

CONTENTS

<p>Ch.1 - Features</p> <p>Ch.2 - Limitations</p> <p>Ch.3 - Installation</p>	<p>Ch.4 - Electrical connections</p> <p>Ch.5 - Starting the unit</p> <p>Ch.6 - Maintenance and troubleshooting</p>
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GENERAL SAFETY INSTRUCTIONS

Warnings for the safety of individuals and objects.

Carefully follow the instructions marked with the following symbols.



DANGER
Electric shock risk

Warns that the failure to follow the directions given may cause electric shock.



DANGER

Warns that the failure to follow the directions given could cause serious risk to individuals or objects.



WARNING

Warns that the failure to follow the directions given could damage the pump or the system.

WARNING: *Read this manual carefully before installing this pump. Any damage caused by failure to observe the directions contained in this manual will not be covered by warranty.*

CH. 1 FEATURES

The **MAX / MULTINOX-A** series includes horizontal and self-priming multi-stage centrifugal electropumps with front suction and radial delivery. Every electropump is carefully tested and packed during its assembly. On receiving the pump, verify that the product complies with the requirements stated in the order and that it has not been damaged during transportation. All damages should be immediately reported to the dealer by and no later than 8 (eight) days from the date of purchase.

CH. 2 LIMITATIONS

MAX / MULTINOX-A series electropumps are suitable to pump clean water free from suspended solid particles or abrasive materials.



WARNING

The electropump cannot be used to move inflammable or dangerous liquids.



WARNING

Verify that the electropump never runs without liquids.

MAX. TEMPERATURE OF PUMPED LIQUID	50° C
MAXIMUM/MINIMUM AMBIENT TEMPERATURE	40°/ 5° C*
MAX.ON/OFF CYCLES/HOUR	40 equally spaced
MAXIMUM SUCTION HEIGHT (recommended)	7 m including load losses
MAXIMUM OPERATING PRESSURE	7 bar electropump MAX
MAXIMUM OPERATING PRESSURE	9 bar electropump MULTINOX-A

**below 5° C, drain the electropump to prevent failures or damages caused by frost*

CH. 3 INSTALLATION



DANGER
Electric shock risk

When installing, please ensure electropump is disconnected from electrical supply.



WARNING

Protect the electropump and all pipes from bad weather or freezing conditions.



MAX / MULTINOX-A series electropumps are self-priming. It is advisable to install it under the level of the water. If the electropump is to be installed above the water level then a suction pipe should be used with a diameter equal to that of the suction duct for electropump. If the height (**HA**) is over 4 meters use a tube with a larger diameter. The suction line should be perfectly airtight. No elbows and/or slopes should be present to prevent the formation of air locks that could affect the electropump efficiency. A standing valve with filter should be fitted at about half a metre below the fluid that has to be pumped (**HI**) on one end of the line. Load losses can be reduced using delivery piping with a diameter equivalent or greater than the electropump mouth. It is advisable to install a check valve directly on the delivery line to prevent the electropump being damaged by "water hammer". A cut-off valve should also be installed downstream from the check valve, to facilitate servicing operations. Piping should be fitted so that vibrations, when existing, tension and weight do not affect the pump. Piping should be routed along the shortest and straighter track, avoiding an excessive number of bends. Verify that the motor is appropriately vented.

CH. 4 ELECTRICAL CONNECTIONS

	WARNING	<i>Verify that the voltage and frequency of the electropump shown on the nameplate correspond to those available on the mains.</i>
	DANGER Electric shock risk	<i>The installer must make sure that the electric system is grounded in accordance with the law in force.</i>
	DANGER Electric shock risk	<i>Make sure that the electric system has a high-sensitivity circuit breaker D=30 mA (DIN VDE 0100T739).</i>

Single-phase motors have a permanently inserted condenser and a thermal protection fitted on the motor winding. Customers will be responsible for protections of three-phase motors. Electric connections should be performed using cables H07RN-F (for external connections) or H05RN-F or H07RN-F (for internal connections). For connections, refer to Fig. 1 (single phase motors) or 2 (three-phase motors).

CH. 5 STARTING THE UNIT

	WARNING	<i>Use the electropump for the applications listed on the nameplate.</i>
	WARNING	<i>Do not operate the electropump without fluids.</i>
	WARNING	<i>Do not operate the electropump when the interception valve on the delivery side is completely closed.</i>

Before starting the electropump fill the suction pipe and the electropump body with water by using the filling cap, making sure that there are no leaks, close the cap and start the electropump. Check that it rotates clockwise when looking at the electropump from the side of the motor fan. On the three phase electropumps it is possible to invert the rotation by changing the order of two phases. It is advisable to empty the electropump and repeat the above-described operations, if the electropump is not used for long intervals of time.

The electropump is self-priming and can therefore be started without filling the suction pipe. It is however necessary to fill the pump body. The electropump will prime in a few minutes. Priming time varies according to the length and diameter of the suction pipe. Water will be circulated inside the pump body only during the priming phase. At the end of this phase, the valve will close the recirculation system to enable the pump to offer the highest hydraulic performances.

Ch.6 MAINTENANCE AND TROUBLESHOOTING

	DANGER Electric shock risk	<i>Make sure the machine is disconnected from electric power supply, before performing servicing operation.</i>
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Under normal conditions **MAX / MULTINOX-A** electropumps do not need any type of maintenance. In order to avoid possible failures, it is advisable to periodically check the pressure supplied and current absorption. A decrease in pressure is a symptom of wear. An increase in current absorption is a sign of abnormal mechanical friction in the pump and/or motor. If the electropump is not going to be used for long periods of time it should be emptied completely, rinsed with clean water and put in a dry place.

PROBLEM	POSSIBLE CAUSE	REMEDY
THE ELECTROPUMP DOES NOT PUMP WATER, THE MOTOR DOES NOT RUN	1) No power 2) Motor protection tripped 3) Defective condenser 4) Shaft blocked	1) Verify the presence of voltage 2) Verify the cause and reset the switch. If the thermal circuit breaker has tripped wait for the system to cool down 3) Replace the condenser 4) Verify the cause and unblock the electropump
THE MOTOR RUNS BUT THE ELECTROPUMP DOES NOT PUMP LIQUID	1) The pump is sucking air 2) Wrong rotation direction	1) Make sure: a) Make sure that the joints are airtight. b) Check that the level of liquid has not c) Check that the foot valve is airtight and is not blocked 2) Reset the direction of rotation
THE ELECTROPUMP STOPS AFTER RUNNING FOR A SHORT PERIOD OF TIME BECAUSE ONE OF THE THERMAL MOTOR CIRCUIT BREAKER TRIPS	1) The power supply does not conform with the data on the nameplate 2) A solid object is blocking the impellers 3) The liquid is too thick	1) Check the voltage on the power supply cable leads 2) Dismantle the electropump and clean it 3) Change the type of electropump