

Title: Component Maintenance Manual

Component: Pressure Control Valve – P/N 21-32-004

Revision: Rev. 3 – Effective: 10 Oct 2024

Section 1 – General Description

The Pressure Control Valve (PCV) regulates differential pressure between the cabin and ambient atmosphere.

It consists of:

- Housing assembly
- Electric actuator
- Control circuit
- Position feedback sensor

The valve opens and closes automatically based on pressure feedback from cabin pressure transducers.

Section 2 – Operating Principle

The actuator receives electrical input from the Cabin Pressure Controller (CPC). When the cabin altitude exceeds 8000 ft, the CPC commands the PCV to modulate airflow to maintain target pressure differential ($\Delta P = 8.2$ psi).

Section 3 – Maintenance Tasks

Task No	Interval	Action
CMM-21-32-01	1200 FH	Perform leak test
CMM-21-32-02	2400 FH	Replace actuator seals
CMM-21-32-03	4800 FH	Full overhaul and calibration

Procedure Example (CMM-21-32-02):

1. Disconnect wiring harness.
2. Remove valve assembly.

3. Replace seals with approved kit P/N 21-32-004K.
4. Torque fasteners per Spec 20-32-10.
5. Perform bench test before installation.

Section 4 – Testing and Calibration

Use pneumatic test bench with airflow of 5–10 SCFM.

Measure leak rate — must not exceed 0.1 SCFM at 5 psi.

Calibration data logged via test software CMC-TestBench v2.3.

Section 5 – Illustrated Parts List

Item	Part Number	Description	Qty
1	21-32-004A	Valve Housing	1
2	21-32-004B	Actuator Assembly	1
3	21-32-004C	Feedback Sensor	1
4	NAS620C4-16	Bolt	4
5	NAS1149C0463R	Washer	4

Section 6 – Storage and Preservation

Store in a humidity-controlled environment (\leq 50% RH).

Apply preservative oil MIL-PRF-6081 before long-term storage.

End of CMM Extract

© 2025 Engineering Maintenance Division