

Troubleshooting Guide

General checks and quick actions – *VitroFlow.Bio*



Overview of corrective actions

If errors occur during operation, several measures can be taken to resolve them independently:

1 Restart the system

- Press the *"Save Data as .csv" button on the experiment screen to reset all parameters to 0
- Switch off the device using the main switch on the rear panel
- Wait 2 minutes
- Switch the device back on
- Resume operation as usual

2 Check all cable connections

- Disconnect the plug
- Inspect plug and socket for corrosion
- Reconnect the plug
- Tighten the fixing screws if necessary

3 Check all olive tubing connectors for tightness

- Inspect the tubing for cracks at the connector
- Remove the tubing
- Cut off the first 3 mm of the tubing using scissors
- Reattach the tubing to the connector

Note:

Olive connectors are only reliably sealed if the tubing is pushed at least 1 mm beyond the barb.

4 Check all screw-type tubing connectors for tightness


- Inspect the connector for visible leaks
- Unscrew the connector
- Wrap the connector with PTFE tape
- Ensure the ferrule is correctly positioned on the capillary (cone facing the connector)
- Reattach the connector with steady manual pressure and tighten firmly


If the measures listed above do not resolve the issue, contact VitrofluidiX support at:


 support@vitrofluidix.com


Troubleshooting Perfusion

If the peristaltic pumps do not generate the desired perfusion:

-  Check that the system is completely filled with liquid
 - Fill the system manually using a syringe with sterile liquid (e.g. H₂O)
 - Slowly inject liquid into both ends of each tubing line until all channels are fully filled

-  Check that the pump tubing is not excessively deformed
 - Replace tubing if deformation or wear is visible

-  Check that the pumps are rotating
 - Set a high flow rate and visually confirm rotation


-  Check that the revision safety switch is correctly triggered when the revision cover is mounted


If the measures listed above do not resolve the issue, contact support:


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Troubleshooting Bubble Formation

If air bubbles occur during operation:

-  Check that the system is fully filled with liquid
 - Fill the system manually using a syringe with sterile liquid (e.g. H₂O) and slowly inject liquid into both ends of the tubing until all channels are completely filled and free of air

-  Check that bubble trap vacuum pumps are active (audible)
 - Listen for periodic activation sounds of the vacuum pumps during operation; absence of sound may indicate malfunction

-  Check and tighten all tubing connections
 - Inspect all connections manually for looseness or leakage and tighten them securely to ensure airtight and fluid-tight sealing

-  Replace bubble trap membranes
 - Remove the tubing connections, open the bubble trap using the screw, remove the old PTFE membrane, place a new membrane, reassemble the bubble trap and reconnect all tubing securely


If the measures listed above do not resolve the issue, contact support:


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Troubleshooting Incubation

If incubation is not functioning correctly:

-  Check that the main valves of the gas supply are open
→ Ensure both CO₂ and compressed air supplies are turned on and available at the device

-  Check that pneumatic tubing is intact and properly connected
→ Inspect all gas lines for damage, kinks or loose connections and reconnect if necessary

-  Check that the operating pressure of CO₂ and compressed air is equal
→ Set both gases to the same pressure within a range of 100–500 mbar

-  Check that the solenoid valves are active (audible)
→ Listen for switching sounds of both valves during operation; absence may indicate a malfunction


If the measures listed above do not resolve the issue, contact support:


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Troubleshooting Heating Errors

If the chip chamber does not heat correctly:

-  Restart the system
→ Press "Save Data [.csv]"*, switch off the device, wait 2 minutes, switch on and resume operation

-  Check that the chip chamber is properly connected
→ Ensure the cable is correctly plugged into both the chip chamber and the interface and that the connector screws are tightened

-  Check the chip chamber cable for mechanical stress
→ Ensure the cable is not under tension, bent excessively or strained, as this may affect heating performance


If the measures listed above do not resolve the issue, contact support:


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Troubleshooting Contamination


If contamination occurs during operation:


-  Perform a cleaning cycle (bacterial contamination)
→ Run a full cleaning cycle using the designated cleaning solutions to remove biological residues

-  Perform a decontamination procedure (fungal contamination)
→ Use increased concentrations of cleaning agents and follow a full decontamination workflow

-  Autoclave unused vials again and fill media
→ Sterilize all unused vials again and fill with fresh, sterile medium

-  Check system for leakage
→ Ensure all tubing and connections are leak-free to prevent contamination entry

-  Check system for air bubbles
→ Ensure the system is completely filled with liquid and free of trapped air

-  Disinfect all opened fluid connections
→ Before handling, thoroughly disinfect all relevant areas with 65–70% ethanol


If the measures listed above do not resolve the issue, contact support:


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Troubleshooting Software

If software errors occur during operation:

-  Restart the system
→ Press "Save Data [.csv]"* to reset all parameters, switch off the device, wait 2 minutes, switch on again and resume operation

-  Check system response after restart
→ Verify that the user interface loads correctly and parameters can be entered and executed

-  Repeat restart if necessary
→ If the issue persists, perform the restart procedure again to ensure a full reset



Further Information & Support

Need more details?

Detailed operation & workflows

→ See Full User Manual

Vial preparation & filling

→ See Vial Filling Guide

Chip & microscope compatibility

→ See Compatibility Guidelines in the download section on our website

Support

For any questions, feedback or technical support, please contact:



info@vitrofluidix.com

For application-specific or detailed technical questions:

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