F&P myAIRVO™ 2 Troubleshooting Guide

This Troubleshooting Guide is intended for all users, including clinical/biomedical engineers and technical personnel, of the myAIRVO™ 2 humidifier. It applies to all myAIRVO 2 humidifiers from lot numbers **140910** and above. Refer to the myAIRVO Product Technical Manual and the myAIRVO 2 User Manual for additonal informations and detailed instructions of use.

If this troubleshooting guide does not resolve your issue, please contact your local Fisher & Paykel Healthcare representative.

1. myAIRVO does not turn on

A. Press and hold the ON/OFF button for at least 2 seconds.

B. Is the myAIRVO 2 plugged into mains power?

C. Is the power cord securely inserted into the back of the myAIRVO 2?

D. Is the power cord damaged?
- If yes, replace the damaged cord. See **Section 5.1** of the myAIRVO Product Technical Manual for a **900PT410xx** replacement power cord.

E. Connect the myAIRVO 2 into another power outlet.

F. Connect a different electrical device into the same power outlet. Turn on the device to confirm that the power outlet is working.

G. The myAIRVO 2 may be 'on' with a broken display.
Turn the myAIRVO 2 on without the heated breathing tube and check that the audible alarm activates.

2. Power out (black screen)

The auditory alarm will sound for at least 120 seconds.

The most likely cause is a dislodged or disconnected power cord.

A. Please follow the instructions in **Section 1**.
Note: Press "audio pause" button to permanently silence the alarm ( ).
The device will not automatically restart.

3. "Check water" Fig. 1

A. Is the water bag empty?
If yes, refill or replace the water bag and press the "mode" button ( ) to reset the alarm.

B. Is the water chamber empty?
- For HC360: Ensure the water level is below the indicated black line.
- For MR290: If yes, replace the water chamber as it may be damaged.

Contact your local Fisher &Paykel Healthcare representative about the faulty chamber.
⚠ Warning: The heater-plate and base of the water chamber may be hot.

C. For MR290:
- Open the vent cap near the water bag spike. This allows the pressure to equalize, letting the water flow into the water chamber.
- Ensure that there are no kinks in the fluid line, preventing water from flowing into the chamber.

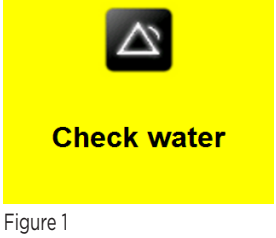


Figure 1

4. "Check for leaks"[Fig. 2] or "E122"

The most likely cause is a missing water chamber or the existing chamber has not been pushed into place correctly.

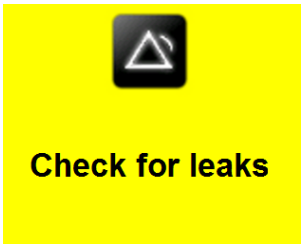


Figure 2

4.1 WATER CHAMBER

A. Is the water chamber fitted correctly? Even if it appears to be:
- Remove the water chamber.
- Push the chamber on firmly, until the finger guard "clicks" into place[Fig. 3].

⚠ Warning: The heater-plate and base of the water chamber may be hot.

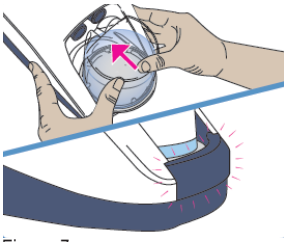


Figure 3

4.2 HEATED BREATHING TUBE

A. Is the heated breathing tube attached to the device correctly?
Even if it appears to be:
- Disconnect the heated breathing tube.
- Check that the black O-ring is in place[Fig.4].
  If the O-ring is damaged or missing, replace with part **900PT408**.
- Reconnect the heated breathing tube.

B. Confirm that the heated breathing tube is not visibly damaged.

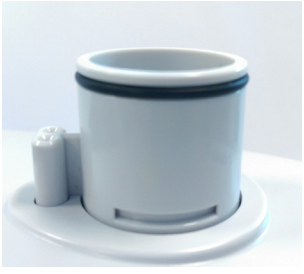


Figure 4

4.3 PATIENT INTERFACE

A. Is the patient interface correctly fitted to the heated breathing tube?
- Even if it appears to be, disconnect and reconnect the patient interface. It should make a "click" sound when it is connected properly.

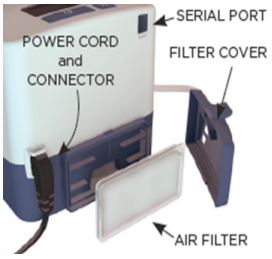
B. The unit may be in Junior mode, used an adult interface.
- Press and hold the "mode" button (▷) for 5 seconds to change between Junior mode and Default mode.

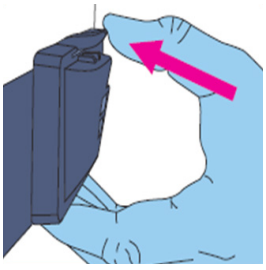
Junior mode can be disabled in the advanced menu, see page 10.

Note: If the myAIRVO is in Junior mode and the 900PT500/501/500E Default tube is used with the OPT842/44/46/70 or RT013 interfaces, it may generate a "Check for leaks" alarm.

4.4 AIR FILTER & FILTER COVER

A. Is the air filter and filter cover (at the back of the device) correctly fitted, as per the User Manual?





5. “Check for blockages” Fig. 5 or “E121”

5.1 WATER CHAMBER AND NON-RETURN VALVE

A. Have the silicone flaps of the non-return valve, found inside the left-hand chamber port, been displaced[Fig. 6]?
- If yes, return them to the correct position using a non-sharp tool, such as a pair of non-sharp tweezers[Fig. 7].

Note: If the Non-return valve is damaged or missing, replace with part **900PT911**. Upon replacement, ensure the spine is sitting vertically[Fig. 7]. If placed horizontally, this may cause the bottom flap to open due to gravity[Fig. 6b]. This may cause both “Check for leaks” and “Check for blockages” warnings.

B. Is the water chamber overfilled above the black line?
- For HC360: Ensure the water level is below the indicated black line.
- For MR290: If yes, replace the water chamber as it may be damaged.

Contact your local Fisher &Paykel Healthcare representative about the faulty chamber.

5.2 HEATED BREATHING TUBE

A. Is the heated breathing tube visibly blocked or kinked[Fig. 8]?

5.3 PATIENT INTERFACE AND myAIRVO MODE

A. Is the patient interface visibly blocked or kinked[Fig. 9]?

B. The unit may be in Default mode with a junior cannula.
- Press and hold the “mode” button ( ) for 5 seconds to change between Default mode and Junior mode.

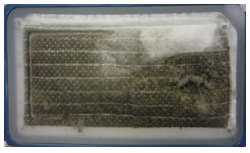
Note: If the myAIRVO is in Default mode and the 900PT531 Junior tube is used with the OPT316 and OPT318 cannula interfaces it may generate a “Check for blockages” alarm.

C. Are you using an unsuitable cannula?
- The OPT312 and OPT314 cannot be used with the myAIRVO 2.

See the User Manual for information regarding patient interfaces.

5.4 AIR FILTER

A. Is the air filter significantly discolored/dirty?
- Replace with part **900PT913**.



Note: A prompt[Fig. 10] for filter change will occur once the myAIRVO 2 has counted 1,000 hours of use. Choose “Now” or “Later”[Fig. 11] by using the “up” or “down” buttons and press the “mode” button ( ) to confirm. Selecting “Now” will zero the counter. Selecting “Later” will activate the prompt at the start of next use.

B. Is there a foreign object blocking the air filter or filter holder?

5.5 CONDENSATION

Please see **Section 10**.

5.6 ALTITUDE

A. The myAIRVO 2 is designed to operate at an altitude below 2,000 meters.

Figure 5

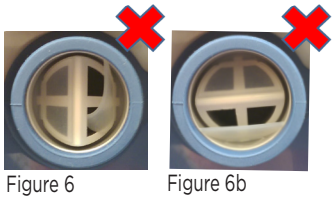


Figure 6 Figure 6b

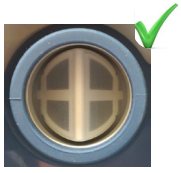


Figure 7

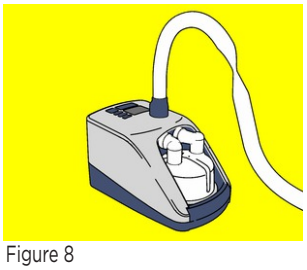


Figure 8

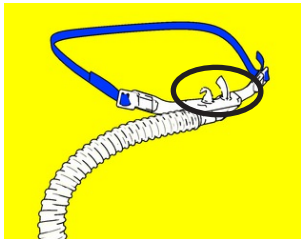


Figure 9

Figure 10

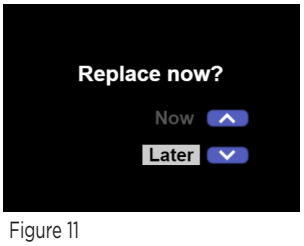


Figure 11

6. "Cannot reach target flow" Fig. 12

A. Press the "mode" button (▷) to continue normal operation at a lower (maximum achievable) flow rate.

B. Is the target flow setting too high for the patient interface?
- Check the swing tag/User Manual for the appropriate flow range for each patient interface.

Note: If the myAIRVO 2 cannot reach the target flow setting, it will automatically select a maximum achievable flow rate and prompt the user to press the "mode" button (▷) to confirm.

C. Follow steps in **Section 5** — "check for blockages".

D. Is the altitude above 2,000 m?
The myAIRVO 2 is designed to operate at an altitude below 2,000 meters.

Figure 12

7. "Cannot reach target temperature" Fig. 13

The most likely cause is operating the myAIRVO 2 at a high flow rate in a cold room. Consider decreasing the target flow setting.

A. Press "mode" button (▷) to continue.
Note: The humidity level may be compromised.

B. Is the ambient room temperature below 18 °C (64 °F)?
- If yes, proactive management of condensation may be required. See **Section 10** on prevention and management of condensation.

Figure 13

8. "Check operating conditions" Fig. 14

This alarm may be caused by a sudden change in ambient room temperature, e.g. storing the unit in a cold place, then using it in a warm place.

A. Is the ambient room temperature less than 10 °C (50 °F) or greater than 30 °C (86 °F)?

B. Leave the unit running for 30 minutes.
Switch the unit off, then restart.

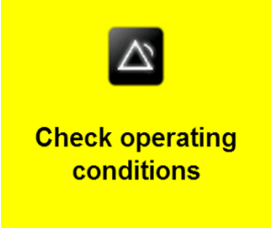


Figure 14

9. "Check tube" Fig. 15 or "E38"

A. Is the heated breathing tube attached correctly?
- Even if it appears to be, unplug and reconnect the heated breathing tube.

B. Is the heated breathing tube visibly damaged?
- Check the electrical pins and the tube itself.

C. Try using a new heated breathing tube.

Figure 15

10. Condensation

10.1 PREVENTION OF EXCESSIVE CONDENSATION

A. Is the myAIRVO 2 being used in ambient conditions between 18 – 28 °C (64 - 82 °F)?
   - If the room is less than 18 °C (64 °F), condensation is more likely to occur.

B. Is there a local source of cooling acting on the heated breathing tube?
   - A fan to cool the patient,
   - An air-conditioning unit, vent or an open window?
   - Are you able to remove or minimize these sources of cooling, e.g. redirect the fan, cooling the patient, away from the heated breathing tube?

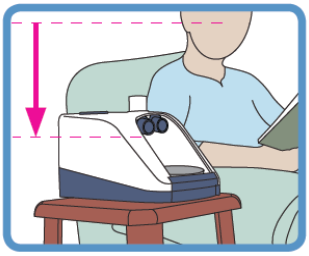


Figure 16

10.2 CONDENSATION MANAGEMENT

A. Implement a system to check the heated breathing tube for condensate regularly.

B. Is the myAIRVO 2 placed below head height[Fig. 16]?
   - This will allow condensate to drain towards the water chamber, away from the patient.

C. If condensation is present, drain it back into the water chamber[Fig. 17]:
   - Disconnect the patient interface from the heated breathing tube.
   - Drain the tube by lifting the patient end of the tube, allowing the condensate to run into the water chamber.
   - At higher target flow rates, it may be necessary to first reduce the target flow rate to 30 L/min or below, to ensure the condensate drains into the water chamber.

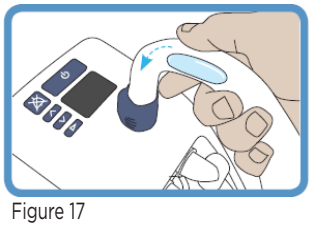


Figure 17

D. If condensate persists, consider turning the target temperature down.
   - A lower target temperature will decrease the humidity output of the myAIRVO 2, decreasing the level of condensation.

   Note: The temperature and humidity level delivered to the patient will also be reduced.

11. "O_2 too low"[Fig. 18]

The measured oxygen level has fallen below the allowed limit.
Ensure the oxygen source matches that of the oxygen setting - see "Oxygen Input Settings" on page 11.

A. Adjust the level of oxygen from the oxygen source as necessary, i.e. increase the oxygen flow rate through the oxygen flow meter.

B. Is the oxygen source (wall / cylinder flow meter or concentrator) turned on?

C. Is the oxygen source empty or faulty?

D. Is the "AIRVO 2 oxygen inlet kit"[Fig. 19] installed correctly, as per the instructions included with part **900PT422** and confirmed that there are no kinks in the "AIRVO 2 oxygen inlet kit" oxygen tubing?

E. Is the oxygen source tubing correctly and securely fitted to the myAIRVO 2?

F. Is the minimum oxygen limit set to 25%?
- A prompt will appear with an option to change this lower limit to 21 %.

Select "Yes" or "No" by using the "Up" and "Down" buttons. Press the "mode" button (▷) to confirm selection[Fig. 20].
See **Section 2 - Advanced Settings** in the myAIRVO Product Technical Manual to change this lower oxygen limit.

G. Ensure the oxygen source matches the oxygen input setting.
- For oxygen concentrators: The "Oxygen Input Setting" should be 95 %.
- For 100 % oxygen sources: The "Oxygen Input Setting" should be 100 %.

See page 11 for details on "Oxygen Input Settings"

H. Allow the device to sufficiently warm up; rapid changes in temperature can affect the sensor.

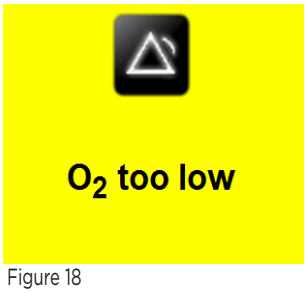


Figure 18


Figure 19

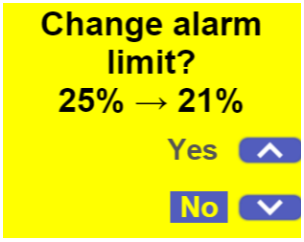


Figure 20

12. "O_2 too high"[Fig. 21]

The measured oxygen level has risen above the allowed limit.
Ensure the oxygen source matches that of the oxygen setting - see "Oxygen Input Settings" on page 11.

A. Adjust the level of oxygen from the oxygen source as necessary, i.e. decrease the oxygen flow rate through the oxygen flow meter.
See **Section 2 - Advanced Settings** in the myAIRVO Product Technical to change this lower oxygen limit.

B. Ensure the oxygen source matches the oxygen input setting.
- For oxygen concentrators: The "Oxygen Input Setting" should be 95 %.
- For 100 % oxygen sources: The "Oxygen Input Setting" should be 100 %.

See page 11 for details on "Oxygen Input Settings"

Figure 21

13. Exxx[Fig. 22]

A. Follow the instructions in **Appendix A** if a fault with an error code is displayed on the myAIRVO screen.

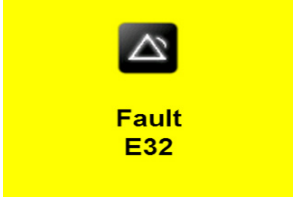
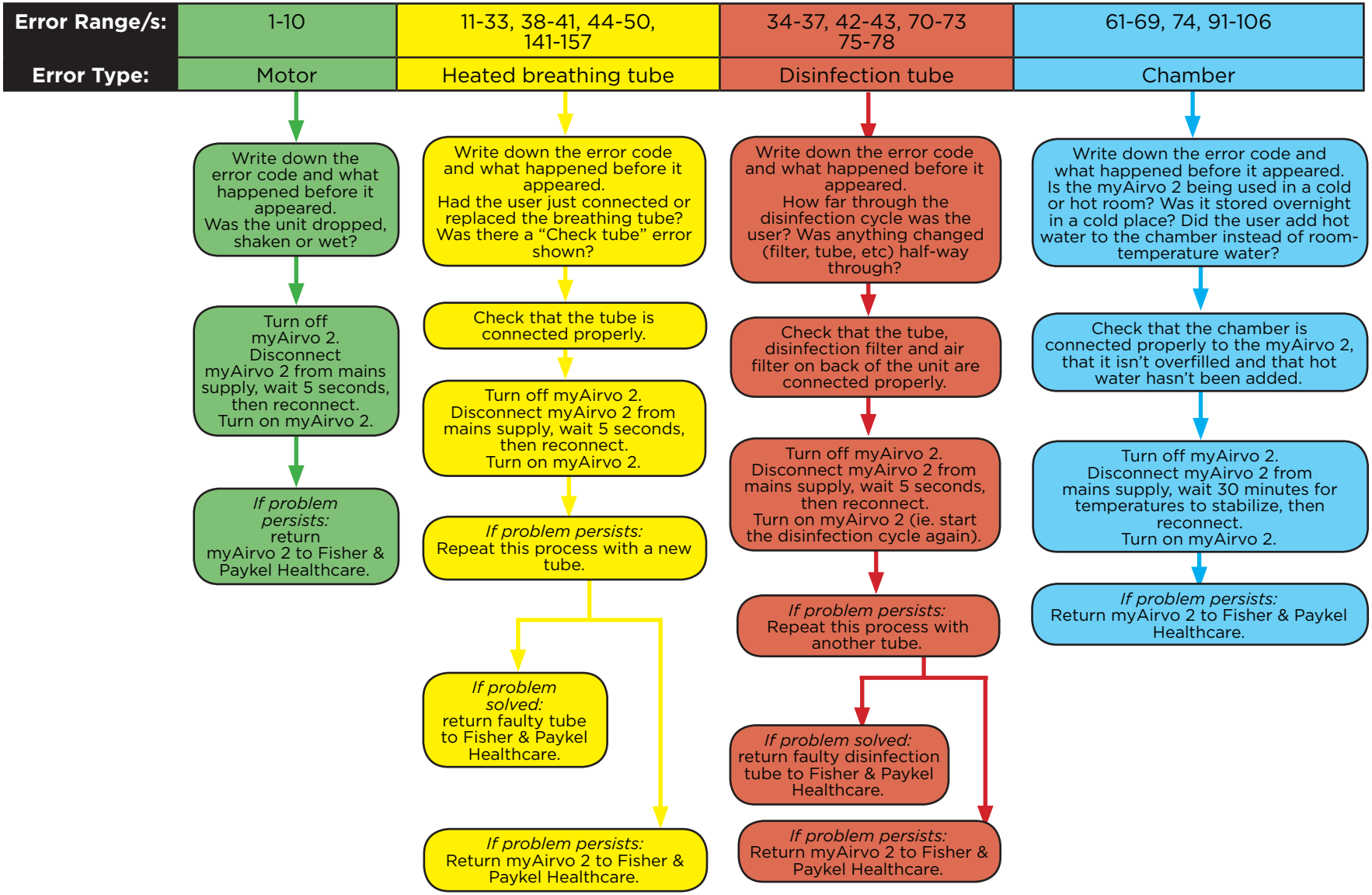
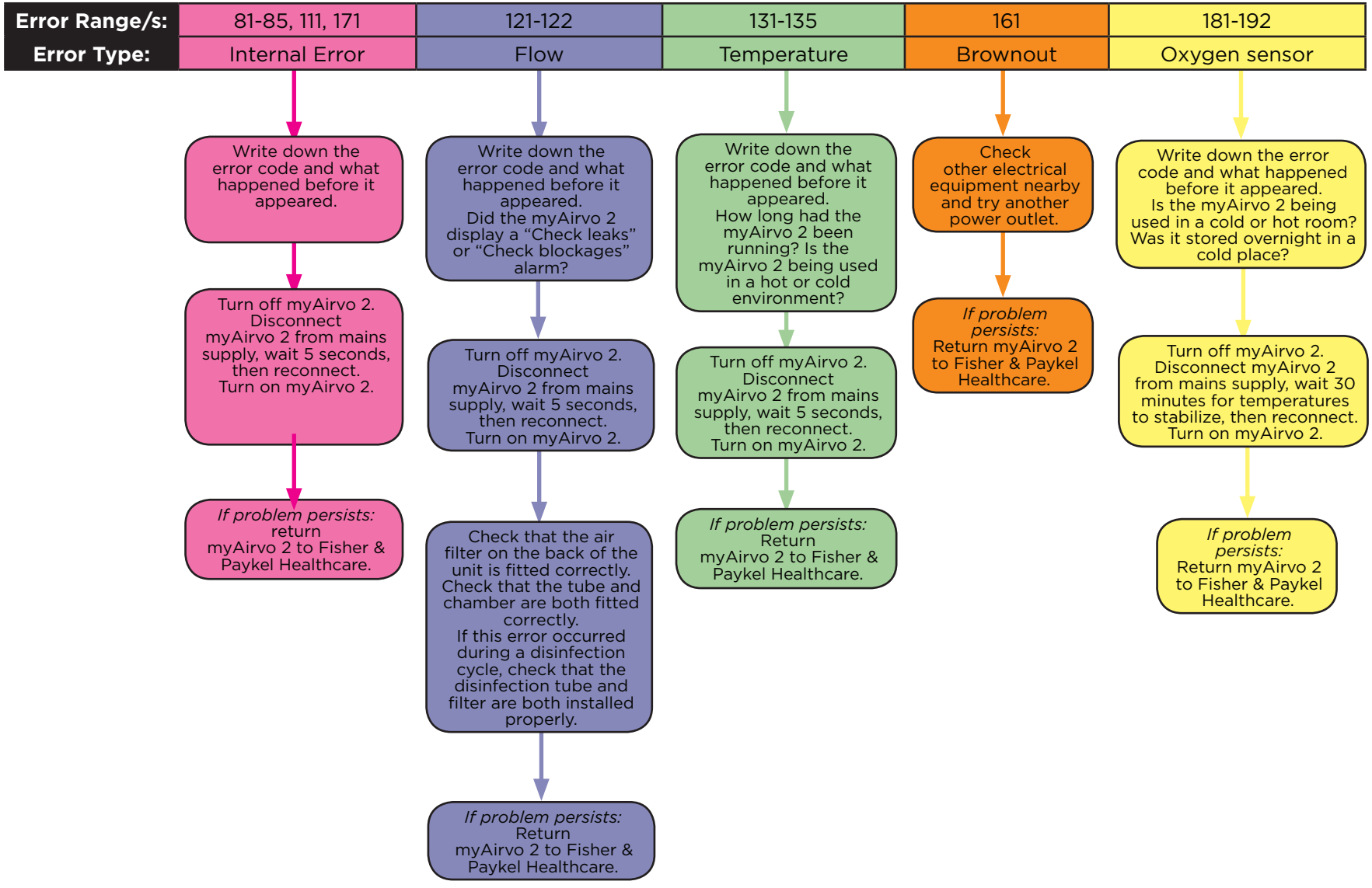


Figure 22

APPENDIX A: TROUBLESHOOTING

The following pages provide troubleshooting advice for fault / error / "E" codes that may appear during use of the myAIRVO 2.


Error Range/s:
1-10
11-33, 38-41, 44-50, 141-157
34-37, 42-43, 70-73 75-78
61-69, 74, 91-106
Error Type:
Motor
Heated breathing tube
Disinfection tube
Chamber
Write down the error code and what happened before it appeared. Was the unit dropped, shaken or wet?
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2.
If problem persists: return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. Had the user just connected or replaced the breathing tube? Was there a "Check tube" error shown?
Check that the tube is connected properly.
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2.
If problem persists: Repeat this process with a new tube.
If problem solved: return faulty tube to Fisher & Paykel Healthcare.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. How far through the disinfection cycle was the user? Was anything changed (filter, tube, etc) half-way through?
Check that the tube, disinfection filter and air filter on back of the unit are connected properly.
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2 (ie. start the disinfection cycle again).
If problem persists: Repeat this process with another tube.
If problem solved: return faulty disinfection tube to Fisher & Paykel Healthcare.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. Is the myAirvo 2 being used in a cold or hot room? Was it stored overnight in a cold place? Did the user add hot water to the chamber instead of room-temperature water?
Check that the chamber is connected properly to the myAirvo 2, that it isn't overfilled and that hot water hasn't been added.
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 30 minutes for temperatures to stabilize, then reconnect. Turn on myAirvo 2.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.


Error Range/s:
Error Type:
81-85, 111, 171
Internal Error
121-122
Flow
131-135
Temperature
161
Brownout
181-192
Oxygen sensor
Write down the error code and what happened before it appeared.
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2.
If problem persists: return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. Did the myAirvo 2 display a "Check leaks" or "Check blockages" alarm?
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2.
Check that the air filter on the back of the unit is fitted correctly. Check that the tube and chamber are both fitted correctly. If this error occurred during a disinfection cycle, check that the disinfection tube and filter are both installed properly.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. How long had the myAirvo 2 been running? Is the myAirvo 2 being used in a hot or cold environment?
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 5 seconds, then reconnect. Turn on myAirvo 2.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.
Check other electrical equipment nearby and try another power outlet.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.
Write down the error code and what happened before it appeared. Is the myAirvo 2 being used in a cold or hot room? Was it stored overnight in a cold place?
Turn off myAirvo 2. Disconnect myAirvo 2 from mains supply, wait 30 minutes for temperatures to stabilize, then reconnect. Turn on myAirvo 2.
If problem persists: Return myAirvo 2 to Fisher & Paykel Healthcare.

For more information please contact your local Fisher & Paykel Healthcare representative

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