

Integra® Valve Preventive Maintenance Guidelines

MAINTAINING, REPLACING AND REBUILDING INTEGRA® VALVES

Valves examined after years of service have shown that the number of open/close cycles a valve experiences is not a reliable single criteria for preventive maintenance. The environment plays a key role in a valve's life expectancy. Poorly exhausted enclosures and chemical leaks onto valve exteriors and other environmental conditions can negatively affect valve life. System pressure fluctuations also play a key role in a valve's life expectancy. These fluctuations cause additional stress on the valve, which can negatively affect valve life. To prolong valve life and maintain process integrity, Entegris suggests the following guidelines.

PREVENTIVE MAINTENANCE DURING SCHEDULED FAB DOWNTIME

- Cycle valves that are normally static. In addition to visually inspecting the valve indicator for movement, technicians should also independently test and verify that normally static valves open and close upon demand. This will also ensure that the valve position indicator is providing an accurate reading.
- Confirm fitting torque is to the tightness specification.
- Ensure all high-temperature applications have PrimeLock® or FlareLock® II nuts.
- Replace PVDF nuts with PFA nuts on Flaretek connections in systems used for bases (e.g., ammonium hydroxide) or ketones (e.g., acetone).
- Avoid installing valves in locations where they may be exposed to direct splash or spray. If the location is susceptible to chemical exposure, add an Integra indicator cap and add pilot lines to valve actuator vents if they are options.

ANNUAL MAINTENANCE CHECKLIST

- Perform a quick, preventive maintenance check on all valves.
- Look for media leaks at the leak port.
- Actuate valves looking for indicator movement. In addition to visually inspecting the valve indicator for movement, technicians should also independently test and verify that normally static valves open and close upon demand. This will also ensure that the valve position indicator is providing an accurate reading.
- Verify pilot pressures are correct, pilot lines are correctly installed and are not leaking.
- Perform general system visual leak inspection; look for other plumbing leaks, especially onto components, cross-threaded nuts, etc., also look for corrosion or discoloration on the valve's exterior.

ADDITIONAL CONSIDERATIONS

- Check the outer cap or actuator screws for proper torque.
- More frequent replacement of valves or the internal components of valves used with the following chemicals is suggested:

– HF	– Sulfuric	– Any highly
– HCl	– Ammonium	corrosive
– Nitric acid	hydroxide	chemical
- Consider periodic disassembly and internal inspection of a random sample of valves exposed to particularly harsh chemical environments.
- Visual external appearance of a valve in and of itself is not always a reliable indicator of the condition of the internal metal components, which can degrade over time in a highly corrosive environment.
- Consider replacing any valve more than five years old. If valve replacement is cost prohibitive, basic preventive maintenance should be increased to twice per year.

DISCLAIMER

These guidelines on extending the life of any Integra valve do not extend the 1-year warranty nor do they alter or modify the company's standard terms and conditions of sale.

These guidelines and preventive maintenance schedules are merely suggested procedures that should not be exclusively relied upon by end users. Integra valves are installed in an infinite variety of applications and are often exposed to a diverse number of highly corrosive chemical environments. Some valve configurations contain internal metal components that can be damaged over time through permeation and other sources of exposure to corrosive process chemicals. As a result, ultra-pure valves installed in highly corrosive chemical environments have an unpredictable useful life. The suggested general guidelines and maintenance procedures should be reviewed and modified to be site-specific by the appropriate on-site plant and equipment engineers. The company does not guarantee resistance to corrosion, erosion, abrasion or any other source of failure, nor does the company guarantee a minimum length of service or a specific number of cycles for any specific application.

Valve life cycle testing data in various chemistries is available in product data sheets and reliability test documents. Visit www.entegris.com to view these documents.

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