

INCH-POUND

MS18308A(SH)

5 January 2016

SUPERSEDING

MS18308(SH)

18 June 1976

MILITARY SPECIFICATION SHEET

ALLOY STEEL SOCKET WELDING FLANGES AND FLANGED NIPPLES, 1/4 INCH AND 3/8 INCH,
600 POUNDS PER SQUARE INCH AT 850 °F (MAXIMUM)

This specification sheet is approved for use by the Naval Sea Systems Command 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.

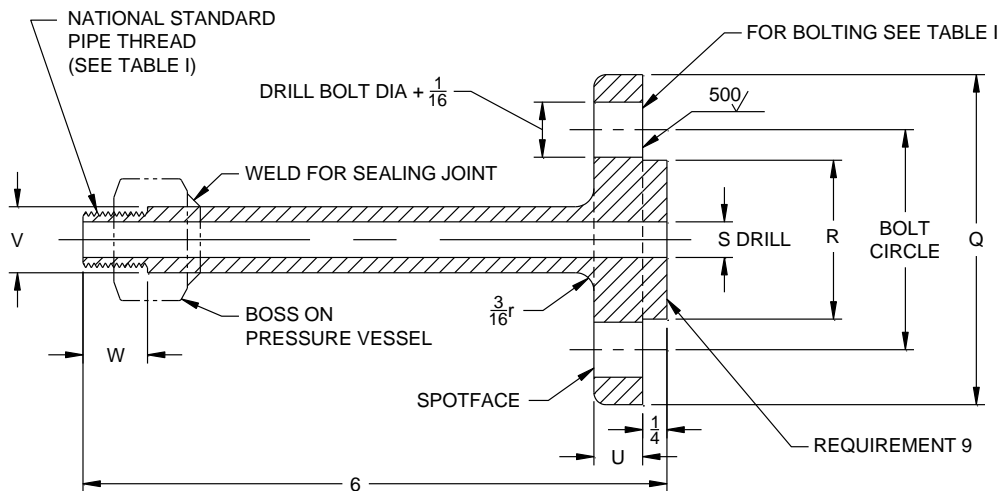


FIGURE 1. Flanged nipple.

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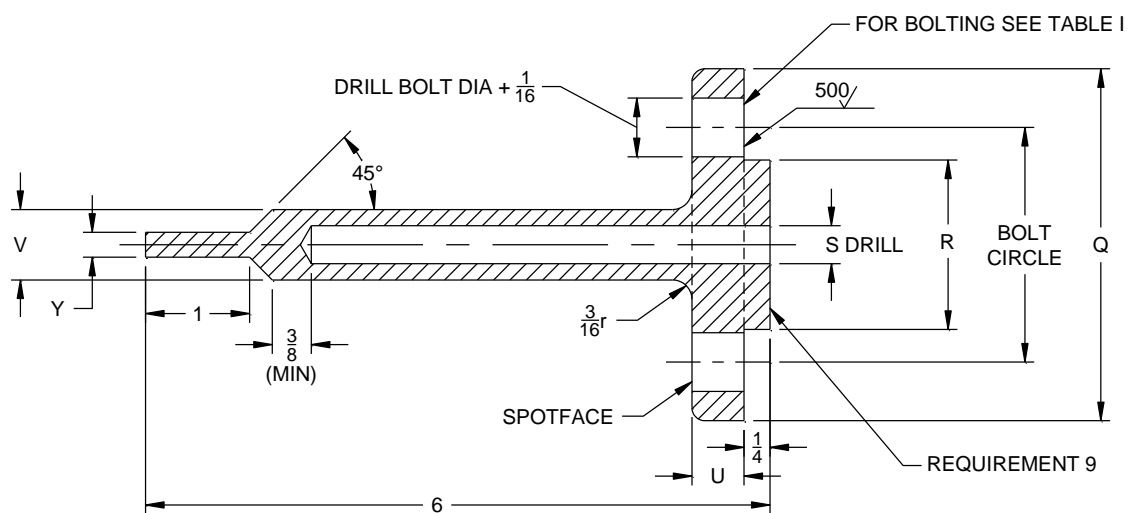


FIGURE 2. Welding flanged nipple.

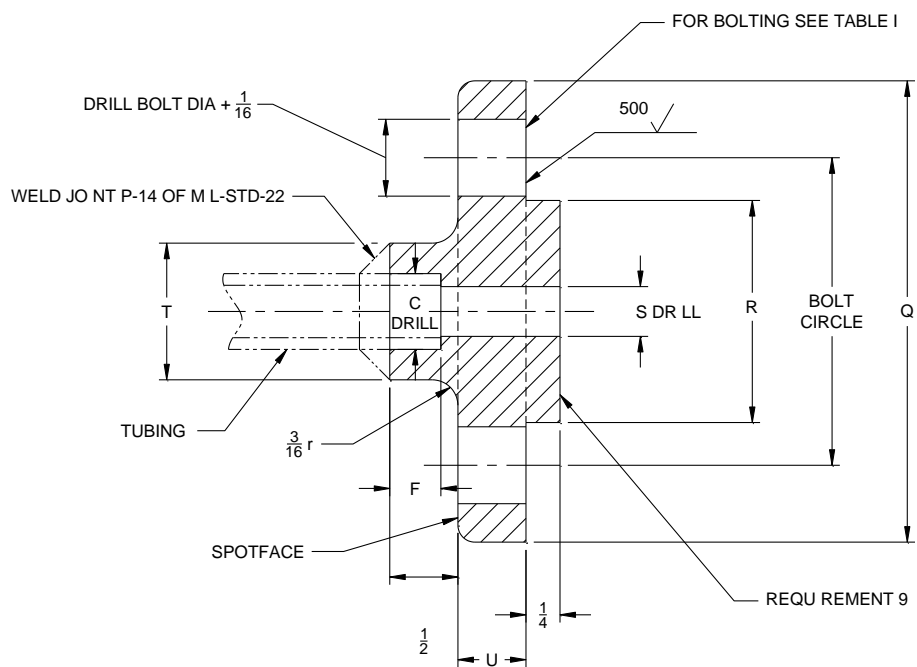


FIGURE 3. Socket welding flange.

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TABLE I. Welding flanges and flanged nipples.

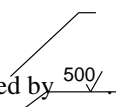
Flange								
Nominal Pipe Size	Q Diameter	R Diameter	C Diameter	S Diameter	T	F Min	U	Y
1/4	3-3/8	1-5/8	0.555	0.364	1	3/8	1/2	0.239
3/8	3-3/4	2	0.690	0.493	1-3/8	3/8	9/16	0.368
Bolting								
No. of Bolts		Bolt Diameter		Bolt Circle		Pitch Chord		
4		1/2		2-1/4		1.59		
4		1/2		2-5/8		1.86		
Pipe Thread								
V Diameter		Thread Size		Thread Per Inch		W		
0.675		3/8		18		0.65		
0.840		1/2		14		0.80		

TABLE II. Service rating.

Service	Size	Gage Pressure (Max lb/in ²)	Temperature (Max °F)
All	All	600	850
All	All	750	425
All	All	800	360
All	All	900	100

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REQUIREMENTS:

1. Flange material shall be chromium-molybdenum alloy steel, 1-1/4 chromium, 1/2 molybdenum in accordance with ASTM A182/A182M, Grade F-11, Class 2 or ASTM A217/A217M, Grade WC-6.
2. Surface finishes shall be as follows:
 - a. In accordance with ASME B46.1 where indicated by  500.
 - b. Mating surfaces of the flanges shall be either serrated-concentric or serrated-spiral, having a roughness not exceeding 500 roughness height rating (RHR) produced by machining not less than 40 cuts of uniform depth per inch of face width.
3. Threads shall be in accordance with FED-STD-H28, except that parts manufactured in accordance with the original version of MS18308 using the National Bureau of Standards (NBS) Handbook H28 may continue to use NBS Handbook H28 in lieu of FED-STD-H28.
4. After machining, flanges shall be cleaned to remove foreign particles. Burrs shall be blended.
5. Each flange shall be identified by casting, electro-chemical etch, vibro tool, or stamping with the following:
 - a. Manufacturer's name or trademark.
 - b. Pressure rating.
 - c. Material.
 - d. Size, iron pipe size (ips).
6. Stamping shall be accomplished with round bottom stamps.
7. Cast identification marking is allowed on the flange back provided placement is not subject to removal of the marking during machining.
8. Two flanges of each type and size, selected by the Government representative from the initial run, shall be tested to 1500 lb/in² hydrostatic pressure, in the presence of the Government representative. There shall be no evidence of leaks or weaknesses in the flanges during this test. The ability of the flanges to meet the hydrostatic pressure test without leaks or weaknesses constitutes acceptance of the test.
9. Dimensions are in inches. Tolerances shall be as follows:
 - a. Unless otherwise specified herein, tolerances on fractions shall be $\pm 1/64$ inch and tolerances on decimals shall be 0.010 inch.
 - b. Socket and flange bore shall be concentric within a tolerance of ± 0.030 inch.
 - c. The maximum allowable variation in the alignment of the flange bore and the socket bore axis shall be 1/16 inch in 1 foot.
10. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the following references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

ASME B46.1, Surface Texture (Surface Roughness, Waviness, and Lay)

(Copies of ASME documents are available online at www.asme.org.)

ASTM A182/A182M, Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service

ASTM A217/A217M, Standard Specification for Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service

(Copies of ASTM documents are available online at www.astm.org.)

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FED-STD-H28, Screw-Thread Standards for Federal Services

MIL-STD-22, Welded Joint Design

(Copies of military documents are available online at <http://quicksearch.dla.mil/>).

NBS Handbook H28, Screw-Thread Standards for Federal Services

CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Review activity:
DLA – CC

Preparing activity:
Navy – SH
(Project 4730-2016-011)

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