

MIL-F-15618F(SHIPS)
AMENDMENT 4
28 February 1985
SUPERSEDING
AMENDMENT 3
18 January 1966

MILITARY SPECIFICATION

FILTER-SEPARATORS AND FILTER ELEMENTS,
FLUID, PRESSURE, AVIATION AND DIESEL FUEL,
NAVAL SHIPBOARD

This amendment forms a part of Military Specification MIL-F-15618F(SHIPS), dated 31 August 1962, and is approved for use by the Naval Sea Systems Command, Department of the Navy and is available for use by all Departments and Agencies of the Department of Defense.

PAGE 1

2.1, under "SPECIFICATIONS, FEDERAL": Add:

- "QQ-C-465 - Copper-Aluminum Alloys (Aluminum Bronze) (Copper Alloy Numbers 606, 614, 630, 632M, and 642); Rod, Flat Products with Finished Edges (Flat Wire, Strip, and Bar), Shapes, and Forgings.
- "QQ-N-288 - Nickel-Copper Alloy and Nickel-Copper-Silicon Alloy Castings."

PAGES 1 and 2

2.1, under "SPECIFICATIONS, MILITARY": Delete reference to "MIL-G-5572" and "MIL-G-16356" .

PAGE 2

2.1, under "SPECIFICATIONS, MILITARY": Add:

- "MIL-I-20037 - Indicators, Sight; Liquid Level, Direct Reading, Reflex Tubular Gage Glass."

2.1, under "STANDARDS": Add:

- " FEDERAL
FED-STD-H28 - Screw-Thread Standards for Federal Services."

2.1, under "DRAWINGS, BUREAU OF SHIPS": Delete reference to "5000-S4800-F-841177" and add "810-1385850 - Piping, Gage, for All Services."

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2.1: Add: "PUBLICATIONS
NAVAL SEA SYSTEMS COMMAND (NAVSEA)
0900-LP-001-7000 - Fabrication and Inspection of Brazed
Piping Systems."

PAGES 2 and 3

2.2, under "AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)": Delete and substitute:

"AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- B 21 - Naval Brass Rod, Bar and Shapes.
- B 36 - Brass Plate, Sheet, Strip and Rolled Bar.
- B 61 - Steam or Valve Bronze Castings.
- B 62 - Composition Bronze or Ounce Metal Castings.
- B 164 - Nickel Copper Alloy Rod and Bar.

* "(Applications for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)"

PAGE 3

* 2.2: Add:
"AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
B16.5 - Pipe Flanges and Flanged Fittings

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)"

3.2.1: Add: "The hydrophobic screen shall be of monel, coated with polytetrafluoroethylene."

3.3.1.1, items (a), (b) and (c): Delete and substitute:

- "(a) All wrought parts shall be copper-nickel in accordance with composition 90-10 of MIL-C-15726.
- (b) All cast parts shall be copper-nickel in accordance with composition 70-30 of MIL-C-20159.
- (c) Materials for pressure gauge piping and connections shall conform to Drawing 810-1385850.
- (d) All pipe or tubing shall be either of 70-30 or 90-10 copper-nickel alloy in accordance with MIL-T-16420."

PAGE 4

* 3.4.3.1, line 8: Delete: "no free water" and substitute "no more than 5 parts per million (p/m) of free water".

* 3.4.3.2, lines one and two: Delete: "free water" and substitute "more than 5 p/m of free water".

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Table I: Delete and substitute:

"TABLE I. Materials for element mounts.

Piece number	Name	Number required	Material	Specification	Remarks
<u>1</u> /1	Tube	1	Cu-Ni-90-10 or Cu-Si	MIL-T-16420 or MIL-C-17516	1.315 outside diameter, 1.185 inside diameter
2	End cap	1	Cu-Si	QQ-C-593	-----
3	Base cap	1	Cu-Si	QQ-C-593	-----
4	Stud	1	Cu-Si Ph bronze Ni-Cu	MIL-C-17516 ASTM B 103, alloy A, or ASTM B 164, class A or B	1/2 stud
5	End plug	1	Cu-Si	MIL-C-17516	Silver solder in tube, piece number 1
6	Friction washer	1	Cu-Si	MIL-C-17516	17/32 inside diameter by 15/16 outside dia- meter by 1/16 thick
7	Stud gasket	1	Synthetic rubber	MIL-G-6855, class I, grade 80	17/32 inside diameter by 15/16 outside dia- meter by 1/16 thick

1/ Pieces 3 and 5 shall be silver brazed to piece 1 using alloy IV in accordance with MIL-B-15395. The Brazing flux used shall be type A in accordance with O-F-499 (Handy and Harman special flux, type A-1 or equivalent only). Other suitable methods of securing these pieces may be used when approved by the Command or agency concerned."

PAGE 6

3.5.1.5: Delete and substitute:

"3.5.1.5 Inlet and outlet connections. Inlet and outlet connections shall be horizontal. The inlet and outlet connections shall be flanged in accordance with MIL-F-20042 of the pressure class suitable for the designated working pressure (see 6.1). For Diesel fuel filter-separators using ferrous materials as specified (see 3.3.2), the inlet and outlet shall be flanged in accordance with ANSI B16.5. The flange faces shall have a phonographic or serrated finish with 30 to 80 serrations per inch, with serration depth of 0.002 to 0.010 inch and serration tips not exceeding 0.010 inch in width. Inlet and outlet piping shall not require disconnecting in order to replace elements."

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* 3.5.1.11.1, line 8: After "Sharpe", add "or a NAVSEA approved alternative construction".

PAGE 8

3.501.13: Delete and substitute:

"3.5.1.13 sump gauge connections, gauges and gauge valves. A sump gauge assembly shall be fitted to the sump to permit a visible indication of the cleavage line between the fuel and water in the sump over the complete range of high to low water level indication. The sump gauge assembly shall be in accordance with MIL-I-20037, type I, class a, modified as follows:

- (a) Valve bodies shall be of bronze in accordance with ASTM B 61 with replaceable monel stems (see ASTM B 164) and monel seats (see QQ-N-288). Other trim material as adjudged by the Naval Sea Systems Command to be compatible with JP-5 of MIL-J-5624 and sea water or Diesel and sea water will be considered.
- (b) The tubular gauge column shall be polycarbonate plastic with 3/4 inch outside diameter (od) and 7/64 inch wall thickness.
- (c) Glands shall be designed to prevent the plastic column from coming loose under shock and to minimize torsional stress on the column. Means shall be provided to keep the inside diameter (id) of the column circular when the od of the column is compressed by the packing.
- (d) Threads shall be in accordance with FED-STD-H28. Taper pipe threads will not be permitted.
- (e) The end connections shall be flanged in accordance with MIL-F-20042.
- (f) Drain plugs in lieu of the petcock shall be provided for draining and cleaning the gauge column. These plugs shall be O-ring sealed.
- (g) A colored ball float which will float at the liquid fuel interface shall be provided.
- (h) The assembly shall meet the shock requirements for grade A, class I, of MIL-S-901.

The gauge assembly connection to the sump shall conform to figure 2"

3.5.1.14, line 3: After "inch" add "shock proof".

3.5.1.14, line 10: Delete: "5000-S4800-F-841177" and substitute "810-1385850".

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3.5.1.17: Delete and substitute:

"3.5.1.17 Pipe joints. Taper pipe thread connections will not be acceptable except for the element mount. Permanent joints shall be silver brazed. Silver brazing fittings shall conform to MIL-F-1183. The material of the silver brazing fittings shall be in accordance with either ASTM B 61 bronze or QQ-C-465. ASTM B 62 bronze will not be permitted. Joints required for disassembly shall be flanged or silver brazing union."

Add as new paragraph 3.5.1.18:

"3.5.1.18 Brazing. Brazing shall be in accordance with NAVSEA 0900-LP-001-7000."

PAGE 9

3.8, line 1: Delete "type III" and substitute "type I".

PAGE 10

Add as new paragraph 3.11:

"3.11 Preproduction samples. Prior to start of production, one filter-separator shall be subjected to preproduction inspection (see 4.3)."

PAGE 11

* 4.2.1.2, line 4: Delete "evidence of undissolved water" and substitute "more than 5 p/m of free water."

PAGE 12

* 4.3.2.2.2, line 6: Delete "not contain free water." and substitute "be no more than 5 p/m of free water."

* 4.3.2.2.3, line 7: Delete "free water" and substitute "more than 5 p/m of free wate".

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* 4.5.2.3, line 3: Delete "free water" and substitute "more than 5 p/m of free water."

The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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