

Operator and Maintenance Instruction Card

OnGuard™ Controller

BreatheSafe

The BreatheSafe systems are engineered to protect your lungs by eliminating airborne particles in your environment. This guide is designed to keep your system working as intended.



Operators Checklist

Pre-Start					
1	Visually inspect the pressuriser, ducting, mounting brackets, and return air filter assembly.	4	Ensure doors and windows are closed correctly.		
2	Visually inspect the cabin for any damage to doors, windows and seals.	5	Start engine and turn HVAC blower to mid speed or greater.		
3	Please remove debris from shoes and clothes before entering the cabin.	6	After automatic pressure test, the BreatheSafe display will show 50 Pascals or pre-set value.		

*The system is working correctly when the back light is green and there are no alerts displayed. No further action required.

Normal Operating Condition

Fan motor speed output.	
+50 Pa	19%
12:31	20/04/2024
+50 Pa	
PM2.5	19%
+50 Pa	
PM10	0.0µg
+50 Pa	
CO2	19%
+50 Pa	
CO2	1028 PPM

BreatheSafe recommends OEM air conditioning fan is set at mid-speed or greater to circulate air around the breathing zone and minimise CO₂.

Acceptable operating range for BreatheSafe fan is between 10-80%. >80% maintenance is recommended.

Alerts

Operator: Types of Notifications, Warnings and Alerts	
Notifications	
Starting Up Awaiting Pressure	System has not detected cabin pressure and is waiting to detect pressure before starting automatic pressure test. Close doors and windows and check pressure reference tube is not kinked or blocked.
Pressure Test Target 250 Pa	System is running automatic pressure test to measure cabin sealing and filter loading. Default target pressure is 250 Pa.
Low Test Pressure Target Pressure Not Reached	System did not achieve target pressure. Notify maintenance department to check filters and cabin sealing at next scheduled service.
Warnings	
Overload Pressure Low, Check Filter	Motor is operating at maximum speed and cannot reach target pressure. Check that the doors and windows are closed correctly, check cabin sealing, ducting from enclosure to pressuriser, and filter condition. Replace filter if issue persists.
Pressure Warning Close Doors and Windows	Absolute pressure loss detected. System will regulate pressuriser at 30% safety speed. Check that the doors and windows are closed correctly.
High CO ₂ Level	First alarm threshold for CO ₂ level reached (default 1000 ppm). Ensure OEM air conditioning fan is set at mid-speed or greater to circulate air around the breathing zone and minimise CO ₂ .
Alerts	
No Air Pressure	Pressure warning has persisted and system has escalated warning to an alert. Check cabin sealing, outside pressure tube is connected to unit and not kinked or blocked, pressuriser is powered and running, and ducting from pressuriser to cabin is connected and undamaged.
Very High CO ₂ Level	Critical alarm threshold for CO ₂ level reached. System will temporarily increase fresh air intake to reduce CO ₂ concentration. Ensure OEM air conditioning fan is set at mid-speed or greater to circulate air around the breathing zone and minimise CO ₂ .
High Dust Level	High dust load detected inside the cabin. System will temporarily flush enclosure with filtered air. Close doors and windows. Check filter is installed correctly and ducting is not damaged.

Maintenance Instruction

Always keep door and windows closed during maintenance activities to prevent dust entering the cabin. Use correct PPE. Ensure the BreatheSafe system is energised by an independently fused circuit live via ignition.

1. Check Pressuriser Filter Loading



Ensure doors and windows are effectively closed, allow unit to enter normal operation. Replace filter if pressure is below target (default 50 Pa) and motor speed is at or above 80%.

Use cabin pressure test method to verify.

! Note:
Typical filter change out is 1000 hours.

2. Check Cabin Sealing

New replacement filter is required to perform this check. Start engine (pressuriser ON) and ensure all windows & door(s) are CLOSED correctly (no cabin pressure leaks).

Instructions



The action menu is opened by holding down the centre 'enter' button.



Press the 'up' or 'down' buttons to navigate to "Max Speed Test". Begin the test by pressing the 'enter' button.



Cabin sealing needs to be checked and improved if maximum pressure is below 250 Pa with a new filter. Cancel the test by pressing the centre 'enter' button.

Alerts

Maintenance: Types of Notifications, Warnings and Alerts

Notifications

System Identifier Not Set	System identifier / tag has not been set in the unit's configuration. Log into the unit's web interface and save vehicle ID, serial number, or type in the 'edit configuration' section.
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Alerts

Sensor Not Detected	Unit failed to detect sensor pod. Check sensor pod cable is securely connected to the unit and sensor pod. Restart unit, and replace sensor pod if alert persists.
Sensor Fault	Unit has detected a sensor pod fault. Ensure airflow to sensor pod is not blocked or obstructed. Replace sensor pod if alert persists.
No Air Pressure	Pressure loss warning has persisted for longer than 2 minutes. Check cabin sealing, outside pressure tube is connected to unit and not kinked or blocked, pressuriser is powered and running, and ducting from pressuriser to cabin.

Auditing



Scan the QR code & follow the steps to audit your machine.

Ensure you are wearing the correct PPE.

