

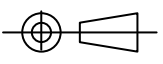
FED. SUPPLY CLASS

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THIRD ANGLE PROJECTION		CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 9
PROCUREMENT SPECIFICATION NONE	TITLE PIN, QUICK RELEASE, POSITIVE LOCKING, SINGLE & DOUBLE ACTING	⑨	CLASSIFICATION SPECIFICATION NAS1332 SHEET 1 OF 17



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1. SCOPE

1.1 Scope

This specification establishes the requirements for material, construction, heat treatment, surface roughness, protective finish, and quality control of positive locking quick release pins, single and double acting.

1.2 Classification

Quick-release pins shall be of the following classes as specified (see 6.2):

- Class I: Single acting pins: A push on the release button releases the locking mechanism (NAS1333-1346).
- Class II: Double acting pins: A push or pull on the release button or handle releases the locking mechanism (NAS1353-1366).

2. APPLICABLE DOCUMENTS

2.1 Publications

The following publications of the issue in effect on date of invitation for bids shall form a part of this specification to the extent specified herein.

Military

MIL-DTL-5541	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-A-8625	Anodic Coatings, For Aluminum and Aluminum Alloy
MIL-PRF-23827	Grease, Aircraft and Instruments for Low and High
MIL-STD-129	Standard Practice for Military Marking
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-810	Environmental Test Methods and Engineering Guidelines

Copies can be obtained from the Department of Defense Single Stock Point (DODSSP). <http://dodssp.daps.dla.mil>

Federal

A-A-59588 Commercial Item Description Rubber, Silicon

Copies can be obtained from the Department of Defense Single Stock Point (DODSSP). <http://dodssp.daps.dla.mil>

Aerospace Industries Association

NAS1333-1346	Pin, Quick Release, Positive Locking, Single Acting
NAS1353-1366	Pin, Quick Release, Positive Locking, Double Acting
NASM1312	Fastener Test Methods

Copies can be obtained from the Aerospace Industries Association, 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209. www.aia-aerospace.org

American Society for Quality

ANSI/ASQ Z1.4 Sampling Procedures and Tables For Inspection By Attributes

Copies can be obtained from the American Society for Quality, 600 North Plankinton Ave., Milwaukee, WI 53203. www.asq.org

ASME

ASME B46.1 Surface Texture (Surface Roughness, Waviness, and Lay)

Copies can be obtained from ASME, Three Park Ave., New York, NY 10016-5990. www.asme.org

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SAE International

AMS2700	Passivation of CRES
AMS5520	Steel, Corrosion and Heat Resistant, Sheet, Strip, Foil, and Plate 15Cr-7.1Ni-2.5Mo-1.1Al Solution Heat Treated, Precipitation Hardenable
AMS5568	Steel, Corrosion and Heat Resistant, Welded Tubing, 17Cr 7.1Ni 1.1Al, Solution Heat Treated, Precipitation Hardenable
AMS5630	Steel, Corrosion Resistant, Bars, Wire, and Forgings 17Cr-.52Mo (.95-1.20C) (SAE 51440C)
AMS5640	Steel, Corrosion Resistant, Bars, Wire, and Forgings, 18Cr-9Ni
AMS5643	Steel, Corrosion Resistant, Bars, Wire, Forgings, Tubing and Rings 16Cr-4.0Ni-.30 (Cb+Ta)-4.0Cu Solution Heat Treated, Precipitation Hardenable
AMS5644	Steel Bars and Forgings, Corrosion Heat Resistant 17Cr-7Ni-1Al
AMS5657	Steel, Corrosion and Heat Resistant 15Cr-7.1Ni-2.5Mo-1.1Al
AMS5659	Steel Bars, Forgings, Rings, and Extrusions, Corrosion Resistant 15Cr-4.5Ni.30(Cb+Ta)- 3.5Cu Consumable Electrode Melted, Solution Heat Treated
AMS5678	Steel Wire, Corrosion Resistant 17Cr-7.1Ni-1.1Al
~~AMS5880~~	~~Steel, Corrosion-Resistant, Bars, Forgings, and Wire 17Cr-.52Mo (.95-1.20C) (SAE51440C) for Bearing Applications~~
AMS5618	Steel, Corrosion-Resistant, Bars, Wire, and Forgings 17Cr-.52Mo (.95-1.20C) (440C) Consumable Electrode Vacuum Melted – UNS S44004
AMS6378	Steel Bars, 1.0Cr .20Mo .045Se (.39-.48C), Die-Drawn, 130 KSI Yield Strength Free Machining
AMS6381	Steel, Mechanical Tubing .95Cr .20Mo (.38-.43C) (SAE4140)
AMS6382	Steel Bars, Forgings and Rings .95Cr .20Mo (.38-.43C), Annealed
~~AMS6530~~	~~Steel Tubing, Seamless .50Cr-.55Ni-.20Mo (.28-.33C) (SAE8630)~~
AMS6360	Steel Tubing, Seamless .95Cr-.20Mo (.28-.33C) (SAE 4130) Normalized or Stress Relieved UNS G41300
AMS2770	Heat Treatment of Aluminum Alloys, Process for Aircraft
AMS-T-6735	Tubing, Chrome-Molybdenum (4135) Steel Seamless
AMS-T-6736	Tubing, Chrome-Molybdenum (4130) Steel Seamless, Aircraft Quality
AMS2759	Heat Treatment of Steels (Aircraft Process)
AMS-S-6758	Steel, Chrome-Molybdenum (4130) Bars and Forging Stock (For Aircraft Applications)
AMS-S-7720	Steel, CRES 18-8 Bars, and Forging Stock for Aircraft
AMS-QQ-A-200/8	Aluminum Alloy 6061, Bar, Rod, Shapes, Tube and Wire Extruded
~~AMS-QQ-A-225/3~~	~~Aluminum Alloy 2011, Bar, Rod, and Wire, Rolled, Drawn or Cold Finished~~
ASTM B211	Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
AMS-QQ-A-225/5	Aluminum Alloy 2017, Bar, Rod, and Wire, Rolled, Drawn or Cold Finished
AMS-QQ-A-225/6	Aluminum Alloy 2024, Bar, Rod, and Wire, Rolled, Drawn or Cold Finished
~~AMS-QQ-A-225/8~~	~~Aluminum Alloy 6061, Bar, Rod, and Wire, Rolled, Drawn or Cold Finished~~
AMS4115	Aluminum Alloy, Rolled or Cold-Finished, Bars, Rods, Wire, and Flash Welded Rings Annealed 1.0Mg-.60Si-.28Cu-.20Cr (6061-0) – UNS A96061
AMS4116	Aluminum Alloy, Bars, Rods, and Wire 1.0Mg-.60Si-.30Cu-.20Cr (6061-T4) Cold Finished, Solution Heat Treated and Naturally Aged – UNS A96061
AMS4117	Aluminum Alloy, Rolled or Cold Finished Bars, Rods, and Wire and Flash Welded Rings 1.0Mg-.60Si-.28Cu-.20Cr (6061; -T6, -T651) Solution and Precipitation Heat Treated – UNS A96061
AMS4128	Aluminum Alloy Bars, Rolled or Cold Finished 1.0Mg-.60Si-.30Cu-.20Cr (6061-T451) Solution Heat Treated and Stress Relieved by Stretching – UNS A96061
AMS-QQ-A-225/9	Aluminum Alloy 7075, Bar, Rod, and Wire, Rolled, Drawn or Cold Finished
AMS-QQ-P-416	Plating, Cadmium, Electro-Deposited
AMS-QQ-W-428	Wire, Steel, Carbon (High Carbon, Round, for Mechanical Springs, General Purpose)
AMS-QQ-S-763	Steel Bars, Shapes and Forgings, Corrosion Resisting
AMS-H-6875	Heat Treatment of Steel Raw Materials

Copies can be obtained from SAE International, 400 Commonwealth Dr., Warrendale, PA 15096-0001. www.sae.org

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ASTM International

ASTM A108	Steel Bars, Carbon, Cold Finished, Standard Quality
ASTM A228/A228M	Steel Wire, Music Spring Quality
ASTM A313/A313M	Chromium-Nickel Stainless and Heat-Resistant Steel Spring Wire, Specification for
ASTM A380	Standard Practice for Cleaning, Descaling, and Passivation of Stainless Parts, Equipment, and Systems
ASTM A484/A484M	Steel, Bars, Billets and Forgings, Stainless
ASTM A581/A581M	Steel Wire Corrosion Resisting
ASTM A582/A582M	Steel Bars Corrosion Resisting
ASTM A967	Chemical Passivation Treatments for Stainless Steel Parts
ASTM B85/B85M	Aluminum Alloy Die Castings
ASTM B221	Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Wire and Shapes
ASTM D3951	Standard Practice for Commercial Packaging

Copies can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. www.astm.org

American Welding Society

AWS C3.4M/C3.4	Specification for Torch Brazing – 2nd Edition
AWS C3.5M/C3.5	Specification for Induction Brazing – 2nd Edition
AWS C3.6M/C3.6	Specification for Furnace Brazing – 3rd Edition
AWS C3.7M/C3.7	Specification for Aluminum Brazing – 4th Edition
AWS D17.1/D17.1M	Specification for Fusion Welding for Aerospace Applications – 2nd Edition

Copies can be obtained from the American Welding Society, 8669 Doral Boulevard, Suite 130 Doral, Florida 33166, www.aws.org

3. REQUIREMENTS

3.1 Standards

The individual item requirements shall be as specified herein and in accordance with the applicable standards. In the event of any conflict between the requirements of this specification and the standards, the latter shall govern.

3.2 Qualification

The pin manufacturer shall be responsible for conducting qualification tests, and, if required by the purchaser, provide part drawings, certified qualification test reports, and test samples. The pins furnished under this specification shall be produced using the same manufacturing methods as those used to produce pins that have passed qualification tests. The purchaser may apply any or all tests specified herein to any product represented as meeting this specification, at any time, to verify conformance.

3.2.1 Retention of Qualification

Requalification will be required in the event any change is made in the product design, construction, materials, methods of manufacture, manufacturing location, heat treatment, finish, lubricant, or manufacturer's part number or designation.

3.3 Materials

3.3.1 Verification

The materials used to fabricate the quick release pins shall be verified (see 4.6.12).

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3.3.2 Alloy steel

Shanks and spindles of Class I and Class II alloy steel pins shall be fabricated from materials conforming to ~~AMS5630~~ AMS6360 (UNS G86300), AMS-S-6758 (UNS G41300), AMS-T-6735 (UNS G41350), AMS-T-6736 (UNS G41300), AMS6381 (UNS G41400), AMS6382 (UNS G4140), or AMS6378 (UNS K11542).

3.3.3 CRES

Shanks and spindles of Class I and Class II pins shall be fabricated from CRES conforming to AMS5643 (UNS S17400), AMS5659 (UNS S15500), AMS5520 (UNS S15700), AMS5657 (UNS S15700), AMS5568 (UNS S17700), or AMS5644 (UNS S17700).

3.3.4 Welded Tubing

Welded CRES tubing may be used provided the welding material is of the same chemical composition and hardness as the tubing. The tubing shall be drawn and heat-treated after welding (see 4.6.8.1).

3.3.5 Attaching Links, Springs, Rings, or Ring Handles

All attaching links, ring, or ring handles shall be fabricated from music wire (UNS G10860) per ASTM A228/A228M or carbon steel wire per AMS-QQ-W-428, CRES 302 (UNS S30200) per ASTM A313/A313M or CRES 17-7PH (UNS S17700) with spring temper per AMS5678 (UNS S17700).

3.3.6 Locking Elements

All locking elements shall be corrosion-resistant conforming to AMS5630 (UNS S44004), ~~AMS5880~~ AMS5618 (UNS S44004) or AMS-QQ-S-763.

3.3.7 Core Material

Core material, for types of pins which use an elastic material in place of springs, shall be per A-A-59588.

3.3.8 Buttons, Heads, and Handles

Buttons, heads and handles shall be made of 2017 aluminum alloy per AMS-QQ-A-225/5 (UNS A92017); 2024 aluminum alloy per AMS-QQ-A-225/6 (UNS A92024); 7075 aluminum alloy per AMS-QQ-A-225/9 (UNS A97075); 2011 aluminum alloy per ~~AMS-QQ-A-225/3~~ ASTM B211 (UNS A92011); 6061 aluminum alloy per AMS-QQ-A-200/8, ~~AMS-QQ-A-225/8~~ AMS4115, AMS4116, AMS4117, AMS4128 (UNS A96061) or ASTM B221; aluminum alloy die casting per ASTM B85/B85M; 4130 steel per AMS-S-6758 or AMS-T-6736; CRES per AMS-S-7720, AMS-QQ-S-763, ASTM A484/A484M, ASTM A581/A581M, ASTM A582/A582M or AMS5640; or carbon steel per ASTM A108. CRES and steel heads may be one piece or multiple piece construction. When multiple piece construction, the handle must be completely welded to the head.

3.3.9 Component Parts

Materials for other component parts shall be specified on the applicable part standard.

3.4 Protective Finish

Pins shall be plated, coated, or treated in accordance with 3.4.1, 3.4.2 or 3.4.3 as applicable.

3.4.1 Cadmium Plating

Alloy steel parts shall be cadmium plated in accordance with AMS-QQ-P-416, Type II, Class 2. For embrittlement relief, alloy steel parts shall be baked at 190 °C ± 14 °C (375 °F ± 25 °F) for not less than four hours and within four hours after plating.

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