D-17-05

ASME/ANSI B18.3.4M-1986
26 February 1987
SUPERSEDING
ANSI B18.3.4M-1979
9 August 1979

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Title of Document:	Screw, Cap, Hexagon Socket Button Head-Metric
Document Number:	AMSME/ANSI B18.3.4M-1986
Date of Specific Issue Adopted:	12 September 1986
Releasing Industry Group:	The American Society of Mechanical Engineers

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AN AMERICAN NATIONAL STANDARD

Hexagon Socket Button Head Cap Screws (Metric Series)

ASME/ANSI B18.3.4M - 1986

(REVISION OF ANSI B18.3.4M-1979)

Government Key Words:
Screw, Cap, Hexagon
Socket Button Head — Metric

SPONSORED AND PUBLISHED BY

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

United Engineering Center 345 East 47th Street New York, N. Y. 10017

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Date of Issuance: February 15, 1986

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FOREWORD

(This Foreword is not part of ASME/ANSI B18.3.4M-1986.)

American National Standards Committee B18 for the standardization of bolts, screws, nuts, rivets, and similar fasteners was organized in March 1922, as Sectional Committee B18 under the aegis of the American Engineering Standards Committee (later the American Standards Association, then the United States of America Standards Institute and, as of October 6, 1969, the American National Standards Institute, Inc.), with the Society of Automotive Engineers and the American Society of Mechanical Engineers as joint sponsors.

Subcommittee No. 9 was established in April of 1929 to undertake develoment and oversee maintenance of standards covering Socket Head Cap Screws and Set Screws. In line with a general realignment of the subcommittee structure on April 1, 1966, Subcommittee 9 was redesignated Subcommittee 3. Over the intervening years this activity has produced several versions of American National Standards covering inch series socket cap, shoulder, and set screws bearing the B18.3 designation.

At the December 4, 1974 meeting of American National Standards Committee B18, Subcommittee 3 was assigned the task of preparing for metric series socket screw products paralleling that contained in the latest ANSI B18.3 document. The subcommittee was also instructed to continue coordination with the International Standards Organization, ISO Technical Committee 2 and Working Group 3 under that activity, and to the extent possible keep the proposals for metric standards under development in conformance with agreements reached therein.

Subsequent meetings of Subcommittee 3 held in February 1975 and January 1976 resulted in general agreement on the following basic principles to be considered in developing the metric version of the standard:

(*a*) to assure consumers continuity of performance integrity consistent with inch socket screw products, the metric standards should maintain the same quality levels as their inch counterparts;

(*b*) to facilitate and expedite the processing, acceptance, and adoption of the metric versions, proposals for the various product categories should be prepared as separate and complete product standards;

(*c*) to promote understanding and assimilation during the transition to metric, the dimensional symbols, designations, terminology, and basic formats of the metric standards should be kept similar to that used in the ANSI B18.3 document.

At the November 10, 1976 meeting of Subcommittee 3, it was agreed that the socket screw industry document covering metric hexagon socket button head cap screws should be circulated for subcommittee consideration as a proposed standard. It was noted that the dimensional characteristics were very similar to proposals prepared by Working Group 3 of ISO TC2, the major difference being in the thread fit. The ISO proposal specifies tolerance class 5g6g whereas the socket screw industry document calls for tolerance class 4g6g, consistent with past practices. Subcommittee acceptance of the content ensued and the document, modified to more closely suit the ANSI format, was approved by letter ballot to American National Standards Committee B18. Following its approval by the sponsor organizations, the proposal was duly

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submitted to the American National Standards Institute and was granted recognition as an American National Standard on August 9, 1979.

A periodic review of the Standard, undertaken by the Committee in 1985, resulted in agreement that the document should be revised to reference the new ASTM documents for the appropriate mechanical and chemical requirements. A proposal containing these changes, as well as editorial corrections, was prepared and submitted for approval by letter ballot to the ASME Committee B18.

Following its approval by the sponsor organization, the proposal was submitted to the American National Standards Institute and was designated an American National Standard on September 12, 1986.

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HEXAGON SOCKET BUTTON HEAD CAP SCREWS (METRIC SERIES)

1 GENERAL

1.1 Scope

1.1.1 This Standard contains the complete general and dimensional requirements for Metric Series Hexagon Socket Button Head Cap Screws of nominal sizes from 3 mm to 16 mm recognized as an American National Standard. Also included are appendices covering formulas for dimensions, part numbering system and preferred sizes for government use, and thread dimensions. The application of these screws is limited by their design as denoted below.

This product is designed and recommended for applications where a lower head profile than that of the normal socket head cap screw (ASME/ANSI B18.3.1M) is required to prevent interference. Wrenchability is significantly reduced due to the smaller sockets and shallower key engagements and, because of the head configuration, the property class 12.9 tensile loads will not be met. It may be necessary to assemble this product using a nut to develop the full clamping capability.

1.1.2 The inclusion of dimensional data in this Standard is not intended to imply that all of the products described are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

1.2 Interchangeability With Proposed ISO Metric Button Head Cap Screws

Screws produced to this Standard are considered completely interchangeable with the screws described in the International Standard, ISO/TC2 7380-1983. The primary differences between the two documents consist of the thread fit (4g6g vs 5g6g) and the magnitude of the tolerance on length.

1.3 Dimensions

All dimensions in this Standard are given in millimeters (mm) and apply before plating unless otherwise stated.

1.4 Options

Options, where specified, shall be at the discretion of the manufacturer unless otherwise agreed upon by the manufacturer and purchaser.

1.5 Responsibility for Modification

The manufacturer shall not be held responsible for malfunctions of product determined to be due to plating or other modifications when such plating or modification is not accomplished under his control or direction.

1.6 Terminology

For definitions of terms relating to fasteners or component features thereof used in this Standard, refer to American National Standard ANSI B18.12, Glossary of Terms for Mechanical Fasteners.

1.7 Designation

Metric hexagon socket button head cap screws conforming to this Standard shall be designated by the following data in the sequence shown:

(*a*) specification (ANSI Document) number followed by a dash;

(*b*) nominal size of screw;

(*c*) thread pitch, preceded by ×;

(*d*) nominal screw length, preceded by ×;

(*e*) name of product. Where so desired, the product name may be abbreviated SBHCS;

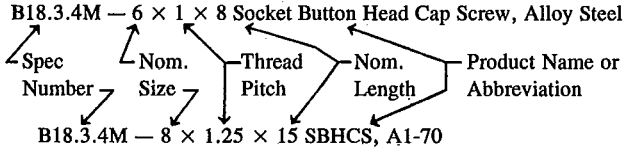
(*f*) material and property class. Alloy steel screws shall be supplied to property class 12.9 as specified in ASTM F 835M. For corrosion resistant steel screws, the property class and material requirements shall be as specified in ASTM F 879M (see para. 3.1);

(*g*) protective finish, if required by ASTM F 879M.

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EXAMPLES:

B18.3.4M — 6 × 1 × 8 Socket Button Head Cap Screw, Alloy Steel



B18.3.4M — 8 × 1.25 × 15 SBHCS, A1-70

1.8 Part Numbering System

For users who need a definitive part numbering system, one is suggested in Appendix II.

2 DIMENSIONAL CHARACTERISTICS

The following requirements supplement the dimensional data presented in Tables 1 and 2, and shall apply to the respective features of screws.

2.1 Heads

2.1.1 Head Height. The tabulated head heights represent metal-to-metal measurements: that is, the truncation of the rounded surface caused by the socket is not considered part of the head height.

2.1.2 Bearing Surface. The plane of the bearing surface shall be perpendicular to the axis of the screw within a maximum deviation of 2 deg.

2.1.3 Head Concentricity. The head shall be concentric with the axis of the screw shank within an amount equal to 6% of the specified maximum head diameter or 0.2 mm, whichever is greater, FIM (Full Indicator Movement). Concentricity shall be measured with the screw being held by the threads next to the head (within a distance equal to one screw diameter) and indicating on the outer rounded portion of the head surface, adjacent to but not on the extreme outer periphery.

2.1.4 Underhead Fillet. For all lengths of screws the form of the fillet at the junction of head and shank shall be optional within the following provisions. The fillet shall be a smooth and continuous concave curve fairing into the bearing surface within the limits for diameter B with a juncture radius of not less than F, and blending into the shank at a distance from the head not exceeding E as determined at the basic screw diameter D.

2.2 Sockets

2.2.1 Socket Size. Sockets shall be of the nominal size J specified in Table 1 for the respective screw size and shall conform with the dimensions given in Table 2, as determined by gaging in accordance with para. 2.2.3.

2.2.2 Key Engagement. The key engagement depth shall conform with the minimum values specified for T in Table 1, as determined by gaging in accordance with para. 2.2.3.

2.2.3 Socket Gaging. Acceptability of sockets shall be determined by the use of the hexagon socket gages specified in Table 3. The hexagon sockets shall allow the GO member of the gage to enter freely to the minimum key engagement depth. The NOT GO gage member shall be permitted to enter only to a depth equivalent to 7.5% of the nominal socket size.

For determining the acceptability of sockets in plated products after plating, a GO gage identical in design and tolerances to that shown in Table 3, but having a minimum width across flats dimension equal to the nominal socket size shall be employed.

2.2.4 Broached Sockets. For hexagon broached sockets which are at or near the maximum limit of size, the overcut resulting from drilling shall not exceed 20% of the length of any flat of the socket. (See Figs. 1 and 2.)

2.2.5 Edge of Socket. The edge at the junction of the socket with the top of the head may be broken (rounded or chamfered) as depicted in Fig. 3, provided the depth of chamfer or rounding does not violate the NOT GO gage penetration limit specified in para. 2.2.3.

2.2.6 Socket True Position. The axis of the socket shall be located at true position relative to the axis of the screw within a tolerance zone having a diameter equal to 3% of the basic screw diameter or 0.26 mm, whichever is greater, for nominal screw sizes up to and including 12 mm; and equal to 6% of the basic screw diameter for sizes larger than 12 mm, regardless of feature size.

2.2.7 Wall Thickness. The minimum wall thickness G specified in Table 1 shall apply only to screws having nominal lengths shorter than two times the basic screw diameter which are not subject to tensile testing in accordance with para. 3.5.2.

2.3 Length

2.3.1 Measurement. The length of the socket button head cap screw shall be measured, parallel to the axis of the screw, from the plane of the bearing surface under the head to the extreme end of the shank.

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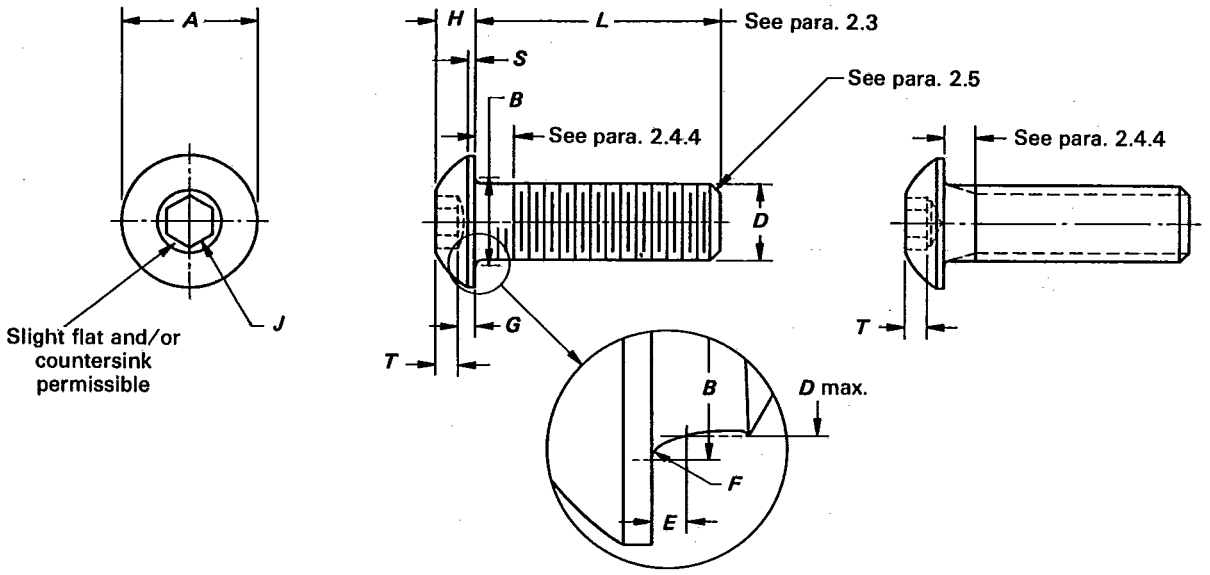


TABLE 1 DIMENSIONS OF METRIC HEXAGON SOCKET BUTTON HEAD CAP SCREWS

D		A		H		S	J	T	G	B		E	F	L
										Under Head Fillet				
Nominal Size or Basic Screw Diameter	Thread Pitch	Head Diameter		Head Height		Head Side Height	Hexagon Socket Size	Key Engagement	Wall Thickness	Transition Diameter		Transition Length	Juncture Radius	Maximum Standard Length
		max.	min.	max.	min.	ref.	nom.	min.	min.	max.	min.	max.	min.	nom.
3	0.5	5.70	5.40	1.65	1.43	0.38	2	1.04	0.20	3.6	3.2	0.51	0.10	12
4	0.7	7.60	7.24	2.20	1.95	0.38	2.5	1.30	0.30	4.7	4.4	0.60	0.20	20
5	0.8	9.50	9.14	2.75	2.50	0.50	3	1.56	0.38	5.7	5.4	0.60	0.20	30
6	1	10.50	10.07	3.30	3.00	0.80	4	2.08	0.74	6.8	6.5	0.68	0.25	30
8	1.25	14.00	13.57	4.40	4.05	0.80	5	2.60	1.05	9.2	8.8	1.02	0.40	40
10	1.5	17.50	17.07	5.50	5.20	0.80	6	3.12	1.45	11.2	10.8	1.02	0.40	40
12	1.75	21.00	20.48	6.60	6.24	0.80	8	4.16	1.63	14.2	13.2	1.87	0.60	60
16	2	28.00	27.48	8.80	8.44	1.50	10	5.20	2.25	18.2	17.2	1.87	0.60	60
See paras.		2.1.3		2.1.1			2.2	2.2.2	2.2.7	2.1.4				2.3.3

GENERAL NOTE: For additional requirements refer to data contained in paras. 2 and 3.

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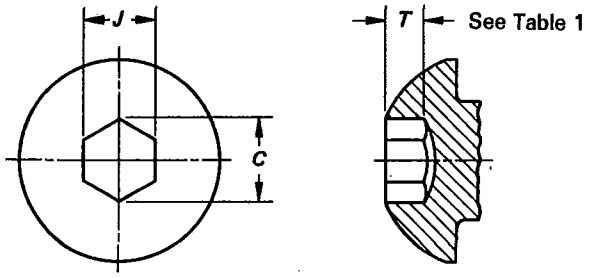


FIG. 1 FORGED HEXAGON SOCKET

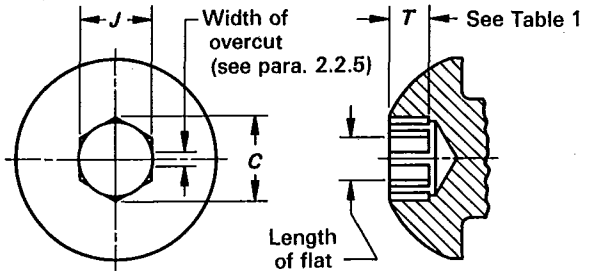


FIG. 2 BROACHED HEXAGON SOCKET

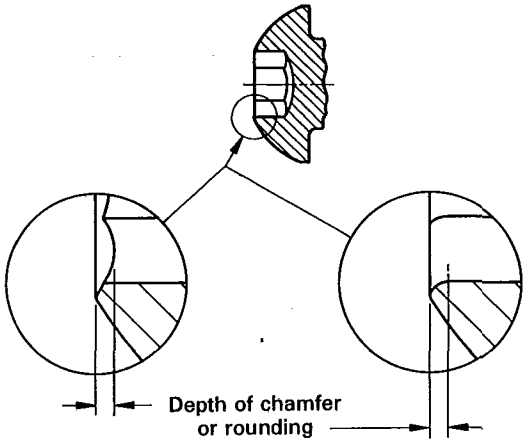


FIG. 3 SOCKET EDGE DETAIL

2.3.2 Tolerance On Length. The tolerance on length shall be bilateral as tabulated below.

Nominal Screw Length	Tolerance On Length, mm
Up to 16 mm, incl.	±0.3
Over 16 mm to 60 mm, incl.	±0.5

2.3.3 Standard Lengths. The standard lengths for socket button head cap screws shall be as follows: 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, 30, 35, 40, 45, 50, 55, and 60. The longest standard nominal lengths for the respective screw sizes are listed in Table 1.

TABLE 2 DIMENSIONS OF METRIC HEXAGON SOCKETS

Nominal Socket Size	J		C
	Socket Width Across Flats		Socket Width Across Corners
	max.	min.	min.
2	2.045	2.020	2.30
2.5	2.560	2.520	2.87
3	3.071	3.020	3.44
4	4.084	4.020	4.58
5	5.084	5.020	5.72
6	6.095	6.020	6.86
8	8.115	8.025	9.15
10	10.127	10.025	11.50

2.4 Threads

2.4.1 Thread Series and Form. Unless otherwise specified, threads shall be the metric coarse series in accordance with ANSI/ASME B1.13M, Metric Screw Threads — M Profile.

2.4.2 Thread Tolerance Class. Threads shall be ISO Tolerance Class 4g6g. For plated screws the allowance *g* may be consumed by the thickness of plating so that the maximum limit of size after plating shall be that of Tolerance Class 4h6h. Thread limits shall be in accordance with ANSI/ASME B1.13M. See Appendix III wherein the limiting dimensions applicable to threads up to 4 mm in size before and after plating are given for reference purposes. The allowable *g* shown therein for those sizes has been increased over that specified in ANSI/ASME B1.13M. However, because the minimum limits are unchanged, the screws will be totally interchangeable.

2.4.3 Thread Gaging. Acceptability of screw threads shall be determined based upon system 22 of ANSI/ASME B1.3M.

2.4.4 Thread Length. Screws of nominal lengths equal to or shorter than the longest standard lengths listed under Column *L* in Table 1 shall be threaded full length. The distance measured, parallel to the axis of the screw, from the underside of the head to the face of a noncounterbored or noncountersunk standard GO thread ring gage assembled by hand as far as the thread will permit, shall not exceed two pitches (threads).

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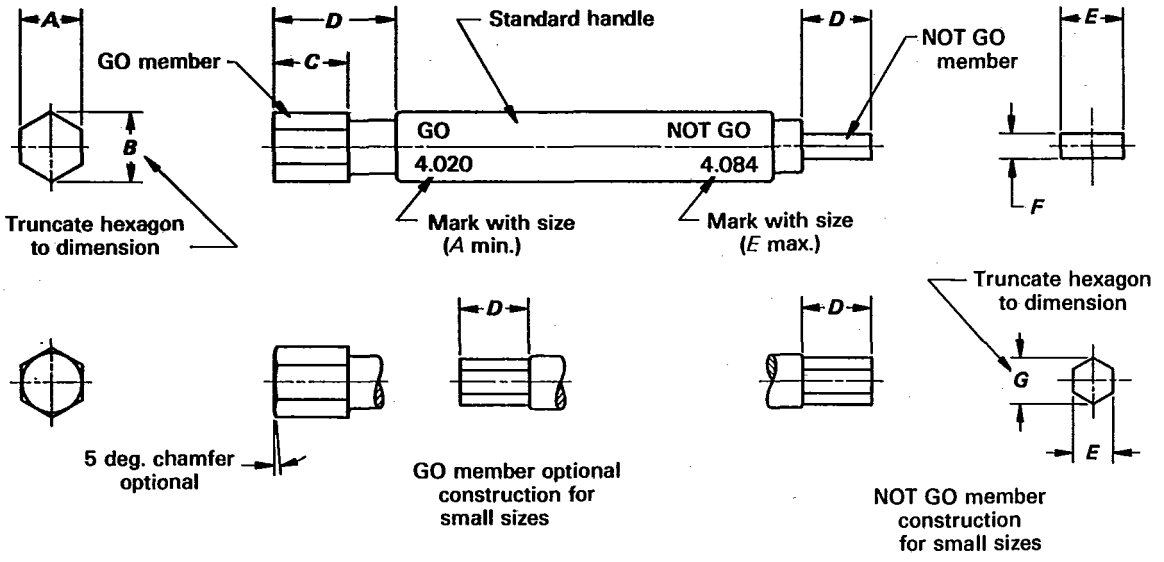


TABLE 3 DIMENSIONS OF METRIC HEXAGON SOCKET GAGES

Nominal Socket Size	A		B		C	D	E		F		G	
	GO Gage Width Across Flats		GO Gage Width Across Corners		GO Gage Length	Usable Gage Length	NOT GO Gage Width		NOT GO Gage Thickness		NOT GO Gage Width Across Corners	
	max.	min.	max.	min.	min.	min.	max.	min.	max.	min.	max.	min.
2.0	2.023	2.020	2.300	2.295	5.0	5.0	2.045	2.042	. . .	. . .	2.23	2.21
2.5	2.525	2.520	2.870	2.865	7.0	7.0	2.560	2.555	. . .	. . .	2.79	2.77
3.0	3.025	3.020	3.440	3.435	7.0	7.0	3.071	3.066	. . .	. . .	3.35	3.33
4.0	4.025	4.020	4.580	4.575	7.0	7.0	4.084	4.079	1.80	1.75	. . .	. . .
5.0	5.025	5.020	5.720	5.715	7.0	7.0	5.084	5.079	2.30	2.25	. . .	. . .
6.0	6.025	6.020	6.860	6.855	8.0	12.0	6.095	6.090	2.80	2.75	. . .	. . .
8.0	8.030	8.025	9.150	9.145	8.0	16.0	8.115	8.110	3.80	3.75	. . .	. . .
10.0	10.030	10.025	11.500	11.495	12.0	20.0	10.127	10.122	4.80	4.75	. . .	. . .

GENERAL NOTE:
(a) Gage specifications.
(1) Gages shall be made from steel, hardened and tempered to a hardness of Rockwell C60 minimum. They shall be thermally stabilized and given suitable surface treatment to obtain maximum abrasion resistance.
(2) The form of hexagonal gage members shall be within the tolerance zone specified. See ANSI Y14.5M-1982, Dimensioning and Tolerancing.
(3) The surface roughness on hexagon flats shall be 0.2 μm (arithmetical average) maximum. See ANSI/ASME B46.1-1985, Surface Texture.
(4) The gage handles shall conform with ANSI B47.1-1981, Gage Blanks.

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For longer screws, the length of complete (full form) thread shall, at the option of the manufacturer, be between a minimum limit equal to twice the basic screw diameter plus 12.0 mm and a maximum limit of to within two pitches (threads) of the head.

2.5 Point

The end on screws of 5 mm nominal size and larger and of nominal lengths equivalent to 0.75 times the basic screw diameter or longer shall be chamfered. The chamfer shall extend slightly below the root of the thread and the edge between the flat and chamfer may be slightly rounded. The included angle of the point shall be approximately 90 deg. Chamfering on screw sizes up to and including 4 mm, and of larger sizes having lengths shorter than 0.75 times the basic screw diameter, shall be optional.

3 MATERIAL, PROCESSING, AND MECHANICAL PROPERTIES

Socket button head cap screws shall conform to the following requirements pertaining to materials, processing, mechanical and physical properties, and testing and sampling procedures.

3.1 Material and Heat Treatment

3.1.1 Alloy Steel. Alloy steel metric button head cap screws shall be fabricated from an alloy steel and physical properties of screws, fabrication processes, and testing requirements shall conform with ASTM F 835M, Alloy Metric Socket Button and Flat Countersunk Head Cap Screws.

3.1.2 Corrosion Resistant Steel. Corrosion resistant steel metric button head cap screws shall be fabricated from austenitic corrosion resistant steel and physical properties of screws, fabrication processes, and testing requirements shall conform to ASTM F 879M, Stainless Steel Metric Button and Flat Countersunk Head Cap Screws. Unless otherwise specified, the property class will be A1-70.

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APPENDIX I
FORMULAS FOR DIMENSIONS

(This Appendix is not part of ASME/ANSI B18.3.4M-1986, and is included for information purposes only.)

Head Diameter A (See Table 1)

A(max.) = 1.90D for sizes 3 mm through 5 mm
= 1.75D for sizes 6 mm and larger

A(min.) = A(max.)-h14 tolerance[1]

Head Height H (See Table 1)

H(max.) = 0.55D

H(min.) = no formula, see table for values

Key Engagement T (See Table 1)

T(min.) = 0.52 J

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[1]Tolerances from International Standard ISO R286-1962, System of Limits and Fits Part I: General Tolerances and Deviations, where

D = the basic diameter of the screw
J = the nominal socket size

These tolerances also appear in an Appendix of ANSI B4.2, for information.

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APPENDIX II
GOVERNMENT STANDARD ITEMS AND PART NUMBERING SYSTEM

(This Appendix is not part of ASME/ANSI B18.3.4M-1986, and is included for information purposes only.)

NOTE: The Government encourages the general use of this Appendix to achieve maximum parts standardization.

This Appendix establishes the standard items for Government application, selected from the possible variations of items within the scope of the Standard and provides a Part Numbering System for identification and application in engineering documents.

(*a*) The following variations are standard:

(*1*) diameter/thread pitch and length combinations (as spacified in Table 10);

(*2*) material, alloy steel, or corrosion resistant steel, property class Al-70 (as coded in the Part Numbering System);

(*3*) finish, cadmium plating, or zinc coating for alloy steel; and cleaning, descaling, and passivation for corrosion resistant steel (as coded in the Part Numbering System);

(*4*) special features (self-locking, if specified).

(*b*) The part number shall consist of the following element codes in the order shown:

(*1*) document identifier (ANSI/ASME Standard Number less decimal points);

(*2*) material and finish;

(*3*) nominal diameter;

(*4*) nominal length;

(*5*) special features.

NOTE: The Part Numbering System may also be used for nonstandard diameter and length combinations.

(*c*) *Quality Assurance Provisions.* The Quality Assurance Provisions shall be in accordance with ANSI B18.18.1M. Inspection Level B shall apply for thread acceptability.

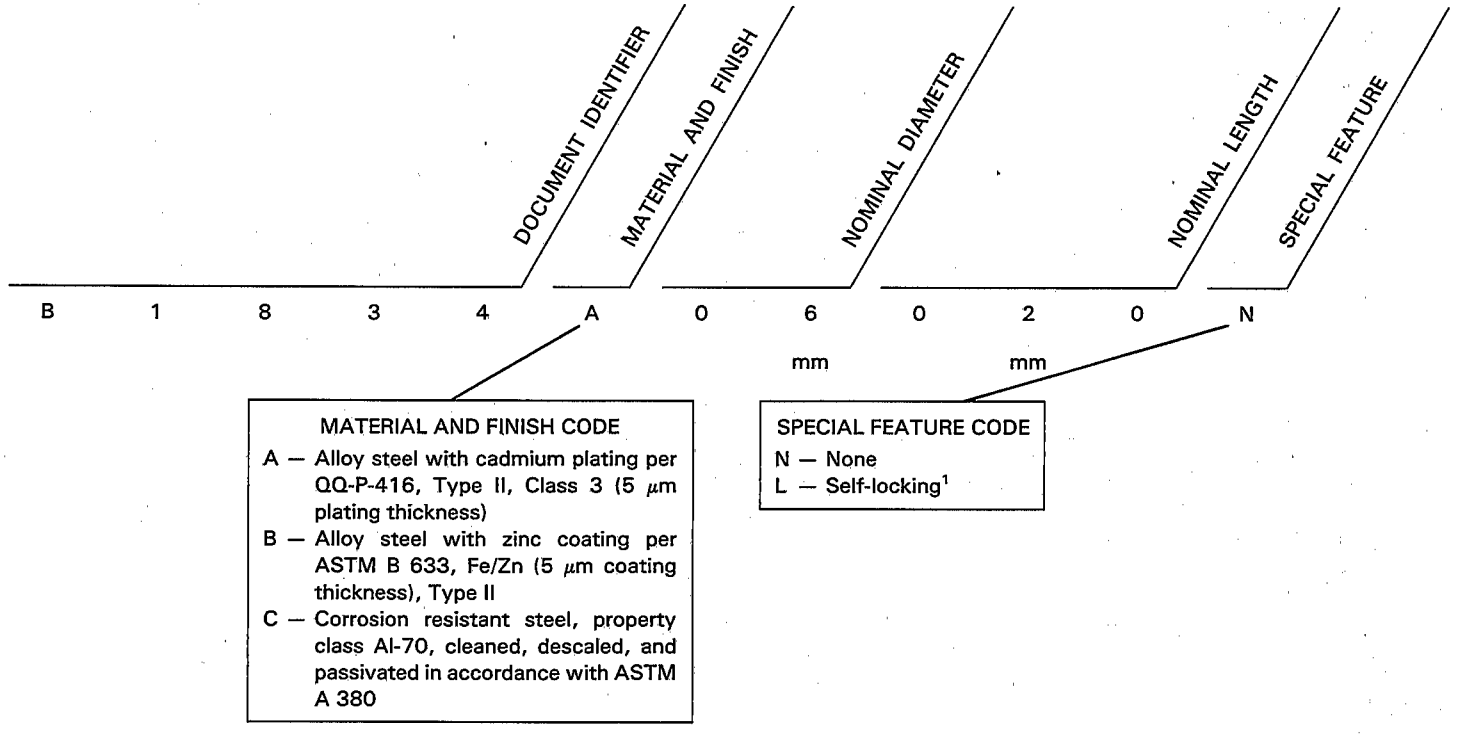
(*d*) *Packaging.* Packaging shall be in accordance with ASTM D 3951.

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PART NUMBERING SYSTEM COVERING STANDARD ITEMS FOR GOVERNMENT USE

(The Government encourages the general use of this system to achieve maximum parts standardization.)



GENERAL NOTE:
Example: B1834A06020N indicates a screw, cap, hexagon socket button head — metric made of cadmium plated alloy steel, 6 mm in diameter, 20 mm in length, and no special feature.

NOTE:
(1) Details will be provided when available.

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METRIC HEXAGON SOCKET BUTTON HEAD CAP SCREWS — STANDARD SIZES FOR GOVERNMENT USE

Nominal Length	Nominal Diameter and Thread Pitch							
	M3 × 0.5	M4 × 0.7	M5 × 0.8	M6 × 1	M8 × 1.25	M10 × 1.5	M12 × 1.75	M16 × 2
3								
4								
5	03005							
6		04006	05006	06006				
8								
10					08010			
12	03012					10012		
16			Standard Diameter and length combination					
20		04020						
25							12025	16025
30			05030	06030				
35								
40					08040	10040		
45								
50								
55								
60							12060	16060

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APPENDIX III
DIMENSIONS OF METRIC THREADS FOR SOCKET SCREW PRODUCTS

(This Appendix is not part of ASME/ANSI B18.4M-1986, and is included for information purposes only.)

Nominal Size or Basic Thread Diameter	Pitch	Dimensions Before Plating [Note (1)]						Tolerance Class 4h6h [Note (2)]		
		Major Diameter		Pitch Diameter		Allowance	Root Radius	Major Diameter 6h	Pitch Diameter 4h	GO Gage Minor Diameter
		max.	min.	max.	min.		min.	max.	max.	
M3	0.5	2.976	2.874	2.651	2.607	0.024	0.06	3.000	2.675	2.459
M4	0.7	3.976	3.838	3.521	3.467	0.024	0.08	4.000	3.545	3.242

NOTES:
(1) Applies to unplated or uncoated screws and plated or coated screws before plating or coating.
(2) Applies to plated or coated screws after plating or coating.

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AMERICAN NATIONAL STANDARDS FOR BOLTS, NUTS, RIVETS, SCREWS, WASHERS, AND SIMILAR FASTENERS

Small Solid Rivets B18.1.1-1972 (R1983)
Large Rivets B18.1.2-1972 (R1983)
Metric Small Solid Rivets B18.1.3M-1983
Square and Hex Bolts and Screws — Inch Series B18.2.1-1981
Square and Hex Nuts B18.2.2-1972 (R1983)
Metric Hex Cap Screws B18.2.3.1M-1979
Metric Formed Hex Screws B18.2.3.2M-1979
Metric Heavy Hex Screws B18.2.3.3M-1979
Metric Hex Flange Screws B18.2.3.4M-1984
Metric Hex Bolts B18.2.3.5M-1979
Metric Heavy Hex Bolts B18.2.3.6M-1979
Metric Heavy Hex Structural Bolts B18.2.3.7M-1979
Metric Hex Lag Screws B18.2.3.8M-1981
Metric Heavy Hex Flange Screws B18.2.3.9M-1984
Metric Hex Nuts, Style 1 ..... B18.2.4.1M-1979
Metric Hex Nuts, Style 2 ..... B18.2.4.2M-1979
Metric Slotted Hex Nuts B18.2.4.3M-1979
Metric Hex Flange Nuts B18.2.4.4M-1982
Metric Hex Jam Nuts B18.2.4.5M-1979
Metric Heavy Hex Nuts B18.2.4.6M-1979
Socket Cap, Shoulder and Set Screws — Inch Series B18.3-1982
Socket Head Cap Screws (Metric Series) B18.3.1M-1986
Metric Series Hexagon Keys and Bits B18.3.2M-1979
Hexagon Socket Head Shoulder Screws: Metric Series B18.3.3M-1986
Hexagon Socket Button Head Cap Screws (Metric Series) B18.3.4M-1986
Hexagon Socket Flat Countersunk Head Cap Screws (Metric Series) B18.3.5M-1986
Metric Series Hexagon Socket Set Screws B18.3.6M-1986
Round Head Bolts (Inch Series) B18.5-1978
Metric Round Head Short Square Neck Bolts B18.5.2.1M-1981
Metric Round Head Square Neck Bolts B18.5.2.2M-1982
Wood Screws B18.6.1-1981
Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws ... B18.6.2-1972 (R1983)
Machine Screws and Machine Screw Nuts B18.6.3-1972 (R1983)
Metric Thread Forming and Thread Cutting Tapping Screws B18.6.5M-1986
Metric Machine Screws B18.6.7M-1985
Drive Screws (Inch Series) B18.6.4-1981
General Purpose Semi-Tubular Rivets, Full Tubular Rivets, Split Rivets and Rivet Caps B18.7-1972 (R1980)
Metric General Purpose Semi-Tubular Rivets B18.7.1M-1984
Clevis Pins and Cotter Pins B18.8.1-1972 (R1983)
Taper Pins, Dowel Pins, Straight Pins, Grooved Pins, and Spring Pins (Inch Series) B18.8.2-1978
Plow Bolts B18.9-1958 (R1977)
Track Bolts and Nuts B18.10-1982
Miniature Screws B18.11-1961 (R1983)
Glossary of Terms for Mechanical Fasteners B18.12-1962 (R1981)
Screw and Washer Assemblies — Sems B18.13-1965 (R1983)
Forged Eyebolts B18.15-1985
Mechanical and Performance Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts B18.16.1M-1979 (R1986)
Torque-Tension Test Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts B18.16.2M-1979 (R1986)
Dimensional Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts B18.16.3M-1982
Wing Nuts, Thumb Screws, and Wing Screws B18.17-1968 (R1983)
Inspection and Quality Assurance for General Purpose Metric Fasteners B18.18.1M-1982
Inspection and Quality Assurance for High-Volume Machine Assembly Metric Fasteners B18.18.2M-1982
Inspection and Quality Assurance for Special Purpose Metric Fasteners B18.18.3M-1982
Inspection and Quality Assurance for Specialized Engineered Applications — Metric Fasteners B18.18.4M-1982
Lock Washers B18.21.1-1972 (R1983)
Metric Plain Washers B18.22M-1981
Plain Washers B18.22.1-1965 (R1981)
Beveled Washers B18.23.1-1967 (R1975)

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