NAVSEA
STANDARD ITEM

FY-19 ***CH-4***

ITEM NO:	009-53
DATE:	***31 AUG 2018***
CATEGORY:	II

1. SCOPE:

1.1 Title: Bolted Bonnet, Globe, Globe Angle, and Globe Stop Check Valve Shop Repair; accomplish

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

2.5 S9086-RJ-STM-010/CH-504, Pressure, Temperature and Other Mechanical and Electromechanical Measuring Instruments

2.6 S9086-RK-STM-010/CH-505, Piping Systems

3. REQUIREMENTS:

3.1 Matchmark each valve part.

3.2 Disassemble, clean each internal and external surface free of foreign matter (including paint), and inspect each part for defects.

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

(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 each seat (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 each exposed threaded area.

3.3.3 Clean and spot-in each bonnet to each body gasket mating surface.

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.

(I) or (V) "INSPECT CONTACT" (See 4.3)

3.3.4.1 Inspect contact using blueing method (soft seated valves excluded).

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 AND CLEANLINESS"

3.4 Assemble valve, installing new each gasket and each fastener for those removed in 3.2 in accordance with the manufacturer's specification or instruction.

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

3.4.2 Pack each valve for systems other than feedwater, condensate, and steam with each valve stem packing conforming to MIL-P24396, type B.

3.5 Hydrostatically test valve as follows:

3.5.1 Hydrostatic test equipment shall have the following capabilities:

3.5.1.1 Manual overpressure protection release valve.

3.5.1.2 Self-actuated and resetting relief valve with a set point no greater than 100 PSIG above the test pressure or 10 percent above the test pressure, whichever is less.

3.5.1.3 Master and backup test ***gauges*** with ***gauge*** range and graduation in accordance with Table 504-6-1 of 2.5. The backup ***gauge*** shall be cross-checked to the master hydrostatic test ***gauge*** up to the maximum test pressure just prior to start of testing. Master and backup ***gauges*** shall track within 2 percent of each other.

3.5.1.4 Protection equipment shall be accessible and test ***gauges*** shall be located where clearly visible and readable to pump operator and inspector.

(V)(G) or (I)(G) "SEAT TIGHTNESS" (See 4.4)

3.5.2 Test for seat tightness alternately on each side of gate for double seated valves, and on outboard side only on single seated valves, with the opposite side open for inspection.

3.5.2.1 Do not exceed handwheel closing force specified in Table 505-11-2 of 2.6.

3.5.2.2 Test shall be continued for a minimum of 3 minutes if there is no evidence of leakage, or in the event of visible leakage, until accurate determination of leakage can be made.

3.5.2.3 For each hard seated valve, maximum allowable leakage: 10 cubic centimeters (cc) per hour, per inch of nominal pipe size; 10cc maximum per hour for each valve size less than 1-1/2 inches.

3.5.2.4 For each soft seated valve the maximum allowable leakage rate is none.

(V)(G) or (I)(G) "SEAT TIGHTNESS" (See 4.4)

3.5.3 Test globe valve in the direction tending to open valve.

3.5.3.1 Do not exceed the handwheel closing force specified in Table 505-11-2 of 2.6.

3.5.3.2 Test shall be continued for a minimum of 3 minutes if there is no evidence of leakage, or in the event of visible leakage, until accurate determination of leakage can be made.

3.5.3.3 For each hard seated valve, maximum allowable leakage: 10 cubic centimeters (cc) per hour, per inch of nominal pipe size; 10 cc maximum per hour for valves sizes less than 1-1/2 inches.

(V)(G) or (I)(G) "BACK PRESSURE TEST" (See 4.4)

3.5.4 Back pressure test globe stop check valve with stem in the open position. Allowable leakage as follows:

VALVE SIZE (NOM)	LEAKAGE RATE
Up to 2 inches inclusive	25 cc/hr./in.dia.
2-1/2 inches - 10 inches inclusive	50 cc/hr./in.dia.
Over 10 inches	100 cc/hr./in.dia.

The back pressure applied shall be in accordance with the following:

VALVE PRESSURE RATING	TEST BACK PRESSURE
100 PSIG and Below	50 PSIG
Over 150 PSIG	100 PSIG

4. NOTES:

4.1 The test pressures of 3.5.2 and 3.5.3 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).

4.4 The paragraph referencing this note is considered an (I)(G) if the valve is Level I. If the valve is not Level I, the paragraph is considered a (V)(G).

4.5 Test medium will be specified in Work Item.