

NAVSEA
STANDARD ITEM

FY-03

ITEM NO: 009-49
DATE: 30 AUG 2001
CATEGORY: II

1. SCOPE:

1.1 Title: Pressure Seal Bonnet Valve; repair (in-line)

2. REFERENCES:

- a. T9074-AS-GIB-010/271, Requirements for Nondestructive Testing Methods
- b. MIL-STD-2035, Nondestructive Testing Acceptance Criteria
- c. 803-5001021, Pressure Seal Ring Standard and Oversize Valve Pressure Class 600-1500
- d. S9253-AD-MMM-010, Volume 1, Maintenance Manual for Valves, Traps, and Orifices (Non-Nuclear), User's Guide and General Information

3. REQUIREMENTS:

3.1 Matchmark valve parts.

(V) "INSPECT PARTS FOR DEFECTS"

3.2 Disassemble, clean free of foreign matter (including paint), and inspect parts for defects.

(I) "LIQUID PENETRANT INSPECT"

3.2.1 Accomplish liquid penetrant inspection of seats (including back seat), discs or gate, and body inlay area in accordance with 2.a.

3.2.1.1 Acceptance criteria shall be in accordance with Section 7 of 2.b, except hairline cracks in hardfaced seats and discs or gate are acceptable provided the valve does not show evidence of leakage.

3.3 Repair valve as follows:

3.3.1 Straighten stem to within 0.002 inch total indicator reading. Polish stem to a 32 Root-Mean-Square (RMS) finish in way of packing surface and remove raised edges and foreign matter.

3.3.2 Chase and tap exposed threaded areas.

3.3.3 Inspect and repair sealing surfaces of inlay area and bonnet as follows:

(V) "VISUAL INSPECT"

3.3.3.1 Inspect valve body to verify that stainless steel inlay is free of steam cuts and cracks and that diameter of inlay area is round to within 0.003 inch and free of non-design taper. Measure diameter at top and bottom of inlay area in increments of 45 degrees, on each circle.

3.3.3.2 Correct out-of-round, non-design tapered condition to provide 32 RMS finish. Finished diameter shall provide 0.002 to 0.005 inch clearance on the standard size or oversize number one diameter for seal rings described by 2.c.

3.3.3.3 Machine valve bonnet tapered area for concentricity and design angle to within 0.002 inch total indicator reading and 32 RMS finish.

3.3.4 Machine, grind, or lap and spot-in discs or gate to seats (including back seat) to obtain a 360-degree continuous contact.

(V) "INSPECT CONTACT"

3.3.4.1 Inspect contact using blueing method.

(I)(G) "VERIFY LEVEL I PARTS" (See 4.3.)

3.4 Assemble valve, installing new fasteners in accordance with Table One.

3.4.1 Install new seal ring in accordance with 2.c.

3.4.1.1 Attach a metal identification tag to the valve bonnet indicating the size of seal ring installed, straight or tapered body neck, name of installing activity, and date of installation.

3.4.2 Install new valve stem packing conforming to MIL-P-24503 and MIL-P-24583 in accordance with Chapter 6 of 2.d.

3.4.2.1 Valve stem clearances that are not within the prescribed tolerances of Table 6-7 of 2.d shall be packed with valve stem packing conforming to MIL-P-17303, Class II, Type E, Symbol 1111 for temperatures greater than 500 degrees Fahrenheit and with valve stem packing conforming to MIL-P-24377 for temperatures 500 degrees Fahrenheit or less.

4. NOTES:

4.1 Operational test of the valve will be specified in Work Item.

4.2 Repair of valve operating gear will be specified in Work Item.

4.3 The paragraph referencing this note is considered an (I)(G) if the valve is Level I.

TABLE ONE

VALVE BODY MATERIAL

	<u>1/</u> Alloy Steel	Carbon Steel	<u>2/</u> Nonferrous
<u>3/</u> Studs and Bolts to MIL- DTL -1222	Grade B-16	Grade B-16	Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A <u>4/</u>
Nuts to MIL- DTL -1222	Grade 4 or 7	Grade 4 or 7	Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A or Class B <u>5/</u>
Socket Head Cap Screws	FF-S-86	FF-S-86	

1/ Alloy steel is of Composition A - 2-1/4 percent Chromium, one percent Molybdenum, Composition B - 1-1/4 percent Chromium, 1/2 percent Molybdenum, and Composition C - Carbon Molybdenum.

2/ Nonferrous Alloy except Aluminum.

3/ Studs shall be Class 2 or 3 fit on the nut end and Class 5 fit on the stud end, except that a Class 3 fit with a thread locking compound may be used where temperatures do not exceed 250 degrees Fahrenheit. The thread locking compound shall conform to MIL-S-22473. Check Class 3 fit stud ends in accordance with SAE-J2270.

4/ Fasteners of Nickel Copper Aluminum shall be the only type used on sea chest and hull valves.

5/ Nuts of Nickel Copper alloy conforming to QQ-N-281 Class A or B, or Nickel Copper Aluminum conforming to QQ-N-286 shall be the only type used on sea chest and hull valves.