

# 3 Diagnostics and Troubleshooting

## 3.5 Troubleshooting cycle faults

Cycle Fault	Effect	Problem	Possible Causes
<b>CF 1 Water Heating Failure</b>	Improper wash, cycle aborted	Chamber temperature less than a set point after a timeout, or a temperature increase rate of 1°C per 2 minutes was not achieved during “Circulation and heating” phase	This is caused by a water heater malfunction: <ul style="list-style-type: none"> <li>• Check water heater wire harness for loose contacts.</li> <li>• Check for open thermal cut-off switch due to high temperature.</li> <li>• Check that the heater element is not interrupted.</li> <li>• Check I/O PCB water heater relay output.</li> </ul>
<b>CF 2 Chamber Filling Failure</b>	Improper wash, cycle aborted	Timeout on filling up the chamber	<ul style="list-style-type: none"> <li>• Water supply issue</li> <li>• Water valves failure</li> <li>• Air gap water pump failure</li> <li>• Air gap valve failure</li> <li>• Air gap Full/Empty level switches failure</li> <li>• Chamber water level pressure switch malfunction</li> <li>• Overflow switch malfunction triggering evacuation pump.</li> </ul>
<b>CF 3 Chamber Temperature Sensor Reading Failure</b>	Improper wash, cycle aborted	Temperature reading outside acceptable range for primary or secondary sensor	This is caused by a temperature sensor malfunction: <ul style="list-style-type: none"> <li>• Check temperature sensor wires for loose contacts.</li> <li>• Replace sensor with a good one and verify if the CF persist.</li> <li>• Replace I/O PCB.</li> </ul>
<b>CF 4 Water Evacuation Failure</b>	Cycle interrupted	Timeout on water evacuation from the chamber	<ul style="list-style-type: none"> <li>• Blocked drain tube</li> <li>• Chamber water level switch malfunction</li> <li>• Chamber water evacuation pump failure</li> <li>• Drain pump priming connection hole in the sump blocked</li> </ul>
<b>CF 7 Cycle Aborted or Interrupted</b>	Cycle interrupted	Stop button pressed or power failure	<ul style="list-style-type: none"> <li>• Cycle aborted due to loss of power</li> </ul>

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<b>Cycle Fault</b>	<b>Effect</b>	<b>Problem</b>	<b>Possible Causes</b>
<b>CF 8 Cycle Fault</b>	Drying aborted	Air temperature less than a set point after a timeout	This is caused by a heater malfunction: <ul style="list-style-type: none"> <li>• Check air heater wire harness for loose contacts.</li> <li>• Check that the heater element is not interrupted.</li> <li>• Check I/O PCB air heater relay output.</li> </ul>
<b>CF 9 Program Timeout</b>	Cycle interrupted	The unit is running a cycle for more than 3h ±3 min.	<ul style="list-style-type: none"> <li>• Defective PCB and/or software failure</li> <li>• Replace Color LCD controller.</li> </ul>
<b>CF 10 Drying System Error</b>	Cycle interrupted	Air Dryer RPM not zero when Dryer motor should not be activated	Electronics – motor driver failure (I/O board) <ul style="list-style-type: none"> <li>• Check Dryer motor wiring.</li> <li>• Verify that motor stops when in non drying phase.</li> <li>• Replace I/O board.</li> <li>• Replace dryer motor.</li> </ul>
<b>CF 13 Temperature Validation Error</b>	Cycle interrupted	Water temperature rose above the maximum allowed temperature	The temperature sensor out of range: <ul style="list-style-type: none"> <li>• Check temperature sensor wires for loose contacts.</li> <li>• Run cycle to monitor that the water temperature is below 96°C.</li> <li>• Replace sensor and verify if the CF persist.</li> <li>• Replace I/O PCB.</li> </ul>
<b>CF 14</b>	Cycle interrupted	During the Prewash phase the water temperature in the chamber is 5°C higher than the target for more than 1sec	
<b>CF 15 Chamber Overflow</b>	Cycle interrupted	Leak in the unit	The water reservoir overflow switch was triggered: <ul style="list-style-type: none"> <li>• Check the water reservoir full switch.</li> </ul>

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<b>CF 16 Ambient Temperature Error</b>	Cycle interrupted	Operating temperature for one or both logic boards is too high	The room or enclosure is too warm and not allowing the unit to adequately cool: Check that fans are working.
<b>CF 17 Cycle Fault</b>		Drying Air temperature above a set point	The air temperature in the air duct is too high: <ul style="list-style-type: none"> <li>• Check dryer motor.</li> <li>• Verify that the air heater is not always ON.</li> <li>• Verify air temperature sensor.</li> <li>• Verify I/O PCB.</li> </ul>
<b>CF 21 Dosing System Error</b>	Dosing System failure Cycle interrupted	Dosing system failed to dispense the preset amount in a predefined time (timeout is 3.5s/pulse). Dosing reservoir level switch does not change from Full ON to OFF by the end of dosing (no chemical dispensed)	Dosing pump or switch error: <ul style="list-style-type: none"> <li>• Verify bellows dosing pump</li> <li>• Verify bellows dosing pump switch</li> </ul>
<b>CF 22 Air Temperature error</b>	Cycle cannot start or cycle interrupted	Ambient temperature sensor broken	Temperature sensor reading error: <ul style="list-style-type: none"> <li>• Check air temperature sensor wires for loose contacts.</li> <li>• Replace sensor with a good one and verify if the CF persist.</li> <li>• Replace I/O board.</li> </ul>
<b>CF 23 Top RPM error</b>	Cycle interrupted	Top RPM lower than 10 while washing or disinfecting	<ul style="list-style-type: none"> <li>• Instrument blocking upper wash arm</li> <li>• Chamber water level too low</li> <li>• Water pump failure</li> </ul>
<b>CF 24 Low RPM error</b>	Cycle interrupted	Low RPM lower than 25 while washing or disinfecting	<ul style="list-style-type: none"> <li>• Instrument blocking lower wash arm</li> <li>• Chamber water level too low</li> <li>• Water pump failure</li> </ul>

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<b>Cycle Fault</b>	<b>Effect</b>	<b>Problem</b>	<b>Possible Causes</b>
<b>CF 25 Vref Error</b>	Cycle cannot start or cycle interrupted	Vref and VCC drift, post CF 25 if VCC and Vref are more than 3% apart (power supply error)	The power supply 5V output voltage is fluctuating: <ul style="list-style-type: none"> <li>• Check power supply 5V output.</li> <li>• Replace I/O board.</li> </ul>
<b>CF 27 Memory Error</b>	Hardware failure	Color LCD control board failure	The internal memory of the Color LCD Controller is malfunctioning: <ul style="list-style-type: none"> <li>• Replace Color LCD controller board.</li> </ul>
<b>Touchscreen is blank/white</b>			Check power source
<b>USB storage device does not contain the last print out</b>			Re-insert the USB storage device and wait for the data to copy over again. If problem persists, back up all the information on the USB device and reformat it. <b>NOTE:</b> the web portal allows access to all of the unit's cycle information.
<b>Unit is not sending emails</b>			Check email settings by using the TEST button on the unit's web portal. From the SETUP web page, select the TOOLS tab. Click on TEST to check your router, unit, and Internet connections. If all settings appear to be OK. Go to the unit's touchscreen and renew the IP address by following these steps: <ol style="list-style-type: none"> <li>1. Scroll through the setup menu to NETWORK SETUP and select.</li> <li>2. Select RENEW IP.</li> </ol>
<b>Not receiving emails from the unit</b>			Check user's spam filter. Be certain the unit has been identified as an accepted email source.