

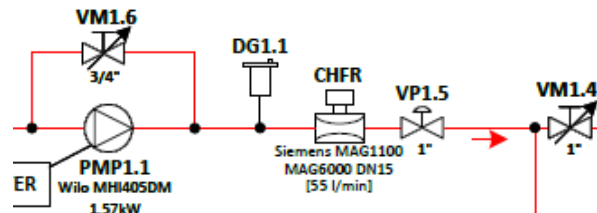


Pump troubleshooting

The following guide might help to troubleshoot problems related with hydraulic pumps of Microplan’s test benches.



Problem	Possible reason	Possible solution
Pump doesn't start	1. The emergency button is pressed or the test bench is in emergency mode	1. Ensure safety conditions and reset the test bench
	2. The pump's electrical supply is missing due to thermal protection switch off	2. Check the thermal protection of the pump inside the electric cabinet and try to reactivate it
	3. The inverter of the pump is in overheat alarm mode	3. The problem might be a consequence of the pump running at low speed for a long time. To get rid of it, identify a manual (gate) valve next to the pump and partially close it in order to let the pump run at a higher speed.
	4. The inverter of the pump is in alarm mode “Pump Alarm” or “Pump Fault” due to the pump overheating as a result of prolonged operation at too low a motor speed.	4. Execute the following operations: <ul style="list-style-type: none"> • make sure the circulator of the appliance under test is deactivated • partially open the by-pass manual valve (VM1.6 in our example), to increase pump speed • (if previous is not sufficient) partially close the downstream manual valve (VM1.4 in our example) • read What shall I do to reset "Pump alarm"?
	5. Pressure-switch alarm is activated	5. Read Water pressure problems troubleshooting
	6. Level switch is activated	6. Make sure air vents are open and refill the water circuit
	7. Pressure switch and/or level switch broken, electrical fault	7. Contact Microplan Support





Problem	Possible reason	Possible solution
Pump doesn't generate any flow rate	8. One or more valves, within the pump circuit, are closed	8. Inspect water circuit and open the closed valves
	9. The pump doesn't prime or has not been properly filled with water	9. Refill the circuit with water
	10. Pump mechanical problem	10. Contact Microplan Support
Pump doesn't reach the required flow rate or the required pressure	11. Incorrect direction of rotation	11. Fix the wiring of the pump
	12. Problem with the inverter of the pump	12. Contact Microplan Support
	13. The gate (manual) valve, in the by-pass of the pump, is too open	13. Reduce the flow in the by-pass operating on the gate valve
	14. Residual air could be trapped in the water circuit	14. Refill the circuit with water and ensure air separator tap is open
Pump is noisy	15. Inverter problem	15. Contact Microplan Support
	16. Damaged bearing or obstruction in pump casing/impeller	16. Replace pump or contact Microplan Support
	17. Cavitation due to a pressure drop in the circuit	17. Increase the filling pressure. When using the pump make sure not to exceed the discharge pressure of the safety valve of the test bench, because this can cause a pressure drop in the circuit
Unstable water flow rate	18. Residual air could be trapped in the water circuit	18. Refill the circuit with water and ensure air separator tap is open
	19. Pump PID command oscillations	19. Adjust pump PID parameters within the software of the test bench