

FED-STD-H28/18B

20 August 1991

SUPERSEDING

FED-STD-H28/18A

10 May 1985

**FEDERAL STANDARD**  
**SCREW-THREAD STANDARDS FOR FEDERAL SERVICES**  
**SECTION 18**  
**PHOTOGRAPHIC EQUIPMENT THREADS**

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

AMSC N/A

AREA THDS

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All users of Federal Standards should keep them up to date by inserting revised or new pages as issued and removing superseded and cancelled pages.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 Change Notices should be retained and filed in front of the standard until such times as they are superseded by a reissue of the entire standard.

## FOREWORD

This section was developed in order to provide photographic equipment thread data for the Federal Services.

FED-STD-H28/18A was prepared by the Defense Industrial Supply Center (DLA-IS) with the following significant changes from the previous issue: (1) connection details were replaced by references to controlling standards; (2) threads for attaching mounted lenses, which originally appeared in the withdrawn American National Standard ANSI PH3.10-1954, were removed; (3) attachment thread sizes for lens accessories, which originally appeared in the superseded American National Standard ANSI PH3.12-1953, were revised to agree with ANSI PH3.103-1983; (4) tapered threads for shutter cable release tip/socket, which originally appeared in the superseded American National Standard ANSI PH3.23-1950, were revised to agree with ANSI PH3.107-1983 (ANSI/ISO 6053-1979); (5) straight threads for shutter cable release tip/socket, which originally appeared in the withdrawn American National Standard ANSI PH3.24-1950, were removed; (6) added lens mount thread data for 16mm and 8mm motion picture cameras.

FED-STD-H28/18B is an updated version of FED-STD-H28/18A. Significant changes include the following: (1) inclusion of 4 additional lens accessory attachment sizes from the 1987 edition of the International Standard, ISO 1948; (2) removal of the mating external thread tolerance 6g from the body of the standard thread table to a table footnote; (3) redesignation of document ANSI PH22.76 to the Society of Motion Picture and Television replacement, ANSI/SMPTE 76.

## SECTION 18 - PHOTOGRAPHIC EQUIPMENT THREADS

1. Scope. This section describes the screw threads commonly used on photographic equipment in order to promote interchangeable connections.

2. Referenced documents.

2.1 Government publications. The issues of the following documents in effect on the date of invitation for bids or request for proposal form a part of this standard to the extent specified herein.

Federal standards

- FED-STD-H28/1 - Nomenclature, Definitions and Letter Symbols for Screw Threads
- FED-STD-H28/2 - Unified Inch Screw Threads - UN and UNR Thread Forms
- FED-STD-H28/20 - Inspection Methods for Acceptability of UN, UNR, UNF, M, and MJ Screw Threads
- FED-STD-H28/21 - Metric Screw Threads

(Activities outside the Federal Government may obtain copies of Federal specifications, standards and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. Index, which includes cumulative bi-monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of these standards and other Federal specifications, standards, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Specification Section, Room 6654, 7th and D Streets, S.W., Washington, DC 20407; telephone (202) 708-9205.

(Federal Government activities may obtain copies of Federal standardization documents, and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

2.2 Other publications. The following documents form a part of this standard to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

American National Standards

- ANSI PH3.101 - Photography (cameras) - Tripod connections for American cameras (1/4-inch-20 thread)
- ANSI PH3.102 - Photography (cameras) - Tripod connections for heavy-duty or imported cameras (3/8-inch-16 thread with adapter for 1/4-inch-20 tripod screws)
- ANSI PH3.103 - Photography (cameras) - Lens barrel attachment threads for lens accessories
- ANSI PH3.107 - Photography (cameras) - Shutter cable release and socket-dimensions
- ANSI/SMPTE 76 - Motion picture cameras - threaded lens mounts - 16mm and 8mm cameras

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.)

3. Definitions. Screw thread terms applicable to this standard are defined in FED-STD-H28/1.

4. General requirements. Not applicable.

5. Detailed requirements.

5.1 Standard threads. Standard threads for photographic equipment are listed in Table XVIII.1.

5.2 Screw thread acceptability. Inspection methods for acceptability shall be in accordance with FED-STD-H28/20. The required gaging system shall be specified in accordance with that document. 1/

1/ Gaging systems are defined in ANSI/ASME B1.3M which is incorporated in FED-STD-H28/20.

**TABLE XVIII.1 Standard Threads for Photographic Equipment**

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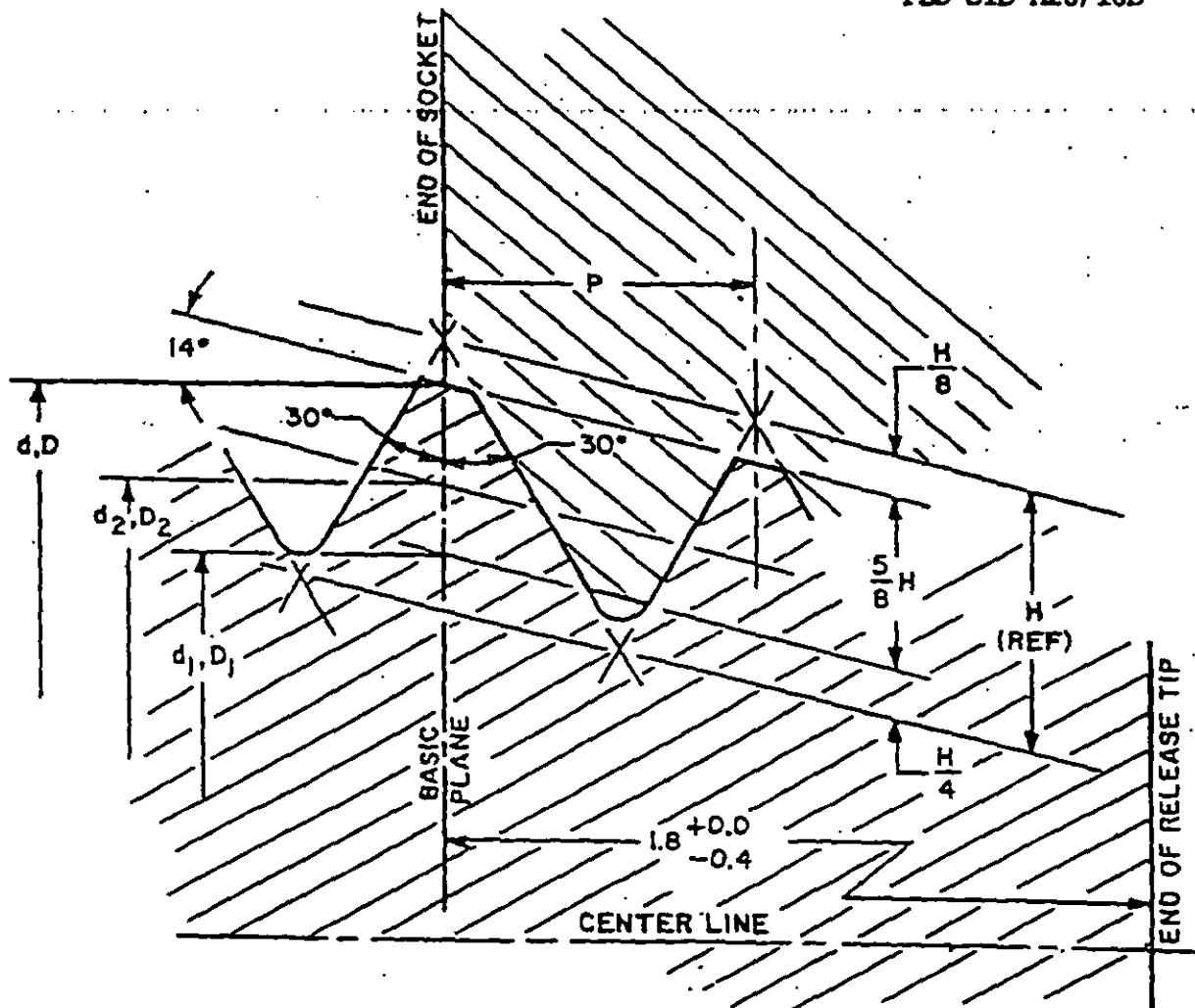
NOTES: See next page.

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Notes for Table XVIII.1

- 1/ In ISO 1222-1987, an allowance of 0.0043 inch is applied to pitch and major diameters of the internal thread.
- 2/ The equivalent industry standard for unified screw threads is ASME B.1.1. This standard is incorporated into FED-STD-H28/2.
- 3/ Non-standard socket thread used to accommodate an oversized tripod screw thread.
- 4/ In ISO 1222-1987, an allowance of 0.0059 inch is applied to pitch and major diameters of the internal thread.
- 5/ In ANSI PH3.103, tolerance class is indicated as inch standard class 2.
- 6/ The equivalent industry standard for metric M profile screw threads is ANSI/ASME B1.13M. This standard is incorporated into FED-STD-H28/21.
- 7/ Lens accessory attachments specified in the Controlling Connection Standards column are internally threaded. The mating external threads for lens accessories may be manufactured to tolerance class 6g prior to plating or coating. Plated or coated threads must not exceed the basic profile (tolerance position h) at maximum material condition.
- 8/ Sizes are included in ISO 1948:1987.

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**BASIC PLANE DIMENSIONS**

MAJOR DIAMETER  $d, D$  = 3.400  
 PITCH DIAMETER  $d_2, D_2$  = 3.082  
 MINOR DIAMETER  $d_1, D_1$  = 2.870

**THREAD FORM DIMENSIONS**

PITCH = 0.5  
 FUNDAMENTAL TRIANGLE HEIGHT,  $H$  = 0.424  
 TRUNCATION AT MAJOR DIAMETER,  $\frac{H}{8}$  = 0.053

TRUNCATION AT MINOR DIAMETER,  $\frac{H}{4}$  = 0.106

THREAD HEIGHT,  $\frac{5H}{8}$  = 0.265

FIGURE 18.1 THREADS FOR SHUTTER CABLE RELEASE TIP (EXTERNAL TAPER THREAD) AND SOCKET (INTERNAL TAPER THREAD)

NOTE: All dimensions are in millimeters unless indicated otherwise.

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**MILITARY INTERESTS:**

Custodians:

Army - AR  
Navy - AS  
Air Force - 99

Review Activities:

Army - ER, MI  
Air Force - 15, 82  
DLA - GS

**CIVIL AGENCY COORDINATING ACTIVITY:**

GSA - 7FXE

**PREPARING ACTIVITY:**

DLA - IS

(DoD Project THDS-0085)



## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

## 1. DOCUMENT NUMBER

FED-STD-H28/188

## 2. DOCUMENT TITLE

PHOTOGRAPHIC EQUIPMENT THREADS

## 3a. NAME OF SUBMITTING ORGANIZATION

## 4. TYPE OF ORGANIZATION (Mark one)

☐

VENDOR

☐

USER

☐

MANUFACTURER

☐

OTHER (Specify):

## 3b. ADDRESS (Street, City, State, ZIP Code)

## 5. PROBLEM AREAS

## a. Paragraph Number and Wording:

## b. Recommended Wording:

## c. Reason/Rationale for Recommendation:

## 6. REMARKS

## 7a. NAME OF SUBMITTER (Last, First, MI) - Optional

## b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

## c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional

## 8. DATE OF SUBMISSION (YYMMDD)

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