

IMR VALVE MANAGEMENT CHECKLIST

Inspect. Maintain. Replace.

Valves are critical to system reliability, safety, and maintenance efficiency. A valve that fails to isolate properly can turn a routine repair into a costly shutdown. This checklist helps identify what to inspect, maintain, and replace before valve issues impact operations.



INSPECT:

ISOLATION (STOP) VALVES

- ☐ No oil staining or refrigerant leaks
- ☐ Valve stem moves freely
- ☐ Packing gland not leaking
- ☐ Valve tag present and legible
- ☐ Valve can fully open and close

Take Action If:

- Stem is seized
- Packing is leaking
- Valve cannot isolate properly

MOTORIZED CONTROL VALVES

- ☐ Responds correctly to control signals
- ☐ Stable temperatures and pressures
- ☐ No hunting or constant repositioning

Take Action If:

- System temperatures become unstable
- Valve position fluctuates excessively
- Actuator performance degrades

PRESSURE REGULATORS & EXPANSION VALVES

- ☐ Maintain desired operating conditions
- ☐ Stable pressures and superheat
- ☐ No signs of flooding or starving

Take Action If:

- Pressure becomes difficult to control
- Cooling performance declines
- Superheat becomes erratic

SOLENOID VALVES

- ☐ Opens and closes reliably
- ☐ No refrigerant leakage
- ☐ Coil operating normally
- ☐ No excessive heat or noise

Take Action If:

- Valve fails to close
- Coil fails repeatedly
- Evaporator feeds when it shouldn't

CHECK VALVES

- ☐ Proper flow direction maintained
- ☐ No reverse refrigerant migration
- ☐ No unusual vibration or noise

Take Action If:

- Backflow occurs
- Downstream components warm or cool unexpectedly

RELIEF VALVES

- ☐ No visible damage or corrosion
- ☐ Outlet unobstructed
- ☐ Certification current

Critical: Replace or recertify every 5 years.

MAINTAIN:

Annual Valve Maintenance

- ☐ Exercise all manual isolation valves
 - ☐ Lubricate stems and moving components
 - ☐ Inspect valve packing
 - ☐ Repaint or protect corroded valves
 - ☐ Verify valve tags remain readable
 - ☐ Update system drawings as required
- Outdoor valves should be inspected more frequently due to weather exposure.

Before Planned Shutdowns

4-8 weeks prior:

- ☐ Test critical isolation valves
 - ☐ Identify valves that will not hold
 - ☐ Schedule repairs before shutdown begins
 - ☐ Ensure replacement parts are available
- Goal: Discover problems during planning, not during production downtime.

REPLACE:

Replace valves when maintenance can no longer restore reliable operation.

Replace Immediately If:

- ☐ Valve no longer isolates
- ☐ Stem or body is damaged
- ☐ Excessive corrosion is present
- ☐ Internal seat leakage persists
- ☐ Repeated repairs fail to restore performance

Highest Priority Valves for Replacement

1. Solenoid Valves
 - Internal leakage
 - Coil failure
 - Failure to open or close
2. Motorized Valves
 - Actuator failure
 - Poor control response
 - Continuous hunting
3. Pressure Regulators
 - Cannot maintain setpoint
 - Pressure instability develops
4. Expansion Valves (TXVs)
 - Unstable superheat
 - Flooding or starving conditions
5. Aging Isolation Valves
 - Seized stems
 - Chronic packing leaks
 - Inability to fully isolate equipment