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An American National Standard

Standard Specification for Pressure-Reducing Manifolds for Air or Nitrogen Systems[1]

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1. Scope

1.1 This specification covers the design, construction, testing and operating requirements for pressure-reducing manifolds for air or nitrogen systems, referred to herein also as manifolds. The term manifold constitutes the combination of all components and piping between, and including, the inlet and outlet ports (see Fig. 1 and Fig. 2).

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses (metric SI units) are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

F 992 Specification for Valve Label Plates[2]

F 1508 Specification for Angle Style, Pressure Relief Valves for Steam, Gas, and Liquid Services[2]

F 1795 Specification for Pressure-Reducing Valves for Air or Nitrogen Systems[2]

2.2 *American Society of Mechanical Engineers (ASME):*

B1.1 UnifiedScrew Threads[3]

2.3 *Military Standards and Specifications:*

MIL-STD-167-1 Mechanical Vibrations of Shipboard Equipment (Type I—Environmental and Type II— Internally Excited)[4]

MIL-STD-740 Airborne and Structureborne Noise Measurements and Acceptance Criteria of Shipboard Equipment[4]

MS 16142 Boss, Gasket Seal Straight Thread Tube Fitting, Standard Dimensions for[4]

MIL-S-901 Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for[4]

MIL-F-1183 Fittings, Pipe, Cast Bronze, Silver-Brazing, General Specification for[4]

2.4 *Government Drawings:*

Naval Sea Systems Command (NAVSEA):

NAVSEA 803-1385884 Unions, Fittings and Adapters Butt and Socket Welding 6000 PSI, WOG and OXY (IPS)[4]

NAVSEA 803-1385943 Unions, Silver Brazing 3000 PSI, WOG, IPS, for UT Inspection[4]

NAVSEA 803-1385946 Unions, Bronze, Silver Brazing, WOG for UT Inspection, 1500 PSI, WOG[4]

3. Terminology

3.1 *Definitions:*

3.1.1 *accuracy of regulation*—the amount by which the downstream pressure may vary when the manifold is set at any pressure within the required set pressure range and is subjected to any combination of inlet pressure, flow demand, and ambient temperature variations within the specified limits.

3.1.2 *bubble-tight*—No visible leakage over a 5-min period using either water submersion or the application of bubble fluid for detection.

3.1.3 *external leakage*—Leakage from the manifold which escapes to atmosphere.

3.1.4 *flow rate demand*—the amount of flow demanded at any given time by the system downstream of the manifold.

3.1.5 *flow rate demand range*—the range over which the flow demand can vary.

3.1.6 *hydrostatic shell test pressures*—the hydrostatic test pressures that the inlet and outlet sections of the manifold are required to withstand without damage. Manifold operation is not required during application of shell test pressure, but the manifold must meet all performance requirements after the shell test pressure has been removed.

3.1.7 *inlet operating pressure range*—the range over which the inlet pressure supplied to the manifold can vary under any operational conditions which the manifold can be subjected to in service.

3.1.8 *internal leakage*—leakage from higher pressure to lower pressure portions of the manifold and which does not escape to atmosphere.

3.1.9 *manifold rated pressures*—the inlet and outlet pressure ratings of the manifold. These rated pressures are selected from the applicable pressure ratings (see 4.2) and specified in the ordering information (see Section 5). The inlet pressure rating is applicable from the manifold inlet up to and including the seats of the outlet stop valve and bypass throttle valve. The

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[2] *Annual Book of ASTM Standards,* Vol 01.07.

[3] Available from American Society of Mechanical Engineers, Headquarters, Three Park Ave., New York, NY 10016–5990. Telephone: 212–591–7722, Fax: 212–591–7674, Telex: 710–591–5267.

[4] Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

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