MILITARY SPECIFICATION

# VALVE, QUICK CLOSING, FOR SATURATED STEAM SERVICE

This specification 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.

## 1. SCOPE

1.1 Scope. This specification covers quick closing valves for saturated steam service which are hydraulically actuated.

1.2 Classification. Valves shall be of the types and ratings specified in 1.2.1 and 1.2.2, as specified (see 6.2.1).

1.2.1 Type. Valves shall be of the following types:

Type I - Globe valve with inline nozzles.
Type II - Angle valve.
Type III - Globe valve with offset nozzles.

1.2.2 Rating. The valves shall be designed and rated in accordance with ANSI B16.34 special class 600 or 900, except as modified herein.

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

SPECIFICATIONS

FEDERAL

QQ-C-320 - Chromium Plating (Electrodeposited).
QQ-S-763 - Steel Bars, Wire, Shapes, and Forgings, Corrosion-Resisting.
PPP-P-40 - Packaging and Packing of Hand Tools.

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MIL-P-116 - Preservation, Methods of.
MIL-S-901 - Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for.
MIL-S-1222 - Studs, Bolts, Hex Cap Screws, and Nuts.
MIL-H-6083 - Hydraulic Fluid, Petroleum Base, for Preservation and Operation.
MIL-S-8660 - Silicone Compound.
MIL-P-15024 - Plates, Tags and Bands for Identification of Equipment.
MIL-P-15024/5 - Plates, Identification.
MIL-R-17131 - Rods and Powders, Welding, Surfacing.
MIL-L-17331 - Lubricating Oil, Steam Turbine and Gear, Moderate Service.
MIL-G-21032 - Gaskets, Metallic - Asbestos, Spiral Wound.
MIL-S-22473 - Sealing, Locking, and Retaining Compound; Single-Component.
MIL-L-24131 - Lubricant, Colloidal Graphite in Isopropanol.
MIL-L-24478 - Lubricant, Molybdenum Disulfide in Isopropanol.
MIL-L-24479 - Lubricant, Red Lead and Graphite in Mineral Oil.
DOD-G-24508 - Grease, High Performance, Multi-Purpose. (Metric)
MIL-P-24548 - Penetrating Fluid.
MIL-S-45180 - Sealing Compound, Gasket, Hydrocarbon Fluid and Water Resistant.

STANDARDS

FEDERAL

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

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MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-167-1 - Mechanical Vibrations of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited).
MIL-STD-271 - Nondestructive Testing Requirements for Metals.
MIL-STD-278 - Fabrication Welding and Inspection; and Casting Inspection and Repair for Machinery, Piping and Pressure Vessels in Ships of the United States Navy.
MIL-STD-792 - Identification Marking Requirements for Special Purpose Components.
MIL-STD-1552 - Provisioning Technical Documentation, Uniform Department of Defense Requirements for.
MIL-STD-1561 - Provisioning Procedures, Uniform Department of Defense.

2.1.2 Other Government documents and publications. The following other Government documents and publications form a part of this specification to the extent specified herein.

PUBLICATIONS

NAVAL SEA SYSTEMS COMMAND (NAVSEA)
0900-LP-003-8000 - Metals, Surface Inspection Acceptance Standards.
0948-LP-019-0010 - Valve Gate Grinder Resealing Model 100R 400 2000N 400N and 800N, TM/W CHG.

(Copies of specifications, standards and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
B1.12 - Class 5 Interference-Fit Thread.
B16.34 - Valves-Flanged and Buttwelding End Steel, Nickel Alloy, and Other Special Alloys. (DoD adopted)
B18.2.1 - Square and Hex Bolts and Screws Inch Series Including Hex Cap Screws and Lug Screws. (DoD adopted)
B18.2.2 - Square and Hex Nuts. (DoD adopted)

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

ASTM
A 105 - Forgings, Carbon Steel, For Piping Components.
A 106 - Seamless Carbon Steel Pipe for High-Temperature Service. (DoD adopted)
A 182 - Forged or Rolled Alloy - Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service. (DoD adopted)
A 193 - Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service. (DoD adopted)
A 194 - Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service. (DoD adopted)
A 216 - Carbon-Steel Castings Suitable for Fusion Welding for High-Temperature Service. (DoD adopted)
A 217 - Martenistic Stainless Steel and Alloy Steel Castings for Pressure-Containing Parts Suitable for High-Temperature Service. (DoD adopted)
A 479 - Stainless and Heat-Resisting Steel Wire, Bars, and Shapes to Use in Boilers and Other Pressure Vessels. (DoD adopted)
A 582 - Free-Machining Stainless and Heat-Resisting Steel Bars, Hot-Rolled or Cold-Finished. (DoD adopted)
B 168 - Nickel-Chromium-Iron Alloy (UNSN06600) Plate, Sheet, and Strip. (DoD adopted)

(Application for copies should be addressed to the ASTM, 1916 Race Street, Philadelphia, PA 19103.)

INSTRUMENT SOCIETY OF AMERICA (ISA)
S75.02 - Control Valve Capacity Test Procedure.

(Application for copies should be addressed to the Instrument Society of America, P.O. Box 12277, Research Triangle Park, NC 27709.)

UNIFORM CLASSIFICATION COMMITTEE AGENT
Uniform Freight Classification Ratings, Rules and Regulations

(Application for copies should be addressed to the Uniform Classification Committee Agent, Tariff Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2.1), a sample shall be subjected to first article inspection (see 4.3 and 6.3).

3.2 Materials. Materials shall be as specified in table I. Materials for parts other than those listed in table I shall be suitable for the intended pressures and temperatures and shall be selected to prevent galling, seizing or excessive wear on operating parts.

TABLE I. List of material.

| Name of part | Material form | Applicable documents |
|---|---|---|
| Body and bonnet | Forgings or castings | ASTM A 105; ASTM A 216, grade WCB; ASTM A 217, grade WC6 |
| Stem and stem sleeves | Forging, bar stock | ASTM A 182, grade F6; ASTM A 582, type 416; QQ-S-763, class 410; ASTM A 479, type 410 |
| Disc | Forging or casting | ASTM A 105; ASTM A 216, grade WCB; ASTM A 217, grade WC6; ASTM A 182, grade F11 |
| Fasteners | Alloy steel for high temperature service | ASTM A 193, grade B7 or B16; ASTM A 194, grade 2H or 4; MIL-S-1222 |
| Gaskets | Spiral wound | MIL-G-21032, type I, class A or B |

TABLE I. List of material. - Continued

| Name of part | Material form | Applicable documents |
|---|---|---|
| Seating, surface hard facing | Cobalt and chromium alloy | MIL-R-17131, MIL-CoCr-A |
| Stem bushings | Forged, bar stock | QQ-S-763, class 440C |
| Drain and bypass lines | | ASTM A 106, grade B |

3.2.1 Sulfur content. The sulfur content of carbon and alloy steel pressure boundary parts intended for welding shall be 0.050 percent maximum.

3.2.2 Magnesium alloy. Magnesium alloy shall not be used.

3.2.3 Cast iron. Cast iron shall not be used.

3.2.4 Aluminum and zinc castings. Aluminum and zinc castings shall not be used.

3.2.5 Cadmium plating. Cadmium plating shall not be used. Zinc coating shall not be used on surfaces of internal parts of hydraulic equipment which may be in contact with hydraulic fluid.

3.2.6 Mercury. Valves shall not contain metallic mercury or mercury compounds and shall be free from mercury contamination (that is, during the manufacturing process, tests or inspections). Valves shall not have come in direct contact with mercury or any of its compounds nor with any mercury containing devices employing only a single boundary of containment. (A single boundary of containment is one which is not backed by a second seal or barrier to prevent contamination in event of rupture of the primary seal or barrier.) Mercury contamination of the valves will be cause for rejection of the material.

3.2.7 Lubricants and compounds. Lubricants and compounds identified as shown below shall be specified for shipboard maintenance. This requirement only applies to applications where forces afloat may have to maintain or assemble and disassemble the valve on board ship. This requirement does not apply to lubricants and compounds used only in the manufacturing process (for example, cutting oils).

(a) Lubricants

(1) Lubricating oil in accordance with MIL-L-17331 (Military symbol 2190 TEP).
(2) Grease in accordance with DOD-G-24508.

(b) Anti-galling compounds

(1) Graphite in isopropanol in accordance with MIL-L-24131 (Military symbol CGI).
(2) Molybdenum disulfide in isopropanol in accordance with MIL-L-24478.
(3) Red lead and graphite in mineral oil in accordance with MIL-L-24479.

(c) Sealing compound in accordance with MIL-S-45180, type II.
(d) Silicone compound in accordance with MIL-S-8660.
(e) Locking compound in accordance with MIL-S-22473, grade AV.
(f) Penetrating fluid in accordance with MIL-P-24548.

3.2.8 Recovered materials. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and shall be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

3.3 Design and construction. The valve design shall utilize steam pressure so that the valve closes when hydraulic pressure is relieved even if the valve spring is broken. Clearances shall be such as to prevent interferences due to thermal expansion. Valve design and construction shall assure that assembly and disassembly of the valve can be accomplished on board ship by Navy personnel.

3.3.1 Pressure-temperature ratings. The design and pressure-temperature rating of the valves shall be in accordance with ANSI B16.34 special class 600 or 900.

3.3.2 End preparation. Weld preparations for pipe end connections and drain and bypass bosses shall be as specified (see 6.2.1). End connections for hydraulic piping shall be flanged or union end connections as specified (see 6.2.1).

3.3.3 End connections. Valve end connections shall withstand the forces and moments imposed by the connecting pipe to which they are attached. For design purposes, the maximum value of the fiber stress in the connecting pipe produced by these forces and moments shall be considered to be equal to the 0.2 percent offset yield stress of the piping material at room temperature. When the valve is intended to be used as a piping system anchor point, additional design criteria shall apply (see 6.2.1).

3.3.4 Drain, bypass and leakoff connections.

3.3.4.1 Size of drains and bypasses. Drains and bypasses shall be as shown in table II.

TABLE II. Drain and bypass sizes.

| Valve size (n.p.s.) | Drain and bypass size (n.p.s.) |
|---|---|
| 2-1/2 - 4 | 1/2 |
| 5 - 12 | 1 |
| 14 - 20 | 1-1/2 |
| 24 | 2 |

3.3.4.2 Location. The location of drains and bypasses shall be as specified (see 6.2.1). Location of drains shall provide maximum drainage from bonnet cavity closures and shall permit nondestructive testing of root connections.

3.3.4.3 Root connections. Drain and bypass line root connections shall employ integral bosses or bosses that are welded to the body by a full penetration weld.

3.3.4.4 Leakoff connection. Stem leakoff connection shall be flanged. The root connection shall be an integral boss or boss that is welded to the body by a full penetration weld. Unless otherwise specified (see 6.2.1), the size, schedule and pressure rating of pipe and flange shall be established by the manufacturer (see 3.3.16).

3.3.5 Dynamic and spring loads. The design of the valve shall take into consideration dynamic and spring loads imposed by actuators. Calculations showing these design considerations shall be submitted for approval.

3.3.6 Port arrangement. For type III valves, the offset dimensions shall be as specified (see 6.2.1).

3.3.7 Weights and center of gravity. The manufacturer shall supply a calculated weight and estimated center of gravity with the proposal. After completion of the first valve, the actual dry weight and calculated center of gravity shall be shown on the cross-section drawing.

3.3.8 Overall dimensions. Valve space envelope requirements shall be as specified (see 6.2.1).

3.3.9 Shock and vibration.

3.3.9.1 The valve with the actuator installed shall withstand the shock requirement in accordance with MIL-S-901, grade A, class I, type A.

3.3.9.2 The valve with the actuator installed shall withstand the vibration test in accordance with MIL-STD-167-1.

3.3.10 Flanged bonnets or covers. The valve bonnet or cover shall be secured by cap screws, through bolts, or studs. The construction shall incorporate the following features:

(a) Alinement shall be obtained by body guiding, that is, a close tolerance fit between the bonnet or cover and valve body. The bonnet or cover shall not be alined by means of the studs or cap screws.
(b) Flange face design shall assure proper compression of the flange gasket when the body and bonnet or cover flanges are drawn metal-to-metal.
(c) Spiral wound gaskets shall be in accordance with table I.

3.3.11 Flange finish. Flange finishes shall be provided with a circular lay (concentric or phonographic) having a roughness not exceeding 500 roughness average (Ra) produced by machining not less than 40 cuts of uniform depth per inch of face width.

3.3.12 Bearing surfaces. Bearing surfaces of nuts and bolt heads and their respective mating surfaces on the valve shall be machined.

3.3.13 Fasteners. Fasteners shall be one of the following:

(a) Capscrews in accordance with ANSI B18.2.1 and mating nuts in accordance with ANSI B18.2.2.
(b) Bolts, studs and nuts in accordance with MIL-S-1222, type I.
(c) Studs shall be installed in accordance with ANSI B1.12.
(d) Fasteners in the fluid media shall be corrosion-resistant steel, nickel-copper, or nickel-chromium-iron.

3.3.13.1 Unless otherwise specified (see 6.2.1), threaded fasteners of normally stocked lengths shall be used. Male threads on threaded fasteners, after being installed and tightened, shall protrude at least one thread and not more than five threads beyond the top of the nut or plastic locking element. Washers shall not be used for the sole purpose of lessening thread protrusion. Thread engagement for the setting end of a stud or bolt shall be sufficient length so that the shear load strength of the engaged threads is more than the tensile load strength of the stud or cap screw. (See FED-STD-H28 for an acceptable method of determining required length of engagement.)

3.3.14 Threaded parts. Threads for parts other than fasteners shall be in accordance with FED-STD-H28.

3.3.15 Locking devices. Threaded fasteners and threaded machine parts internal to the valve and actuator and on moving parts shall be secured by locking devices.

3.3.16 Valve stem seals. The valve shall be provided with a leakoff stem sealing arrangement. The leakoff stem seal arrangement shall be of the labyrinth type and shall be provided with a hardfaced seat to seal the arrangement when the main valve is in the open position. When the main valve is in the closed position or any intermediate position, the steam flow at the leakoff connection shall not exceed the amount specified (see 6.2.1). The following empirical equation may be used to estimate the maximum flow rate:

$W = .06 P\sqrt{D}$
W = pounds of steam flow per hour through the stem seal arrangement
P = maximum system design pressure in $lb/in^2$ absolute
D = main valve nominal diameter in inches

3.3.17 Trim.

3.3.17.1 Disc construction. The disc shall be a semi-balanced design. The main disc shall be a semi-balanced element with the unbalance such that steam pressure tends to close the valve. The disc assembly shall be cage guided and the stem and pilot valves shall restrain the main disc in the open position. Stem and disc assembly wearing surfaces shall be designed to prevent galling. The disc shall be provided with hardfacing (see table I) on sliding surfaces between disc and cage. A positive means shall be provided to prevent rotation of the stem and disc. The pressure balance shall be controlled by means of an internal pilot which is actuated by the valve stem. The amount of unbalance shall be adjustable and shall be controlled by a variable orifice in the balance chamber. The control of the orifice opening shall be obtained by external means. After the final adjustments have been made, the external control device shall be seal welded. Provision shall be made to permit rewelding of the seal joint. The valve shall not chatter at any operating point.

3.3.17.2 Main seat construction. The main seat shall be an insert type, recessed into the valve body, and seal welded.

3.3.17.2.1 Valve seat expansion seal rings or lips shall be nickel-chromium-iron in accordance with ASTM B 168. The design of the expansion rings shall be such that water cannot collect in the ring or lip. The expansion absorbing device shall not be in the steam flow path where it would be subject to erosion.

3.3.17.2.2 The valve shall be designed to be repaired using the lapping tool in accordance with NAVSEA 0948-LP-019-0010.

3.3.17.3 Valve trim material. Valve trim materials shall be in accordance with table I.

3.3.17.4 Seating surfaces. The minimum finished thickness of hardsurfacing shall be 3/32 inch. Hardsurfacing materials shall be in accordance with table I.

3.3.17.5 Stem position indicators. A stem position indicator shall be provided. Remote position sensors shall be provided as specified (see 6.2.1). Valve position sensors shall have an accuracy of 1/16 inch of true valve position.

3.3.17.6 Seat tightness. Leakage rate of water shall not exceed 2 cubic centimeters per inch per hour ($cm^3/in/h$) of nominal pipe size (n.p.s.). Steam test leakage rate shall not exceed 50 $cm^3/in/h$ n.p.s. (see 4.3.2.2.1 and 4.4.2.1.2).

3.3.18 Welding, fabrication and forging.

3.3.18.1 Welding. Welding shall be in accordance with MIL-STD-278.

3.3.18.2 Fabrication. Fabricated assemblies shall be stress relieved as units prior to finish machining. The stress relieving shall be done in accordance with MIL-STD-278.

3.3.18.3 Nondestructive testing. Nondestructive testing and acceptance criteria shall be in accordance with MIL-STD-271 and MIL-STD-278 (see 4.4.1).

3.3.18.4 Forgings. Forgings shall be free of scale and machining burrs.

3.3.18.4.1 Accessible surfaces of finished forgings. Accessible surfaces of the finished forging shall be magnetic particle or liquid penetrant inspected in accordance with MIL-STD-271. Indications obtained by the inspection shall be evaluated and shall be free of injurious imperfections as specified in 3.3.18.4.1.1 through 3.3.18.4.1.2.

3.3.18.4.1.1 Depth of injurious imperfections. Linear imperfections shall be explored for depth. When the depth encroaches on the minimum wall thickness of the finished forging, such imperfections shall be considered injurious.

3.3.18.4.1.2 Any imperfection located in the gasket, bearing or machined surface which can cause leakage or otherwise interfere with proper function of the components shall be considered injurious.

3.3.18.4.2 Machining or grinding imperfections not classifed as injurious. Surface imperfections not classified as injurious shall be treated as follows:

(a) Seams, laps, tears or slivers not deeper than 5 percent of the nominal wall thickness or 1/16 inch, whichever is less, need not be removed, if the bottoms of these imperfections are obvious. Imperfections which are deeper than 1/16 inch, or which the depth cannot be determined, shall be removed by machining or grinding.

(b) Mechanical marks or abrasions and pits shall be acceptable without grinding or machining provided the depth does not exceed the limitations set forth in (a) above. Imperfections that are deeper than 1/16 inch but which do not encroach on the minimum wall thickness of the forgings shall be removed by grinding to sound metal.

(c) When imperfections have been removed by grinding or machining, the outside dimension at the point of grinding or machining may be reduced by the amount removed. Should it be impracticable to secure a direct measurement, the wall thickness at the point of grinding or at an imperfection not required to be removed, shall be determined by deducting the amount removed by grinding from the nominal finished wall thickness of the forging, and the remainder shall be not less than the minimum specified or required wall thickness.

3.3.18.4.3 Acceptable surface conditions. Surface conditions as specified in 3.3.18.4.2 shall be considered acceptable without weld repair provided the grinding is blending smoothly with the adjacent material and is scattered, and provided the total ground area does not exceed 10 percent of the forging surface. Ground areas shall be reinspected by magnetic particle or liquid penetrant inspections.

3.3.18.4.4 Injurious imperfections and defect excavations. Injurious imperfections and defect excavations which violate the minimum required wall thickness shall be weld repaired, in accordance with MIL-STD-278, under the following conditions:

(a) Minor weld repairs., Minor weld repairs meeting the following conditions may be made at the direction of the contractor or foundry:

(1) Depth of excavation does not exceed 20 percent of the minimum wall thickness, or 1 inch, whichever is less, and has been confirmed by magnetic particle or liquid penetrant inspection that all imperfections have been removed.
(2) Total area of excavation does not exceed 10 percent of the forging surface.
(3) Location of excavation that requires weld repair does not occur at a fillet radius area.

(b) Major weld repairs. Major weld repairs are those where the excavations exceed that specified for minor repair and the location of excavation occur in the fillet radius area. Major weld repairs shall not be made without specific approval.

3.3.18.4.5 Weld repaired areas. Weld repaired areas shall be inspected by magnetic particle or liquid penetrant inspection. Acceptance criteria shall be in accordance with MIL-STD-278.

3.3.19 Valve actuator. The valve shall be actuated by a spring and hydraulic cylinder mechanism. The spring shall close the valve when the hydraulic pressure is released. Hydraulic pressure shall be used to maintain the valve in the open position.

3.3.19.1 The hydraulic operating pressures and temperature range shall be as specified (see 6.2.1):

(a) Maximum and nominal hydraulic system pressure.
(b) Minimum hydraulic differential pressure across the actuator to open the valve with the valve pressurized to design rated steam pressures.
(c) Minimum hydraulic pressure required to hold the valve open without steam in the valve.
(d) The valve actuator shall function with the hydraulic oil within the hydraulic system oil temperature range.

3.3.19.2 Bores for cylinders. Bores for cylinders of noncorrosion resistant steel shall be chrome plated to a minimum thickness of 0.002 inch on the finished part. Chrome plating shall be in accordance with QQ-C-320, class 2.

3.3.19.3 Valve actuator and design. The valve actuator and design shall be such that the heat from the valve conducted to the hydraulic cylinder shall not raise the hydraulic fluid temperature above 160 degrees Fahrenheit (°F). The hydraulic oil shall be in accordance with MIL-L-17331 (Military symbol 2190 TEP).

3.3.19.4 Actuating mechanism. The actuating mechanism shall include an antislamming device to protect the valve seating and internal components from damage. The antislamming device shall function within approximately the last 5 percent of closure, as applicable (see 3.3.20.1) before the valve fully closes.

3.3.19.5 Failure of elastomer seals. Failure of elastomer seals in the actuator shall still result in the valve being able to be opened with nominal hydraulic system pressure and with design steam pressure equalized across the disc. A visual means shall be provided to indicate failure of elastomer seals in the actuator.

3.3.20 Functional requirements. Functional requirements for valves and actuators shall be as specified in 3.3.20.1 through 3.3.20.8 (see 6.2.1).

3.3.20.1 Fast closing time. Closing time (a), (b) or (c) shall be specified (see 6.2.1).

(a) The valve shall fast close from the full "OPEN" back seated position to approximately 95 percent "CLOSED" position in 0.25 second or less, and shall continue closed from this position to the full "CLOSED" position in 1/4 second minimum and 2 seconds maximum while being subjected to a hydraulic system backpressure of 150 pounds per square inch ($lb/in^2$).
(b) The valve shall fast close from the full "OPEN" back seated position to the 95 percent closure in 2 seconds or less, and shall continue closed from the 95 percent closure to the full "CLOSED" position in 1 second minimum and 3 seconds maximum.
(c) Valves shall close to the partially closed position in the time specified.

3.3.20.2 The valve shall close during normal operation in 10 to 20 seconds.

3.3.20.3 The time to open the valve from fully closed to fully open shall not exceed 30 seconds against maximum design steam pressure when supplied with minimum hydraulic opening differential pressure.

3.3.20.4 The valve shall have a minimum saturated steam flow capacity as specified (see 6.2.1).

3.3.20.5 The maximum pressure drop for the valve at the flow and pressure specified in 3.3.20.4 and 3.3.20.6 shall be as specified (see 6.2.1).

3.3.20.6 The maximum system design pressure and temperature shall be as specified (see 6.2.1).

3.3.20.7 Partial trip position. When specified, the valve shall close to a partial open position. The position and closing time shall be as specified (see 6.2.1).

3.3.20.8 The valve shall open with a maximum steam differential pressure across the disc with minimum design hydraulic pressure (see 6.2.1).

3.3.21 Incorrect assembly. Individual valve parts shall be self alining and shall be nonreversible, unless such parts are also reversible with regard to function and performance.

3.3.22 Interchangeability. Parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable.

3.3.23 Cleanliness. Parts shall be cleaned by any process or combination of processes which will accomplish thorough cleaning without damage to the parts. Surfaces shall be examined visually to determine freedom from dirt, corrosion, oil, grease or foreign residue. Preservatives shall not be used on parts which are vulnerable to damage by contact preservatives.

3.4 Body markings and identification plates.

3.4.1 Body markings. Valve bodies shall have the pressure rating, manufacturer's name or trademark, and a flow directional arrow cast or forged integral with the valve body. Marking shall be applied in accordance with MIL-STD-792, or approved specifications and drawings.

3.4.2 Identification plates. Each valve shall be permanently marked with identification information on a brass, nickel-copper or corrosion-resistant steel identification plate. Identification plates shall be type A, B, C or D in accordance with MIL-P-15024, suitable for severe service. The etching, stamping, plate thickness and color style shall be in accordance with the MIL-P-15024 and MIL-P-15024/5. Identification plates shall be permanently fastened to a part of the valve not subjected to working pressure, and shall include the following data or a space therefore:

(a) Manufacturer's name or trademark.
(b) Size of valve and rating.
(c) Body and bonnet material composition.
(d) Valve trim identification (stem-disc-seat) (see 3.3.17).
(e) Manufacturer's identification number (Federal Supply Code for Manufacturers (FSCM)).
(f) Manufacturer's drawing number.
(g) MIL-V-24619.
(h) Component identification number.

3.5 Special tools. If required, special tools shall be listed in accordance with MIL-STD-1552 and MIL-STD-1561. Special tools are defined as those tools not listed in the Federal Supply Catalog (copies of this catalog may be consulted in the office of the Defense Contract Administration Services Management Area (DCASMA)).

3.6 Technical data. The contractor shall prepare technical data in accordance with the data ordering documents included in the contract or order (see 6.2.2), and as specified in 3.6.1 through 3.6.2. The drawings and manuals shall be developed for approval.

3.6.1 Drawings. In addition to the drawing content required by the data ordering document (see 6.2.2), the following features shall be included:

(a) Accurately scaled cross-sectional assembly which depicts the design and construction of the valve, including variation in design based on pipe size, identification of critical clearances and dry weight and center of gravity (see 3.3.7).
(b) Bill of materials listing specification, grade, condition and any other data required to identify the properties of the materials.
(c) Detail drawings of parts and subassemblies necessary for evaluation of the equipment and parts necessary for maintenance and overhaul of the valve. Details of these parts shall be so complete as to permit emergency manufacture by a Naval shipyard without assistance from the original manufacturer. Subassembly parts which cannot be acquired or serviced individually, shall be shown as a single part and so indicated. Multidetail drawings are preferred, but monodetail drawings may be used.
(d) Layout of the pressure-containing envelope (body and bonnet or cover) giving dimensions which control compression of the spiral-wound gaskets. This is to assure that where remachining is necessary to repair the sealing surfaces on these parts, that compensating cuts can be accurately made to restore original gasket compression. This layout shall also specify the dimensional limits of corrective remachining with which the function of the valve remains unaffected.
(e) Recommended torques or equivalent procedures for assembling joints and threaded assemblies.
(f) Tabulation of required gasket characteristics including all dimensions with tolerances and load versus compression characteristics with tolerances.
(g) Mark areas to be radiographic, magnetic particle, or dye penetrant inspected.
(h) Installation and maintenance dimensions. Overall dimensions, accessibility space including disassembly clearances and all dimensions pertinent to installation.
(i) Surface finishes. Show finish marks for all hard face surfaces and bearing areas.
(j) Name of laboratory conducting shock and vibration tests, test report identification and the Navy approval letter.
(k) Steam leakoff flow with the valve closed.

3.6.1.1 Certification data. Certification data sheets shall be prepared by the contractor (see 6.2.2). In addition to the general requirements, the certification data sheets shall include the following:

(a) Type.
(b) Pressure and temperature rating.
(c) Body and bonnet material.
(d) Seat, disc, and stem material.
(e) Type of power actuator. Shock and vibration tests of valve with the power actuator attached.

3.6.2 Manuals. In addition to the general requirements for technical manuals (see 6.2.2), the following shall be included as part of the contents:

(a) Drawings of the valve including certification data sheet. Drawings shall be supplemented by additional illustrations where necessary to adequately describe operation and maintenance. These additional illustrations may consist of exploded views, partial or full sections, and may eliminate extraneous lines and details to clarify the interaction of parts.
(b) Table listing wrench sizes and torque or other equivalent procedures for assembling joints and threaded parts.
(c) Instructions to permit overhaul by shipyard or other repair facility. These should include procedures for checking critical dimensions subject to wear or change and the acceptable dimensional limits and surface finish condition. Also, the appropriate procedures for part replacement, correction at repair facility, or repair at manufacturer's facility which should be followed to correct each case of damage or wear.
(d) Detailed disassembly and reassembly procedures. In addition to providing procedures for the complete disassembly and reassembly of the equipment, maintenance and troubleshooting sections shall contain, or refer to, only the limited disassembly and reassembly required to accomplish each particular operation. This is intended to reduce the possibility of unnecessary disassembly and unnecessary disturbance of adjustments when performing specific or limited maintenance or troubleshooting operations.
(e) Adjustment procedures.

## 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Inspection system. The contractor shall provide and maintain an inspection system in accordance with the data ordering documents included in the contract or order (see 6.2.2).

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

(a) First article inspection (see 4.3).
(b) Quality conformance inspection (see 4.4).

4.3 First article inspection. First article inspection shall consist of the examinations specified in 4.3.1 and the tests of 4.3.2. The orientation of the test valve shall be as specified (see 6.2.1). A first article test report shall be prepared in accordance with the data ordering document included in the contract or order (see 6.2.2).

4.3.1 Examinations.

4.3.1.1 Visual, dimensional and nondestructive examinations. Prior to testing, visual, dimensional and nondestructive examinations shall be as follows:

(a) The test valve shall be visually inspected for conformance with this specification.
(b) The test valve shall be dimensionally inspected, and a complete list of the critical valve dimensions shall be made. This list shall be used in the final examination at the conclusion of first article tests.
(c) Nondestructive examination shall be in accordance with 4.4.1.

4.3.1.2 Post-test visual and dimension examination. After the tests of 4.3.2.1 through 4.3.2.2.2.4, the following visual and dimensional examination shall be conducted:

(a) The test valve shall be disassembled and visually and dimensionally examined for wear and damage.
(b) The list of critical valve dimensions taken in 4.3.1.1 shall be used and a final set of dimensions taken.
(c) Valve components which have unusual wear shall be noted.
(d) The ability of the stem and disc to be replaced shall be demonstrated.
(e) Disassembly and reassembly shall be accomplished by following the technical manual instructions.

4.3.2 Tests.

4.3.2.1 Cold tests. Hydrostatic shell and tightness tests shall be conducted in accordance with 4.4.2.

4.3.2.2 Hot tests. Hot tests shall be conducted using saturated steam at the conditions specified (see 3.3.20.6).

4.3.2.2.1 Steam leakage. With the valve in the closed position, steam pressure shall be applied to the inlet side of the disc. Upon stabilization of the temperature differentials across the valve, the leakage past the main and pilot seats shall be measured and recorded. The leakage shall be measured in $cm^3/in/h$ of condensate. The acceptance critieria as specified in 3.3.17.6 applies. The steam flow through the stem leak-off assembly shall be measured and recorded.

4.3.2.2.2 Operational test.

4.3.2.2.2.1 Steam shall be passed through the valve for at least 48 hours.

4.3.2.2.2.2 During the steaming period, the valve shall be cycled 1000 times, 500 fast close cycles (see 3.3.20.1) and 500 slow close cycles (see 3.3.20.2). If the valve has a partial trip position (see 3.3.20.7), the valve shall be closed to the partial trip position 250 times in addition to the 1000 cycle test. The opening and closing times shall be measured and shall be in accordance with 3.3.20.1, 3.3.20.2 and 3.3.20.3.

4.3.2.2.2.3 At approximately each 250 cycles, a thermal shock test shall be conducted as follows:

(a) Close the valve while hot and allow the valve to cool to ambient.
(b) Upon achieving ambient, the system design pressure and temperature steam shall be reapplied and the valve opened.
(c) The hydraulic differential pressure required to open the valve shall be measured and shall be not greater than the amount specified in 3.3.19.1(b).

4.3.2.2.2.4 After completion of the testing, the valve seat tightness tests in accordance with 4.3.2.2.1 shall be performed. Seat leakage shall not exceed five times the acceptance criteria in accordance with 3.3.17.6. The valve shall be opened with no steam pressure and the hydraulic pressure required to hold the valve fully open shall be measured. The pressure shall be not greater than the amount specified in 3.3.19.1(c).

4.3.2.3 Flow tests.

4.3.2.3.1 The valve shall be tested for chattering by passing system design steam flow through the valve. Chattering of the valve at full open or at the specified partial trip position shall be cause for rejection. This test may be done after installation in the ship, when approved.

4.3.2.3.2 The valve flow coefficient (Cv) shall be determined in accordance with ISA S75.02. The maximum presure drop shall be calculated and the pressure drop shall not exceed that specified in 3.3.20.5.

4.3.2.4 Shock and vibration.

4.3.2.4.1 Shock. One valve of each new design and size shall be tested in accordance with 3.3.9.1.

4.3.2.4.1.1 Tests shall be conducted with the valve hydrostatically pressurized to its ambient design pressure. The valve shall be tested in the full closed, partially tripped, and full open position. During the closed shock test, the valve inlet shall be pressurized and the outlet shall be depressurized.

4.3.2.4.1.2 Post shock examination and testing shall include the following:

(a) A visual and dimensional examination of the valve including the internals.
(b) Production tests in accordance with 4.4.2.1.
(c) Cycle the valve one quick trip cycle, one slow cycle and one partial trip cycle, if applicable within the hydraulic pressure limits (see 3.3.19.1).
(d) The trip time shall be determined and shall be in accordance with 3.3.20.

4.3.2.4.1.3 The valve shall pass post shock tests without exception. Any permanent change which is detrimental to the valve shall be cause for rejection. This shall include any permanent deformation of any pressure containing part. Shock tests shall be approved by the contracting activity, subject to concurrence by the Naval Sea Systems Command, cognizant Supervisor of Shipbuilding, Conversion and Repair, or Commander, Naval Shipyard. If the design is changed from a previously tested and approved configuration, the modified design shall be submitted to NAVSEA for review to determine the suitability of shock extension approval or need for retest.

4.3.2.4.2 Vibration. One valve of each new design shall be tested in accordance with 3.3.9.2.

4.4 Quality conformance inspection.

4.4.1 Nondestructive examination.

4.4.1.1 Each valve shall be examined to verify conformance with the requirements of this specification not involving tests.

4.4.1.2 Each steam pressure containing casting of a valve shall have 100 percent radiographic examination coverage (see 3.3.18.3).

4.4.1.3 Each steam pressure containing forging of a valve shall be magnetic particle inspected over 100 percent of the surface in accordance with MIL-STD-271. Pressure containing parts shall be magnetic particle inspected after final heat treatment. Liquid penetrant inspection may be substituted for magnetic particle inspection when the configuration is not suitable for magnetic particle inspection or liquid penetrant inspection is required to detect fine porosity. Acceptance criteria shall be in accordance with NAVSEA 0900-LP-003-8000.

4.4.1.4 Nondestructive testing of buttweld end preparations. For valves with buttweld end preparations, the weld end preparation shall be liquid penetrant inspected. Liquid penetrant inspection shall include examination of the surfaces in accordance with 4.4.1.4.1 through 4.4.1.6.

4.4.1.4.1 For buttweld end preparations of 1 inch n.p.s. and larger, inspect 1/2 inch back from the end preparation.

4.4.1.4.2 For buttweld end preparations less than 1 inch n.p.s., inspect 1/4 inch back from the end preparation.

4.4.1.4.3 Liquid penetrant inspection methods shall be in accordance with MIL-STD-271 and the acceptance standard shall be in accordance with NAVSEA 0900-LP-003-8000.

4.4.1.5 Defects to be repaired. Base metal shall be repaired in accordance with MIL-STD-278.

4.4.1.6 Hardfaced surfaces. Hardfaced surfaces shall be liquid penetrant inspected after finish machining in accordance with MIL-STD-278. Acceptance criteria shall be in accordance with NAVSEA 0900-LP-003-8000.

4.4.2 Tests.

4.4.2.1 Production tests. Each valve shall be subjected to the hydrostatic tests specified in 4.4.2.1.1 for strength and porosity and the tests specified in 4.4.2.1.2, 4.4.2.1.3, 4.4.2.1.4, and 4.4.2.1.5. The water temperature shall not exceed 125°F.

4.4.2.1.1 Shell test. Valves shall be subjected to 1-1/2 times the 100°F special class pressure ratings in accordance with ANSI B16.34 for a duration of 10 minutes minimum. The valve actuator shall be subjected to 1-1/2 times the maximum specified hydraulic system pressure (see 3.3.19.1(a)) for a duration of 1 minute minimum. Any weeping, leakage or permanent deformation shall be cause for rejection. Test shall be conducted with the valve in the open position.

4.4.2.1.2 Seat tightness. Valves shall be hydrostatically pressurized on the inlet side of the disc to 110 percent of the 100°F special class pressure rating in accordance with ANSI B16.34 and examined for seat tightness. Duration of the test shall be 3 minutes minimum. Leakage rate of water shall not exceed the rate specified in 3.3.17.6. A steam test shall be performed in accordance with 4.3.2.2.1 with steam conditions in accordance with 3.3.20.6.

4.4.2.1.3 Stem seal seat tightness. Valve shall be open and pressurized on the inlet side of the disc to 110 percent of the 100°F special class pressure rating in accordance with ANSI B16.34 and examined for stem seal seat tightness. Duration of the test shall be 3 minutes minimum. Leakage rate of water shall not exceed 2 $cm^3$/in/h of stem diameter. A steam test shall be performed in accordance with 4.3.2.2.1 with steam conditions in accordance with 3.3.20.6.

4.4.2.1.4 Operational test. The valve shall be cycled five times with steam at conditions in accordance with 3.3.20.6. The valve fast closing time shall be measured and shall be in accordance with 3.3.20.1, 3.3.20.2 and 3.3.20.3. The hydraulic differential pressure across the actuator required to open the valve shall be measured and shall be not greater than the amount specified in 3.3.19.1(b).

4.4.2.1.5 Leakage past mechanical closures. Mechanical closure of each production valve shall be tested as follows: Test fluid conditions shall be in accordance with 4.4.2.1.2. The hydraulic cylinder shall be pressurized as specified in 3.3.19.1 with hydraulic fluid. Duration of the test shall be 3 minutes minimum. The appearance of fluid or wetting at the fluid boundary formed by the seals, gaskets or O-rings shall be cause for rejection. Leakage of hydraulic oil past piston seals shall not exceed that which wipes into the cylinder walls as the piston moves.

4.4.3 Test reports. Test reports shall be prepared in accordance with the data ordering document included in the contract or order (see 6.2.2).

4.5 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified herein.

5. PACKAGING

(The preparation for delivery requirements specified herein apply only for direct Government acquisition. For the extent of applicability of the preparation for delivery requirements of referenced documents listed in section 2, see 6.5.)

5.1 Preservation, packaging, and packing. Unless otherwise specified (see 6.2.1), valve assemblies shall be preserved and packaged in accordance with the manufacturer's commercial practice, except as specified in 5.1.1 through 5.3. Packing shall be in a manner which will ensure acceptance by common carrier and safe delivery at destination. Shipping container or method of packing shall comply to the Uniform Freight Classification Rules or other carrier regulations as applicable to the mode of transportation.

5.1.1 Weld end preparations. Weld end preparations shall be capped with plastic or other suitable caps to provide protection against damage and to maintain internal cleanliness.

5.1.2 Packaging. At the discretion of the manufacturer, valves may be individually packaged to ensure maximum protection against damage. When individual containers are used, the purchase order number and item number shall be marked on each container.

5.1.3 Protection. Machined flange faces shall be protected by 1/8-inch or thicker hardboard discs (or other suitable nonmetallic material) having the same outside diameter as the flange. The disc shall be secured to the flange's gasket surface by two or more undersized bolts or by heavy-duty tape.

5.1.4 Preservatives. Water soluble preservatives shall be used for surfaces in contact with steam. A tag shall be attached to each component specifying the date of preservation and the preservative used.

5.1.5 Preservative fluid. The valve actuator shall be flushed with preservative fluid in accordance with MIL-H-6083. Excess preservation shall be drained and valve actuator openings sealed. Plastic, wood, cardboard or tape by itself shall not be used to seal openings. A tag shall be attached to each component specifying the date of preservation and the preservative used.

5.2 Tools. Tools shall be preserved, packaged, and packed for the level specified (see 6.2.1) in accordance with PPP-P-40, as applicable. Tools not covered therein shall be preserved in accordance with MIL-P-116. Tools shall be individually packaged unless used in sets or quantities greater than one.

5.3 Marking. In addition to any special marking required by the contract or order, interior packages and exterior shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. Valves in accordance with this specification are intended for quick closing applications in saturated steam service.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

(a) Title, number, and date of this specification.
(b) Type and rating required (see 1.2).
(c) If first article inspection is required (see 3.1).
(d) Pipe end connections (see 3.3.2).
(e) Drain and bypass (see 3.3.2).
(f) Hydraulic piping end connection (see 3.3.2).
(g) Design criteria if valve is to be used as a piping system anchor point (see 3.3.3).
(h) Location of drains and bypass (see 3.3.4.2).
(i) Leak-off connection design if other than specified (see 3.3.4.4).
(j) Port arrangement (see 3.3.6).
(k) Overall dimensions (see 3.3.8).
(l) When threaded fasteners of normally stocked lengths shall be used (see 3.3.13.1).
(m) Stem leakoff flow (see 3.3.16).
(n) Valve position sensor requirements (see 3.3.17.5).
(o) Hydraulic actuating pressures and temperature range (see 3.3.19.1).
(p) Functional requirements (see 3.3.20).
(q) Closing time (see 3.3.20.1).
(r) Steam flow capacity (see 3.3.20.4).
(s) Maximum pressure drop (see 3.3.20.5).
(t) Maximum system design pressure and temperature (see 3.3.20.6).
(u) Partial trip position and closing time (see 3.3.20.7).
(v) Opening differential pressure (see 3.3.20.8).
(w) Test valve orientation (see 4.3).
(x) Preservation and packaging of valve assemblies (see 5.1).
(y) Level of preservation, packaging, or packing of tools (see 5.2).

6.2.2 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9 (n)(2) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs.

| Paragraph no. | Data requirement title | Applicable DID no. | Option |
|---|---|---|---|
| 3.6 and 3.6.1 | Drawings, engineering and associated lists | DI-E-7031 | Level 3<br>Design activity designation - contractor<br>Drawing no. - contractor<br>Delivery of hard copies - contracting - activity |
| 3.6 and 3.6.1.1 | | | Certification data sheets - required |
| 3.6 and 3.6.2 | Manual, technical, preliminary | DI-M-2043 | MIL-M-15071, type I |
| 4.1.1 | Inspection system program plan | DI-R-4803 | ---- |
| 4.3 | First article inspection report | DI-T-4902 | ---- |
| 4.4.3 | Reports, test | DI-T-2072 | 10.1.b |

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5000.19L., Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.2.2.1 The data requirements of 6.2.2 and any task in sections 3, 4, or 5 of this specification required to be performed to meet a data requirement may be waived by the contracting/acquisition activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item acquired to this specification. This does not apply to specific data which may be required for each contract regardless of whether an identical item has been supplied previously (for example, test reports).

6.2.2.2 Where the Government has limited rights in the data shown on the drawings, as determined by the contractual provisions regarding rights in technical data, the drawings may be marked with a legend. If used, the "Limited Rights Legend" of the DAR should be used.

6.2.2.3 Valve drawings should be submitted for NAVSEA review and approval prior to first article inspection.

6.3 First article inspection. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection as to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.4 Provisioning. Provisioning Technical Documentation (PTD), spare parts, and repair parts should be,furnished as specified in the contract.

6.4.1 When ordering spare parts or repair parts for the equipment covered by this specification, the contract should state that such spare parts and repair parts should meet the same requirements and quality assurance provisions as the parts used in the manufacture of the equipment. Packaging for such parts should also be specified.

6.5 Sub-contracted material and parts. The preparation for delivery requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

Preparing activity:
Navy - SH
(Project 4820-N455)

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

*(See Instructions – Reverse Side)*

| 1. DOCUMENT NUMBER | 2. DOCUMENT TITLE |
|---|---|
| MIL-V-24619(SH) | |

| 3a. NAME OF SUBMITTING ORGANIZATION | 4. TYPE OF ORGANIZATION *(Mark one)* |
|---|---|
| | ☐ VENDOR |
| b. ADDRESS *(Street, City, State, ZIP Code)* | ☐ USER |
| | ☐ MANUFACTURER |
| | ☐ OTHER *(Specify)*: _____ |

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

| 7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional | b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional |
|---|---|
| c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional | 8. DATE OF SUBMISSION *(YYMMDD)* |

*(TO DETACH THIS FOI JT ALONG THIS LINE.)*

DD FORM 1426 PREVIOUS EDITION IS OBSOLETE.

**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge *(DO NOT STAPLE)*, and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

*NOTE:* This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document*(s)* or to amend contractual requirements.

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