Control Valve and Positioner Fault Finding Guide

Vendor neutral fault finding guide for field technicians

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Before you start

- Permit, isolation and control room informed.
- Put the loop in manual or inhibit trips as authorised.
- Use certified test equipment in hazardous areas.
- Record as found readings before changing anything.

Quick checks

- Supply pressure correct?
- Positioner shows target vs actual travel?
- Fail action correct on air loss?
- Recent packing work?

Symptoms, causes and fixes

Symptom	Likely causes	Checks and fixes
Does not move	No air, failed I/P or positioner, seized stem, no signal	Check supply, signal, positioner status, manual override
Hunting or cycling	Stiction, high positioner gain, loose feedback arm, oversized valve	Check signature; tune; tighten linkage
Passing when closed	Seat wear, wrong bench set, low thrust, debris	Check bench set and thrust; inspect trim
Slow stroking	Small tubing, blocked exhaust, booster or solenoid limits	Check air path; fit booster or quick exhaust
Cannot fully open	Low supply pressure, travel limits, wrong spring range	Check supply and settings
Noise or vibration	Cavitation, flashing, high velocity	Check pressure drop and σ; consider trim change
Air leak	Diaphragm, fittings, positioner	Soap test; replace parts

NAMUR NE107 status

Status	Meaning	Action
F Failure	Output invalid	Repair or replace; check loop goes to safe state
C Function check	Simulation, calibration or maintenance active	Finish the work, return to normal mode
S Out of specification	Operating outside limits or uncertain	Check process conditions and sensor
M Maintenance required	Still valid but degrading	Plan maintenance before failure