ece®
environmental control equipment

AHU Access Doors

How To Guides

40+

AHU Access Doors

Figure 1. Typical ECE air handling unit with compression latch-hinge access doors. Door arrangements may be right- or left-hinged and may include removable, compression-adjustable and pressure-relief variants.

Video Duration: 7 minutes 47 seconds
Applies to: Compression Latch-Hinge Access Doors (Right/Left Hinged, Removable, With or Without Pressure Relief)
Document Status: Controlled technical instruction

1. Purpose

This controlled instruction explains the requirements for AHU Access Doors – Hinged, Removable, Compression & Pressure Relief.

2. Important AHU Information

- ECE AHUs are bespoke. Do not assume that information, access arrangements, terminal numbers, wiring colours, component selections or controls logic from another AHU applies to the AHU being reviewed or worked on.
- The certified drawing and current project-specific documentation are the primary sources for the AHU arrangement and component technical information.
- Where component technical information is checked, it must be checked against the certified drawing and related manufacturer data for the exact AHU.

IMPORTANT: Always use the project-specific asset information, certified drawing, relevant ECE product-range IOM, quotation scope and component information for the exact AHU being reviewed or worked on.

3. Safety and Competency Requirements

- Only competent and authorised personnel should carry out this procedure. The required competency depends on the task being undertaken.
- Before starting, confirm the correct AHU, asset tag, certified drawing, relevant ECE product-range IOM and any applicable wiring diagram, controls description, component technical information or manufacturer data sheet.
- Follow all site-specific RAMS, permits, PPE, isolation and access requirements.
- Where the task requires physical access to the AHU, do not open access doors, remove panels or work inside the AHU unless fans and relevant equipment are isolated, stationary and safe to access.
- Do not bypass safety devices, interlocks, alarms or controls.
- Stop and escalate if the AHU identity, current technical information, safe isolation, access condition or required competency cannot be confirmed.

Figure 2. Site personnel in PPE reviewing the certified drawing. Confirm AHU identity, asset tag and document revision before opening any access door.

Task-specific requirements:

- Before opening access doors or removing panels, select Maintenance Mode where applicable, allow fans to ramp down fully, confirm airflow has stopped, isolate relevant equipment and apply lock-off/tag-out where required by site procedure.
- Do not open AHU access doors while fans are rotating.
- Use suitable PPE and manual-handling controls for the component being removed, cleaned, replaced, inspected or tested.
- Do not leave tools, fixings, debris, packaging or loose items inside the AHU.
- Stop and escalate if safe isolation cannot be confirmed, the component does not match the certified drawing, or the access/withdrawal route is obstructed.

4. Before You Begin

- Access the AHU asset information via the ECE Client Portal using the asset tag or 18-digit reference number where available.
- Confirm the AHU reference, project name, location and latest document revision.
- Review the certified drawing, relevant ECE product-range IOM, quotation scope, component schedule and manufacturer data sheets where applicable.
- Review the wiring diagram, controls description and commissioning information where the task involves electrical, controls or BMS interfaces.
- Confirm the required personnel, tools, PPE, access equipment, permits and isolation method before starting work.

Figure 3. Asset Tag plate carrying the unique 18-digit reference number used to retrieve AHU technical information from the ECE Client Portal.

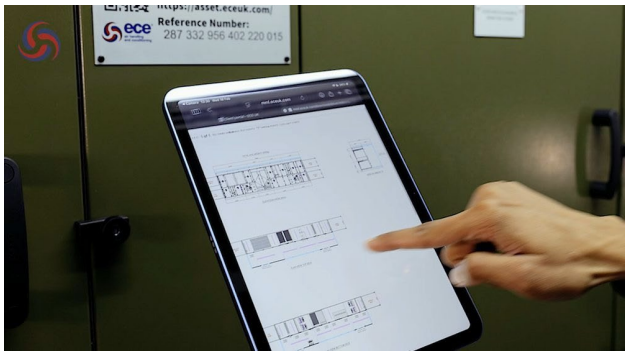

Figure 3b. AHU technical information opened on a device via the Asset Tag link, used to confirm AHU reference, drawing revision and fan information before starting work.

5. Required Tools, Equipment, PPE and Information

- Project-specific certified drawing and relevant ECE product-range IOM
- Task-specific hand tools
- Replacement components or spares where applicable
- PPE required by site procedure
- Cleaning materials or seal inspection tools where applicable
- Maintenance record or site log

6. Procedure

This booklet accompanies the video demonstration of:

- Door hinged left and right
- Door removal and refitting
- Eliminating door leaks through compression adjustment
- Pressure relief operation
- Safe isolation requirements before opening

Specifications referenced from IOM – Compression Latch-Hinge.

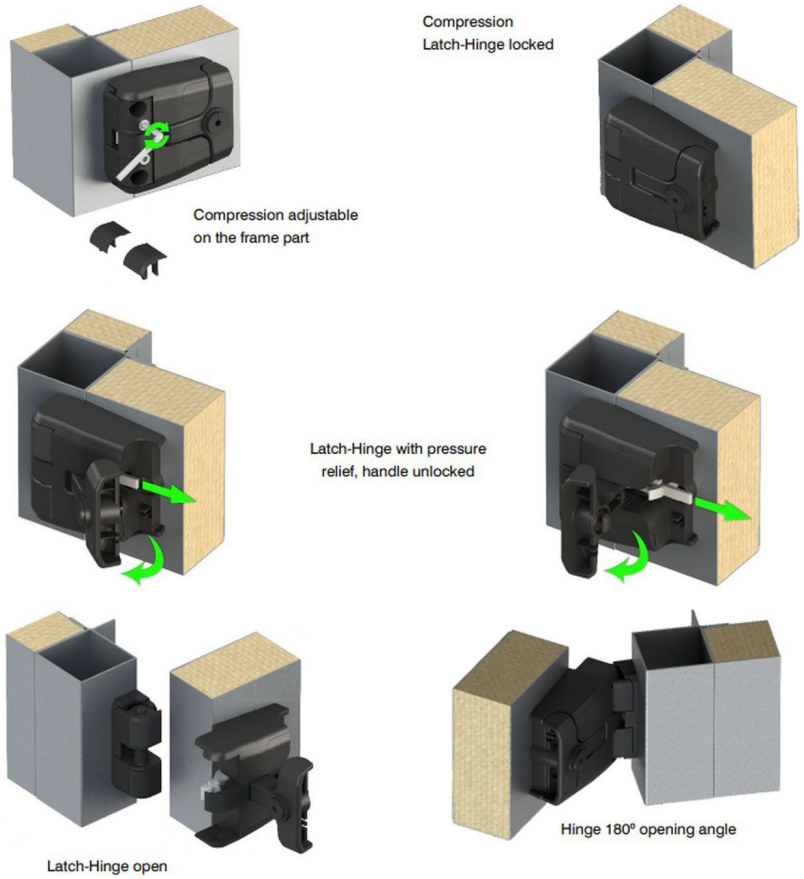

Figure 4. Compression latch-hinge reference (IOM): compression adjustable on the frame part, latch-hinge with pressure relief (handle unlocked), latch-hinge open, and 180° hinge opening angle.

Before opening any AHU access door:

- Select Maintenance Mode via the control panel (if applicable).
- Allow fans to ramp down fully.
- Confirm airflow has completely stopped.
- Isolate fans electrically using local isolators.
- Apply lock-off/tag-out if required by site procedure.

WARNING: Do not open access doors while fans are rotating.

WARNING: White Cap on Latch: If a white cap is fitted to the latch, this indicates the door is locked and must not be opened.

6.1 Door Hinged Left and Right

Compression latch-hinges are available in both left-hand and right-hand configurations.

They feature:

- 180° opening angle
- Adjustable compression (approx. 5 mm)
- Adjustable latch alignment (approx. 3 mm)
- Removable door capability

6.2 Opening the Door

- Confirm unit is isolated (see Section 1).
- Check latch is not fitted with white lock cap.
- Rotate compression latch handle to unlocked position.
- Pull door open using integrated handle.
- Open fully to hinge stop (up to 180°).

Ensure door does not swing freely into adjacent panels.

Figure 6. Moving pressure relief latch to the unlocked position.

Figure 6b. Opening the door fully to its stop.

6.3 Closing the Door

- Bring door evenly back into frame.
- Confirm seal contacts uniformly around perimeter.
- Rotate compression latch handle to locked position.
- Confirm latch fully engages.

Compression should feel firm but not excessive.

6.4 Checking Compression Seal

Compression latch provides approximately 5 mm of compression.

Check:

- Door sits flush with surrounding panels.
- Gasket seal evenly compressed.
- No visible light gaps.
- Even resistance when closing.

Figure 7. Checking the gasket seal compression around the door perimeter for uniform contact.

7. Door Removal (Completely Removable Access)

> **WARNING: IOM Requirement: “When working internal to the AHU you must remove the access doors completely to stop personnel getting locked inside.”**

7.1 Removing the Door

- Ensure full isolation completed.
- Open door fully (180°).
- Unlatch compression handles on both sides.
- Lift door vertically to disengage hinge pins.
- Remove door from frame.
- Store safely in secure position.

Avoid twisting door during removal.

Figure 8. Lifting the door vertically from the frame.

7.2 Inspecting Hinge Pins and Latch

Inspect for:

- Excessive hinge pin wear.
- Cracks in hinge housing.
- Loose hinge fixings.
- Damaged compression cam.
- Seal damage.

Replace components if wear is evident.

7.3 Refitting the Door

- Align hinge barrels with frame hinges.
- Lower door evenly into hinge seats.
- Confirm full engagement of hinge pins.
- Close door carefully.
- Engage compression latches.
- Confirm correct alignment and seal compression.

Figure 9. Refitting the door: aligning the hinge barrels and lowering evenly into the hinge seats.

8 Door Leaks Eliminated Through Compression Adjustment

Compression latch allows fine alignment adjustment (approx. 3 mm on frame part) .

Figure 10. Removing the compression cap cover.

8.1 Identifying Minor Leakage

Signs of door leakage:

- Air noise at panel edge.
- Visible light gap.
- Uneven seal compression.
- Smoke pen movement at door perimeter.

8.2 Adjusting Compression

- Open door.
- Access compression adjustment on frame part (as shown in IOM diagram) .
- Adjust latch cam incrementally.
- Close and recheck seal.

Figure 11. Adjusting the compression on the latch cam incrementally before re-checking the seal.

Do not over-compress as this may:

- Distort panel
- Damage gasket
- Increase closing force excessively

8.3 Smoke Pen Demonstration (Before/After)

- With unit running (under controlled conditions).
- Apply smoke pen along door perimeter.
- Observe inward or outward leakage.
- Adjust compression.
- Repeat smoke test.
- Confirm no visible leakage.

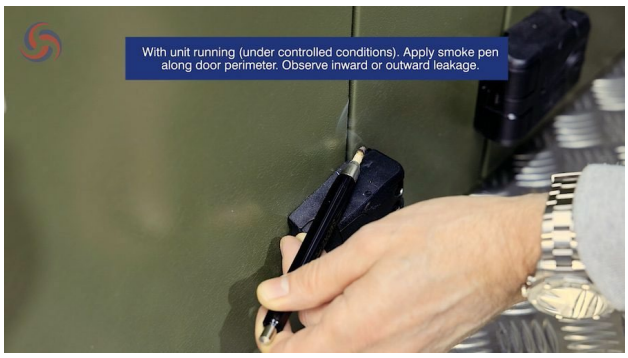

Figure 12. Applying smoke pen along the door perimeter to observe inward or outward leakage (controlled conditions).

Figure 13. Repeating the smoke test after compression adjustment to confirm no visible leakage remains.

9 Pressure Relief Function

Some latch-hinges are fitted with pressure relief capability.

9.1 Purpose

Pressure relief prevents sudden force on door if opened under positive pressure conditions.

9.2 Demonstration (Controlled)

If door is opened unsafely under positive pressure:

- Latch may partially relieve pressure.
- Door may move abruptly.

> **WARNING: However: This is not a safety substitute for isolation.**

9.3 Mandatory Rule

Always:

- Select Maintenance Mode.
- Allow fans to stop.
- Confirm zero airflow.
- Electrically isolate.
- Apply lock-off/tag-out.

Never rely on pressure relief to safely open a live unit.

10 White Cap Indicator – Door Locked

If latch shows a white cap:

- Door is locked.
- Do not attempt to open.
- Confirm authorisation before removing lock.

Figure 14. Compression latch showing white cap indicator (door locked). Do not attempt to open until authorisation to remove the lock has been confirmed.

11. Verification / Functional Test

- Component is correctly refitted, seated, latched, sealed or secured.
- Access doors, panels and latches are fully closed and secure.
- No tools, fixings, packaging or loose items remain inside the AHU.
- AHU is returned to normal operating condition and no abnormal noise, vibration, leakage or alarm condition is present.
- Door opens, closes, seals and latches correctly; removable door refits securely.

Additional Verification Notes

- Door flush with adjacent panels.
- All latches fully engaged.
- Even gasket compression.
- No visible gaps.
- Smoke pen test satisfactory.
- No abnormal vibration during restart.

12. Stop-and-Escalate Conditions

STOP: Stop work or stop the review and escalate to the responsible ECE/project technical contact if any of the following apply:

- The AHU reference, asset tag, certified drawing or document revision cannot be confirmed.
- The information found does not match the physical AHU, installed component or project scope.
- Safe access, safe isolation or required site permits cannot be confirmed.
- A required component technical detail, wiring detail, control signal or manufacturer data sheet is missing.
- The task would block or compromise AHU maintenance access, withdrawal routes, isolators, terminal boxes or emergency access.
- Access cannot be obtained safely.
- Door, panel, latch, rail or component condition is damaged or does not match the certified drawing.
- The replacement component does not match the original component or asset information.
- The white lock cap is fitted or door security status is unclear.
- A pressure relief door or latch does not operate freely or cannot seal correctly.

13. Final Checks

- Confirm the AHU, component, wiring, control function or approval item has been left in the intended safe and complete condition.
- Confirm access doors, panels, terminal boxes, covers, guards, isolators and labels are secure where applicable.
- Confirm no tools, temporary materials, loose items, debris or packaging remain in or around the AHU.
- Confirm any alarms, faults, abnormal indications or unresolved comments have been recorded and escalated.

14. Records to Complete

Record enough evidence to prove that the task, review or test has been completed using the correct AHU information and by competent personnel.

- AHU isolated and made safe
- Component removed/refitted or adjusted
- Final physical inspection completed
- Operational check completed
- Maintenance record updated

Evidence item	Required entry
AHU reference / asset tag	To be completed
Certified drawing revision / document revision	To be completed
Person completing task / review	To be completed
Date completed	To be completed
Result / status	Pass / fail / comment / not applicable
Outstanding actions	To be completed or marked none

15. Completion Checklist

[ ] Correct AHU and guide number confirmed.
[ ] Latest asset information and certified drawing checked.
[ ] Relevant IOM, wiring diagram, controls description or manufacturer data checked where applicable.
[ ] Safety and competency requirements confirmed.
[ ] Procedure completed or approval review completed.
[ ] Verification / functional test completed.
[ ] Stop-and-escalate conditions checked and no unresolved stop condition remains.
[ ] Records to Complete section completed.
[ ] AHU returned to safe condition or review status recorded.

16. Task-Specific Completion Checks

[ ] Maintenance Mode selected
[ ] Fans stopped and isolated
[ ] White cap checked (if present)
[ ] Door opened safely
[ ] Door removed (if required)
[ ] Hinges inspected
[ ] Compression adjusted
[ ] Smoke test completed
[ ] Door refitted correctly
[ ] Latches secured
[ ] Unit restarted safely

17. Learning Outcome

After completing this guide, the user should be able to complete or review AHU Access Doors – Hinged, Removable, Compression & Pressure Relief using the correct AHU information, with clear safety controls, defined verification, completion records and escalation criteria.