



WL 500

Specification and User Manual

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Revision History

REV	DATE	DESCRIPTION
1.0	01-02-2009	Initial release
1.1	03-10-2022	Updated pictures. Updated part numbers for spare parts. Rewritten on new Operation manual template. Moved Safety Precautions from front page to chapter 2. Corrected Technical data.

1. Description

The WL 500 cooling unit is intended to remove heat from a liquid circuit. The coolant can be either water or a mixture of water and water-glycol (antifreeze). Water circulates in a closed loop between the ambient cooling system and a cold plate at the heat source. Heat is removed from water by an air-cooled heat exchanger. The capacity of the cooling unit is dependent on the temperature differential, which is defined as the difference between the ambient temperature and the water outlet temperature. The cooling unit is designed to remove 500 W of heat at a temperature differential of 13°C. The water inlet and water outlet are marked as Water in and Water out.

The maximum forward pressure is limited by a bypass valve, which has been integrated into the pump. The coolant flow is controlled by a flow switch that opens when flow falls below a set rate. Cooling hoses supplied by user are connected to threaded nozzle that can accommodate an 8 mm hose ID.

The water flow is monitored by an adjustable flow switch. The signal of the flow switch is available at a potential free safety circuit. The permissible contact rating for the safety circuit is 125 VAC/1A/50 VA.

A bypass valve limits the water pressure.

Note: Flow switch and bypass valve are adjusted at factory and set according to specification.

2. Safety Precautions

Note: Read manual before operating the cooling unit.

2.1 Electrical Danger

- Work on electrical installations must be carried out only by trained and authorized electricians
- Input power must be rated 230 VAC at 50/60 Hz.
- Before starting any service work on the cooling unit, please disconnect from the main power source.

2.2 Safe Operation

- Use Water or Water/Glycol as coolant.
- Run the cooling unit at the correct coolant level, otherwise the pump might degrade, and cooling capacity will be reduced.
- Use cooling hoses that can handle max pressure of the liquid circuit and is resistant to corrosion from coolant.
- Never operate the unit if it is damaged or leaking.

2.3 Environmental Issues

- Environmentally hazardous substances must be used or disposed of according to regional regulations.
- When dealing with working fluids, always be aware of the safety data sheet of the corresponding manufacturer and use appropriate personal protective gear.

3. Technical Data

3.1 Physical Dimensions

- Length: 370 mm
- Width: 307 mm
- Height: 151 mm
- Weight: 11 Kg without coolant
- Coolant capacity: 1.7 L

3.2 Performance Data

- Cooling capacity: 500 W
- Flow rate: 2.3 L/min at 2,5 bar
- Supply voltage: 230 V / 50/60 Hz
- Current consumption: 1.2 A
- Noise level: ≤ 60 dB(A) distance 1 m in any direction
- Contact rating of safety circuit (make): 250 Vac, 0.5 A, 50 VA

3.3 Mounting

- Mount on vertical wall with filling port facing up.
- Mechanically fasten with four M5 x 40 mm screws and washers

3.4 Environmental Specifications

- Ambient temperature: + 5°C...+ 40°C
- Storage temperature: - 25°C...+ 70°C (storage without water)
- Air humidity: 20%...80%

3.5 Settings

- Maximum forward pressure: 3.5 bar
- Flow switch open: ≤ 0.9 l/min

4. Installation Procedure

- 1 Vertically wall-mount the cooling unit with the filling port in an upright position.
Hole pattern: width 216 mm, height 352 mm.
- 2 Remove the yellow transportation cap, and the sheet metal cover.
- 3 Insert mains power cable and connect it to the terminals according to the terminal diagram; use a 3 mm screwdriver to connect the wires to terminal block. Remount the cover.
- 4 Connect the external hoses supplied by the user.
- 5 Fill the cooling unit with approximately 1.7 L of coolant and install the red filling level indicator cap.



Note: The level must always be between **MAXIMUM** and **MINIMUM**



Note: Cooling performance will be reduced, and pump will degrade if filling level is less than Minimum.

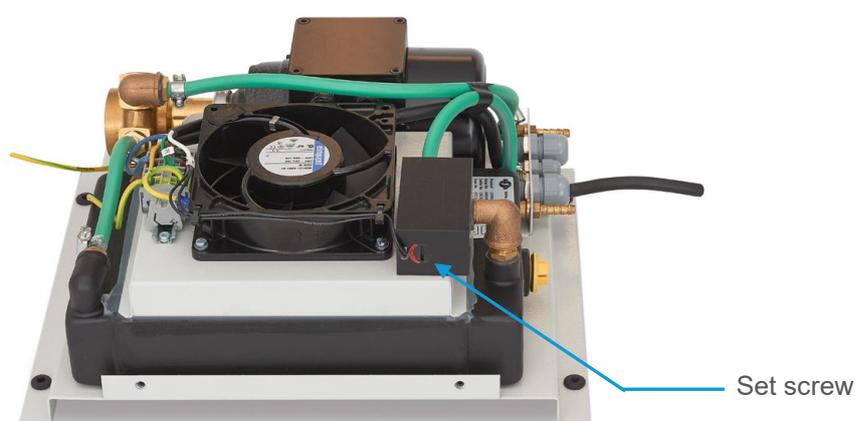
- 6 Allow the cooling unit to run for 10 minutes to deaerate the coolant circuit.
- 7 Check the coolant level as indicated by the cap. If necessary, add additional coolant.

5. Settings

5.1 Flow Switch

The flow switch is set to open at 0.9 lpm. If it is necessary to adjust this setting, then perform the following:

- 1 Disconnect the cooling unit from the main power source.
- 2 Remove the complete cover.
- 3 Adjust set screw to:
 - Increase the flow rate set point by adjusting the screw clockwise.
 - Decrease the flow rate set point by adjusting the set screw counterclockwise.



6. Maintenance

Check the coolant level regularly and refill if necessary.

6.1 Heat Exchanger

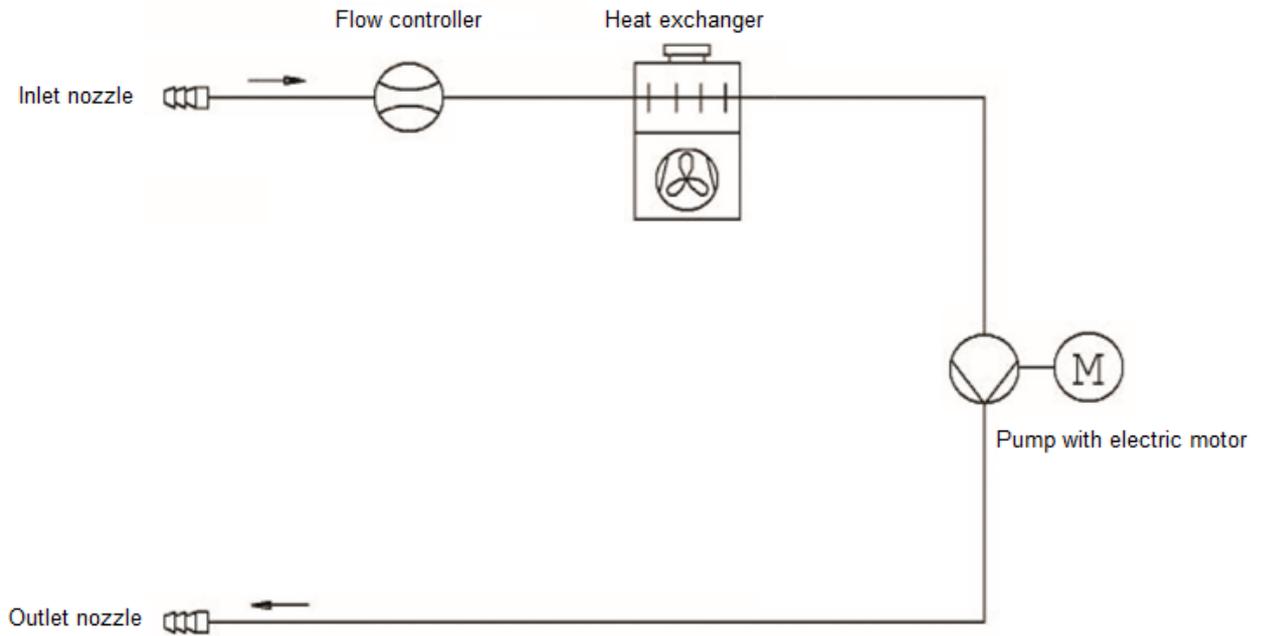
To retain maximum cooling capacity, the heat exchanger of the cooling unit must be kept clean.

Check heat exchanger every 3 months for cleanliness.

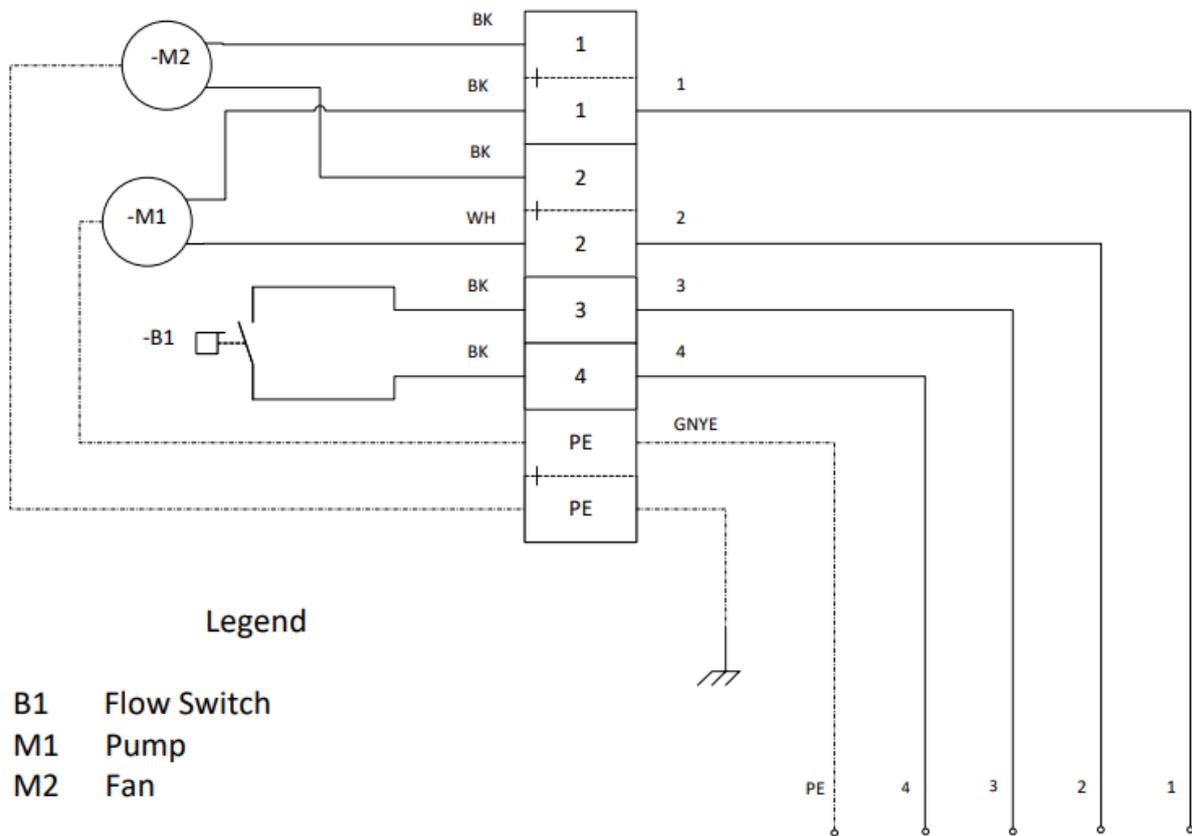
If cleaning is required perform the following:

1. Disconnect the cooling unit from the main power source.
2. Remove the cover.
3. Clean the heat exchanger with compressed air, a damp cloth, or a vacuum cleaner.
4. Mount the cover.

7. Liquid Circuit Diagram



8. Electronic Schematic



9. Spare Parts

WL 500 (1505.00)

No.	Description	Part number
1	Motor	2060.00
2	Pump	2061.00
3	Fan	2062.00
4	Filling cap	2063.00

