On Off and ESD Valve 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

- Air supply and solenoid power present?
- Stroke time within the safety requirement?
- Limit switches set at full open and closed?
- Last proof test result?

Symptoms, causes and fixes

Symptom	Likely causes	Checks and fixes
Does not close on trip	Solenoid stuck, exhaust blocked, seized valve, high friction	Test solenoid; clear vents; stroke test
Slow closing	Small solenoid Cv, blocked exhaust, long tubing	Check air path; fit quick exhaust
No closed feedback	Limit switch misaligned or failed, cable fault	Adjust cam; test switch; check wiring
Partial stroke test fails	Sticking, high breakaway torque, wrong test settings	Full stroke test; inspect actuator and valve
Leaks when closed	Seat damage, debris	Leak test; repair seats
Solenoid coil fault	Overheating, wrong voltage, water ingress	Check voltage and coil resistance; replace

Remember

- Record as found stroke times before maintenance.
- Stroke time must fit within the process safety time.
- A failed proof test needs reporting and review.