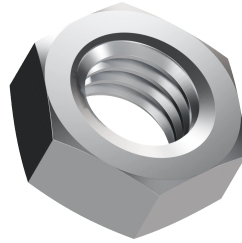


ASME B18.2.2

Hex nuts and hex jam nuts - inch series (Table 1.1.1-5 profile)



Standard	ASME B18.2.2		
Product Type	General and dimensional data for inch-series square and hex nuts, including machine screw and coupling nuts.		
Material	Carbon Steel		
Property Class	Grade 2, Grade 5		
Surface Finish	Zinc Plated, Plain		
Size Range	1/4-20 UNC - 1-1/2-12 UNF	Thread	Unified inch UNC / UNF

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Carbon steel / Alloy steel mechanical properties to	SAE J995
Stainless steel mechanical properties to	ASTM A194/A194M
Dimensions edition	to be agreed
Product grade	to be agreed

PROPERTY CLASSES

REQUIRED VALUES PER ISO 898-2

Class	Governing property	Source
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Property classes Grade 2, Grade 5 are supplied to this standard; their requirement values are not tabulated here. Refer to the standard.

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

Same for every size listed: Thread Class: 2B

Nominal Size	Basic Major Diameter - in	TPI Threads Per Inch	Thread Series	F (max) Width Across Flats - in	F (min) Width Across Flats - in	G (min) Width Across Corners - in	G (max) Width Across Corners - in	H Nut Height - in	H (min) Nut Height - in	H (max) Nut Height - in	H1 (min) Jam Nut Thickness - in	H1 (max) Jam Nut Thickness - in
1/4-20 UNC	0.25	20	UNC	0.438	0.428	0.488	0.505	0.226	0.212	0.226	0.15	0.163
5/16-18 UNC	0.3125	18	UNC	0.5	0.489	0.557	0.577	0.273	0.258	0.273	0.18	0.195
3/8-16 UNC	0.375	16	UNC	0.563	0.551	0.628	0.65	0.337	0.32	0.337	0.21	0.227
7/16-14 UNC	0.4375	14	UNC	0.688	0.675	0.768	0.794	0.385	0.365	0.385	0.24	0.26
1/2-13 UNC	0.5	13	UNC	0.75	0.736	0.84	0.866	0.448	0.427	0.448	0.302	0.323
5/8-11 UNC	0.625	11	UNC	0.938	0.922	1.051	1.083	0.559	0.535	0.559	0.363	0.387
3/4-10 UNC	0.75	10	UNC	1.125	1.088	1.24	1.299	0.665	0.617	0.665	0.398	0.446
7/8-9 UNC	0.875	9	UNC	1.312	1.269	1.447	1.516	0.776	0.724	0.776	0.458	0.51
1-8 UNC	1	8	UNC	1.5	1.45	1.653	1.732	0.887	0.831	0.887	0.519	0.575

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

Not held in stock. Available to order; minimum order quantity applies.

Nominal Size	Basic Major Diameter - in	TPI Threads Per Inch	Thread Series	F (max) Width Across Flats - in	F (min) Width Across Flats - in	G (min) Width Across Corners - in	G (max) Width Across Corners - in	H Nut Height - in	H (min) Nut Height - in	H (max) Nut Height - in	H1 (min) Jam Nut Thickness - in	H1 (max) Jam Nut Thickness - in
1/4-28 UNF	0.25	28	UNF	0.438	0.428	0.488	0.505	0.226	0.212	0.226	0.15	0.163
5/16-24 UNF	0.3125	24	UNF	0.5	0.489	0.557	0.577	0.273	0.258	0.273	0.18	0.195
3/8-24 UNF	0.375	24	UNF	0.563	0.551	0.628	0.65	0.337	0.32	0.337	0.21	0.227
7/16-20 UNF	0.4375	20	UNF	0.688	0.675	0.768	0.794	0.385	0.365	0.385	0.24	0.26
1/2-20 UNF	0.5	20	UNF	0.75	0.736	0.84	0.866	0.448	0.427	0.448	0.302	0.323
9/16-12 UNC	0.5625	12	UNC	0.875	0.861	0.982	1.01	0.496	0.473	0.496	0.301	0.324
9/16-18 UNF	0.5625	18	UNF	0.875	0.861	0.982	1.01	0.496	0.473	0.496	0.301	0.324
5/8-18 UNF	0.625	18	UNF	0.938	0.922	1.051	1.083	0.559	0.535	0.559	0.363	0.387
3/4-16 UNF	0.75	16	UNF	1.125	1.088	1.24	1.299	0.665	0.617	0.665	0.398	0.446
7/8-14 UNF	0.875	14	UNF	1.312	1.269	1.447	1.516	0.776	0.724	0.776	0.458	0.51
1-12 UNF	1	12	UNF	1.5	1.45	1.653	1.732	0.887	0.831	0.887	0.519	0.575
1-1/8-7 UNC	1.125	7	UNC	1.688	1.631	1.859	1.949	0.999	0.939	0.999	0.579	0.639
1-1/8-12 UNF	1.125	12	UNF	1.688	1.631	1.859	1.949	0.999	0.939	0.999	0.579	0.639
1-1/4-7 UNC	1.25	7	UNC	1.875	1.812	2.066	2.165	1.094	1.03	1.094	0.687	0.751
1-1/4-12 UNF	1.25	12	UNF	1.875	1.812	2.066	2.165	1.094	1.03	1.094	0.687	0.751
1-3/8-6 UNC	1.375	6	UNC	2.062	1.994	2.273	2.382	1.206	1.138	1.206	0.747	0.815
1-3/8-12 UNF	1.375	12	UNF	2.062	1.994	2.273	2.382	1.206	1.138	1.206	0.747	0.815
1-1/2-6 UNC	1.5	6	UNC	2.25	2.175	2.48	2.598	1.317	1.245	1.317	0.808	0.88
1-1/2-12 UNF	1.5	12	UNF	2.25	2.175	2.48	2.598	1.317	1.245	1.317	0.808	0.88

TECHNICAL SPECIFICATIONS

Property Class	Grade 2, Grade 5	Surface Finish	Zinc Plated, Plain
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MARKING
Steel — Required

What	As required by the applicable mechanical and performance standard - ASTM A563 Grade A for steel nuts, or SAE J995 Grade 2 for square nuts only (Clause 3.11); ASTM F594 for corrosion resistant and ASTM F467 for non-ferrous. The symbol itself is defined in those standards, which we do not hold.
Where	Not fixed by this Standard; it is set by the referenced material specification
Sizes	Machine screw nuts to Tables 1-1 and 1-2 are exempt - Clause 3.14 states markings are not required for them
Clause	ASME B18.2.2-2015, 3.14 Grade and Manufacturer's Identification Marking, with materials named in 3.11

Stainless steel — Required

What	As required by the applicable mechanical and performance standard - ASTM A563 Grade A for steel nuts, or SAE J995 Grade 2 for square nuts only (Clause 3.11); ASTM F594 for corrosion resistant and ASTM F467 for non-ferrous. The symbol itself is defined in those standards, which we do not hold.
Where	Not fixed by this Standard; it is set by the referenced material specification
Sizes	Machine screw nuts to Tables 1-1 and 1-2 are exempt - Clause 3.14 states markings are not required for them
Clause	ASME B18.2.2-2015, 3.14 Grade and Manufacturer's Identification Marking, with materials named in 3.11

Clause 3.14 of ASME B18.2.2-2015 sets no marking symbol of its own: grade and manufacturer's markings are applied as required by the applicable mechanical and performance standard, which Clause 3.11 names as ASTM A563 Grade A for steel nuts, or SAE J995 Grade 2 for square nuts only.

Machine screw nuts to Tables 1-1 and 1-2 are explicitly exempt: Clause 3.14 states that markings are not required for them.

Corrosion resistant nuts take their requirements from ASTM F594 and non-ferrous nuts from ASTM F467, so the marking obligation follows whichever of those the order specifies.

Clause 3.13 fixes the designation order: product name, dimensional standard, nominal size, threads per inch, basic width across flats where applicable, mechanical and performance standard, grade, and protective finish with its specification and thickness. Example: Square Nut, ASME B18.2.2, 1/2-13, ASTM A563 Grade A, Zinc Plated per ASTM F1941 Fe/Zn 3A.

Confirm the ordered property class before production.

INSPECTION DOCUMENTS WE CAN ISSUE

EN 10204 3.1 material certificate	Can be included when agreed in the order.
Dimensional inspection report	Can be provided for the agreed inspection scope.
Certificate of conformity	Can be issued against the confirmed order requirements.
Mechanical test report	Available when the required tests are agreed before production.
Chemical analysis report	Available when the material verification scope is agreed.
Coating inspection report	Can record the coating checks agreed for the order.

REFERENCES & NOTES

Note: Dimensional values follow the selected execution standard. Material properties and batch test results are included only when declared or supported by the applicable certificate or test report.