

 SURFACE VEHICLE STANDARD	SAE	J2485 DEC2012
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		Superseding J2485 JAN2003
(R) Fastener Part Standard - Machine Screw Nuts (Metric and Inch)		

RATIONALE

The ASME removed machine screw nuts from ASME B18.6.3 and added them to ASME B18.2.2. That change is now reflected in SAE J2485.

Section 1: Added statement about potential hazardous materials.

Section 2: Added new reference standards.

Section 3: Added a Definitions paragraph.

Section 4: Added caution on Black Oxide Coatings. Added requirements on phosphate coatings and zinc/aluminum inorganic coatings.

Figure 1: Field 3 Configuration added Designator F for hex flange nut.

Field 5 Platings and Coatings added Designators K = Manganese Phosphate Coating, P = Zinc Phosphate Coating, X = Zinc/Aluminum Inorganic Coating-No Chromium Permitted and ZA = Zinc with clear topcoat (Hexavalent chromium prohibited). Z = Zinc Electroplate allows ZA to be furnished. Designator C for cadmium coating is inactivated for new design. Designator A for Aluminum plating is deleted due to misidentification of the coating. Hexavalent chrome is now prohibited due to environmental and regulatory concerns.

Table 1: Reformatted to place Designators in alpha-numeric order. In accordance with industry practice, proof stress testing of machine screw nuts is no longer required.

Designator G steel expanded UNS compositions range to match standard production alloys.

Designators for CRES are reformatted. Designator S added alloy 302HQ and now identifies alloy XM7 as 18-9LW. New Designator S1 is added with 303 and 303Se free machining alloys. Designator S3 is added with 321 and 347 alloys. There is no change to current practice of allowing suppliers to choose the CRES alloy to be provided and this is noted. Hardness range of Designators in the S series is revised to align with ASTM F 594.

Designator C added copper alloys 260.

Designator C1 is added with naval brass alloys 462 and 464.

Designator T2 is added with titanium alloy 23, Ti-6Al-4V ELI.

Designator BN added "Grade 1" to alloy 686 and adjusted hardness and proof stress to match ASTM F 467.

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Section 5: Informational notes revised and added.

Minor editorial changes, clarifications and corrections made throughout.

1. SCOPE

This SAE Part Standard covers selected machine screw nuts manufactured in accordance with American Society for Mechanical Engineers (ASME) dimensional standards. This document covers material most often used in ship systems and equipment but its use may be applied wherever nuts of the covered materials are used. This document permits the nuts to be identified and ordered by a part identification number (PIN) as defined in this document.

1.1 Purpose

The purpose of this document is to assist the designer and other personnel in providing requirements and PINs for the most commonly used machine screw nuts. A PIN is normally required for all military applications and provides a useful means of communicating fastener requirements to suppliers and manufacturers in a very succinct manner.

1.2 Hazardous Materials

While the materials, methods, applications and processes described or referenced in this standard may involve the use of hazardous materials, this standard does not address the hazards that may be involved in such use. It is the responsibility of manufacturers and users to consult with officials on the applicable health and environmental regulations regarding the handling, use and disposal of hazardous materials. For nuts, some of the hazardous materials concerns are the application of the materials in platings (coatings), release of toxic vapors due to heat (for example, welding) and environmental regulations for disposal.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of all publications shall apply at date of purchase order.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE AMS2412	Plating, Silver, Copper Strike, Low Bake
SAE AMS2485	Coating, Black Oxide
SAE AMS2487	Anodic Treatment of Titanium and Titanium Alloys, Solution pH 12.4 Maximum
SAE AMS2488	Anodic Treatment - Titanium and Titanium Alloys, Solution pH 13 or Higher
SAE AS1701	Lubricant, Solid Film
SAE J2280	Ship Systems and Equipment - Fasteners - Selection and Identification Requirements
SAE J2295	Fastener Part Standard - Cap Screws, Structural Bolts, and Hex Nuts (Inch Dimensioned)
SAE J2295M	Fasteners-Part Standard - Cap Screws, Hex Bolts, and Hex Nuts (Metric)
SAE J2484	Fastener Part Standard - Machine Screws

2.1.2 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)

ASME B1.3 Screw Thread Gaging Systems for Dimensional Acceptability - Inch and Metric Screw Threads (UN, UNR, UNJ, M and MJ)

ASME B1.13M Metric Screw Threads - M Profile

ASME B18.2.2 Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series)

ASME B18.2.4.1 Metric Hex Nuts, Style 1

ASME B18.12 Glossary of Terms for Mechanical Fasteners

ASME B18.18 Quality Assurance for Fasteners

2.1.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org

ASTM A 29/A 29M Steel Bars, Carbon and Alloy, Hot Wrought, General Requirements for

ASTM A 342/A 342M Standard Test Methods for Permeability of Feebly Magnetic Materials

ASTM A 380 Cleaning, Descaling and Passivation of Stainless Steel Parts, Equipment, and Systems

ASTM A 453/A453M High-Temperature Bolting, with Expansion Coefficients Comparable to Austenitic Stainless Steels

ASTM A 563 Carbon and Alloy Steel Nuts

ASTM A 563M Carbon and Alloy Steel Nuts [Metric]

ASTM B 580 Anodic Oxide Coatings on Aluminum

ASTM F 467 Nonferrous Nuts for General Use

ASTM F 467M Nonferrous Nuts for General Use [Metric]

ASTM F 594 Stainless Steel Nuts

ASTM F 812/F 812M Surface Discontinuities of Nuts, Inch and Metric Series

ASTM F 836M Style 1 Stainless Steel Metric Nuts

ASTM F 1136 Zinc/Aluminum Corrosion Protective Coatings for Fasteners

ASTM F 1137 Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners

