



Standard Specification for Alloy Steel Socket Button and Flat Countersunk Head Cap Screws (Metric)¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers the requirements for quenched and tempered alloy steel hexagon socket button (SBHCS) and flat countersunk (SFHCS) head cap screws M3 through M20 thread sizes having material properties of ISO 898/1 Property Class 12.9.

1.2 Fasteners meeting this specification are intended for shear type applications and have tensile requirements equivalent to ISO 898/1 Property Class 10.9.

1.3 The hazard statement pertains only to the test method section, Section 11 of this specification. *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

E3 Guide for Preparation of Metallographic Specimens

E112 Test Methods for Determining Average Grain Size

E384 Test Method for Knoop and Vickers Hardness of Materials

F606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets (Metric)

F788/F788M Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series

¹ This specification is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets and Washers.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

F1470 Practice for Fastener Sampling for Specified Mechanical Properties and Performance Inspection

F2328 Test Method for Determining Decarburization and Carburization in Hardened and Tempered Threaded Steel Bolts, Screws and Studs

2.2 ANSI/ASME Standards:

B18.3.4M Hexagon Socket Button Head Cap Screws³

B18.3.5M Hexagon Socket Flat Countersunk Head Cap Screws³

B18.24 Part Identifying Number (PIN) Code System Standard for B18 Fastener Products⁴

2.3 ISO Standard:

898/1 Mechanical properties of fasteners made of carbon steel and alloy steel -- Part 1: Bolts, screws and studs with specified property classes -- Coarse thread and fine pitch thread³

3. Ordering Information

3.1 Orders for material under this specification shall include:

3.1.1 Quantity (number of screws).

3.1.2 Dimensions, including nominal thread designation, thread pitch and nominal screw length (millimetres). A standard part number may be used for this definition.

3.1.3 Name of the screw: SBHCS or SFHCS.

3.1.4 Coating, if required. If a protective finish other than black oxide is required, it must be specified on the order or product standard.

3.1.5 Certification, if required (see 14.1).

3.1.6 ASTM designation and year of issue, and

3.1.7 Any special requirements.

3.1.8 For establishment of a part identifying system, see ASME B18.24.1.

3.2 *Example*—1000 pieces M6 × 1 × 25 SBHCS, ASTM F835M – XX, test report required.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.