INCH-POUND
MIL-V-22687C(SH)
29 March 1988
SUPERSEDING
MIL-V-22687B(SHIPS)
27 March 1963
(See 6.6)

MILITARY SPECIFICATION

VALVES, BALL, NAVAL SHIPBOARD, FOR AIR, NITROGEN, HELIUM OR HYDRAULIC SERVICE (SIZES 2-1/2 INCHES NPS AND BELOW)

This specification is approved for use within 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 corrosion-resisting steel, bronze, aluminum-bronze and naval brass ball valves in sizes 2-1/2 inches nominal pipe size (nps) and below.

1.2 Classification. Valves shall be of the following types, as specified (see 6.2.1).

Type I - Valves of a design which allows replacement of all component parts except the body without removing the valve from the line.
Type II - Valves of a design which require removal from the line in order to replace all component parts.

1.3 Pressure and temperature ratings. Valves shall have nominal pressure ratings of 400, 1500, 3000, 4500 and 6000 pounds per square inch (lb/in^2) gauge as specified (see 6.2.1). The maximum temperature rating for all valves shall be 180 degrees Fahrenheit (°F).

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 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4820

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-S-901 - Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for.

MIL-F-1183 - Fittings, Pipe, Cast Bronze, Silver Brazing, General Specification for.

STANDARDS

MILITARY

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 - Requirements for Nondestructive Testing Methods.

2.1.2 Other Government drawings and publication. The following other Government drawings and publication form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DRAWINGS

NAVAL SEA SYSTEMS COMMAND (NAVSEA)

803-1385859 - Unions, Silver Brazing, for NPS Tubing, 1500 lb/in^2, WOG.

803-1385883 - Unions, Silver Brazing, 3000 lb/in^2, WOG.

803-1385884 - Unions, Butt and Socket Welding, 6000 lb/in^2, WOG.

803-1385620 - Handwheels for Valves.

PUBLICATION

NAVSEA

NAVSHIPS 250-537-1 and 2 - Radiographic Standards for Bronze Castings.

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

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Ball valves furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time set for opening of bids (see 4.3.2 and 6.3).

3.2 Materials. Materials shall conform to the requirements of 3.2.1 through 3.2.6. They shall be suitable for the intended pressures and shall be selected so as to prevent galling, seizing, or excessive wear on operating parts.

3.2.1 Body. The body material shall be one of the following basic materials:

(a) Corrosion-resisting steel.
(b) Bronze.
(c) Aluminum-bronze.
(d) Naval brass.

3.2.2 Balls. Balls shall be of unplated nickel-copper alloy (monel) or corrosion-resisting steel.

3.2.3 Nonmetallic seats, thrust washers, seals and similar parts. Nonmetallic seats, thrust washers, seals and similar parts shall be compatible with petroleum base fluids or other hydraulic fluids as specified by the Command or agency concerned.

3.2.4 Valve stems. Valve stems shall be manufactured from nickel-copper alloy (monel), corrosion-resistant steel or aluminum-bronze.

3.2.5 Nuts, bolts, washers, bushings, guides and similar parts. Materials used in construction of these parts shall be of the quality best suited for the intended purpose and shall be in accordance with the material specification shown on the approved drawing.

3.2.6 Recovered materials. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and may 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 Construction.

3.3.1 End preparation. Unless otherwise specified (see 6.2.1), valve ends shall be in accordance with applicable details of drawings or specifications listed in table I. Type I valves shall be either union end or direct silver brazing or welding end as specified by the Command or agency concerned. Type II valves shall be of the union end type only.

TABLE I. End preparations.

Pressure rating (lb/in^2) gauge	Drawing or specification
400	MIL-F-1183
1500	803-1385859
3000	803-1385883
4500 and 6000	803-1385884

3.3.2 End-to-end dimensions. Unless otherwise specified (see 6.2.1), end-to-end dimensions for in-line valves shall be in accordance with table II and for angle valves in accordance with table III.

TABLE II. End-to-end dimensions for in-line valves. 1/

Size	Pressure rating (lb/in^2) gauge 400, 1500, 3000, 4500, 6000
Inches	Inches
1/8	3
1/4	3
3/8	3
1/2	3
3/4	3
1	3-1/4
1-1/4	3-5/8
1-1/2	3-3/4
2	3-15/16
2-1/2	4-3/16

1/ These dimensions include the male threaded body end connections, but do not include the union nut or tailpiece. When brazed end valves instead of union end connections are specified, the dimensions given shall be increased by the length of two union tailpieces to make the overall dimensions identical.

TABLE III. End-to-end dimensions for angle valves. 1/

Size	Pressure rating (lb/in^2) gauge 400, 1500, 3000, 4500, 6000
Inches	Inches
1/8	2-3/8 by 1-9/16
1/4	2-3/8 by 1-9/16
3/8	2-3/8 by 1-9/16
1/2	2-3/8 by 1-9/16
3/4	2-9/16 by 1-11/16
1	2-11/16 by 1-15/16
1-1/4	3-5/8 by 2-9/16
1-1/2	3-5/8 by 2-9/16
2	4-3/16 by 3-1/4
2-1/2	4-3/16 by 3-1/4

1/ These dimensions include the male threaded body connections, but do not include the union nut or tailpiece. Dimensions shall be (inlet end to centerline of outlet) by (centerline of inlet to outlet end). When brazed end valves instead of union end valves are specified, the dimensions given shall be increased by the length of one union tailpiece to make overall dimensions identical.

3.3.3 Body pattern. The body pattern, in-line, angle or 3-way, shall be as specified (see 6.2.1). If a 3-way body pattern is specified, the contract or order should also specify the desired end-to-end dimensions.

3.3.4 Valve seats. Valves shall seat in both directions. Seats shall be nonmetallic, renewable, compatible with the fluid media specified (see 6.2.1), and shall be located in a manner which will prevent any erosive effects due to fluid flow through the valve.

3.3.5 Valve stem seals. Valve stem seals shall be compatible with the fluid media specified (see 6.2.1), and shall be either of the following:

(a) O-ring.
(b) Packing.
(c) Split ring.

3.3.5.1 O-rings and split rings. O-ring and split ring materials shall be determined as specified in 3.2.3.

3.3.5.1.1 Back-up washers. Back-up washers for O-rings, split rings and gaskets shall be compatible with the fluid media specified (see 6.2.1). They shall be provided on all 3000, 4500 and 6000 lb/in^2 gauge valves and on any 400 or 1500 lb/in^2 gauge valve when deemed necessary by the valve manufacturer.

3.3.5.2 Packing. Packing materials shall be determined in accordance with 3.2.3. The stuffing box shall be of ample depth to ensure no stem leakage without excessive gland tightening. Stuffing boxes shall be secured and adjusted by an arrangement which will ensure tightness under all operating conditions.

3.3.6 Thrust washer. When thrust collars are incorporated into a valve, a thrust washer shall be employed in conjunction with the thrust collar to facilitate valve operation. This washer shall be self-lubricating and renewable.

3.3.7 Position indicator. Each valve shall incorporate a means of indicating the ball position. The means of indication shall be governed by the following:

(a) The valve position shall be indicated by the words "open", "closed" and "bleed", if applicable (see 3.3.7.1) on the valve bonnet.
(b) When open, lever handle shall be parallel to the connecting pipe axis (required for lever-operated valves only).
(c) A groove or other means of position indication shall be stamped or cut into the top of the stem. This groove shall be parallel with the ball port axis. (Required for lever and handwheel-operated valves.)
(d) The position indicator shall be attached directly to the valve stem, not to the operator. On remote operated valves, an additional position indicator shall be located at the operating station.

3.3.7.1 Travel stops. Travel stops shall be located on the valve bonnet. Valves shall be provided with a stop in the fully open and fully closed position. In addition, valves intended for air service (see 6.2.1) shall be provided with an intermediate stop to prevent inadvertent opening past the bleed port position (see 3.3.7.2).

3.3.7.2 Bleed ports. Valves intended for air service shall be of the internal bleed port design if their rated pressure is in excess of 1500 lb/in^2. The construction shall be such that when the valve is opened to the bleed port position, which is located by an intermediate stop (see 3.3.7.1), the bleed port shall be opened but the main port shall be still closed. The bleed port shall be located so that the seats are not wire drawn when the valve is in the bleed position. Maximum bleed port diameters shall be in accordance with the following:

Valve size	Bleed port diameters
Inches	Inch
1/4, 3/8, 1/2	0.020
3/4, 1	.024
1-1/4, 1-1/2	.031
2, 2-1/2	.040

3.3.8 Lever arms, handwheels and mechanical operators. Unless otherwise required for remote operation, no handwheels or mechanical operators (see 3.3.8.3.1) will be allowed on valves covered by this specification.

3.3.8.1 Rotation. Valves shall be open by counter clockwise rotation of the handwheel, or lever when facing same.

3.3.8.2 Material and construction of handwheels and lever arms.

3.3.8.2.1 Handwheels. Handwheels smaller than 8 inches in diameter may be of commercial design and manufactured from malleable iron or aluminum. Handwheels 8 inches in diameter and larger shall be of aluminum alloy and shall be in accordance with Drawing 803-1385620.

3.3.8.2.2 Lever arms. Lever arms shall be either cast steel, malleable iron, bronze or aluminum. The material to be used shall be in accordance with the manufacturer's general manufacturing practices. They shall be provided with a latch or other mechanism to hold them in either the open or closed position.

3.3.8.3 Size of lever arms and handwheels. Valve handwheels or lever arms shall be sized so that a tangential force of not more than the value specified in table IV is required to be exerted on the rim of the handwheel, or 1-1/2 inches from the end of the lever arm, to open the valve against full differential. Maximum sizes for handwheels and lever arms shall be as specified in table V.

TABLE IV. Tangential force.

Maximum lever arm length	Maximum hand-wheel diameter	Maximum permissible tangential force
Inches	Inches	Pounds
	4	60
	5	70
	6	80
	7	90
	8	102
	9	114
6	10	120
7	12	129
9	16	138
11	20	144
13	24	150

TABLE V. Size of handwheels and lever arms.

Nominal valve size	Maximum lever arm length 1/	Maximum hand-wheel diameter
Inches	Inches	Inches
1/4, 3/8, 1/2	7	12
3/4, 1	9	16
1-1/4, 1-1/2	11	20
2, 2-1/2	13	24

1/ Lever arm length shall be measured from stem centerline.

3.3.8.3.1 Valve operators. When valves are remotely operated and opening cannot be obtained or the force requirements listed in table IV cannot be met by direct manual means, mechanical operators shall be employed.

3.3.9 Valve ports. Valves may be reduced ported. However, the minimum flow area through the valve shall be 28 percent of the internal area of the connecting pipe for bleed-ports design (see 3.3.7.2) and 35 percent for all other designs. The bore of the body shall taper from connecting pipe diameter to ball port diameter in a manner calculated to produce a minimum pressure drop.

3.3.10 Seat leakage. Valves shall not leak through seats (see 4.6.2.2).

3.3.11 Shock and vibration. Valves shall be constructed for shock and vibration. When specified (see 6.2.1), valves shall be shock and vibration tested in accordance with MIL-S-901 and MIL-STD-167-1.

3.3.12 Bearing surfaces. Bearing surfaces of nut and bolt heads and their respective surfaces on the valves shall be machined to a finish not in excess of 250 roughness height rating (RHR). Machining will not be necessary if the "as cast" or "as forged" surfaces in question are square, parallel and meet the finish requirements.

3.3.13 Assembly. Valve parts shall be so constructed that it shall be impossible to assemble the valve in any manner which will not comply with the provisions of 3.3.7, 3.3.7.1, and 3.3.8.1.

3.3.14 Interchangeability. In no case shall parts be physically interchangeable or reversible unless such parts are also interchangeable or reversible with regard to function, performance and strength.

3.4 Marking.

3.4.1 Body markings. Unless the valve size or construction makes it impractical, valve bodies shall have the pressure rating and manufacturer's name or trademark cast or forged integral with the valve body. When this is impractical because of size or construction, this information may be stamped on the valve body in an area not subject to high stress in service.

3.4.2 Identification plates. Valves shall bear an identification plate made of corrosion-resisting steel or brass. Identification plates shall be permanently fastened to a part of the valve not subjected to working pressure. Identification plates shall include the following data or a space therefor:

(a) Size of valve.
(b) Body material composition.
(c) Valve trim identification (ball, stem, seat).
(d) Manufacturer's drawing number.
(e) Manufacturer's identification number (optional).
(f) Specification MIL-V-22687.

3.5 Drawings. When specified in the contract or order, drawings shall be prepared (see 6.2.2 and appendix).

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 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

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

(a) Qualification inspection (see 4.3).
(b) Quality conformance inspection (see 4.4.).

4.3 Qualification inspection. Qualification inspection shall be conducted at a laboratory satisfactory to NAVSEA. Qualification inspection shall consist of the tests specified in 4.3.2. Prior to testing for qualification, all parts shall be degreased as specified in 4.6.1.

4.3.1 Qualification inspection samples. Valves submitted for qualification inspection shall be of the type and design for which qualification is desired, of 2-1/2 inch nps, and pressure rating of 400, 1500, 3000, 4500 or 6000 pounds. Valves of the 2-1/2 inch nps which have passed the qualification tests specified herein, shall qualify all sizes and materials that have a pressure rating equal to, or less than, the valves tested, provided the valves are the same type and design.

4.3.2 Qualification inspection procedures. Valves shall be subjected to the following tests in the order listed:

(a) Shock and vibration (see 4.3.2.1).
(b) Hydrostatic (see 4.3.2.2).
(c) Seat tightness (see 4.3.2.3).
(d) Operation (see 4.3.2.4).
(e) Examination after testing (see 4.3.2.5).
(f) Proof (see 4.3.2.6).

4.3.2.1 Shock and vibration tests. Each valve submitted for qualification inspection shall be shock tested in accordance with MIL-S-901 and vibration tested in accordance with MIL-STD-167-1.

4.3.2.2 Hydrostatic tests. Hydrostatic tests shall be conducted in accordance with 4.6.2.1.

4.3.2.3 Seat tightness. Seat tightness tests shall be in accordance with 4.3.2.3.1 and 4.6.2.2.

4.3.2.3.1 Seat tightness (to determine recovery capability of valve seat). After completion of seat tightness tests specified in 4.6.2.2, the inlet side of the valve shall be subjected to rated pressure (water) for 1 hour, with the valve in the closed position. After 1 hour, the outlet bore shall be completely dry. After this has been done, the pressure differential across the valve shall be reduced to 50 lb/in^2 gauge and held for a period of 3 minutes and the inlet side of the valve examined for leakage. Any leakage shall be cause for rejection. The pressure differential shall then be increased to rated pressure and the valve again examined for seat tightness. Any leakage shall be cause for rejection (for example: bubble tight).

4.3.2.4 Operation. Air or nitrogen at rated pressure shall be passed through the valve and the valve shall be fully cycled 5000 times at a rate of 1 to 4 cycles per minute. The valve shall be opened against full differential pressure only. During this cycling period, the following tests shall be conducted. The valve shall not be disassembled until all operational tests (a) through (d) as follows have been completed:

(a) After every 1000 cycles, the valve shall be tested for seat tightness in accordance with 4.6.2.2.
(b) After every 1000 cycles, the force required to open the valve shall be recorded. These forces shall not exceed those listed in table IV (see 3.3.8.3).

(c) After completion of (a) and (b) above, a differential pressure equal to rated pressure shall be maintained across the valve for 40 hours. After this period of time has elapsed, the valve shall be fully cycled (closed to open to closed) every 2 hours and the breakaway torques recorded. This shall be continued until such time as three consecutive readings that are within plus or minus 5 percent of each other are obtained.

(d) The test valve shall be placed in the cracked open position and throttled for a period of time that is sufficient to indicate that the valve can be throttled. Either air, nitrogen or water may be used for this test. However, water will be permitted only when the necessary air or nitrogen is not available at the testing facility. The manufacturer shall draw up a proposed throttling test and shall forward it to NAVSEA for approval.

4.3.2.5 Examination after testing. After completion of the tests specified in 4.3.2.1 through 4.3.2.4, the valves shall be disassembled and shall be visually and dimensionally examined for damage and wear.

4.3.2.6 Proof. Upon completion of the examination after testing specified in 4.3.2.5, the valve shall be reassembled and subjected to a hydrostatic pressure equal to 3 times rated pressure for a period of 1 minute. Valve shall be in the open position.

4.4 Quality conformance inspection. Quality conformance inspection shall consist of the examination of 4.5 and the tests specified in 4.6.1 through 4.6.2.2.

4.4.1 Sampling.

4.4.1.1 Lot. All valves of the same material, pressure rating, size, type and design offered for delivery at the same time shall be considered a lot for the purpose of sampling.

4.4.1.2 Sampling for visual and dimensional examination. A random sample of valves shall be selected from each lot in accordance with table VI for the examination specified in 4.5.1. Failure of any valve to pass the examination specified in 4.5.1 shall be cause for rejection of the lot.

TABLE VI. Sampling for visual and dimensional examination.

Number of valves in lot	Sample size
2 to 25	1
26 to 65	2
66 to 180	3
181 to 500	5
501 to 1300	8
1301 to 3200	12

4.4.1.3 Sampling for tests. A random sample of valves shall be selected from each lot in accordance with table VII for the tests specified in 4.6. If the number of rejected valves exceeds the number specified in table VII, the lot shall be rejected.

TABLE VII. Sampling for tests.

Number of valves in lot	Sample size	Allowable number of rejects
2 to 8	5	0
9 to 15	7	0
16 to 25	10	0
26 to 40	15	0
41 to 65	25	0
66 to 110	35	1
111 to 180	50	1
181 to 300	75	2
301 to 500	110	3
501 to 800	150	4
801 to 1300	225	6
1301 to 3200	300	8

4.5 Non-destructive inspection.

4.5.1 Visual and dimensional examination. Each of the sample valves selected in accordance with 4.4.1.2 shall be visually and dimensionally examined to verify compliance with all the requirements of this specification not involving tests.

4.5.2 Radiographic inspection. Pressure containing parts of castings shall be radiographed when their size and pressure rating exceed the following:

(a) One inch nps and larger when pressure rating exceeds 3000 lb/in^2.
(b) Over 2 inch nps when the rating is from 550 lb/in^2 up to and including 3000 lb/in^2. Inspection shall be in accordance with MIL-STD-271 and NAVSHIPS 250-537-1 and NAVSHIPS 250-537-2. Sections less than 1/2 inch in thickness shall meet class 2 requirements of the applicable publication and sections with thickness 1/2 inch and over shall meet the class 3 requirements of the applicable publications.

Forgings shall be free from flaws such as seams, cracks, laps, porosity, scale and flakes which affect the suitability of the forgings for the service intended.

4.5.3 Material inspection. Pressure containing parts shall be inspected to determine their conformance with the applicable material specification. When specified in the contract or order, certification data/reports shall be prepared (see 6.2.2).

4.6 Tests.

4.6.1 Degreasing (prior to assembly for testing). Prior to assembly for the tests specified in 4.3.2 and 4.6.2, all parts shall be vapor degreased with tetrachloroethylene or other approved method, and then flushed with clean water. The tests specified in 4.3.2 and 4.6.2 shall be conducted with clean water and air.

4.6.2 Hydrostatic and seat tightness tests. Each of the sample valves selected in accordance with 4.4.1.3 shall be subjected to tests specified in 4.6.2.1 and 4.6.2.2.

4.6.2.1 Hydrostatic test. Each of the sample valves shall be subjected to a test pressure equal to 150 percent of the valve body rating with valve open. Any weeping, porosity or permanent deformation shall be cause for rejection.

4.6.2.2 Seat tightness test. Each of the sample valves shall be pressurized alternately on each side of the ball by air or nitrogen and examined for seat tightness. The differential test pressure shall be equal to the valve rated pressure. The duration of the test shall be 1 minute for each side. Any leakage shall be cause for rejection (for example: bubble tight). Upon completion of the seat tightness test, each of the sample valves shall be pressurized alternately on each side of the ball by air or nitrogen at a pressure of 100 lb/in^2. Duration of this test shall be 3 minutes. Any leakage shall be cause for rejection (for example: bubble tight).

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

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Degreasing. After degreasing and testing as specified in 4.6.1, the valves shall be drained and dried with clean dry air or nitrogen. The valve ends shall be capped and the valves shall be individually packaged.

5.2 Preservation and packing. Unless otherwise specified (see 6.2.1), preservation and packing of valve assemblies shall be in accordance with the manufacturer's commercial practice.

5.3 Marking. In addition to any special marking required by the contract or order (see 6.2.1), or herein, interior and exterior shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. Valves are intended for use in all shipboard air, nitrogen, helium or hydraulic systems.

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 required (see 1.2).
(c) Pressure and temperature ratings required (see 1.3).
(d) End preparation (see 3.3.1).
(e) In-line and angle valve end-to-end dimensions (see 3.3.2).
(f) Body pattern (see 3.3.3).
(g) Fluid media (see 3.3.4, 3.3.5 and 3.3.5.1.1).
(h) Valves intended for air service should be provided with an intermediate stop to prevent inadvertent opening past the bleed port position (see 3.3.7.1).
(i) When shock and vibration tests are required (see 3.3.11).
(j) Packaging and packing required (see 5.2).
(k) Special marking required (see 5.3).
(l) Quantity and size required.

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, 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 Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD FAR Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) 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 are cited in the following paragraphs.

Paragraph no.	Data requirement title	Applicable DID no.	Option
3.5 and appendix	Drawings, engineering and associated lists	DI-E-7031	----
4.5.3	Certification data/report	UDI-A-23264	----

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5010.12-L., 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).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time set for opening of bids, qualified for inclusion in Qualified Products List QPL-22687 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 and information pertaining to qualification of products may be obtained from that activity. Application for qualification tests shall be made in accordance with "Provisions Governing Qualification SD-6" (see 6.3.1).

6.3.1 Copies of "Provisioning Governing Qualification SD-6" may be obtained upon application to Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

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 Subject term (key word) listing.

Aluminum-bronze
Angle valve
Bronze
Corrosion-resisting steel
In-line valve
Naval bronze

6.6 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
Navy - SH
(Project 4820-N038)

APPENDIX

DRAWING TECHNICAL CONTENT REQUIREMENTS

10. SCOPE

10.1 Scope. This appendix covers the technical content requirements that should be included on drawings when required by the contract or order. This appendix is mandatory only when the appropriate data item description is cited on the DD Form 1423.

20. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

30. DRAWINGS

30.1 Drawings. When required by the contract or order, drawings should contain the following information:

(a) A sectional assembly of the valve.
(b) Bill of material, listing specifications, grade and condition, or other data adequate to identify the materials proposed.
(c) Dimensions - overall accessibility space including disassembly clearances and all dimensions pertinent to installation.
(d) Surface finishes - show finish marks for all stellited areas and bearing surfaces.
(e) Note design and performance characteristics, weight, any limitation on installation and previous approval for shock and vibration when applicable.