

- **Zollschrauben**
- **Luftfahrt-Normteile**
- **MS-NAS-AN Hardware**
- **Schnellverschlüsse**
- **Spannverschlüsse**
- **Gewindeinsätze**

# Fürniss GmbH

*... und die Verbindung stimmt*



## 002 INHALTSVERZEICHNIS INDEX

<b>AN-MS-NAS HARDWARE</b>	<b>003</b>
ESNA WRENCHABLE NUTS .....	004
ESNA Anchor NUTS .....	012
National Aerospace Standard .....	018
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Military Standard Retaining Rings & Lockwasher .....	076
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## 004 ESNA WRENCHABLE NUTS

### ESNA WRENCHABLE NUTS



#### LH7644

HEX, THIN, STRUCTURAL, SHEAR  
1/2-20 thru 1 1/2-12 to 450°F.

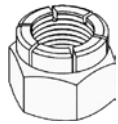
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#### LH12284

HEX, LOW HEIGHT STRUCTURAL,  
SHEAR, 80.000 PSI  
1/2-20 thru 1 1/4-12 to 450°F.  
NAS1757

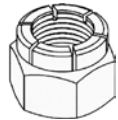
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#### 1801

HEX, FULL HEIGHT  
4-40 thru 3/4-16 to 450°F.  
AN363, MS20365, MS21045,  
NAS1021

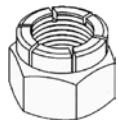
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#### 1802

HEX, HIGH TEMPERATURE  
8-32 thru 1/2-20 to 1200°F.  
MS20500

---



#### 1803, SM1813

HEX, FULL HEIGHT  
4-40 thru 5/8-18 to 450°F and 800°F.  
AN363, MS20365, MS21045,  
MS21046, NAS1021

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#### Z1200

HEX, HIGH TEMPERATURE  
00 thru 00 to 1200°F.



**NE4717**  
HEX, THIN, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1-12 to 250°F.  
MS17826

---



**NE4753**  
HEX, FULL, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1-12 to 250°F.  
MS17825

---



**NE8235**  
HEX, CASTELLATED, C'BORED,  
SELF-LOCKING, CAPTIVE WASHER  
10-32 thru 1-12 to 250°F.  
MS21224

---



**NE9106**  
HEX, CASTELLATED, C'BORED,  
SELF-LOCKING, STEEL,  
CAPTIVE WASHER  
10-32 thru 5/8-18 to 250°F.

---



**E9868**  
REDUCED HEX, FULL,  
LIGHTWEIGHT, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1-12 to 450°F.  
MS14144, NSA5059

---



**TE9868**  
REDUCED HEX, THIN,  
LIGHTWEIGHT, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1-12 to 450°F.  
MS14145, NSA5060

## 006 ESNA WRENCHABLE NUTS

### ESNA WRENCHABLE NUTS



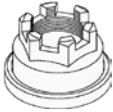
**E9925**  
REDUCED HEX, FULL,  
LIGHTWEIGHT, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1 1/4-12 to 450°F and 800°F.  
NSA5059C

---



**TE9925**  
REDUCED HEX, THIN,  
LIGHTWEIGHT, CASTELLATED,  
SELF-LOCKING  
10-32 thru 1 1/4-12 to 450°F and 800°F.  
NSA5660C

---



**E10361**  
HEX, CASTELLATED, C'BORED, SELFLOCKING,  
CAPTIVE WASHER  
10-32 thru 1-12 to 450°F.  
MS14146

---



**E11900**  
HEX, CASTELLATED, C'BORED, NON  
SELF-LOCKING  
10-32 thru 1-12 to 450°F.  
MS21244

---



**Z7764**  
HEX, CASTELLATED, SELF-LOCKING  
3/8 thru 1/2-20 to 800°F.  
MS21225

---



**NE2935, 2935**  
HEX, SELF-ALIGNING and MATING  
BASE RING  
3/8 thru 3/4-16 to 250°F.



**LH4367, 4367**  
REDUCED HEX, SELF-LOCKING,  
LIGHTWEIGHT and MATING BASE  
RING (160,000 PSI)  
8-32 thru 1/2-20 to 450°F.

---



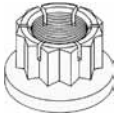
**LH2935, 2935**  
HEX, SELF-ALIGNING and MATING  
BASE RING  
10-32 thru 5/16-24 to 450°F.

---



**EB**  
DOUBLE HEX, HIGH TENSILE,  
NYLON INSERT  
(180,000 PSI)  
1/4-28 thru 1 1/2-12 to 250°F.

---



**ZEB1845**  
DOUBLE HEX, HIGH TENSILE  
(180,000 PSI)  
1/4-28 thru 1-12 to 450°F.

---



**LH18A**  
DOUBLE HEX (180,000 PSI)  
10-32 thru 2-12 to 450°F.  
NAS1804

---



**LH8574A**  
DOUBLE HEX (180,000 PSI)  
10-24 thru 2-12 to 450°F and 800°F.  
NAS1805

## 008 ESNA WRENCHABLE NUTS

### ESNA WRENCHABLE NUTS



**LH3393**  
REDUCED DOUBLE HEX, HIGH  
TENSILE (220,000 PSI)  
1/4-28 thru 1/2-20 to 450°F.

---



**LHEB220**  
DOUBLE HEX, HIGH TENSILE  
(220,000 PSI)  
1/4-28 thru 1-12 to 450°F.

---



**LH22**  
DOUBLE HEX, HIGH TENSILE  
(220,000 PSI)  
10-32 thru 2-12 to 450°F.

---



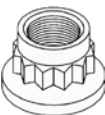
**LH11848**  
DOUBLE HEX, HIGH TENSILE  
(220,000 PSI)  
10-32 thru 1 1/2-12 to 450°F.  
NAS1758

---



**LH9031**  
DOUBLE HEX, HIGH TENSILE  
(220,000 PSI)  
10-32 thru 2-12 to 450°F and 800°F.

---



**LH3417**  
REDUCED DOUBLE HEX, CLOSE  
CLEARANCE  
8-36 thru 9/16-18 to 1200°F.





**LH1855**  
DOUBLE HEX, CLOSE CLEARANCE  
10-32 thru 3/8-24 to 1200°F.

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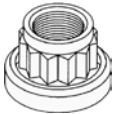
**LH6520 3**  
DOUBLE HEX, LIGHTWEIGHT SHEAR  
5/16-24 thru 5/8-18 to 450°F.

---



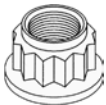
**LH6521**  
DOUBLE HEX, LIGHTWEIGHT SHEAR  
1/4-28 thru 5/8-18 to 450°F.

---



**LH8099**  
REDUCED DOUBLE HEX, HIGH  
TENSILE, CAPTIVE WASHER  
10-32 thru 3/8-24 to 450°F.  
MS90415

---



**LH6422T**  
DOUBLE HEX, HIGH TENSILE  
(220,000 PSI) Double/Durability®  
10-32 thru 1 1/2-12 to 450°F.

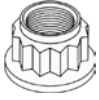
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**LH6426T**  
DOUBLE HEX, HIGH TENSILE  
(260,000 PSI) Double/Durability®  
10-32 thru 1-12 to 450°F.

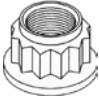
# 010 ESNA WRENCHABLE NUTS

## ESNA WRENCHABLE NUTS



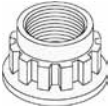
**LH12175T**  
DOUBLE HEX Double/Durability®  
1/4-28 thru 5/8-18 to 800°F.

---



**LH12105T**  
DOUBLE HEX Double/Durability®  
1/4-28 thru 1 1/2-12 to 1200°F.

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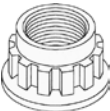
**LH10718**  
SPLINE DRIVE, SELF-LOCKING,  
FLANGED (180,000 PSI )  
10-32 thru 1 1/2-12 to 450°F.  
MS21133

---



**LH10722**  
SPLINE DRIVE, SELF-LOCKING,  
FLANGED (220,000 PSI)  
10-32 thru 1 1/2-12 to 450°F.  
MS21084

---



**LH10726**  
SPLINE DRIVE, SELF-LOCKING,  
FLANGED (260,000 PSI)  
10-32 thru 1-12 to 450°F.  
MS21085

---



**LH11860**  
SPLINE DRIVE, SELF-LOCKING,  
FLANGED (180,000 PSI)  
10-32 thru 1 1/2-12 to 450°F.  
MS14156



**LH11995**  
SPLINE DRIVE, SELF-LOCKING,  
FLANGED (220,000 PSI)  
10-32 thru 1 1/2-12 to 450°F.  
MS14164

---



**LH11922**  
SPLINE DRIVE, SELF-LOCKING,  
SHEAR  
10-32 thru 1 1/2-12 to 450°F.  
MIL-N-8985/2

---



**LH11926**  
SPLINE DRIVE, SELF-LOCKING,  
SHEAR  
1/4-28 thru 1-12 to 450°F.

## 012 ESNA ANCHOR NUTS

### ESNA ANCHOR NUTS



#### NA1

ANCHOR, TWO LUG, NYLON INSERT

4-40 thru 5/8-18 to 250°F.

MS21078, NAS1023, AN366

---



#### NA1K3, NA5K3, NA17K3

ANCHOR, HIGH METAL CAP, NYLON  
INSERT

6/32 thru 1/4-28 to 250°F.

---



#### NKA1, NKA5, NKA17

ANCHOR, NYLON CAP

6-32 thru 5/16-24 to 250°F.

---



#### NA401

ANCHOR, TWO LUG, FLOATING,  
NARROW

6-32 thru 1/2-20 to 250°F.

MS21077, NAS1031

---



#### NAJ401, NAJ2674

ANCHOR, TWO LUG, FLOATING,  
NARROW, HIGH STRENGTH  
ALUMINUM

6-32 thru 1/4-28 to 250°F.

NAS1031

---



#### NA21

ANCHOR, TWO LUG, FLOATING,  
NYLON INSERT

6-32 thru 7/16-20 to 250°F.



**F9421, F19421**  
ANCHOR, TWO LUG, FLOATING,  
C'BORED, REPLACEABLE NUT  
10-32 thru 5/16-24 to 450°F.

---



**F18421L**  
ANCHOR, TWO LUG, FLOATING,  
C'BORED, REPLACEABLE NUT  
10-32 thru 5/16-24 to 450°F.

---



**F18425L**  
ANCHOR, CORNER, FLOATING,  
C'BORED, REPLACEABLE NUT  
10-32 thru 5/16-24 to 450°F  
and 800°F.

---



**F19425**  
ANCHOR, CORNER, FLOATING,  
C'BORED, REPLACEABLE NUT  
10-32 thru 5/16-24 to 450°F.

---



**A6293, F11885**  
ANCHOR, FLOATING,  
SPRING LOADED  
10-32 and 1/4-28 to 450°F.

---



**A6792, F11886**  
ANCHOR, FLOATING, SPRING  
LOADED  
10-32 to 450°F.

## 014 ESNA ANCHOR NUTS

### ESNA ANCHOR NUTS



**VF12502**  
ANCHOR, TWO LUG, FLOATING,  
REPLACEABLE NUT, VESPEL Insert  
10-32 thru 5/16-24 to 450°F.  
MS14179

---



**VA12502**  
REPLACEMENT NUT, VESPEL Insert  
FOR PART VF12502  
10-32 thru 5/16-24 to 450°F.  
MS14180

---



**LHA3022**  
ANCHOR, TWO LUG,  
SELF-ALIGNING  
10-32 thru 3/8-24 to 450°F.

---



**A2502**  
ANCHOR, FLOATING, TWO LUG,  
CAPPED, BASE SEAL  
8/32 thru 5/16-24 to 250°F and  
450°F.

---



**A2506, A4506**  
ANCHOR, CAPPED, FLOATING, BASE  
SEAL, MINIATURE  
6-32 thru 1/4-28 to 450°F.

---



**LHA3575**  
ANCHOR, CORNER, FLOATING,  
REDUCED RIVET SPACING  
10-32 to 450°F.



**NA5**

ANCHOR, CORNER, NYLON INSERT

6-32 thru 5/8-18 to 250°F.

MS21081, NAS1027

---



**LHTA525**

ANCHOR, CORNER, FLOATING,

C'BORED, LOW HEIGHT

10-32 and 1/4-28 to 450°F.

---



**NA17A**

ANCHOR, ONE LUG, TWO RIVET

HOLES

6-32 thru 5/16-24 to 250°F.

MS21080, NAS1025

---



**F9427**

ANCHOR, FLOATING, ONE LUG,

C'BORED, REPLACEABLE NUT

10-32 thru 5/16-24 to 450°F.

---



**F19427**

ANCHOR, FLOATING, ONE LUG, DEEP

C'BORED, REPLACEABLE NUT

10-32 thru 5/16-24 to 450°F.

---



**F18427L**

ANCHOR, FLOATING, ONE LUG,

C'BORED, REPLACEABLE NUT

10-32 thru 5/16-24 to 450°F.

## 016 ESNA ANCHOR NUTS

### ESNA ANCHOR NUTS



**TA2507**  
ANCHOR, FLOATING, CORNER,  
CAPPED, BASE SEAL  
10-32 thru 5/16-24 to 250°F.

---



**LHA4972**  
ANCHOR, CLIP-ON, FLOATING  
6-32 thru 10-32 to 450°F.

---



**NA7**  
ANCHOR, RIGHT ANGLE, BRACKET  
6-32 thru 10-32 to 250°F.  
AN256

---



**LHA71**  
ANCHOR, RIGHT ANGLE, BRACKET  
8-32 and 10-32 to 450°F.

---



**A27M**  
ANCHOR, RIGHT ANGLE, FLOATING,  
MINIATURE  
4-40 to 250°F.

---



**NA27**  
ANCHOR, RIGHT ANGLE, FLOATING  
6-32 thru 5/16-24 to 250°F.  
NAS1033





**LHA27M, LHA27M-2860**  
ANCHOR, RIGHT ANGLE, FLOATING,  
MINIATURE  
4-40 and 6-32 to 450°F. and 800°F.

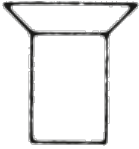


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**LHA227, LHA228**  
ANCHOR, RIGHT ANGLE, FLOATING  
4-40 and 6-32 to 450°F. and 800°F.

# 018 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



**NAS 1**  
100° Countersunk Rivet  
SUPERSEDED BY AN 426



**NAS 2**  
Lubrication Fittings  
INACTIVE FOR NEW DESIGN -  
USE AN 944



**NAS 4-5**  
Rod End  
Alloy Steel, Steel



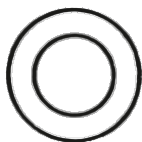
**NAS 12**  
Screws, Captive  
Al Alloy  
INACTIVE FOR DESIGN



**NAS 42-43**  
Spacer, Rivet; Screw and Bolt  
Al Alloy, Alloy Steel, Steel



**NAS 50-51**  
Rings-Internal, External Retaining  
Steel, Beryllium Copper



**NAS 70**  
Washer, Flat  
Alclad, Steel, CRES. Steel, Brass,  
Vulc. Fibre Phenolic

---



**NAS 75-77**  
Bushing, Plain and Flanged, Press Fit  
Steel  
Al Bronze

---



**NAS 91-93**  
Rod Assembly,  
Adjustable Clevis Ends  
Steel  
AN 486, NAS 94, AN 316  
INACTIVE FOR DESIGN

---



**NAS 98-100**  
Rod Assembly,  
Adjustable Clevis Ends  
Steel  
AN 486, NAS 101-2, AN 316

---



**NAS 172-176**  
Bolt, Internal Wrenching  
Alloy Steel  
3A Fit

---



**NAS 185**  
Spacer, Split Screw and Bolt  
Steel, Alclad

# 020 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



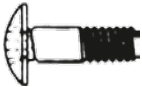
**NAS 192**  
Post, Binding Terminal Board  
Steel

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**NAS 200-203**  
Round Head and 100° Countersunk  
Machine Screws  
Phillips Recessed,  
Frearson Recessed  
Steel

---



**NAS 220-227**  
Brazier Head Machine Screw  
Al Alloy, Alloy Steel, Mang. Bronze,  
CRES. Steel (A-286)

---



**NAS 228-235**  
Brazier Head Machine Screw  
Al Alloy, Bronze, Alloy Steel  
Frearson Recessed  
INACTIVE FOR DESIGN  
SEE NAS 220-224, NAS 623

---



**NAS 333-340**  
100° Close Tolerance Bolt, High Strength  
Drilled and Undrilled  
Steel, Available in Ti Alloy 3A Fit  
INACTIVE FOR DESIGN - HEAD  
MARKING: NAS Part No. and Δ

---



**NAS 354-362**  
Control Rod, Tube Assembly  
Steel, Al Alloy



**NAS 382-383**  
Bushing-Pulley, Bearing  
Steel, Phenolic

---



**NAS 384-389**  
100° Oval Head  
82° Oval Head  
Phillips Recessed  
Steel

---



**NAS 424**  
Coupling, Tube  
Steel, Al Alloy

---



**NAS 427**  
Pin, Pulley Guard  
Steel, Al Alloy

---



**NAS 428**  
Bolt, Adjusting Crowned, Hexagon  
Head  
Alloy Steel  
3A Fit

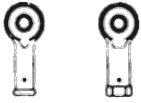
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**NAS 429-430**  
Bearing-Sintered, Plain  
Sintered Metal, Copper Base,  
Iron Base

## 022 NATIONAL AEROSPACE STANDARD

### NATIONAL AEROSPACE STANDARD



**NAS 431-432**  
Bearing-Ball, Rod End Type  
Steel, CRES. Steel  
INACTIVE FOR DESIGN

---



**NAS 434-435**  
Clamp, Loop Type, Sheet Metal Nut  
Al Alloy, Steel  
INACTIVE FOR DESIGN

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**NAS 436-437**  
Clamp-Harness Wire Bundle  
Steel  
INACTIVE FOR DESIGN

---



**NAS 442**  
Latch, Flush Type  
CRES. Steel  
(Also Monel)

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**NAS 443**  
Nut, Self-Locking Internal Wrenching  
Steel

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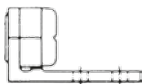


**NAS 444-445**  
Nut, Double Lug, Anchor Type; Offset  
Steel  
CRES. Steel



**NAS 446**  
Nut, Flat Type  
Steel  
USE AN530 SCREW

---



**NAS 447-448**  
Plate Nut, Self-Locking  
Steel  
Al Alloy  
INACTIVE FOR DESIGN

---



**NAS 449**  
Nut, Anchor Type  
Steel  
CRES. Steel  
INACTIVE FOR DESIGN

---



**NAS 450**  
Nut Plate, Self-Locking  
Steel  
Al Alloy  
INACTIVE FOR DESIGN

---



**NAS 451**  
Plug, Button  
Steel  
Brass  
INACTIVE FOR DESIGN

---



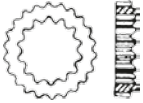
**NAS 452-453**  
Rivnut-100° CTSK. Head; Flat Head  
See Spec.  
INACTIVE FOR DESIGN

**024 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



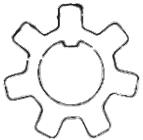
**NAS 454-455**  
Rivet, Blind  
Al Alloy  
INACTIVE FOR DESIGN

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**NAS 456-457**  
Ring Locking and Sleeve  
Steel  
INACTIVE FOR DESIGN

---



**NAS 460**  
Washer, Tap Type  
Steel

---



**NAS 463**  
Shim, Anchor Nut, Plain  
Steel  
CRES. Steel  
Al Alloy

---



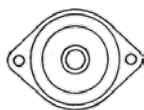
**NAS 464**  
Bolt, Shear Close Tolerance  
Steel  
3A Fit

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**NAS 487-489**  
Nut-Instrument Mount ; « J » Type ;  
Latching Type  
Phos. Bronze, Brass, Steel  
INACTIVE FOR DESIGN





**NAS 490-491**  
Shock Mount  
Steel, Al Alloy, Monel  
AN-1-16  
INACTIVE FOR DESIGN

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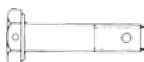
**NAS 492-493**  
Stud-Trimount ; Stud  
Steel  
Brass  
INACTIVE FOR DESIGN

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**NAS 500**  
Shim-Anchor Nut, CTSK.  
Steel  
CRES. Steel  
Al Alloy

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**NAS 501**  
Bolt, Hex Head Drilled and Undrilled  
CRES. Steel  
3A Fit  
Dimensions equivalent to AN3-20

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**NAS 508**  
Rivet, Universal Head  
Monel  
INACTIVE FOR DESIGN—SEE MS20615

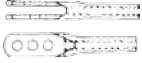
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**NAS 509**  
Nut, Jam Drilled  
Steel  
Available in CRES.

# 026 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



**NAS 510-511**  
Link Assembly, Cable Take-Up  
Steel  
Available in CRES.

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**NAS 513**  
Washer, Rod End Locking  
Steel

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**NAS 514**  
100° Flat Head Full Threaded  
Machine Screw  
Alloy Steel

---



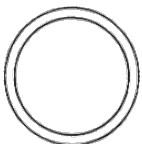
**NAS 517**  
100° Close Tolerance Machine Screw  
Stloy Steel  
Available in Ti Alloy

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**NAS 534-536**  
Ring Flexible; Washer; Adapter  
Al Alloy  
Phenolic

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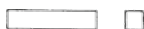


**NAS 549**  
Washer, Flat  
Phenolic  
Optional Fittings NAS 1236-NAS  
1240



**NAS 557**  
Grommet Split  
Nylon

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**NAS 558-559**  
Key, Square; Lock-Rod End  
Steel  
Alloy Steel

---



**NAS 560**  
100° Structural Machine Screw, High  
Temperature Non-Magnetic  
CRES. Steel, AMS5735 (A-286)  
Disaloy, Inconel "X"  
2° & 3° Fit

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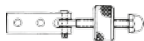
**NAS 561**  
Pins-Spring  
Heavy Duty  
CRES. Steel  
Steel

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**NAS 563-572**  
Bolt, Full Thread Indented Head  
Drilled Head  
Alloy Steel  
3A Fit

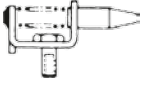
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**NAS 573**  
Clamp Assembly Electronic  
Equipment  
Al Alloy  
CRES. Steel

# 028 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



### NAS 574

Pin, Rear Mounting Electronic  
Equipment  
CRES. Steel, Al Clad, Steel  
Attaching Bolt  
AN3-4A

---



### NAS 583-590

Bolt 100° Head  
„Hi-Torque“, Close Tolerance 160,000  
PSI  
Steel  
3A Fit

---



### NAS 600-606

Pan Head Machine Screw, Aircraft—  
Phillips Recessed  
Alloy Steel  
3A Fit

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### NAS 607

Pin, Headless Dowel  
Steel  
Available in CRES.

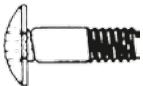
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### NAS 608-609

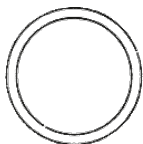
Screw, Hex Socket Cap; Plain and  
Self Locking—Drilled Head  
1936 Series  
Steel, CRES. Steel, Alloy Steel  
3A Fit

---



### NAS 610-616

Pan Head Machine Screw  
Alloy Steel  
**2A & 3A Fit**  
INACTIVE FOR DESIGN -  
SEE NAS 600-606



**NAS 620**  
Washer Flat Reduced O.D.  
Steel  
Al Alloy  
Brass  
CRES. Steel

---



**NAS 622**  
Hook Support  
Electronic Equip. Clamp  
Steel  
CRES. Steel

---



**NAS 623**  
Pan Head Machine Screw, Short  
Thread  
160,000 PSI  
Phillips Recess  
Alloy Steel,

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**NAS 624-644**  
Bolt 12 Pt. External Wrenching  
180,000 PSI  
Alloy Steel

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**NAS 645-651**  
Fork and Eye Turn Buckles;  
Barrel, Terminal, Turnbuckles, Cable  
and Clip, Locking  
Steel, CRES. Steel

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**NAS 653-658**  
Hexagon Head Bolt, Close Tolerance  
Drilled Shank Optional  
Ti Alloy per \*NAS 621  
3A Fit  
\*4Al-4Mn and 6Al-4V

**030 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



**NAS 662**

100° Flat Head Machine Screw;  
Regular and Self-Locking  
Steel, CRES. Steel, Bras  
2A Fit

---



**NAS 663-668**

100° Flat Head Bolt, Close Tolerance  
Ti Alloy per \*NAS 621  
3A Fit  
\*4Al-4Mn and 6Al-4V

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**NAS 669-670**

Ring, Retainer  
Steel  
Beryllium  
Copper

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**NAS 671**

Nut, Plain Hexagon—Small Pattern  
Steel  
CRES. Steel  
Brass  
2B Fit

---



**NAS 673-678**

Hexagon Head Bolt, Close Tolerance  
Drilled Head or Drilled Shank  
Ti Alloy per \*NAS 621  
3A Fit  
\*4Al-4Mn and 6Al-4V

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**NAS 680**

Self-locking Plate Nut  
Two Lug



**NAS 681**  
Superseded by  
MS 21049 thru MS 21050



**NAS 682**  
Self-locking Plate Nut  
One Lug

**NAS 683**  
Superseded by  
MS 21053 thru MS 21054



**NAS 684**  
Self-locking Plate Nut  
Corner

**NAS 685**  
Superseded by 100° CSK  
MS 21057 thru MS 21058



**NAS 686**  
Superseded by  
MS 21059 thru MS 21060



**NAS 687**  
Superseded by  
MS 21061 thru MS 21062



**NAS 696**  
Self-locking Plate Nut  
Miniature-One Lug

# 032 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



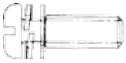
**NAS 697**  
Self-locking Plate Nut  
Miniature - Two Lug

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**NAS 698**  
Self-locking Plate Nut  
Miniature - Corner

---



**NAS 720**  
Pan Head Screw; Assembled Lock  
Washer and Flat washer; Slotted  
Steel, Brass, CRES. Steel  
2A Fit

---



**NAS 721-725**  
Miniature Screws Slotted  
CRES. Steel, Brass, Nickel Silver

---



**NAS 1003 thru NAS 1010**  
Hex Head Bolt A286 CRES

**NAS 1012 thru NAS 1020**  
Hex Head Bolt A286 CRES

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**NAS 1021 and NAS 1022**  
Superseded by  
MS 21042 thru MS 21043 and MS  
21045 thru MS 21046 and MS  
21083





**NAS 1023**  
Self-locking Plate Nut,  
Two Lug

**NAS 1024**  
Self-locking Plate Nut, Two Lug,  
100° CSK



**NAS 1025**  
Self-locking Plate Nut,  
One Lug

**NAS 1026**  
Self-Locking Plate Nut,  
One-Lug, 100° CSK



**NAS 1027**  
Self-locking Plate Nut,  
Corner

**NAS 1028**  
Self-locking Plate Nut,  
Corner, 100° CSK



**NAS 1031**  
Self-locking Plate Nut,  
Floating - Two Lug



**NAS 1032**  
Self locking Plate Nut,  
Floating - One Lug



**NAS 1033**  
Self-locking Plate Nut,  
Floating - Right Angle

**034 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



**NAS 1067**  
Self-locking Plate Nut,  
Miniature - Modified Base

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**NAS 1068**  
Self-locking Plate Nut,  
Floating Miniature - Two Lug

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**NAS 1081**  
Set Screw, self-Locking Hex  
Socket;  
250°F  
Alloy Steel, CRES. Steel  
3A Fit

---



**NAS 1083-1088**  
Bolt 100° Flat Head,  
Close Tolerance

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**NAS 1096**  
Screw-Hex Head, Recessed  
Alloy Steel

---



**NAS 1097**  
Rivet-Solid  
100° Flush Shear  
Al Alloy



**NAS 1098**  
Nut, Tube Fitting  
Aluminium  
Steel  
CRES. Steel

---



**NAS 1100, NAS 1100E, NAS 1100V**  
Pan Head Bolt, Offset Cruciform  
Recess  
Alloy Steel and A286

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**NAS 1101, NAS 1101E, NAS 1101V**  
Flat Fillister Head Screw, Offset  
Cruciform Recess  
Alloy Steel and A286

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**NAS 1102, NAS 1102E, NAS 1102V**  
100° Flush Head Screw, Offset  
Cruciform Recess  
Alloy Steel and A286

---



**NAS 1103-1120**  
Bolt, Hex Head Close Tolerance  
160,000 psi  
Drilled Shank / Undrilled  
Alloy Steel  
3A Fit

---



**NAS 1121 thru NAS 1128,**  
**NAS 1121 E thru NAS 1128E,**  
**NAS 1121V thru NAS 1128V**  
Flat Fillister Close Tolerance,  
Offset Crusiform Recess,  
Alloy Steel and A286

**036 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



**NAS 1131 thru NAS 1138**  
**NAS 1131E thru NAS 1138E**  
**NAS 1131V thru NAS 1138V**  
Pan Head Close Tolerance,  
Offset Cruciform Recess  
Alloy Steel and A286

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**NAS 1141 thru NAS 1148**  
**NAS 1141E thru NAS 1148E**  
**NAS 1141V thru NAS 1148V**  
Brazier Head Bolt  
Close Tolerance,  
Offset Cruciform Recess

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**NAS 1151 thru NAS 1158**  
**NAS 1151E thru NAS 1158E**  
**NAS 1151V thru NAS 1158V**  
100° Flush Head Bolt,  
Close Tolerance, Offset Cruciform  
Recess, Alloy Steel and A286

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**NAS 1161-1168**  
Bolt, Self-Locking Torq-Set<sup>®</sup>  
Alloy Steel  
Available in CRES. (A-286)  
3A Fit

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**NAS 1171 thru NAS 1178**  
**NAS 1171E thru NAS 1178E**  
**NAS 1171V thru NAS 1178V**  
Pan Head Bolt,  
Self-locking  
Offset Cruciform Recess

---



**NAS 1181 thru NAS 1188**  
**NAS 1181E thru NAS 1188E**  
**NAS 1181V thru NAS 1188V**  
Flat Fillister Head Bolt,  
Self-locking Offset Cruciform  
Recess Alloy Steel and A 287



**NAS 1189, NAS 1189 E**

100° Flush Head Bolts,  
Self-locking,  
Cruciform and  
Offset Cruciform Recess,  
Alloy Steel and A 286

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**NAS 1190, NAS 1190E**

Pan Head Screw, Self-locking  
Cruciform and Offset Cruciform  
Recess, Alloy Steel and A286

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**NAS 1202-1210**

Bolt, 100° Close Tolerance  
160,000 PSI  
Drilled and Undrilled Shank  
Alloy Steel  
3A Fit

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**NAS 1211-1213**

Fitting, Tie Down Strap End; Strap  
Steel  
Al Alloy  
Cotton  
Nylon

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**NAS 1216, NAS 1216E, NAS  
1216V**

Pan Head Screw with Dovetail Slot,  
Alloy Steel, 302 S/S and A286

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**NAS 1217, NAS 1217E, NAS 1217V**

Pan Head Screw, Dovetail Slot,  
Alloy Steel, 302 S/S and A286

**038 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



**NAS 1218, NAS 1218E,  
NAS 1218V**  
Pan Head Screw, Dovetail Slot,  
Alloy Steel, 302 S/S and A286

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**NAS 1219, NAS 1219E,  
NAS 1219V**  
100° Flush Head Screw,  
Dovetail Slot,  
Alloy Steel, 302 S/S and A286

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**NAS 1220, NAS 1220E,  
NAS 1220V**  
100° Flush Head Screw,  
Dovetail Slot,  
Alloy Steel, 302 S/S and A286

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**NAS 1221, NAS 1221E,  
NAS 1221V**  
100° Flush Head Screw,  
Dovetail Slot,  
Alloy Steel, 302 S/S and A286

---



**NAS 1222**  
Insert, Helical Coil, Self-Locking  
CRES. Steel  
INACTIVE FOR DESIGN—SEE MS  
21209

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**NAS 1223 thru NAS 1228  
NAS 1223C thru NAS 1228C**  
Hex Head Bolt, Self-locking,  
Alloy Steel and A286

**NAS 1229 thru NAS 1235**  
Hex Head Bolt, Self-locking  
NAS 1229 thru NAS 1235C  
Alloy Steel and A287



**NAS 1243-1250**  
Bolt, 100° Head "Hi-Torque"  
160,000 PSI  
Steel  
3A Fit

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**NAS 1251**  
Eye Bolt, Swivel  
Steel

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**NAS 1252**  
Washer, Flat  
Al Alloy

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**NAS 1253-1260**  
Bolt, 100° Head "Hi-Torque"  
160,000 PSI  
Steel  
3A Fit

---



**NAS 1261 thru NAS 1265**  
Hex Head, Close Tolerance,  
Short Thread Bolt,  
Titanium Alloy - 6AL - 4V

**NAS 1266 thru NAS 1270**  
Hex Head, Close Tolerance Bolt  
Titanium Alloy - 6AL - 4V

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**NAS 1271 thru NAS 1275**  
12-Point Bolt  
Titanium Alloy - 6AL - 4V

**NAS 1276 thru NAS 1280**  
12-Point Bolt  
Titanium Alloy - 6AL - 4V

**040 NATIONAL AEROSPACE STANDARD**  
**NATIONAL AEROSPACE STANDARD**



**NAS 1292-1296**  
Pin-Threaded, Shear-100° CTSK.  
Alloy Steel, Rene '41  
3A Fit  
Use with NAS 1287 or NAS 1288  
Nut and NAS 1288W Washer

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**NAS 1297-1299**  
Bolt, Shoulder  
Alloy Steel  
3A Fit

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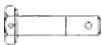
**NAS 1300**  
Thumb Screw  
Drilled/Undrilled  
Steel  
CRES. Steel  
2A Fit

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**NAS 1301**  
Screw, Pan Head, Assembled  
Washer  
Phillips Recess  
Steel, Brass, CRES. Steel  
2A Fit

---



**NAS 1303-1320**  
Bolt, Hex Head Close Tolerance  
160,00 PSI  
Drilled/Undrilled  
Alloy Steel  
3A Fit

---



**NAS 1322 thru NAS 1326**  
Threaded Shear Pin, Protruding  
Head





**NAS 1351-1352**  
Socket Cap Screw-Hex  
1960 Series  
Drilled/Undrilled  
Alloy Steel, CRES. Steel  
3A Fit

---



**NAS 1382-1385**  
Fitting, Tie Down, Strap End,  
trap  
Assemble  
Steel, Zinc Alloy, Cotter, Nylon

---



**NAS 1386**  
Eyelet, Electrical  
Brass, Copper (Gold/Cad. Plated)

---



**NAS 1393**  
Screw, 82° Flat Head "Torq-Set®"  
Alloy Steel, CRES. Steel  
3A Fit

---



**NAS 1394-1395**  
Insert-Threaded Metal, Lt. Wght.  
Regular and Self-locking  
Steel, CRES. Steel  
CRES. (A-286)  
3B/3A Fit

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**NAS 1397**  
Clamp-Loop  
Nylon

# 042 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



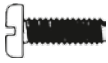
**NAS 1398-1400**  
Rivets-Blind  
Al Alloy, Monel, CRES. (A-286)

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**NAS 1401**  
Washer, Radius  
Al Alloy  
CRES. Steel  
Steel

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**NAS 1402-1406**  
Pan Head Aircraft Screw  
Phillips Recess 160,000 PSI  
Alloy Steel  
2A Fit

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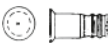
**NAS 1407**  
Pin-Spring, Coiled  
Steel, CRES. Steel

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**NAS 1408-1409**  
Nut, Self-Locking  
Steel, CRES. Steel  
2B Fit

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**NAS 1414-1422**  
**NAS 1424-1432**  
Lockbolt-Shear  
100° Head, Flat Head  
Alloy Steel



**NAS 1436-1442**  
**NAS 1446-1452**  
Lockbolt-Shear  
100° Head, Protruding Head  
Alloy Steel

---



**NAS 1463-1464**  
Clip, Spring  
Steel, Beryllium Copper

---



**NAS 1473**  
Nut, Cap, Self-Sealing, Self-  
Locking,  
Two Lug Floating, Plate  
Steel, CRES. Steel  
3B Fit

---



**NAS 1493**  
Lock Nut Bearing, Retaining  
Steel

---



**NAS 1496-1502**  
Lock Bolt-Protruding Head  
Alloy Steel

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**NAS 1503-1510**  
Bolt, 100° Head "Hi-Torque"  
Alloy Steel  
3A Fit

# 044 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



### NAS 1553

Knobs, Hand

Alloy Steel, Al Alloy, Available in  
CRES.



### NAS 1578, NAS 1578C,

### NAS 1578V

Bolt, Shear, Pan Head

1200°F, Dovetail Slot and Offset  
Cruciform Recess



### NAS 1579, NAS 1579C,

### NAS 1579V

Screw, Pan Head, Full Threaded,

1200°F, Dovetail Slot and Offset  
Cruciform Recess



### NAS 1580, NAS 1580C,

### NAS 1580V

Bolt, Tension, Flush Head,

1200°F, Dovetail and Offset  
Cruciform Recess



### NAS 1581F, NAS 1581C,

### NAS 1581K

Bolt, Shear,

Reduced 100° Flush Head, 1200°F,  
Offset Cruciform Recess



### NAS 1582, 1582C, NAS 1582V

Screw, Flush Head, Full Threaded,

1200°F, Dovetail Slot and Offset  
Cruciform Recess



**NAS 1583-1585**

Pin, Hi-Shear 1200°F; Collar, 100°

CTSK.

Inconel "X", per AMS 5667

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**NAS 1586**

Bolt, 12 Pt. External Wrenching,

1200°F; Drilled/Undrilled

CRES.(U-212), Per NAS 1597,

Cond.F

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**NAS 1588**

Bolt, Shear Hex Head 1200°F

CRES.(U-212), Per NAS 1597,

Cond.F

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**NAS 1593-1596**

Packing "O" Ring Preformed

Syn. Rubber

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**NAS 1603-1610**

Bolt, 100° Head Close Tolerance

160,000 PSI

Alloy Steel

3A Fit

---



**NAS 1611-1613**

Packing "O" Ring Preformed

Syn. Rubber

# 046 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



**NAS 1620-1628**  
**NAS 1630-1634**  
Screw-Torq-Set®, 100° Flat Head  
Alloy Steel, CRES. (A-286)  
3A Fit

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**NAS 1635**  
Screw-Pan Head Phillips Recess  
Regular and Self-Locking  
CRES. Steel (Non-Mag.)  
2A Fit

---



**NAS 1703-1710**  
Bolt, 100° Head Close Tolerance  
160,000 PSI  
Steel  
3A Fit

---



**NAS 1724D, NAS 1724V**  
Bolt, Taper Shank, Shear,  
100° Flush Head

**NAS 1725D, NAS 1725V**  
Bolt, Taper Shank, Shear,  
100° Flush Head, Oversize

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**NAS 1728D, NAS 1728V**  
Bolt, Taper Shank, Shear  
Protruding Head

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**NAS 1729D, NAS 1729V**  
Bolt, Taper Shank, Shear  
Protruding Head, Oversize



**NAS 1731**  
Nut, Self-locking Blind  
Serrated Head, CRES

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**NAS 1732**  
Nut, Self-locking, Blind, Closed-  
End  
Serrated Head, CRES

---



**NAS 1734**  
Nut, Self-locking, Blind  
Elliptical Head, CRES

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**NAS 1735**  
Nut, Self-locking, Blind, Closed  
End,  
Elliptical Head, CRES

---



**NAS 1757**  
Nut, Self-locking, Hexagon, Low  
Height  
Alloy Steel, 450°F

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**NAS 1758**  
Nut, Self-locking, Double Hexa-  
gon,  
Extended Washer, Alloy Steel,  
450°F

# 048 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



### NAS 1759

Nut, Self-locking, Double Hexa-  
gon, Shear  
450°D, Steel

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### NAS 1765

Nut, Self-locking, Plate, Two Lug,  
Floating, Self-Aligning, Steel  
A-286

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### NAS 1766

Nut, Self-locking, Plate, Corner  
Counterbored, Floating  
Steel, A-286

---



### NAS 1767, NAS 1767C, NAS 1767V

Bolt, 100° Reduced Flush Head,  
Dovetail Slot Recess

---



### NAS 1770

Nut, Self-locking, Plate Two Lug  
Low Height, Counterbored, 160  
KSI,  
Steel, A-286

---



### NAS 1771

Nut, Self-locking, Plate, One Lug  
Low Height, Counterbored, 160  
KSI,  
Steel, A286





**NAS 1772**

Nut, Self-locking, Plate, Corner  
Low Height, Counterbored, 160  
KSI,  
Steel, A-286

---



**NAS 1773**

Nut, Self-locking Plate, Two Lug,  
Low Height, Counterbored  
Floating,  
Steel, A-286, 160 KSI

---



**NAS 1785**

Bolt, Tension, Double Hexagon,  
220 KSI, 900°F

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**NAS 1790, NAS 1790C,  
NAS 1790V**

Bolt, 100° Flush Head, Shear,  
Dovetail Slot Recess

---



**NAS 1795**

Retaining Clip - Replaceable  
Nut Plate

---



**NAS 1803**

Nut, Self-locking, Plate, Two Lug  
Floating, Spring Loaded, Steel

# 050 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



### NAS 1804

Nut, Self-locking, Double Hexagon,  
Extended Washer, Alloy Steel

### NAS 1805

Nut, Self-locking, Double Hexagon,  
Extended Washer, CRES



### NAS 1806-1816

### NAS 1906-1916

Rivet, Hi-Shear  
Ti Alloy per NAS621



### NAS 1870

Nut, Self-locking, Plate, Two Lug,  
Floating, Deep C'bores, Steel,  
A-286



### NAS 1953 thru NAS 1958

### NAS 1953C thru NAS 1958C

Bolt Shear Hex Head,  
Alloy Steel, Titanium, A-286

### NAS 1959 thru NAS 1970

### NAS 1959C thru NAS 1970C

Bolt Shear Hex Head,  
Alloy Steel, Titanium, A-286



### NAS 1972 thru NAS 1980

### NAS 1972C thru NAS 1980C

Bolt 100° Flush Head,  
Offset Cruciform and Dovetail  
Slot,  
Alloy Steel, Titanium, A-286



### NAS 1982 thru NAS 1990

### NAS 1982C thru NAS 1990C

Bolt Brazier Head, Offset Cruciform and Dovetail Slot, Alloy Steel,  
Titanium, A-286



**NAS 1992 thru NAS 2000**  
**NAS 1992V thru NAS 2000V**  
Bolt 100° Flush Head, Dovetail  
Slot and Offset Cruciform Recess,  
Alloy Steel, Titanium, A-286

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**NAS 2005 thru NAS 2012**  
Pan Head Lock Bolt, Titanium

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**NAS 2105 thru NAS 2112**  
100° Flush Head Lock Bolt,  
Titanium

**NAS 2115 thru NAS 2122**  
Lock Bolt, Tension 100° Flush  
Head, Standard and Oversize,  
Titanium

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**NAS 2125 thru NAS 2132**  
Lock Bolt, Tension 100° Crown  
Head, Standard and Oversize,  
Titanium

---



**NAS 2205 thru NAS 2212**  
Lock Bolt, Tension Protruding  
Head, Stump Type, Titanium

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**NAS 2306 thru NAS 2312**  
100° Flush Head Lock Bolt,  
Titanium

**NAS 2315 thru NAS 2322**  
Lock Bolt, Tension 100° Head,  
Stump Type, Titanium

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## NATIONAL AEROSPACE STANDARD



**NAS 2325 thru NAS 2332**  
Lock Bolt, Tension 100° Crown  
Head Stump Type, Titanium

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**NAS 2406 thru NAS 2412**  
Flat Head Lock Bolt, Titanium

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**NAS 2506 thru NAS 2512**  
100° Flush Head Lock Bolt,  
Titanium

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**NAS 2605 thru NAS 2612**  
Flat Head Lock Bolt, Titanium

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**NAS 2705 thru NAS 2712**  
100° Flush Head Lock Bolt,  
Titanium

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**NAS 2803-2810**  
Bolt, 100° Head, Torq-Set®  
180,000 PSI  
Alloy Steel  
3A Fit



**NAS 2813 thru NAS 2830**

Bolt, Shear, Hex Head, Alloy Steel,  
Titanium, A-286



**NAS 2842 thru NAS 2850**

Bolt, Brazier HEad, Dovetail Slot  
and Offset Cruciform Recess



**NAS 2852 thru NAS 2860**

Bolt, Shear, 100° Crown, Reduced  
Head, Dovetail Slot and Offset  
Cruciform Recess



**NAS 4104 thru NAS 4116**

100° Flush Head Bolt, Alloy Steel,  
Tri-Slot Recess, Long Thread, Self-  
locking and Non-locking



**NAS 4204 thru NAS 4216**

100° Flush Head Bolt, A-286,  
Tri-Slot Recess, Long Thread, Self-  
locking and Non-locking

**NAS 4304 thru NAS 4316**

100° Flush Head Bolt, Titanium  
Tri-Slot Recess, Long Thread,  
Self-locking and Non-locking



**NAS 4400 thru NAS 4416**

100° Flush Head Bolt, Alloy Steel,  
Tri-Slot Recess, Short Thread,  
Self-locking and Non-locking

**NAS 4500 thru NAS 4516**

100° Flush Head Bolt, A-286  
Tri-Slot Recess, Short Thread,  
Self-locking and Non-locking

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## NATIONAL AEROSPACE STANDARD



**NAS 4600 thru NAS 4616**  
100° Flush Head Bolt, Titanium,  
Tri-Slot Recess, Short Thread,  
Self-locking and Non-locking



**NAS 4703 thru NAS 4716**  
100° Reduced Flush Head Bolt,  
Tri-Slot Recess, Short Thread  
Self-locking and Non-locking



**NAS 4803 thru NAS 4816**  
100° Reduced Flush Head Bolt,  
Tri-Slot Recess, Short Thread,  
A-286, Non-locking

**NAS 4903 thru NAS 4916**  
100° Reduced Flush Head Bolt,  
Tri-Slot Recess, Short Thread,  
Titanium, Non-locking



**NAS 5000 thru NAS 5006**  
Pan Head Bolt, Alloy Steel  
Tri-Slot Recess, Short Thread

**NAS 5100 thru NAS 5106**  
Pan Head Bolt, A-286  
Tri-Slot Recess, Short Thread



**NAS 5200 thru NAS 5206**  
Pan Head Bolt, Titanium,  
Tri-Slot Recess, Short Thread



**NAS 5300 thru NAS 5306**  
Flat Fillister Head Machine  
Screw,  
Tri-Slot Recess, Full Thread,  
Alloy Steel

**NAS 5400 thru NAS 5406**  
Flat Fillister Head Machine Screw,  
Tri-Slot Recess, Full Thread, A-286,  
CRES, Steel



**NAS 5500 thru NAS 5506**  
Flat Fillister Head Machine Screw,  
Tri-Slot Recess, Full Thread,  
Titanium



**NAS 5600 thru NAS 5606**  
100° Flush Head Screw, Alloy  
Steel,  
Tri-Slot Recess, Full Thread,  
Self-locking and Non-locking

**NAS 5700 thru NAS 5706**  
100° Flush Head Screw, A-286  
Tri-Slot Recess, Full Thread,  
Self-locking and Non-locking



**NAS 5800 thru NAS 5806**  
100° Flush Head Screw, Titanium-  
Tri-Slot Recess, Full Thread,  
Self-locking and Non-locking



**NAS 5900 thru NAS 5903**  
Screw, Hex Head, Tri-Slot Recess,  
Alloy Steel, Full Thread

**NAS 6000 thru NAS 6003**  
Hex Head, A-286, Tri-Slot Recess,  
Full Thread, Non-locking



**NAS 6100 thru NAS 6103**  
Hex Head Screw, Titanium, Tri-  
Slot Recess, Full Thread, Non-  
locking



**NAS 6203 thru NAS 6220**  
Hex Head Close Tolerance,  
Short Thread Bolt, Alloy Steel,  
Self-locking and Non-locking

**NAS 6303 thru NAS 6320**  
Hex Head Close Tolerance,  
Short Thread Bolt, A-286, Self-  
locking and Non-locking

# 056 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



**NAS 6403 thru NAS 6408**  
Hex Head Close Tolerance,  
Short Thread Bolt, Titanium, Self-  
locking and Non-locking

**NAS 6409 thru NAS 6420**  
Hex Head Close Tolerance,  
Short Thread Bolt, Titanium, Self-  
locking and Non-locking



**NAS 6500 thru NAS 6506**  
Screw 100° Oval Head, Tri-Slot  
Recess, Self-locking and Non-  
locking, Full Thread Bolt, A-286



**NAS 6603 thru NAS 6620**  
Hex Head Close, Tolerance,  
Long Thread Bolt, Alloy Steel,  
Self-locking and Non-locking

**NAS 6703 thru NAS 6712**  
Hex Head Close Tolerance,  
Long Thread Bolt, Alloy Steel,  
Self-locking and Non-locking



**NAS 6803 thru NAS 6820**  
Hex Head Close Tolerance,  
Long Thread Bolt, Titanium,  
Self-locking and Non-locking



**NAS 6900 thru NAS 6906**  
Screw Pan Head, Tri-Slot Recess,  
Self-locking and Non-locking,  
Full Thread Bolt, A-286



**NAS 7103 thru NAS 7116**  
Bolt, 100° Flush Head, Steel,  
Cruciform Recess, Long Thread,  
Self-locking and Non-locking

**NAS 7203 thru NAS 7216**  
Bolt, 100° Flush Head, A-286  
Cruciform Recess, Long Thread,  
Self-locking and Non-locking





**NAS 7303 thru NAS 7316**

Bolt, 100° Flush Head, Titanium,  
Cruciform Recess, Long Thread,  
Self-locking and Non-locking

**NAS 7400 thru NAS 7416**

Bolt, 100° Flush Head,  
Steel, Cruciform Recess, Short  
Thread, Self-locking and Non-  
locking



**NAS 7500 thru NAS 7516**

Bolt, 100° Flush Head, A-286,  
Cruciform Recess, Short Thread,  
Self-locking and Non-locking

**NAS 7600 thru NAS 7616**

Bolt, 100° Flush Headm Titanium,  
Cruciform Recess, Short Thread,  
Self-locking and Non-locking



**NAS 7700 thru NAS 7706**

Bolt, Pan Head, Alloy Steel,  
Cruciform Recess, Short Thread,  
Self-locking and Non-locking

**NAS 7800 thru NAS 7806**

Bolt, Pan Head, A-286  
Cruciform Recess, Short Thread  
Self-locking and Non-locking



**NAS 7900 thru NAS 7906**

Bolt, Pan Head, Titanium,  
Cruciform Recess, Short Thread,  
Self-locking and Non-locking



**NAS 8000 thru NAS 8006**

Screw, Pan Head, Steel,  
Cruciform Recess, Full Thread,  
Self-locking and Non-locking

**NAS 8100 thru NAS 8106**

Screw, Pan Head, A-286  
Cruciform Recess, Full Thread,  
Self-locking and Non-locking



**NAS 8200 thru NAS 8206**

Screw, Pan Head, Titanium,  
Cruciform Recess, Full Thread  
Self-locking and Non-locking

# 058 NATIONAL AEROSPACE STANDARD

## NATIONAL AEROSPACE STANDARD



**NAS 8302 thru NAS 8304**  
Screw, Machine, Washer Head,  
Full Thread, Cruciform Recess,  
Alloy Steel

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**NAS 8402 thru NAS 8404**  
Screw, Machine, Washer Head,  
Full Thread, Cruciform Recess,  
A-286 CRES

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**NAS 8602 thru NAS 8616**  
Bolt, 100° Reduced Head, Cruci-  
form Recess, Close Toleranace,  
Alloy Steel, Short Thread

**NAS 8702 thru NAS 8716**  
Bolt, 100° Reduced Head, Cruci-  
form Recess, Close Tolerance,  
A-286  
Short Thread

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**NAS 8802 thru NAS 8816**  
Bolt, 100° Reduced Head, Cruci-  
form Recess, Close Tolerance, 6AL-  
4V Titanium Alloy, Short Thread

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**NAS 9001 thru NAS 9006**  
Screw, Hex Head, Offset Cruci-  
form-Ribbed Recess, Full Thread,  
Alloy Steel 160,000 PSI Tensile

**NAS 9101 thru NAS 9106**  
Screw, Hex Head, Offset Cruci-  
form-Ribbed Recess, Full Thread,  
Alloy Steel 160,000 PSI Tensile

---



**NAS 9201 thru NAS 9206**  
Screw, Hex Head, Offset Cruci-  
form-Ribbed Recess, Full Thread,  
Titanium Alloy 6Al-4V 160,000 PSI  
Tensile



**AN 3-20**  
Aircraft Bolts  
Alloy Steel, CRES. Steel, Aluminium  
3A Fit

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**AN 21-36**  
Clevia Bolts  
Alloy Steel, available in CRES.  
Steel  
Add the letter "A" after the dash  
number for undrilled

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**AN 42-49**  
Bolt, Eye  
Alloy Steel, available in CRES.  
Steel

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**AN 73-81**  
Machine Bolt, Aircraft  
Alloy Steel, available in CRES.  
Steel  
INACTIVE FOR DESIGN -  
USE MS 20073/74

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**AN 100**  
Thimble Wire Cable  
Carbon Steel, CRES. Steel, Phos.  
Bronze

---



**AN 115-116**  
Shackles, Wire Rope and Anchor  
Steel, CRES. Steel, Monel

# 060 AIR FORCE/NAVY AERONAUTICAL

## AIR FORCE/NAVY AERONAUTICAL



**AN 130-170**  
Turnbuckles, Assemblies and  
Parts  
Steel

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**AN 173-186**  
Bolt, Aircraft, Close Tolerance  
Alloy Steel, CRES. Steel, Alumi-  
nium  
3A Fit

---



**AN 200-209**  
Bearings, Ball Airframe

---



**AN 210**  
Pulley, Anti-Friction  
INACTIVE FOR DESIGN

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**AN 216**  
Balls, Metal  
Steel, CRES. Steel, Al. Alloy  
3B Fit

---



**AN 220**  
Flight Control Pulley  
Phenolic

**AN 227**

Fasteners, Snap and Curtain  
See Spec.



**AN 250-253**

Hinges. Assemblies & Parts  
Brass, Steel, Aluminium  
ALSO SEE – MS 20001 and MS  
20253



**AN 254**

Screw Thumb Necked  
Steel  
2A Fit  
INACTIVE FOR DESIGN



**AN 256**

Nut, Self – Locking,  
Right Angle Plate  
Al Alloy, Steel  
3B Fit



**AN 257**

Hinge—Continuous  
Alloy Steel, CRES. Steel  
INACTIVE FOR DESIGN –  
USE MS 20257



**AN 286**

Fittings, Lubrication  
See Spec.  
INACTIVE FOR DESIGN –  
USE MS 15006



## 062 AIR FORCE/NAVY AERONAUTICAL

### AIR FORCE/NAVY AERONAUTICAL



**AN 310**  
Nut, Airframe, Castellated  
Steel, CRES. Steel, Al Alloy  
3B Fit

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**AN 315**  
Nut, Plain Airframe  
Steel, CRES. Steel, Al Alloy  
3B Fit  
Add "L" after dash number for Left  
Hand Thread

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**AN 316**  
Nut, Check  
Steel, CRES. Steel, Al. Alloy  
3B Fit  
Add "L" after dash number for Left  
Hand Thread

---



**AN 320**  
Nut, Castle Shar  
Steel, CRES. Steel, Al Alloy  
3B Fit

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**AN 335**  
Nut Plain  
Hex: Non-Structural  
Brass Steel  
2B Fit

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**AN 340**  
Nut, Machine Screw,  
Hexagon Coarse Thread  
Steel, CRES. Steel, Brass, Al Alloy  
2B Fit



**AN 341**  
Nut, Plain Hexagon, Electrical  
Brass  
2B Fit

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**AN 345**  
Nut, Machine Screw,  
Hexagon Fine Thread  
Steel, CRES. Steel, Brass, Al Alloy  
2B Fit

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**AN 350**  
Nut, Wing  
Steel, Brass, available in CRES.  
2B Fit  
INACTIVE FOR DESIGN

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**AN 355**  
Nut, Engine Slotted  
Steel

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**AN 360**  
NUT, Plain Engine  
Steel  
3B Fit  
CANCELLED USE

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**AN 361**  
Nutt-Shel, Self-locking Plate Nut,  
Two Lug

## 064 AIR FORCE/NAVY AERONAUTICAL

### AIR FORCE/NAVY AERONAUTICAL



#### AN 363

Nut, Self – Locking, 550° F  
Steel, CRES. Steel, Monel  
3B Fit  
Available SILVER PLATED

---



#### AN 364

Nut, Self – Locking Thin. 250° F  
Steel, al. Alloy, Monel,  
available in CRES., 3B Fit  
INACTIVE FOR DESIGN –  
USE MS 20365

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#### AN 365

Nut, Self – Locking, 250° F  
Steel, Al Alloy, Monel,  
available in CRES., 3B Fit  
INACTIVE FOR DESIGN –  
USE MS 20364

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#### AN 366

Nutt-Shel, Self-locking, Plate Nut,  
Two Lug, 250°F

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#### AN 373

Nutt-Shel, Self-locking, Plate Nut,  
Two Lug, 250°F

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#### AN380-381

Cotter Pin  
Steel, CRES. Steel  
INACTIVE FOR DESIGN –  
USE MS 24665





**AN 385-386**  
Pin Taper, Plain and Threaded  
Steel, Alloy Steel, CRES. Steel

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**AN 392-406**  
Pins, Flat Head, Clevis  
Steel, available in CRES.  
INACTIVE FOR DESIGN –  
USE MS 20392

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**AN 415-416**  
Pins, Lock, Retaining  
CRES. Steel, Steel

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**AN 420-470**  
Rivets  
Al Alloy, Steel, CRES. Steel,  
Monel, Copper  
INACTIVE FOR NEW DESIGN—  
USE MS 20426,20427,20435,20470

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**AN 450**  
Rivet, Tubular, Oval Head Counter-  
sunk, Copper, Steel, Brass, Aluminu-  
m, Monel, available in CRES.;  
INACTIVE FOR DESIGN -  
USE MS 2450

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**AN 481-486**  
Clevis, Rod End Adjusting  
Steel

# 066 AIR FORCE/NAVY AERONAUTICAL

## AIR FORCE/NAVY AERONAUTICAL



### AN 490

Rod, Threaded, Aircraft  
Steel



### AN 500-501

Machine Screw, Fillister Head  
Drilled; Slotted – Coarse and Fine  
Steel, 2A Fit, Drilled and Undrilled,  
Add "A" before first dash number  
for Drilled Head



### AN 502-503

Machine Screw, Fillister Head  
Drilled;  
Slotted, Coarse and Fine  
Steel  
2A Fit



### AN 504

Round Head  
Tapping Screw, Type "F" Coarse  
and Fine  
Steel, CRES. Steel



### AN 505/510

82° Flat Head Machine Screw,  
Coarse and Fine  
Steel, CRES. Steel, Brass, Al Alloy  
2A Fit



### AN 506

82° Flat Head Tapping Screw,  
Type "F"—Coarse and Fine  
Steel, CRES. Steel



**AN 507**

100° Flat Head Machine Screw  
Coarse and Fine  
Steel, CRES. Steel, Brass, Al. Alloy  
2A Fit

---



**AN 508**

Screw, Round Head, Machine  
(Electrical)  
Brass  
2A Fit

---



**AN 509**

100° Structural Flat Head  
Machine Screw, Coarse and Fine  
Steel, CRES. Steel, Al Alloy, Bronze  
3A Fit

---



**AN 515/520**

Round Head Machine Screw,  
Coarse and Fine  
Steel, CRES. Steel, Brass, Al Alloy  
2A Fit

---



**AN 525**

Washer Head Machine Screw  
Coarse and Fine  
Steel, Al Alloy, available in CRES.  
3A Fit

---



**AN 526**

Truss Head Machine Screw  
Coarse and Fine  
Steel, CRES. Steel, al Alloy  
2A Fit

# 068 AIR FORCE/NAVY AERONAUTICAL

## AIR FORCE/NAVY AERONAUTICAL

Phillips Slotted



### AN 530

Round Head Tapping Screw

Type "B" (z)

Steel, CRES. Steel

Phillips Slotted



### AN 531

82° Flat Head Tapping Screw

Type "B" (z)

Steel, CRES., For Alternate Point

Styles see AN 30



### AN 535

Round Head Drive Screw

Type "U" Point

Steel, available in CRES.

Phillips Slotted



### AN 545

Round Head Wood Screw

Steel, Brass, available in CRES.

Phillips Slotted



### AN 550

82° Flat Head Wood Screw

Steel, Brass, available in CRES.



### AN 560

Square Head Set Screw

Steel, Available in CRES.

2A Fit, Inactive For Design—See

AN565

Hex Socket Spline Slotted



**AN 565**

Set Screw Hexagon and Spline  
Socket Also Slotted  
Alloy Steel, CRES. Steel, 3A Fit

**AN 658-669**

Terminals, Wire Rope and Electrical, Steel, CRES. Steel, Copper  
INACTIVE FOR DESIGN—USE MS  
20658, 20659, 20663, 20664,  
20667, 20668, 21259, 21260



**AN 671-708**

Tie Rods  
Steel, CRES. Steel



**AN 735-742**

Clamps  
Al Alloy, Steel, CRES. Steel,  
Available Styles:  
Loop, Hose, Tube, Plain Support  
AN742—Loop Type



**AN 753**

Splice, Assembly and Tip  
Per Mil-S-6852



**AN 756-849**

Fittings. Aircraft  
Steel, CRES. Steel, Al Alloy



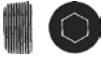
# 070 AIR FORCE/NAVY AERONAUTICAL

## AIR FORCE/NAVY AERONAUTICAL



**AN 905-909**  
Plugs  
Bronze, Steel, Brass

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**AN 932**  
Plug, Pipe, Hexagon Recess

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**AN 944**  
Fittings, Lubrication  
Steel  
INACTIVE FOR DESIGN—  
USE MS 15001/2

---



**AN 950/955**  
Washer, Ball Socket/Ball Seat  
Steel

---



**AN 960-975**  
Washer, Flat  
Aluminium, Al Alloy, Brass, Copper  
Steel, CRES.

---

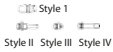


**AN 995**  
Lock Wire, CRES. Steel  
Available in 1LB. & 5 LB. Spools  
INACTIVE FOR DESIGN  
USE MS 20995



**AN 3054-3066**  
Nut, Coupling Conduit  
Al Alloy

---



**AN 3196-3199**  
Fastener, Snapslide  
CRES. Steel

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**AN 6225-6230**  
Packing,  
"O" and "V" Ring  
Al Alloy

---



**AN 6231**  
Scraper, Rod Hydraulic  
See AN-S-60  
INACTIVE FOR DESIGN -  
USE MS 28776

---



**AN 8013**  
Washer, Insulator  
Steel, Al Alloy

---



**AN 101001-101900**  
Bolt Hex Head  
.190 - .750  
Steel  
3A Fit

## 072 AIR FORCE/NAVY AERONAUTICAL

### AIR FORCE/NAVY AERONAUTICAL



Drilled Shank

#### AN 101901-102800

Bolt, Hex Head .190 - .750

Steel

3A Fit

---



Drilled Head  
1 Hole

#### AN 102801-103700

Bolt, Drilled Hex Head .190 - .750

Steel

3A Fit

---



Drilled Head  
6 Hole

#### AN 103701-104600

Bolt, Drilled Hex Head .190 - .750

Steel

3A Fit

---



Drilled Shank

#### AN 104601-105500

Bolt, Hex Head .190 - .750

CRES. Steel

3A Fit

---



Drilled Shank

#### AN 105501-106401

Bolt, Hex Head Drilled Shank

.190 - .750

CRES. Steel

3A Fit

---



Drilled Head  
1 Hole

#### AN 106401-107300

Bolt, Cres. Drilled Hex Head

.190 - .750

CRES. Steel

3A Fit#



**AN 107301-108200**

Bolt, Cres. Drilled Hex Head

.190 - .750

CRES. Steel

3A Fit

Drilled Head, 6 Holes

---



**AN 115401-115600**

Screws, Flat Fillister Head

.190 - .375

Steel

3A Fit

---



**AN 115601-115800**

Screws, Flat Fillister

.190 - .375

Steel

3A Fit

Drilled Shank

---



**AN 115801-116150**

Screws, Flat Fillister

.190 - .375

Steel

3A Fit

Drilled Head

---



**AN 116901-117080**

Screws, Oval Fillister Head

.112 - .164

Steel

2A Fit

---



**AN 121501-121550**

Nut, Plain

Steel

CRES. Steel

3B Fit



## 074 AIR FORCE/NAVY AERONAUTICAL

### AIR FORCE/NAVY AERONAUTICAL



**AN 121551-121600**

Nut, Castle

Steel

CRES. Steel

3B Fit

---



**AN 121601-121925**

Pin, Flat Head Clevis

.125 - .500

Steel

---



**AN 122576-122600**

Washer, Plain

Steel

---



**AN 122676-122775**

Pin, Dowel

Steel

---



**AN 123151-123750**

Rivet, Solid Universal Head and

100°CTSK Head

CRES. Steel, Inconel

---



**AN 123851-124050**

Seal, Packing "O" Ring

Rubber



**AN 125551-125700**

Rivet, Solid  
Universal head  
Steel



**AN 150201-150400**

Pin, Lock  
Steel, Brass  
E1 Marketing




















**AN 150401-150450**

Nut-Hex, Check and Shear  
Slotted  
Steel  
3B fit







# 076 MILITARY STANDARD RETAINING RINGS & LOCKWASHER

## MILITARY STANDARD RETAINING RINGS & LOCKWASHERS

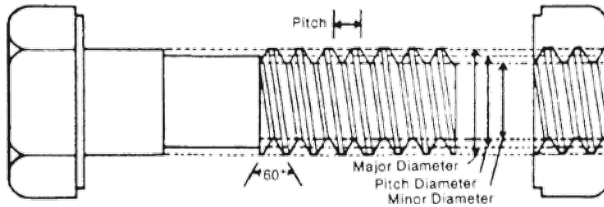
### RETAINING RINGS

Internal Axial Stamped Rings	External Axial Stamped Rings	External Radial Stamped Rings	End Play Take-Up
 Basic MS 16625	 Basic MS 16624	 Basic E Ring MS 16633	 Bowed Internal MS 16629
 Inverted MS 16627	 Inverted MS 16626	 Extra-Grip MS 3215	 Bowed External MS 16628
	 Self-Locking MS 90707	 E Ring Variation	 Bowed E Ring MS 16634
	 Heavy Duty MS 3217	 E Ring Variation	 Beveled Internal MS 16631
		 E Ring Variation	 Beveled External MS 16630
		 C Ring MS 16632	

### LOCKWASHERS

Standard Internal		MS 35333	Maximum locking application. Prevent snagging. Neater appearance.
Standard Heavy Duty Internal		MS 35334	Use with heavy bolts and nuts, heavy machinery or equipment.
Special Internal		MS 35333	If design does not allow standard to be used. Large Diameter covers elongated hole.
Standard External		MS 35335	For Maximum locking force and Torque resistance. Use with round, pan or binding heads large enough to engage all teeth.
Standard Internal-External		MS 45904	Recommended when extra biting teeth are required, especially on soft materials and thin sheet metal.
Countersunk		MS 35336	Use with flat head or oval head screws, in countersunk angles of 82° in external type.

## Terminology and Definitions



- ROLLED THREAD:** Rolled threads are cold formed by squeezing the blank between reciprocating or revolving serrated dies, similar to rolling a pencil between your two hands. This acts to increase the major diameter of the thread over and above the diameter of the unthreaded shank, if any. Rolled threads are both stronger and smoother than cut threads and more economical insofar as the process is faster with no waste of material. Virtually all cold headed fasteners within the Aerospace Industry today have rolled threads.
- CUT THREAD:** A thread produced by removing material from the surface with a form cutting tool. This method keeps the unthreaded portion of the shank equal to the major diameter of the thread.
- PITCH:** The distance from a point on one thread to a corresponding point on the next thread measured parallel to the axis.
- MAJOR DIAMETER:** On a straight thread the diameter of the coaxial cylinder which bounds the crest of an external thread (Bolts and Screws) or the roots of an internal thread (Nuts). Stated in layman terms, the largest diameter of a screw thread.
- MINOR DIAMETERS:** On a straight thread the diameter of the coaxial cylinder which would pass through the roots of an external thread (Bolts & Screws) or the roots of an internal thread (Nuts). Stated in layman terms, the smallest diameter of a screw thread.
- PITCH DIAMETER:** On a straight thread the diameter of the coaxial cylinder the surface of which would pass through the thread profiles at such points as to make the width of the groove equal to one-half of the basic pitch. Approximately half way between the major and minor diameters.
- LEAD:** This is the distance a screw thread advances in one full turn.

## **Common Fastener Materials**

<b>CARBON STEEL:</b> <b>1008, 1010, 1015</b>	Used for machine screws, wood screws, etc., and similar products without critical strength requirements. Can not be heat treated for greater strength. Sometimes called „Mild Steel“. Tensile strength around 54M PSI.
<b>MEDIUM CARBON:</b> <b>1018, 1020, 1022</b>	Used extensively for sheet metal screws and grade 2 Hex Head bright cap screws. Tensile strength around 59M PSI.
<b>HIGH CARBON:</b>	A medium alloy steel. Can be heat treated to 120M PSI and above. Grade 5 or heat treated cap screws are made from this material.
<b>ALLOY STEEL:</b> <b>4037, 4137</b>	Molybdenum alloy steel of 150M PSI and above after heat treating. Used for clevis pins and some screws.
<b>4130, 4340, 8740</b>	Aircraft quality alloy steel. Used extensively in the Aerospace Industry for bolts screws and clevis pins. Tensile strength minimum of 120M PSI.
<b>STAINLESS STEEL:</b>	There are three basic stainless steel groups; 1) MARTENSITIC: Straight chromium hardenable. These steels contain from 12 to 20% chromium, are magnetic and hardenable. May be cold worked with reasonably good results and hot forged with limitations. 2) FERRITIC: Straight chromium, nonhardenable, Are magnetic and not hardenable by heat. Can be cold worked with reasonably good results. Used where the corrosion resistance requirements are not too severe. 3) AUSTENITIC: This is the group with which we are most familiar. Chrome-nickel, non hardenable. This group is generally made up of the 18/8, or the 300-series stainless steels. Contains upward to 8% Nickel, are nonmagnetic, and offer a high degree of corrosion resistance.
<b>302, 304, 305, 321, 347 (Cres)</b>	This is the 18/8 group of stainless steel referred to in group 3: Tensile strength is 80M PSI+ after nominal cold working. Material is nonmagnetic or nearly so. Widely used in Aerospace Fasteners.
<b>CARPENTER 10, ARMCO 18 9 LW</b>	Stainless steel developed to improve the workability of the 18/8 family, qualities which they share in common. Many AN and MS specifications permit its use.
<b>STAINLESS 316</b>	3 High corrosion resistant. This stainless steel has the highest degree of corrosion resistance of all the commonly used stainless alloys and is stronger than the 18/8 family.
<b>A-286</b>	A high strength stainless steel for use in high temperature (to 1300°F) applications.

## Common Fastener Materials

410, 416, 431	Fall in group 1. Magnetic stainless steel of less corrosion resistance than the 300 series. Can be heat treated.
430,430F	Group 2 stainless. General purpose non-hardenable chromium type. The 430F is a free-machining modifications of type 430.
17 4PH	A stainless magnetic steel having a combination of high strength and hardness plus excellent corrosion resistance.
ALUMINUM 2024	A heat treated aluminum alloy wire used for cold headed pins and bolts per Federal Spec. QQ-A-268 and Spec. QQ-Q-225/6C. Has the tensile strength of mild steel with only one-third the weight.
INCONEL	A high nickel content alloy with superior corrosion and heat resistant properties.
BRASS	<p>YELLOW BRASS: Completely non-magnetic and has a strength just slightly more than mild or carbon steel when cold formed. Brass is an alloy of copper and zinc. It cannot be heat treated but gains some strength from cold working as do all copper alloys.</p> <p>NAVAL BRASS: Also called Naval Bronze. A non-ferrous alloy. Widely used for cold formed bolts and nuts. Has much higher corrosion resistance than steel. Like Yellow Brass, cannot be heat treated but gains strength through cold forming.</p>
NICKEL-COPPER ALLOY	A high nickel alloy used for toughness, and immunity to discoloration and elevated temperatures. Used for fasteners but extremely tough and difficult to work.
GREEK ASCOLOY	A stainless, magnetic steel with high strength, hardness and corrosion resistant. Aircraft Quality.

**080 MILITARY STANDARD**  
**MILITARY STANDARD**



**MS 9016-9017**  
Bushing Screw, Slotted  
Steel

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**MS 9020-9021**  
Packing "O" Ring  
Rubber

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**MS 9033-9039**  
Bolt, 12 Point High Temp.  
AMS 5735  
(A-286)

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**MS 9047-9048**  
Pin, Spring  
Steel

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**MS 9058**  
Ring, Back-Up  
AMS 3651

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**MS 9060-9066**  
Bolt, Machine 12 Point  
**Ext. Washer Head**  
High Temp., AMS5735 (A-286)  
EH19 Head Marking





**MS 9068**  
Packing "O" Ring  
Silicone Rubber  
AMS 3304

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**MS 9081**  
Washer, Key Double  
Steel

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**MS 9099-9100**  
Nut, Hex Connection  
Aluminium, CRES. Steel  
E 12 Marking Aluminium  
E10 Marking CRES.

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**MS 9110 thru MS 9113**  
12 Point Bolt, AMS 5731, Extended, Washer Head, Close Tolerance Shank

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**MS 9122-9123**  
Slotted Hex Head Machine Screw  
Steel  
E 11 Head Marking

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**MS 9146 and MS 9152**  
12 Point Bolt - Steel - Cad. Plate

**MS 9157 and MS 9163**  
12 Point Bolt - Steel

## 082 MILITARY STANDARD

### MILITARY STANDARD



**MS 9164**  
Pin, Dowel Oversize  
Steel



**MS 9165-9168**  
Bolt, Brackets  
Steel  
ALSO SEE  
MS 9101-04/MS 9228-31



**MS 9169-9175**  
Bolt, Machine 12 Point Head  
Drilled  
**Steel**  
E 11 Head Marking

**MS 9169 thru MS 9175**  
12 Point Bolt Steel, D.H.



**MS 9177 thru MS 9178**  
12 Point Bolt A-286 - 1200°

**MS 9183 thru MS 9186**  
12 Point Bolt - Steel



**MS 9187 thru MS 9188**  
12 Point Bolt A-286 - 1200° D.H.



**MS 9189 thru MS 9190**  
12 Point Machine Screw, Alloy  
Steel



**MS 9191 and MS 9192**  
12 Point Machine Screw, Alloy  
Steel,  
Drilled Head

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**MS 9200-9201**  
Nut, Plain Hex Connection  
Aluminium, CRES. Steel  
E 12 Aluminium  
EH 5 CRES.

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**MS 9206 thru MS 9223**  
12 Point Screw  
Steel AM 6304  
Diffused Nickel - Cadmium Plated

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**MS 9224**  
Bolt, Machine 12 Point Head  
AMS 5735 (A 286)  
EH 19 A-286 Head Marking

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**MS 9281 thru MS 9291**  
Bolt, Hexagon Head, ASM 6332

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**MS 9292 thru MS 9302**  
Bolt, Hexagon Head, Drilled, 1  
Hole,  
AMS 6332

# 084 MILITARY STANDARD

## MILITARY STANDARD



**MS 9316/9317**  
Screw, Machine Hexagon Head  
**Slotted**  
Steel  
2A Fit, E 37 Head Marking

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**MS 9352-9354**  
Clamp, Loop  
Aluminium

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**MS 9355**  
Packing "O" Ring  
Rubber  
AMS 7272

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**MS 9356-9357**  
Nut, Plain Hexagon  
CRES. Steel  
A-286

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**MS 9358-9359**  
Nut, Castellated Hexagon  
CRES. Steel  
A.286

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**MS 9360**  
Nut, Plain  
Hex, Drilled  
Silver Plated, AMS 5735 (A-286)



**MS 9361-9362**  
Nut, Plain Hexagon  
Check (also Silver Plated)  
CRES. Steel, A-286

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**MS 9363-9364**  
Nut, Slotted Hexagon,  
Shear (also Silver Plated)  
CRES. Steel, A-286

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**MS 9397 thru MS 9402**  
Chamfered Tee Head Bolt,  
ASM6322, Cadmium Plated

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**MS 9403**  
Rivet, Universal Head  
AMS 5737  
(A-286)

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**MS 9432 thru MS 9437**  
Bolt, Tee Head, AMS 5735,  
Chamfered

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**MS 9438 thru MS 9439**  
Screw, Hexagon Head, Drilled,  
1 Hole, AMS 6304

**MS 9440 thru MS 9448**  
Bolt, Machine-Steel AMS 6304,  
Diffused Nickel - Cadmium Plated,  
Hexagon Head, Drilled

## 086 MILITARY STANDARD

### MILITARY STANDARD



**MS 9449 thru MS 9459**  
Screw, Machine-Steel AMS 6304,  
Diffused Nickel - Cadmium Plated,  
Hexagon Head

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**MS 9489 thru MS 9494  
& MS 9496**  
Bolt, Hexagon Head, AMS 5731,  
CRES

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**MS 9500 thru MS 9503  
MS 9505 thru MS 9506, Bolt,**  
Hexagon Head,  
AMS 5731, CRES

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**MS 9516 thru MS 9526**  
Hex Head Machine Screws,  
AMS 6322,  
Cadmium Plated

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**MS 9527 thru MS 9534**  
Hex Head Machine Screw, Drilled  
Head,  
1 Hole, AMS 6332,  
Cadmium Plated

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**MS 9554 thru MS 9561**  
12 Point Bolt, AMS 5731,  
Extended, Washer Head



**MS 9564 thru MS 9568**  
12 Point Bolt, AMS 5731,  
Extended  
Washer Head, Drilled, 4 Holes

**MS 9572 thru MS 9580**  
12 Point Bolt, AMS 5731,  
Extended Washer Head, Drilled 4  
Holes, Silver Plated



**MS 9583 thru MS 9589**  
Bolt, Hexagon Head,  
Drilled, 6 Holes,  
AMS 5731, CRES



**MS 9631, MS 9633, MS 9638**  
Bolt, Hex Head, P.D. Shank,  
Titanium



**MS 9676 thru MS 9679**  
12 Point Bolt, AMS 5731,  
Extended Washer Head,  
Cupwasher, Locked

**MS 9681**  
12 Point Bolt, AMS 6322,  
Extended Washer Head,  
Cupwasher, Locked



**MS 9685 thru MS 9687**  
Bolt, Hexagon Head, Drilled,  
P.D. Shank, AMS 6304



**MS 9696 thru MS 9699**  
12 Point Bolt, AMS 5708,  
Extended  
Washer Head

# 088 MILITARY STANDARD

## MILITARY STANDARD



**MS 9705**  
12 Point Bolt, AMS 5708,  
Extended  
Washer Head, Drilled, 4 Holes

**MS 9712, MS 9714 thru MS 9716**  
12 Point Bolt, AMS 57808,  
Extended Washer Head,  
Drilled, 4 Holes,  
Silver Plated

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**MS 9724**  
12 Point Bolt, AMS 5708,  
Extended Washer Head,  
Full Shank

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**MS 9731 thru MS 9743**  
12 Point Bolt, AMS 5643,  
Extended Washer Head, Drilled,  
P.D. Shank

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**MS 9732 thru MS 9734**  
12 Point Bolt, AMS 5643,  
Extended Washer Head,  
P.D. Shank

**MS 9750 and MS 9751**  
12 Point Bolt, Titanium,  
Extended Washer Head,  
P.D. Shank

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**MS 9759 thru MS 9761**  
12 Point Bolts, Titanium, Exten-  
ded Washer Head, Drilled,  
P.D. Shank

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**MS 9783 thru MS 9786,  
MS 9788 and MS 9790**  
Bolt, Hex Head, 17-4 PH,  
Full Shank



**MS 9796**

Bolt, Hex Head, 17-4 PH,  
Full Shank, Drilled Head



**MS 9805 thru MS 9808**

Bolt, Hex Head, P.D. Shank,  
AMS 5643

**MS 9816 and MS 9821**

Bolt, Hex Head, drilled,  
P.D. Shank,  
AMS 5643



**MS 9885 thru MS 9887, MS 9890**

12 Point Bolt, AMS 5616,  
Extended Washer Head



**MS 9894 and MS 9895**

Bolt, 12 Point, Extended Washer  
Head, Drilled, 4 Holes, AMS 5616



**MS 9914 , MS 9917 and MS 9918**

Bolt, 12 Point, Extended Washer  
Head, P.D. Shank, Steel



**MS 9923 and MS 9924**

Bolt, 12 Point, Extended Washer  
Head, Drilled, 4 Holes, P.D. Shank,  
Steel



# 090 MILITARY STANDARD

## MILITARY STANDARD



### MS 9933

Bolt, 12 Point,  
Extended Washer Head,  
Full Shank, Steel

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### MS 9944 and MS 9947

Bolt, 12 Point, Extended Washer  
Head, Drilled 4 Holes, Full Shank,  
Steel

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### MS 9958 thru MS 9964

Bolt, Hex Head, Drilled, 6 Holes,  
P.D. Shank. Steel

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### MS 14144

Nut, Self-locking, Castellated,  
Light Weight Steel

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### MS 14145

Nut, Self-locking, Castellated,  
Light Weight, Thin Steel

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### MS 14146

Nut, Self-locking, Castellated,  
C' bored, Captive Washer, Steel



**MS 14157**  
Bolt, Tension, Spline Drive,  
Wheel, Steel 180 KSI

**MS 14163**  
Bolt, Tension, Spline, Drive,  
Wheel  
Steel 220 KSI



**MS 14164**  
Bolt, Self-locking, Spline Drive,  
Flanged, Wheel, Steel 220 KSI



**MS 14490**  
Bolt, Wheel, Nickel Alloy 718,  
220 KSI, Ft<sub>u</sub>, 132 KSI, Fs<sub>u</sub>, 450°F,  
External Wrenching, Spline Drive,  
Flanged Head



**MS 14491**  
Nut, Wheel, Self-locking, Flanged,  
Nickel ,Alloy 718, 220 KSI,  
Ft<sub>u</sub>, 50°F  
Spline Drive



**MS 15000-15006**  
Fittings, Lubrication  
Steel, Monel



**MS 16036**  
Belt, Aircraft Safety  
see Mil-B-18461 (Wep)  
Complete Assembly and Individual Parts

## 092 MILITARY STANDARD

### MILITARY STANDARD



#### MS 16107

Jacks, Tip, High Voltage  
See Spec. (Ships)  
Color Coded



#### MS 16108

Jacks, Tip  
Low Voltage  
Bronze, Copper



#### MS 16198

Round Head Wood Screw Slotted  
CRES. Steel

#### MS 16199

Screw Wood Slotted,  
82° Flat  
Copper Sil



#### MS 16200

Pan Head, Screws Machine  
Slotted  
CRES. Steel  
2A Fit



#### MS 16201

Flat Head Bolt, Lag  
Sil Bronze  
Cone Point



#### MS 16202/16209

Square Head Bolt  
Lag Gimlet Point  
CRES. Steel, Sil. Bronze



**MS 16203**  
Nuts, Plain Hexagon Jam and  
Finished  
CRES. Steel,  
2B Fit

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**MS 16205**  
Bolt, Machine Semi-Finished  
Hexagon Head  
Sil Bronze  
2A Fit

**MS 16206**  
Bolt, Machine Hexagon Head  
Reg. Semi-Finished  
Al Alloy  
2A Fit

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**MS 16207**  
Carriage Bolt, Round Head  
Sil. Bronze  
2A Fit

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**MS 16208**  
Hexagon Head Machine Bolt,  
Semi Finished  
CRES. Steel  
2A Fit

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**MS 16209**  
See MS 16202  
See Spec.

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**MS 16210**  
Nut, Plain Hexagon, Machine  
Screw  
CRES. Steel  
2B Fit

# 094 MILITARY STANDARD

## MILITARY STANDARD



**MS 16211**  
Nut, Plain Square  
Sil. Bronze



**MS 16212**  
Washer, Flat  
CRES. Steel  
Sil. Bronze



**MS 16213**  
Washer, Lock External Tooth  
Non-Magnetic  
CRES. Steel  
Phos. Bronze



**MS 16214**  
Washer, Lock, Spring, Split  
CRES. Steel



**MS 16215**  
Screw, Wood Slotted Oval Head  
CRES. Steel (Non-Mag.)



**MS 16216**  
Round Head Wood Screws,  
Slotted  
Sil. Bronze

**MS 16217**  
82° Flat Head Wood Screws,  
Slotted  
CRES. Steel



**MS 16218**  
82° Flat Head Wood Screws,  
Slotted  
Sil. Bronze  
2A Fit

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**MS 16219**  
82° Flat Head Wood Screws,  
Slotted  
CRES. Steel

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**MS 16228**  
Nut, Self-Locking Hexagon, HvY.  
Thin Nylon Insert  
CRES. Steel  
3B Fit

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**MS 16285**  
Nut, Hexagon Semi-Finished,  
Heavy Steel

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**MS 16286**  
Nuts, Hexagon Finished to  
1000°F.  
Steel  
2B Fit

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**MS 16535-16536**  
Rivet, Tubular Oval Head; Coun-  
tersunk Head  
Brass, Al Alloy, Monel, Copper  
Steel, CRES.

# 096 MILITARY STANDARD

## MILITARY STANDARD



**MS 16555**  
Dowel Pin, .0002" over nominal  
size

**MS 16556**  
Dowel Pin, .001" over nominal  
size



**MS 16562**  
Spring Pins  
Steel  
CRES. Steel



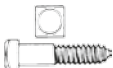
**MS 16593**  
Rivet, Solid 78° Flat Head  
Aluminium



**MS 16600**  
Washer, Flat  
Leather



**MS 16637-16638**  
Shoulder Screw Hexagon Socket  
Alloy Steel  
Available in CRES.  
3A Fit



**MS 16992**  
Bolt, Lag  
Square Head Gimlet Point  
Steel, CRES. Steel, Sil. Bronze





**MS 16994**  
Nut, Plain Knurled  
Brass, CRES. Steel  
2B Fit



**MS 16995 and MS 16996**  
Screw, Cap, Socket  
Head, Hexagon,  
CRES, 1960 series

**MS 16997 and MS 16998**  
Screw, Cap, Socket Head, Hexa-  
gon  
Alloy Steel, Cadmium Plated,  
1960 series



**MS 17121-17123**  
Terminal, Stud Turret  
Brass



**MS 17160**  
Clip, Spring Tension  
Steel  
Beryllium  
Copper



**MS 17825-17826**  
Nut, Self-Locking  
Castellated, 250° F.  
Nylon Insert  
Alloy Steel  
3B Fit



**MS 17828**  
Nut, Self-Locking  
(Nylon Insert)  
250° F, Regular Height  
Monel

**MS 17829-17830**  
Nuts, Self-Locking, Nylon Insert,  
250° F.  
CRES. Steel, Steel, 3B Fit.  
Regular Height

# 098 MILITARY STANDARD

## MILITARY STANDARD



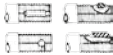
**MS 17974-17975**  
Switch, Moistureproof  
Push-Push Action  
Per MIL-S-6743



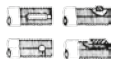
**MS 17984-17990**  
Pin, Quick-Release Assemblies  
Available in Button Handle,  
"T" Handle, "L" Handle, Ring  
Handle  
CRES. Steel, Alloy Steel, Al Alloy



**MS 18063-18064**  
Set Screw, Self-Locking  
Hex Socket (250° F)—  
Per MS 15981  
Alloy Steel, CRES. Steel, 3A Fit  
Cup Point (Nylok®--Long-Lok®)



**MS 18065-18066**  
Set Screw, Self-Locking  
Hex Socket (250° F)—  
Per MS 15981, Alloy Steel, CRES.  
steel, 3A Fit, Flat Point (Nylok®--  
Long-Lok®)



**MS 18067-18068**  
Set Screw, Self-Locking  
Hex Socket (250° F)—  
Per MS 15981, Alloy Steel, CRES.  
Steel, 3A Fit, Cone Point (Nylok®--  
Long-Lok®)



**MS 18153**  
Bolt, Hex Head, Cap, Grade 8 UNF

**MS 18154**  
Bolt, Hex Head, Cap, Grade 8 UNC



**MS 19059-19064**  
Ball, Bearing  
Alloy Steel, CRES. Steel, Brass,  
Bronze, K-Monel

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**MS 19069-19070**  
Washer, Key, Retaining  
Steel  
Alloy Steel  
CRES. Steel

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**MS 20000**  
Turnbuckle Assembly  
Per MIL-T-5685  
Also See AN155 and AN165

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**MS 20001**  
Hinge, Structural  
Al Alloy  
Supersedes AN252

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**MS 20002**  
Washer, Countersunk and Plain  
Alloy Steel  
Under Bolt Head  
Under Nut Supersedes NAS 143

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**MS 20003**  
Indicator Humidity Card  
Paper

# 100 MILITARY STANDARD

## MILITARY STANDARD



### MS 20004-20024

Bolts, Internal Wrenching  
Alloy Steel  
3A fit

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### MS 20033-20046

Bolt, Machine Hexagon Head  
1200° F  
CRES. Steel  
3A Fit  
1200 Head Marking

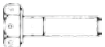
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### MS 20069

Bolt Carriage with Hex Nut  
Steel  
2A & 3A Fit

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### MS 20073-20074

Bolt, Machine Aircraft Drilled  
Head, Steel, Available in CRES.  
3A Fit  
Supersedes AN73 – AN81

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### MS 20115

Shackle-Wire, Rope  
CRES. Steel  
Al Alloy  
Steel  
Supersedes AN115

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### MS 20219-20221

Pulley, Groove, Aircraft  
Al Alloy, Phenolic  
MS20219 Supersedes  
AN219-AN221



**MS 20257**  
Hinge, Continuous  
Al Alloy  
CRES. Steel  
SUPERSEDES AN257

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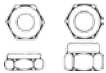
**MS 20270-20271**  
Joint Universal  
Per MIL-J-6193A  
SUPERSEDES AN270/AN271

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**MS 20341**  
Nut, Plain Hexagon Electrical  
Brass  
2B Fit  
SUPERSEDES AN341

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**MS 20364-20365**  
Nut, Self-Locking 250° F  
Steel Al Alloy, Monel,  
Available in CRES.  
3B Fit  
SUPERSEDES AN364/AN365

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**MS 20392**  
Pin, Headed Drilled Shank (Clevis)  
Steel  
Available in CRES.  
SUPERSEDES AN392-AN406

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**MS 20426-20470**  
Rivets, Solid and Tubular  
Aluminium, Al Alloy, CRES. Steel  
Monel, Copper, Steel  
SUPERSEDES AN426/AN427 (In  
Part) 435/AN450/AN470

# 102 MILITARY STANDARD

## MILITARY STANDARD



**MS 20500**  
Flexloc Nut - Self-locking 1200°F



**MS 20600-20606**  
Rivet, Blind Structural & Non-  
Structural  
Al Alloy  
Monel



**MS 20613-20615**  
Rivet, Solid Universal  
Steel, CRES. Steel, Monel, Copper  
SUPERSEDES MS 20435 (In Part)



**MS 20658-20659**  
Terminal Wire Rope,  
Fork End; Lug Crimp Style  
Steel, CRES. Steel, Copper, Bronze  
SUPERSEDES AN658/AN659



**MS 20663-20664**  
Ball End, Wire Rope Swaging  
Steel  
CRES. Steel  
SUPERSEDES AN663/AN664



**MS 20667-20668**  
Terminal Wire Rope  
Fork End; Eye End  
SUPERSEDES AN667/AN668



**MS 20757-20913**

Fittings, Elbows and Connectors  
Al Alloy, Steel, Brass, CRES. Steel  
SUPERSEDES AN757-AN913

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**MS 20995**

Wire, Lock  
CRES. Steel  
SUPERSEDES AN995

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**MS 21000-21001**

Pin, Flathead Hi-Shear  
Steel (Heat Treated)

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**MS 21025**

Nut, Castellated Bearing Retain-  
ing  
Steel, Alloy Steel  
3B Fit  
Inactive for Design

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**MS 21040**

Nut, Self-Locking Hexagonal,  
500° F  
Steel  
INACTIVE FOR DESIGN -  
USE MS 21042

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**MS 21042**

Lightweight, Low Height, 450°F  
Hexagonal Locknut, Alloy Steel  
and Stainless Steel

# 104 MILITARY STANDARD

## MILITARY STANDARD



### MS 21043

Lightweight, Reduced Height,  
800°F,  
Hexagonal Locknut

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### MS 21044

Nut, Self-locking, Hexagon,  
Regular  
Height, 250°F

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### MS 21045

Nut, Self-locking, Hexagon,  
Regular  
Height, 450°F

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### MS 21046

Nut, Self-locking, Hexagon,  
Regular  
Height, 800°F

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### MS 21047 and MS 21048

Nut, Self-locking, Plate, Two Lug,  
Low Height

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### MS 21049 and MS 21050

Nut, Self-locking, Plate, Two Lug,  
Low Height, 100° Csk.





**MS 21051 and MS 21052**  
Nut, Self-locking, Plate, One Lug,  
Low Height

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**MS 21053 and MS 21054**  
Nut, Self-locking, Plate, One Lug,  
Low Height, 100° Csk.

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**MS 21055 and MS 21056**  
Nut, Self-locking, Plate, Corner,  
Low Height

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**MS 21057 and MS 21058**  
Nut, Self-locking, Plate, Corner,  
Low Height, 100° Csk.

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**MS 21059 and MS 21060**  
Nut, Self-locking, Plate, Two Lug,  
Floating, Low Height

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**MS 21061 and MS 21062**  
Nut, Self-locking, Plate, One Lug,  
Floating, Low Height

# 106 MILITARY STANDARD

## MILITARY STANDARD

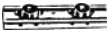


### MS 21063

Channel, Floating, Low Height,  
250°F, 125 KSI

### MS 21064

Channel, Floating, Low Height,  
450°F, 129 KSI



### MS 21065

Channel, Floating, Low Height,  
800°F, 125 KSI



### MS 21069 and MS 21070

Nut, Self-locking, Plate, Two Lug,  
Reduced Rivet Spacing, Low  
Height



### MS 21071 and MS 21072

Nut, Self-locking, Plate, One Lug,  
Reduced Rivet Spacing, Low  
Height



### MS 21073 and MS 21074

Nut, Self-locking, Plate, Corner,  
Reduced Rivet Spacing, Low  
Height



### MS 21075 and MS 21076

Nut, Self-locking, Plate, Two Lug,  
Floating, Reduced Rivet Spacing,  
Low Height



**MS 21084**  
Nut, Self-locking, Spline Drive,  
Flanged, Steel, 220 KSI

**MS 21085**  
Nut, Self-locking, Spline Drive,  
Flanged, Steel 260 KSI

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**MS 21086 and MS 21087**  
Nut, Self-locking, Plate, Low  
Height, Side by Side, Reduced  
Rivet Spacing

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**MS 21090**  
Screw, Self-locking, Steel 250°F,  
Pan Head, Cross Recessed

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**MS 21091**  
Bolt, Self-locking, Steel, 250°F,  
Flush Head, Cross Recessed

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**MS 21092**  
Bolt, Self-locking, CRES, 250°F,  
Flush Head, Cross Recessed

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**MS 21093**  
Screw, Self-locking, Steel 250°F,  
100° Flat Head, Cross Recessed

# 108 MILITARY STANDARD

## MILITARY STANDARD



### MS 21094

Bolt, Self-locking, Steel 250°F,  
Hexagon Head

### MS 21095

Bolt, Self-locking, CRES, 250°F,  
Hexagon Head



### MS 21096

Bolt, Self-locking, Steel, 250°F,  
Pan Head, Cross Recessed

### MS 21097

Bolt, Self-locking, CRES, 250°F,  
Pan Head, Cross Recessed



### MS 21098

Bolt, Tension, 12 Point, Self-  
locking,  
Steel, 160 KSI

### MS 21099

Bolt, Tension, 12 Point, Selflo-  
cking,  
CRES, 80 KSI



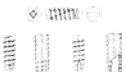
### MS 21133

Nut, Self-locking, Spline Drive,  
Flanged,  
Steel 180 KSI



### MS 21134

Bolt, Tension, Spline Drive,  
Flanged,  
Steel 1280 KSI



### MS 21207

100° Flat Head Tapping Screw  
Steel  
CRES. Steel



**MS 21208-21209**  
Insert, Screw Thread, Helical Coil  
CRES. Steel  
(Free Running and Lock Thread)

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**MS 21225**  
Nut, Self-locking, Hexagon, Cas-  
tellated,  
A-286

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**MS 21244**  
Castellated Nut, Hexagon, Coun-  
terbored,  
Captive Washer, 450°

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**MS 21245**  
Nut, Self-locking, Hexagon, Thin  
Steel

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**MS 21250**  
Bolt, 12PT  
External Wrenching  
Alloy Steel  
3A Fit

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**MS 21251**  
Turnbuckle Body, Blip Locking  
Steel, Brass, Aluminium  
SUPERSEDES AN155, NAS5649  
(SEE NOTES)

# 110 MILITARY STANDARD

## MILITARY STANDARD



### MS 21252-21253

Clevis End, Turn Buckle,  
Clip Locking, Steel, Alloy Steel  
SUPERSEDES AN161, AN162; NAS  
645, NAS646 (SEE NOTES)

---



### MS 21254-21255

Eye End, Turn Buckle  
Steel, Alloy Steel  
SUPERSEDES AN165, AN170;  
NAS648, NAS647 (SEE NOTES)

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### MS 21256

Clip, Locking Turn Buckle  
CRES. Steel

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### MS 21258

Washer, Key Retaining  
Steel  
SUPERSEDES AN7503

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### MS 21259-21260

Terminal Wire Rope, Stud  
SUPERSEDES AN666/AN669

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### MS 21261

Woodruff Key, Chamfered  
Alloy Steel  
Available in CRES.  
SUPERSEDES AN280 (In Part)

**MS 21262**

Socket Head Cap Screw (Hex)  
Self Locking 250° F.  
1960 Series, Alloy Steel  
Available in CRES., 3A Fit  
Head Marking



**MS 21279 thru MS 21282**

12 Point Bolt, A-286



**MS 21284 thru MS 21294**

12 Point Bolt, A-286



**MS 21295**

Socket Head Cap Screw (Hex)  
Self Locking 250° F. 1960 Series  
CRES. Steel, Available in Alloy  
Steel 3A Fit  
Head Marking



**MS 21296**

Bolt, Tension, Spline Drive,  
Flanged,  
Steel, 260 KSI



**MS 21297**

Bolt, Tension, Spline Drive,  
Flanged,  
Steel, 220 KSI

**MS 21301**

Bolt, Shoulder Hex and Spline  
Socket, Steel  
3A Fit  
Available in CRES.



# 112 MILITARY STANDARD

## MILITARY STANDARD



**MS 21304**  
Nut, Plain Square  
Steel  
2B Fit

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**MS 21305-21308**  
Washers; Cushion, Flat Round,  
Flat Square, Saddle  
Steel

---



**MS 21314-21315**  
Strap, Retaining  
Two Hole, For Pipe  
Conduit, Cable and Tubing

---



**MS 21318**  
Round Head Drive Screw  
Steel, CRES. Steel  
Type "U" Point

---



**MS 21322-21323**  
Clamp, Loop  
Plain and Cushioned  
Aluminium  
Al Cad

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**MS 21331**  
Nut, Plain, Clinch  
Steel  
2B Fit





**MS 21333-21334**

Clamp, Loop

Steel

Plain

Cushioned

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**MS 21900-21918**

Fittings, Flareless Tube

CRES. Steel, Steel, Al Alloy

MS 21912

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**MS 21919-21920**

Clamp, Loop and hose

Al Alloy

Steel

CRES. Steel

---



**MS 21982**

Lamp, 28 Volt

Incandescent

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**MS 22003-22010**

Link, Lap, Aircraft Safety Belt; Bar

Adjuster; Shoulder Harness;

Release, Steel

See AN6043

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**MS 22011-22022**

Connectors Parachute

CRES. Steel

# 114 MILITARY STANDARD

## MILITARY STANDARD



**MS 24017**  
Nut, Plain  
Hexagon, Mounting  
Brass, Steel  
2B Fit

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**MS 24127**  
Nut, plain hexagon  
Nylon  
2B Fit

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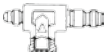
**MS 24318**  
Switch, Push  
Al Alloy

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**MS 24319**  
Boot, Joggle Switch  
Silicone  
SUPERSEDES AN3224/AN3247  
Inactive for Design -  
Use MIL-B-5423/3

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**MS 24388-24405**  
Fittings, Flared and Flareless  
Al Alloy  
CRES. Steel

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**MS 24566**  
Pulley, Control  
Non-Metallic  
Replaces AN210 (In Part)

**MS 24584**

Pan Head Machine Screw Phillips  
Recessed  
Steel  
2A Fit  
Replaces MS 35208/9 (In Part)

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**MS 24594**

Switch, Sensitive-Plunger Type  
High Temperature  
CRES. Steel

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**MS 24612-24614**

Switches, Toggle  
Per MIL-S-8834

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**MS 24615-24618**

Tapping Screws Type "A"  
Phillips Recessed  
Steel  
CRES. Steel

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**MS 24619-24622**

Tapping Screws Type "B"  
Phillips Recessed  
Steel, CRES. Steel

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**MS 24623-24626**

Tapping Screws Type "BF"  
Phillips Recessed  
Steel  
CRES. Steel



# 116 MILITARY STANDARD

## MILITARY STANDARD



**MS 24627-24630**  
Tapping Screws  
Thread Cutting Type "F"  
Phillips Recessed  
Steel, CRES. Steel

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**MS 24635-24638**  
Tapping Screws Type "A"  
Slotted  
Steel  
CRES. Steel

---



**MS 24639-24642**  
Tapping Screws Type "B"  
Slotted  
Steel  
CRES. Steel

---



**MS 24643-24646**  
Tapping Screws Type "BF"  
Slotted  
Steel  
CRES. Steel

---



**MS 24647-24650**  
Tapping Screws  
Thread Cutting Type "F"  
Slotted  
Steel, CRES. Steel

---



**MS 24661-24662**  
Rivet, Blind, Drive, CTSK. &  
Universal  
Aluminium  
Steel

**MS 24667**

82° Flat Head Socket Cap Screw,  
Alloy Steel, Cadmium Plated



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**MS 24671**

82° Flat Head Socket Cap Screw,  
Stainless Steel, Passivated



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**MS 24673 and MS 24674**

Socket Head Cap Screws, Drilled  
Head, 1960 Series



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**MS 25089**

Switch Push, Moistureproof



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**MS 25221-25225**

Guard, 2 or 3 Position Toggle  
witch  
Steel  
Plastic



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**MS 25226-25227**

Bus, terminal Board; Strip  
Copper  
Plastic



# 118 MILITARY STANDARD

## MILITARY STANDARD



**MS 25231-25243**  
Lamps  
Incandescent

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**MS 25256-25258**  
Light,  
Indicators

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**MS 25301**  
Boot, Circuit Breaker  
Silicone Rubber

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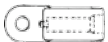
**MS 25311-25312**  
Ferrule, Shield Grounding and  
Tool  
Brass  
Nylon  
Mil-F-21608

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**MS 25397**  
Light Indicator  
CANCELLED—No Superseding  
Standard

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**MS 25435-25438**  
Terminal Lug, Crimp Style,  
Aircraft  
Aluminium



**MS 25440**

Washer, Flat

Steel, Brass

For Use with Aircraft Aluminium

Terminals

---



**MS 27039**

Pan Head, Machine Screw Phillips

Al Alloy, Mang. Bronze, Alloy Steel,

CRES. Steel (A-286)3A Fit

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**MS 27040**

Nuts, Plain Square

Steel

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**MS 27051**

Washer, Slotted

Steel

Available in CRES.

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**MS 27111-27112**

Washer, Key-Flat; Key-Bent

Steel

Alloy Steel

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**MS 27120**

Clevis, Rod End Turn Buckle

Steel

# 120 MILITARY STANDARD

## MILITARY STANDARD



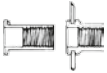
**MS 27128**  
Nut, Plain, Welding  
Steel

---



**MS 27129**  
Washer, Finishing  
Countersunk 80° - 82°  
Brass, Steel, CRES. Steel

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**MS 27130-27131**  
Nut, Blind Rivet  
Steel Al Alloy

---



**MS 27186-27187**  
Plug, End, Seal  
Plastic

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**MS 27576**  
Bolt, Self-Retaining, Impedance  
Type,  
Hex Head

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**MS 27577**  
Bolt, Self-Retaining, Impedance  
Type, 100° Flush Head



**MS 27769**  
Plug, Pipe, Hexagon Socket



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**MS 27950-27951**  
Bolt, Eye;  
Stud Welding Turnbuckle  
Steel



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**MS 27952**  
Nut, plain Hexagon Left Hand  
Steel



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**MS 27953-27954**  
Bolt, Hook;  
Body; Turn-Buckle  
Steel



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**MS 27955**  
Nut, Plain Round, Spanner  
Alloy Steel



---

**MS 27974**  
Turnbuckles Assemblies  
Steel



# 122 MILITARY STANDARD

## MILITARY STANDARD



### MS 27975-27976

Clevis, Rod End  
Steel

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### MS 27977-27986

Fasteners,  
Snap Styles 1, 1A, 1B, 2, 2A, 3, 4,  
5, 6, 7  
Brass

---



### MS 27990

Pin, Straight Hinge  
Aluminium, Brass, Steel,  
CRES. Steel, Bronze

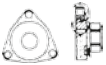
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### MS 28720

Filter, Aircraft Hydraulic  
Per Mil-F-5504

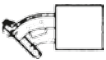
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### MS 28742-28747

Fittings, End Hose, Swivel  
Al Alloy  
Steel

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### MS 28749-28750

Elbow, Swivel  
Al Alloy

**MS 28751**  
Hose, Assembly High Pressure  
Per Mil-H-5512



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**MS 28752-28755**  
Fitting End, Self-Sealing  
Al Alloy



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**MS 28774**  
Retainer



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**MS 28775**  
Packing "O" Ring  
Per Mil-P-25732



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**MS 28776**  
Scraper Hydraulic Piston Rod  
Per Mil-S-5049



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**MS 28777**  
Ring, Hydraulic Fitting  
Mil-R-5521



# 124 MILITARY STANDARD

## MILITARY STANDARD



**MS 28778**  
Packing—Preformed  
Mil-G-5510

---



**MS 28782-28783**  
Retainer, Packing; Ring Back Up  
Teflon

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**MS 35198-35199**  
82° Flat Head Machine Screw  
Phillips Recessed  
Brass; 2A Fit  
Coarse and Fine Threads

---



**MS 35200-35201**  
82° Flat Head Machine Screw  
Phillips Recessed  
CRES. Steel  
2A Fit  
Coarse and Fine Threads

---



**MS 35202-35203**  
82° Flat Head Machine Screw  
Phillips Recessed  
Al Alloy  
2A Fit  
Coarse and Fine Threads

---



**MS 35212-35215**  
Pan Head Machine Screw  
Phillips Recessed  
Brass, 2A Fit  
Coarse and Fine Threads



**MS 35216-35217**  
Pan Head Machine Screw  
Phillips Recessed  
CRES. Steel  
2A Fit  
Coarse and Fine Threads

---



**MS 35218-35219**  
Pan Head Machine Screw  
Phillips Recessed  
Al Alloy  
2A Fit  
Coarse and Fine Threads

---



**MS 35221-35236**  
Pan Head Machine Screw  
Slotted  
Al Alloy, Brass, Steel, CRES. Steel  
2A Fit  
Coarse and Fine Threads

---



**MS 35237-35262**  
82° Flat Head Machine Screw  
Slotted  
Al Alloy, Brass, Steel, CRES. Steel  
2A Fit  
Coarse and Fine Threads

---



**MS 35263-35278**  
Drilled Fillister Head Slotted  
Al Alloy, Brass, Steel, CRES. Steel  
2A Fit  
Coarse and Fine Threads

---



**MS 35289-35314**  
Cap Screw Hexagon Head Fini-  
shed, Al Alloy, Alloy Steel, Steel,  
CRES. Stee, Brass, Monel  
2A Fit, Coarse and Fine Threads



**MS 35333-35336**  
Washer, Lock Toothed  
Steel  
CRES. Steel  
Phos. Bronze

---



**MS 35337-35340**  
Lock Washer Split, Spring Light,  
Medium Heavy, Extra Heavy  
Steel, CRES. Steel, Phos. Bronze  
Monel

---



**MS 35354-35356**  
Bolt, Machine Square Head Unfi-  
nished  
Steel  
2A fit  
Coarse and Fine Threads

---



**MS 35357-35366**  
Machine Screw  
Designs (Inactive)

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**MS 35425-35426**  
Nut, Plain Wing  
Steel, Brass,  
Available in CRES. Steel  
2B Fit  
Coarse and Fine Thread

---



**MS 35430-35433**  
Terminal, Lug, Solder Type  
Copper

**MS 35455-35461**

Cap Screw, Socket Head Hexagon, 1936 Series, Alloy Steel, CRES Steel, 3A Fit  
Coarse and Fine Thread



**MS 35492-35495**

Wood Screws Phillips Recessed, Slotted  
Brass, Steel, 82° Flat Head  
Round Head



**MS 35649-35650**

Nut, Plain, Hex Machine Screw  
Steel, CRES. Steel  
2B Fit  
Coarse and Fine Thread



**MS 35690-35691**

Nut, Plain Hexagon Finished, Jam, Steel, CRES. Steel, 2B Fit  
Finished Jam Slotted  
Coarse and Fine Thread



**MS 35743-35745**

Rivets  
Steel, Copper  
Per 90° CTSK. Belt



**MS 35751-35754**

Carriage Bolt, Round Head; Truss Head; Flat Elevator; Plow  
Steel 2A Fit  
Coarse Thread



# 128 MILITARY STANDARD

## MILITARY STANDARD



**MS 35763-35764**  
Bolt, Self-Locking Hexagon Head  
Steel  
2A fit  
Coarse and Fine Thread

---



**MS 35790**  
Washer, Lock  
100° CTSK External Tooth  
Steel  
Phos. Bronze

---



**MS 35810**  
Pin, Headed (Clevis)  
Steel

---



**MS 35914**  
Insert, Screw Thread, Self Tapping  
CRES. Steel  
Steel  
2B Fit

---



**MS 39081**  
Nut, Coupling Electrical, Plain  
Hex  
Al Alloy  
2B fit  
SUPERSEDES AN3066

---



**MS 39086**  
Pins, Spring, Tubular, Coiled  
Steel  
CRES. Steel





**MS 45904**  
 Washer, Lock Internal-External  
 Tooth  
 Steel



**MS 45905**  
 Nut, Plain Hexagon Left Hand  
 Steel  
 CRES. Steel  
 2B Fit



SET SCREW POINT STYLES			
Point Style	Part	Part	Part
Other Point Styles	Other Point Styles	Other Point Styles	Other Point Styles

**MS 51017-51052**  
 Set Screws Hexagon Socket  
 Alloy Steel, CRES. Steel  
 3A Fit  
 Coarse and Fine Thread



**MS 51053**  
 Set Screws Spline Socket  
 Alloy Steel  
 Available in CRES.  
 3A Fit  
 Coarse and Fine Thread



**MS 51054**  
 Set Screw Square Head Cup Point  
 Steel  
 2A Fit



**MS 51056-51060**  
 Set Screw Slotted,  
 Brass, CRES. Steel  
 2A Fit  
 Coarse and Fine Thread

# 130 MILITARY STANDARD

## MILITARY STANDARD



### MS 51093-51102

Screw, Cap Hexagon Head Drilled  
Head

Alloy Steel, Steel, CRES. Steel,  
Al Alloy;  
2A Fit; Coarse and Fine Thread

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### MS 51102-51112

Screw, Cap Hexagon Head Drilled  
Shank

Alloy Steel, Steel, CRES. Steel,  
Al Alloy  
2A Fit; Coarse and Fine Thread

---



### MS 51923

Pins, Spring, Tubular, Coiled  
Steel  
CRES. Steel

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### MS 51963

Set Screw, Hexagon Socket,  
Point: Cup, Flat

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### MS 51973 and MS 51974

Set Screw, Hexagon Socket, Cone  
Point

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### MS 51975

Screw, Shoulder Socket Head  
Hexagon



**MS 51976 and MS 51977**  
Set Screw, Hexagon Socket, Half  
Dog Point



**MS 51981 and MS 51982**  
Set Screw, Hexagon Socket, Oval  
Point



**MS 122076-122275**  
Insert, Helical Coil  
CRES.



**MS 122900-122939**  
Clamp Loop (Heat Resistant)  
Steel



**MS 124651-124850**  
Insert, Helical Coil  
CRES.



**MS 134351-134440**  
Ball, Precision Grade  
CRES. Steel