

# A4 (316) Stainless Steel Hex Standoffs, Female-Female

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Fasteners Standoffs & Spacers/Hex Standoffs, Female-Female/A4 (316) Stainless Steel Hex Standoffs, Female-Female  
Standoffs & Spacers · Industry standard  
Mechanical properties, corrosion behaviour and the full dimensional range for this grade.

A4 Stainless Steel Hex Standoffs, Female-Female are supplied to ISO 3506 group A4 (316 / 1.4401), commonly supplied A4-80. Corrosion behaviour is superior, including marine and chloride environments, the material is largely non-magnetic, and the usable service range is approx. -200 °C to +400 °C, subject to the property class and the joint. In practice this grade is specified for marine, coastal and chemical applications.

## Grade

ISO 3506 group A4 (316 / 1.4401), commonly supplied A4-80

## Corrosion resistance

Superior, including marine and chloride environments

## Magnetic response

Largely non-magnetic

## Service temperature

approx. -200 °C to +400 °C, subject to the property class and the joint

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



Hex Standoffs, Female-Female manufactured in A4 Stainless Steel (ISO 3506 group A4 (316 / 1.4401), commonly supplied A4-80) are dimensioned to Industry standard. The sections below give the mechanical and physical properties of the grade, its behavior in corrosive and elevated-temperature service, and the full size table.

## Why Choose A4 Stainless Steel for Hex Standoffs, Female-Female

Specified for marine, coastal and chemical applications. For hex standoffs, female-female, this matters when superior, including marine and chloride environments is the primary requirement.

## Mechanical & Physical Properties

|                                 |                                                                         |
|---------------------------------|-------------------------------------------------------------------------|
| <b>Grade designation</b>        | ISO 3506 group A4 (316 / 1.4401), commonly supplied A4-80               |
| <b>Magnetic response</b>        | Largely non-magnetic                                                    |
| <b>Service temperature</b>      | approx. -200 °C to +400 °C, subject to the property class and the joint |
| <b>Corrosion characteristic</b> | Superior, including marine and chloride environments                    |

## Corrosion Behavior in Service

A4 (316) adds 2–3% molybdenum to the A2 (304) composition, which dramatically improves resistance to chloride-pitting corrosion. For Hex Standoffs, Female-Female in marine, coastal, swimming-pool or food-processing environments, A4 is the default selection.

## Comparable Grades

For Hex Standoffs, Female-Female, the alternative stainless grade is A2 (304). A2 (304) suits general indoor and outdoor service; A4 (316) adds molybdenum for marine and chloride environments. Where higher strength matters more than corrosion, switch to plated alloy-steel class 8.8 or 10.9.

## Using Stainless Fasteners in Aluminum

Stainless steel is more noble than aluminum, so in the presence of an electrolyte — rain, condensation, salt spray — the aluminum becomes the anode and corrodes at the joint. The effect is driven by the area ratio: a small stainless fastener in a large aluminum section is normally acceptable, while a large stainless fastener in thin aluminum is not. Where the joint is wet, isolate the two metals with a coated or nylon washer and a sealant, or specify an aluminum or coated fastener instead.

## Sizes of Hex Standoffs, Female-Female Available in A4 Stainless Steel

| Thread size | Pitch (mm) | Across flats s (mm) | Across corners e (mm) | Length range L (mm) | Thread depth each end (mm) | Reference standard |
|-------------|------------|---------------------|-----------------------|---------------------|----------------------------|--------------------|
| M2.5        | 0.45       | 5                   | 5.8                   | 5~40                | 5                          | Industry standard  |
| M3          | 0.5        | 5.5                 | 6.4                   | 5~50                | 6                          | Industry standard  |
| M4          | 0.7        | 7                   | 8.1                   | 6~60                | 8                          | Industry standard  |
| M5          | 0.8        | 8                   | 9.2                   | 8~80                | 10                         | Industry standard  |
| M6          | 1.0        | 10                  | 11.5                  | 10~100              | 12                         | Industry standard  |
| M8          | 1.25       | 13                  | 15.0                  | 12~100              | 16                         | Industry standard  |
| M10         | 1.5        | 17                  | 19.6                  | 15~100              | 20                         | Industry standard  |

## Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose.

Changing the size will snap the other fields to that size's standard values; you can then override any individual value.

Sends the selected values to the quote form below.

## 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 (Industry standard)

| Thread size | Pitch (mm) | Across flats s (mm) | Across corners e (mm) | Length range L (mm) | Thread depth each end (mm) | Reference standard |
|-------------|------------|---------------------|-----------------------|---------------------|----------------------------|--------------------|
| M2.5        | 0.45       | 5                   | 5.8                   | 5~40                | 5                          | Industry standard  |
| M3          | 0.5        | 5.5                 | 6.4                   | 5~50                | 6                          | Industry standard  |
| M4          | 0.7        | 7                   | 8.1                   | 6~60                | 8                          | Industry standard  |
| M5          | 0.8        | 8                   | 9.2                   | 8~80                | 10                         | Industry standard  |
| M6          | 1.0        | 10                  | 11.5                  | 10~100              | 12                         | Industry standard  |
| M8          | 1.25       | 13                  | 15.0                  | 12~100              | 16                         | Industry standard  |
| M10         | 1.5        | 17                  | 19.6                  | 15~100              | 20                         | Industry 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](#)
[38 Carbon Steel](#)
[66 Alloy Steel](#)
[41 Bearing Steel](#)
[5 Spring Steel](#)
[25 Aluminum and Aluminum Alloys](#)
[21 Brass](#)
[17 Bronze](#)
[11 Copper](#)
[8 Titanium and Titanium Alloys](#)
[18 Nickel and Nickel Alloys](#)
[22 Iron-Nickel and High-Temperature Alloys](#)
[10 Tool Steel and Specialty Hardened Steel](#)
[9 Structural and Construction Steel](#)

### 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 corrosion resistance do A4 Stainless Steel Hex Standoffs, Female-Female offer?

A4 Stainless Steel Hex Standoffs, Female-Female provide superior, including marine and chloride environments with a service range of approx. -200 °C to +400 °C, subject to the property class and the joint.

Should I choose A4 Stainless Steel or A2 (304) for Hex Standoffs, Female-Female?

For Hex Standoffs, Female-Female, A4 Stainless Steel suits general indoor and outdoor use; A2 (304) is preferred for marine, coastal and chemical environments. Choose by corrosion exposure first.

Can A4 Stainless Steel Hex Standoffs, Female-Female gall during installation?

Yes — stainless on stainless is prone to thread galling under load, especially at smaller sizes. Use an anti-galling lubricant or wax thread compound, and slow the tightening rate where possible.

Is A4 Stainless Steel food-grade?

A4 (316) is the standard food-contact stainless grade in most jurisdictions, particularly where chloride exposure (brines, dairy CIP) is present.

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 Hex Standoffs, Female-Female page](#)

### More Hex Standoffs, Female-Female Guides

- [A2 Stainless Steel Hex Standoffs, Female-Female](#)