HANDHELD DIFFERENTIAL PRESSURE MONITOR (HHDPM)

Required Equipment

- 1 x BreatheSafe Handheld Differential Pressure Monitor (SKU: 200136).
- 1 x 4mm OD pressure reference tube, cut to a suitable length (recommended 2 metres).

Pressurization Systems General Information

Pressurization systems are designed to turn on with **ignition**. Some of the latest systems have reduced capacity / start delays - allowing operators time to close all doors and windows before starting operation. Before conducting any tests, it's important to ensure that the pressurization system, if present, is fully turned on and running in its normal state (no start delay or other alerts showing on display). If the HVAC has a recirculation flap, the HVAC must be set to fresh air or it will not be able to generate pressure.

Calibration of HHDPM

1. Turn on the handheld differential pressure monitor.
2. **Connect each end of the pressure reference tube to the 'Ambient' and 'Positive' ports on the handheld differential pressure monitor.**
3. Check the display is reading '0'.
4. If not, re-zero the sensor by pressing  After 5 seconds the display will read 0.

Test 1 - Zero Pressure Test

With the ignition turned on, fully open a door; the monitor should display zero on the screen.

*See FAQ notes below if there is a false positive pressure reading.

Test 2 - Cabin Pressure: Sensor Inside the Cabin

*For an ISO compliant audit test, the pressure should be 50 ± 10 Pa.

1. With the door open, turn on the HHDPM and observe the pressure reading. Confirm it is reading zero.
2. Connect the pressure reference tube to 'Ambient' (bottom port) and place the other end of the tube outside the cabin.
3. Close the door, make sure the tube isn't kinked.
4. Turn on the machine's HVAC and pressurization system (if present). Note - It is recommended that the HVAC fan speed is set to ½ speed.
5. Observe the pressure reading and allow it to stabilize. The Handheld Differential Pressure Monitor & cabin pressure monitor should read within 5 Pa of each other.

Test 3 – Cabin Pressure: Sensor outside the cabin

The cabin pressure test can also be carried out with the service technician outside the cabin.

*Not recommended due to the possibility of HVAC airflow affecting the reading.

1. With the door open, turn on the HHDPM and observe the pressure reading. Confirm it is reading zero.
2. Connect the pressure reference tube to 'Positive' (top port) place the other end of the tube on the operator seat, away from HVAC vents and any other direct airflow.
3. Turn on the machine's HVAC and pressurization system (if present). **Ensure HVAC is set to fresh air and not recirculation.**
4. Close the door, make sure the tube isn't kinked.
5. Observe the pressure reading and allow it to stabilize. The Handheld Differential Pressure Monitor & cabin pressure monitor should read within 5 Pa of each other.

FAQ

Q: The Handheld Differential Pressure Monitor is reading zero pressure during a cabin pressure test, what's wrong?

A1: Confirm all doors and windows are fully closed. Check access points and maintenance panels are in place.

A2: Confirm that the machine has a powered/fan forced pressuriser installed (some machines have a casing that looks like a pressuriser, but it does not have a motor/blower installed).

A3: Confirm the motor in the pressuriser has power and is running (the fan blade can freeze in cold climates, which can blow the fuse on start-up). BreatheSafe pressurisers are brushless with lock rotor protection (Will not blow fuse).

A4: Inspect the filter to see if it is heavily contaminated/blocked.

A5: Check cabin seals and panels are not worn, damaged or missing.

A6: Check pressure sensing pipe is not blocked, kinked, or disconnected.

Q: The door (or window) is open, but the cabin pressure monitor is showing positive pressure, what's wrong?

A1: The cabin pressure monitor needs to be recalibrated.

A2: The pressure sensing pipe has been installed incorrectly, in moving air or in the pressuriser / HVAC duct work. Taking a pressure reading from direct airflow will result in a false pressure reading. The image below shows how a false positive pressure reading can be generated by placing the pressure reference tube in direct airflow.

Figure 1: False positive pressure reading when blowing into open air