Kit Part Number: 710709

BreatheSafe

Parts and Service Manual

LIEBHERR

T264 HAUL TRUCK

HEPA H14 High Pressure Variable Speed Pressuriser | OnGuard | HEPA Return Air Filter

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LIEBHERR

T264 HAUL TRUCK

BreatheSafe

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Installation Overview	
Manufacturer	LIEBHERR
Type	Haul Truck
Model	T264
Cabin Pressure Max	>250 Pascals
Set Auto Cabin Pressure	50 Pascals / 20 Pascals

HEPA H14 High Pressure Variable Speed Pressuriser

OnGuard Air Quality Monitoring & Control

HEPA Return Air Filter

WARNING

THE PRESSURISATION SYSTEM DESCRIBED IN THIS MANUAL HAS THE FOLLOWING AREAS WHICH MAY BE DANGEROUS IF NOT TREATED WITH GREAT CARE.

QUALIFIED STAFF MUST WEAR THE CORRECT PERSONAL PROTECTIVE EQUIPMENT WHEN CLEANING AND SERVICING THIS UNIT DUE TO DUST AND FIBRES WHICH MAY BE CAUGHT BY THE STAGES OF AIR FILTRATION DURING NORMAL UNIT OPERATION.

THE ELECTRICAL POWER SYSTEM IS SUPPLIED BY 12V DC OR 24V DC AND NO WORK SHOULD BE CARRIED OUT ON THE PRESSURISER SYSTEM WITHOUT THE CORRECT SAFE WORK PROCEDURES AND ELECTRICAL SAFETY MEASURES BEING TAKEN, AND ALL RELEVANT CIRCUIT BREAKER OPENED TO ISOLATE THE CIRCUIT.

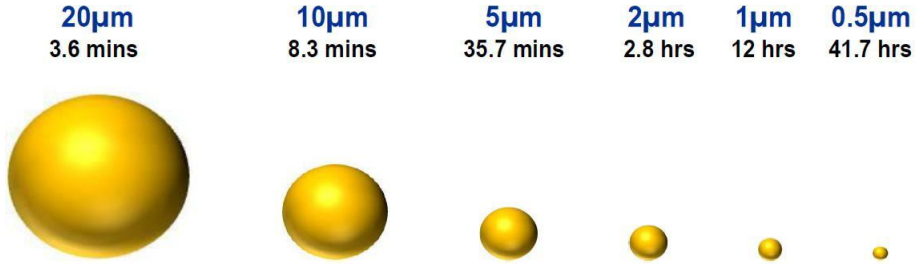
THE AIR FILTRATION SYSTEM MAY HAVE SEVERAL TYPES OF HIGH-SPEED ROTATING EQUIPMENT INSTALLED WITH VERY SHARP EDGES. ENSURE ALL SAFETY GUARD ARE IN PLACE WHILE THE SYSTEM IS RUNNING.

Please be aware that HEPA filters cannot be cleaned and must be replaced at the end of their lifecycle or if filter media has been damaged.

Hard Hat | Eye Protection | Dust Mask | Ear Protection | Protective Clothing

Particulate Behaviour

This is the length of time it takes for a particle to drop from a height of 1.5m in **STILL** air.



Warehouses and workshops do not have still air, so hazardous airborne particulates may remain in air for longer, increasing chance for workers to breathe in dust. Ensure PPE is worn when installing this system.

Maintenance Schedule

The following tables show our suggested maintenance schedule for all units. Please note that site conditions may alter this. Excludes high corrosion environments.

Data download is required to claim the 3-year warranty on Brushless Blower Motor.

Inspect every 500 Hours and replace when filter is full*

Component / System	Action Required
Turbo Pre-cleaner	Check operation of the Turbo Pre-Cleaner.
Pressuriser Blower	Ensure blower is operational.
HEPA Primary Filter p/n: **500000**	Inspect filter capacity indicator. Replace HEPA filter when 80% or greater. Vacuum out housing before replacing the filter elements.
HEPA Return Air Filter P/N: **500051**	Vacuum inside cabin floor before replacing filter.
Filter Frame Assembly, Mounts, Seals and Filter Housing	Check door seals, all bolts, screws, and all mounts are secure. Check the filter canister & ensure it is correctly fitted. Check latches are operational and in good order. Replace / Re-tension fixtures and fittings required.

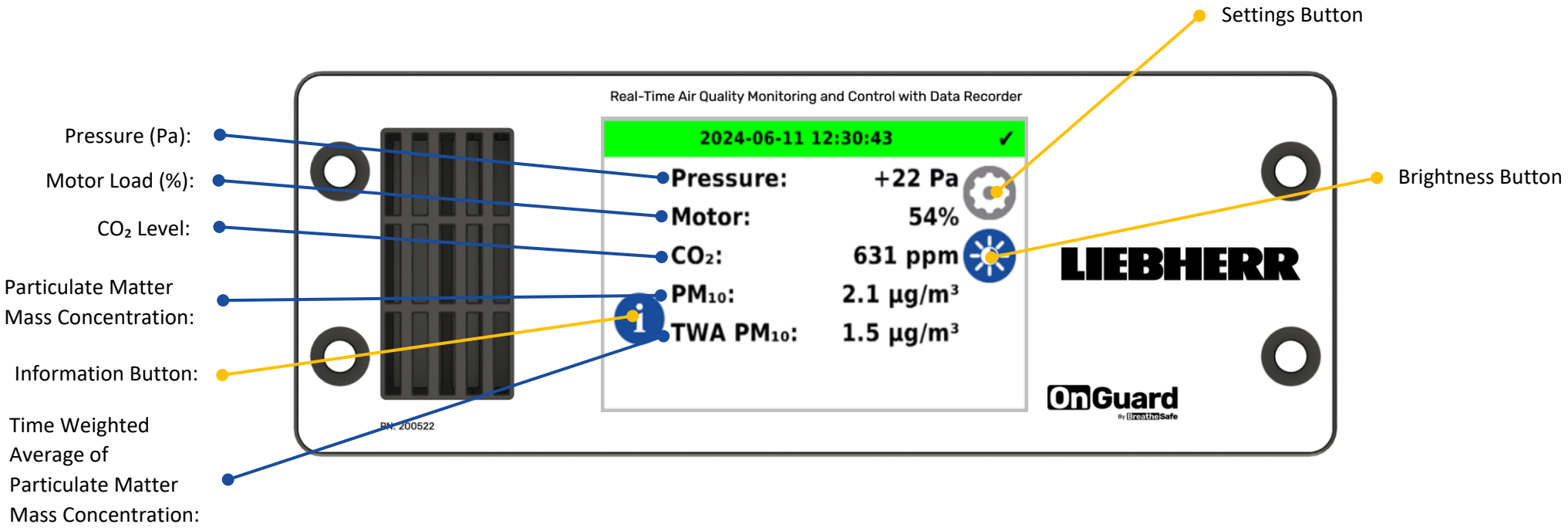
15,000 Hours / 36 months*

Component / System	Action Required
500 Hour Inspection	All 500-hour inspection actions.
Pressuriser's Blower **200002**	Replace BRUSHLESS Pressuriser blower.

Critical Parts				
Item	**Part Number**	**Qty.**	**Description**	**Service Interval**
1	500000	1	Fresh Air HEPA H14 Filter (Tested per EN1822)	1000* Hours
2	500051	1	HEPA Return Air Filter	500* Hours
3	200002	1	Brushless Blower Motor – 24V	15,000 Hours
4	200361	1	OnGuard Main Unit Active	10,000 Hours
5	200522	1	OnGuard UI	AR

*Filter service hours are subject to cab sealing efficiency, site conditions and correct system use.

ONGUARD USER INTERFACE

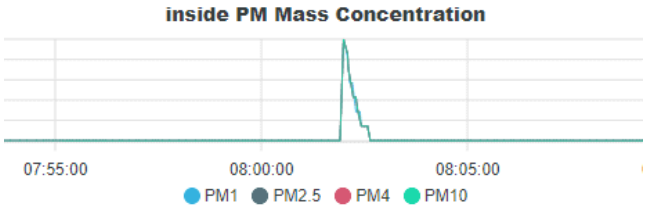


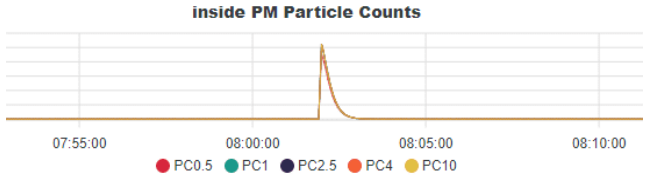
ONGUARD DATA POINTS

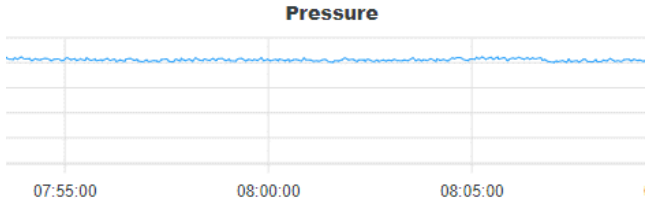
The OnGuard TS UI (Touch Screen) UI (User-Interface) combines a Touch Screen User Interface with PM, CO_2 & Temp sensor (New).

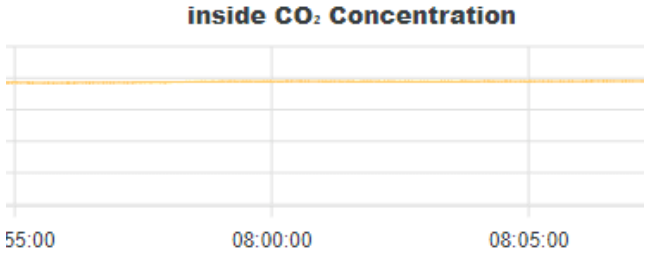
This single component provides a simple in-cabin user interface with Particulate Matter (PM), temperature and CO_2 sensing.

OnGuard Data Points
PM Mass Concentration • Measures the mass concentration of particulate matter inside of the cabin. • These metrics represent the particle mass concentrations in µg/m³, for sizes under 1µm, 2.5µm, 4µm and 10µm. Available only if the sensor pod feature is enabled.
PM Particle Counts • See in real-time the specific amount of particles inside the cabin and what size those particles are. Particle size has a direct correlation with the health hazard of the dust and how likely it is to bypass the filter. • These are the counts of particles per m³, for particles sizes under 0.5µm, 1µm, 2.5µm, 4µm and 10µm. Available only if the sensor pod feature is enabled.
Positive Pressure • The cabin is measured in Pascals (Pa). • The industry minimum standard is between 20 and 50Pa of positive pressure. BreatheSafe systems are preset to remain at 20Pa but can be adjusted through system settings. Monitoring pressure and alerting when the positive pressure drops is part of the ISO 23875 requirements, and OnGuard has real-time data available, as well as recorded data for later use.
Inside CO_2 Concentration • The CO_2 concentration is reported in ppm (parts per million). • Monitoring CO_2 is part of the requirements in ISO 23875 which states that the maximum allowable CO_2 level is the outside ambient level + 400ppm. Alarms on the OnGuard are set to 2500ppm and are configurable by an individual with administrative control privileges.





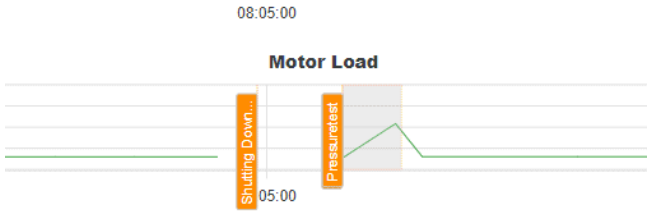




OnGuard Data Points

Motor Load

- This represents how hard the motor is working. With variable speed pressurisers such as the BreatheSafe TL unit, the OnGuard will maintain 20Pa of positive pressure within the cabin by controlling motor speed – the motor load will increase as the filter fills up or if any sealing issues occur.
- The motor load is presented as a percentage between 0% at motor off and 100% at full speed.



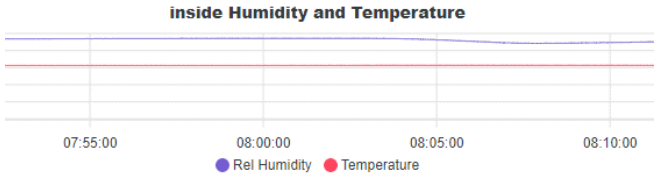
Humidity and Temperature

Relative Humidity

- The relative humidity is measured in percentage. Available only if the sensor pod feature is enabled.

Temperature

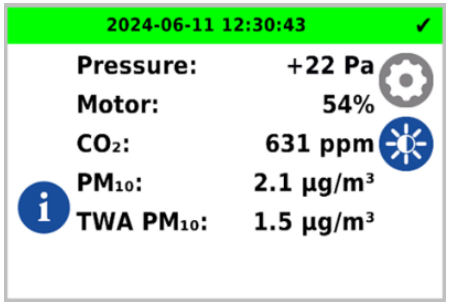
- The temperature is measured in the sensor pod and reported in Degrees Celsius. Available only if the sensor pod feature is enabled.

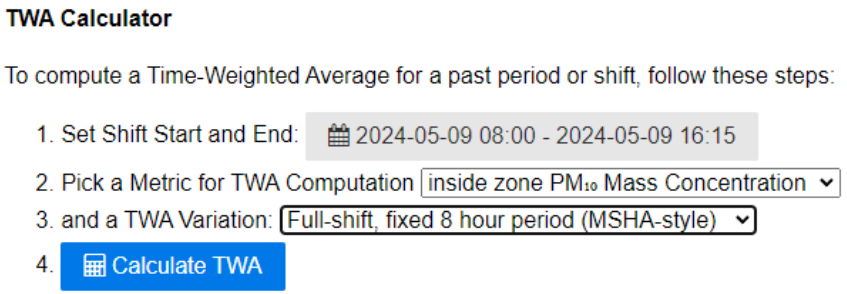


Time Weighted Average (TWA)

- The OnGuard software has been upgraded to compute the Time-Weighted Average (TWA) of the Particulate Matter (PM) mass concentration measured by the unit.
- An N-running hour average (e.g. 8-hour) is computed and displayed on the UI in real-time, shown below TWA PM10: x.x.ug/m3.
- Also available via the web-interface, is the function that will enable you to view & calculate the TWA for a specific shift.

Note: There is an option to increase the shift duration from the standard 8 hours to 12 hours.





Operators Checklist	
PRE-START	
1.	Visually inspect the BreatheSafe system for any damage.
2.	Visually inspect the cabin for any damage to doors, windows, seals.
3.	Please remove dust & debris from shoes and clothes before entering the cabin.
4.	Ensure door(s) and windows are closed correctly.
5.	Start engine and turn HVAC on to speed 2 (medium speed).
6.	After starting up, the OnGuard TS user interface (UI) will show 50 Pa or a pre-set value.
The system is working correctly when the pascal value is green. >> There is no further action required <<	

Normal Operating Condition

Cab Air Conditioning

BreatheSafe recommends OEM air conditioning fan is set at mid speed or greater to circulate air around the breathing zone and minimise CO_2.
Acceptable operating range for BreatheSafe fan 10-80%. >80% recommend maintenance.

Alerts

System Start Delay

- System has not detected cabin pressure and is waiting to detect pressure before starting pressure test. Factory delay is 30 seconds.

Pressure Loss

- Cabin is not maintaining positive pressure – check doors and windows are closed correctly
- Warning will escalate to an alarm if pressure does not return after two minutes.
- Refer to maintenance department to check filters and cabin sealing. Ensure filters are serviceable.

High CO2 Level

- Ensure A/C is running on 1/2 speed or higher. Do not breathe on sensor pod. Ensure sensor pod is located where air is being circulated effectively by cabin HVAC system.

High Dust Level

- Check doors & windows and close. Check pressurizer filter is correctly installed.

System Identifier Not Set

- Log into the unit's web interface and save vechile ID, serial number or type to configuration.

Motor Overload

- Ensure cab is sealed. Check ducting to pressuriser and filter condition. Replace filter if issue persists.

SPECIFICATIONS HIGH-CAPACITY HEPA PRESSURISER

Specifications HEPA H14 High Pressure Variable Speed Pressuriser

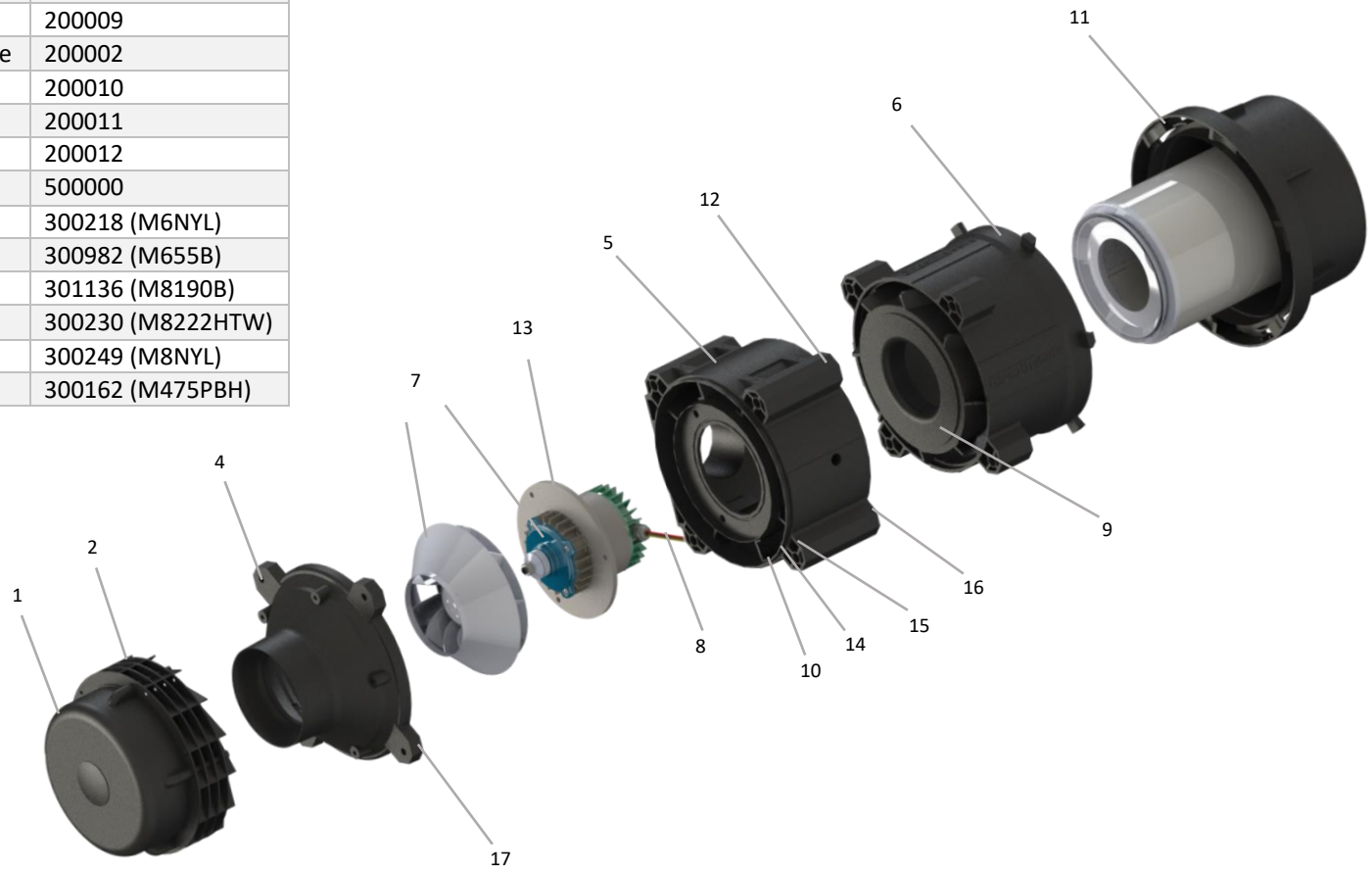
Blower	: Brushless Blower P/N 200002.
Protection	: Locked Rotor Protection (Sub Zero Environments) Under Voltage, Under/Over Current & Over Temperature.
Voltage	: 24VDC.
Current Draw	: 11 amps (peak). *Note: Motor has slow start to stop excessive in-rush current.
Air Flow	: Up to 30-300 m^3/h or 50-215 CFM.
Pre-cleaner	: Integrated VLR (Very Low Restriction). Turbo Pre-Cleaner.
Filter Element	: BreatheSafe HEPA Primary Filter (H14=99.99% MPPS) TESTED AS PER EN1822 – P/N 500000.
Plugs & Fittings	: Mining Spec. Deutsch electrical plugs as standard.
Construction	: High strength composite construction.
Serviceability	: Easy access HEPA filter with twist-lock (TL) dust cap single assembly.
Mounting	: Heavy Duty adjustable mounting brackets.
Design	: Fully designed in SolidWorks 3D CAD & Ansys Engineering Simulation Software.
FEA Testing	: Critical components FEA (Finite Element Analyst) tested in Solid Works Simulation.
CFD Testing	: CFD (Computational Fluid Dynamics) simulations in Flow Works to ensure optimum air flow through the system.

List of Abbreviations	
DH	Dual HEPA
DHPR	Dual HEPA Powered Recirculation
DHAC	Dual HEPA Activated Carbon
DHACPR	Dual HEPA Activated Carbon Powered Recirculation
CPM	Cabin Pressure Monitor
CPU	Central Processing Unit
DB	Decibel Sensor
DPM	Diesel Particulate Matter
GAS	Gas Sensor
HEPA	High-Efficiency Particulate Air Filter
HPAFU	High Pressure Air Filtration Unit
HRAF	HEPA Return Air Filter
HVAC	Heating Ventilation and Air Conditioning
MAF	Mass Air Flow
OEM	Original Equipment Manufacturer
PM	Particulate Mass
RH	Relative Humidity
TEMP	Temperature
TS	Touch screen
UI	User Interface
VMS	Vehicle Monitoring System
VS	Vibration Sensor
OGSP	OnGuard Sensor Pod
CO2s	CO2 Sensor INPRESS TS

PARTS LIST – TL4 24V DC PRESSURISER UNIT

PRESSURISER ASSEMBLY No: 200000

Item No.	Qty.	Description	Part No.
1	1	Pre-cleaner Hood & Rotor Assy	200004
2	4	Pre-cleaner Injector Ring	200005
3	1	TL Fan Blade (inc. in #7)	200006
4	1	TL Nose Cone / Pre-cleaner	200007
5	1	TL Motor Housing	200008
6	1	TL Filter Housing	200009
7	1	24v DC Brushless VSD Motor & TL Fan Blade	200002
8	1	O Ring Seal Kit 2 Parts	200010
9	1	Included in 8	200011
10	1	Wiring Sleeve	200012
11	1	HEPA H14 Filter	500000
12	3	M6 Nyloc Nut	300218 (M6NYL)
13	3	M6 x 55mm Hex Bolt	300982 (M655B)
14	4	M8 x 190 Hex Bolt	301136 (M8190B)
15	8	M8 x 22mm O/D HD Washer	300230 (M8222HTW)
16	4	M8 Nyloc Nut	300249 (M8NYL)
17	5	M4 x 75mm Pan Head Phillips Screw	300162 (M475PBH)

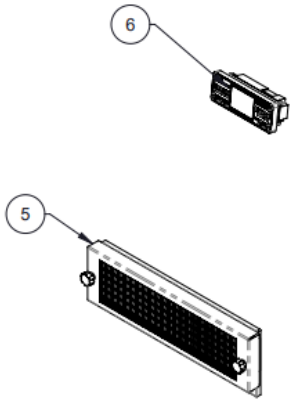


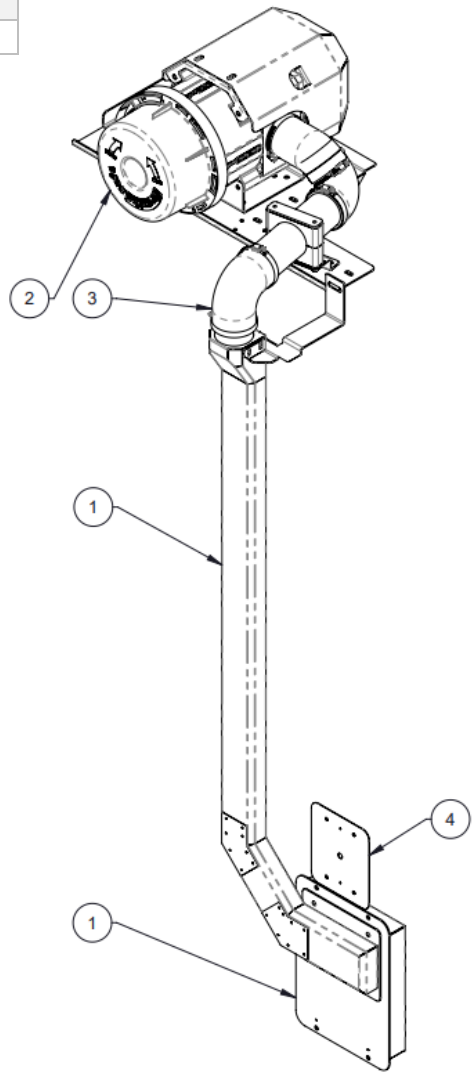
PARTS GA

COMPLETE ASSEMBLY No: 710709

Item No.	Part No	Rev	Description	Qty	Colour	Group
1	100159F01	1	Fresh Air Module	1	301779 New Liebherr White	Module
2	100159A01	0	Pressuriser Module	1	301779 New Liebherr White	Module
3	100159P01	0	Pipework Module	1	301779 New Liebherr White	Module
4	100159Q01	0	Sealing Module	1	301779 New Liebherr White	Module
5	09779	0	Return Air Filter Frame Assy	1	Charcoal Satin 27288351	Assembly
6	200307	0	OnGuard Controller	1	-	Assembly

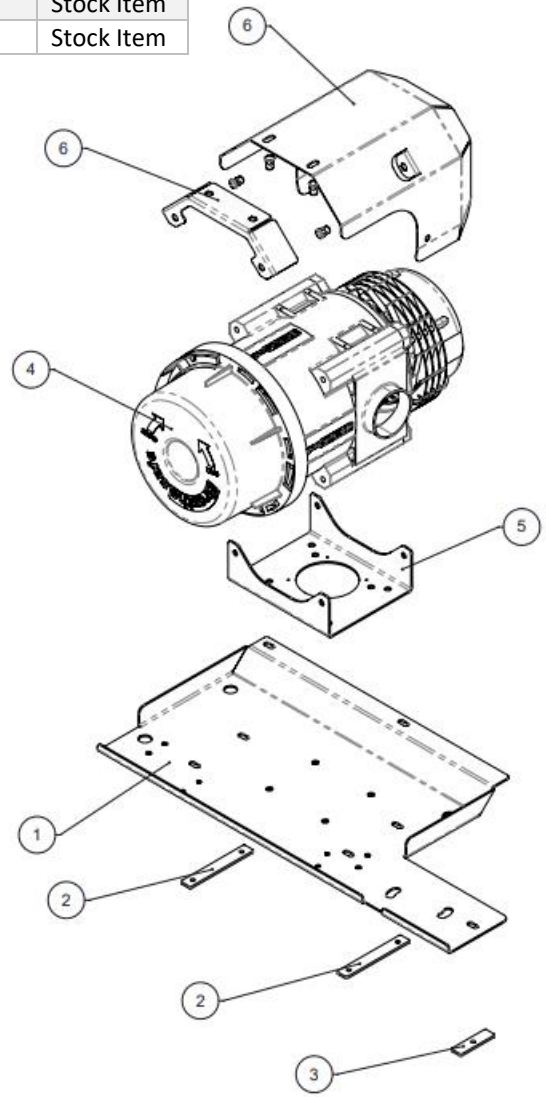
Kit Part Number: 710709





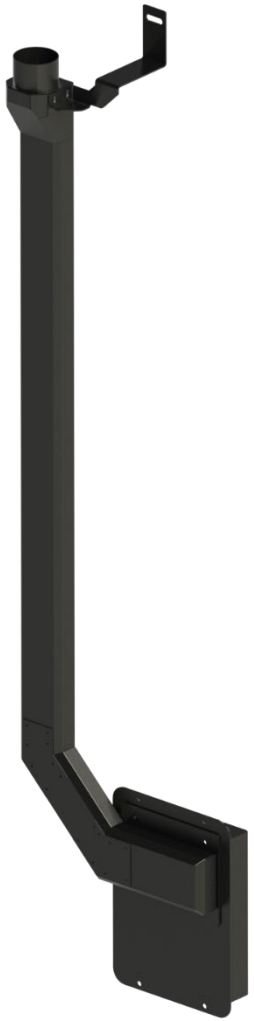
PARTS - PRESSURISER

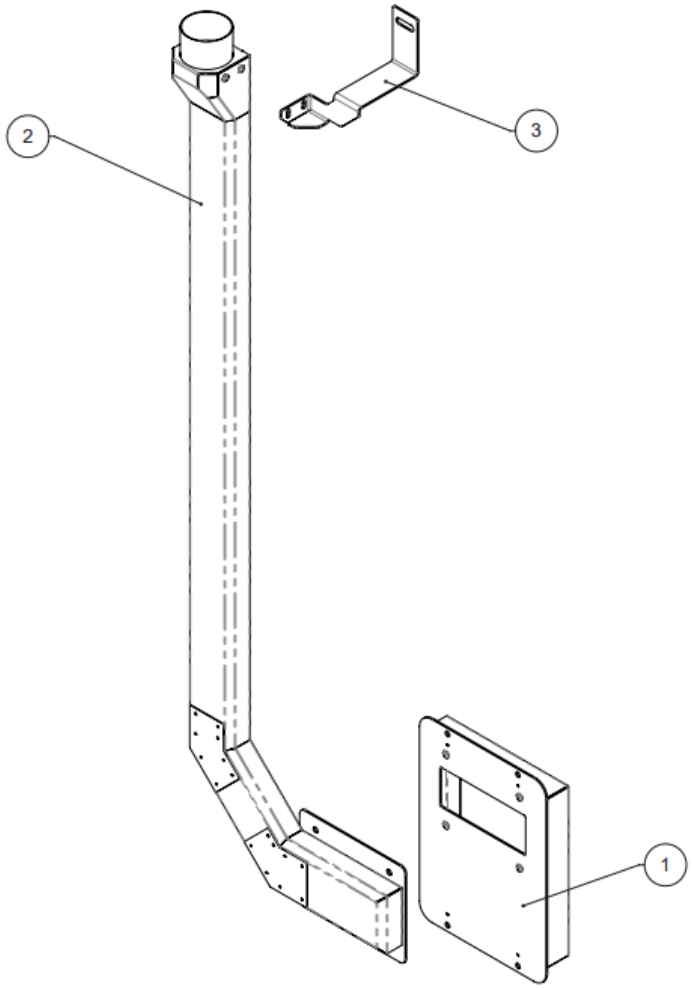
Item No.	Part No	Rev	Description	Qty	Material	Thickness	Colour	Group
1	100159A02	0	TL Mount Assy	1	-	-	301779 New Liebherr White	Weld Assy
2	09787	0	Main Clamp Bar	2	Mild Steel	4	(As Req'd)	Part
3	09788	0	Main Clamp Bar	1	Mild Steel	4	(As Req'd)	Part
4	200000	[*]	TL4 24V DC Unit	1	-	-	-	Stock Item
5	250007	0	TL Mount Bracket 56.5mm	1	Mild Steel	3	(As Req'd)	Stock Item
6	250044	0	TL Water Cannon Guard	1	-	-	(As Req'd)	Stock Item



PARTS – FRESH AIR

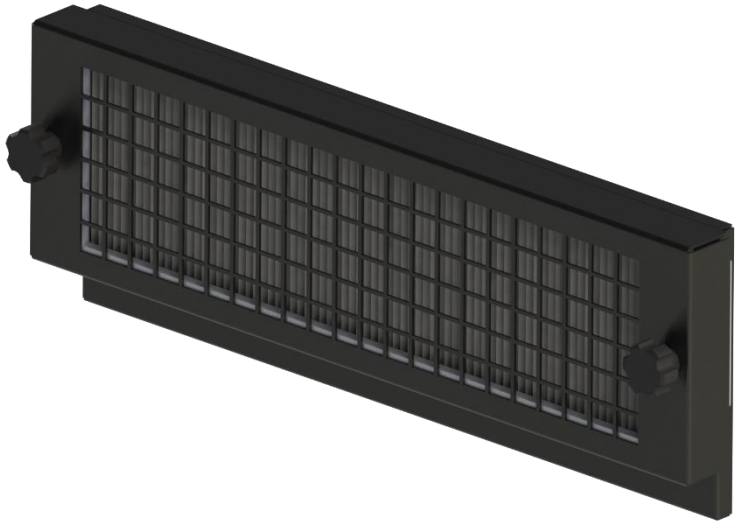
Item No.	Part No	Rev	Description	Qty	Material	Thickness	Colour	Group
1	100159F02	0	Fresh Air Inlet	1	-	-	301779 New Liebherr White	Weld Assy
2	100159F03	1	Fresh Air Duct	1	-	-	301779 New Liebherr White	Weld Assy
3	100159F513	0	Fresh Air Duct Support	1	G250	3	301779 New Liebherr White	Part

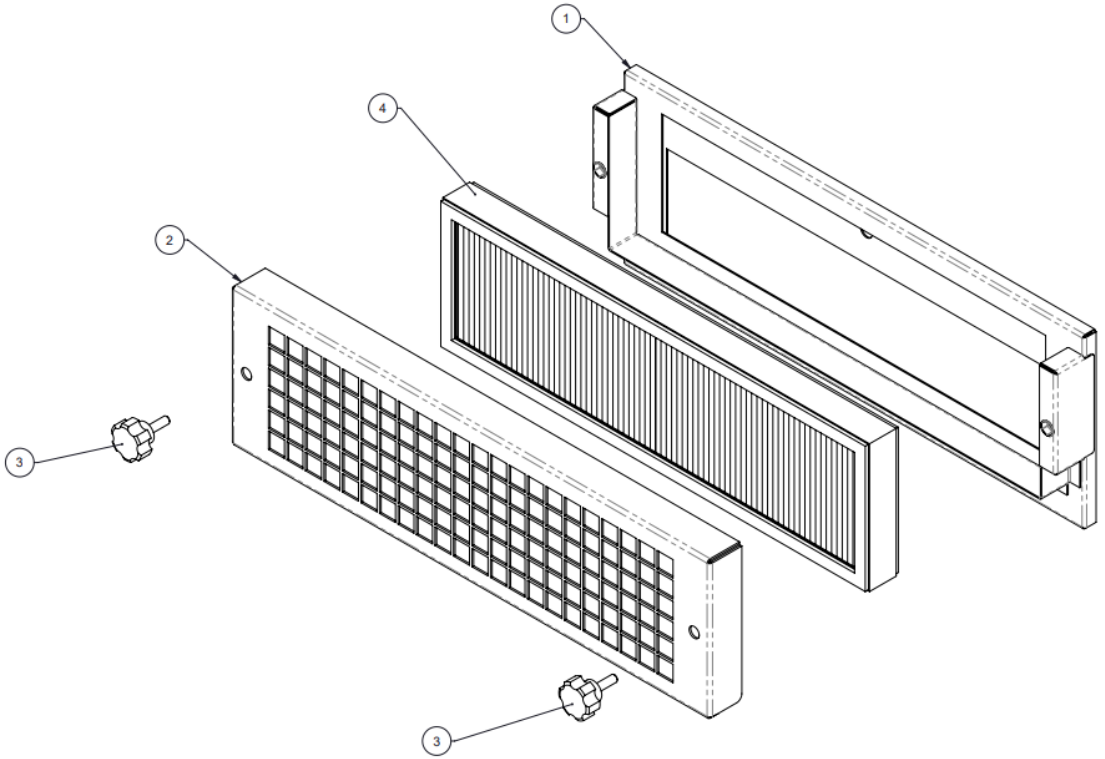




PARTS – RETURN AIR

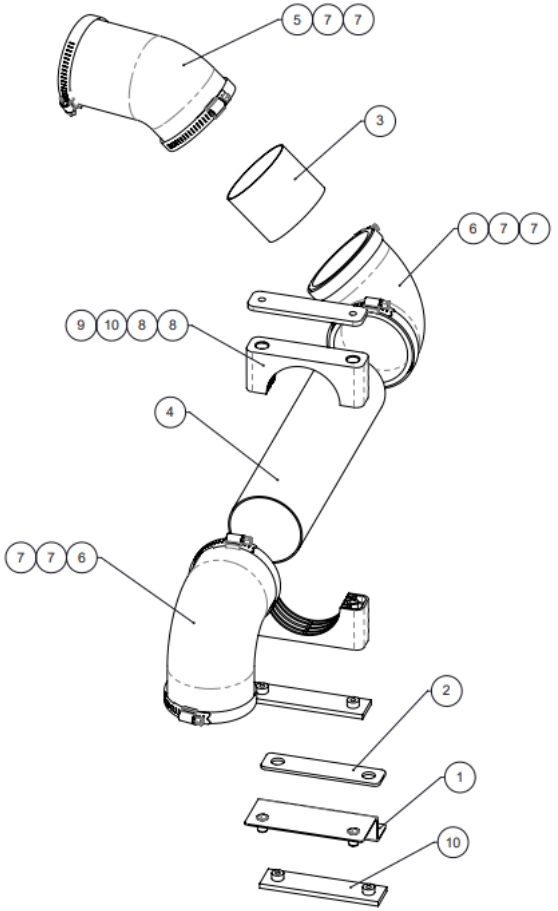
Item No.	Part No	Rev	Description	Qty	Material	Thickness	Colour
1	09773	0	Filter Housing Assy	1	-	-	Charcoal Grey MX83-682
2	09785	0	Filter Cover	1	Zan	1.6	Charcoal Grey MX83-682
3	300814	-	M6x20 Scallop Knob Male	1	-	-	-
4	500051	0	HEPA Filter 400x210x31	2	N/A	-	-





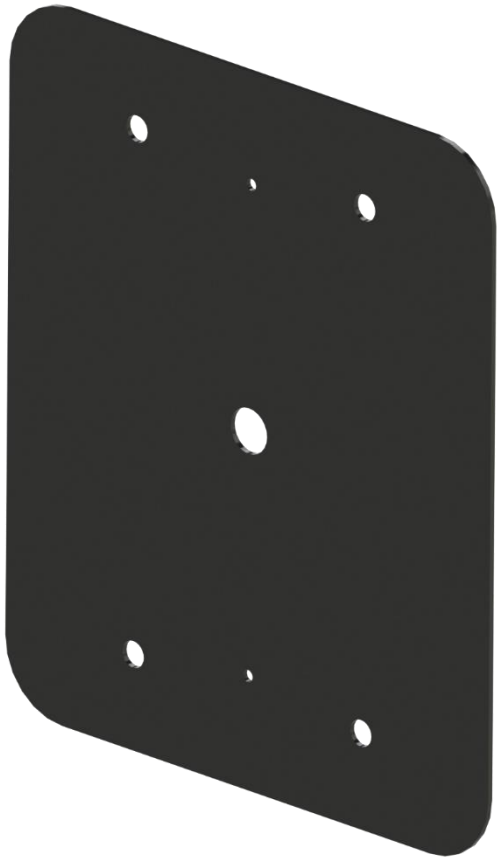
PARTS - PIPEWORK

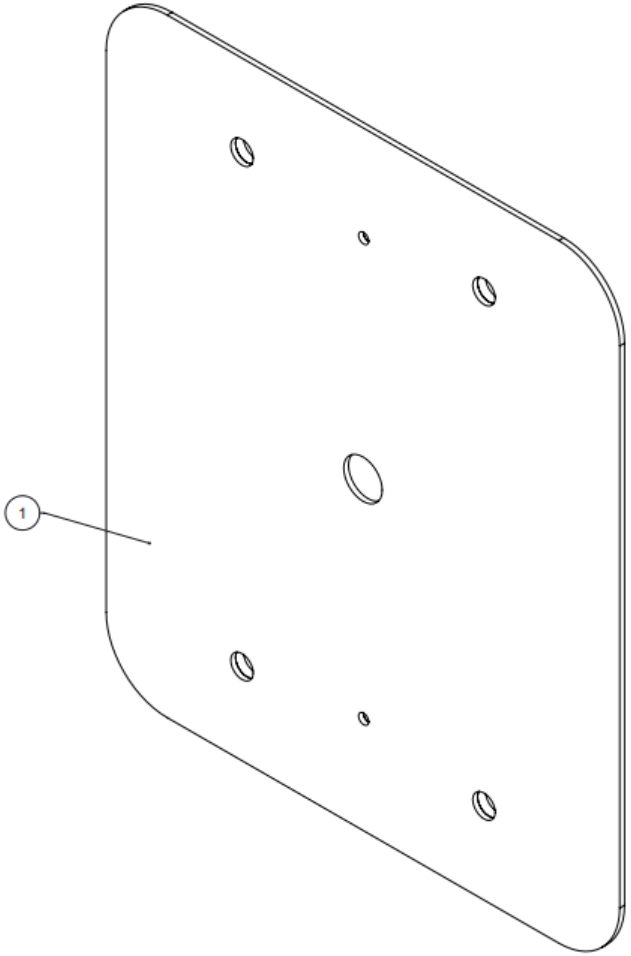
Item No.	Part No	Rev	Description	Qty	Material	Thickness	Colour	Group
1	100159P02	0	Stauff Support Bracket	1	-	-	301779 New Liebherr White	Assembly
2	100159P552	0	Stauff Clamping Plate	1	G250	3	301779 New Liebherr White	Part
3	300388-0060	-	76 SS Tube @60L	1	SS Tube	1.6	(As Req'd)	Pipework
4	300388-0285	-	76 SS Tube @285L	1	SS Tube	1.6	(As Req'd)	Pipework
5	200306	-	Ø76.2x45SD Elb	1	Silicone	-	-	Pipework
6	200308	-	Ø76.2x90SD Elb	2	Silicone	-	-	Pipework
7	300001	-	65-89mm Hose Clamp	6	-	-	-	Pipework
8	300480	-	Stauff Shell GR7 76.1 Black	2	-	-	-	Pipework
9	300481	-	Stauff GR7 Cover Plate	1	Zinc Plated	5	(As Req'd)	Pipework
10	300483	-	Stauff GR7 Weld Plate	2	Zinc Plated	5	(As Req'd)	Pipework



PARTS - SEALING

Item No.	Part No	Rev	Description	Qty	Material	Thickness	Colour	Group
1	100159Q02	0	Inlet Seal Cover	1	-	-	301779 New Liebherr White	Weld Assy





LIEBHERR

T264 HAUL TRUCK

BreatheSafe

*** Do not handle until MSDS & all safety precautions have been read and understood. Use personal protective equipment as required.**

Before use, carefully read the product label. Safe work practices are advised to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking, and smoking in contaminated areas. Avoid inhalation. Mechanical extraction ventilation is recommended when the removal of atmospheric contaminants is required. Maintain dust / fume levels below the recommended exposure standard. For small amounts, absorb with sand, vermiculite or similar and dispose of at an approved landfill site.

SMOKE EMITTER CABIN PRESSURE LEAK TEST

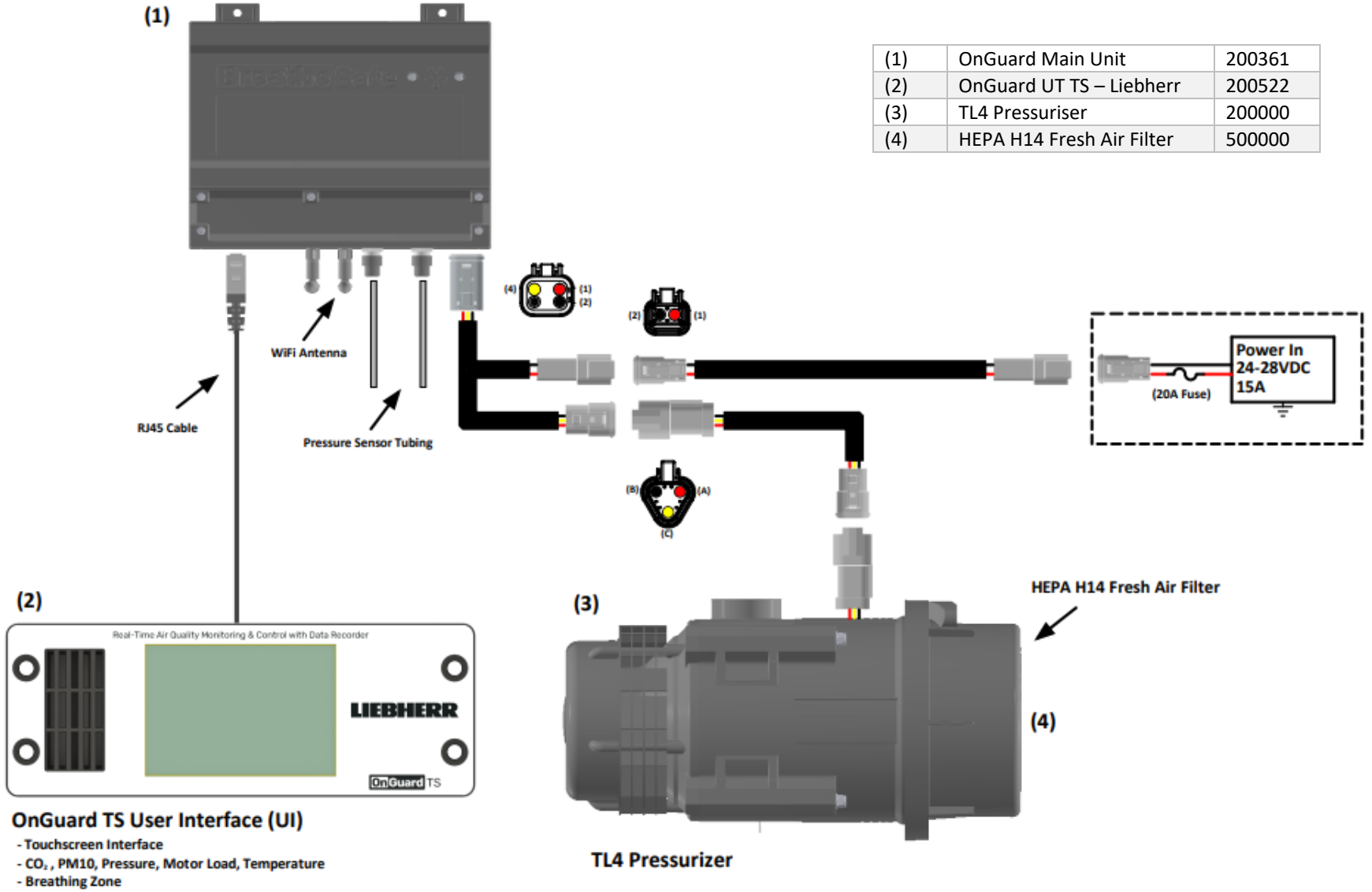
Warning
For professional use only – keep out of reach of children.
Do not ignite near or around flammable materials.
Use only in well-ventilated areas, outdoors, and/or with proper respiratory protection.
Persons with respiratory sensitivity should avoid exposure to any smoke.
Concentrated smoke may cause severe burns to the skin, eyes, or respiratory system.
Improper use may result in sufficient inhalation of smoke to cause respiratory tract irritation and lung damage.
Harmful if swallowed.
Danger
Use only as directed. Do not handle until all safety precautions, including Safety Data Sheet, have been read and understood. The product contains hexachloroethane. Wear protective clothing. If exposed or concerned, get medical advice. Store in a cool, dry, secure location. KEEP OUT OF REACH OF CHILDREN. Dispose of contents/container per location regulations. When used as directed, exposure should be limited and usually poses no hazard because the hexachloroethane is consumed inside the tube as smoke is produced.

	Directions: (Smoke Bomb)
1	Ensure other workers in close proximity are informed of use. Place on a non-combustible container, away from flammable materials.
2	Place at Blower intake, or upwind of target area, or near centre of space.
3	Orient “Smoke Issues Here” toward air stream, away from surfaces. Place candle on a flame / heat resistance plate – if not it will melt into the plastic surface.
4	Ensure smoke will not create any hazard where it is anticipated to go.
5	Ignite emitter inside the cabin using site approved device i.e., solder torch or ‘lighter’ and conduct smoke test.
6	Do not touch or hold smoke generator after ignition – item becomes very hot & remains hot after use.
	Smoke Emitter Cabin Pressure Leak Test
1	The pressuriser system is switched on (AUTO MODE).
2	Hold the smoke emitter angled down.
3	Ignite emitter using site approved ignitor i.e., solder torch or ‘lighter’.
4	When the product ignites, remove the lighter.
5	If the product flames up, blow out the flame.
6	Place the emitter in a non-flammable container and place it inside the cabin at floor level and close the door/windows.
7	Observe smoke leaks to indicate worn-out or broken seal locations. Check leakage points outside the cabin.
8	Do not come into contact with or inhale smoke haze.
9	Wait until the smoke haze **completely** disperses before re-entering the cabin. Open door to allow sufficient ventilation of smoke prior to entering cabin.

	Personal Protective Equipment (PPE)
	Safety glasses must be worn at all times.
	Sturdy footwear with rubber soles must be worn.
	Respiratory protection devices may be required.
	Gloves may be worn.
	Pre-Operational Safety Checks
✓	Locate and ensure you are familiar with all machine operations and controls.
✓	Check work area and walkways to ensure no slip/trip hazards are present.
✓	Ensure the work area is clean and clear of any flammable material & fire extinguish device is present.
	Operational Safety Checks
✓	Ensure the machine is correctly isolated / immobilized.
✓	Ensure other persons do not inhale smoke haze.
✓	Take care and do not place a lit emitter close to a flammable surface.
	Ending Operations and Cleaning Up
✓	Leave the work area in a safe, clean, and tidy state.
	Potential Hazards
ⓘ	Falls
ⓘ	Fumes
ⓘ	Fire
ⓘ	May cause cancer
	Exposure is highly unlikely when the product is used as directed. Direct contact with the product does not occur.
	Don’t
✗	Do not use if an open flame is forbidden.
✗	Never leave the emitter [cabin test] unattended.

*This SWP does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with other references. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

Wiring Diagram – Single Zone

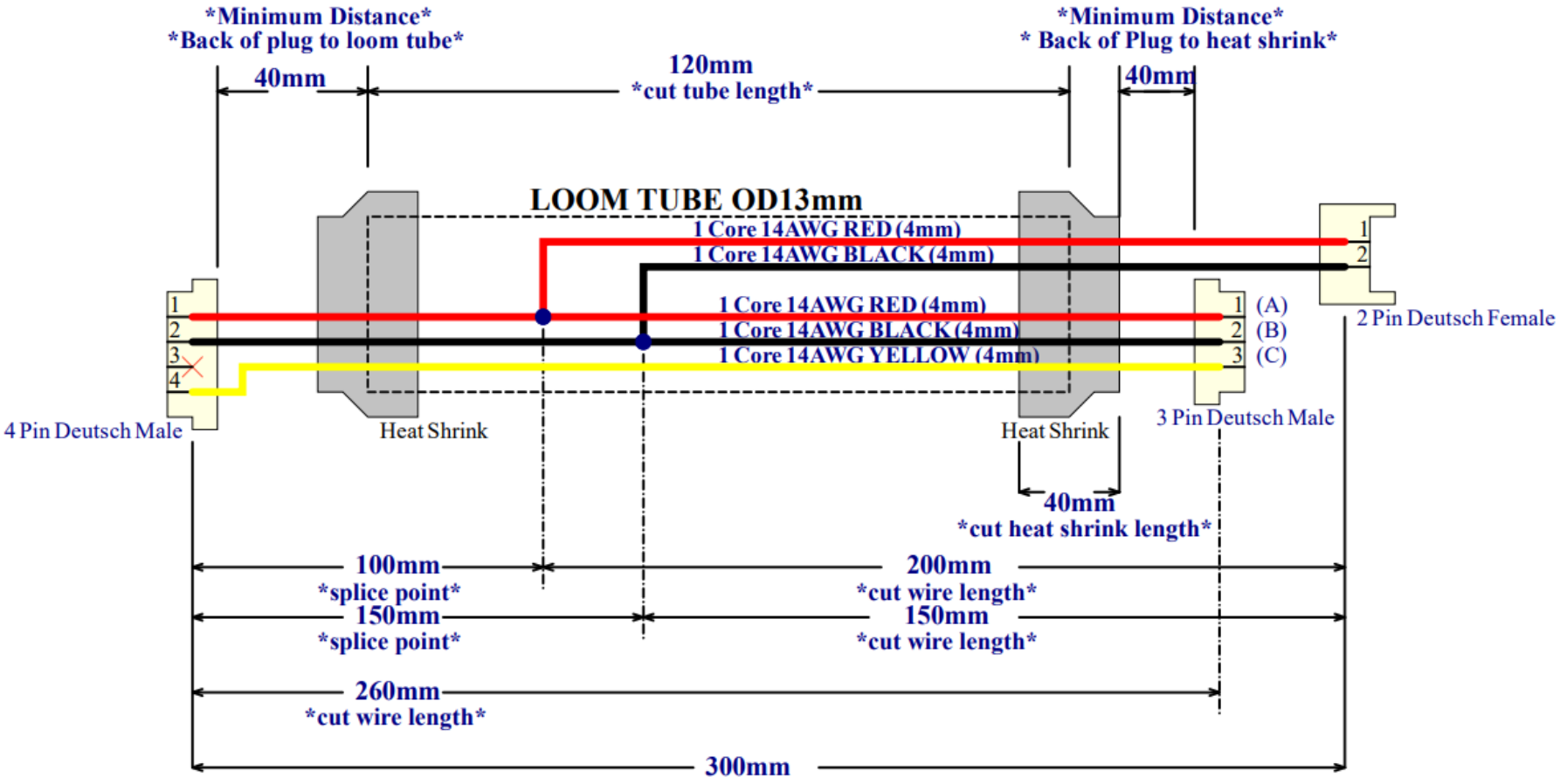


(1)	OnGuard Main Unit	200361
(2)	OnGuard UT TS – Liebherr	200522
(3)	TL4 Pressuriser	200000
(4)	HEPA H14 Fresh Air Filter	500000

Item No.	Part No.	Rev	Description	Qty	Colour	Category
1	400009	N/A	4 Pin 0.5m Master Controller Loom	1	-	Stock Item

PARTS LIST – MASTER CONTROLLER LOOM

WIRING LOOM No: **400009**

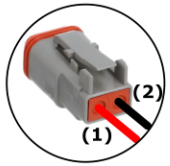


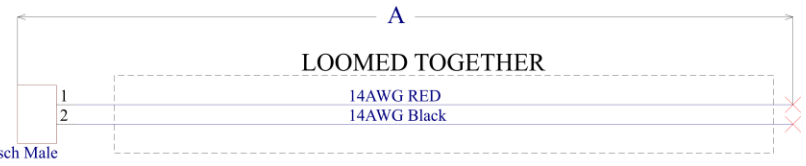
Formed Crimps Acceptable
Formed Splices Acceptable

Item No.	Part No.	Rev	Description	Qty	Colour	Category
1	400002	N/A	2 Pin 5m Main Power & Earth Supply Loom	1	-	Stock Item
2	400003	N/A	3 Pin 5m Power, Earth & Speed Control Loom	1	-	Stock Item
3	400004	N/A	5m Air Pressure Sense Pipe w/ Sleeving	1	-	Stock Item

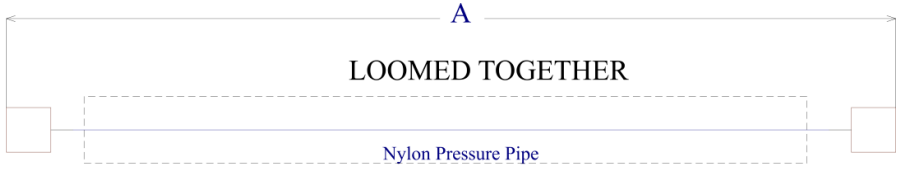
PARTS LIST – PIN LOOMS & AIR PRESSURE PIPE

WIRING ASSEMBLY No: 400001

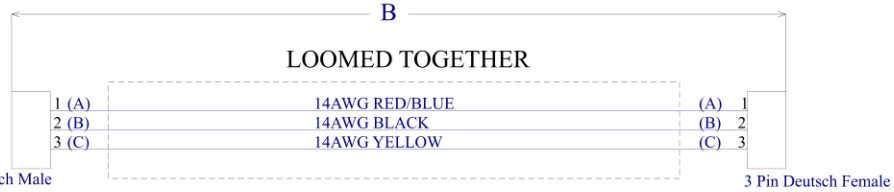




Part Number	Dimension A
400002 (L100002)	5000.0 mm
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-



Part Number	Dimension B
400004 (L100004)	5000.0 mm
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-



Part Number	Dimension B
400003 (L100003)	5000.0 mm
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-
To be Advised	-

*Plug Assemblies Provided Loose

Commissioning Procedures

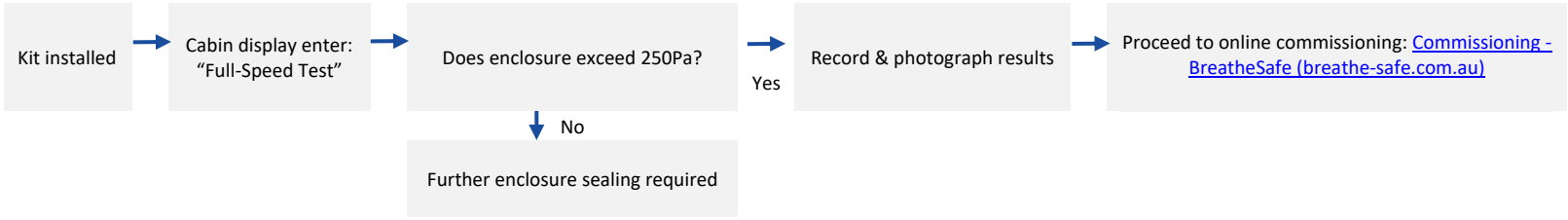
COMMISSIONING PROCEDURES – CABIN PRESSURISER

Follow each step of the installation guide that was supplied with the BreatheSafe kit.
Cabin sealing is an integral part of RS20 & ISO 23875; you must ensure that cabin seals are adequate for maintaining positive pressure. In addition, the site (end- user) must have the correct procedure(s) for servicing OPERATOR enclosure seals in a proactive manner rather than reactive. Items such as door and window seals must be in good working order or new seals FITTED before the BreatheSafe system installation.

How to run Full-Speed Commissioning Test

1. Press the 'Main Menu' button on the home screen to enter the main menu.
2. Ensure the cabin door and windows are completely closed.
3. Press the 'Full-Speed Test' button to initiate the test.
4. Press the 'Stop test' button to end the test and resume normal operation.

Submission for commissioning procedure as per the diagram below:




BreatheSafe
TRACS QLD Pty Ltd T/A BreatheSafe
Brisbane / Head Office
62 Mica Street, Carole Park QLD 4300
07 3276 7833 / 1300 667 597
Perth Branch
169 Chisholm Crescent, Kewdale WA 6105
08 9253 3314

Commissioning Certificate

Customer Details
Company
Customer Email
Customer PO Reference
Job Reference No
Location
Australia
Collinsville Mine
Date of Issue
Date of Installation/Commissioning
Installer/Commissioning Technician
Name
From Company
Company / Agent
Installation Location
Same as customer location
Machine Details
Brand
CATERPILLAR
Type
Haul Truck
Model
Fleet No
VIN / Serial No
Machine Age
BreatheSafe System
Pressuriser Model
TL4
Pressuriser Serial No
Monitor Model
INPRESS TS
Monitor Serial No
Fresh Air Filter P/N
Return Air Filter P/N
Act. Carbon Filter P/N
Removed Parts/Filters
Fresh Air Filter P/N
N/A
Return Air Filter P/N
N/A
Commissioning and Calibration Results
Date of test
Max Pressure (Pa)
Pressure Setpoint (Pa)
Actual Pressure (Pa)
Motor Load (%)
Nanozen Real Time Cabin Results
Tested at A/C vent
N/A
Tested in Breathing Zone
N/A
Warranty
Variable Speed Motor - 3 years or 15,000 hours extended warranty
Installation Notes


BreatheSafe
Part of AireSafe
AIR CONDITIONING FAN MUST BE TURNED TO MEDIUM SPEED TO CIRCULATE AIR & MINIMISE CO_2 LEVELS.
MACHINE SN:
BREATHESAFE CONTROLLER SN:
DATE INSTALLED:
MACHINE HOURS:
AUTO PRE-SET PRESSURE (Pa):
MAX CABIN PRESSURE (Pa):
NOTES (FILTER PART NUMBERS):
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
2023 2024 2025 2026 2027 2028
Technical Support Phone: 1300 667 597 | www.breathe-safe.com

The commissioning images required are:

- ID plate / Machine Serial Number / Asset Number or Call Sign.
- Pressuriser location.
- HEPA Return Air Filter Location Option: Powered Return Air Filter.
- Cabin Pressure Display Location – Including the "System Check" maximum cabin pressure result with motor output capacity %.

Fill in the BreatheSafe Service Tag with the following details:

- Machine Serial Number and Installers details.
- Date installed and System Check result (max cabin pressure).
- The set cabin pressure with actual pressure and motor percentage output.
- Verify the 250-pascal threshold was achieved = pass OR not achieved = fail**.

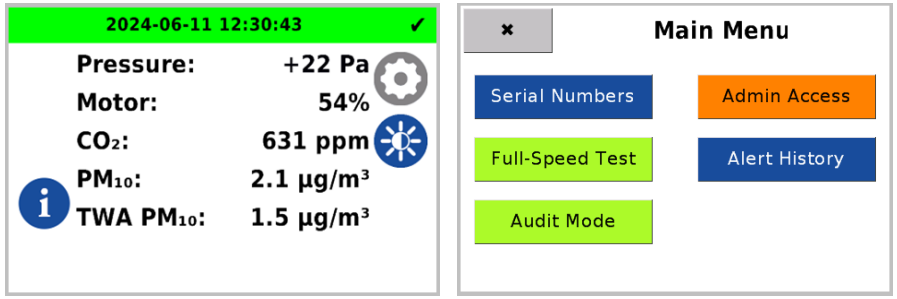
Please upload machine and installation details in conjunction with the required images. A Commissioning Certificate will be sent to the email address you nominate. **Extended warranty for (RS20 & ISO 23875) BreatheSafe Systems is only applicable to operator enclosures meeting this requirement.

1.0 HOW TO GAIN ACCESS TO THE OPERATOR AND ADMIN MENUS ON THE TS UI

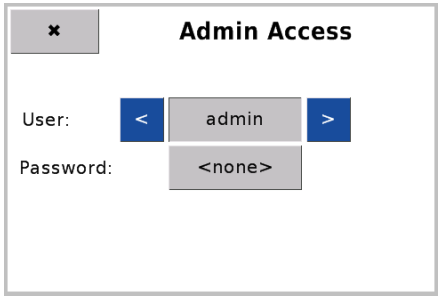
On the default display, press the 'Admin Access' button to enter the action menu. From here, select the 'operator' option to access the operator menu or, select the 'admin' option to access the admin menu. Once selected, enter the respective passwords for operator or admin access. While in the password entry screen, use the onscreen keyboard to enter the password and use the green enter (↲) button to confirm password.

Entering access credentials

1. Press the main menu button on the home screen to access the main menu.



2. Press the 'Admin Access' button.
3. Select the respective credential level (admin or operator).



4. Press the input box beside 'Password:' and enter the respective access credentials using the on-screen keyboard. these are provided on the info sheet.

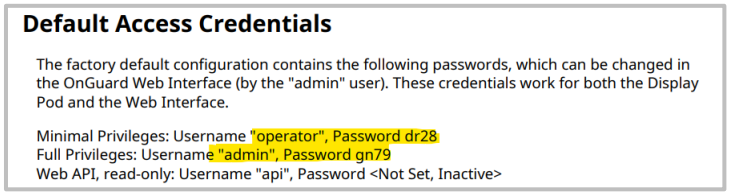
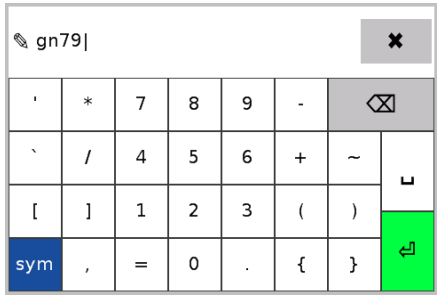
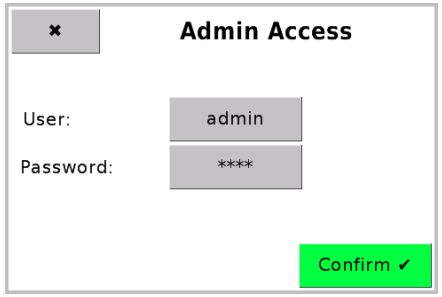


Figure 1: Excerpt from example Information sheet showing access credentials

5. Press the enter button once the password has been entered.

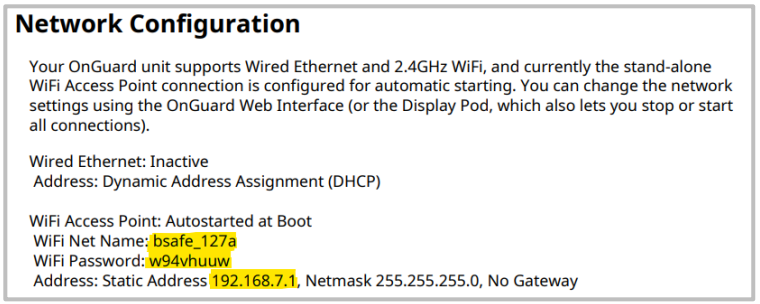


6. Press the 'Confirm' button to login with the selected username and password.

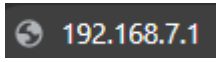


2.0 How to access the web interface via the Wi-Fi Access Point (AP)

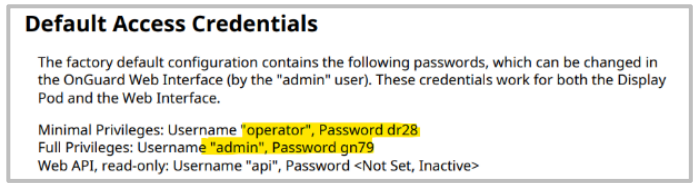
1. Turn the OnGuard on and wait 3 minutes for the network to start.
2. Open any Web Browser from a 2.4GHz Wi-Fi capable device.
3. On the device, connect to the Wi-Fi network being hosted by the OnGuard. The details of the OnGuard's AP are found on the Info sheet (example shown below). These details are also shown in 'Net Config' in the admin menu on the OnGuard UI.



4. Enter the IP address of the OnGuard AP, 192.168.7.1, the AP address is the same for all OnGuard Kits.

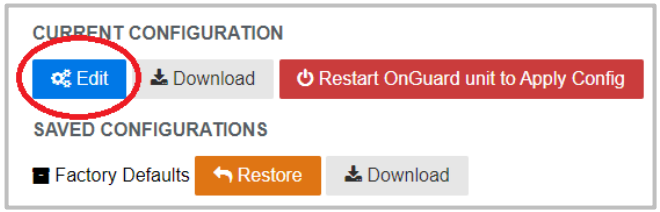


5. The client will be prompted to enter a username and password. These are the same access credentials as for the OnGuard UI. 'admin' or 'operator' must be entered as the username and the respective pin must be entered as the password.

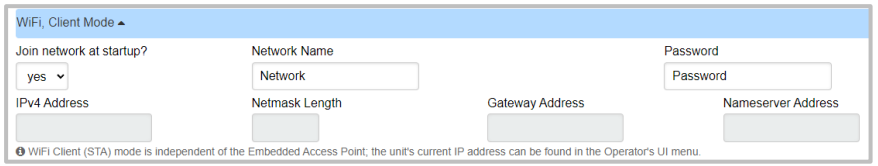


3.0 How to Configure the OnGuard to Connect to an External Wi-Fi Network via the Web Interface

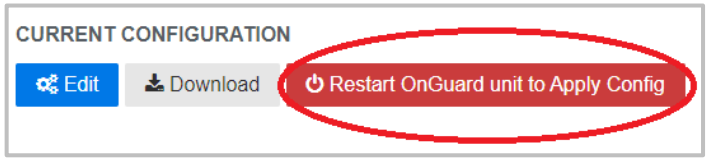
1. Connect to the web interface via the Access Point (See Section 2.0).
2. Ensure client is logged in as 'admin'.
3. Click 'Edit' under 'Current Configuration' heading.



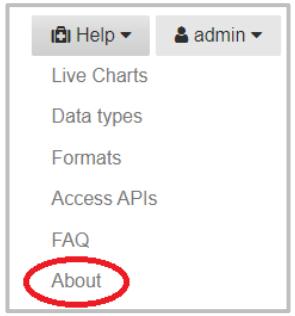
4. Scroll down to 'WiFi, Client Mode'.



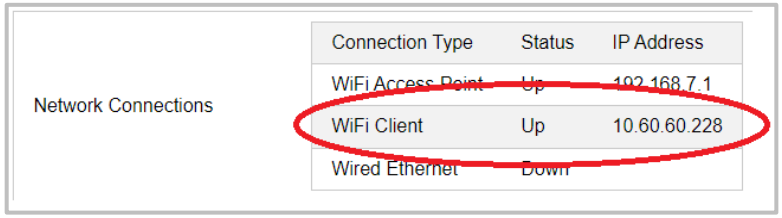
5. Enter the details of the network the OnGuard will connect to under 'Network Name' and 'Password'.
6. Click 'Save Changes'.
7. Click 'Restart OnGuard unit to Apply Config'.



8. Once the OnGuard has restarted, reconnect to the web interface via the AP.
9. Navigate to 'Help' -> 'About'.



10. Verify the OnGuard has successfully connected to the Wi-Fi network by checking that 'WiFi Client' is 'Up' and has an IP Address assigned. If the status of the Wi-Fi Client is 'Down', manually restart the OnGuard Main Unit by turning it off and then powering it back on after 10 seconds.



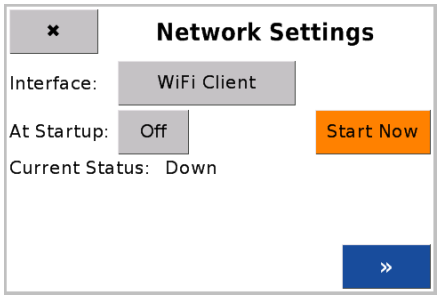
11. The OnGuard web interface can now be accessed on this network by navigating to the IP address displayed next to 'WiFi Client' (as above example) on any normal web browser.

Trouble Shooting:

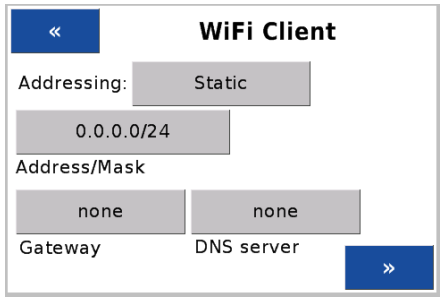
1. If the network status in step 10 shows 'WiFi Client: down', the OnGuard has not successfully connected to the network.
2. Verify all network details were entered correctly in step 5.
3. Restart the OnGuard by powering off the Main Unit for 10 seconds.
4. Once the OnGuard has restarted, return to step 10.

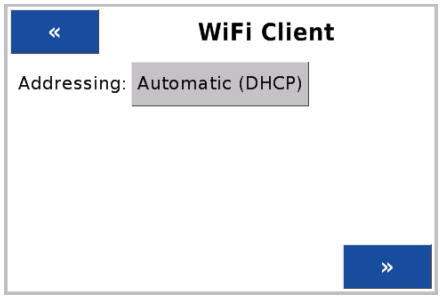
4.0 How to Configure the OnGuard to Connect to an External Wi-Fi Network via the Touchscreen User-Interface (TS UI)

1. Enter the Admin menu on the TS UI using the 'admin' pin (See Section 1.0).
2. Enter the Network Config page by pressing the 'Network Config' button.
3. Press the button beside 'Interface' to select the 'Wi-Fi Client' option.

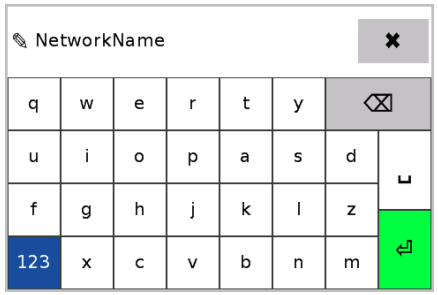


4. Press the blue arrow to continue to edit the Wi-Fi Client network settings.
5. Select the addressing type by cycling through the options (Static/DHCP). The default option is DHCP and is standard for most networks. Consult your network admin to confirm the configuration of the network being connected to (i.e. if static connection is required).

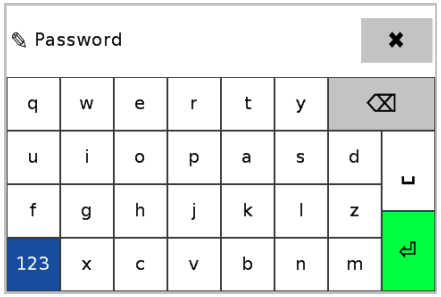




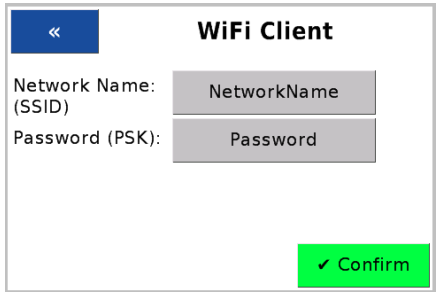
6. Continue to edit the network name and password by pressing the blue arrow on the bottom right of the screen.
7. Enter the name of the Wi-Fi network for the OnGuard to join beside ‘Network Name (SSID):’. Press the enter button when complete.



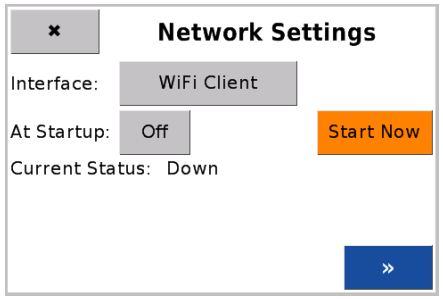
8. Enter the password for this network beside ‘Password (PSK):’. Press the enter button when complete.



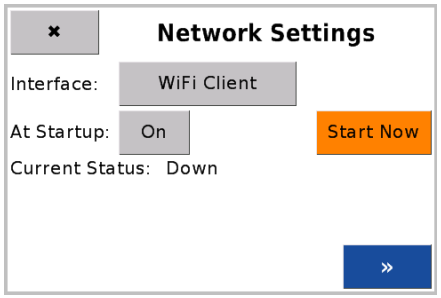
9. Press ‘Confirm’ to save changes.



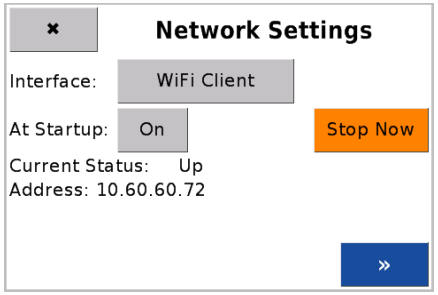
10. Back on the Network Configuration page, enable ‘At Startup’ to automatically start the network on boot.



11. Press the ‘Start Now’ button to start the network.



12. Confirm the OnGuard has connected to the desired network, the DHCP or static IP address will have appeared on the Network Settings page and the current status should show ‘Current Status: Up’ if the OnGuard has connected to the network.



13. The IP address displayed (10.60.60.72 in the example) is the address of the OnGuard web interface on the network. Navigate to this address via a web browser on a device connected to the same network to access the OnGuard’s web interface.

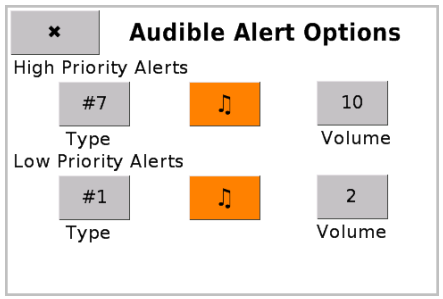
Trouble Shooting:

1. If the network status in step 12 shows ‘WiFi STA: down’, the OnGuard has not successfully connected to the network.
2. Verify all network details were entered correctly in steps 7-8.
3. Restart the OnGuard by powering off the Main Unit for 10 seconds.
4. Once the OnGuard has restarted, return to step 12.

Note: The OnGuard will attempt to re-connect to the configured network periodically if the first attempt was unsuccessful or if it is moved out of range of the network.

5.0 How to Adjust or Disable the Alarms on the UI

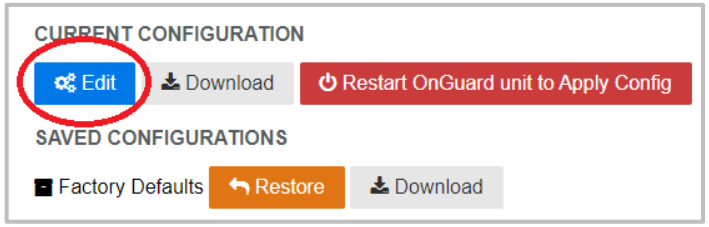
1. Enter the Admin menu on the TS UI using the ‘admin’ pin (See Section 1.0).
2. Press the ‘Alert Options’ button to enter the menu.
3. Select a suitable buzzer type for high and low priority alerts by editing the selection.
4. Select a suitable buzzer volume for high and low priority alerts by editing the selection (1-16 with 16 being the highest volume).
5. To disable the buzzer, adjust the volume to 0.
6. The ‘Sound buzzer’ button can be pressed to play the buzzer and cancelled by pressing it again.



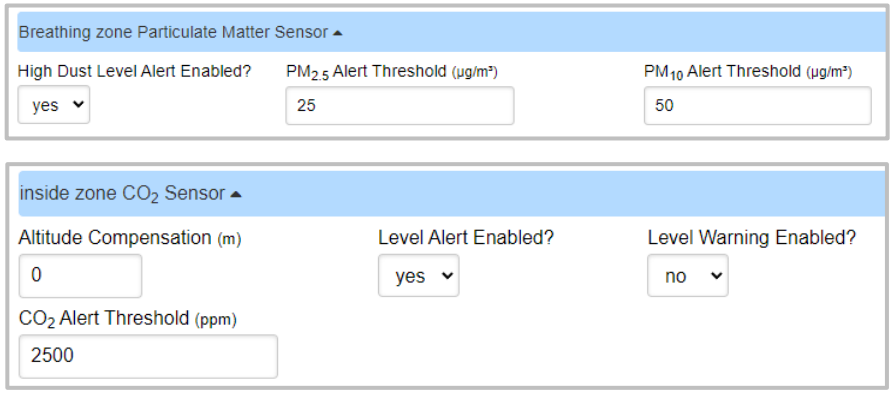
7. Press ‘Confirm’ to save the new alert settings.

6.0 How to Adjust PM & CO_2 Alerts on the Web Interface

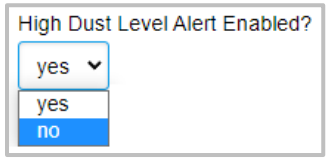
1. Sign in to the Web Interface as 'admin' (see section 2.0).
2. Click 'Edit' under 'Current Configuration' heading.



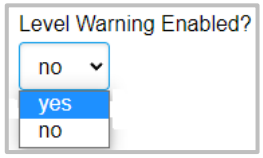
3. Scroll down to '[Sensor Name] [Sensor Type]' (e.g. Breathing Zone Particulate Matter Sensor).



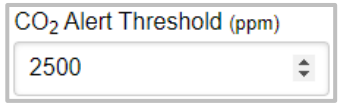
4. To disable the alert level, click the 'Alert Enabled?' drop-down and select 'no'.



5. For the CO_2 sensor, to enable a secondary alert level, click the 'Level Warning Enabled?' drop-down and select 'yes'.



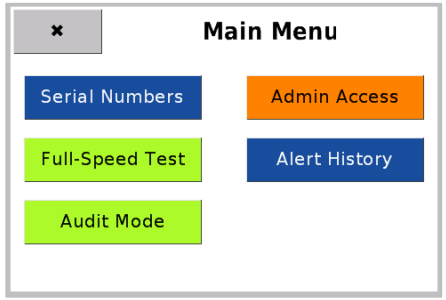
6. The alert thresholds can be adjusted by changing the value(s) under '[Parameter] Alert Threshold' (e.g. 'CO_2 Alert Threshold').



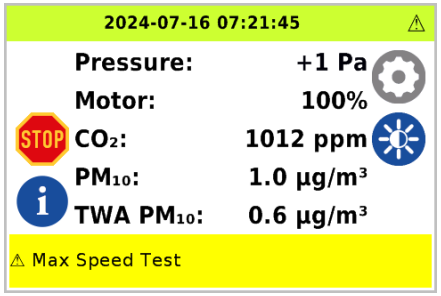
7. Scroll to the bottom and select 'Save Changes'. A comment recording the changes made will be required.

7.0 Commissioning: How to Run a Max Speed Test

1. Press the 'Main Menu' button on the home screen to enter the main menu.

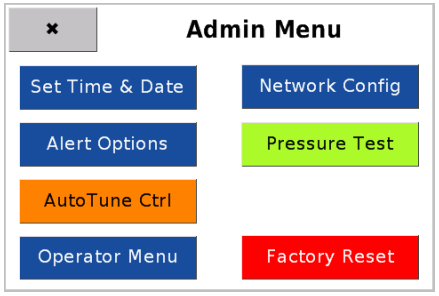


2. Ensure the cabin door and windows are completely closed.
3. Press the ‘Full-Speed Test’ button to initiate the test.
4. Press the ‘Stop test’ button to end the test and resume normal operation.



8.0 Commissioning: How to Run a Pressure Test

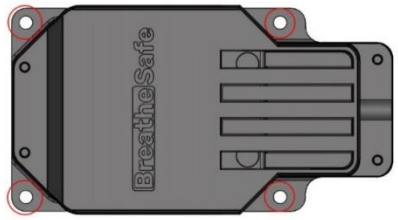
1. Access the Admin menu on the UI using the ‘admin’ pin (See Section 1.0).



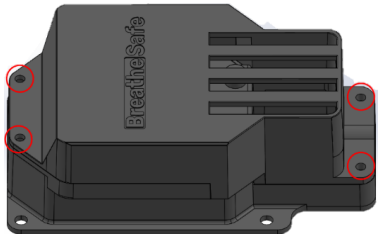
2. It is critically important that the cabin door and windows are fully **closed** during this operation. If target pressure (250pa default) is not reached, a Test Failure alert is raised.
3. Press the ‘Pressure Test’ button to initiate a pressure test.

9.0 How to Replace a Sensor Pod

1. Switch off power to the OnGuard Main Unit, as it powers the Sensor Pod.
2. Remove the existing Sensor Pod from where it is mounted by removing the 4 M4 Bolts from the corners of the case, the mounting holes are shown in the figure below:



3. Find the replacement Sensor Pod, do not mount this in the previous Sensor Pod’s place yet.
4. Remove the 4 M3 screws from the top of the sensor pod and remove the lid.



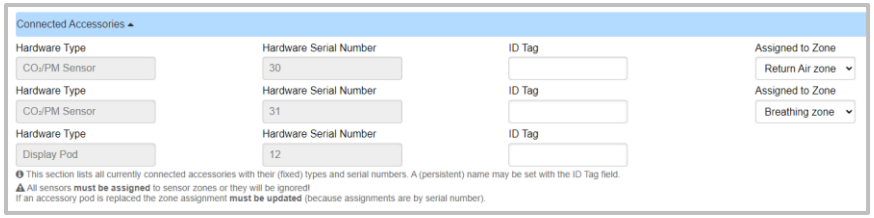
5. Plug the cable used to power the previous Sensor Pod into the female port on the sensor board, clip facing upwards.

   Note: Replace the cable as well if there is any visible damage to the cable or connector.

6. Replace the lid, ensuring that the cable is clamped in the hole between the lid and the base. Special care must be taken to ensure the wires inside the case are not clamped by the lid when putting it back on the case.
7. Re-install the M3 screws. Do not over tighten the screws as excessive force will strip the threads inside the plastic.
8. Power on the OnGuard Main Unit.

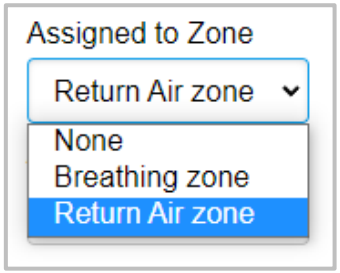
If your OnGuard installation includes multiple (more than 1) sensor pod:

1. Sign in to the Web Interface as ‘admin’ (see section 2.0).
2. Click ‘Edit’ under ‘Current Configuration’ heading.
3. Scroll down to the ‘Connect Accessories’ heading.
4. Verify the newly replaced Sensor Pod has successfully connected to the OnGuard by checking the number under ‘Hardware Serial Number’ matches the serial number on the sticker attached to the Sensor Pod.



5. Under ‘Assigned to Zone’, the new sensor will display ‘None’. Click this drop-down menu and select the same zone that applied to the replaced sensor pod. This will one of the zones that is **not** already assigned to another sensor pod.

   For example, if the other connected sensor is assigned to ‘Breathing Zone’, the replacement sensor is most likely the ‘Return Air zone’ sensor.



6. Scroll to the bottom and select ‘Save Changes’. A comment recording the changes made will be required.

WARRANTY

Express Warranty

All BreatheSafe products carry a warranty against defects in materials or workmanship, provided the defects are not from factors outside of BreatheSafe's control (including neglect, lack of maintenance, improper installation or operation, unauthorized servicing repair, etc.). BreatheSafe will replace goods defected in material or workmanship at our Queensland factory or designated branch*. All parts deemed as failed or faulty must be returned to BreatheSafe for evaluation unless otherwise stated in writing.

Note- Systems must be installed and commissioned as per BreatheSafe installation and commissioning instructions. Once commissioned, the online commissioning sheet must be filled in, extending the components warranty as below. In addition, the system must be serviced and maintained correctly and by trained and qualified personnel. This requisite includes BreatheSafe technicians, qualified automotive air-conditioning technicians, or qualified auto electricians.

Warranty period – Standard

- 1 year or 10,000 hours (whichever occurs first).
- Controllers – 1 year no extended warranty option.
- Warranty Period Extension when commissioning documents are registered online within 28 days of installation
- Extended warranty** only offered if commissioning maximum pressure test reaches at least 250Pa.
- Brushless motor fixed speed two years, or 10,000 hours (whichever occurs first).
- Variable speed brushless motor 15,000 hours, or 3 years** (whichever occurs first).

Must be supplied with a variable speed pressure controller, data download required for 3-year warranty option. Link to online Commissioning and Extended Warranty Registration form https://www.breathe-safe.com.au/commission/

What is not covered under Express Warranty?

- Failures are due to incorrect application.
- Damage resulting from neglect, misuse, lack of maintenance, improper installation, or operation, inappropriate or abnormal use, accidental or unauthorized servicing repair.
- Failures are due to parts not being sold or approved by BreatheSafe.
- Failures arising from any other cause that is not directly related to a defect in material or workmanship.

This Express Warranty is VOID if the product is altered, modified, or used in the manner it was not designed for, also including unauthorized repairs, or using maintenance and repair parts other than those supplied by BreatheSafe.

BreatheSafe responsibilities

If there is a defect in material or workmanship not caused by the excluded failures during the warranty period, BreatheSafe will either replace the defective goods at our Queensland factory, or designated branch. *

Alternatively, BreatheSafe may elect to provide new replacement parts, BreatheSafe approved repair parts or assembled components needed to repair the defect. BreatheSafe reserves the right to provide a refund of the purchase price in lieu of replacement or repair at BreatheSafe's discretion. The replacement or repaired product will be sent to you freight prepaid by the customer or made available for pick-up on site.

Users Responsibilities

The customer should ensure that the system is maintained according to BreatheSafe service requirements and only authorized parts must be used to service and maintain BreatheSafe systems. In the event of a suspected warranty claim, BreatheSafe should be contacted in the first instance to arrange the repair or to assist with diagnosis. Claims should be made within one week of the repair.

After contacting BreatheSafe, you may be required to deliver or send the parts to BreatheSafe's Queensland factory or designated branch. * Link to online Warranty claim form https://www.breathe-safe.com.au/warranty/

Exclusion and Limitations on Damages and Remedies

This warranty is provided in lieu of all other warranties, written or oral, whether expressed by affirmation, promise, description, drawing, model, or sample. To the extent allowed by law, all warranties other than this warranty, whether express or implied, including implied warranties of fitness for a particular purpose, are disclaimed. The maximum liability of BreatheSafe under this warranty shall not exceed the original purchase price of the product. Interference with the equipment by or abuse, or by operating the equipment at ambient temperatures or with electrical power characteristics outside the ranges indicated in our specification shall be excluded from this warranty, as shall consequential damages.

Excluded from any express warranty are costs incurred in relation to service outside our factory our designated service branch, including traveling time, waiting time, transport costs, mechanical and overtime payments required. As per Australian Consumer Law: You are entitled to choose a refund or replacement for major failures with goods. If a failure with the goods or service does not amount to a major failure, you are entitled to have the failure rectified in a reasonable time. If this is not done, you are entitled to a refund for the goods and to cancel the contract for the service and obtain a refund of any unused portion. You are also entitled to be compensated for any other reasonably foreseeable loss or damage from a failure in the goods or service.

*This express warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

Extended warranty for (RS20 & ISO 23875) BreatheSafe Variable Speed Systems is only applicable to operator enclosures meeting this requirement.