

INCH-POUND

MIL-S-24235/18A(SH)

28 December 1992

SUPERSEDING

MIL-S-24235/18(SH)

21 August 1989

MILITARY SPECIFICATION SHEET

STUFFING TUBES, METAL, AND PACKING ASSEMBLIES FOR
ELECTRIC CABLES, SWAGE TYPE, REDUCED DIAMETER,
STEEL AND ALUMINUM, FOR DECK AND BULKHEADS
WITH PIPE 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.

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.

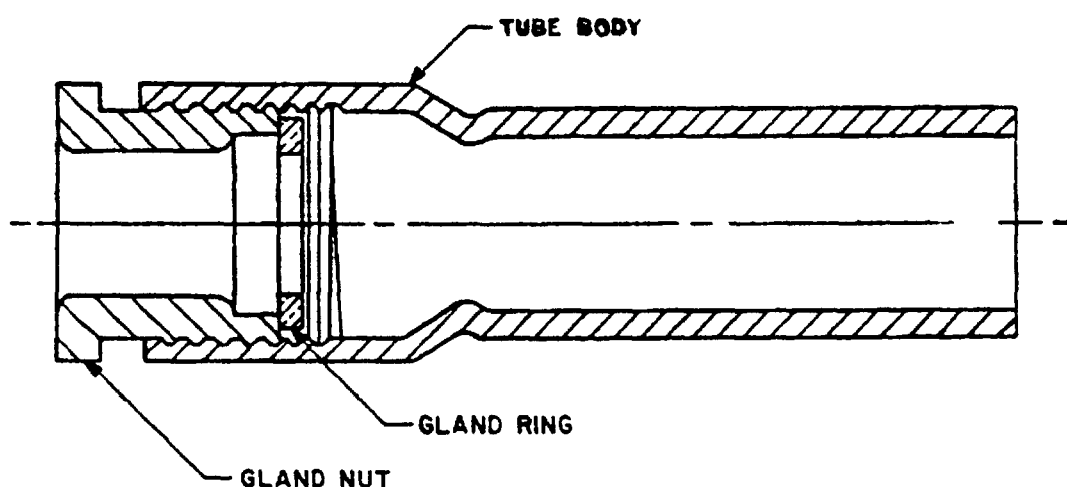


FIGURE 1. Stuffing tube assembly. (01)

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.

AMSC N/A

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FSC 5975

DISTRIBUTION STATEMENT A

Approved for public release; distribution is unlimited.

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TABLE I Stuffing tube assembly (steel) for bulkheads

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-001	M24235/18-121	M24235/9-061	M24235/9-181	A	1821
M24235/18-002	M24235/18-122	M24235/9-062	M24235/9-182	B	1822
M24235/18-003	M24235/18-123	M24235/9-063	M24235/9-183	C	1823
M24235/18-004	M24235/18-124	M24235/9-064	M24235/9-184	D	1824
M24235/18-005	M24235/18-125	M24235/9-065	M24235/9-185	E	1825
M24235/18-006	M24235/18-126	M24235/9-066	M24235/9-186	F	1826
M24235/18-007	M24235/18-127	M24235/9-067	M24235/9-187	G	1827
M24235/18-008	M24235/18-128	M24235/9-068	M24235/9-188	J	1828
M24235/18-009	M24235/18-129	M24235/9-069	M24235/9-189	K	1829
M24235/18-010	M24235/18-130	M24235/9-070	M24235/9-190	L	1830
M24235/18-011	M24235/18-131	M24235/9-071	M24235/9-191	M	1831
M24235/18-012	M24235/18-132	M24235/9-072	M24235/9-192	N	1832
M24235/18-013	M24235/18-133	M24235/9-073	M24235/9-193	P	1833
M24235/18-014	M24235/18-134	M24235/9-074	M24235/9-194	R	1834
M24235/18-015	M24235/18-135	M24235/9-075	M24235/9-195	S	1835
M24235/18-016	M24235/18-136	M24235/9-076	M24235/9-196	T	1836
M24235/18-017	M24235/18-137	M24235/9-077	M24235/9-197	V	1837
M24235/18-018	M24235/18-138	M24235/9-078	M24235/9-198	W	1838
M24235/18-019	M24235/18-139	M24235/9-079	M24235/9-199	X	1839
M24235/18-020	M24235/18-140	M24235/9-080	M24235/9-200	Y	1840
M24235/18-021	M24235/18-141	M24235/9-081	M24235/9-201	Z	1841
M24235/18-022	M24235/18-142	M24235/9-082	M24235/9-202	AA	1842
M24235/18-023	M24235/18-143	M24235/9-083	M24235/9-203	BB	1843

TABLE II Stuffing tube assembly (aluminum) for bulkheads

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-031	M24235/18-151	M24235/17-241	M24235/17-271	A	1871
M24235/18-032	M24235/18-152	M24235/17-242	M24235/17-272	B	1872
M24235/18-033	M24235/18-153	M24235/17-243	M24235/17-273	C	1873
M24235/18-034	M24235/18-154	M24235/17-244	M24235/17-274	D	1874
M24235/18-035	M24235/18-155	M24235/17-245	M24235/17-275	E	1875
M24235/18-036	M24235/18-156	M24235/17-246	M24235/17-276	F	1876
M24235/18-037	M24235/18-157	M24235/17-247	M24235/17-277	G	1877
M24235/18-038	M24235/18-158	M24235/17-248	M24235/17-278	J	1878
M24235/18-039	M24235/18-159	M24235/17-249	M24235/17-279	K	1879
M24235/18-040	M24235/18-160	M24235/17-250	M24235/17-280	L	1880

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TABLE II. Stuffing tube assembly (aluminum) for bulkheads - Continued.

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-041	M24235/18-161	M24235/17-251	M24235/17-281	M	1881
M24235/18-042	M24235/18-162	M24235/17-252	M24235/17-282	N	1882
M24235/18-043	M24235/18-163	M24235/17-253	M24235/17-283	P	1883
M24235/18-044	M24235/18-164	M24235/17-254	M24235/17-284	R	1884
M24235/18-045	M24235/18-165	M24235/17-255	M24235/17-285	S	1885
M24235/18-046	M24235/18-166	M24235/17-256	M24235/17-286	T	1886
M24235/18-047	M24235/18-167	M24235/17-257	M24235/17-287	V	1887
M24235/18-048	M24235/18-168	M24235/17-258	M24235/17-288	W	1888
M24235/18-049	M24235/18-169	M24235/17-259	M24235/17-289	X	1889
M24235/18-050	M24235/18-170	M24235/17-260	M24235/17-290	Y	1890
M24235/18-051	M24235/18-171	M24235/17-261	M24235/17-291	Z	1891
M24235/18-052	M24235/18-172	M24235/17-262	M24235/17-292	AA	1892
M24235/18-053	M24235/18-173	M24235/17-263	M24235/17-293	BB	1893

TABLE III. Stuffing tube assembly (steel) for decks.

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-061	M24235/18-181	M24235/9-061	M24235/9-181	A	1911
M24235/18-062	M24235/18-182	M24235/9-062	M24235/9-182	B	1912
M24235/18-063	M24235/18-183	M24235/9-063	M24235/9-183	C	1913
M24235/18-064	M24235/18-184	M24235/9-064	M24235/9-184	D	1914
M24235/18-065	M24235/18-185	M24235/9-065	M24235/9-185	E	1915
M24235/18-066	M24235/18-186	M24235/9-066	M24235/9-186	F	1916
M24235/18-067	M24235/18-187	M24235/9-067	M24235/9-187	G	1917
M24235/18-068	M24235/18-188	M24235/9-068	M24235/9-188	J	1918
M24235/18-069	M24235/18-189	M24235/9-069	M24235/9-189	K	1919
M24235/18-070	M24235/18-190	M24235/9-070	M24235/9-190	L	1920
M24235/18-071	M24235/18-191	M24235/9-071	M24235/9-191	M	1921
M24235/18-072	M24235/18-192	M24235/9-072	M24235/9-192	N	1922
M24235/18-073	M24235/18-193	M24235/9-073	M24235/9-193	P	1923
M24235/18-074	M24235/18-194	M24235/9-074	M24235/9-194	R	1924
M24235/18-075	M24235/18-195	M24235/9-075	M24235/9-195	S	1925
M24235/18-076	M24235/18-196	M24235/9-076	M24235/9-196	T	1926
M24235/18-077	M24235/18-197	M24235/9-077	M24235/9-197	V	1927
M24235/18-078	M24235/18-198	M24235/9-078	M24235/9-198	W	1928
M24235/18-079	M24235/18-199	M24235/9-079	M24235/9-199	X	1929
M24235/18-080	M24235/18-200	M24235/9-080	M24235/9-200	Y	1930

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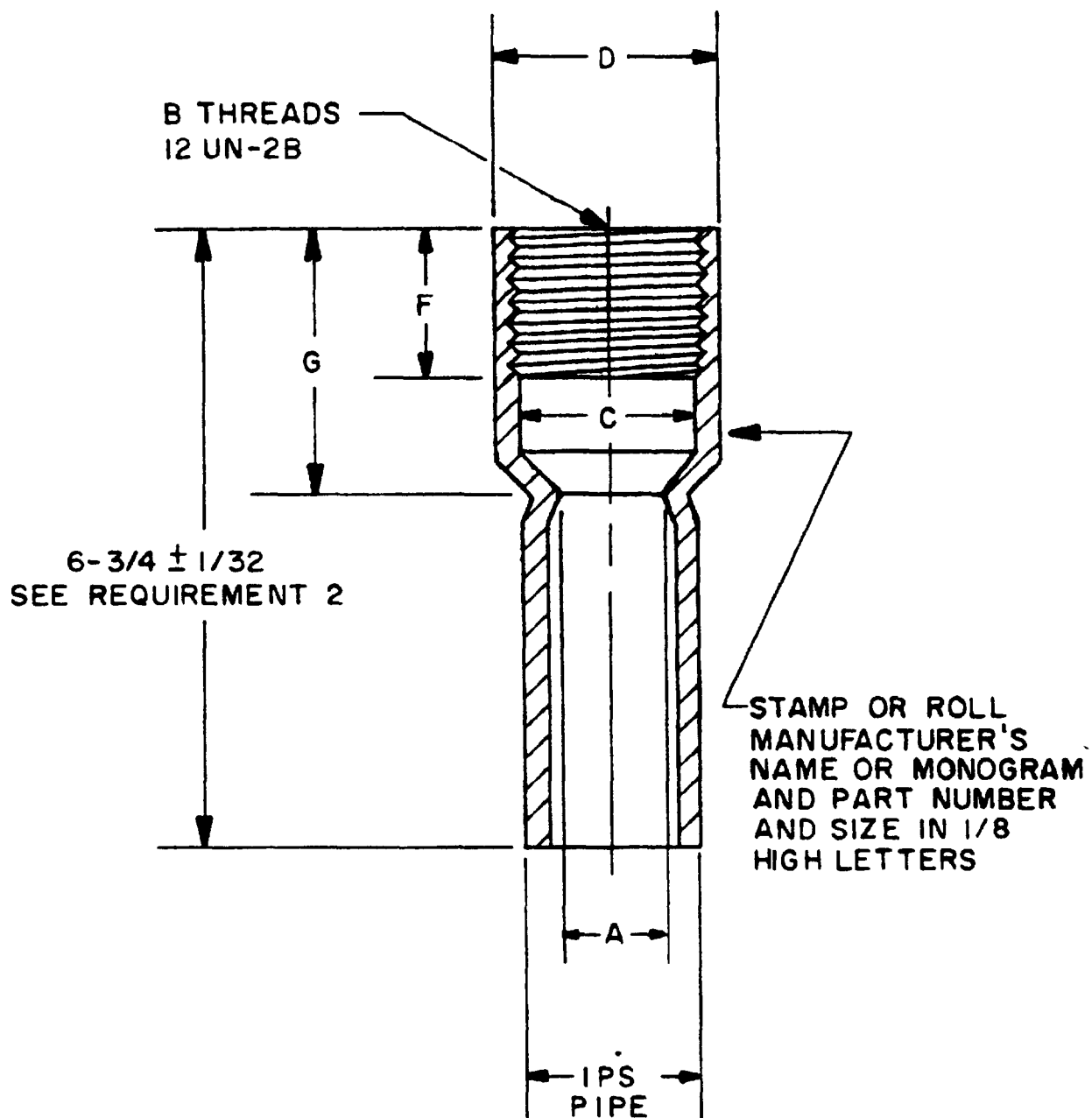
TABLE III. Stuffing tube assembly (steel) for decks - Continued

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-081	M24235/18-201	M24235/9-081	M24235/9-201	Z	1931
M24235/18-082	M24235/18-202	M24235/9-082	M24235/9-202	AA	1932
M24235/18-083	M24235/18-203	M24235/9-083	M24235/9-203	BB	1933

TABLE IV. Stuffing tube assembly (aluminum) for decks.

Assembly part or identifying number	Part or identifying numbers of components			Size	Symbol number
	Tube body 1 required	Gland nut 1 required	Gland ring 1 required		
M24235/18-091	M24235/18-211	M24235/17-241	M24235/17-271	A	1941
M24235/18-092	M24235/18-212	M24235/17-242	M24235/17-272	B	1942
M24235/18-093	M24235/18-213	M24235/17-243	M24235/17-273	C	1943
M24235/18-094	M24235/18-214	M24235/17-244	M24235/17-274	D	1944
M24235/18-095	M24235/18-215	M24235/17-245	M24235/17-275	E	1945
M24235/18-096	M24235/18-216	M24235/17-246	M24235/17-276	F	1946
M24235/18-097	M24235/18-217	M24235/17-247	M24235/17-277	G	1947
M24235/18-098	M24235/18-218	M24235/17-248	M24235/17-278	J	1948
M24235/18-099	M24235/18-219	M24235/17-249	M24235/17-279	K	1949
M24235/18-100	M24235/18-220	M24235/17-250	M24235/17-280	L	1950
M24235/18-101	M24235/18-221	M24235/17-251	M24235/17-281	M	1951
M24235/18-102	M24235/18-222	M24235/17-252	M24235/17-282	N	1952
M24235/18-103	M24235/18-223	M24235/17-253	M24235/17-283	P	1953
M24235/18-104	M24235/18-224	M24235/17-254	M24235/17-284	R	1954
M24235/18-105	M24235/18-225	M24235/17-255	M24235/17-285	S	1955
M24235/18-106	M24235/18-226	M24235/17-256	M24235/17-286	T	1956
M24235/18-107	M24235/18-227	M24235/17-257	M24235/17-287	V	1957
M24235/18-108	M24235/18-228	M24235/17-258	M24235/17-288	W	1958
M24235/18-109	M24235/18-229	M24235/17-259	M24235/17-289	X	1959
M24235/18-110	M24235/18-230	M24235/17-260	M24235/17-290	Y	1960
M24235/18-111	M24235/18-231	M24235/17-261	M24235/17-291	Z	1961
M24235/18-112	M24235/18-232	M24235/17-262	M24235/17-292	AA	1962
M24235/18-113	M24235/18-233	M24235/17-263	M24235/17-293	BB	1963

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FIGURE 2. Tube body (bulkhead).

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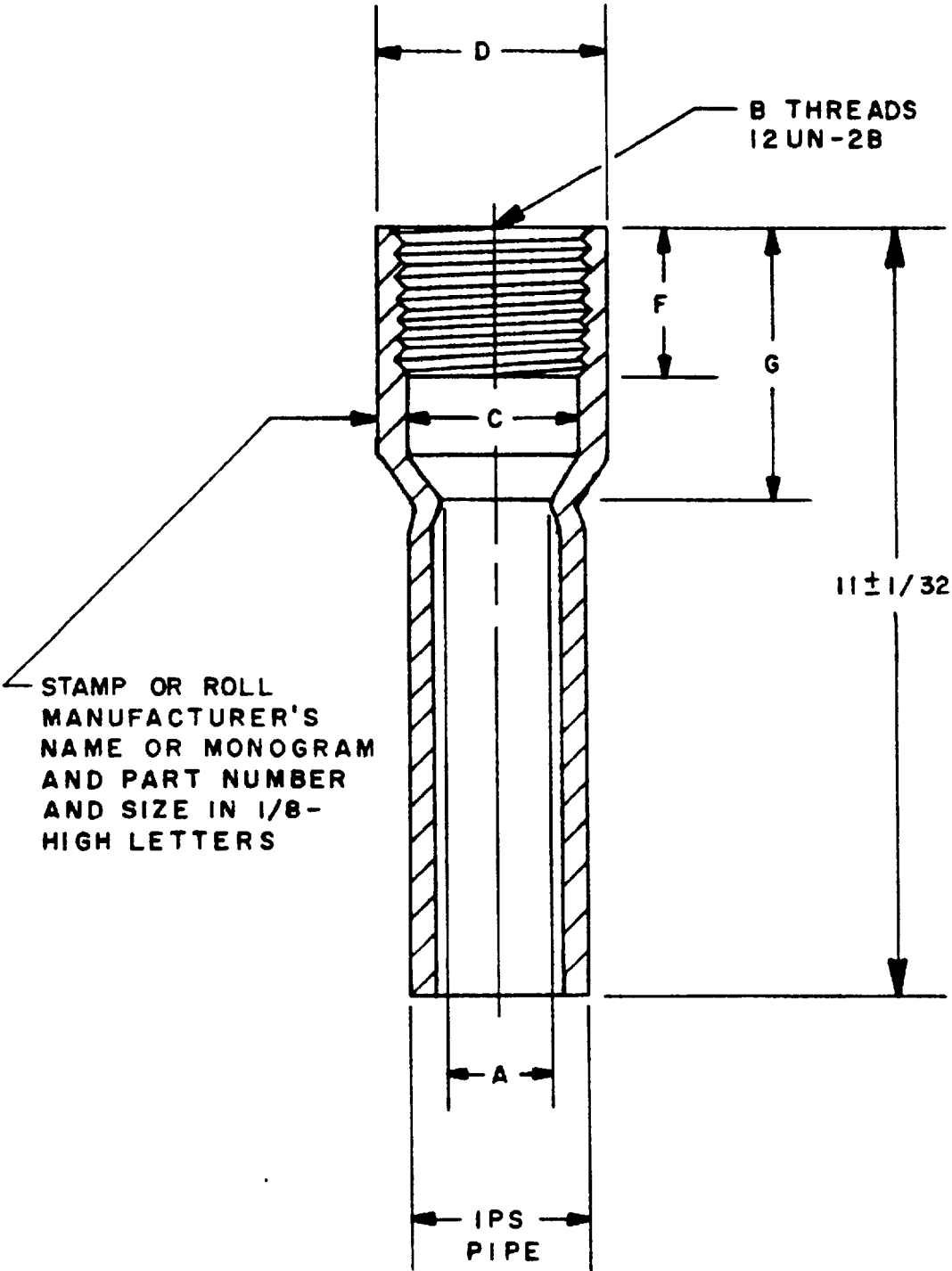


FIGURE 3. Tube body (deck)

TABLE V. Tube body dimensions.

Tube body (bulkhead) see figure 2			Tube body (deck) see figure 3								
Part or identifying number (steel)	Part or identifying number (aluminum)	Part or identifying number (steel)	Part or identifying number (aluminum)	Size	NPS pipe size	A DIA	B THDS	C DIA	D DIA	F L/ DIA	G
M24235/18-121	M24235/18-151	M24235/18-181	M24235/18-211	A	1/2 SCH 80-(27/32)	0.406	0.875	0.767	1.039	7/8	1-5/8
M24235/18-122	M24235/18-152	M24235/18-182	M24235/18-212	B	1/2 SCH 80-(27/32)	.515	1.000	0.892	1.164	7/8	1-5/8
M24235/18-123	M24235/18-153	M24235/18-183	M24235/18-213	C	3/4 SCH 40-(1-1/16)	.640	1.125	1.017	1.261	7/8	1-5/8
M24235/18-124	M24235/18-154	M24235/18-184	M24235/18-214	D	3/4 SCH 40-(1-1/16)	.750	1.250	1.142	1.386	7/8	1-5/8
M24235/18-125	M24235/18-155	M24235/18-185	M24235/18-215	E	1 SCH 40-(1-21/64)	.812	1.250	1.142	1.426	7/8	1-5/8
M24235/18-126	M24235/18-156	M24235/18-186	M24235/18-216	F	1 SCH 40-(1-21/64)	.843	1.312	1.204	1.488	7/8	1-5/8
M24235/18-127	M24235/18-157	M24235/18-187	M24235/18-217	G	1 SCH 40-(1-21/64)	.953	1.500	1.392	1.676	1	1-11/16
M24235/18-128	M24235/18-158	M24235/18-188	M24235/18-218	J	1-1/4 SCH 40-(1-21/32)	1.062	1.625	1.517	1.815	1	1-11/16
M24235/18-129	M24235/18-159	M24235/18-189	M24235/18-219	K	1-1/4 SCH 40-(1-21/32)	1.171	1.750	1.642	1.940	1-5/16	3
M24235/18-130	M24235/18-160	M24235/18-190	M24235/18-220	L	1-1/4 SCH 40-(1-21/32)	1.265	1.812	1.704	2.000	1-5/16	3
M24235/18-131	M24235/18-161	M24235/18-191	M24235/18-221	M	1-1/2 SCH 40-(1-29/32)	1.406	2.000	1.892	2.200	1-5/16	3
M24235/18-132	M24235/18-162	M24235/18-192	M24235/18-222	N	1-1/2 SCH 40-(1-29/32)	1.515	2.062	1.954	2.290	1-5/16	3
M24235/18-133	M24235/18-163	M24235/18-193	M24235/18-223	P	2 SCH 40-(2-5/16)	1.625	2.188	2.079	2.406	1-5/16	3
M24235/18-134	M24235/18-164	M24235/18-194	M24235/18-224	R	2 SCH 40-(2-5/16)	1.750	2.312	2.204	2.530	1-5/16	3

TABLE V. Tube body dimensions - Continued

Tube body (bulkhead) see figure 2			Tube body (deck) see figure 3		MIL-S-24235/18A(SH)						
Part or identifying number (steel)	Part or identifying number (aluminum)	Part or identifying number (steel)	Part or identifying number (aluminum)	Size	NPS pipe size	A DIA	B THDS	C DIA	D DIA	F L/ DIA	G
M24235/18-135	M24235/18-165	M24235/18-195	M24235/18-225	S	2 SCH 40-(2-5/16)	1.875	2.688	2.579	2.905	1-7/8	5
M24235/18-136	M24235/18-166	M24235/18-196	M24235/18-226	T	2-1/2 SCH 40-(2-7/8)	2.062	2.875	2.767	3.191	1-7/8	5
M24235/18-137	M24235/18-167	M24235/18-197	M24235/18-227	V	2-1/2 SCH 40-(2-7/8)	2.187	3.000	2.892	3.316	1-7/8	5
M24235/18-138	M24235/18-168	M24235/18-198	M24235/18-228	W	2-1/2 SCH 40-(2-7/8)	2.312	3.125	3.017	3.441	1-7/8	5
M24235/18-139	M24235/18-169	M24235/18-199	M24235/18-229	X	3 SCH 40-(3-1/2)	2.500	3.250	3.142	3.592	1-7/8	5
M24235/18-140	M24235/18-170	M24235/18-200	M24235/18-230	Y	3 SCH 40-(3-1/2)	2.609	3.375	3.267	3.717	1-7/8	5
M24235/18-141	M24235/18-171	M24235/18-201	M24235/18-231	Z	3 SCH 40-(3-1/2)	2.781	3.562	3.454	3.904	1-7/8	5
M24235/18-142	M24235/18-172	M24235/18-202	M24235/18-232	AA	3 SCH 40-(3-1/2)	2.875	3.750	3.642	4.092	2-11/16	6-3/4
M24235/18-143	M24235/18-173	M24235/18-203	M24235/18-233	BB	3-1/2 SCH 40-(4)	3.157	4.000	3.892	4.362	2-11/16	6-3/4

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

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REQUIREMENTS

1. Overall length for bulkhead tube body sizes S thru BB shall be 9 inches in lieu of 6-3/4 inches.
2. Steel bulkhead and deck tubes shall be annealed after swaging.
3. MIL-P-16685, class 1, or class 2 (preformed) shall be used to pack stuffing tubes in service and in tests.
4. Size "BB" stuffing tube is designed to accommodate radio frequency transmission line MIL-L-17342 and Drawing S6702-1338683.
5. Intended use: The stuffing tubes are for electric cable penetrations of surface ships deck and bulkheads where pipe protection is required (see DOD-STD-2003). Alternate to stuffing tubes, MIL-S-24235/9 and MIL-S-24235/17.
6. Wall thickness (after swaging and threading) shall be at least 0.062 inch.

TABLE VI. Parts list.

Item no.	Description 1/	Qty 2/		Material and specification	Remarks
		STL	AL		
01	Stuffing tube, swage type	-	--	--	See figure 1 and tables I through IV
02	Tube body (bulkhead)	1	--	Steel, grade A, ASTM A 53	See figure 2 and table V
03	Tube body (bulkhead)	-	1	Aluminum 5086-H32, WW-T-700/5 or ASTM B 210	See figure 2 and table V
04	Tube body (deck)	1	--	Steel, grade A, ASTM A 53	See figure 3 and table V
05	Tube body (deck)	-	1	Aluminum 5086-H32, WW-T-700/5 or ASTM B 210	See figure 3 and table V
06	Gland nut	-	1	Aluminum, 356T, QQ-A-601, or 6061T-6, ASTM B 211	See tables II and IV
07	Gland ring	-	1	Aluminum, 3003-H14, QQ-A-250/2	See tables II and IV
08	Gland nut	1	--	Brass, com1	See tables I and III
09	Gland ring	1	--	Steel, ASTM A 569, Zinc plated3/	See tables I and III

See footnotes at top of next page.

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- 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/ Zinc plating shall be as specified in ASTM B 633.

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

Preparing activity:
Navy - SH
(Project 5975-N07B-18)