

Instrument & Valve Services

Seven Reasons Why An Encore® Valve Belongs In Your Plant



Emerson Process Management is dedicated to delivering remanufactured control valve assemblies, instrumentation, and processes that support and sustain the process industries' environmental and safety focus, while optimizing control performance. We understand that you need to be aware of design standards and regulatory requirements applicable to Fisher® valves, actuators, and instruments to better ensure product and plant safety. This document highlights these standards and regulatory requirements as well as the processes and practices required to maintain compliance. Emerson's Instrument & Valve Services business remanufactures used Fisher products into Encore products that meet specifications as originally designed to ASME standards. Instrument & Valve Services is audited and approved by FM and CSA to apply its approval mark to Encore Remanufactured Valves. Isn't this the kind of quality you demand?





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ASME DESIGN STANDARDS

- Full traceability with Fisher Serial Numbers stamped on nameplates.
- Pressure class stamped on the nameplate with conformance to all Fisher specifications as designed to ASME B16.34 including paragraph 6.1.7 “Additional Metal Thickness.”
- Fisher body/bonnet/bolting materials, grade, diameter, thread, and casting whole depths are in strict accordance with Fisher Proof-of-Design engineering specifications to meet applicable pressure class. Any de-rating of the pressure class limits, due to different combinations of the above, is marked on a nameplate.
- PMI (Positive Material Identification) testing on all remanufactured valve components.

Why are ASME design standards important?

By using Encore products, customers can help reduce potential safety risks and address the mechanical integrity element of the OSHA PSM Standard and the EPA RMP Rule addressing hazardous chemical processes.

How can customers ensure their remanufactured control valves meet original design specifications?

By asking your Emerson sales representative or other vendors for signed documentation proving their capability to certify compliance to all Fisher specifications as designed in accordance to ASME B16.34, specifically referencing paragraph 6.1.7.

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EPA EMISSION STANDARDS

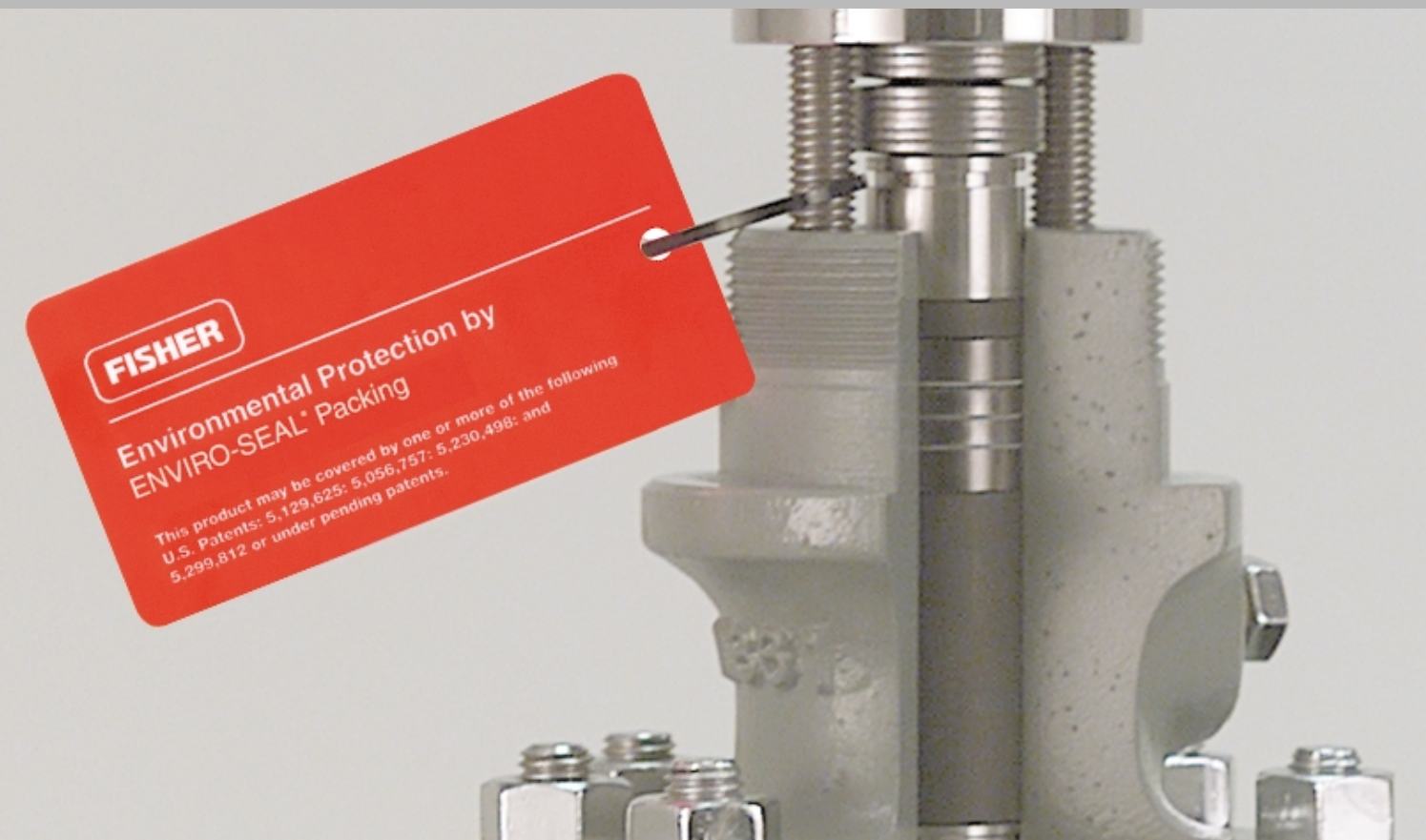
- Packing box sealing performance and life is dependent on valve stem and bonnet bores machined to stringent surface finish specifications.
- Patented live-loaded ENVIRO-SEAL® packing is designed and tested to provide superior performance and very long life while minimizing fugitive emissions from valve packing.

Why is using Fisher ENVIRO-SEAL valve packing in Encore products important?

Instrument & Valve Services uses packing that helps meet emission standards and can reduce budgets, time, and resource investment by potentially moving from a monthly to an annual EPA regulatory LDAR (Leak Detection and Repair) monitoring frequency.

How can customers minimize their control valve fugitive emissions?

Specify ENVIRO-SEAL packing on all packing applications where packing integrity is an economic, environmental, or safety concern.



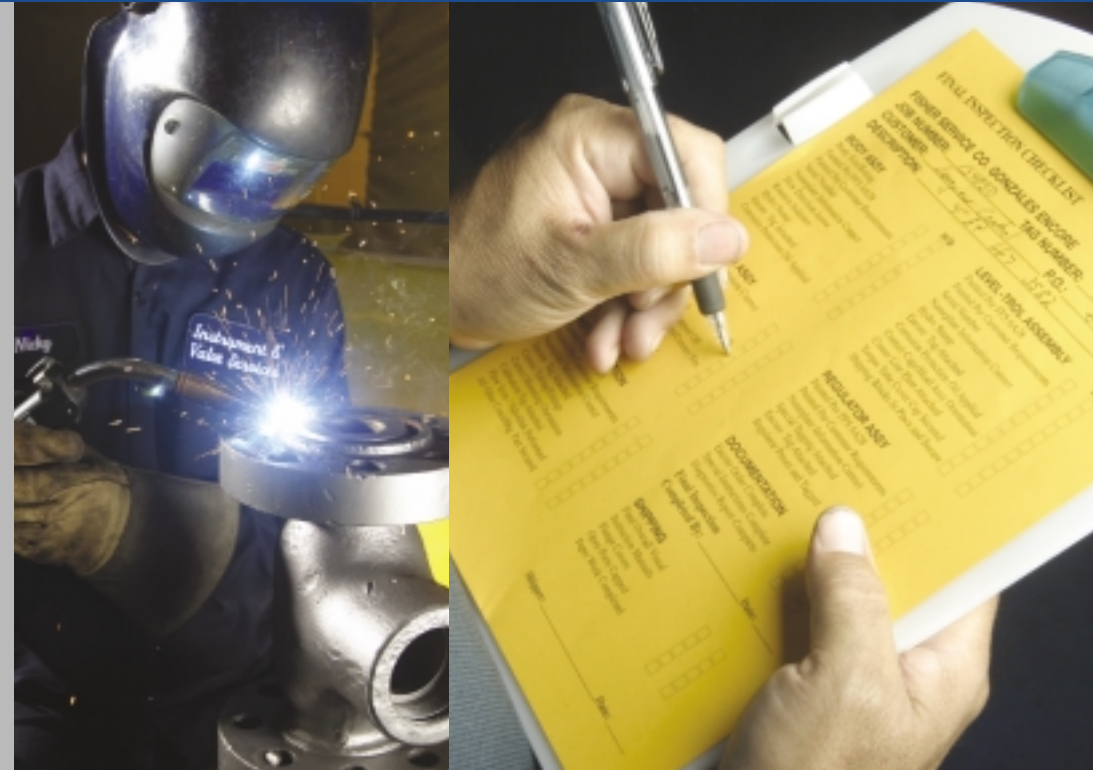
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PROOF-OF-DESIGN DOCUMENTATION

Fisher valve body and bonnets are uniquely designed with additional body wall thicknesses needed for assembly loads, actuating (closing and opening) loads, shapes other than circular, and stress concentrations as referenced in paragraph 6.1.7 of ASME B16.34.

Why is Proof-of-Design important to customers? Customers with mechanical integrity programs should have documentation that all remanufactured control valves comply with the design specifications of this ASME Standard to better prevent the potential loss of equipment integrity with loss of containment of toxic or flammable materials.

How can customers ensure Proof-of-Design criteria are met? Upon request, Instrument & Valve Services can provide a certificate of conformance showing verification to OEM design specifications in accordance with ASME B16.34, including verification of body/bonnet wall thickness, materials, dimensional tolerances, surface finishes, and hydro-testing.



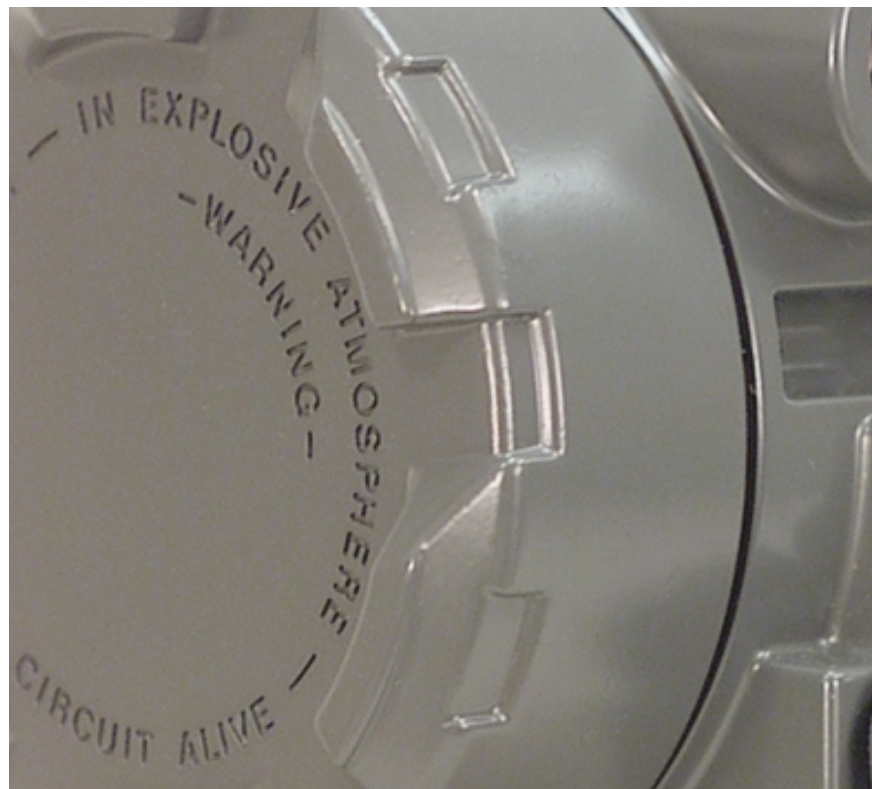
4

NATURAL GAS INSTRUMENT APPLICATIONS

Some Regulatory Authorities have changed requirements for electro-pneumatic instruments using natural gas as the supply.

Why are these changes important to customers? Such changes may warrant the review of existing instruments as they may no longer be the best alternative. Instruments installed prior to these changes for natural gas applications may need to be reviewed and possibly replaced with instruments that are approved by an OSHA accredited NRTL (Nationally Recognized Testing Laboratory) such as FM or CSA.

How can customers ensure their instrumentation meets current requirements? Consult your Emerson sales representative when using natural gas as the pneumatic instrument supply. Emerson application specialists can assist in your safety compliance efforts by providing the latest FM/CSA approved Fisher electro-pneumatic instruments suitable for natural gas as the instrument supply.



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FM/CSA APPROVED REMANUFACTURED INSTRUMENTS

- Salvaged, remanufactured, new-surplus, or repaired electronic and electro-pneumatic instruments lose their FM or CSA approvals, regardless of whether the original manufacturer's nameplate remains on the device. To be approved for use in hazardous locations, these instruments need to be re-certified by a facility that is audited and authorized by a NRTL.
- Several Instrument & Valve Services facilities are authorized by FM and CSA to re-certify and apply their approval marks on Encore remanufactured valves.
- Encore instruments are re-serialized by stamping a new serial number on a Fisher nameplate, providing full traceability of your remanufactured instrument.

Why are FM and CSA approvals important to customers?
OSHA 1910.307 defines requirements for use of electrical equipment (which include electronic or electro-pneumatic instruments). Use of non-approved remanufactured or new surplus equipment, although appearing to be a replacement-in-kind, would require a management of change (MOC) evaluation.

How can customers ensure their remanufactured instruments are really FM or CSA Approved?
Use Encore Remanufactured Valves or ask your supplier for documentation from FM or CSA that verifies they are authorized to certify and apply FM or CSA approval marks.



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SPECIAL MANUFACTURING PROCESSES UNIQUE TO ENCORE VALVES

- Special tooling is required to manufacture valve trim and instrumentation per factory specifications.
- FlowScanner™ and Signature Series testing offers a base line comparison to valve performance through AMS™ ValveLink® software.
- Soft goods such as actuator diaphragms, gaskets, and valve plug seal rings are made from special formulas that were developed from decades of testing and experience.
- Weld overlays and heat treat processing are often specific to each application.

Why should customers worry about special tools, tests, materials, and manufacturing processes?
Special attributes were developed to maximize product performance and service life. Most of these attributes are proprietary to Emerson and are often unique to a customer's specific application. Failure to incorporate these special attributes in a remanufactured control valve could result in degradation of performance, a lower service life, and increased maintenance and production costs to the customer.

How can customers be assured that all special attributes are included in their remanufactured control valves?
Contact your local Emerson sales representative and provide them with the serial number and process conditions of the valve. Emerson application specialists can review the applications data and ensure the correct specifications are applied to Encore Remanufactured Valves and repaired valves, ensuring special attributes are included when required.





GUARANTEED SUCCESS WITH ENCORE REMANUFACTURED VALVES

- An Emerson application specialist reviews process conditions and operating requirements and selects the appropriate valve for the application.
- A new serial number and record is created for the valve.
- A core is selected, de-serialized, and cleaned for PMI testing to validate material specifications for wetted parts.
- Cores are ultrasonically tested to ensure that wall thickness is

in accordance with OEM specifications as designed to AMSE B16.34 including those addressed by paragraph 6.1.7.

- Internal parts are inspected, repaired, or replaced to ensure tolerances necessary to maximize performance and service life. PMI testing verifies the specific valve trim materials from the multiple possible combinations that exist, based on application severity, and thermal expansion/contraction. The machining tolerance of

trim parts can vary, and only Encore valves ensure proper tolerances and surface finishes are applied during the remanufacturing process.

- Joints of critical pressure boundaries such as the body and bonnet are inspected and machined to original tolerance to ensure proper gasket crush, eliminating external and internal leaks. This process is critical as most joints are cleaned by sandblasting.

- Weld repairs are performed using ASTM Standards for welding and heat treating. All fabrication work is done by ASTM Section IX welders.
- Encore valves are tested and assembled per factory specifications using factory-trained technicians. A hydro-test per ASME B16.34 and seat leak test per ANSI Standard is performed on every Encore valve.

- Upon request, Quality Control conformance documentation is available. With advanced requests, customers can obtain customized documentation which may include paper copy or digital video of actual test results, material verification, FM/CSA accreditation, functionality tests, and other specialized customer requirements.

Why should customers consider Encore valves over other remanufactured valves?

Encore valves meet regulatory and safety compliance requirements and ensure adherence to OEM specifications and tolerances. All remanufactured electronic/electro-pneumatic instrumentation is FM/CSA approved. Call your Emerson Process Management sales representative to find out how Encore Remanufactured Valves can be part of your plant's successful future.

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