

NAVSEA  
STANDARD ITEM

FY-16

ITEM NO: 009-68  
DATE: 29 JUL 2011  
CATEGORY: II

1. SCOPE:

1.1 Title: Bolted Bonnet Valve; repair

2. REFERENCES:

2.1 S9086-CJ-STM-010/CH-075, Fasteners

2.2 T9074-AS-GIB-010/271, Requirements for Nondestructive Testing Methods

2.3 MIL-STD-2035, Nondestructive Testing Acceptance Criteria

2.4 S9253-AD-MMM-010, 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.

3.2.1 The removal of body-bound studs only to determine the condition of threads is not required.

3.2.1.1 Exposed portion of body-bound studs shall be inspected in accordance with Section 075-8.3 of 2.1.

(I) or (V) "TORQUE TEST" (See 4.3)

3.2.2 Torque test each body-bound stud in accordance with Section 075-8.6.3.2(d) of 2.1.

(I) "LIQUID PENETRANT INSPECT"

3.2.3 Accomplish liquid penetrant inspection of seats (including back seat), discs, or gate in accordance with 2.2.

3.2.3.1 Acceptance criteria shall be in accordance with Paragraph 7 of 2.3, except hairline cracks in hard-faced areas of 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 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 Clean and spot-in bonnet to body gasket mating surfaces.

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

(V) "INSPECT CONTACT"

3.3.4.1 Inspect contact using blueing method.

3.3.4.2 Transfer line for gate valve shall not exceed 3/16 inch in width and shall appear within the lower 75 percent of the gate seating surface.

3.3.4.3 Transfer line for globe valve shall not exceed 1/16 inch in width.

(I)(G) "VERIFY LEVEL I PARTS"

3.4 Assemble valve, installing new gaskets in accordance with the manufacturer's specifications, using new fasteners for those removed in 3.2, in accordance with Attachment A, or for DDG-51 class, Attachment B.

3.4.1 Pack feedwater, condensate, and steam valves with valve stem packing conforming to MIL-P-24503/24583 combination in accordance with Chapter 6 of 2.4.

3.4.2 Pack valves of systems other than feedwater, condensate, or steam with valve stem packing conforming to MIL-P-24396, Type B.

4. NOTES:

4.1 Operational test of 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) if the valve is Level I. If the valve is not Level I, the paragraph is considered a (V).

ATTACHMENT A

VALVE BODY MATERIAL

	<sup>1/</sup> Alloy Steel	Carbon Steel	<sup>2/</sup> Nonferrous
<sup>3/</sup> 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 <sup>4/</sup>
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 <sup>5/</sup>
Socket Head Cap Screws	FF-S-86	FF-S-86	

<sup>1/</sup> 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.

<sup>2/</sup> Nonferrous Alloy except Aluminum.

<sup>3/</sup> Studs shall be Class 2 or 3 fit on the nut end and Class 5 fit on the stud and, 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 ASTM D 5363. Check Class 3 fit stud ends in accordance with SAE-J2270.

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

<sup>5/</sup> 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.

ATTACHMENT B

VALVE BODY MATERIAL

	1/ Alloy Steel/Carbon Steel	2/ Nonferrous
3/ Studs and Bolts to MIL-DTL-1222	5/ For services up to and including 650 degrees Fahrenheit; Grade 5 steel	4/ 5/ Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A
	For services to 775 degrees Fahrenheit; Grade B-7 or B-16	
	For services to 1,000 degrees Fahrenheit; Grade B-16	
	For services in which JP-5 lubricating oil, or inflammable gas or liquid of any kind, regardless of pressure and temperature, which are within 3 feet of hot surfaces (above 650 degrees F) and where steel tubing is required; Grade 2, 5 or 8 steel	
	Bolting subject to seawater corrosion (other than hull integrity bolting; for hull integrity bolting see Note 4) Connections in contact with bilge regions. Where strength requires ferrous bolting and is exposed to the weather; Class A Nickel - Copper alloy to QQ-N-281 or silicon bronze to ASTM B 98 with dimensions of MIL-DTL-1222. Where greater strength is required, use Nickel - Copper - Aluminum alloy QQ-N-286.	
Nuts to MIL-DTL- 1222	5/ For services up to and including 650 degrees Fahrenheit; Grade 5 steel	4/ 5/ Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A or Class B
	For service to 775 degrees Fahrenheit; Grade 2H or 4 steel	
	For services to 1,000 degrees Fahrenheit; Grade 4 steel	

ATTACHMENT B  
(Con't)

	1/ Alloy Steel/Carbon Steel	2/ Nonferrous
	<p>For services in which JP-5, lubricating oil, or inflammable gas or liquid of any kind, regardless of pressure and temperature which are within 3 feet of hot surfaces (above 650 degrees F) and where steel tubing is required; Grade 5 or 8 steel</p>	
	<p>Nuts subject to seawater corrosion. Connections in the bilge regions. Where strength requires ferrous material and is exposed to the weather; Class A or B Nickel Copper Alloy to QQ-N-281 or Silicon Bronze to ASTM B 98 with dimensions to MIL-DTL-1222</p>	

NOTES

- 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 200 degrees Fahrenheit. The thread locking compound shall conform to ASTM D 5363. 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/ Where these materials would constitute part of a galvanic couple, proposals for alternate materials shall be submitted for approval.