CLEANCAB
FILTRATION SYSTEMS
"Keeping the operator clean & cool"

CABIN PRESSURE FAULTS

Technician Troubleshooting Procedure

This procedure is designed to help technicians diagnose cabin pressure problems where the cabin pressure is either **too high** or **takes too long to reduce below 200 Pa**.

FAULT 1 – CABIN PRESSURE TOO HIGH

Symptom

Cabin pressure becomes excessively high when the machine's HVAC system is operating at high fan speed.

Excessive cabin pressure can indicate that the HVAC system is restricting the amount of air that can escape from the cabin or that the HVAC recirculation system is not flowing correctly.

Follow the checks below **in order**.

NOTE. If the pressure still reads high with the door open the fault will be in the sensor tube or sensor filter. The pressure should drop to 0 quickly after the door is opened. Check the tube for crushing & the filter condition. Note. To quickly test for this fault, remove the sensor tube from the sensor box with the door open the reading should go back to 0 if it does the fault is in the senor tube or filter.

STEP 1 – Check the HVAC Recirculation Filter

A blocked or heavily restricted HVAC recirculation filter is one of the first things to check.

Test

1. Turn the HVAC system on.
2. Temporarily remove the HVAC recirculation filter.
3. Run the HVAC system at high fan speed.
4. Check the cabin pressure.

If cabin pressure returns to normal:

The recirculation filter is restricting airflow.

Replace the recirculation filter.

Technician Hint

A quick way to check a filter is to hold it up towards a strong light or the sun.

- If you can clearly see light through the filter, the filter may still be serviceable.
- If very little or no light can be seen through the filter, the filter is likely heavily restricted and should be replaced.

Note: This is only a quick field check. A filter can still be restrictive even when some light can be seen through it.

STEP 2 – Check if a HEPA Recirculation Filter Has Been Fitted

Some sites replace the machine's original HVAC recirculation filter with a HEPA filter.

A HEPA filter can have significantly higher airflow resistance than the original OEM filter. Depending on the filter and operating conditions, this can result in substantially less airflow through the HVAC recirculation circuit.

This can contribute to excessive cabin pressure when the HVAC fan is operating at high speed.

If a HEPA recirculation filter is required onsite

Cleancab recommends using a separate powered cabin recirculation system rather than replacing the machine's OEM HVAC recirculation filter with a highly restrictive HEPA filter.

A separate powered recirculation system allows the cabin filtration requirements to be achieved without placing excessive restriction on the machine's HVAC system.

STEP 3 – Check the HVAC System Design

If removing the HVAC recirculation filter does **not** resolve the excessive pressure, the problem may be related to the design of the machine's HVAC system.

Some HVAC systems restrict the recirculation airflow and are designed to draw additional air from outside the cabin.

When a Cleancab pressuriser is installed, this can result in the HVAC system and Cleancab pressuriser supplying additional air to a cabin that has limited means of allowing air to escape.

Possible result

The cabin pressure may become excessive, particularly when the HVAC system is operating at high fan speed.

Corrective action

If the HVAC design is causing excessive cabin pressure, the HVAC system may require modification to allow adequate airflow through the recirculation circuit or provide another suitable method of controlling the airflow.

Do not modify the HVAC system without first confirming the cause of the excessive pressure.

STEP 4 – Check Whether the Cabin Is Too Well Sealed

If the above checks do not identify the problem, check whether the cabin itself is excessively well sealed.

A very well-sealed cabin can make it difficult for excess air to escape.

Test

1. Turn the machine's HVAC system **OFF**.
2. Operate the Cleancab pressuriser.
3. Allow the Cleancab system to reduce the fan speed to its minimum setting of approximately **9%**.
4. Observe the cabin pressure.

If the cabin pressure remains too high

If the cabin pressure remains around **150–200 Pa or higher** while the Cleancab fan is already operating at approximately 9%, the cabin may have insufficient natural leakage.

In this situation, switching the HVAC system on may cause the cabin pressure to increase further.

Corrective action

The cabin may require a controlled additional leakage path to allow excess air to escape and maintain the desired operating pressure.

Do not create a cabin leak until the previous checks have been completed and excessive cabin sealing has been confirmed as the likely cause.

FAULT 2 – CABIN PRESSURE TAKES TOO LONG TO DROP BELOW 200 Pa

Symptom

The cabin pressure remains above **200 Pa** for an extended period.

The Cleancab system may remain in a high-pressure alarm condition because the pressure has not dropped below the alarm threshold.

This fault is generally related to the same conditions described under **Fault 1 – Cabin Pressure Too High**.

First check for the causes listed above, particularly:

- Restricted HVAC recirculation filter
- HEPA filter fitted in place of the OEM recirculation filter
- HVAC system airflow restrictions
- HVAC system design
- Cabin being excessively well sealed

ADJUSTING THE CLEANCAB APP SETTINGS

If the cabin pressure is correct during normal operation but takes too long to reduce below 200 Pa, the Cleancab App settings can be adjusted to make the system respond more quickly.

Before changing any settings

Take a screenshot of the existing settings.

This allows the original settings to be restored if required.

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1. Reduce the startup pause time

Open the Cleancab App and log in.

Go to:

Settings → Startup pause time

Change the delay time from approximately:

30 seconds → 5 seconds

This allows the Cleancab system to begin reducing the fan output sooner, rather than waiting for the full delay period.

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2. Reduce the Hold Time

Go to:

Settings → Hold Time

If the hold time is currently around 15 seconds, reduce it to approximately:

15 seconds → 5 seconds

This allows the system to progress through the pressure reduction sequence more quickly.

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3. Increase the Step Size

Go to:

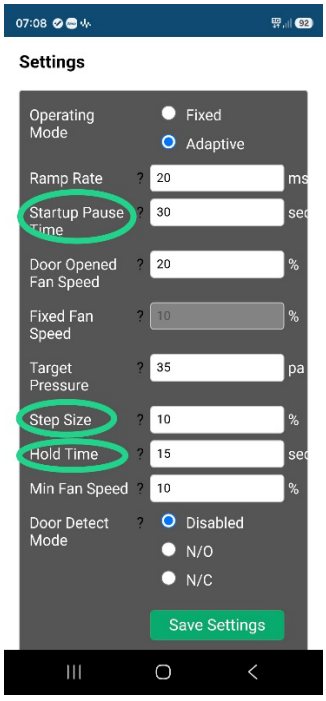
Settings → Step Size

Change:

10% → 15%

This provides largerr fan-speed adjustments as the system reduces cabin pressure.

This can help the system reach the required pressure range more quickly and return the pressure indication from the **red alarm condition to green**.



IMPORTANT – USE THE SETTINGS INFORMATION

The Cleancab App provides a **?** symbol next to the adjustable settings.

Tap the ? symbol to see an explanation of what each setting controls before making adjustments.

TECHNICIAN TROUBLESHOOTING SUMMARY

When investigating excessive cabin pressure, follow this sequence:

1. Check HVAC recirculation filter
↓
2. Temporarily remove the filter and retest
↓
3. Check whether a HEPA filter has been fitted to the HVAC recirculation system
↓
4. Check HVAC airflow/restrictions and HVAC design
↓
5. Test the Cleancab pressuriser with the HVAC system OFF
↓
6. Check whether cabin pressure remains excessive at the minimum Cleancab fan speed
↓
7. If required, investigate whether the cabin is excessively sealed
↓
8. If the physical causes are satisfactory, adjust the Cleancab App settings to improve pressure response

Remember

The objective is **not simply to reduce cabin pressure**.

The objective is to maintain the cabin at the required positive pressure while providing sufficient clean, filtered air and allowing the HVAC system to operate correctly.