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Filter and Filter Element for Hydraulic System(s) Used on Manufacturing and Assembly Equipment		

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Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board format.

1. Scope—This SAE Standard establishes a common specification and ordering code for hydraulic filter assemblies and hydraulic filter elements, and establishes minimum performance criteria and test methods. This document establishes two filter diameter sizes, five basic micron ratings, and two basic collapse ratings. These classifications will satisfy most hydraulic filter applications, and thereby can minimize inventory requirements for hydraulic filter elements.

2. References

2.1 Applicable Publications—The following publications form a part of this specification to the extent specified herein. The latest issue of the applicable publication shall apply.

2.1.1 ANSI PUBLICATIONS—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ANSI B93.19M-1972 (R1988)—Extracting Fluid Samples from the Lines of an Operating Hydraulic Fluid Power System (for Particulate Contamination Analysis), Method for

ANSI B93.20M-1972 (R1988)—Qualifying and Controlling Cleaning Methods for Hydraulic Fluid Power Fluid Sample Containers, Procedure for

ANSI B93.21M-1972 (R1987)—End Load Test Method for a Hydraulic Fluid Power Filter Element

ANSI B93.22M-1987—Hydraulic Fluid Power—Filter Elements—Verification of Fabrication Integrity

ANSI B93.23M-1972 (R1987)—Material Compatibility of a Hydraulic Fluid Power Filter Element, Method for Verifying the

ANSI B93.24M-1972 (R1987)—Flow Fatigue Characteristics of a Hydraulic Fluid Power Filter Element, Method for Verifying the

ANSI B93.25M-1972 (R1987)—Collapse/Burst Resistance of a Hydraulic Fluid Power Filter Element, Method for Verifying the

ANSI B93.28-1973—Method for Calibrating Liquid Automatic Particle Counters

ANSI/(NFPA) T3.10.8.8R1-1990—Multi-Pass Method for Evaluating the Filtering Performance

ANSI B93.30M-1980 (R1987)—Contamination Analysis Data of Hydraulic Fluid Power Systems, Method of Reporting

- 2.1.2 MILITARY SPECIFICATIONS—Available from Navy Publications and Forms Center, 700 Robbins Avenue, Philadelphia, PA 19111.

MIL-H-5606E—Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance

3. Definitions

PPM—Parts per million

kPaD—kPascal/differential (PSID—Pounds force/square inch differential)

Time Weighted Beta—The average Beta ratio weighted by time

Filter Assembly—Filter housing plus filter element

4. Identification

- 4.1 **Filter**—The filter manufacturer's nameplate shall be of corrosion-resistant metal, with a minimum thickness of 0.8 mm (0.031 in) thick. The tag should be permanently attached, mechanically preferred. The following data shall be permanently stamped on the plate:

- a. Manufacturer's name and address
- b. Operating pressure kPa (psi)
- c. Serial number and date code
- d. Filter assembly identification code (Figure 1)
- e. Filter element identification code (Figure 2)

- 4.1.1 Filter housing port size shall be a minimum as indicated in Table 1 in 5.6. The port sizes as shown are based on a fluid velocity of 3.05 m/s (10 ft/s) maximum for the flow rates shown.

- 4.2 **Filter Element**—Filter elements shall be permanently identified with the element code shown in Figure 2.

- 4.3 **Filter Element Seal Material**—The filter element seal material shall be color coded as follows:

- a. (N) Nitrile (e.g., Buna N and NBR)—Black
- b. (F) Fluorocarbon (e.g., Viton and FPM)—Brown
- c. (E) Ethylene Propylene (e.g., EPR and EPM)—Purple

5. Requirements

5.1 Filter Element Interchangeability

- 5.1.1 Filter elements supplied to this document shall comply with the interface dimensions shown in Figures 3, 4, 5, 6, 7, and 8.

- a. 1-place decimals have a tolerance of ± 0.5 mm (± 0.02)
- b. 2-place decimals have a tolerance of ± 0.13 mm (± 0.005)

Additional dimensions and design features necessary to meet this document are the responsibility of the filter manufacturer. Manufacturing design features shall not affect interchangeability of filter elements in housings supplied under this document.

- 5.1.2 The element grommet shown in Figure 4 is typical. Alternate seal designs consistent with performance and element interchangeability requirements are acceptable.

- 5.2 Fluid Compatibility**—Filter element materials shall be compatible with the fluid specified per ANSI B93.23M with the fluid and temperature specified.
- 5.3 Element Maximum Flow Rate**—The maximum permissible flow rate through a filter element shall be in accordance with 5.6.

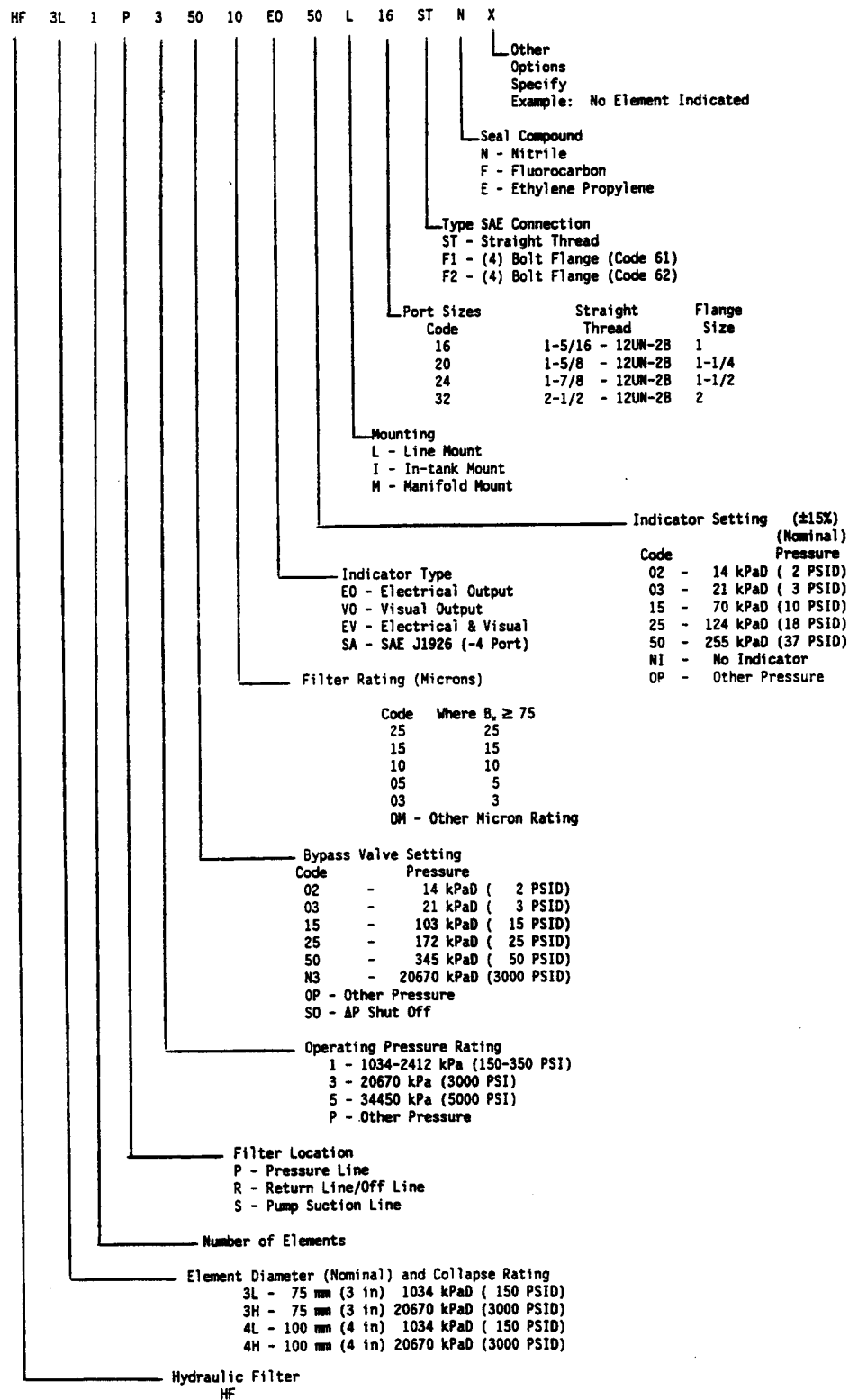


FIGURE 1—FILTER ASSEMBLY IDENTIFICATION CODE