

VPAP Tx General Inspection

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Carry out the steps in this procedure to confirm that the flow generator is in a good electrical, mechanical and functional condition. These tests will highlight any major mechanical, electrical or functional problem with the unit.

Note: Please return the device to your nearest ResMed service centre for repairs in case any of the tests from 3 to 10 fails.

Equipment required

- Oxygen side port connector (ResMed part #14915)
- Calibration adaptor kit - contains calibration cap, air tubing connector and oxygen side port connector (ResMed part #19911)
- Calibrated flow meter with flow regulation valve

Note: The flow meter must be capable of measuring air flows ranging from 0 to 200 L/min with an accuracy of 3% or better over this range.

- 2 m, 19 mm inner diameter air hose
- Manometer (0-40 cm H₂O range) or ResControl
- HumidAire 2i
- Digital thermometer with external temperature probe

1. Clean the flow generator

Before inspecting the unit it should be wiped down using a lint free cloth and a cleaning agent with high alcohol content, for example, isopropyl alcohol.

Caution: When using a cleaning agent with high alcohol content refer to the appropriate Material Safety Data Sheet to ensure safe handling of the cleaning agent.

Remove any stains from the cases. When removing any stains from the flow generator or mask system, use soap or detergent-based cleaning solutions. Remove excess and wipe dry after use.

Do not use thinners, trichloroethylene, bleach or other solvents. **Do not** apply oil to any component of the flow generator.

2. Record clinical settings and options

1. Turn on the flow generator and allow it to complete the self test.
2. Access Therapy menu on VPAP Tx and manually record the current device (lab defaults) settings.

Note: these settings will be needed after performing the entire test in this document.

3. External examination

Visually examine the flow generator for external damage such as:

1. deformation or cracking of the upper or lower cases
2. damaged components such as the mains power inlet or mains power switch
3. damage to the interface panel or bottom decal

If either of the outside cases are fractured and require replacement, take particular care in inspecting all other components within the cases for damage

4. Tx Link test

1. Turn on both the VPAP Tx and the Tx Link.
2. Connect the serial cable to the VPAP Tx and Tx Link



3. Confirm the PAP device LED on the Tx Link illuminates (circled).



4. Disconnect the Tx Link from the VPAP Tx.

5. HumidAire 2i test

1. Access the therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 4 cmH2O
2. Ensure the humidifier setting in therapy menu is enabled.
3. Remove the flow generator's front cover.
4. With the flow generator still on, plug the HumidAire 2i docking station without the water chamber into the front of the flow generator as shown in the picture below:

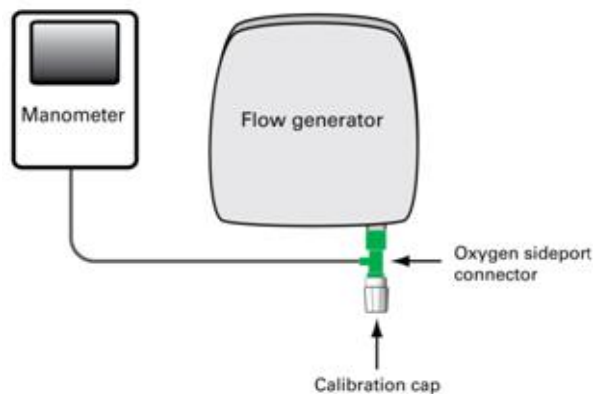


5. Fit the water chamber to the docking station.
 6. Connect the air hose with calibration cap to the air outlet on the humidifier.
 7. Turn the knob on the humidifier to the maximum setting.
 8. Press the **Start** key to start the flow generator.
 9. Leave the flow generator running for a minute.
 10. Remove the water chamber.
- Warning** Take care when handling the HumidAire 2i. The water chamber may be hot. Do not touch the tub plate at the base of the water chamber while removing the water chamber from the docking station. It may be hot.
11. Use the temperature probe to check the temperature of the heating plate. Confirm the heating plate has reached $65^{\circ}\text{C} \pm 3^{\circ}\text{C}$.



12. Remove the HumidAire 2i docking station.
13. Refit the flow generator front cover.

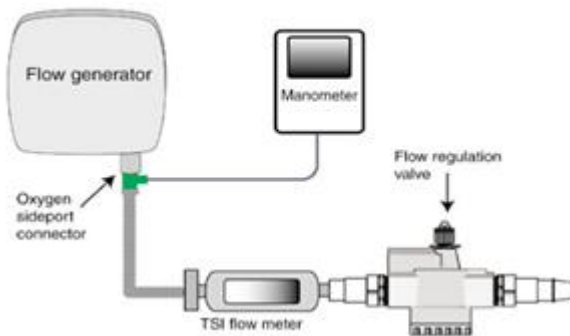
6. Pressure calibration test



1. Make sure the flow generator has been warmed up for at least 10 minutes before proceeding with this test. Please ensure that no humidifier is connected to the flow generator.
2. Access the Therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 4 cmH₂O
3. Start the device and wait for pressure to stabilise. Confirm that the pressure on manometer is 4 ± 0.5 cmH₂O.
4. Stop the device.
5. Access therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 12 cmH₂O
6. Start the device and wait for pressure to stabilise. Confirm that the pressure on manometer is 12 ± 0.5 cmH₂O.
7. Stop the device.

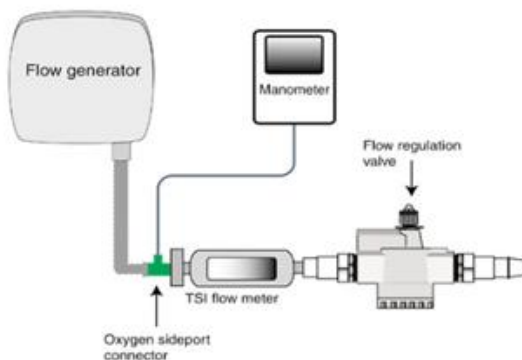
8. Access the therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 20 cmH₂O
9. Start the device and wait for pressure to stabilise. Confirm that the pressure on manometer is 20 ± 0.5 cmH₂O.
10. Stop the device.

7. Flow calibration test



1. Make sure the flow generator has been warmed up for at least 10 minutes before proceeding with this test. Please ensure that no humidifier is connected to the flow generator.
2. Access the Therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 20 cmH₂O
3. Access the Monitor menu by pressing the left (●) key, the right (●) key and the down (▼) simultaneously and then hold them for 3 seconds until the menu is displayed. Scroll through to "Total Flow" value.
4. Fully close the flow regulation valve and confirm the value in monitor menu under total flow 0 ± 1 L/min
5. Start the device.
6. While the device is running, access the Monitor menu again and scroll through to the "Total Flow".
7. Adjust the flow regulation valve until the value on flow meter is 70 L/min and confirm the value displayed in Monitor menu under total flow is 70 ± 4 L/min
8. Adjust the flow regulation valve until the value on flow meter is 100 L/min and confirm the value displayed in Monitor menu under total flow is 100 ± 7 L/min
9. Adjust the flow regulation valve until the value on flow meter is 150 L/min and confirm the value displayed in Monitor menu under total flow is 150 ± 25 L/min
10. Stop the device

8. Blower test



1. Make sure the flow generator has been warmed up for at least 10 minutes before proceeding with this test. Please ensure that no humidifier is connected to the flow generator.
2. Access the Therapy menu and apply following settings:
 - a. Mode: CPAP
 - b. Pressure: 20 cmH₂O
3. Adjust the flow regulation valve until the flow meter reading is 30 ± 3 L/min
4. Wait for pressure to stabilise. Confirm that the pressure displayed on manometer is greater than 14.7 cmH₂O
5. Stop the device.

9. Keypad test

1. Switch OFF the flow generator, then switch it back ON. Wait for the **Welcome** message to appear and check that the LCD back light and LEDs beneath the keypad are illuminated.
Note: The LCD backlight and LEDs may not be clearly visible in bright light.
2. Press Right key to access the mask type
3. Press the left key to enter the Setup menu. Use the Up/down button to cycle through the menu and the Left and Right keys to set and change options. Confirm that all button presses produce the appropriate response.
4. Press the start button and confirm that the flow generator starts. Press the button again and confirm that the flow generator stops.
5. Press the Home key and verify it return to home screen (Ready)

10. Alarm system test

1. Hold down the Alarm Mute key while turning the main power switch on VPAP Tx to ON (|).
2. The LEDs flash and the alarm sounds briefly before entering the normal start-up sequence.

11. Reload the setting (lab settings)

1. Turn on the flow generator and allow it to complete the self test.
2. Access Therapy menu on VPAP Tx and manually save the device settings saved in Test 2.