

Trouble Shooting

The troubleshooting section lists some potential problems and solutions which can be checked. It should be used as a starting point when a problem occurs. If a specific issue arises and cannot be solved by using the below list, please contact the service department.

Issue	Cause or required Action
System does not reach the required operating pressure.	<ul style="list-style-type: none"> ➤ Pressure holding valve RV1.1 is open or not closed enough or spring is not installed correctly.
Instrument failure.	<ul style="list-style-type: none"> ➤ Replace Instrument
Permeate quality not reached or flux is higher than expected or flux varies significantly when using the same membrane in the Triple Cell.	<ul style="list-style-type: none"> ➤ Verify that O-rings are installed and undamaged or replace O-rings. ➤ Verify that membranes are undamaged, and thickness is within range.
Permeate flux swings or shows strange values.	<ul style="list-style-type: none"> ➤ Membrane area is not set correctly. ➤ Flux measuring interval is set too short.
Low permeate capacity.	<ul style="list-style-type: none"> ➤ Fouling layer on membrane reduces permeate capacity. ➤ Flow rate of circulation pump (crossflow) is too low. ➤ Transmembrane pressure is too low ➤ Concentration, osmotic pressure or viscosity of feed liquid is too high.
The balance weight (WT10.1) is not shown on the HMI.	<ul style="list-style-type: none"> ➤ Ensure the signal cable is connected correctly to the 4 – 20 mA connection.
The permeate weight on the balance display (WT10.1) differs significantly from the value on the HMI.	<ul style="list-style-type: none"> ➤ The analogue input values (range and offset) need to be checked and adjusted. Please contact MMS for further information.
Pump M1.1 makes loud noises.	<ul style="list-style-type: none"> ➤ Ensure there is enough liquid in the system. ➤ Ensure there is no air in the system.

Maintenance of the System

The recommended maintenance steps of the unit are listed below in terms of daily, weekly and yearly inspections. The regular inspection of the system will ensure that major downtime of the unit will be prevented. The below section does not describe maintenance of specific components, which can be found in the general component folder.

Inspection		Description
<p>Daily inspection: The daily inspection can be performed when the system is in production.</p>		<ul style="list-style-type: none"> ➤ Check for leaks on pump(s), valves and heat exchanger(s). ➤ Check for abnormal noise from the pump. ➤ Check for abnormal vibrations on components.
<p>Weekly inspection, Warning: The unit should be switched off during the inspection.</p>	<p>Warning</p> 	<ul style="list-style-type: none"> ➤ Clean unit externally with weak acid and caustic (no oxidizing agents, not more than 50 °C, high pressure cleaning machines should not be used). ➤ Tighten clamps and other pipe connections. ➤ Check tightness of hose connections. ➤ Check cabinet internally for humidity or damaged cables/components.
<p>Yearly inspection, Warning: The unit should be switched off during the inspection.</p>	<p>Warning</p> 	<p>It is recommended that the required spare parts are pre-ordered prior to the yearly inspection and maintenance:</p> <ul style="list-style-type: none"> ➤ Check instrument calibration and function. ➤ Open valves and check seal integrity. ➤ Open clamps and connections and check seal and O-ring integrity.