

INCH- POUND  
MIL-S-2940C(SH)  
1 November 1994  
SUPERSEDING  
MIL-S-2940B  
18 June 1986  
(See 6.9)

## MILITARY SPECIFICATION

### SNUBBERS, FLUID PRESSURE, INSTRUMENT PROTECTION

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. A snubber covered by this specification is a pressure transmission device which restricts the rate of fluid flow to a pressure sensing instrument and, as a result, the rate of pressure change.

1.2 Classification. Snubbers covered by this specification are classified according to the following as specified (see 6.2):

M2940	-	<u>1</u>	-	<u>L</u>	-	<u>A</u>	-	<u>P</u>	-	<u>G</u>
		Type		Class		Composition		End		Cleanliness
		(see		(see		(see 1.2.3)		connection		(see 1.2.5)
		1.2.1)		1.2.2)				(see 1.2.4)		

1.2.1 Types. The type of service in which the snubber will be used is designated by one of the following numbers selected based on the expected fluid temperature (viscosity) at the snubber location:

<u>Type</u>	<u>Service</u>
1	Oils, hydraulic fluid above 20 centistokes (cSt). Oil above 225 saybolt universal seconds (SUS) at operating temperatures.
2	Fresh water, steam, gasoline, light oils below 20 cSt.
3	Gases.
4	Seawater (composition B only).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, SEA 03R42, Naval Sea Systems Command, 2531 Jefferson Davis Hwy, Arlington, VA 22242-5160 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 6685

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1.2.2 Class. The range of operating pressures is designated by the following letters:

<u>Class</u>	<u>Operating range limit</u>
L	10 to 1000 pounds per square inch gauge (psi).
H	1001 to 6000 psi.

1.2.3 Composition. The material composition of the snubber is designated by one of the following letters:

<u>Composition</u>	<u>Material</u>
A	Copper-nickel alloy (see 3.2.1.1).
B	Nickel-copper (monel) alloy (see 3.2.1.2).
C	Corrosion resisting steel (see 3.2.1.3).

1.2.4 End connection. The configuration for the snubber's end connection is designated by one of the following letters (see 3.3.2):

<u>End connection</u>	<u>Application</u>
P	Pressure gauge general applications (see 3.3.2.1.1).
F	Pressure gauge flareless (bite type) applications (see 3.3.2.1.2).
T	Pressure transducer general applications (see 3.3.2.2).
S	Other applications (see 6.1.1.3). The end connections must be specified in the contract ordering data.

1.2.5 Cleanliness. The method for cleaning the snubber is designated by one of the following letters:

<u>Cleanliness</u>	<u>Application</u>
G	General applications.
X	Oxygen and dry nitrogen applications.

## 2. APPLICABLE DOCUMENTS

### 2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

### FEDERAL

- QQ-N-281 - Nickel-Copper Alloy Bar, Rod, Plate, Sheet, Strip, Wire, Forgings, and Structural and Special Shaped Sections.
- QQ-S-763 - Steel Bars, Wire, Shapes and Forgings, Corrosion Resisting.
- PPP-B-566 - Boxes, Folding, Paperboard.
- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.
- PPP-B-665 - Boxes: Paperboard, Metal-Edged and Components.
- PPP-B-676 - Boxes, Setup.

### MILITARY

- MIL-B-117 - Bags, Sleeves and Tubing.
- MIL-S-901 - Shock Tests, H.I. (High-Impact) Shipboard Machinery, Equipment and Systems, Requirements For.
- MIL-B-7883 - Brazing of Steels, Copper, Copper Alloys, Nickel Alloys, Aluminum and Aluminum Alloys.
- MIL-C-15726 - Copper-Nickel Alloy, Sheet, Plate, Strip, Bar, Rod and Wire.
- MIL-N-17163 - Nickel-Copper Alloy, Wrought; (55-60 Percent Nickel) Low Permeability.
- MIL-L-17331 - Lubricating Oil, Steam Turbine and Gear, Moderate Service.
- MIL-F-18866 - Fittings, Hydraulic Tube, Flared, 37 Degree and Flareless, Steel.
- MIL-V-24578 - Valves, Globe, Pressure Instrument, Stem Test Connection, Union End.
- MIL-T-28800 - Test Equipment For Use With Electrical and Electronic Equipment, General Specification For.
- MIL-R-83248 - Rubber, Fluorocarbon Elastomer, High Temperature, Fluid, and Compression Set Resistant.

## STANDARDS

### FEDERAL

- FED-STD-595 - Colors Used in Government Procurement.

### MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

## MILITARY (Continued)

- 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-278 - Welding and Casting Standard.
- MIL-STD-454 - Standard General Requirements for Electronic  
Equipment.
- MIL-STD-1330 - Cleaning and Testing of Shipboard Oxygen, Nitrogen  
and Hydrogen Gas Piping Systems.
- MIL-STD-1622 - Cleaning of Shipboard Compressed Air Systems.
- MS16142 - Boss, Gasket Seal Straight Thread Tube Fitting,  
Standard Dimensions for.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, BLDG. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

## DRAWING

## NAVAL SEA SYSTEMS COMMAND (NAVSEA)

- NAVSHIPS 803-1385850 - Piping, Instrument, Pressure, For All  
Service.

(Application for copies should be addressed to: Commander, Portsmouth Naval Shipyard, Code 202.2, Portsmouth, NH 03801.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 1974 - Methods of Closing, Sealing and Reinforcing Fiberboard  
Shipping Containers.
- D 3951 - Standard Practice for Commercial Packaging.  
(DoD adopted)
- D 5118 - Practice for Fabrication of Fiberboard Shipping Containers

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein except for related associated detail specifications, specifications, specification sheets or MS standards, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspections (see 6.4) in accordance with 4.2.1.

3.2 Material. Material for snubbers shall be as specified in 3.2.1 through 3.2.5.1.

3.2.1 Snubber body. The materials for construction of the bodies of snubbers, compositions A, B, and C, shall be as specified in 3.2.1.1, 3.2.1.2, and 3.2.1.3, respectively. All wetted parts shall be of materials equal or superior in corrosion resistance to that used in the body except that corrosion resistant steel is not acceptable for type 4 (seawater) snubbers or for oxygen applications.

3.2.1.1 Composition A. The material for composition "A" shall be copper-nickel alloy in accordance with MIL-C-15726.

3.2.1.2 Composition B. The material for composition "B" shall be nickel-copper (monel) alloy in accordance with MIL-N-17163 or QQ-N-281. Composition "B" is the only material specified for seawater (type 4) applications.

3.2.1.3 Composition C. The material for composition "C" shall be corrosion resistant steel in accordance with QQ-S-763, classes 304L, 316L, 321, or 347. Where the end connections (see 3.3.2) do not consist of connections which are meant to be welded, then classes 304 and 316 are also acceptable.

3.2.2 Nonmetallic materials. Nonmetals shall be moisture and flame resistant, shall not support fungus growth, and shall not be adversely affected by the ambient environments specified in the configuration and performance requirements of this specification. Nonmetals shall not chemically react, degrade, or outgas when subjected to the following: air, distilled water, sea water, salt, petroleum and silicone based oils, oil solvents, prolonged (greater than one month) periods of exposure to ambient temperatures, prolonged periods of exposure to elevated temperatures (up to 350 degrees Fahrenheit (°F)), and exposure to prolonged cycling periods from ambient to elevated temperatures. Any material which provides a nutrient medium for fungus and insects shall not be used. Nonmetals shall be fungus inert materials in accordance with requirement 4 of MIL-STD-454.

3.2.3 O-ring. When specified for use (see 3.3.2.1.1 and 3.3.2.2), the material for O-rings shall be fluorocarbon rubber in accordance with MIL-R-83248, type I.

3.2.4 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.

3.2.5 Prohibited materials. The snubber shall not contain a prohibited material as specified in MIL-T-28800.

3.2.5.1 Porous metal. Snubbers with a porous metal composition (internal parts and configuration) shall not be certified for gas (type 3) or for seawater (type 4) applications. When used for oil or water (type 1 or 2) applications, snubbers with porous metal compositions shall only be employed in systems with particulate contaminants less than 25 microns in size.

3.3 Configuration. The snubber shall consist of no more than two primary components except internal parts needed to perform pressure fluctuation/pulsation dampening (see 6.3 and appendix). Snubbers shall contain no electrical or electronic components.

3.3.1 Snubber body. The length of the assembled snubber body shall be not greater than 4 inches. The body shall have hexagonal cross-sections of sufficient widths to allow the use of a wrench for installing and removing. The distance across the flats shall be not less than 0.375 inch nor greater than 1.25 inches. The maximum diameter of the snubber body shall be not greater than 2.0 inches.

3.3.1.1 Positive retaining feature. Internal parts shall be positively retained in place, preventing them from becoming loose when the snubber is assembled. Split pin type retaining pins shall not be used.

3.3.2 End connections.

3.3.2.1 General pressure gauge applications. Snubbers used in pressure gauge applications shall be as follows:

3.3.2.1.1 O-ring union connection. Snubbers used for O-ring union pressure gauge application shall have 9/16-18 UNF-3A external threads on the inlet connection and 9/16-18 UNF-3B internal threads on the outlet connection in accordance with Drawing 803-1385850. When specified (see 6.2), each snubber shall be furnished with a union nut, tailpiece, and O-ring .

3.3.2.1.2 Flareless (bite type) connection. Snubbers used for flareless (bite type) pressure gauge applications shall have 7/16-20 UNF-2A external threads on the inlet connection and 7/16-20 UNF-2B internal threads on the outlet connection in accordance with MIL-F-18866, 6000 psi for 1/4-inch tubing.

3.3.2.2 General pressure transducer applications. Snubbers used for pressure transducer applications shall have a 7/16-20 UNF flareless tube connection (1/4 inch outside diameter (od)) in accordance with MIL-F-18866 on the inlet connection. The outlet connection shall be 7/16-20 UNF-2A external thread to mate with the MS16142 female connection port of the pressure transducer. An O-ring shall be supplied on the outlet connection.

3.3.3 Cleaning. The snubber body and all parts that come into contact with the service fluid shall be free of all loose scale, rust, grit, fillings, and free of mercury, calibration liquids, oil, grease, solvents, and other organic materials.

3.3.4 Welding and brazing. Welding shall be in accordance with MIL-STD-278 and brazing shall be in accordance with MIL-B-7883.

3.3.5 Marking. Each snubber shall be metal stamped or otherwise permanently marked with the maximum working pressure, classification (see 1.2), and manufacturer's stamp or trademark. The maximum working pressure shall be followed by the abbreviation "psi." (For example: 6000 psi M2940-1HBPG \*. \*manufacturer's stamp or trademark)

3.3.5.1 Flow direction. The direction of flow through the snubber shall be indicated by an arrow with the word "gauge" at the point of the arrow. The arrow shall be raised from the surface or etched into the surface in a permanent manner and to the extent that it can be easily identified by human touch. The word "gauge" shall be metal stamped or otherwise permanently marked.

### 3.4 Performance.

3.4.1 Steady state transmission. When tested as specified in 4.5.1, the difference in indicated output with and without the snubber under test shall be within the accuracy limits of the pressure transducer or pressure gauge employed.

3.4.2 Dampening. When tested as specified in 4.5.2, the pressure as indicated by the test pressure transducer shall satisfy both the following criteria:

(a) Indicate a pressure of 25 percent or less of the final steady state pressure at a time equal to that at which the monitoring pressure transducer initially reaches its step pressure level.

(b) Reach at least 90 percent of its final steady state pressure in not more than the 2.5 seconds after initiation of the pressure step as indicated by the monitoring transducer.

3.4.3 Temperature. The snubber under test shall show no evidence of leakage or damage as a result of the temperature test specified in 4.5.3. The snubber under test shall meet the dampening requirement of 3.4.2 after the high temperature, low temperature, and temperature cycling portions of 4.5.3.



3.4.4 Vibration. The snubber under test shall show no indication of leakage or damage as a result of the vibration testing specified in 4.5.4. Upon completion of the vibration test, the snubber shall meet the dampening requirement of 3.4.2.

3.4.5 Shock. The snubber under test shall show no indication of leakage or damage as a result of the shock testing specified in 4.5.5. Upon completion of the shock test, the snubber under test shall meet the dampening requirement of 3.4.2.

3.4.6 Pressure integrity. The snubber under test shall withstand the pressure specified in 4.5.6 without showing any evidence of leakage or damage. Upon completion of the pressure integrity test, the snubber under test shall meet the dampening requirement of 3.4.2.

3.5 Cleaning and surface finishes. Surfaces of castings, forgings, molded parts, stampings, machined, and welded parts shall be free of defects such as cracks, porosity, undercuts, voids, and gaps as well as sand, dirt, fins, sharp edges, scale, flux, and other harmful or extraneous materials. External surfaces shall be smooth and edges shall be either rounded or beveled. There shall be no burn-through. There shall be no warpage or dimensional change due to heat from welding operations. There shall be no damage to adjacent parts resulting from the welding.

#### 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 (examinations and tests) 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

- (a) First article inspection (see 4.2.1).
- (b) Quality conformance inspection (see 4.2.2).



4.2.1 First article inspection. First article inspection shall be performed and passed prior to production and shall be witnessed by a Government inspector (see 6.3). First article inspection shall be performed on samples which have been produced with equipment and procedures normally used in production. First article inspection shall consist of the examination and tests specified in table I and in the sequence listed (see 6.6). Specification conformance drawings (see appendix) must have Government approval prior to first article inspection (see 6.6).

4.2.1.1 Sample size. Two snubber samples of each type, class, composition, and end connection shall be subjected to the first article inspection.

TABLE I. Inspection, examination, and tests.

Inspection	Requirement	Test procedures	First article inspection	Quality conformance inspection
Examination	3.2, 3.3, 3.5	4.4	X	X
Steady state transmission	3.4.1	4.5.1	X	-
Dampening	3.4.2	4.5.2	X	X
Temperature	3.4.3	4.5.3	X	-
Vibration	3.4.4	4.5.4	X	-
Shock	3.4.5	4.5.5	X	-
Pressure integrity	3.4.6	4.5.6	X	X

4.2.2 Quality conformance inspection. Quality conformance inspection shall be performed at the place of manufacture (see 4.2.2.2). Quality conformance inspection shall consist of the examination and tests specified in table I and shall be witnessed by a Government inspector (see 6.3).

4.2.2.1 Lot. A lot shall consist of all snubbers of the same type, class, composition, and end connection manufactured at one time.

4.2.2.2 Sampling for quality conformance inspection. A random sample of snubbers shall be selected by a Government inspector from each lot of snubbers (see 4.2.2.1 and 6.7.1).

4.2.2.3 Acceptance criteria. If any snubber sample exhibits a critical or major defect listed in table II, no snubbers shall be accepted for quality conformance inspection until the contractor has determined the cause of the defect and has taken the necessary action to correct or eliminate the defect from each snubber in the lot. The failed test shall be repeated to demonstrate that the corrective action will enable the snubbers to conform to the requirements of this

specification. In addition, the results of previous tests may be deemed invalid, unless the contractor can prove to the satisfaction of the Government that such tests would not be adversely impacted by the corrective action. If the number of snubbers that contain a minor defect exceeds the acceptable quality listed in table II, no snubber shall be accepted for quality conformance inspection until all snubbers in the lot are inspected for the defect and necessary corrective action taken to enable all snubbers in the lot to conform to the requirements of this specification.

4.3 Test conditions. Test conditions shall be as specified in the applicable examinations and test procedures.

4.4 General examination. The snubbers shall be subjected to a thorough examination to ascertain that the material, finish, workmanship, construction, assembly, dimensions, and marking are in conformance with the requirements of this specification. Examinations shall be limited to disassembling the snubbers to the extent that the performance, durability, or appearance would not be affected.

4.4.1 Quality conformance inspection examination. The snubbers selected as specified in 4.2.2.2 shall be examined to determine conformance to the requirements of this specification, and the classification of defects in table II (see 6.7).

TABLE II. Classification of defects.

Categories	Defects	Requirements	
<u>Critical</u>			
1	Evidence that snubbers for oxygen service are not cleaned, improperly marked, or improperly packaged.	3.3.3, 5.1.1.1	
2	Snubber does not meet the pressure integrity test (see 4.5.6)	3.4.6	
<u>Major</u>			
101	Evidence of unauthorized material	3.2	
102	Inspection systems not provided, dimensional tolerances not maintained, mounting dimensions not interchangeable, pressure connection wrong design, and dimensions erroneous	3.3, 3.3.1, 3.3.2, 4.4	
103	Snubber does not meet steady state transmission or dampening tests (see 4.5.1 and 4.5.2)	3.4.1, 3.4.2	
104	Markings not provided or erroneous; part number not provided	3.3.5	
<u>Minor</u>			
202	Evidence that snubbers for nonoxygen service are not cleaned	3.3.3	
203	Finish non-conforming, scratched, chipped; burrs not removed, color non-conforming	3.5	
204	Cleaning, drying, preservation, packaging, packing, and markings non-conforming	5.	

4.4.1.1 Dimensional verification. Snubber samples selected as specified in 4.2.2.2 shall be subjected to dimensional verification of the pressure connection threaded end to verify conformance to Drawing 803-1385850, or the applicable document for the type threaded end or connection specified (see 6.7.2). In order to comply with the dimensional verification, all dimensions, concentricities, and perpendicularities affecting interchangeability of parts, sealing effectiveness and strength, shall be measured with sufficient precision to

verify conformance to the applicable document. For a snubber having an O-ring union pressure connection, samples of the tail piece and a union nut shall also be subjected to this dimensional verification.

4.5 Test procedures. Tests shall be conducted as described below. For the dampening test, a storage oscilloscope, oscillographic recorder, or other data acquisition system with a frequency response sufficient to resolve full scale deflections in 10 milliseconds or less shall be utilized. Input signal resolution shall be 2 percent or less of full scale. Signals from both the test and monitoring transducers shall be recorded simultaneously (see 4.5.2). With the exception of the dampening test, which requires the use of pressure transducers, all other tests may be monitored with either a pressure transducer or a pressure gauge of suitable range which shall have accuracies of 1 percent of span or better and shall have an overpressure rating of at least 125 percent of upper range value. To maintain sufficient accuracy, the maximum upper range limit for any pressure transducer or pressure gauge shall not exceed twice the maximum pressure expected in a particular test. In addition, controls of the storage oscilloscope, oscillographic recorder, or other data acquisition system should be set that recorded signals are at least 50 percent of full scale. Except for the dampening tests which require a specific fill fluid, the other tests may employ fresh water as the fill fluid. If fresh water is used as the fill fluid for the temperature test, provision should be made to employ a suitable additive to prevent freezing. As applicable, the snubber should be thoroughly cleaned prior to conducting the dampening test. The fill fluids for the dampening test shall be as follows:

- (a) Type 1: 2190-TEP oil in accordance with MIL-L-17331 (an equivalent oil in accordance with MIL-L-17331 may be substituted).
- (b) Types 2 and 4: Fresh water.
- (c) Type 3: Air or nitrogen.

Unless otherwise indicated, the pressure transducer or pressure gauge shall be connected to the output side of the snubber with only an adapter fitting between them. Except where temperature is a variable, the tests in this specification shall be conducted at temperature of  $75 \pm 10^{\circ}\text{F}$ .

4.5.1 Steady state transmission. A reference measurement shall be made employing either a pressure transducer, or pressure gauge, both with and without a snubber. The reference measurement shall be made both upscale and downscale at the test pressures for the applicable class (see 1.2) as shown in table III. The snubber shall meet the requirements of 3.4.1.

TABLE III. Steady state transmission pressures.

Snubber class (see 1.2.2)	Operating range (psi)	Test pressures (psi)
L	10/1000	10, 250, 500, 750, 1000
H	1001/6000	1200, 2400, 3600, 4800, 6000

4.5.2 Dampening. The dampening test shall be conducted utilizing an apparatus similar to that shown on figure 1. A step change shall be made from atmospheric pressure to  $200 \pm 10$  psi for class L snubbers and from atmospheric pressure to  $1500 \pm 100$  psi for class H snubbers. The pressure step change shall be accomplished in 100 milliseconds or less as measured with the monitoring pressure transducer. Both the test and monitoring pressure transducers shall have frequency response characteristics sufficient to respond to and produce an electrical signal output in response to a full scale pressure change occurring in 10 milliseconds or less. The snubber shall meet the requirements of 3.4.2.

4.5.2.1 Dampening test procedure. The following procedure, applicable to figure 1, may be used to perform the dampening test:

- (a) Ensure that V2 and V4 are closed and that V3 is open.
- (b) Utilizing V3, introduce the fill fluid, as applicable into the monitoring and test transducer legs. Loosen the fittings at T1 and T2 to ensure a complete fill. Tighten all transducer fittings and close V3 after the fill procedure is complete.
- (c) Utilizing V1, pressurize the high pressure reservoir with nitrogen to a value sufficient to ensure that the pressure step change in the transducer legs will satisfy the criteria of 4.5.2. Close V1.
- (d) Energize the transducers and applicable monitoring equipment, and actuate V2.
- (e) After steady state has been achieved, close V2 and relieve the test pressure by opening V4.
- (f) As applicable, thoroughly clean the entire dampening apparatus to remove residual traces of the fill fluid.

4.5.3 Temperature.

4.5.3.1 High temperature. Place the snubber in an environmental chamber and pressurize the snubber to  $250 \pm 10$  psi for a class L snubber and  $1500 \pm 50$  psi for a class H snubber. Increase the chamber temperature from ambient to  $150 \pm 5$  °F in not less than 1 hour. Adjust the pressure as necessary to maintain the required pressure. Maintain the pressure and temperature conditions for a minimum of 4 hours. Reduce the chamber to ambient temperature in not less than 1 hour. Remove the snubber from the chamber. Allow it to remain at ambient temperature for at least 1 hour. The snubber shall meet the requirements of 3.4.3.

4.5.3.2 Low temperature. Place the snubber in an environmental chamber and pressurize the snubber to  $250 \pm 10$  psi for a class L snubber and  $1500 \pm 50$  psi for

a class H snubber. Decrease the chamber temperature from ambient to  $40 \pm 5$  °F in not less than 1 hour. Adjust the pressure as necessary to maintain the required pressure. Maintain the pressure and temperature conditions for a minimum of 4 hours. Increase the chamber to ambient temperature in not less than 1 hour. Remove the snubber from the chamber and allow it to remain at ambient temperature for at least 1 hour. The snubber shall meet the requirements of 3.4.3.

4.5.3.3 Temperature cycling. Place the snubber in an environmental chamber. The snubber shall remain unpressurized during the temperature cycling. The test shall consist of 4 complete cycles (steps 1 through 4), as shown in table IV. After completion of the 4th cycle, the snubber shall be removed from the chamber and allowed to stabilize at ambient conditions for at least 1 hour. The snubber shall meet the requirements of 3.4.3.

TABLE IV. Temperature cycle.

Step	Temperature condition	Duration
1	Increase temperature <u>1/</u> from $75 \pm 5$ °F to $150 \pm 5$ °F	1 hour
2	Constant temperature of $150 \pm 5$ °F	22 hours <u>3/</u>
3	Decrease temperature to $-10 \pm 5$ °F	2 hours
4	Constant temperature of $-10 \pm 5$ °F	22 hours <u>3/</u>
5	Increasing temperature to $75 \pm 5$ °F <u>2/</u>	1 hour

1/ Ambient temperature for the first cycle.

2/ Ambient temperature for the last cycle.

3/ Minimum duration.

4.5.4 Vibration. The snubber shall be tested in accordance with type I (environmental) vibration of MIL-STD-167-1 except that the upper frequency shall be 175 hertz (Hz); the amplitude of vibration shall be in accordance with table V; and for the variable frequency portion, the vibration level shall be maintained for 2 minutes at every integral value of frequency. If no resonances are observed, the 2-hour endurance test shall be conducted at 175 Hz. If a particular snubber is determined to be axisymmetric, then the vibration test need only be conducted along the two mutually perpendicular axes. The snubber shall be pressurized to  $250 \pm 10$  psi for a class L snubber and  $1500 \pm 50$  psi for a class H snubber and monitored throughout the test. The snubber shall meet the requirements of 3.4.4.

TABLE V. Vibratory displacement criteria.

Frequency range (Hz)	Table displacement (inches peak to peak)	
	Exploratory	Variable frequency
5 to 20	0.020 ± 0.004	0.060 ± 0.012
21 to 50	0.010 ± 0.002	0.040 ± 0.008
51 to 100	0.003 ± 0.0006	0.020 ± 0.004
101 to 175	0.001 ± 0.0002	0.003 ± 0.0006

4.5.4.1 Vibration fixture. The snubber shall be connected to the outlet side of an instrument cutoff valve. The cutoff valve shall be in accordance with MIL-V-24578. The valve and snubber assembly shall be mounted to a vertical panel of the vibration fixture using the valve mounting nut and lockwasher. A flexible hose shall be used to connect the pressure source to the inlet side of the instrument cutoff valve. A flexible hose shall be used to connect a pressure monitor (gauge or transducer) to the test connection port located in the stem of the instrument cutoff valve. Flexible pressure hoses shall be of sufficient length so as not to interfere with the vibration fixture and shall have appropriate pressure ratings. The snubber shall be mounted to the instrument cutoff valve as indicated below for the various snubber end connection types. After filling and pressurizing the system, the snubber and pressure monitor shall be isolated from the pressure source by means of the instrument cutoff valve.

4.5.4.1.1 O-ring union connection. Thread the output side of the snubber onto the output side of the instrument cutoff valve. Seal the inlet side of the snubber with a blanked tailpiece after the system is filled.

4.5.4.1.2 Flareless (bite type) connection. Mount the outlet side of the snubber to the outlet side of the instrument cutoff valve by means of an O-ring union to flareless (bite type) adapter in accordance with Drawing 803-1385850. Seal the inlet side of the snubber after the system is filled.

4.5.4.1.3 Pressure transducer connection. Mount the inlet side of the snubber to the outlet side of the instrument cutoff valve by means of a short length of 1/4-inch od stainless steel tubing and fittings in accordance with MIL-F-18866. As required, clamp the snubber to the vibration fixture to prevent movement during test. Seal the outlet side of the snubber after the system is filled.

4.5.5 Shock. A lightweight shock test shall be conducted in accordance with MIL-S-901 for grade A, class 1, type A equipment. A total of nine blows shall be applied, three blows applied parallel to each axis of the snubber. The snubber shall be pressurized to 250 ± 10 psi for a class L snubber and 1500 ± 50 psi for a class H snubber and monitored throughout the test. The snubber shall meet the requirements of 3.4.5.

4.5.5.1 Shock fixture. The snubber shall be connected to the outlet side of an instrument cutoff valve. The cutoff valve shall be in accordance with MIL-V-24578. The valve and snubber assembly shall be mounted to a vertical panel of a type 6D-1 adapter plate using the valve mounting nut and lockwasher. A flexible hose shall be used to connect the pressure source to the inlet side of the



instrument cutoff valve . A flexible hose shall be used to connect a pressure monitor (gauge or transducer) to the test connection port located in the stem of the instrument cutoff valve. Flexible pressure hoses shall be of sufficient length so as not to interfere with the shock fixture and shall have appropriate pressure ratings. The snubber shall be mounted to the instrument cutoff valve as indicated below for the various snubber end connection types. After filling and pressurizing the system, the snubber and pressure monitor shall be isolated from the pressure source by means of the instrument cutoff valve.

4.5.5.1.1 O-ring union connection. Thread the output side of the snubber onto the output side of the instrument cutoff valve. Seal the inlet side of the snubber with a blanked tailpiece after the system is filled.

4.5.5.1.2 Flareless (bite type) connection. Mount the outlet side of the snubber to the outlet side of the instrument cutoff valve by means of an O-ring union to flareless (bite type) adapter in accordance with Drawing 803-1385850. Seal the inlet side of the snubber after the system is filled.

4.5.5.1.3 Pressure transducer connection. Mount the inlet side of the snubber to the outlet side of the instrument cutoff valve by means of a short length of 1/4-inch od stainless steel tubing and fittings in accordance with MIL-F-18866. As required, clamp the snubber to the shock fixture to prevent movement during test. Seal the outlet side of the snubber after the system is filled.

4.5.6 Pressure integrity. Pressurize the snubber to a value indicated in table VI appropriate to the snubber class. Isolate the pressurized snubber from the pressure source and monitor the snubber pressure with the appropriate range pressure transducer or pressure gauge. Maintain the pressure for a period of 1 hour. The snubber shall meet the requirements of 3.4.6.

TABLE VI. Pressure integrity test pressures.

Snubber class (see 1.2.2)	Operating range (psi)	Test pressure (psi)
L	10/1000	1500
H	1001/6000	9000

4.6 Inspection of packaging. Sample packages, and the inspection of the packaging (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 shall apply only for direct Government acquisition. For the extent of applicability of the packaging or preparation for delivery requirements of referenced documents listed in section 2, see 6.5.)

5.1 Preservation. Preservation shall be level A, C, or commercial, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Cleaning and drying.

5.1.1.1.1 Types 1, 2, and 4. Unless otherwise specified (see 6.2), cleaning and drying of types 1, 2, and 4 snubbers shall be in accordance with MIL-STD-1622.

5.1.1.1.2 Type 3. Type 3 snubbers shall be cleaned and dried in accordance with MIL-STD-1330 for oxygen and dry nitrogen service and MIL-STD01622 for all other applications (See 6.2).

5.1.1.2 Unit protection. Preservatives shall not be used.

5.1.1.2.1 Bagging. Types 1, 2, and 4 snubbers shall be individually placed in a bag conforming to MIL-B-117 type I, class B, style 2 having a minimum thickness of 0.003 inches. Type 3 snubbers shall be individually placed in a bag conforming to MIL-B-117 type I, class E, style 2 having a minimum thickness of 0.006 inches. Snubber threads shall be protected by a plastic cap to prevent puncture of the plastic bag. Any sharp edges and protrusions of the snubbers shall be cushioned before placing the snubbers in the plastic bag.

5.1.1.2.2 Boxing. Each bagged snubber shall be individually unit packed in a box conforming to PPP-B-566 variety 2, process II, ASTM D-5118 class weather resistant, PPP-B-665 class 2, or PPP-B-676 with box selection and style at the contractor's option. Box closure and sealing shall conform to the requirements for water-proofing or weather-resistant as specified in ASTM D 1974 or the applicable box specification or appendix thereto.

5.1.1.3 Intermediate packing. Snubbers of the same type, class, and composition, unit packed as specified in 5.1.1.2.1 shall be intermediate packed in close-fitting fiberboard boxes conforming to ASTM-D-5118, type CF, class weather-resistant, style optional. Intermediate packs shall contain uniform quantities. Boxes shall be closed in accordance with method V of the appendix to the box specification.

5.1.2 Level C. Cleaning and drying, unit protection, and boxing shall be as specified for level A (see 5.1.1) except that boxes may be of the non water-proof domestic class or variety.

5.1.3 Commercial. Type 1, 2, and 3 snubbers shall be individually packaged in accordance with ASTM D 3951. Type 3 snubbers shall be cleaned, dried, and bagged as specified for level A (see 5.1.1) with boxing in accordance with ASTM D 3951.

5.2 Packing. Packing shall be level B, C, or commercial as specified (see 6.2).

5.2.1 Level B. Snubbers preserved as specified in 5.1 shall be packed in fiberboard containers conforming to ASTM D 5118 class weather-resistant or PPP-B-640 class 2 with container selection at the option of the contractor. Containers shall be closed, sealed, and reinforced with reinforcement utilizing non-metallic banding or pressure sensitive reinforced tape. Box closure for ASTM D 5118 containers shall conform to method V of ASTM D 1974. Intermediate containers conforming to 5.1.1.3 herein, require no further overpacking.

5.2.2 Level C. Snubbers preserved as specified in 5.1 shall be packed as specified for level B (see 5.2.1) except that containers shall be of the non weather-resistant class. Containers shall be closed as specified in the appendix to the container specification with method I closure of ASTM D 1974 applicable to ASTM D 5118 containers.

5.3 Cushioning, filler, dunnage, and wrapping material.

5.3.1 Levels A, B, and C. Use of excelsior, newspaper, shredded paper (all types, including wax paper), and similar hygroscopic or non-neutral materials and all types of loose-fill materials for applications such as cushioning, filler, stuffing, and dunnage for materials destined for shipboard stowage and use is prohibited.

5.3.2 Commercial preservation and packing. When loose fill type materials are used for preservation and packing applications such as cushioning, filler, and dunnage, all containers (unit, intermediate, and shipping) shall be marked or labeled with the following information:

"CAUTION

Contents cushioned with loose-fill material shall not be taken onboard ship. Remove and discard loose-fill material. If required, recushion with cellulosic material, bound fiber, fiberboard, or transparent flexible cellular material."

5.4 Marking. In addition to any special marking required (see 6.2), interior unit packs and exterior shipping containers for levels A, B, and C shall be marked in accordance with MIL-STD-129 including the bar-code markings specified therein. Type 3 unit packs (see 5.1.1.2.1) shall be marked with a warning label as specified in MIL-STD-1330 inserting "oxygen" or "nitrogen" and so forth, as applicable for the system use when cleaned for these applications. The labels shall be green paper and shall match FED-STD-595, color no. 14187. Lettering shall be black.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Snubbers are intended for use in pressure instrument piping systems to suppress pressure spikes and dampen pressure fluctuations (both periodic and nonperiodic) before they can reach and damage pressure sensing instrumentation.

6.1.1 End connections.

6.1.1.1 Pressure gauge applications. Snubbers intended for use in pressure gauge applications should be as follows:

6.1.1.1.1 O-ring union connection. Snubbers intended for use in O-ring union pressure gauge applications should have 9/16-18 UNF-3A external threads on the inlet connection 9/16-18 UNF-3B internal threads on the outlet connection. Snubbers should be installed in accordance with Drawing 803-1385850.

6.1.1.1.2 Flareless (bite type) connection. Snubbers intended for use in flareless (bite type) pressure gauge applications should have 7/16-20 UNF-2A external threads on the inlet connection and 7/16-20 UNF-2B internal threads on the outlet connection. Snubbers should be installed in accordance with Drawing 803-1385850.

6.1.1.2 Pressure transducer applications. Snubbers intended for use in pressure transducers applications should have 7/16-20 UNF flareless tube (1/4 od) connection on the inlet connection and a 7/16-20 UNF-2A external thread on the outlet connection. The outlet of the snubber should be threaded directly into the 7/16-20 UNF-2B connection port of the pressure transducer.

6.1.1.3 Other applications. Snubbers with end connections other than specified above are intended for use as replacements for existing applications only.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Snubber classification variables (see 1.2).
- (c) Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- (d) When first article is required (see 3.1).
- (e) If union nut, tail piece, and O-ring shall be furnished with each snubber that is intended for pressure gauge general applications (see 3.3.2.1.1).
- (f) Levels of preservation and packing (see 5.1 and 5.2)
- (g) When cleaning and drying of types 1, 2, and 4 is other than as specified (see 5.1.1.1.1).
- (h) Cleaning requirements for Type 3 snubbers (see 5.1.1.1.2)
- (i) Special marking (see 5.4).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

<u>Reference Paragraph</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
3.3 and appendix	DI-DRPR-80651	Engineering drawings	---
4.2.1 and 4.2.2	DI-QCIC-81110	Inspection and test plan	---
4.2.1 and 4.2.2	DI-QCIC-80906	Calibration system description	---
4.2.2	DI-NDTI-80809	Test/inspection reports	---

The above DID's were those cleared as of the date of this specification. The current issue of DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a preproduction sample, a first article sample, a first production item, a sample selected from the first production items, a standard production item from the contractor's current inventory, and the number of items to be tested as specified in 4.3. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection 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. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.5 Sub-contracted material and parts. The packing 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.

6.6 NAVSEA approval and direction. Deviations from specified materials, procedures, and requirements and selection of specific alternative materials and procedures require NAVSEA approval or direction. Requests should include supporting documentation.

6.7 Lot acceptance and rejection criteria.

6.7.1 Sampling. Sample selection should be in accordance with MIL-STD-105, inspection level I, acceptable quality level (AQL); 1-1/2 percent defects apply.

6.7.2 Dimensional verification. An AQL of 4 percent defect applies for the snubber's threaded ends. For the tail piece and union nut, inspection level II, AQL 1, -0 percent defects applies when the pressure connection is the O-ring union type.

6.7.3 Defects. The AQL for each defect is as shown in table VII.

TABLE VII. AQL for defects.

Categories	Defects	Requirements	AQL
<u>Critical</u>			
1	Evidence that snubbers for oxygen service are not cleaned, improperly marked, or improperly packaged.	3.3.3, 5.1.1.1	0
2	Snubber does not meet the pressure integrity test (see 4.5.6)	3.4.6	0
<u>Major</u>			
101	Evidence of unauthorized material	3.2	0
102	Inspection systems not provided, dimensional tolerances not maintained, mounting dimensions not interchangeable, pressure connection wrong design, and dimensions erroneous	3.3, 3.3.1, 3.3.2, 4.4	0
103	Snubber does not meet steady state transmission or dampening tests (see 4.5.1 and 4.5.2)	3.5.1, 3.5.2	0
104	Markings not provided or erroneous; part number not provided	3.3.5	0
<u>Minor</u>			
202	Evidence that snubbers for nonoxygen service are not cleaned	3.3.3	1-1/2
203	Finish non-conforming, scratched, chipped; burrs not removed, color non-conforming	3.6	4
204	Cleaning, drying, preservation, packaging, packing, and markings non-conforming	5.	4

6.8 Subject term (key word) listing.

Fluid pressure  
Instrument protection  
Pressure gauge  
Pressure transducer  
Snubbers  
Dampening

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

Custodian activity:

Army - ME  
Navy - SH  
Air Force - 99

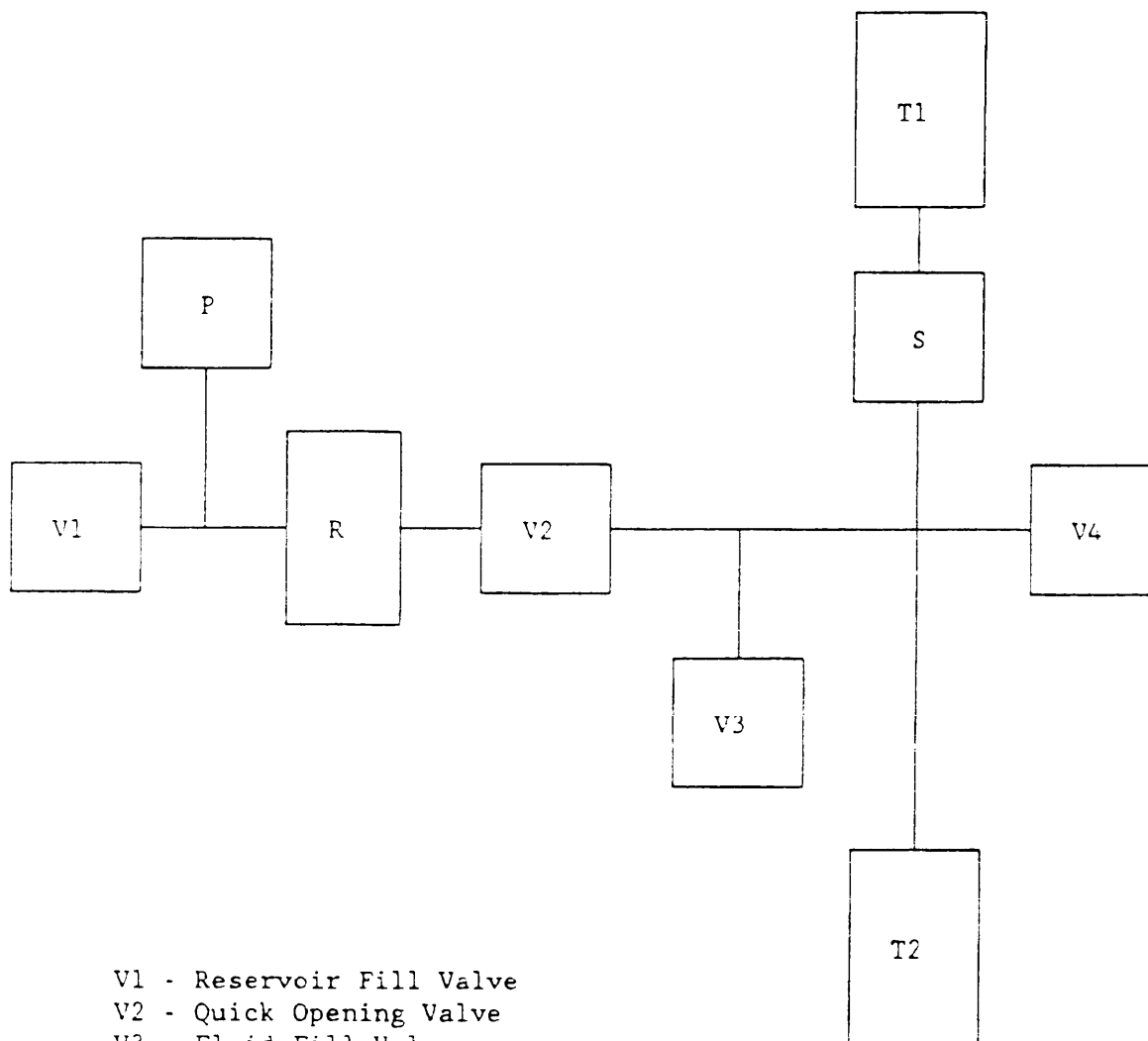
Preparing activity:

Navy - SH  
(Project 6685-0908)

Review activity:

Army - MI  
Air Force - 82  
DLA - DGSC





- V1 - Reservoir Fill Valve
- V2 - Quick Opening Valve
- V3 - Fluid Fill Valve
- V4 - Vent Valve
- P - Reservoir Pressure Monitor
- R - High Pressure Reservoir
- S - Pressure Snubber
- T1 - Test Transducer
- T2 - Monitoring Transducer

FIGURE 1. Suggested dampening test setup.

## APPENDIX

## ENGINEERING DRAWINGS TECHNICAL CONTENT REQUIREMENTS

## 10. SCOPE

10.1 Scope. This appendix contains the format and content preparation instructions for the development of and revision to a conformance drawing. It is not intended that each requirement contained herein should be applied to every type of instrumentation or related equipment. Portions of this appendix are subject to deletion tailoring depending upon the material, construction and principle of operating requirements that are specified in the individual specification or acquisition document. This appendix is a mandatory part of the specification. The information contained herein is intended for compliance.

## 20. APPLICABLE DOCUMENTS

20.1 Government documents.

20.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

## MILITARY

MIL-I-45208 - Inspection System Requirements.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, BLDG. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

20.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

200 - Reference Designations for Electrical and Electronics Parts and Equipment. (DoD adopted)

Y14.1 - Drawing Sheet Size and Format. (DoD adopted.)

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

### 30. CONFORMANCE DRAWING FOR INSTRUMENTATION AND RELATED EQUIPMENT

30.1 Purpose. The conformance drawing contains the information necessary to verify that the equipment meets the requirements specified in the applicable specification and acquisition document.

30.2 Content and format. One conformance drawing shall be developed for each specific type of equipment. It shall include all ranges, sizes, connections and other variations. The conformance drawing shall include the following minimum information (except as specified in 10.1) and shall be developed to the following format:

#### 30.3 Descriptive data.

- A. Equipment identification numbering system. This numbering system shall include, but may not be restricted to, the classification variables.
- B. Equipment identification number system for replaceable parts.
- C. Size, operating data, ranges, scale markings, and other data for proper selection.
- D. Test approval data, including test report number and date and approval letter and date.
- E. A statement that the equipment is in accordance with the requirements of the applicable specification or acquisition document and to referenced specifications.
- F. Conformance drawing acceptance data, including the acceptance letter and date and the drawing revision number.

#### 30.4 Details of construction.

- A. Two or more representative assembly views, as required, to show clearly the details of the design, construction, and assembly of the equipment and to identify each part and its location. Identification of parts shall correspond to the list of materials. Assembly shall show how all mechanical parts are joined or attached.
- B. Sectional views or notes as necessary to show details.
- C. Details such as fastening techniques, welding symbols, mounting requirements, and other details as applicable.
- D. Dimensions required to ensure interchangeability.
- E. Description of the nature and purpose of any adjustments.
- F. Welding procedures with acceptance data, including acceptance letter, report numbers and dates.
- G. Any special features.
- H. Complete weight.
- I. Location, size, and type of connections.
- J. Identification of quality control documents which show conformance with MIL-I-45208 or the quality control specification that is listed in the applicable instrumentation specification or acquisition document. The acceptance letter shall be referenced.

30.5 Drawing format.

- A. Unless otherwise approved by the authorized government activity, a maximum of three sheets shall be allotted.
- B. Each sheet shall be zoned.
- C. Title block shall be included on each drawing sheet and shall include the following information.
  - 1. Title, drawing number, and revision letter. Each sheet contain the same title, drawing number and revision letter.
    - (a) Title - The title shall consist of the name by which the equipment is known.
    - (b) Drawing number - The drawing number shall consist of alphanumeric characters which may be separated by dashes or slashes. The total number of characters in the drawing number (including dashes and/or slashes) shall not exceed 15. Blank spaces are not permitted within the drawing number.
    - (c) Revision letter - The revision letter shall denote the latest approved version of the drawing. The revision letter of conformance drawing shall not be changed until all the changes under that revision have been accepted in writing by the authorized government activity (NAVSEA). No changes made to the conformance drawing shall be considered a revision until after the initial version of the conformance drawing has been accepted in writing by the authorized government activity. After initial submittal of the conformance drawing, no changes shall be made during the initial drawing review process unless the change is either requested by the authorized government activity or the change is documented in written correspondence by the contractor.
  - 2. Sheet \_\_\_\_\_ of \_\_\_\_\_.
  - 3. Tolerance on dimensions for fractions, decimals, and angles. Units of the dimensions specified on the conformance drawing.
  - 4. Contractor acceptance block (appropriate signatures and dates.)
  - 5. Contractor and Government entity (CAGE) code.
  - 6. Scale.
  - 7. Reference drawings.
  - 8. Manufacturer's name and address.
  - 9. Drawing size.

- D. Revision block. The revision block shall be included on each sheet of the conformance drawing and shall contain the following information in tabular form:
1. Revision letter.
  2. Description of revision.
  3. Acceptance letter serial number and originator identification.
  4. Acceptance date.
- E. Form. Sheet size and format not specified herein shall be in accordance with ANSI Y14.1.
- F. Classification designations. No government security classification designation such as confidential or secret shall appear on the conformance drawing unless a particular classification is specified by the government.

#### 40. CONFORMANCE DRAWING ACCEPTANCE

40.1 Acceptance. Acceptance shall be granted by the authorized government activity only after the conformance drawing is found to meet all the requirements specified in 20. through 40.1.

50. Acquisition document instructions. The acquisition document should contain provisions that address submission, review, extension, disapproval, default, acceptance, and waiver of conformance drawings in addition to the effects on the delivery schedule due to delays in conformance drawing acceptance. NAVSEA shall be designated as the activity that accepts or disapproves the conformance drawing.



# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of 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.

<b>I RECOMMEND A CHANGE:</b>	1. DOCUMENT NUMBER MIL-S-2940C	2. DOCUMENT DATE (YYMMDD) 1 November 1994
3. DOCUMENT TITLE SNUBBERS, FLUID PRESSURE, INSTRUMENT PROTECTION		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	e. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY		
a. NAME Technical Point of Contact: Mr. D. Strawser, NAVSEA 03J4,	b. TELEPHONE (Include Area Code) (1) Commercial 703 602-6137 (2) AUTOVON 332-6137	
c. ADDRESS (Include Zip Code) Commander SEA 03R42 2531 Jefferson Davis Hwy Arlington, VA 22242-5160	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	