FED-STD-H28/19

31 August 1978

Superseding
NBS Handbook H28 (1957)
Part III, Section XIX

FEDERAL STANDARD

SCREW-THREAD STANDARDS FOR FEDERAL SERVICES

SECTION 19

MISCELLANEOUS THREADS

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

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. Single copies of this standard are available at the GSA Business Service Centers in Boston, New York, Atlanta, Chicago, Kansas City, MO, Fort Worth, San Francisco, Los Angeles, and Seattle, or from the General Services Administration, Specifications and Consumer Information Distribution Branch, Building 197, Washington Navy Yard, Washington, DC 20407.

FSC THDS

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All Users of Federal Standards should keep them up to date by inserting revised or new pages as issued and removing superseded and cancelled pages.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 Change Notices should be retained and filed in front of the Standard until such time as they are superseded by a reissue of the entire Standard.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.

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CONTENTS

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.

1. 60° STUB THREADS

The angle between the flanks of the thread is 60°. The threads are truncated top and bottom, have a basic height of 0.433p, a basic thickness of 0.50p, and are symmetrical about a line perpendicular to the axis of the screw. Basic dimensions of the 60° stub thread are given in table 19.1. In accordance with standard practice this thread is designated as follows, for example: "1½—9 SPECIAL FORM, 60° thread," followed by all limits of size.

2. MODIFIED SQUARE THREADS

The angle between the flanks of the thread is 10°. The threads are truncated top and bottom, have a basic height of 0.50p, a basic thread thickness of 0.50p, and are symmetrical about a line perpendicular to the axis of the external thread. The angle of 10° results in a thread which is the equivalent of a "square thread" in so far as all practical considerations are concerned, and yet is capable of economical production. This thread form is illustrated in figure 19.1. . In accordance with standard practice this thread is designated as follows, for example: "1½—6 SPECIAL FORM, 10° thread," followed by all limits of size.

Multiple thread milling cutters and ground thread taps should not be specified for modified square threads of steep lead angle without consulting the cutting tool manufacturer.

3. THREADS FOR DAIRY SANITARY FITTINGS

Drawings showing threaded "3A" standard sanitary fitings for dairy applications are available from the Dairy & Food Industries Supply Association, 5530 Wisconsin Avenue, Washington D.C. 20015. These are Acme threads, 8 tpi.

4. GLASS CONTAINER THREADS, PLASTIC CONTAINER THREADS, METAL CONTAINER ROLLED THREADS

Information on these threads is contained in the following documents, coverage being as indicated in the document title:

British Standards:

B.S. 1918 Glass Container Finishes.

B.S. 2038 Rolled Sheet Metal Screw Threads in Moulded Plastics and Die-Cast Materials for General Purposes.

(The latest revision should be consulted when referring to these standards. These standards may be obtained from the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.)

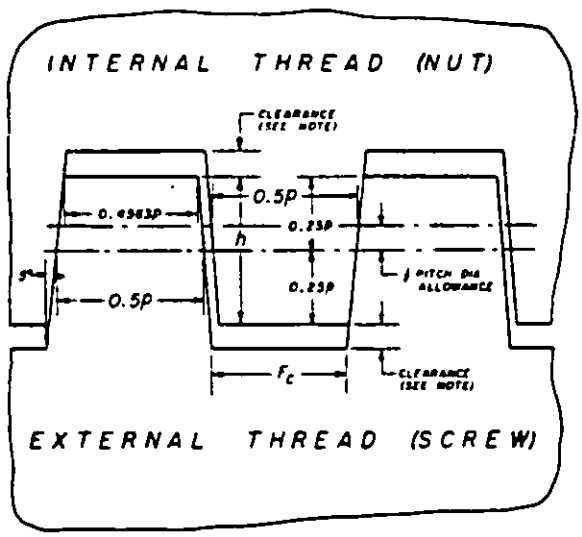
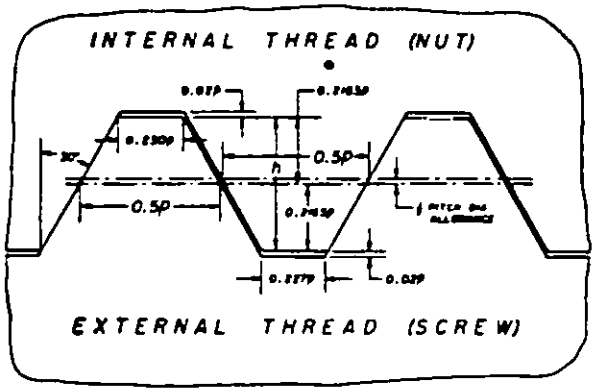


FIGURE 19.1 —*Modified square thread (10° included angle), basic proportions.*

p=pitch in inches
h (basic height of thread)=0.5p
H (total height of thread)=0.5p+clearance
t (thickness of thread)=0.5p
F_r (flat at root of thread)=0.4563p−0.17×clearance
F (basic width of flat at crest of thread)=0.4563p

NOTE.—A clearance should be added to h to produce extra height, thus avoiding interference with threads of mating parts at minor or major diameters. The amount of this clearance must be determined from the application of the thread assembly.

TABLE 19.1 —*Basic dimensions of 60° stub threads*



Threads per inch	Pitch, p	Height of thread (basic), h=0.433p	Total* height of thread, (h+0.02p)	Thread thickness (basic), t=0.5p	Width of flat at: Crest of screw (basic), F=0.250p	Width of flat at: Root of screw F,=0.227p
1	2	3	4	5	6	7
	in.	in.	in.	in.	in.	in.
16	0.06250	0.0271	0.0283	0.0313	0.0156	0.0142
14	.07143	.0309	.0324	.0357	.0179	.0162
12	.08333	.0361	.0378	.0417	.0208	.0189
10	.10000	.0433	.0453	.0500	.0250	.0227
9	.11111	.0481	.0503	.0556	.0278	.0252
8	.12500	.0541	.0565	.0625	.0313	.0284
7	.14286	.0619	.0647	.0714	.0357	.0324
6	.16667	.0722	.0755	.0833	.0417	.0378
5	.20000	.0866	.0900	.1000	.0500	.0454
4	.25000	.1083	.1133	.1250	.0625	.0567

* A clearance of at least 0.02p is added to h to produce extra height, thus avoiding interference with threads of mating part at minor or major diameters.

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