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MRC Series

Instruction Manual

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LEO reserves all the right of products modification without prior notification

Notes:

1. The graphics in this manual are all schematic diagrams, and the electric pump and accessories you buy may be different from the illustrations in this manual, please understand;
2. We are continuously improving the performance of this product, and all product details and specifications (including appearance and color, etc.) shall be subject to the physical product that you buy and shall also subject to change without prior notice.

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PREFACE

Always disconnect the appliance from the supply before assembling, disassembling or cleaning.

Appliances can be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved.

Children shall not play with the appliance.

Pumps without indication that they are protected against the effect of freezing shall not be left outside during freezing weather conditions

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Cleaning and user maintenance shall not be carried out by children unless they are aged from 8 years and above and supervised.

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1. Product Introduction

The MRC series products are intelligent high-efficiency pumps with a shielded water-cooled structure. These pumps include multiple functions such as constant pressure automatic control, memory function, overload protection, over/under voltage protection, temperature anomaly alert, and dry-running protection. They are energy-efficient and can operate at variable speeds to provide users with a stable, safe, and comfortable water supply environment.

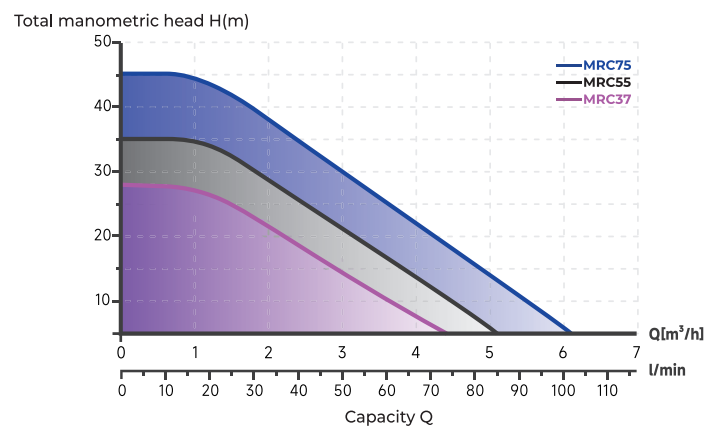
1.1 Product Structure Diagram



Pic 1.1 Structure Diagram

Code	Name	Code	Name
1	Drain Plug	2	G1 Inlet
3	Outlet Plug	4	G1 Outlet
5	Control Panel	6	Nameplate

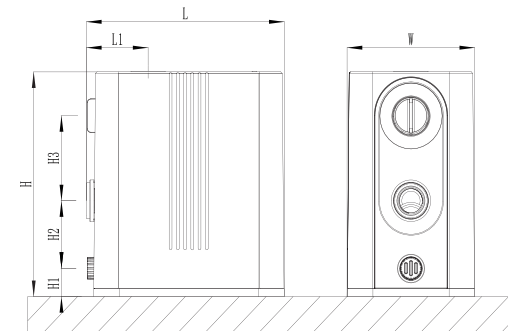
1.2 Product Performance Curve



1.3 Product Performance Parameters

Model	MRC37	MRC55	MRC75
Max. Flow (m³/h)	4	5	6
Max. Head (m)	28	35	45
Rated Flow (m³/h)	1.8	2.5	3.0
Rated Head (m)	20	25	30
Input Power (W)	370	550	750
Working Current (A)	3.0	4.3	5.7
Working Voltage (V)	220-240	220-240	220-240
Protection Class	IPX4	IPX4	IPX4
Max. System Pressure	10bar	10bar	10bar
Max. Water Temperature (°C)	60	60	60

1.4 Product Installation Dimensions



Pic 1.2 Installation Dimensions

Code	Dimension	Code	Dimension
L (mm)	250	H (mm)	280
W (mm)	168	H1 (mm)	35
H2 (mm)	84	H3 (mm)	106
L1 (mm)	81	Inlet/Outlet	G1×G1

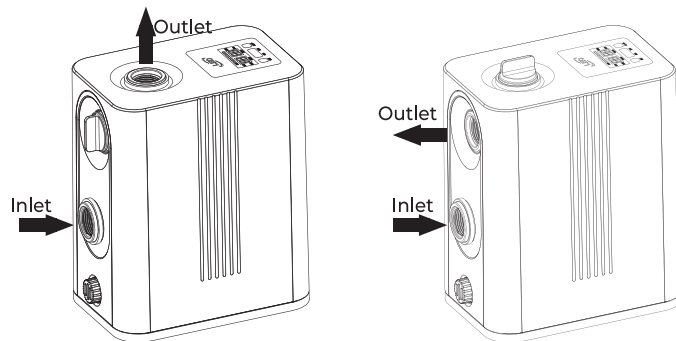
2. Product Installation



Warning

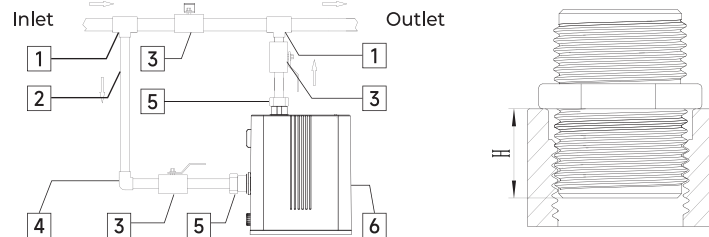
- Before starting installation, please read this manual carefully.
- The manufacturer shall not be liable for any personal injury, pump damage, or other property losses caused by failure to comply with the safety warning labels.
- This product must be installed and maintained by qualified professionals.
- The installation site must have drainage facilities to prevent water accumulation from pipe leaks.
- Disconnect the pump power supply during installation and maintenance.
- The pump should be installed in a place out of children's reach and with proper isolation protection.

2.1 Outlet Selection



★ Note: You can adjust the pump outlet direction according to the actual installation piping (default is vertical outlet). Ensure the outlet plug is tightened!

2.2 Connecting Pipelines



1. Tee 2. Water Pipe 3. Valve 4. Elbow 5. Flexible Coupling 6. MRC Pump

We recommend that you install the pump according to the simplified diagram above and make appropriate adjustments based on the actual installation space. Flexible couplings should be used at both ends of the pump, and valves should be installed for easy disassembly and maintenance.

The main water pipeline should be equipped with valves, and the main pipeline valves must be closed during pump installation to prevent backflow.

The diameter of the pump's inlet pipeline must be equal to or larger than that of the outlet pipeline. For example:

- 1/2-inch inlet pipe with 1/2-inch outlet pipe
- 1/2-inch inlet pipe with 3/4-inch outlet pipe
- 1-inch inlet pipe with 3/4-inch outlet pipe
- 1-inch inlet pipe with 1-inch outlet pipe

We advise against using corrugated pipes as the piping structure may generate noise that affects product performance.

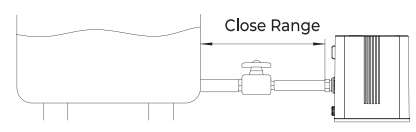
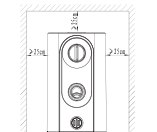
★ Note: The length of the outlet transition thread (H) must be ≥ 15 mm to ensure at least 4-5 threads are engaged to prevent leakage.

3. Installation Precautions

3.1 Application Environment

- The pump is suitable for domestic clear water with a pH value between 6.5 and 8.5.
- It is designed for freshwater with a maximum chloride ion content of 300 ppm and free chlorine ion content below 1 ppm.
- The ambient temperature should be between 0 and 40°C, and the medium temperature between 0 and 35°C.
- The volume ratio of solid impurities in the medium should not exceed 0.1%, and the particle size should not be larger than 0.2 mm.

3.2 Installation Site

1	★ This product is a domestic booster pump. Frequent start-stop cycles in commercial applications (e.g., bubble tea shops) may affect the pump's lifespan. Please use with caution.	
2	Do not install this pump for transporting toxic, flammable, or corrosive liquids.	
3	The pump supports IPX4 protection against rain only. If installed outdoors, please provide proper shielding.	
4	The pump's inlet should be as close to the water source as possible to minimize head loss.	
5	The pump dimensions are 250×168×280 mm. A space of >25 cm should be reserved for easy installation and removal.	

3.3 Electrical Connection

	- Do not perform wiring on the controller unless the power supply is disconnected. - The pump must be properly grounded to prevent electric leakage and should be equipped with a residual current device (RCD). - Electrical connections and protection should comply with local wiring regulations. Ensure the motor matches the rated voltage on the nameplate. - If the working area of the pump is far from the power source, use thicker power supply cables to prevent excessive voltage drop, which may affect the pump's normal operation. - If the power cable is damaged, it must be replaced by a qualified professional to prevent accidents.
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4. Product Installation

4.1 Pipeline Installation Schematic

(building height < 15 m)

The illustration shows a municipal water supply boosting system. After the pump installation is completed, open both the inlet and outlet valves, and then press the start button to begin operation.

★**Note:** After installation, open the inlet and outlet valves and start the pump. If the pump fails to boost pressure, it may be due to excessive back pressure in the piping. Open the faucets on the same floor to drain the piping before running the pump.

The illustration shows a water tower boosting supply system. After the pump installation is completed, open the inlet valve to fill the pump with water. Then, tighten the outlet connector and open the outlet valve before starting the pump.

★**Note:** After installation, open the inlet valve, fill the pump with water, tighten the outlet connection, open the outlet valve, and start the pump.

5. Operating Instructions

5.1 Control Panel Introduction



	Power On/Off Button	After the pump is installed and powered on, press the "On/Off" button to start the pump. The actual pressure and set pressure will be displayed. Pressing it again will stop the pump, displaying "OFF." Holding the button for 7 seconds will reset the pump to its factory settings.
	Pressure Adjustment Buttons	Press the "Increase Pressure" button to raise the set pressure. Press the "Decrease Pressure" button to lower the set pressure. The set pressure range is 10-40m for MRC37, 15-45 m for MRC55, and 15-55 m for MRC75.
	Mode Button	The pump enters Automatic Constant Pressure Mode by default (white indicator on). Press briefly for 1 second to switch the pressure unit. Press and hold for 7 seconds to enter the factory menu (the factory menu is intended for professional service personnel only).
	Set Pressure	In constant pressure mode, the current set pressure will be displayed. In manual mode, the first two digits show the speed. During fault shutdown, "E" is displayed; during temperature shutdown, "C" is displayed; during normal shutdown, "O" is displayed.

	Operating Pressure	In constant pressure mode, the current actual pressure will be displayed. In manual mode, the last two digits show the speed. During fault shutdown, "OX" will be displayed. During temperature shutdown, "XX" will be displayed. (X is a digit from 1 to 9.) When off, "FF" will be displayed.
	Status Indicator	- Indicator off: The pump is not powered on or is in a stopped state; - First indicator on: Standby; - Second indicator on: Operation; - Third indicator on: Pressure unit in meters (m) (default); - Fourth indicator on: Pressure unit in psi; - Fifth indicator on: Pressure unit in bar.
	Indicator Light-AUTO	AUTO (White Light): On indicates constant pressure mode; off indicates manual mode.
	Indicator Light-Fault	Fault (Red Light): On indicates a pump fault. Refer to the digital display for the specific error code.
	Indicator Light-Leakage	Leakage (Red Light): On indicates a minor leak in the pipeline, which does not affect pump use.
	Indicator Light-Water Shortage	Water Shortage (Red Light): On indicates insufficient water at the pump inlet.

6. Function Description

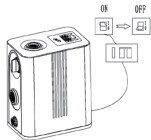
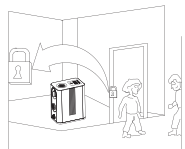
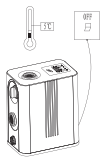
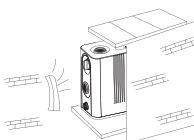
No.	Function	Discription	Display
6.1	Automatic Function	When the user closes the valve and stops using water, the pump automatically shuts down, and the power indicator light illuminates one bar. When the faucet is opened, the pump automatically starts running, and the power indicator light illuminates two or more bars.	Power Light
6.2	Memory Function	The pump retains user settings after power loss and resumes operation as set upon power restoration.	/
6.3	Dry Running Protection	When the pump is short of water, it enters a dry-running state and activates the dry-running protection mode. The pump will shut down, and the water shortage red light will turn on. Once pressure is detected at the front end of the pump, it will automatically restart. If manual intervention is required, the pump can be forced to start by pressing the on/off button. If water is present, the pump will operate normally; if not, the water shortage red light will continue to illuminate, and the pump will enter standby mode.	Leakage Light

6.4	Leak Detection	If there is a leak in the outlet piping, the pump will frequently start and stop, and the leak red light will turn on. This does not affect the normal use of the pump. The icon will disappear after normal water use. The pump will continue to indicate the leak until the piping issue is resolved and no leakage is detected in the outlet pipe.	Leakage Light
6.5	Pressure Fault	When a pressure sensor fault is detected, the fault red light will turn on, and the digital display will show "E04," causing the pump to shut down.	Fault Light E04
6.6	Temperature Protection	High-Temperature Protection: If the temperature of the pump controller exceeds 60 °C, the pump will shut down, and the digital display will show "CXX" (where XX represents the specific temperature value). The pump will automatically restart once the controller temperature drops below 45 °C.	CXX
		Low-Temperature Protection: If the water temperature is detected to be below 5 °C, the pump will automatically run to prevent freezing. It will stop when the water temperature reaches 10 °C or above. This low-temperature state does not affect the normal use of the pump.	CXX
6.7	Overload Protection	If the pump experiences a blockage, it will stop running, the fault red light will turn on, and the digital display will show "E02."	Fault Light E02
6.8	Voltage Protection	If the input voltage exceeds 270V or falls below 180V, the pump will shut down, and the fault red light will turn on. The pump will resume normal operation and the fault indication will disappear once the voltage returns to the range of 180-260V.	Fault Light E03
6.9	Controller Fault	The pump stops and the red fault light turns on if the controller fails.	Fault Light E05
6.10	Communication Fault	The pump stops and the red fault light turns on if a communication fault occurs.	Fault Light E01

7. Troubleshooting and Maintenance

Problem	Possible Cause	Solution
Pump does not start	Cable connection is poor or broken	Check the terminal connections or replace the cable
	Controller is damaged	Replace the controller at a service point
	Motor is burnt out	Replace the motor at a service point
Pump runs but no water is delivered	Air in the pump or pipeline	Open the outlet pipe to allow water to flow, then reconnect
	Air leak in the inlet pipe	Check the inlet pipe for leaks
	Insufficient inlet pressure	Ensure the inlet pressure is greater than 2 meters
	Worn impeller or internal parts	Inspect and repair at a service point
	Pump leaks	Check for water on the ground; if leakage is present, send to a service point for inspection
	Check valve is clogged	Clean the check valve
Pump vibrates	Impurities wear the bearings	Clean or replace the bearings
	Foreign objects in the pipeline or pump chamber	Inspect and clean the pipeline and pump
	Unstable base	Ensure the base is level
Pump leaks water	Damaged seals or other wetted parts	Send to a service point for replacement
Pump makes noise	Damaged bearings	Replace with the same model bearings
	Impeller friction	Remove debris
	Other parts are worn or deformed	Replace at a service point
Pump does not stop	Leakage in the outlet pipe or clogged check valve	Check for leaks in the outlet pipe and ensure the check valve is functioning properly
	Pressure tank fails to hold pressure	Recharge the pressure tank at a service point
Pump does not start	Pipeline pressure has not dropped to the start value	The pump will start automatically when the pipeline pressure drops below the start value
	Controller circuit failure	Replace at a service point
	Interference from front-end electrical devices	Reconnect the power supply to attempt recovery
Pump starts and stops frequently	Continuous low-flow water use	Check for leaks in the household piping

8. Other Precautions

1. To ensure the normal and safe operation of the pump, please read the instructions carefully before use.	
2. The pump must be properly grounded to prevent electric leakage. For safety, use a residual current device (RCD) with a rated residual current not exceeding 30 mA. Keep the power plug and socket dry and located in an area not affected by moisture.	
3. Do not touch the pump during operation. Avoid washing, swimming, or allowing livestock near the working area to prevent accidents.	
4. Avoid spraying strong water pressure onto the pump to prevent water immersion.	
5. When the ambient temperature is below 5°C and the pump will not be used for an extended period, drain the liquid from the pump chamber to prevent freezing and damage to components.	
6. It is recommended to install the pump in a dry and ventilated area to minimize condensation. If the pump will not be used for a long time, store it in a dry, ventilated, and shaded place.	

Note:

1. The graphics in this manual are for illustration purposes only. The pump and accessories you purchased may differ from the illustrations in this manual. Please understand.
2. The performance of this product is continuously being improved. All products (including appearance and color) are subject to the actual item. Any changes will not be notified separately.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.