

**INCH-POUND**

**MIL-T-960E(SH)  
AMENDMENT 3  
30 October 1991**

**SUPERSEDING  
AMENDMENT 2  
14 September 1981**

**MILITARY SPECIFICATION**

**TRAPS, STEAM, INTERMITTENT DISCHARGE AND CONTINUOUS  
FLOW, NAVAL SHIPBOARD**

This amendment forms a part of MIL-T-960E(SHIPS), dated 21 June 1963, and is approved for use by Naval Sea Systems Command, Department of the Navy and is available for use by all departments and agencies of the Department of Defense.

**PAGE 1**

2.1, SPECIFICATIONS, MILITARY: Delete reference to: "MIL-D-963" and substitute "MIL-T-3100 - Technical Data Packages, General Specification For" and delete reference to "MIL-S-2953".

\* 2.1, SPECIFICATIONS, MILITARY: Delete "MIL-G-21032 - Gaskets, Metallic-Asbestos, Spiral Wound (for ASA Commercial Flanged Joints in Piping Systems) (Identification Symbol 2410)" and substitute "MIL-G-24716 - Gaskets, Metallic-Flexible Graphite, Spiral Wound."

**PAGE 2**

3.1, delete and substitute:

"3.1 **Qualification.** Steam traps (type I and II) furnished under this specification shall be products which are qualified for listing on the applicable qualified products list at time set for opening of bids (see 4.2 and 6.2)."

3.2, line 2: Delete "as approved" and substitute "and shall be reviewed"; line 2, delete "Bureau of Ships" and substitute "Naval Sea Systems Command (NAVSEA)".

AMSC N/A

FSC 4730

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• TABLE I, delete and substitute:

**TABLE I. Materials of steam traps.**

Parts	Series 100		Series 150		Series 300		Series 400		Series 600 and 1500	
	Material	Applicable documents	Material	Applicable documents	Material	Applicable documents	Material	Applicable documents	Material	Applicable documents
Bodies, bonnets <sup>4</sup>	Bronze	ASTM B-61 B-143-2A	Steel	ASTM A-105, grade II, A-216, grade WCB	Steel	ASTM A-105, grade II, A-216, grade WCB	Steel	ASTM A-105, grade II, A-216, grade WCB	Cr-Moly alloy steel <sup>3</sup>	ASTM A-182 F11 or F72 ASTM A-217 WC6 or WC9
Valves, valve seats orifices <sup>1</sup> (see 3.2.1)	Ni-Cu alloy Cres	QQ-N-281 ASTM A-276	Hard facing on body Cres	MIL-R-17131 ASTM A-276, type 410	Hard facing on body Cres	MIL-R-17131 ASTM A-276, type 410	Hard facing on body Cres	MIL-R-17131 ASTM A-276, type 410	Hard facing on body Cres	MIL-R-17131 ASTM A-276, type 410
Bonnet gaskets <sup>2</sup>	Sheet	Commercial	Spiral- wound	Commercial MIL-G-24716	Spiral- wound Soft steel	MIL-G-24716 80 Brinell maximum	Spiral- wound Soft steel	MIL-G-24716 80 Brinell maximum	Spiral- wound Monel	MIL-G-24716
Bonnet and body Bolts, nuts	Steel	MIL-B-857, type II	Steel	MIL-B-857, type II	Steel	MIL-S-1222, symbol B7 symbol H symbol 4	Steel	MIL-S-1222, symbol B7 symbol H symbol 4	Alloy steel	MIL-S-1222, symbol B16 symbol 4
Strainer element	Ni-Cu alloy	QQ-N-281 QQ-S-763 or QQ-S-766	Cres	QQ-S-736 or QQ-S-766	Cres	QQ-S-736 or QQ-S-766	Cres	QQ-S-736 or QQ-S-766	Cres	QQ-S-763 or QQ-S-766

<sup>1</sup>Other materials which have demonstrated their suitability will be approved by the command or agency concerned.

<sup>2</sup>Reference to MIL-S-24716 is for construction and materials. Dimensions shall be made to suit joint. Commercial equivalent gaskets may be used.

<sup>3</sup>ASTM A 276 type 410 may be used with flanged end only.

<sup>4</sup>Body and bonnet materials listed for series 600 and 1500 may be used in flanged applications of series 150, 300, and 400.

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**PAGES 5 and 6**

**3.3.4, first sentence: Delete.**

**Table IV, delete and substitute:**

**"TABLE IV. Minimum requirements for continuous discharge capacities of  
1/2 inch traps at specified temperature depressions with  
constant back pressure of 30 lb/in.**

Traps series	Inlet pressure	Minimum capacity pounds per hour		
		10 °F depression	20 °F depression	30 °F depression
Type I				
100	100	800	900	1000
150	150	800	900	1000
Type II				
150	150	1000	1100	1300
300	300	1000	1100	1300
400	400	1000	1100	1300
600	600	1000	1100	1300
1500	1400	2000	2500	3000

**3.8.1.1, delete and substitute:**

**"3.8.1.1 Series. Type I traps may be furnished in series 100 and 150 only."**

**3.8.2, delete and substitute:**

**"3.8.2 Type II. Type II traps may be furnished in all series except 100."**

**Add as paragraph 3.8.3:**

**"3.8.3 Type III. Type III traps may be furnished in all series."**

**3.9, delete and substitute:**

**"3.9 Drawings. Drawings shall be furnished in accordance with MIL-T-31000."**

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**4.1, delete and substitute:**

**"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 as deemed necessary to assure supplies and services conform to prescribed requirements."

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**4.2, delete and substitute:**

**"4.2 Qualification tests<sup>1</sup>.** Qualification tests shall be conducted at a laboratory satisfactory to the Naval Sea Systems Command. Qualification tests shall consist of the tests specified in 4.2.1."

**4.2.1.1, line 2:** Delete "Bureau of Ships" and substitute "NAVSEA".

**4.2.1.1(d), line 2:** Delete "Government inspector" and substitute "Government representative"; line 4, delete "Bureau of Ships" and substitute "NAVSEA".

**4.2.1.2, line 2:** Delete "and series of the same type." and substitute "of the same type and series."

**Footnote<sup>1</sup>:** Delete and substitute:

<sup>1</sup>Application for Qualification tests shall be made in accordance with "Provisions Governing Qualification SD-6" (see 6.2 and 6.3)."

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Table V, delete and substitute:

**"TABLE V. Minimum capacity requirements under operational tests  
conditions of 1/2 inch traps with 30 lb/in back pressure  
level of water in drop leg before trap - 30 inches.**

Trap series	Inlet pressure lb/in	Minimum capacity pounds per hour
<b>Type I</b>		
100	100	600
150	150	600
<b>Type II</b>		
150	150	150
300	300	180
400	400	300
600	600	300
1500	1400	950

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4.2.5, line 1: Delete "Bureau of Ships" and substitute "NAVSEA".

4.3: Delete.

**PAGE 10**

6.1, item (c): Delete and substitute:

"(c) Type and size of end connections required (see 3.3.2)."

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**PAGE 11**

**6.2, delete and substitute:**

"6.2 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 the applicable Qualified Products List QPL 960 whether or not such products have actually been so listed by the 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 orders for the products covered by this specification. The activity responsible for the Qualified Products List is Naval Sea Systems Command, SEA 51222, Department of the Navy, Washington, DC 20362, 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)."

**6.3, delete and substitute:**

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

The margins of this amendment are marked with an asterisk (\*) to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

Preparing activity:  
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