.

To prevent water flow from returning to the pump, we recommend installing a check valve after the motor pump's discharge.

The pump must not suction gravel, dirt, or any aggressive material that could seriously damage the hydraulic part.

4.4. ELECTRICAL CONNECTIONS

The main electrical supply to the pump must have a disconnect switch to ensure the circuit is opened when performing maintenance on the equipment or completely replacing the pump.

CAUTION
Electrical connection must be performed by qualified technical personnel.

The power cable to the pump and the branch circuit must comply with the requirements of the current regulations in the corresponding locality.

We recommend using THW self-extinguishing cable, rated for 75^{0}C (167^{0}F), with a 14 AWG (American Wire Gauge) caliber. Keep in mind that for longer cable lengths, the cable's caliber (gauge) should be larger to accommodate.

WARNING
The plug supplied with the AP-50X pump includes a ground connection.

For your safety, always use it!

4.5. PRIMING

Once the pump is installed (and every time air enters the system or it's been unused for a long period), it's necessary to prime it by completely filling the pump with clean water before starting it. To do this, fill it through the priming plug.

It's very important that the pump never operates without water in its hydraulic body. If this happens accidentally, you must immediately stop the pump and prime it.

4.6. CAUTION

It is the installer's responsibility to make the connections in conformity with the power regulations of the country where the motor pump is installed.

· Confirm that the values on the motor pump's nameplate are suitable for connection to the power supply.

· When making connections, ensure that the installation provides an efficient circuit, free from electrical hazards.

· If the line experiences overheating, the motor pump's protection will activate, preventing damage to the motor. The motor resets automatically once it cools down.

5. MAINTENANCE

Before starting any maintenance, ensure the motor pump is disconnected from the power supply and there's no possibility of electrical shock.

· Check the condition of the power cables; they should always be in good repair.

· Continuously check the condition of the bearings to prevent noise and subsequent wear and tear on the equipment.

· After a reasonable period, we recommend cleaning the motor pump's casing to remove any accumulated scale.

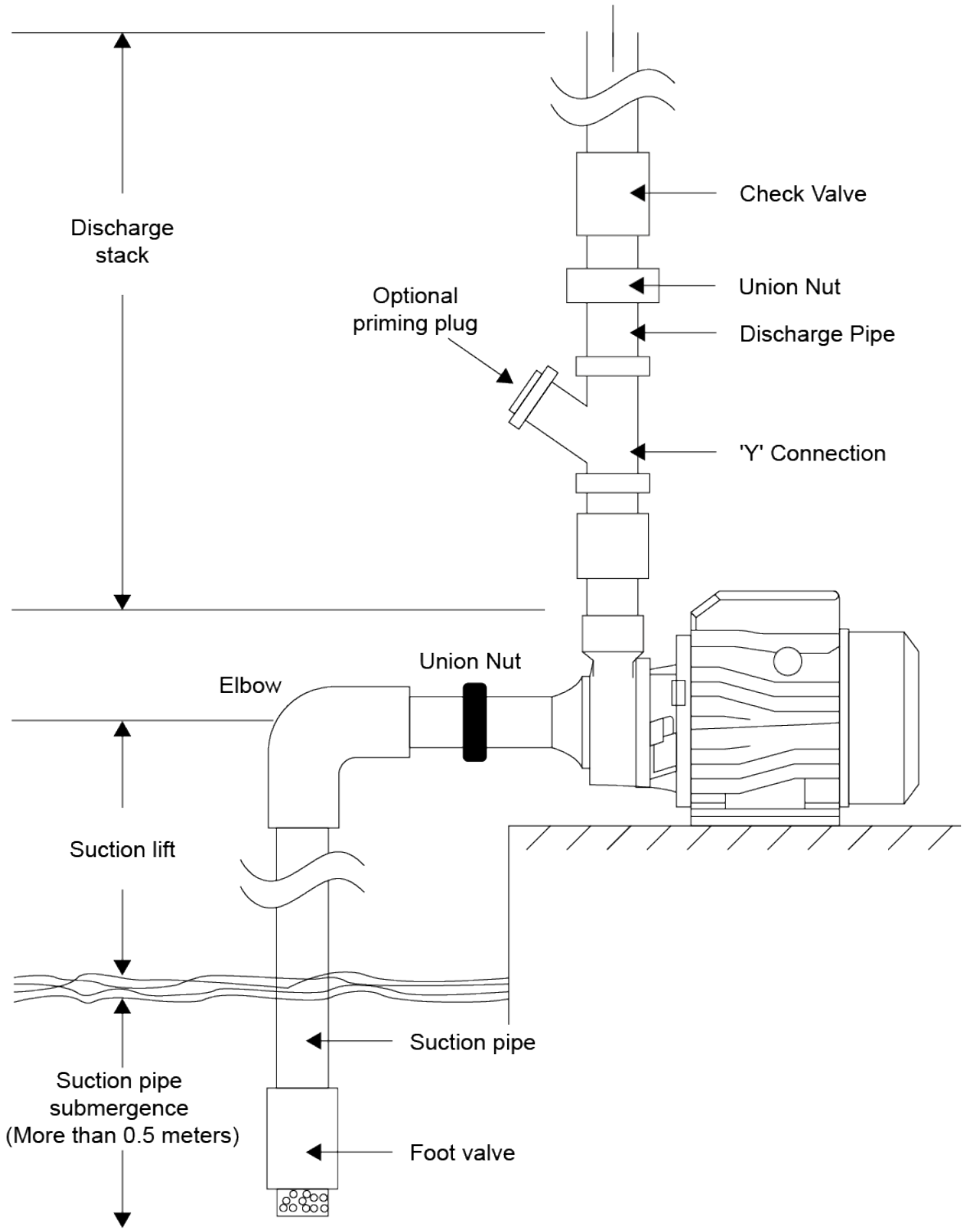
· In case of a blockage, simply apply a small turn with a screwdriver to the screw located in the center of the fan.

· We recommend that an electrician assist you with preventive inspections of the installation.

· When there's a risk of frost, we recommend draining the pump by removing the union nut on the suction side. Don't forget to prime it again when you put it back into operation.

· If the pump remains unused for a long time, it's advisable to completely drain it, rinse it with clean water, and store it in a dry place.

6. INSTALLATION DIAGRAM



7. POSSIBLE FAILURES, CAUSES, AND SOLUTIONS

FAILURE	CAUSE	SOLUTION
PUMP BLOCKED	Impeller Blocked by Debris (Trash, Particles, etc.)	• With a screwdriver, turn the shaft through the slot in the fan. • In the case of the AP50X, the possibility of blockage is reduced due to the stainless steel insert and the high starting torque of the motor.
The Motor Does Not Start.	• Lack of electrical voltage (Voltage). • The impeller is blocked. • Inadequate power cable gauge (caliber). • Switches connected to the pump are deactivated.	• Check that the voltage supply matches what's indicated on the data plate. • Perform cleaning of the hydraulic body. • Control the connections of switches connected to the motor. • Change the cable gauge to a larger unit.
The Motor Runs Without Pumping Water.	• The suction lift is excessive. • There is air in the suction.	• Move the pump closer to the water discharge level. • Ensure that the suction valve is submerged at least 50 cm. • The pump needs to be primed again. • Tighten the connections in the suction piping very well.
The Motor Runs But Pumps Little Water.	• Inadequate suction lift. • The impeller is obstructed. • Inadequate diameters in the suction and/or discharge piping.	• Control the suction lift. • Clean the suction valve and suction pipe. • Disassemble the hydraulic body and clean it along with the impeller. • Tighten the connections in the suction piping very well, and if necessary, modify the piping.
The Motor Runs But Produces Noise.	• Air entry into the system. • Defective motor bearing.	• Adjust the suction connections. • Change the motor bearing (authorized personnel only).
The Thermal Protection Has Activated.	The Motor Gets Hot. • The impeller is blocked. • Inadequate power cable gauge (caliber).	• Place the motor pump in a ventilated location. • Check that the voltage supply matches what's indicated on the data plate. • With a screwdriver, turn the shaft through the slot in the fan. • Change the cable gauge to a larger unit.

8. USES AND PROHIBITIONS

USES

Designed exclusively for pumping clean water, without solids.

Can be used with water whose temperature is between 10 °C and 60 °C.

Suitable for fixed installations on a dry and well-ventilated surface.

Uso doméstico en sistemas hidroneumáticos pequeños.

PROHIBITIONS

• Do not allow children or unsupervised persons to handle the equipment.

• Do not store with heavy objects on the box or leave without drainage in case of frost.

• Do not perform maintenance or electrical connections without first disconnecting the pump.

• Do not connect the pump directly to electrical systems without thermal or overload protection.