

# Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch)

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[Fasteners Nuts Jam Nuts \(Thin Hex, Inch\)](#)/Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch)

Nuts · ASME B19.2.2

Mechanical properties, corrosion behaviour and the full dimensional range for this grade.

Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) are supplied to ISO 898-1 property class 8.8. Corrosion behaviour is requires plating (zinc) for corrosion protection, the material is magnetic, and the usable service range is commonly limited to approx. +300 °C; confirm against the coating and the load. In practice this grade is the workhorse medium-carbon alloy class for structural joints.

## Grade

ISO 898-1 property class 8.8

## Corrosion resistance

Requires plating (zinc) for corrosion protection

## Magnetic response

Magnetic

## Service temperature

commonly limited to approx. +300 °C; confirm against the coating and the load

Property values are typical for the grade. Certified mechanical test data is available on request for production orders.



Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) combine the dimensional form of ASME B18.2.2 with the material properties of grade ISO 898-1 property class 8.8: requires plating (zinc) for corrosion protection, magnetic, service range commonly limited to approx. +300 °C; confirm against the coating and the load. This page summarizes the grade data, its corrosion behavior in service, the comparable grades, and the sizes supplied.

## Why Choose Property Class 8.8 Steel for Jam Nuts (Thin Hex, Inch)

The workhorse medium-carbon alloy class for structural joints. For jam nuts (thin hex, inch), this matters when requires plating (zinc) for corrosion protection is the primary requirement.

## Mechanical & Physical Properties

|                                 |                                                                               |
|---------------------------------|-------------------------------------------------------------------------------|
| <b>Grade designation</b>        | ISO 898-1 property class 8.8                                                  |
| <b>Magnetic response</b>        | Magnetic                                                                      |
| <b>Service temperature</b>      | commonly limited to approx. +300 °C; confirm against the coating and the load |
| <b>Corrosion characteristic</b> | Requires plating (zinc) for corrosion protection                              |

## Galvanic & Galling Considerations

For jam nuts (thin hex, inch) in steel, the dominant compatibility issue is hydrogen embrittlement at high property classes (10.9 and above) when electroplated. Plating must be followed by an appropriate baking treatment, or a non-electroplated finish (mechanical zinc, zinc flake) should be substituted.

## Comparable Grades

For Jam Nuts (Thin Hex, Inch), class 10.9 or 12.9 is the comparable strength step. Move up when the joint preload approaches the proof load of the current class; move down when the joint is over-specified. For corrosion-critical service, switch to stainless A2 or A4.

## Sizes of Jam Nuts (Thin Hex, Inch) Available in Property Class 8.8 Steel

| Thread size | Across flats s (mm) | Across corners e (mm) | Nut height m (mm) | Across flats (in) | Nut height (in) | Reference standard |
|-------------|---------------------|-----------------------|-------------------|-------------------|-----------------|--------------------|
|-------------|---------------------|-----------------------|-------------------|-------------------|-----------------|--------------------|

## Request a Quote

The form below follows the current technical drawing configuration. Change the drawing values above and the request details update automatically.

## Dimensions & Specifications (ASME B18.2.2)

| Thread size | Across flats s (mm) | Across corners e (mm) | Nut height m (mm) | Across flats (in) | Nut height (in) | Reference standard |
|-------------|---------------------|-----------------------|-------------------|-------------------|-----------------|--------------------|
|-------------|---------------------|-----------------------|-------------------|-------------------|-----------------|--------------------|

## Materials & Grades

Select a material class to see the grades we supply it in. Each designation is listed with its ISO/EN, AISI/SAE, JIS and GB equivalents.

[Stainless Steel](#)
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### Stainless Steel

#### Austenitic Stainless Steel

- A1 AISI 303 · SAE 303 · SUS303 · EN 1.4305 · X8CrNiS18-9

- A2 AISI 304 · SAE 304 · SUS304 · EN 1.4301 · X5CrNi18-10 · 06Cr19Ni10
- 304L AISI 304L · SUS304L · EN 1.4307 · X2CrNi18-9 · 022Cr19Ni10
- 302 AISI 302 · SUS302 · EN 1.4310
- 305 AISI 305 · SUS305 · EN 1.4303
- A4 AISI 316 · SAE 316 · SUS316 · EN 1.4401 · X5CrNiMo17-12-2 · 06Cr17Ni12Mo2
- 316L AISI 316L · SUS316L · EN 1.4404 · X2CrNiMo17-12-2 · 022Cr17Ni12Mo2
- 321 AISI 321 · SUS321 · EN 1.4541 · X6CrNiTi18-10
- 310 / 310S AISI 310 · AISI 310S · SUS310S · EN 1.4845
- 302HQ AISI 302HQ
- A3
- A5
- 347 AISI 347 · SUS347 · EN 1.4550 · X6CrNiNb18-10
- 309 / 309S AISI 309 · AISI 309S · SUS309S

### **Martensitic Stainless Steel**

- AISI 410 SUS410 · EN 1.4006 · X12Cr13 · 12Cr13
- AISI 420 SUS420J1 · SUS420J2 · EN 1.4021 · EN 1.4028 · 20Cr13 · 30Cr13
- AISI 431 SUS431 · EN 1.4057 · X17CrNi16-2
- C1
- C3
- C4
- AISI 440A
- AISI 440B
- AISI 440C SUS440C · EN 1.4125

### **Ferritic Stainless Steel**

- AISI 430 SUS430 · EN 1.4016 · X6Cr17 · 10Cr17
- F1
- AISI 434
- AISI 444

### **Precipitation-Hardening Stainless Steel**

- 17-4 PH AISI 630 · UNS S17400 · SUS630 · EN 1.4542 · X5CrNiCuNb16-4
- 15-5 PH UNS S15500
- 17-7 PH UNS S17700

## Duplex and Super Duplex Stainless Steel

- Duplex 2205 UNS S31803 · UNS S32205 · EN 1.4462
- Super Duplex 2507 UNS S32750 · EN 1.4410
- D2
- D4
- D6
- D8
- Lean Duplex 2101 UNS S32101
- Super Duplex S32760 UNS S32760 · EN 1.4501

## Carbon Steel

### Low-Carbon Steel

- SAE 1006
- SAE 1008
- SAE 1010
- SAE 1018
- SAE 1020
- Q195
- Q235
- SAE 1012
- SAE 1015
- Q215
- ML08
- ML08AI
- ML10
- ML15
- ML20
- SWRCH6A
- SWRCH8A
- SWRCH10A
- SWRCH12A
- SWRCH15A
- SWRCH18A

## Medium-Carbon Steel

- SAE 1035
- SAE 1045
- S45C
- C45
- SAE 1030
- SAE 1040
- SAE 1050
- 30
- 35
- 40
- 45
- 50
- S35C
- S40C
- S50C
- C35
- C40

## High-Carbon Steel

- SAE 1060
- SAE 1070
- 65Mn
- SAE 1065
- SAE 1075
- SAE 1080
- SAE 1085
- SAE 1090
- SAE 1095
- 60
- 65
- 70
- 75
- 80
- 85

## Cold-Heading Steel

- SWRCH22A
- 10B21
- SWRCH22K
- SWRCH25K
- SWRCH30K
- SWRCH35K
- SWRCH40K
- ML20Mn
- ML25
- ML30
- ML35
- ML40
- 15B25

## Alloy Steel

### Chromium Steel

- 40Cr
- 45Cr
- AISI 5140
- SAE 5140
- AISI 5120
- SAE 5120
- SCr420
- SCr440

### Chromium-Molybdenum Steel

- 35CrMo
- 42CrMo
- AISI 4140
- SCM435
- SCM440
- 42CrMo4
- 30CrMo

- AISI 4130
- SAE 4130
- SAE 4140
- AISI 4142
- AISI 4145
- SCM415
- SCM420
- SCM445
- EN 1.7220
- EN 1.7225
- 25CrMo4
- 34CrMo4

### **Nickel-Chromium-Molybdenum Steel**

- AISI 4340
- SAE 4340
- 40CrNiMo
- SNCM439
- EN 1.6511
- 36CrNiMo4

### **Boron Alloy Steel**

- 10B22
- 10B21
- 15B21
- 15B25
- 20MnTiB
- 20Mn2B
- 35VB
- 40MnB

### **Bearing Steel**

#### **Bearing Steel**

- GCr15
- AISI 52100 SAE 52100 · UNS G52986

- SUJ2
- 100Cr6 EN 1.3505
- GCr15SiMn

## **Spring Steel**

### **Carbon Spring Steel**

- SAE 1065
- SAE 1070
- SAE 1075
- SAE 1080
- SAE 1095
- 65
- 70
- 75
- 80
- 65Mn

### **Silicon-Manganese Spring Steel**

- 60Si2Mn
- 60Si2MnA
- SUP6
- SUP7

### **Chromium-Vanadium Spring Steel**

- 50CrVA
- SAE 6150
- AISI 6150
- SUP10

### **Stainless Spring Steel**

- AISI 301
- SUS301
- EN 1.4310
- AISI 302
- AISI 304

- AISI 316
- 17-7 PH

## **Aluminum and Aluminum Alloys**

### **Commercially Pure Aluminum**

- 1050
- 1060
- 1070
- 1100

### **2xxx Series Aluminum**

- 2024
- 2011
- 2014
- 2017

### **5xxx Series Aluminum**

- 5052
- 5083
- 5754

### **6xxx Series Aluminum**

- 6061
- 6061-T6
- 6063
- 6082
- 6082-T6

### **7xxx Series Aluminum**

- 7075
- 7075-T6
- 7005
- 7050
- 7075-T73

## Brass

### Free-Cutting Brass

- C36000
- H62
- HPb59-1
- C3601
- C3602
- C3604
- CuZn36Pb3
- CuZn39Pb3
- EN CW614N
- EN CW617N
- H65

### Lead-Free Brass

- C69300
- C27450
- CW510L
- CW511L

### Naval Brass

- C46400
- CuZn39Sn1

## Bronze

### Silicon Bronze

- C65500
- C65100
- C65600

### Phosphor Bronze

- C51000
- C52100

- CuSn6
- CuSn8

### **Aluminum Bronze**

- C95400
- C95500
- C63000
- CuAl10Ni5Fe4

### **Copper**

#### **Copper**

- C11000
- T2
- C10100
- C10200
- C12200
- T1
- TU1
- TU2

### **Titanium and Titanium Alloys**

#### **Commercially Pure Titanium**

- Grade 2
- Grade 1
- Grade 3
- Grade 4
- TA1
- TA2
- TA3

#### **Alpha-Beta Titanium Alloys**

- Grade 5
- Ti-6Al-4V
- TC4

- UNS R56400

### **Low-Interstitial Grade**

- Grade 23
- Ti-6Al-4V ELI
- UNS R56407

### **Other Titanium Fastener Alloys**

- Ti-6Al-6V-2Sn
- Ti-6Al-2Sn-4Zr-2Mo
- Beta-C titanium
- Ti-10V-2Fe-3Al

## **Nickel and Nickel Alloys**

### **Commercially Pure Nickel**

- Nickel 200
- UNS N02200
- Nickel 201
- UNS N02201

### **Inconel Alloys**

- Inconel 625 UNS N06625
- Inconel 718 UNS N07718
- Inconel 600 UNS N06600
- Inconel 601 UNS N06601
- Inconel 686 UNS N06686
- Inconel X-750 UNS N07750

### **Monel Alloys**

- Monel 400 UNS N04400
- Monel K-500 UNS N05500

### **Hastelloy Alloys**

- Hastelloy C-276 UNS N10276
- Hastelloy C-22 UNS N06022

- Hastelloy B-2 UNS N10665
- Hastelloy B-3 UNS N10675
- Hastelloy X UNS N06002

### **Other Nickel Alloys**

- Alloy 20 UNS N08020
- Alloy 625
- Alloy 718
- Alloy 825 UNS N08825
- Alloy 925 UNS N09925

## **Iron-Nickel and High-Temperature Alloys**

### **A286**

- A-286
- UNS S66286
- EN 1.4980

### **Invar**

- Invar 36
- Alloy 36
- UNS K93600
- FeNi36

### **Alloy 42**

- Alloy 42
- UNS K94100
- FeNi42

## **Tool Steel and Specialty Hardened Steel**

### **Tool Steel and Specialty Hardened Steel**

- AISI D2
- AISI H13
- SKD11
- Cr12MoV

- AISI O1
- AISI A2
- AISI S7
- SKD61
- 9CrSi

## Structural and Construction Steel

### Structural and Construction Steel

- ASTM A36
- Q235B
- Q355B
- S355JR
- Q235C
- Q355C
- S235JR
- S275JR
- S355J2

Inside the plant

## Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.

1.



01

### **Cold heading**

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.



2.

02

## Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.



3.

03

### Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.

4.



04

## Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

## Frequently Asked Questions

What's the service temperature limit for Property Class 8.8 Steel?

The practical service range is commonly limited to approx. +300 °C; confirm against the coating and the load.

Can Property Class 8.8 Steel replace stainless steel structurally?

No — stainless A2/A4 cannot match class 10.9 / 12.9 strength. Stainless is selected for corrosion, not raw strength.

Are Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) magnetic?

Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) are magnetic.

What corrosion resistance do Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) offer?

Property Class 8.8 Steel Jam Nuts (Thin Hex, Inch) provide requires plating (zinc) for corrosion protection with a service range of commonly limited to approx. +300 °C; confirm against the coating and the load.

How do I request a quotation?

Use the technical drawing on this page to pick the exact configuration, then submit it with the quote form. We respond within one business day.

## Related Pages

[View the full Jam Nuts \(Thin Hex, Inch\) page](#)

### More Jam Nuts (Thin Hex, Inch) Guides

- [A2 Stainless Steel Jam Nuts \(Thin Hex, Inch\)](#)
- [A4 Stainless Steel Jam Nuts \(Thin Hex, Inch\)](#)
- [Property Class 12.9 Steel Jam Nuts \(Thin Hex, Inch\)](#)