AMERICAN NATIONAL STANDARD

STANDARD FOR PRODUCTION TESTING OF PRESSURE REGULATORS

Fluid Controls Institute, Inc.

Sponsor:

Fluid Controls Institute, Inc.
1300 Sumner Ave
Cleveland, Ohio 44115-2851

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The following Institute members contributed substantively to the development of this standard:

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Three Rivers, Mich.

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Emerson Automation Solutions
Zimmerman, Minn.

Richards Industrials
Cincinnati, Ohio

TLV CORPORATION
Charlotte, N.C.

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Pottstown, Pa.

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Foreword (This foreword is included for information only and is not part of ANSI/FCI 15-1-2020, *Standard for Production Testing of Pressure Regulators.)*

This voluntary standard has been developed and issued in the public interest. It is intended to establish minimum guidelines for production testing of pressure regulators for use by manufacturers, specifiers, inspectors, and users.

The standard was developed by the FCI Regulator Section in 2014 and approved in 2015. The standard was revised with minor revisions in 2020.

The existence of a Fluid Controls Institute (FCI) standard does not in any respect preclude any member or non-member from manufacturing or selling products not conforming to this standard nor is the FCI responsible for its use.

FCI recognizes the need to periodically review and update this standard. Suggestions for improvement should be forwarded to the Fluid Controls Institute, Inc., 1300 Sumner Avenue, Cleveland, Ohio 44115-2851. All constructive suggestions for expansion and revision of this standard are welcome.

Please go to the FCI web site for all of the latest technical articles and standards.

ANSI/FCI 15-1

AMERICAN NATIONAL STANDARD

Standard for Production Testing of Pressure Regulators

1. PURPOSE

This standard establishes minimum guidelines for production testing of pressure regulators for use by manufacturers, specifiers, inspectors, and users to ensure testing of atmospheric leak tightness and seat leakage are completed at the factory before shipment.

2. SCOPE and LIMITATIONS

2.1. This standard provides guidelines for documenting minimum production tests and determining pass/fail criteria for pressure regulators undergoing production tests in a manufacturing facility. It applies to most designs including self and pilot operated pressure reducing regulators, differential pressure regulators, pressure loaded regulators, and regulators with or without internal relief valves.

2.2. Certifications documenting the testing can be requested by the customer upon ordering.

2.3. This standard includes pressure regulators which may have two static pressure ratings, one for the portion of the regulator subjected to the inlet pressure and the other for the portion subjected to the outlet pressure.

2.4. This standard does not cover capacity testing of pressure regulators which is covered in ANSI/FCI 99-2 and is not normally tested during a production test.

2.5. This standard does not cover testing for leakage through pressure boundary shells that would be identified during a production hydrotest. This hydrotest procedure is covered in ANSI/FCI 4-1.

2.6. Relief valves or backpressure regulators are not included in this standard.

2.7. This standard does not cover temperature regulators.

2.8. This standard is not intended to supersede existing standards for regulators in specific applications such as those for gas appliance pressure regulators, for high pressure regulators for gas cylinders, or for fluid power regulators in machinery operations

3. DEFINITIONS

3.1. Controlled Variable. The variable which shall be monitored by the controlling process. This variable is either the outlet pressure or the differential pressure.

3.2. Diaphragm. A flexible element used to sense the outlet pressure (controlled variable.) The diaphragm also works to regulate the controlled variable in combination with the loading spring and valve plug linkage. Diaphragms are usually made from an elastomeric or metallic material.

3.3. Differential Pressure Regulator. A pressure regulator that maintains a constant differential pressure between a reference pressure and the pressure of the controlled fluid.