



Designation: F835 – 16

Standard Specification for Alloy Steel Socket Button and Flat Countersunk Head Cap Screws¹

This standard is issued under the fixed designation F835; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

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) 0.060 through 0.625 thread sizes and flat countersunk (SFHCS) 0.060 through 1.5 thread sizes head cap screws having material properties for high-strength requirements.

1.2 Fasteners meeting this specification are intended for shear-type applications and have tensile requirements ranging from 122 to 150 ksi.

1.3 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 The hazard statement applies only to the test method section, Section 11, of this specification. *This standard does not purport to address all of the safety concerns, 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

D3951 Practice for Commercial Packaging

E3 Guide for Preparation of Metallographic Specimens

E18 Test Methods for Rockwell Hardness of Metallic Materials

E112 Test Methods for Determining Average Grain Size

E384 Test Method for Microindentation Hardness of Materials

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.

Current edition approved Dec. 1, 2016. Published January 2017. Originally approved in 1986. Last previous edition approved in 2013 as F835 – 13. DOI: 10.1520/F0835-16.

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.

F606/F606M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets
F788 Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series

2.2 *ASME Standards:*³

B18.3 Socket Cap, Shoulder and Set Screws—Inch Series

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

3. Ordering Information

3.1 Orders for material under this specification shall include the following:

3.1.1 Quantity (number of screws).

3.1.2 Dimensions, including nominal thread designation, thread pitch, and nominal screw length (inches). 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 Lot testing, if required (see 10.3).

3.1.6 Certification, if required (see 14.1).

3.1.7 ASTM designation and year of issue.

3.1.8 Any special requirements.

3.1.9 For establishment of a part identifying system, see ASME B18.24.

3.2 *Example*—1000 pieces 0.250 – 20 × 0.375 SBHCS lot tensile test. ASTM F835–XX.

4. Materials and Manufacture

4.1 The screws shall be fabricated from alloy steel made to fine grain practice. In the event of controversy over grain size, referee tests on finished screws conducted in accordance with Test Methods E112 shall prevail.

4.2 Screws shall be hot or cold upset or extruded, or both.

³ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

*A Summary of Changes section appears at the end of this standard