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Warnings for the safety of individuals and things.

Please pay careful attention to the following signs and indications.



DANGER
Electric shock risk

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



DANGER

Warns that failure to follow directions could cause serious risk to persons or things.



WARNING

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

WARNING: Before installing this pump read this manual carefully. Any damage caused by failure to observe any directions in this manual will not be covered by warranty.

CH. 1 FEATURES

MCX / MULTINOX-VE electropumps are suitable for pumping clear water that contains no dissolved gases.

The electropumps in this series are a multiphase centrifugal type.

The parts that come into contact with the water are all suitable for use with water for cooking. Each electropump is carefully tested and packed.

Please ensure that the electropump has not been damaged during transport; if this occurs please phone the dealer, within 8 days from purchase date.

CH. 2 LIMITATIONS



WARNING

Electropump cannot be used to move inflammable or dangerous liquids.



WARNING

Ensure electropump never runs dry.

MASSIMA MAX. TEMPERATURE OF LIQUID.....	50°C continuous operation
MAX. ROOM TEMPERATURE.....	40°C
MAX.ON/OFF CYCLES/HOUR.....	40 equally spaced
MAXIMUM SUCTION HEIGHT.....	6 m

CH. 3 INSTALLATION



DANGER
Risk of electric shock

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



WARNING

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

MCX / MULTINOX-VE series electropumps are not 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 pipe must not have “goose-necks” or be inclined improperly in order to avoid the formation of air pockets.

Make sure that the pipe is perfectly air tight.

At one end of the suction tube install a foot valve with filter. The pipe should be submerged at least 50 cm. into the liquid to be pumped **HI**, in order to avoid the formation of whirlwinds.

To avoid load loss on delivery, a pipe with a diameter equal to or greater than the intake of electropump should be used.

It is advisable to install a non-return valve directly on the delivery pipe, this makes it possible to eliminate any damage water hammers may cause to the electropump. After the non-return valve an interception valve should be installed. The pipes must be placed so that their weight does not interfere with the electropump. The delivery and suction pipes must travel the shortest distance with the fewest possible number of bends.

If the installation is fixed then the electropump should be blocked on the support surface. In order to reduce installation vibration the electropump should be connected with a length of flexible tubing and a layer of rubber or other anti-vibration material should be inserted between the electropump and the support surface.

If the electropump is moveable (equipped with a handle) it can be used in a pool only if there are no people in it and if the installation is equipped with a shockproof switch.

Make sure that the motor is well ventilated.

CH. 4 ELECTRICAL CONNECTION



WARNING

Ensure tension and frequency of electropump (read plate) and power supply are same.



DANGER
Electric shock risk

Installer must make sure that electric current network has ground wire conforming to current laws.



DANGER
Electric shock risk

Make sure that electric current network is provided with a high-sensitivity circuit breaker $D=30$ mA (DIN VDE 0100T739).

The single phase motors are protected from overloads by a thermal device installed in the winding. The protection for the three phase motor must be installed by the user.

The following must be used as a conductor for the connection:

- outdoors → cable H07RN-F
- in inside areas → cable H05RN-F or H07RN-F

For connecting single phase motors see Fig. 1

For connecting three phase motors see Fig. 2

For connecting double voltage single phase motors see Fig. 3

CH. 5 STARTING THE UNIT



WARNING

Use the electropump for the type of uses listed on the plate.



WARNING

Do not let electropump run dry, the hydraulic parts and seal could be damaged.



WARNING

Do not run the electropump with the interception valve on delivery completely closed.

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. If the electropump is not used for long periods of time repeat the filling operations before starting it up.

CH. 6 MAINTENANCE AND TROUBLE SHOOTING



DANGER

Electric shock risk

Before doing any operation, make sure machine is disconnected from electric power supply.

Under normal conditions **MCX / MULTINOX-VE** 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 (e.g. an entire season) 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) Check if there is power and if the plug is plugged in properly. 2) Verify the cause and reset the switch. If the thermal has tripped wait until the system has cooled. 3) Replace the condenser. 4) Verify the cause and unblock the electropump.
THE MOTOR RUNS BUT THE ELECTROPUMP DOES NOT PUMP LIQUID	1) It is taking on air. 2) Wrong rotation direction.	1) - Make sure that the joints are airtight. - Check that the level of liquid has not dropped below the foot valve. - Check that the foot valve is airtight and is not blocked. 2) Reset the rotation direction.
THE ELECTROPUMP STOPS AFTER RUNNING FOR A SHORT PERIOD OF TIME BECAUSE ONE OF THE THERMAL MOTOR PROTECTION DEVICES TRIPS	1) Power supply does not conform to data on plate. 2) A solid object is blocking the impeller. 3) The liquid is too thick.	1) Check the voltage on the power supply conductor cables. 2) Dismantle the electropump and clean it. 3) Change electropump type.

If the problem has not been eliminated after carrying out the above operations contact the closest service centre.



CH. 7 D.R.O.P. SYSTEM (Electropump protection)

If requested, **MCX** series electropumps can be equipped with a complete protection system called D.R.O.P., which protects the hydraulic parts from possible damage that can be caused by overheating of the liquid inside the electropump body.

This overheating can be the result of external causes (outside the electropump) or occur because the electropump stops priming and the liquid in the installation does not circulate, the electropump runs dry. The D.R.O.P. system is composed of a sensor mounted on the seal holder flange and fixed by two nuts. The wires of the sensor cross flange and reach the terminal of the motor.

The D.R.O.P. system is reset using the switch located on the box which holds the condenser.

Operation: when the temperature of the liquid inside the electropump reaches 60-70°C, D.R.O.P. interrupts the power supply to the motor, the electropump stops and the light next to the switch goes on. The electropump can only automatically start again when the system has cooled and if the power for the whole electropump unit is disconnected and then connected again.

Restoring operation:

- put the switch on "0", unplug the plug;
- remove causes of malfunction;
- wait a few minutes, let the all the hydraulic part cool;
- put the switch on "1", plug in the plug, the red light goes off and the electropump starts again.
If the red light is still on, put the switch on "0", unplug the plug and repeat the start up operations after a few minutes.

A diagram of electrical connections is seen in Fig. 4.