INSTRUCTION MANUAL

EPURA

Model

CABIN G7

PROPULSA
INNOVATIONS

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Document ID PI–MAN–EPU–G7–R001–ENG–2026
Date of publication March 2026

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The user is responsible for ensuring that the installation and operation of the system comply with all applicable local laws, standards, and regulations.

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Environmental Sensors and ISO 23875

The environmental sensors available with Epura units are monitoring tools intended to provide real-time tracking of selected in-cab air quality parameters. Their presence does not, by itself, constitute proof, certification, or a guarantee of compliance with ISO 23875. Compliance with ISO 23875 must be assessed based on the overall performance of the operator enclosure air quality control system, including, but not limited to, system design, integration, installation, maintenance, operating conditions, and completion of the applicable performance tests. These sensors may support a monitoring and verification process, but they do not replace a full system evaluation against the applicable requirements.

KEEP THESE INSTRUCTIONS

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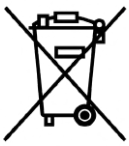
FOREWORD

Your Epura self-cleaning pre-filtration system was designed and manufactured in Saguenay Lac St Jean, Quebec by Propulsa Innovations. By using this revolutionary system, you will observe that the solutions offered by Propulsa Innovations provide efficient air filtration without the need for filter changes, reducing downtime, repetitive maintenance, and the environmental impact of heavy machinery. Additionally, it significantly improves air quality, thereby limiting health risks for workers.

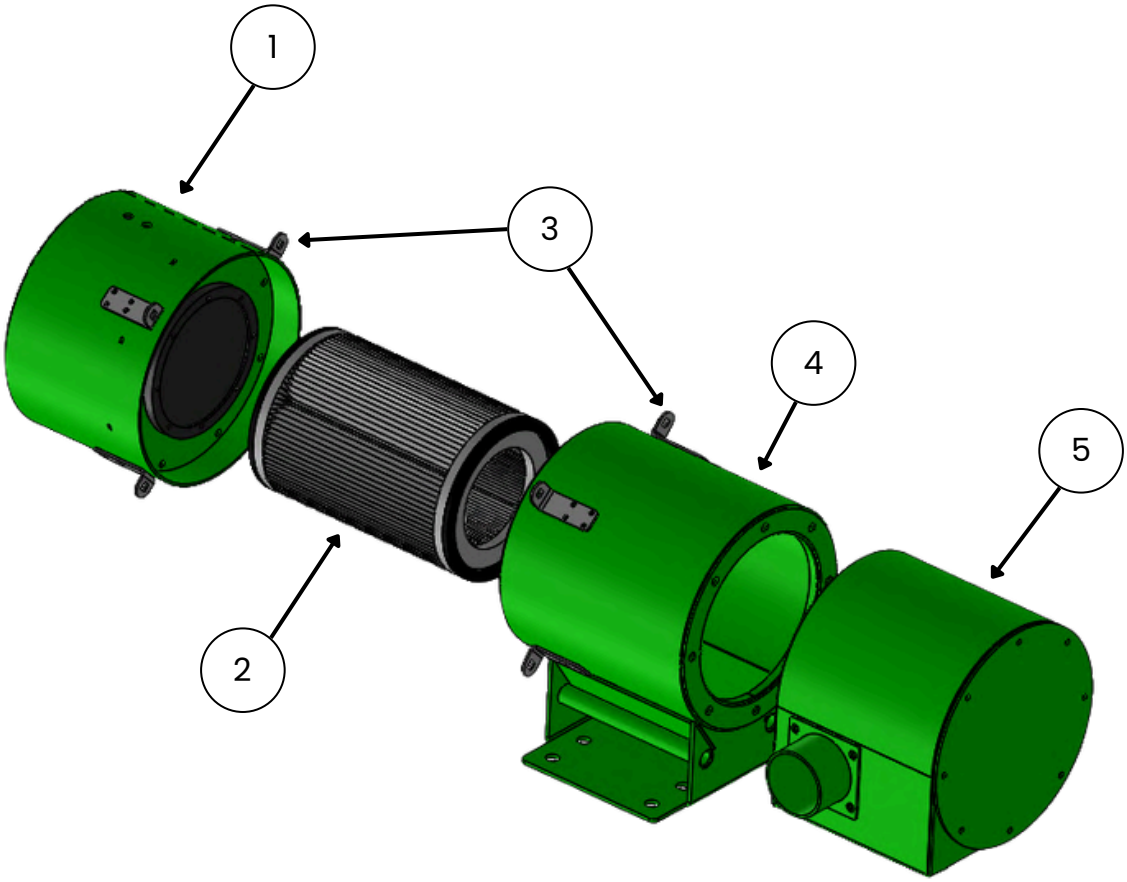
SAFETY INFORMATION

For safe and effective use of the Epura, please follow these precautions. Read all the instructions below before operating the device.

DANGER	
	The fan contains exposed rotating parts that pose a risk of entanglement. It should only be started once all the ducting is connected.
	Special attention must be paid to the rigidity of the installation to prevent the Epura system from falling during use.
	The weight of the Epura system is considerable. Technicians responsible for installation must follow best practices for handling heavy components.
	The systems must be installed at a level lower than the exhaust ducts to avoid the risk of gas intake and decreased efficiency.
	Do not dispose of it in regular trash. For proper disposal, take the Epura system to an authorized Universal Waste collection center or contact your local waste management facility for guidance.

GENERAL INFORMATION

COMPONENTS – *EPURA CABIN G7*



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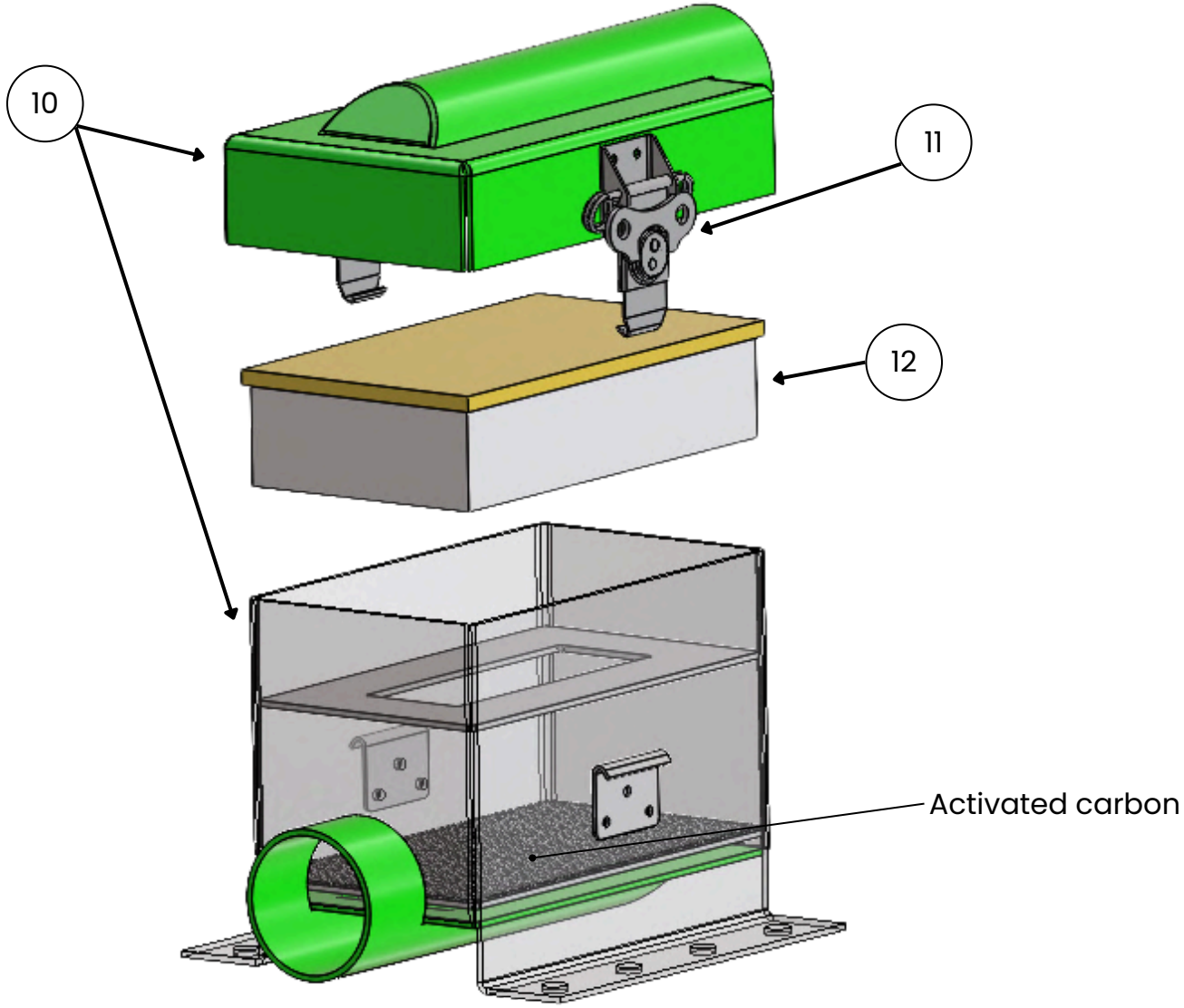
COMPONENTS – *ACTIVATED CARBON OPTION*



SYSTEM COMPONENTS AND SKU NUMBERS

Refer to the numbered schematic on the previous pages.

N°	Description	SKU Numbers
1	Cleaning Head	G7.1C-103-R000
2	HEPA filter	AF112525-HEPA
3	Fastening Hardware for Latches	G7.1C-105-R000
4	Housing	G7.1C-101-R000
5	Fan	G7.1C-102-R000
6	Power Supply Wiring	EPU-CABLE-ALIM
7	Interface Wiring	EPU-CABLE-INTERFACE
8	Fan Wiring	EPU-CABLE-VENT
9	Interface	CON-IN3-V2E
10	Carbon Housing	BH01-R000
11	Carbon Housing Latch	1406A74
12	Carbon Housing HEPA Filter	VF130H

ENVIRONMENTAL MONITORING SENSORS

Important Notice : *Environmental sensors support in-cab air quality monitoring, but do not by themselves make the system compliant with ISO 23875.*

Epura units can be equipped with environmental sensors that allow real-time monitoring of air quality inside the cab. Depending on the system configuration, these monitoring options can display:

- carbon dioxide (CO_2) concentration;
- the concentration of fine airborne particles (PM4) -

Fine particle measurements help monitor the operator environment and can support air quality monitoring as part of an approach aligned with ISO 23875 requirements. The other displayed measurements also provide real-time monitoring of ambient conditions inside the cab.

DESCRIPTION AND INTERPRETATION OF DISPLAYED MEASUREMENTS

CO_2 Sensor (ppm)

The CO_2 value indicates the concentration of carbon dioxide in the cab air. An increase in CO_2 may indicate insufficient ventilation or inadequate air exchange. The system uses the following thresholds to interpret the readings:

- **< 1000 ppm**: good air quality; no action required
- **1000 to 2500 ppm**: insufficient ventilation; increase airflow
- **> 2500 ppm**: high concentration; ventilate the cab immediately

PM4 Particle Sensor (µg/m³) - *Operational Monitoring Option - ISO 23875*

The PM4 reading represents the concentration of fine airborne particles suspended in the air. The higher the displayed value, the more fine dust is present in the air. This reading can be used to monitor in-cab air quality and the effectiveness of the filtration system. The system interprets the readings as follows:

- **< 25 µg/m³**: optimal air quality
- **25 to 50 µg/m³:** acceptable air quality
- **50 to 100 µg/m³**: filtration should be monitored
- **> 100 µg/m³**: check filter condition and schedule replacement

INSTALLATION

IMPORTANT INSTRUCTIONS – MATERIALS AND FASTENING

⚠ Use self-locking nuts or threadlocker for mechanical fastening.

⚠ Use constant tension clamps or equivalent stainless steel fittings for securing the ducting.

⚠ Galvanized ducting cannot be used for cabin systems due to health risks to the operator.

MECHANICAL INSTALLATION STEPS – EPURA G7

1 **DEFINE THE INSTALLATION PLAN**

Inspect the machine and determine the optimal location for each component before drilling or mounting. Attention should be taken to not drill in the machine's safety systems (such as ROPS and FOPS).

2 **DRILL MOUNTING HOLES**

Using the mounting bracket or template as a guide, mark and drill the holes according to the installation plan.

3 **INSTALL THE FILTER HOUSING (ALSO CONTAINING THE BLOWER) ON THE BRACKET**

Using the mounting bracket or template as a guide, mark and drill the holes according to the installation plan.

4 **ASSEMBLE THE CLEANING HEAD ON THE SYSTEM**

Follow the latch assembly procedure (see page 8).

5 **CONNECT THE POWER SUPPLY**

Wire the system to the designated power source following standard safety and polarity guidelines.

MECHANICAL INSTALLATION STEPS *(CONTINUED)*

6 INSTALL THE PASS-THROUGH PLATE

Mount the pass-through plate on the cabin HVAC plenum wall and connect the ducting between the Epura system and the plate. Sealing of the pass-through plate is critical.

7 ENSURE AIRTIGHT SEALING

Verify that the air intake and duct connections are properly sealed to prevent any air leakage.

8 ROUTE THE WIRING TO THE CABIN

Route the interface wiring through an appropriate entry point to the operator cab. At the same time, route the 4 mm rubber hose from outside the cab to the display location, where it will be connected to the control interface push-to-connect fitting.

9 INSTALL THE CABIN INTERFACE

Mount the interface module inside the cabin in an accessible location for the operator.

10 VALIDATE CABIN PRESSURE

Caution: Before beginning this step, the original recirculation system must be blocked or disabled, either mechanically or electronically.

Check the cabin pressure and carefully adjust the fan speed as needed using the blower unit's potentiometer (Slotted screwdriver 0.3x1.8mm 120mm) to reach the required pressurization level. Ensure the grommet is properly seated back in place to maintain an airtight seal. It is recommended to validate the displayed pressure reading with an approved reference measurement device (e.g., Pitot-style manometer).

LATCH FASTENING PROCEDURE

1. Install the components in the order indicated in the diagram **(Figure 1)**.
2. Use the tightening template. Using the nut, tighten until a slight pressure is achieved on the template **(Figure 2)**.

Note: The latches must be installed in a cross sequence.

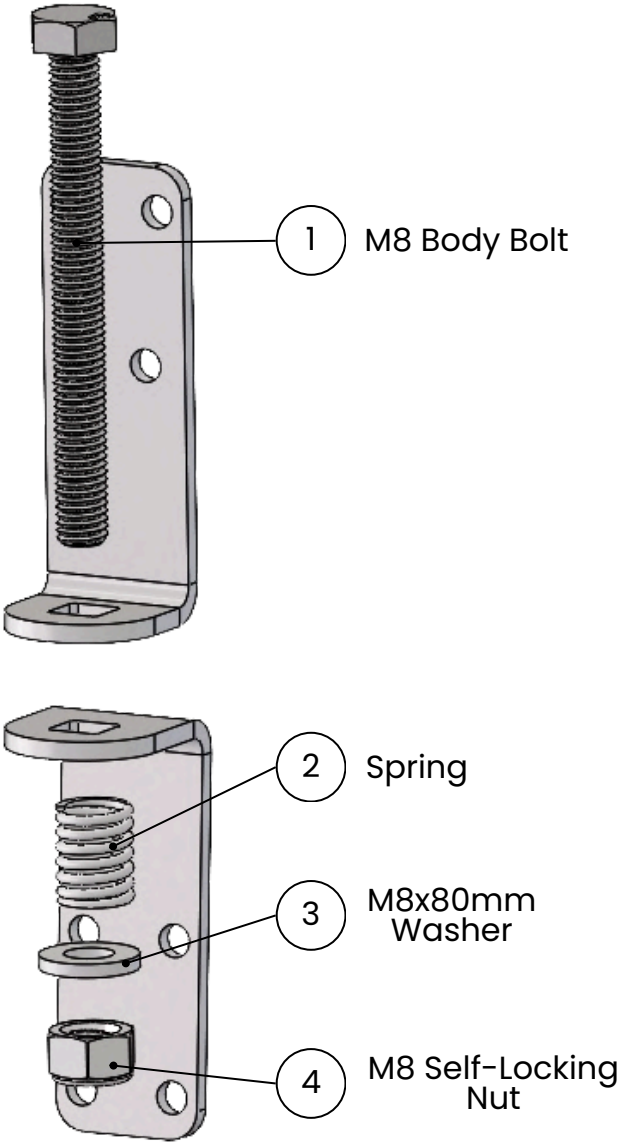


Figure 1

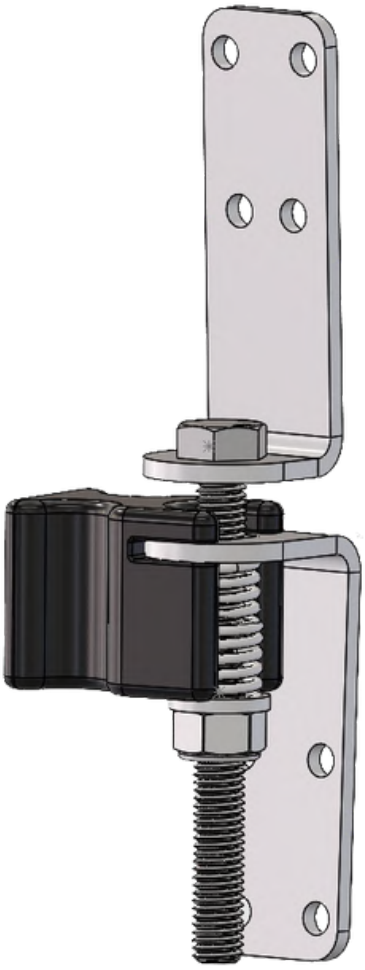
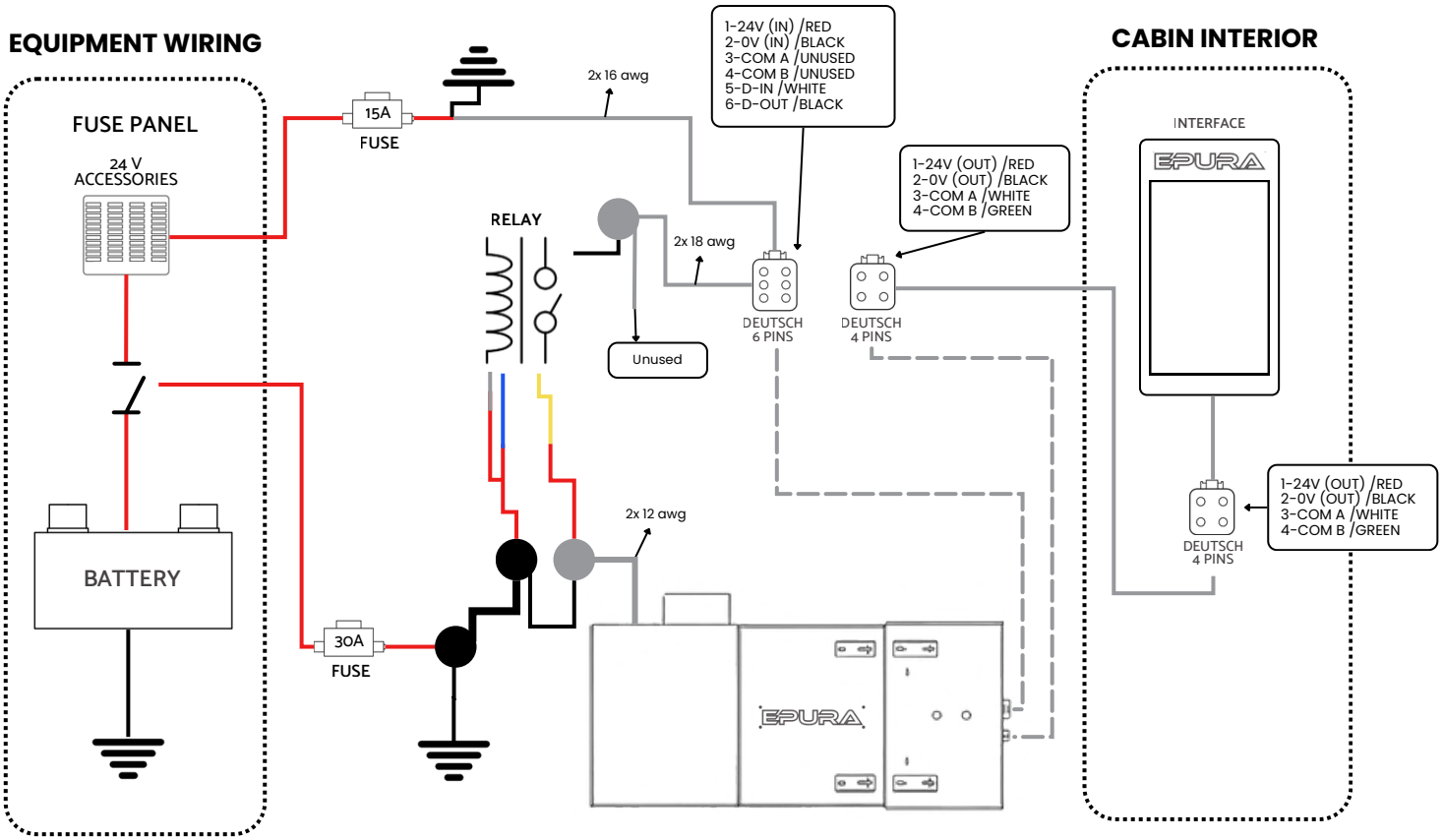


Figure 2

EPURA CABIN G7 SYSTEM - WIRING DIAGRAM



MAINTENANCE

MAINTENANCE CALENDAR

Required Action	Frequency					
	After 100 h	After 250 h	Every 500 h	Every 2,500 h	Every 15,000 h	Bi-annually
Data analysis performed by Propulsa Innovations or its authorized distributor	X					
Visual inspection of the OEM filter		X	X	X		
Visual inspection of the electrical connectors		X	X			
Visual inspection of the piping		X	X			
Visual inspection of the structure	X		X			
Replacement of the Epura filter *(end of warranty)*				X		
Preventive replacement of the fan					X	
Calibration of the pressure sensor						X
Calibration of the CO_2 monitor*						X
Particle monitor cleaning	Cleaning frequency varies depending on the environment. Refer to the environmental sensors maintenance section.					

**The CO_2 monitor performs an auto-calibration based on an assumed ambient concentration of 400 ppm.*

DATA EXTRACTION PROCEDURE

Step 1 – Select the "Export" Button

1. From the Settings menu ⚙, access the Information submenu ⓘ as shown on page 18.

2. Select the Export button 🗄 to open the data transfer function. This feature allows you to transfer the data stored in the internal flash memory to the microSD card.

Step 2 – Remove the microSD Card

1. Gently press the card to release it using the spring-loaded mechanism. The microSD card is located on the right side of the interface **(Figure 3)**.

Step 3 – Extract and Save the Data

1. Insert the card into the computer's card reader (use an adapter if required) **(Figure 4)**.

2. Copy the required files to the computer. To create a .zip archive: right-click > "Compress to Zip" (or equivalent).

3. Send the data to the distributor by attaching the .zip file to a new email using your preferred email application.

Figure 3

Figure 4

CARBON REPLACEMENT PROCEDURE

Note: *It is important to perform this procedure in a clean area to prevent contamination of the air duct.*

Step 1 - Opening the Carbon Housing
1. Unlock the latches: Release the latches on the carbon housing to free the cover.
2. Remove the cover: Remove the carbon housing cover and place it in a clean location.

Step 2 - Removing the HEPA Filter
1. Remove the existing HEPA filter from the housing. Check that the filter compartment is clear and that no debris is obstructing the filter location.

Step 3 - Replacing the Carbon
1. Completely remove the saturated carbon from the housing and dispose of it.
2. Fill the housing with new carbon until it is completely full. Distribute the carbon evenly inside the housing. Make sure the carbon is properly distributed and that the housing is adequately filled.

Step 4 - Installing the New HEPA Filter
1. Install a new HEPA filter (VF130H) in the designated location inside the housing.

Step 5 - Closing the carbon housing
1. Reinstall the carbon housing cover and close the housing latches. Make sure the cover is properly positioned and that the housing is correctly sealed to ensure an airtight closure.

FAN ADJUSTMENT PROCEDURE

Step 1 - System Power-Up
1. To activate the Epura system, turn the equipment key to the "Accessory" position and wait for the cleaning cycle to complete and the fan to start running.

Step 2 - Cabin Pressure Measurement
1. Ensure that the door and windows are tightly closed and that there are no other air leaks.
2. Note the pressure indicated on the interface, as shown on page 16. The standard internal cabin pressure gauge values are as follows: green between 0.08 and 0.20 in H_2O (0.02 to 0.05 kPa), and red below 0.08 in H_2O (0.02 kPa) or above 0.20 in H_2O (0.05 kPa).
3. Perform a cross-check using an external Pitot-type device to validate the pressure reading.

FAN ADJUSTMENT PROCEDURE *(CONTINUED)*

Step 3 - Fan Adjustment

1. Based on the pressure recorded in the previous step, increase or decrease the fan speed by adjusting the potentiometer. To access it, remove the eyelet on the fan housing. The potentiometer is located beneath the eyelet **(Figure 5)**.

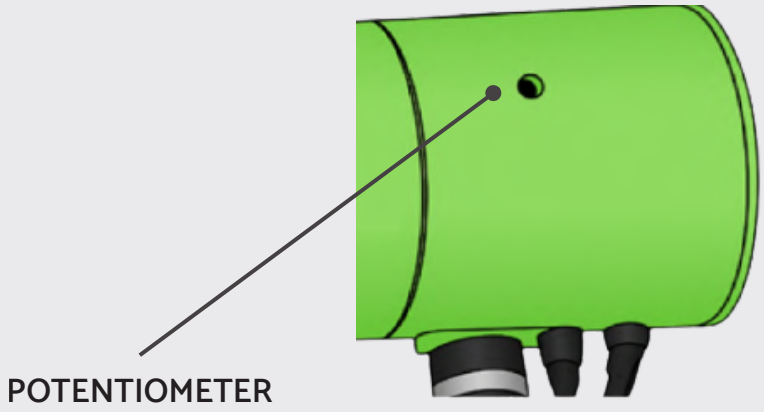


Figure 5

FUNCTIONAL VERIFICATION

1. Verify that each Epura in the installation completes its cleaning cycle as required.
2. Verify the interface by ensuring it lights up and displays each system on the screen.
3. For the Epura Cabin, verify that the fan starts at the end of the cleaning cycle.
4. For the Epura Cabin, ensure that the cabin pressure complies with current standards. Adjust if necessary.
5. If equipped with the Epura Engine, verify the engine pressure. Start the engine and reach maximum engine speed, then confirm that a pressure reading is displayed on the screen. The pressure should be positive (greater than 0) and low (typically below 3 in H_2O).

CALIBRATION AND MAINTENANCE OF ENVIRONMENTAL SENSORS

CO_2 Sensor (ppm)

Calibration of the CO_2 sensor, as well as any associated maintenance procedures, must be performed միայն by a technician accredited by Propulsa Innovations. If a calibration alert appears or if the displayed readings seem abnormal, contact Propulsa Innovations or an authorized technician.

An automatic alert may be generated if CO_2 calibration has never been performed or if it was last performed more than six months ago.

PM4 Particle Sensor (µg/m³)

The particle sensor contains an internal fan that draws in air. This fan may become clogged over time, especially in dusty environments. Cleaning must be performed at the frequency indicated in the following table:

Environment	Cleaning Frequency
Office / Clean area	Every 6 months
Workshop / Garage	Every 3 months
Dusty environment (e.g., sanding, grinding)	Monthly

Calibration of the CO_2 sensor and PM4 particle sensor, as well as any associated maintenance procedures, must be performed only by a technician accredited by Propulsa Innovations.

PRE-START CHECKS

Required Check	System Type		
	Epura Engine *(if equipped)*	Epura Cabin	Epura Cabin + Particle Monitor
Interface Powering	X	X	X
Automatic Filter Cleaning Cycle Activation	X	X	X
Filter Air Restriction Value Reading *(once the engine is started)*	X		
Cabin Pressure Display		X	X
CO_2 Level Reading		X	X
Particle Concentration Reading			X
Fan Activation*		X	X

**Directly linked to the cabin pressure. Cabin pressurization depends directly on fan activation, as the fan provides the airflow required to create positive pressure inside the cab.*

START-UP PROCEDURE

Before starting the Epura Ensure that all installation steps described in the Installation section of this manual have been correctly followed, as well as the pre-start checks

CLEANING CYCLE

Automatic Cleaning Cycle The automatic cleaning cycle is triggered when the system reaches a predefined pressure threshold. It can also optionally be scheduled at a preset time interval.

Manual Cleaning Cycle The manual cleaning cycle can be initiated from the *real-time node details menu* by pressing the *Clean* button. This menu is accessed by selecting a gauge on an Epura system from the interface home screen.

INTERFACE - MAIN MENU

The main menu (**Figure 6**) displays the key measurements, performance indicators, and system information related to the Epura unit(s).

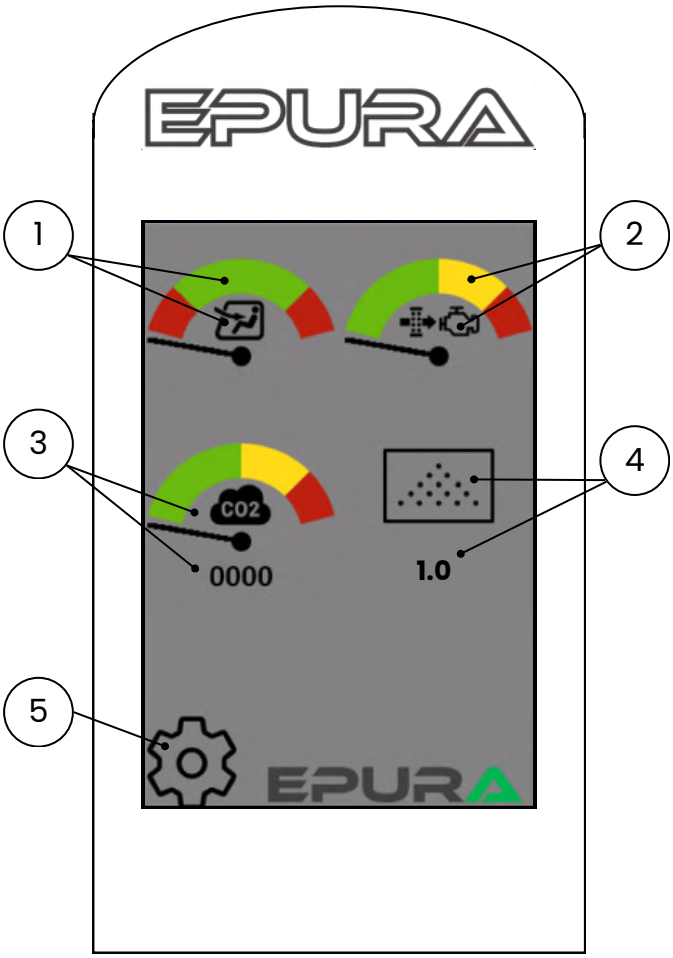


Figure 6

1. **Dial for an Epura Cabin system** - Standard values for the internal cabin pressure gauge:
   Green : 0.08 to 0.20 in H_2O (0.02 kPa to 0.05 kPa)
   Red : below 0.08 in H_2O (0.02 kPa) or above 0.20 in H_2O (0.05 kPa)

2. **Dial for an Epura Engine system** - Standard values for the air restriction gauge:
   Green: up to 9 in H_2O (2.20 kPa)
   Yellow: up to 19 in H_2O (4.70 kPa)
   Red: above 19 in H_2O (4.70 kPa)

3. **Cabin CO_2 concentration gauge** -
   Green: 360-1000PPM
   Yellow: 1000-2500PPM
   Red: 2500-5000PPM

4. **PM4 particle mass concentration in the cab** - The value is displayed in micrograms per cubic meter (µg/m³).

5. **Settings menu** - Access to the various internal parameters.

ALARM

Green circle and checkmark - The system is operating correctly.

Yellow triangle and exclamation mark - Yellow alarm indicating immediate attention required.

Red octagon - Red alarm indicating immediate cessation of operations.

Do not start the engine – Displayed during the startup of an engine system, as well as when an attempt is made to initiate a cleaning cycle while the engine is running (if equipped with Epura Engine).

ENVIRONMENTAL MONITORING SENSORS

OPERATOR TABLE – SITUATION → ACTION

Situation	Immediate Action
CO_2 green (< 1000 ppm)	No action required; normal operation
CO_2 yellow (1000–2500 ppm)	Increase ventilation; check airflow
CO_2 red (> 2500 ppm)	Evacuate the area, ventilate, investigate the source
PM4 high (> 100 µg/m³)	Check the filters; schedule replacement
CO_2 calibration alert	Notify the technician for calibration
Sensor readings at 0	Notify the technician

NORMAL REFERENCE VALUES

Measurement	Normal Range	Unit
CO_2	400 – 1000	ppm
PM4	< 50	µg/m³

FACTORY SETTINGS CONFIGURATION

Epura systems are factory-configured with standard values. However, the pressure thresholds associated with the green, yellow, and red zones, the corresponding alarms, as well as the CO_2 concentration values and, depending on the system configuration, the particle concentration values, can be adjusted. Any modification to the factory settings must be carried out by a technician accredited by Propulsa Innovations.

INTERFACE - LIVE NODE DETAILS MENU

By pressing one of the systems from the home screen, you access the detailed view **(Figure 7)**.

This screen is used for diagnostics and displays technical values intended for technicians.

It also allows a manual cleaning cycle to be triggered by pressing the *Clean* button.

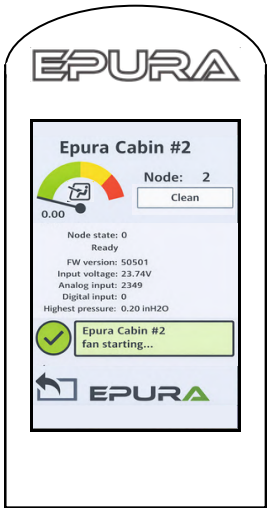


Figure 7

INTERFACE - SETTINGS MENU

The Settings menu (**Figure 8**) displays the configurable parameters of the interface and the Epura system.

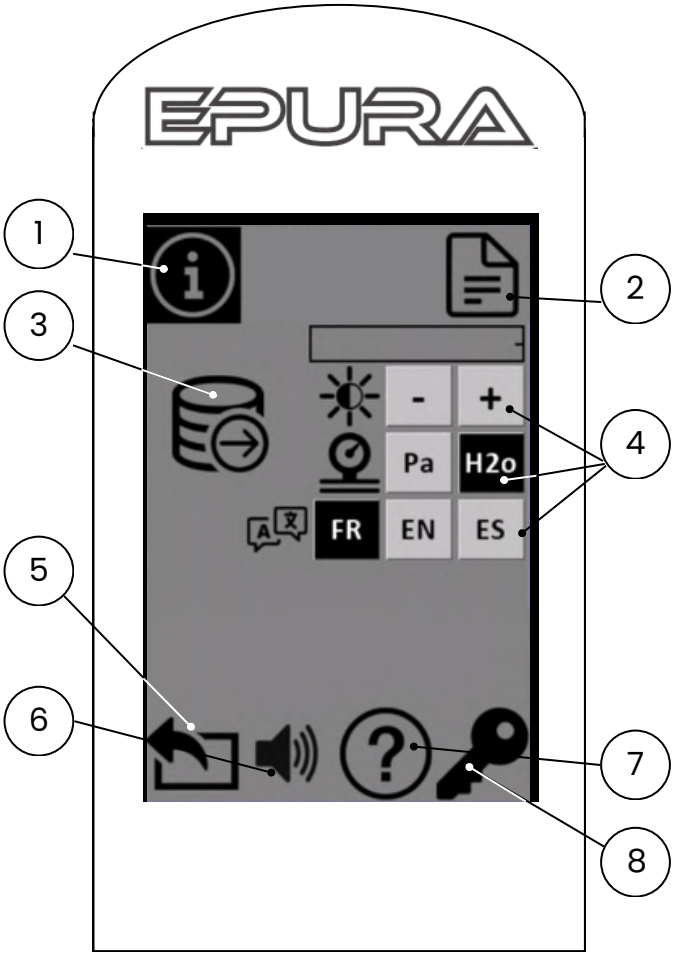


Figure 8

1. **Information Menu** – Submenu used to adjust screen brightness, select the measurement unit and language, and access the data log.
2. **System Menu** – Read-only access to the software version and the system's technical data.
3. **Export** – Allows transferring the data stored in the internal flash memory to the microSD card.
4. **General Settings** - Allows customization of certain interface settings, including:
   - screen brightness;
   - display language (French **FR**, English **EN**, Spanish **ES**);
   - pressure unit of measurement (**Pa** or **in H_2O**).
5. **Back** – Returns to the main menu.
6. **Alarm** – Allows turning off the alarm.
7. **Help** – Access to QR codes linking to instructional videos.
8. **Key** – System access level. This function is reserved for technicians.

TROUBLESHOOTING TABLE

Problem	Possible cause	Validation action	Corrective action
The Epura cleaning cycle is not functioning, and the interface does not light up.	The internal card or internal fuse of the cleaning head is damaged.	Follow the internal power supply circuit verification procedure on page 28.	Based on the diagnosis obtained, replace the fuse inside the internal card, the wiring, or the audio card.
	The external power supply circuit is faulty.	Follow the external power supply circuit verification procedure on page 27.	Based on the diagnosis obtained, replace the faulty power cable and/or the blown fuse.
The cleaning cycle of the Epura is not functioning, and the interface lights up.	The speaker in the cleaning head is damaged.	Follow the speaker verification procedure on page 30.	Replace the speaker. Contact the service department.
	The internal fuse of the cleaning head is blown.	Follow the internal power supply circuit verification procedure on page 28.	Replace the fuse.
	The internal wiring of the cleaning head is cut or damaged.	Follow the internal power supply circuit verification procedure on page 28.	Replace the damaged cable.
	The audio card is damaged.	Follow the internal power supply circuit verification procedure on page 28.	Replace the audio card.

TROUBLESHOOTING

Problem	Possible cause	Validation action	Corrective action
The Epura cleaning cycle is functioning, the interface is on, but displays nothing.	The interface wiring is damaged.	Check the condition of the interface wiring. Pay attention to signs of deterioration, such as cracks and breaks.	Replace the interface wiring.
	There is an error in the communication circuit of the Epura.	Follow the communication circuit verification procedure on page 29.	Based on the diagnosis obtained, replace the faulty component(s).
	There is corrosion present in the connectors of the interface wiring.	Perform a visual inspection of the connectors in the interface wiring. Pay attention to signs of corrosion, such as the presence of verdigris.	Clean the connectors showing signs of corrosion with the appropriate electrical contact cleaner.
	The software version installed on the audio card or interface card is not up to date.	Contact the service department.	Proceed with the installation of the appropriate software version. Contact the service department to obtain the installation procedure.

Problem	Possible cause	Validation action	Corrective action
The Epura cleaning cycle is functioning, the interface is on, but displays nothing. *(continued)*	The interface is faulty.	If the issue persists after checking the four possible causes mentioned earlier, the final cause could be the need to replace the interface. Please ensure that the other four possible causes of this issue have been thoroughly examined.	Replace the interface. Contact the service department to obtain the replacement procedure.
Dust particles are detected on the original equipment filter.	One or more leaks are present in the ducting connecting the Epura to the original equipment filter.	Perform a visual inspection of the ducting, checking for holes, loose clamps, and loose joints.	To seal the leaks detected in the ducting, use an appropriate sealing material. Tighten any loose clamps and ensure that all joints are securely fastened to prevent future leaks.
	One or more leaks are present in the housing of the original filter.	Perform a visual inspection of the cover, seal, and discharge port. Ensure that the latter is properly sealed.	Seal the discharge port as well as the cover.
	One or more leaks are present at the filter's sealing gasket.	Verify the latches.	Refer to the latch fastening procedure on page 8.

TROUBLESHOOTING

Problem	Possible cause	Validation action	Corrective action
The cleaning cycle is ineffective or very ineffective. Dust does not fall off during the cleaning cycle, and the level of air restriction remains high.	The filter has not accumulated enough dust particles.	Check the pressure on the interface when the engine is running. Refer to the interface section of the manual on page 16.	The cleaning efficiency is increased when the air restriction at the filter is higher.
	High humidity in the environment causes the filter to become moist, making the dust sticky.	Perform a visual inspection of the filter to detect any significant dust buildup. If there is clogged dust, please contact the service department for assistance.	Contact the service department to request a dust sampling at your site.
	The speaker coils are damaged.	Follow the speaker verification procedure on page 30.	Replace the speaker in the cleaning head. Contact the service department.

Problem	Possible cause	Validation action	Corrective action
The interface indicates that the cabin is not maintaining positive pressure.	The Epura interface is defective and/or out of calibration.	Perform a cross-check of the cabin pressure using a manometer. Ensure that the manometer is properly calibrated before taking measurements. Compare the obtained results with the interface readings. If the measurements differ, the pressure sensor is faulty.	Replace the pressure sensor. Refer to the electrical wiring diagram on page 9.
	The fan fuse is blown.	Check the fuse.	Replace the fuse.
	The fan speed is insufficient.	Check the cabin pressure when the fan is operating at low speed. Gradually increase the fan speed while closely monitoring the cabin pressure. An increase in pressure indicates that the issue was due to insufficient fan speed. If the pressure remains at zero, investigate other possible causes.	Adjust the fan using the adjustment screw, ensuring that the cabin pressure is set to the appropriate level. Refer to the fan adjustment procedure on page 12.

TROUBLESHOOTING

Problem	Possible cause	Validation action	Corrective action
The interface indicates that the cabin is not maintaining positive pressure. *(continued)*	The equipment's operator cabin has one or more air leaks.	Set the fan to its maximum speed and check the cabin pressure on the interface. If the pressure does not reach the target values, this indicates the presence of air leak(s).	Perform a visual inspection of the cabin. Pay particular attention to cracks, breakages, or other factors that could compromise the seal. Ensure that windows and doors are properly closed. Verify that the cabin is completely sealed.
	The fan is obstructed.	Before handling, ensure that the fan is disconnected from any electrical power source. Then, try to rotate the fan manually in the direction indicated on the blades. Confirm that the blades turn freely without any obstruction or blockage.	If the fan blades do not turn freely after manual inspection, proceed with replacing the fan. Contact the service department.

Problem	Possible cause	Validation action	Corrective action
The interface indicates that the cabin is not maintaining positive pressure. *(continued)*	The original equipment's ventilation system is set to "recirculation" mode or a similar mode, as indicated on the equipment's dashboard.	Perform a visual check of the equipment's dashboard. To verify, consult the ventilation settings displayed on the screen or the dashboard controls of the original equipment.	For more details, refer to the user guide provided with the original equipment. To disable "recirculation" mode, follow the specific instructions provided in the manual. Ensure users are trained on the correct operation of the equipment to prevent it from remaining in "recirculation" mode during use.
ENVIRONMENTAL MONITORING SENSORS			
The CO_2 concentration value is abnormally high following calibration.	The calibration was not performed correctly. The CO_2 sensor must be recalibrated.	-	Contact a technician accredited by Propulsa Innovations to perform the calibration.
The CO_2 sensor is not detected.	The interface is faulty or defective.	Contact the technician. If the CO_2 sensor is operating but is not detected, the interface is faulty.	Replace the interface.
CO_2 concentration readings are unstable (variations > ±50 ppm)	There is direct airflow on the interface or a hardware failure.	-	Protect the interface from direct airflow and check the connector.

TROUBLESHOOTING

Problem	Possible cause	Validation action	Corrective action
Particle concentration readings are abnormally low or erratic.	The particle sensor is clogged.	-	Contact a technician accredited by Propulsa Innovations to perform a cleaning cycle on the particle sensor.
The Epura interface is emitting abnormal noise.	The particle sensor's internal fan is obstructed.	-	Contact a technician accredited by Propulsa Innovations to perform a cleaning cycle on the particle sensor.
The particle sensor's PM4 values are no longer responding to environmental changes.	The particle sensor is clogged.	-	Contact a technician accredited by Propulsa Innovations to perform a cleaning cycle on the particle sensor.

EXTERNAL POWER SUPPLY CIRCUIT VERIFICATION

REQUIRED MATERIAL

- Multimeter

Figure 9

PROCEDURE

Step 1 - System Power Supply

1. Disconnect the Epura 6-pin power cable **(Figure 10)**.
2. Set the multimeter to 200 VDC.
3. Turn the system ON.
4. Connect the multimeter with the red probe on connector 1 and the black probe on connector 2.
5. Record the measured value:

- Minimum acceptable: 22 V
- Maximum acceptable: 26 V

6. Turn the system OFF.
7. Reconnect the power cable.

Figure 10

DIAGNOSTIC

If a fuse is blown according to the following diagnostic table, it is essential to identify the cause in order to apply the appropriate corrective measures.

	Normal	**Main fuse blown**	**Internal fuse of the Epura Cabin blown**	**Internal fuse of the Epura Engine blown**
Step 1	22-26 Vdc	0 Vdc	22-26 Vdc	22-26 Vdc
Step 2	22-26 Vdc	0 Vdc	0 Vdc	22-26 Vdc
Step 3	22-26 Vdc	0 Vdc	0 Vdc	0 Vdc

INTERNAL POWER SUPPLY CIRCUIT VERIFICATION

REQUIRED MATERIAL

- Multimeter
- Phillips #3 screwdriver
- Torque screwdriver
- Phillips #3 screwdriver bit

Figure 28

PROCEDURE

Step 1 - Opening the Cleaning Head

1. Disconnect the cables from the Epura.
2. Remove the 12 screws from the cover.
3. Carefully remove the cover, taking care not to damage the internal components.

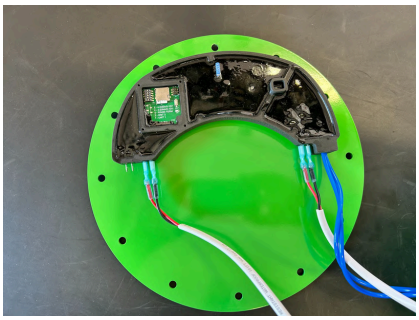


Figure 29
Connector Location - V2E Board

Step 2 - Checking the Audio Board

1. Turn on the power supply (Figure 29).
2. Check the fuse.
3. Check if the LED lights up.
4. Once completed, reinstall it, ensuring that the sealing gasket is properly in place.

Step 3 - Closing the Cleaning Head

1. Carefully reinsert the cover, taking care not to damage the internal components.
2. Replace the 12 screws for the cover.
3. Using the torque screwdriver, apply a torque of 20 lbs/in.
4. Reconnect the Epura cables.

DIAGNOSTIC

	Normal	Abnormal	Intervention
Step 2	LED lights up.	LED light remains off.	Replace the audio board.

COMMUNICATION CIRCUIT VERIFICATION

A communication issue is indicated by unusual interface behavior (incorrect display, missing data, slow response, or screen freeze). The objective is to identify and replace a faulty communication cable between the interface and the Epura system(s).

REQUIRED MATERIAL

- Interface
- Connection cable

Step 1 – Prepare a Known-Good Reference Cable

1. Use a cable whose functionality has been confirmed. This cable will be used to test communication between the interface and each Epura system.

Step 2 – Test Each System Individually

1. Connect the interface to the first Epura system using the reference cable.

2. Observe and note the interface behavior. If, after substitution, the interface operates normally, the original cable is suspect. Proceed to Step 3 to confirm.

3. Repeat the procedure for each Epura system, one at a time.

Step 3 – Identify the Faulty Cable

1. Reinstall the original cable without changing any other parameters.

- *If the anomalies reappear*: the original cable is confirmed defective. Proceed to Step 5.
- *If not*: move on to the next cable/segment (return to Step 2).

Step 4 – Networks with Multiple Epura Systems

1. Repeat steps 2 and 3 for each connection (one cable at a time) until the faulty cable or cables are identified.

Step 5 – Replacement

1. Replace any cable confirmed to be defective with a new cable or with the reference cable. Secure the connectors and ensure proper locking.

SPEAKER VERIFICATION

REQUIRED MATERIAL

- Torque Screwdriver.
- Phillips #3 Screwdriver Bit.
- Phillips #3 Screwdriver.
- Multimeter.

Figure 30

PROCEDURE

Step 1 - Opening the Cleaning Head

1. Disconnect the cables from the Epura.
2. Remove the 12 screws from the cover.
3. Carefully remove the cover, taking care not to damage the internal components.

Step 2 - Disconnecting the Speaker

1. Disconnect the connectors on each side of the speaker.

Step 3 - Check Coil Resistance

1. Set the multimeter to 200 Ω.
2. Connect the multimeter so that the red probe is on the red terminal and the black probe is on the black terminal **(Figure 31)**.
3. Verify the reading :

- The minimum acceptable value is 1.8 Ω.
- The maximum acceptable value is 2.2 Ω.

4. Repeat steps 3.1 to 3.3 for both coils.

Figure 31

Step 4 - Reconnect the Speaker

1. Reconnect all wires according to your notes/photos.

SPEAKER VERIFICATION *(CONTINUED)*

Step 5 - Closing the Cleaning Head

1. Carefully reinsert the cover, taking care not to damage the internal components.

2. Using the screwdriver, secure the 12 screws for the cover.

3. Using the torque screwdriver, apply a torque of 20 lbs/in.

4. Reconnect the cables to the Epura.

DIAGNOSTIC

	Normal	**Abnormal**	**Intervention**
Step 2	Protective sheath intact.	Damaged protective sheath.	Replace damaged cables.
Step 3	Reading on the multimeter between 1.8 and 2.2 Ω.	Reading on the multimeter: OL	Replace the speaker.

WARRANTY

LIMITED WARRANTY – PROPULSA INNOVATIONS

THIS WARRANTY WILL BE VOID IF ANY COMPONENT OF THE EPURA SYSTEM HAS BEEN OPENED OR OTHERWISE MODIFIED WITHOUT PRIOR WRITTEN APPROVAL FROM PROPULSA INNOVATIONS.

THE ORIGINAL FILTRATION AND PROTECTION SYSTEMS OF THE EQUIPMENT MUST REMAIN INSTALLED AND BE MAINTAINED AND OPERATED IN ACCORDANCE WITH THE EQUIPMENT'S OFFICIAL OPERATION MANUAL. ALL ALERTS AND NOTIFICATIONS FROM THE ORIGINAL SYSTEM MUST BE ACKNOWLEDGED AND ADDRESSED APPROPRIATELY.

What is covered :

All EPURA products supplied by Propulsa Innovations are covered by a limited warranty against defects in materials or workmanship. To make this warranty effective, installation of the system must be made accordingly to PROPULSA INNOVATION's recommendations. Propulsa Innovations reserves the right to verify the validity of any warranty claim and may request supporting documentation or inspection prior to authorizing service or replacement.

If a Propulsa Innovations product fails due to a verified defect in materials or workmanship during the applicable limited warranty period, Propulsa Innovations will replace the defective product, subject to the conditions outlined in this limited warranty.

This warranty is non-transferable and applies exclusively to the original purchaser.

Warranty Period :

EPURA products are covered by a limited warranty for a period of three (3) years from the date of approval of the commissioning report. This limited warranty does **not** cover:

- EPURA filters
- failures resulting from incorrect or non-approved uses
- damage caused by improper installation (including installations not performed by an installer assigned by Propulsa Innovations), incorrect or abnormal use, misuse, negligence, accidents, or unauthorized repair

- failures due to any causes not directly related to a defect in materials or workmanship
- costs associated with removal or reinstallation of any component
- any product that has been altered or modified in any way, including unauthorized repair attempts (such attempts will VOID this limited warranty); and
- use of any service or repair parts other than those provided by Propulsa Innovations and/or its authorized partners.

Filters warranty:

The filters of the EPURA systems are covered by a limited warranty based on their operating time and utilization:

- G5 filters: 5,000 hours of effective cleaning cycles.
- G7 filters: 2,500 hours of positive pressure in the cabin.

If filters fail to reach these milestones, they will be replaced following a thorough analysis of the operating data. Systems with active charcoal are excluded from this warranty period.

Propulsa Innovations' Responsibility:

In the event that a defect in materials or workmanship is identified during the warranty period, and is not the result of misuse or other excluded causes, Propulsa Innovations will, at its sole discretion, provide new replacement parts or approved repair parts, or assembled components necessary to correct the defect. Propulsa Innovations reserves the right to refund the purchase price instead of providing a replacement or repair. The replacement product will either be shipped directly to the customer or made available for pickup at a local dealer designated by Propulsa Innovations, at Propulsa Innovations' discretion. Items replaced under this warranty become the property of Propulsa Innovations and must be returned in their original condition.

WARRANTY

User Responsibility:

To initiate a warranty claim, please contact Propulsa Innovations Technical Support at 1-418-579-2001 or info@propulsa.ca as soon as an issue is identified. Our team will assess the situation and determine the appropriate next steps, which may include repair or replacement.

In the case of a replacement, the EPURA system must be returned to Propulsa Innovations. Shipping costs for the return are the responsibility of the customer.

EPURA DIMENSION

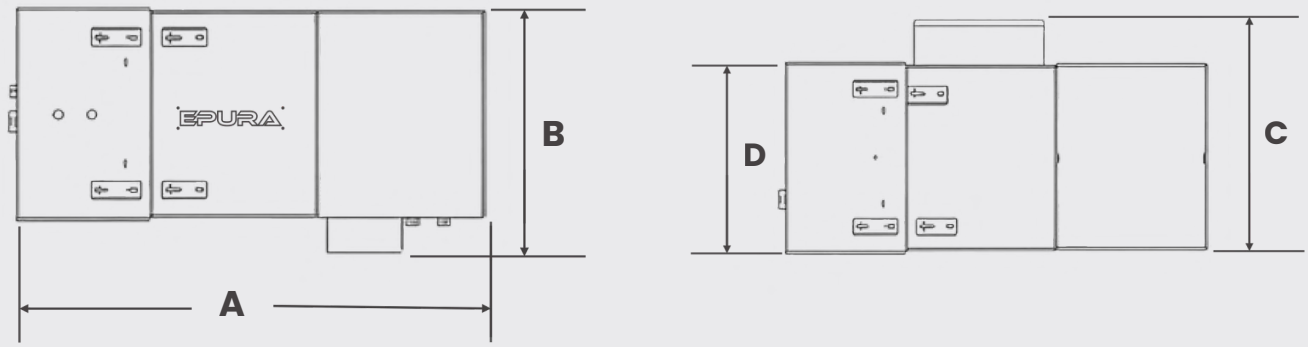


Figure 15

DIMENSIONS AND WEIGHT

A 26 in – 660mm
B 12 in – 305mm
C 13.5 in – 343mm
D 10 in – 250mm

Weight 40 lb – 18 kg

FAN PERFORMANCE

Model	Voltage (Volt)	Max pressure in Pa (inH_2O)	Max flow in m^3/h (CFM)	Intensity (Ampere)
EPU-VENT24V-100	24	5723 (23)	323 (190)	30 A

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INNOVATIONS

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