

**INCH-POUND**

MIL-S-24235/1F(SH)

28 December 1992

SUPERSEDING

MIL-S-24235/1E(SH)

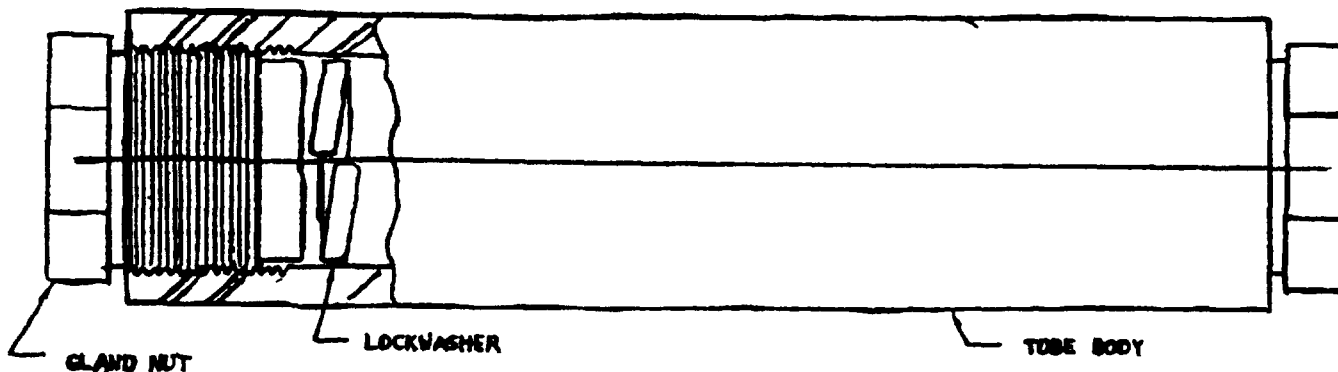
21 August 1989

## MILITARY SPECIFICATION SHEET

STUFFING TUBES, METAL, AND PACKING ASSEMBLIES FOR  
ELECTRIC CABLES, BULKHEAD, PRESSUREPROOF

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.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-S-24235.

FIGURE 1 Stuffing tube assembly.

01

## NOTES:

- 1 Dimensions are in inches
2. Unless otherwise specified, tolerances shall be as follows.
  - Decimals - plus or minus 0.005 inch.
  - Fractions - plus or minus 1/64 inch
  - Angular dimensions - plus or minus 30 minutes.

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TABLE I. Sizes and part number - HY-80.

			Part or identifying numbers of components		
Tube size	Symbol number	Assembly part number	Tube body 1 required	Gland nut 2 required	Lockwasher 2 required
1	2405 HY-80	M24235/1-001	M24235/1-010	M24235/1-019	M24235/1-028
2	2406 HY-80	M24235/1-002	M24235/1-011	M24235/1-020	M24235/1-029
3	2407 HY-80	M24235/1-003	M24235/1-012	M24235/1-021	M24235/1-030
4	2408 HY-80	M24235/1-004	M24235/1-013	M24235/1-022	M24235/1-031
5	2409 HY-80	M24235/1-005	M24235/1-014	M24235/1-023	M24235/1-032
6	2410 HY-80	M24235/1-006	M24235/1-015	M24235/1-024	M24235/1-033
7	2411 HY-80	M24235/1-007	M24235/1-016	M24235/1-025	M24235/1-034
8	2412 HY-80	M24235/1-008	M24235/1-017	M24235/1-026	M24235/1-035
9	2413 HY-80	M24235/1-009	M24235/1-018	M24235/1-027	M24235/1-036

TABLE II Sizes and part or identifying numbers - HT.

			Part or identifying numbers of components		
Tube size	Symbol number	Assembly part number	Tube body 1 required	Gland nut 2 required	Lockwasher 2 required
1	2405 HT	M24235/1-101	M24235/1-110	M24235/1-019	M24235/1-028
2	2406 HT	M24235/1-102	M24235/1-111	M24235/1-020	M24235/1-029
3	2407 HT	M24235/1-103	M24235/1-112	M24235/1-021	M24235/1-030
4	2408 HT	M24235/1-104	M24235/1-113	M24235/1-022	M24235/1-031
5	2409 HT	M24235/1-105	M24235/1-114	M24235/1-023	M24235/1-032
6	2410 HT	M24235/1-106	M24235/1-115	M24235/1-024	M24235/1-033
7	2411 HT	M24235/1-107	M24235/1-116	M24235/1-025	M24235/1-034
8	2412 HT	M24235/1-108	M24235/1-117	M24235/1-026	M24235/1-035
9	2413 HT	M24235/1-109	M24235/1-118	M24235/1-027	M24235/1-036

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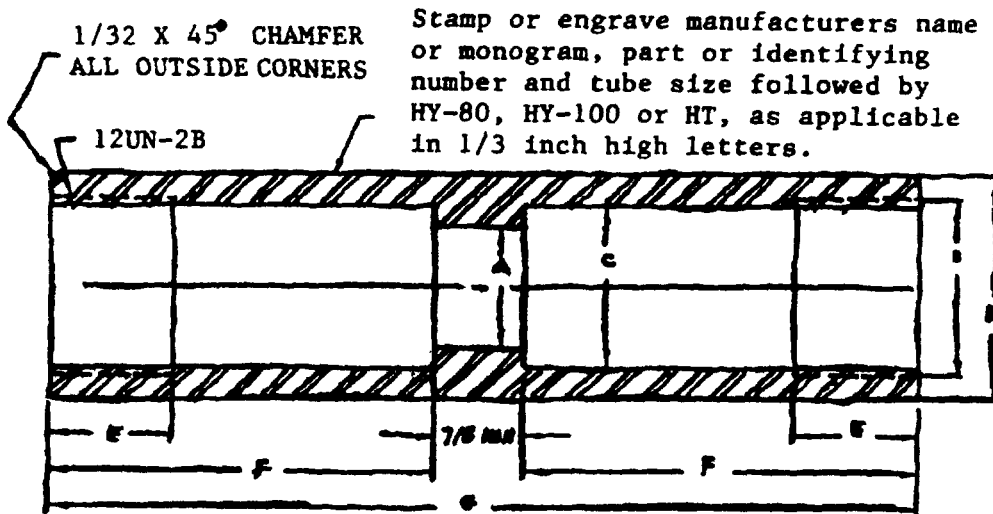


FIGURE 2. Tube body - sizes 1, 2 and 3.

TABLE III. Sizes and part number - HY-100.

Tube size	Symbol number	Assembly part number	Part or identifying numbers of components		
			Tube body 1 required	Gland nut 2 required	Lockwasher 2 required
1	2405 HY-100	M24235/1-201	M24235/1-210	M24235/1-019	M24235/1-028
2	2406 HY-100	M24235/1-202	M24235/1-211	M24235/1-020	M24235/1-029
3	2407 HY-100	M24235/1-203	M24235/1-212	M24235/1-021	M24235/1-030
4	2408 HY-100	M24235/1-204	M24235/1-213	M24235/1-022	M24235/1-031
5	2409 HY-100	M24235/1-205	M24235/1-214	M24235/1-023	M24235/1-032
6	2410 HY-100	M24235/1-206	M24235/1-215	M24235/1-024	M24235/1-033
7	2411 HY-100	M24235/1-207	M24235/1-216	M24235/1-025	M24235/1-034
8	2412 HY-100	M24235/1-208	M24235/1-217	M24235/1-026	M24235/1-035
9	2413 HY-100	M24235/1-209	M24235/1-218	M24235/1-027	M24235/1-036

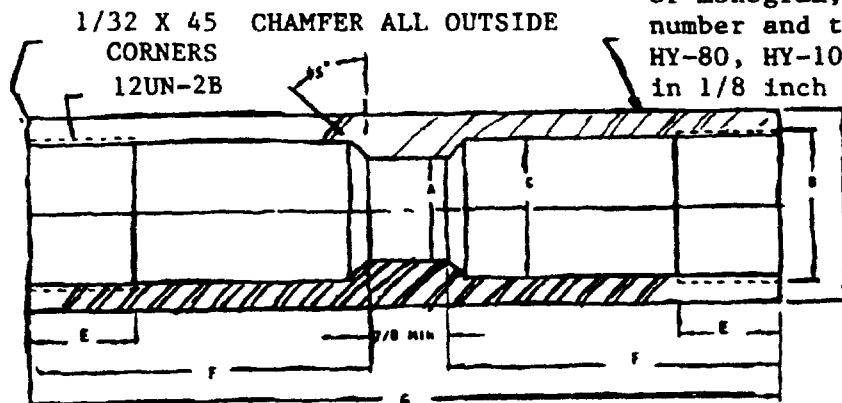
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TABLE IV. Tube body dimensions

Tube size	Part or identifying number HY-80	Part or identifying number HY-100	A DIA	B THDS	C DIA	D DIA	E 1/	F	G
1	M24235/1-010	M24235/1-210	0.609	1.125	1.017	1-1/2	15/16	2-3/8	5-5/8
2	M24235/1-011	M24235/1-211	.812	1.312	1.204	1-11/16	15/16	2-11/16	6-1/4
3	M24235/1-012	M24235/1-212	1.062	1.625	1.517	2-1/8	15/16	3-1/8	7-1/8

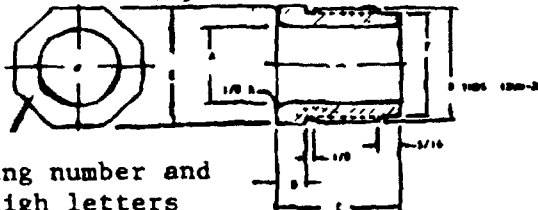
1/ Tolerance shall be minus 0, plus 4 threads.

Stamp or engrave manufacturers name or monogram, part or identifying number and tube size, followed by HY-80, HY-100 or HT, as applicable in 1/8 inch high letters.

FIGURE 3. Tube body - sizes 4 through 9. (03)TABLE V. Tube body dimensions

Tube size	Part or identifying number HY-80	Part or identifying number HY-100	A DIA	B THDS	C DIA	D DIA	E 1/	F	G
4	M24235/1-013	M24235/1-213	1.265	1.812	1.704	2-5/16	1-1/4	3-11/16	8-1/2
5	M24235/1-014	M24235/1-214	1.437	2.062	1.954	2-11/16	1-3/8	4-9/16	10
6	M24235/1-015	M24235/1-215	1.625	2.312	2.204	2-15/16	1-1/2	4-7/8	10-5/8
7	M24235/1-016	M24235/1-216	1.875	2.688	2.578	3-5/16	1-11/16	5-1/4	11-3/8
8	M24235/1-017	M24235/1-217	2.187	3.000	2.882	3-15/16	1-11/16	5-3/8	11-5/8
9	M24235/1-018	M24235/1-218	2.312	3.125	3.077	3-15/16	1-3/4	5-1/2	11-7/8

1/ Tolerance shall be minus 0, plus 4 threads.



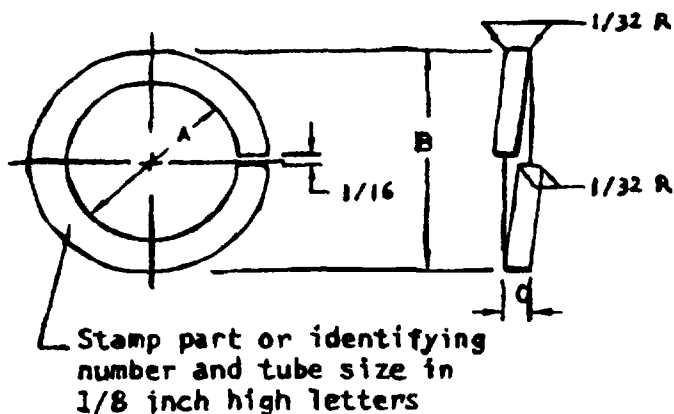
Stamp part or identifying number and tube size in 1/8 inch high letters

FIGURE 4. Gland nut configuration. (04)

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TABLE VI. Gland nut dimensions, brass.

Tube size	Part or identifying number	A DIA	B THDS	C	D	E	F DIA
1	M24235/1-019	0.609	1.125	1-9/16	7/16	1-1/4	0.984
2	M24235/1-020	.812	1.312	1-9/16	7/16	1-7/16	1.171
3	M24235/1-021	1.062	1.625	1-9/16	7/16	1-25/32	1.484
4	M24235/1-022	1.265	1.812	1-7/8	7/16	1-15/16	1.671
5	M24235/1-023	1.437	2.062	2	7/16	2-1/4	1.921
6	M24235/1-024	1.625	2.312	2-1/8	7/16	2-15/32	2.173
7	M24235/1-025	1.875	2.688	2-5/16	7/16	2-13/16	2.531
8	M24235/1-026	2.187	3.000	2-5/16	7/16	3-3/32	2.850
9	M24235/1-027	2.312	3.125	2-3/8	7/16	3-9/32	2.968

FIGURE 5 Lockwasher configurations

(05)

TABLE VII. Lockwasher dimensions.

Tube size	Part or identifying number	A DIA + .015 -.005	B DIA (max)	C Mean ±.010	Cross-section area * (in <sup>2</sup> ) (min)
1	M24235/1-028	0.609	1.007	1/8	0.040
2	M24235/1-029	.812	1.194	1/8	0.040
3	M24235/1-030	1.062	1.507	3/16	0.070
4	M24235/1-031	1.265	1.694	3/16	0.070
5	M24235/1-032	1.437	1.944	1/4	0.110
6	M24235/1-033	1.625	2.194	1/4	0.125
7	M24235/1-034	1.875	2.569	1/4	0.150
8	M24235/1-035	2.187	2.882	1/4	0.150
9	M24235/1-036	2.312	3.007	1/4	0.150

\*Cross section area = (B-A) X (C<sub>min</sub>)

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## REQUIREMENTS.

1 Packing assemblies

For information only, not furnished with stuffing tube.

TABLE VIII Packing assemblies.

Tube size	Stuffing tube part or identifying number	Symbol number	Packing assembly part or identifying number	Symbol number
1	M24235/1-001 M24235/1-101 M24235/1-201	2405 HY-80 2405 HT 2405 HY-100	M24235/2-001	2405.1
			M24235/2-002	2405.2
			M24235/2-003	2405.3
			M24235/2-004	2405.4
			M24235/2-005	2405.5
			M24235/2-006	2405.6
			M24235/2-007	2405.7
2	M24235/1-002 M24235/1-102 M24235/1-202	2406 HY-80 2406 HT 2406 HY-100	M24235/2-008	2406.1
			M24235/2-009	2406.2
			M24235/2-010	2406.3
			M24235/2-011	2406.5
			M24235/2-012	2406.4
3	M24235/1-003 M24235/1-103 M24235/1-203	2407 HY-80 2407 HT 2407 HY-100	M24235/2-013	2407.1
			M24235/2-014	2407.2
			M24235/2-015	2407.5
			M24235/2-016	2407.3
			M24235/2-017	2407.6
			M24235/2-018	2407.7
			M24235/2-019	2407.4
4	M24235/1-004 M24235/1-104 M24235/1-204	2408 HY-80 2408 HT 2408 HY-100	M24235/2-030	2408.5
			M24235/2-031	2408.1
			M24235/2-032	2408.2
			M24235/2-033	2408.3
5	M24235/1-005 M24235/1-105 M24235/1-205	2409 HY-80 2409 HT 2409 HY-100	M24235/2-034	2408.4
			M24235/2-035	2409.1
			M24235/2-036	2409.2
6	M24235/1-006 M24235/1-106 M24235/1-206	2409 HT 2409 HY-100	M24235/2-037	2409.3
			M24235/2-038	2410.1
			M24235/2-039	2410.2
7	M24235/1-007 M24235/1-107 M24235/1-207	2410 HY-80 2410 HT 2410 HY-100	M24235/2-040	2410.3
			M24235/2-041	2411.5
			M24235/2-042	2411.1
			M24235/2-043	2411.2
		2411 HY-80 2411 HT 2411 HY-100	M24235/2-044	2411.3
			M24235/2-045	2411.4

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TABLE VIII Packing assemblies - Continued.

Tube size	Stuffing tube part or identifying number	Symbol number	Packing assembly part or identifying number	Symbol number
8	M24235/1-008	2412 HY-80	M24235/2-046	2412.1
	M24235/1-108	2412 HT	M24235/2-047	2412.2
	M24235/1-208	2412 HY-100	M24235/2-048	2412.3
9	M24235/1-009	2413 HY-80	M24235/2-049	2413.1
	M24235/1-109	2413 HT	M24235/2-050	2413.2
	M24235/1-209	2413 HY-100		

2. Intended use The stuffing tubes are intended for electric cable penetrations of pressureproof submarine bulkheads and sonar domes that are filled with water under normal operating conditions. Stuffing tubes, as shown, may be used in bulkheads of 1/2-inch maximum thickness. Bulkheads of HY-80 material shall use tubes manufactured from HY-80 grade steel; bulkheads of HY-100 material shall use tubes manufactured from HY-100 grade steel; grade HT bulkheads shall use tubes manufactured from MIL-S-22698 grade AH-36T steel.
3. Application See DOD-STD-2003, section 3
4. For special applications requiring an extended tube body exceeding 11-7/8 inches in length, the dimensional tolerance of the tube body length shall be plus or minus 1/32-inch

TABLE IX. Parts list.

Item no.	Description 1/	Qty 2/	Material and specification	Remarks
		1-3 4-9		
01	Stuffing tube assemblies	-	-----	See figure 1 and tables I II and III
02	Tube body	1	HY-80 or HY-100 steel, or HT steel 3/, grade AH-36T, MIL-S-22698	See figure 2 and table IX
03	Tube body	1	HY-80 steel, MIL-S-21952; or HT steel 3/, grade 8620 ASTM A 322, or ASTM A 441	See figure 3 and table V

See footnotes at end of table

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TABLE IX. Parts list - Continued.

Item no	Description <u>1/</u>	Qty <u>2/</u>		Material and specification	Remarks
		1-3	4-9		
04	Gland nut	2	2	Brass, coml	See figure 4 and table VI
05	Lockwasher, spring	2	2	CRES, class B, style 2, FF-W-84 or class G, FF-W-84	See figure 5 and table VII

1/ See applicable figure and table listed in "Remarks" column for part numbers and dimensions

2/ Quantity is for one complete assembly of each size

3/ As specified in the ordering data.

Revision letters are not used to denote changes due to the extensiveness of the changes

Preparing activity  
Navy - SH  
(Project 5975-N078-01)