

FED-STD-H28/11

31 August 1978

Superseding  
NBS Handbook H28 (1957)  
Part II, Section XI

FEDERAL STANDARD

SCREW-THREAD STANDARDS FOR FEDERAL SERVICES

SECTION 11

HOSE CONNECTIONS FOR  
WELDING AND CUTTING EQUIPMENT

This standard was approved by the Commissioner Federal Supply Service, General Services Administration, for the use of all Federal agencies.

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## INFORMATION SHEET ON FEDERAL STANDARDS

This Federal Standard is issued in loose leaf form to permit the insertion or removal of new or revised pages and sections.

All Users of Federal Standards should keep them up to date by inserting revised or new pages as issued and removing superseded and cancelled pages.

New and revised pages will be issued under Change Notices which will be numbered consecutively and will bear the date of issuance. Change Notices should be retained and filed in front of the Standard until such time as they are superseded by a reissue of the entire Standard.

### NOTICE

From 1939, the Interdepartmental Screw Thread Committee (ISTC), under the Chairmanship of the National Bureau of Standards (NBS), Department of Commerce had developed and published NBS Handbook H28, Screw-Thread Standards for Federal Services.

Section 487 of Title 40 of the U.S. Code states that the authority for development of Federal Standards for procurement purposes rests with the General Services Administration (GSA).

In November 1976, the ISTC was terminated, and the General Services Administration (GSA) accepted the responsibility for NBS Handbook H28 and agreed to convert it and maintain it as a Federal Standard.

The standards which had been published as NBS Handbook H28, Part I, Part II and Part III will now be promulgated as a fully coordinated FED-STD-H28, maintaining the existing sections and identifying them with slant lines. For example, NBS Handbook H28, Part I, Section 3 will be detailed standard FED-STD-H28/3 which must be procured individually.

#### Military Custodians

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#### Preparing Activity

DLA-IS  
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#### Civil Agency Coordinating Activity

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The text of this section is reprinted from the NBS HANDBOOK H28 with minor editorial corrections.

Reorganization of the document from NBS HANDBOOK H28 to FED-STD-H28 creates an editorial inconvenience, when maintaining continuity of cross references amongst the pages, paragraphs, tables and figures of the different sections. For this standard individual sections will be numbered sequentially starting with (1) one. If the reprinted text refers to another page, such as Page 6.3, this will be understood to mean section 6 page 3. All figures and tables will maintain the established designations, prefixed with the section; e.g. Table 3.1 and Figure 2.5 to identify their location in this standard. All appendices will be incorporated in the basic document FED-STD-H28 with other general information and will continue to be identified with the prefix A.

Specifications covering hose connections for welding and cutting equipment were formulated and adopted in 1925 by the International Acetylene Association, the Gas Products Association, and various manufacturers. Essentially the same specifications were adopted by the National Screw Thread Commission in 1926.

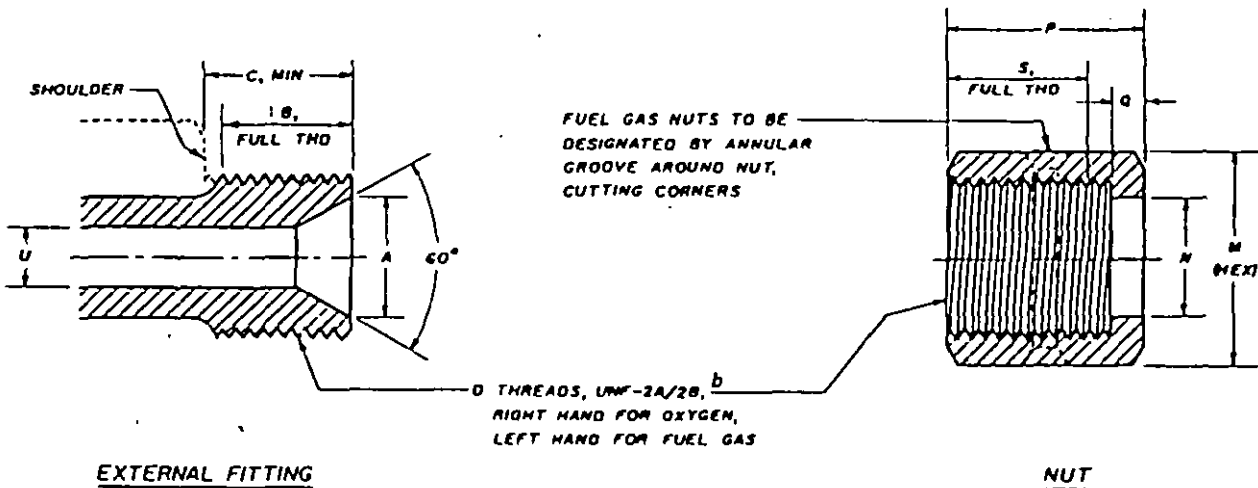
Revised specifications for these connections were adopted by the International Acetylene Association, March 9, 1939. These revised specifications were amended several times; the most recent amendment having been on April 1, 1957. These revised specifications, as amended, were adopted by the Interdepartmental Screw Thread Committee and are presented below.

Dimensions essential to the interchangeability of parts have been standardized. Other dimensions and details of design are optional, so that manufacturers may use their own judgment and follow their usual practice as much as possible.

The hose connection consists of an external fitting, nut, and shank. Dimensions for the type I hose connection external fittings and nuts for oxygen and fuel gas are shown in table 11.1. Dimensions for the type II hose connection external fittings and nuts for water and gases other than oxygen and fuel gas are shown in table 11.2.

The shanks are interchangeable for types I and II for any given class. Dimensions for the hose connection shanks are shown in table 11.3.

TABLE 11.1 — Dimensions for American National standard hose connection external fittings and nuts for oxygen and fuel gas used with welding and cutting equipment, type I



Thread size, D	Industry designation, class	For use with hose of inside diameter of—	External fitting					Nut					
			Large diameter of seat, A		Length of full thread, B	Length to shoulder, C	Hole, U	Width across hexagon flats, M	Diameter of hole, N		Over-all length, P	Length of hole, Q	Depth of full thread, S
			Max	Min					Max	Min			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
3/8-24	A	3/8, 3/8	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
			0.255	0.245	3/8	3/8	3/8	3/8	0.262	0.257	1 1/2	1 1/2	3/8
3/8-18	B	3/8, 3/8, 3/8, 3/8, 3/8	0.438	0.428	3/8	3/8	3/8	3/8	0.4475	0.4375	1 1/2	1 1/2	3/8
3/8-14	C	3/8, 3/8, 3/8, 3/8	0.630	0.620	3/8	3/8	3/8	3/8	0.6397	0.6297	1 1/2	1 1/2	3/8
1/2-12	D	1/2, 1/2, 1/2	0.967	0.946	1/2	1/2	1/2	1/2	0.9122	0.9012	1 1/2	1 1/2	1/2

\* The hose connection consists of the external fitting and nut shown in this table and the shank shown in table 11.3.

<sup>b</sup> See FED-STD-0202 for dimensions of threads and methods of designating threads, and FED-STD-0203 for angles of threads.

1. STANDARD DIMENSIONS "

Dimensions for the following have been standardized and should be met.

1. Size, type, and class of thread.
2. Angle and large diameter of internal seat.
3. Radius and distance of radius center of external seat from shank shoulder.
4. Diameter of shank shoulder.
5. Diameter of drilling through external fitting and shank.
6. Diameter of hole in nut.
7. Large diameter of hose shank.

" Designs of gages for controlling dimensions other than thread dimensions of these connections were published in NBS Miscellaneous Publications MP9 and M141, and Handbook 1125. The gaging of the threads is covered in FED-STD-H28/6

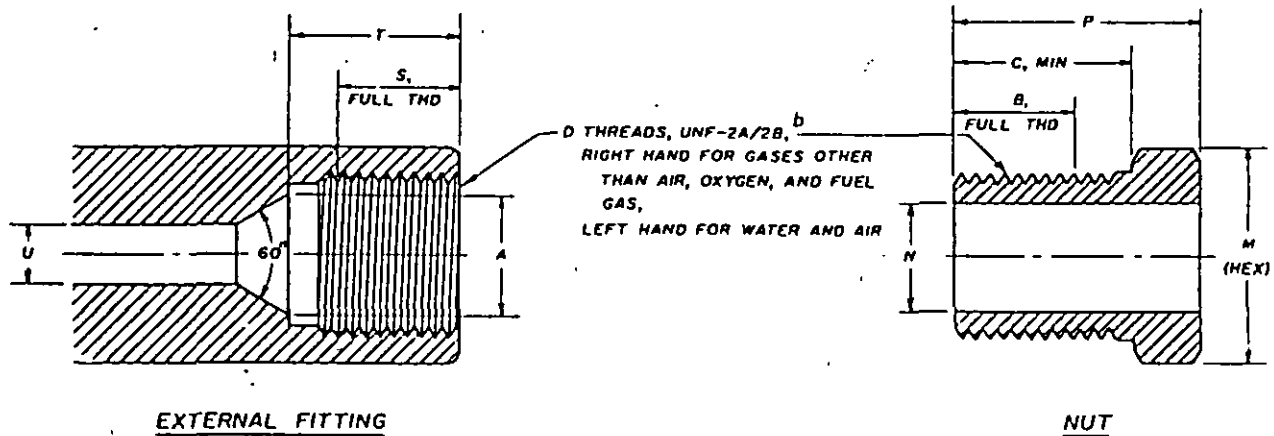
8. Fuel gas nuts to be designated by an annular groove around the nut, cutting corners.

2. OPTIONAL FEATURES

The following features are optional.

1. Material, except that its strength shall be equal to or greater than that of free-turning high brass.
2. Form of end of shank except seating section as dimensioned.
3. Length of hose shank.
4. Type and number of serrations on hose shank.
5. A second shoulder, equal to the larger diameter of the largest shank to extend through the hole in the nut for appearance, may be used or omitted for smaller diameter shanks.
6. Length and location of hexagon wrench section on nut.

TABLE 11.2 - Dimensions for American National standard hose connection external fittings and nuts for water and gases other than oxygen and fuel gas used with oxygen-fuel gas welding and cutting equipment, type 11

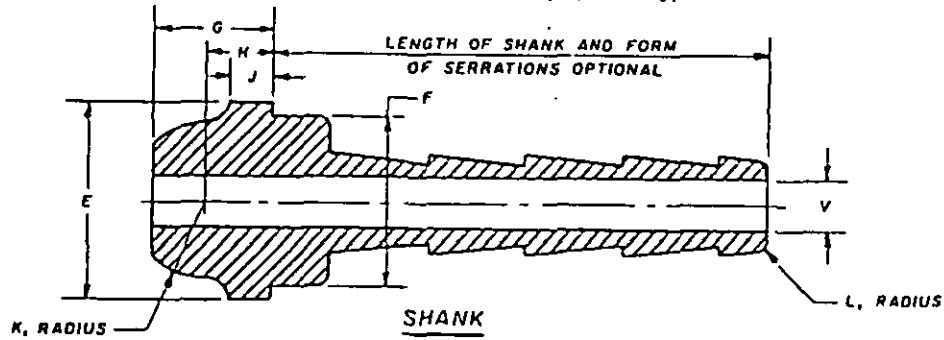


Thread size, D	Industry designation, class	For use with hose of inside diameter of -	External fitting					Nut					
			Large diameter of seat, A		Depth of full thread, S	Depth, T	Bore, U	Length of full thread, B	Length to shoulder, C (Min)	Width across hexagon flats, M	Diameter of hole, N		Over-all length, P
			Max	Min							Max	Min	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
3/4-24	A	3/4, 3/8	.255	.245	.75	.36	.55	.55	.76	.51	.257	.257	.72
3/4-18	B	3/4, 3/8, 3/4, 3/4, 3/4	.438	.428	.76	.55	.55	.76	.51	.425	.4375	.4375	.72
3/4-14	C	3/4, 3/8, 3/4, 3/4	.630	.620	.95	.75	.75	.95	.76	.507	.507	.507	.81
1/2-12	D	3/4, 3/8, 3/8	.962	.946	1.16	.76	.76	1.16	.95	.912	.9042	.9042	1.16

The hose connection consists of the external fitting and nut shown in this table and the shank shown in table 11.1.

See FED-STD-H28/2 for dimensions of threads and methods of designating threads, and FED-STD-H28/6 for gaging of threads.

TABLE 11.3 — Dimensions for American National standard hose connection shanks for water, oxygen, fuel gas, and other gases used with welding and cutting equipment, types I and II



Thread size, D	Industry designation class	For use with hose of inside diameter of—	Diameter of hole, V <sup>1</sup> (min)	Diameter of shoulder, E		Diameter of shank, F		Length to shoulder, G	Radius distance, H		Length of shoulder, J	Radius, K	Radius, L (min)
				Max	Min	Max	Min		Max	Min			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
3/8-24	A	in. 3/8	in. 5/16	0.328	0.324	0.248	0.243	1 1/4	0.187	0.177	3/4	0.099	3/8
3/8-18	B	in. 3/8	in. 5/16	.593	.496	.430	.425	3/4	.180	.170	3/4	.106	3/8
3/8-18		in. 3/8	in. 5/16										
3/8-18		in. 3/8	in. 5/16										
1/2-14	C	in. 1/2	in. 3/8	.734	.746	.578	.568	3/4	.255	.245	3/4	.280	1/2
1 1/4-12	D	in. 1 1/4	in. 1 1/8	1.140	1.132	.875	.865	3/4	.335	.319	3/4	.438	1 1/4

<sup>1</sup> The hose connection consists of the shank shown in this table and the external fitting and nut shown in tables 11.1 or 11.2, depending on the application.

<sup>2</sup> Shown for cross-reference purposes as regards the external fittings and nuts shown in tables 11.1 and 11.2.

<sup>3</sup> The 3/8-18 thread size is for the external fitting and nut shown in table 11.1; the 3/8-18 thread size is for the external fitting and nut shown in table 11.2.

**STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL***(See Instructions - Reverse Side)*

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		<input type="checkbox"/> <b>VENDOR</b>	
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