

Hex Bolts

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[Bolts](#) · Hex Bolts

31 catalogued sizes, dimensioned to ISO 4014 / ISO 4017. Pick any row and the technical drawing redraws to it.

Hex Bolts to ISO 4014 / ISO 4017 are catalogued in sizes M1 to M64, with pitch 0.25-6 mm, spanner 2.5-95 mm, wide 2.71-104.86 mm. 31 sizes are held in the table below, and the technical drawing redraws to whichever row you select.

Standard

ISO 4014 / ISO 4017

Size range

M1-M64

Pitch

0.25-6 mm

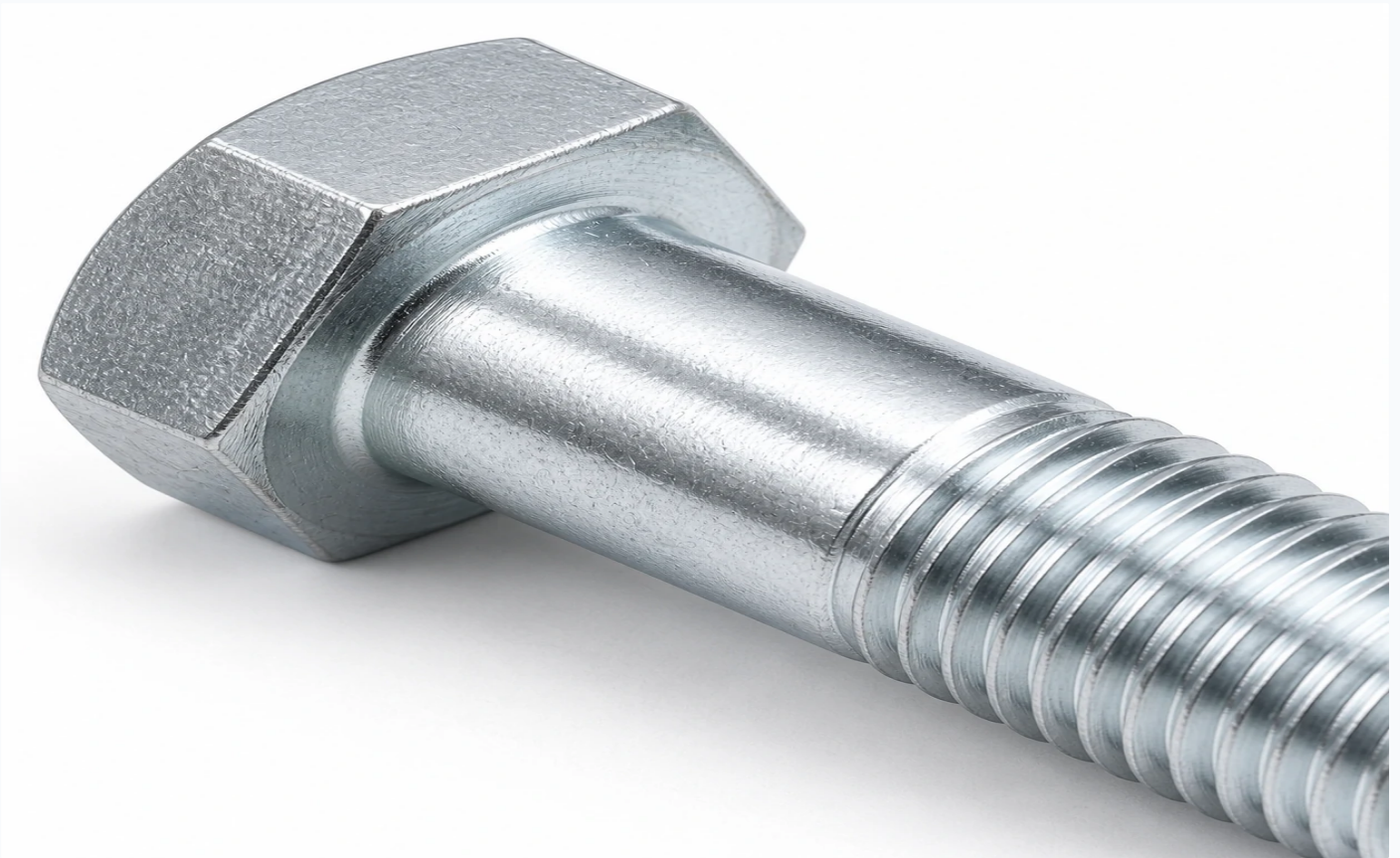
Spanner

2.5-95 mm

Catalogued sizes

31

Dimensions are nominal values from the governing standard. Confirm the tolerance class for your application before ordering.



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](#)[9](#)

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

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 Quotation for Hex Bolts

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

Dimensions & Specifications (ISO 4014 / ISO 4017)

Every row below is a starting point for the customizer above — pick any size and the drawing will redraw to that row.

Size	Pitch coarse (mm)	Width across flats s (mm)	Width across corners e min (mm)	Head height k nom (mm)	Nominal diameter d (mm)	Reference standard	Notes
M1	0.25	2.5	2.71	0.7	1.0	ISO 4017	Fully threaded
M1.2	0.25	3.0	3.28	0.8	1.2	ISO 4017	Fully threaded
M1.4	0.3	3.0	3.28	0.9	1.4	ISO 4017	Fully threaded
M1.6	0.35	3.2	3.48	1.1	1.6	ISO 4014/4017	Fully threaded
M2	0.4	4.0	4.32	1.4	2.0	ISO 4014/4017	Fully threaded
M2.5	0.45	5.0	5.45	1.7	2.5	ISO 4014/4017	Fully threaded
M3	0.5	5.5	6.01	2.0	3.0	ISO 4014/4017	Fully threaded
M4	0.7	7.0	7.66	2.8	4.0	ISO 4014/4017	Fully threaded
M5	0.8	8.0	8.79	3.5	5.0	ISO 4014/4017	Fully threaded
M6	1.0	10.0	11.05	4.0	6.0	ISO 4014/4017	Fully threaded
M8	1.25	13.0	14.38	5.3	8.0	ISO 4014/4017	Fully threaded
M10	1.5	16.0	17.77	6.4	10.0	ISO 4014/4017	Fully threaded
M12	1.75	18.0	20.03	7.5	12.0	ISO 4014/4017	Partial / fully threaded
M14	2.0	21.0	23.36	8.8	14.0	ISO 4014/4017	Partial / fully threaded
M16	2.0	24.0	26.75	10.0	16.0	ISO 4014/4017	Partial / fully threaded

Size	Pitch coarse (mm)	Width across flats s (mm)	Width across corners e min (mm)	Head height k nom (mm)	Nominal diameter d (mm)	Reference standard	Notes
M18	2.5	27.0	30.14	11.5	18.0	ISO 4014/4017	Partial / fully threaded
M20	2.5	30.0	33.53	12.5	20.0	ISO 4014/4017	Partial / fully threaded
M22	2.5	32.0	35.72	14.0	22.0	ISO 4014/4017	Partial / fully threaded
M24	3.0	36.0	39.98	15.0	24.0	ISO 4014/4017	Partial / fully threaded
M27	3.0	41.0	45.2	17.0	27.0	ISO 4014/4017	Partial / fully threaded
M30	3.5	46.0	50.85	18.7	30.0	ISO 4014/4017	Partial / fully threaded
M33	3.5	50.0	55.37	21.0	33.0	ISO 4014/4017	Partial / fully threaded
M36	4.0	55.0	60.79	22.5	36.0	ISO 4014/4017	Partial / fully threaded
M39	4.0	60.0	66.44	25.0	39.0	ISO 4014/4017	Partial / fully threaded
M42	4.5	65.0	71.3	26.0	42.0	ISO 4014/4017	Partial / fully threaded
M45	4.5	70.0	76.95	28.0	45.0	ISO 4014/4017	Partial / fully threaded
M48	5.0	75.0	82.6	30.0	48.0	ISO 4014/4017	Partial / fully threaded
M52	5.0	80.0	88.25	33.0	52.0	ISO 4014/4017	Partial / fully threaded
M56	5.5	85.0	93.56	35.0	56.0	ISO 4014	Partial / fully threaded
M60	5.5	90.0	99.21	38.0	60.0	ISO 4014	Partial / fully threaded

Size	Pitch coarse (mm)	Width across flats s (mm)	Width across corners e min (mm)	Head height k nom (mm)	Nominal diameter d (mm)	Reference standard	Notes
M64	6.0	95.0	104.86	40.0	64.0	ISO 4014	Partial / fully threaded

Manufactured to ISO 4014 / ISO 4017, Hex Bolts are bolts supplied by Engineering Hardware. The dimensional data, materials and selection notes are summarized here.

What Are Hex Bolts?

Hex Bolts are bolts defined by ISO 4014 / ISO 4017. They are selected by thread size and the dimensional characteristics shown below, and are available in a range of materials and finishes to suit the application and environment.

Materials & Finishes

Common materials include carbon steel (typically zinc plated or hot-dip galvanized), alloy steel in property classes 8.8, 10.9 and 12.9, and stainless steel A2 (304) or A4 (316) for corrosion resistance. Specify the material, property class and surface finish appropriate to your load and environment.

Typical Applications

Structural steelwork, machinery, automotive and general assembly where high-strength, removable joints are required. [Read the full application guide for Hex Bolts →](#)

Pricing

Hex Bolts are supplied to order. Pricing starts from approximately US\$0.080 per piece for standard sizes in carbon steel; final pricing depends on size, material, finish and order quantity (MOQ applies). Submit your exact configuration with the quote form above.

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.

Video: Hex Bolts



► Watch video: <https://www.youtube.com/watch?v=6Md3tUD5OLc>

Specifications of Structural Hex Bolts

Third-party video, selected automatically for this topic. It is not produced by Engineering Hardware and is not a specification source — use the tables on this page for dimensional data.

Frequently Asked Questions

What is the controlling standard for Hex Bolts, and what drive do they take?

Hex Bolts are manufactured to ISO 4014 / ISO 4017 and use an external hex drive. The dimensional values on this page follow that standard.

What is the size range of Hex Bolts?

The table on this page lists 31 sizes for Hex Bolts, ranging from M1 to M64. Sizes outside the table can be quoted on request.

In which materials are Hex Bolts supplied?

Hex Bolts are supplied in carbon steel in property classes 8.8 / 10.9 / 12.9 and stainless A2 (304) / A4 (316), with finishes including zinc plating, hot-dip galvanizing and black oxide. Choose material and finish to suit the load and the service environment for Hex Bolts.

What spanner sizes do Hex Bolts take?

The width-across-flats for the smallest size on this page is 2.5 mm; the full table opposite the drawing lists the spanner size for every Hex Bolts.

How do I request a quotation?

Use the parametric drawing on this page to set the exact configuration (size, material, finish) and click "Request this configuration" — a specialist from Engineering Hardware will respond within one business day.

More Bolts

[← PreviousHex Bolt — GB/T 5783 / ISO 4017 \(Series 010\)GB/T 5783 / ISO 4017](#)[Next →Shoulder BoltsISO 7379](#)