

Bolt Size Chart — Metric, SAE & JIS

<https://www.whatsizebolt.com/bolt-size-chart/>

Socket size quick reference

Bolt (metric)	Socket
M5	8mm
M6	10mm
M8	13mm
M10	16 / 17mm
M12	18 / 19mm
M14	21 / 22mm
M16	24mm
M18	27mm
M20	30mm

Bolt (SAE)	Socket
1/4"	7/16"
5/16"	1/2"
3/8"	9/16"
1/2"	3/4"

Where two sizes are shown (e.g. 16 / 17mm), the first is the current ISO 4014/4017 head and the second the older DIN 931/933 head still widely stocked.

Metric hex bolts

Size	Coarse pitch	Fine pitch	ISO 4014/4017 head	Older DIN 931/933 head (only where different)	Tap drill	Clearance hole
M2	0.4	0.25	4 mm		1.6 mm	2.4 mm
M2.5	0.45	0.35	5 mm		2.05 mm	2.9 mm
M3	0.5	0.35	5.5 mm		2.5 mm	3.4 mm
M4	0.7	0.5	7 mm		3.3 mm	4.5 mm
M5	0.8	0.5	8 mm		4.2 mm	5.5 mm
M6	1.0	0.75	10 mm		5.0 mm	6.6 mm
M7	1.0	0.75	11 mm		6.0 mm	7.6 mm
M8	1.25	1.0	13 mm		6.8 mm	9.0 mm
M10	1.5	1.25	16 mm	17 mm	8.5 mm	11 mm
M12	1.75	1.25	18 mm	19 mm	10.2 mm	13.5 mm
M14	2.0	1.5	21 mm	22 mm	12.0 mm	15.5 mm
M16	2.0	1.5	24 mm		14.0 mm	17.5 mm
M18	2.5	1.5	27 mm		15.5 mm	20 mm
M20	2.5	1.5	30 mm		17.5 mm	22 mm
M22	2.5	1.5	34 mm	32 mm	19.5 mm	24 mm
M24	3.0	2.0	36 mm		21.0 mm	26 mm
M27	3.0	2.0	41 mm		24.0 mm	30 mm
M30	3.5	2.0	46 mm		26.5 mm	33 mm
M33	3.5	2.0	50 mm		29.5 mm	36 mm
M36	4.0	3.0	55 mm		32.0 mm	39 mm
M39	4.0	3.0	60 mm		35.0 mm	42 mm
M42	4.5	3.0	65 mm		37.5 mm	45 mm
M45	4.5	3.0	70 mm		40.5 mm	48 mm
M48	5.0	3.0	75 mm		43.0 mm	52 mm

DIN 931/933 heads match ISO 4014/4017 at every other size listed. Where they differ, the DIN bolt needs the larger socket at M10, M12 and M14, and the smaller one at M22.

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JIS B 1180 reduced heads

Size	JIS reduced head	ISO head	Difference
M8	12 mm	13 mm	1 mm smaller
M10	14 mm	16 mm	2 mm smaller
M12	17 mm	18 mm	1 mm smaller

JIS B 1180's reduced-head series appears on some Japanese hardware. Its threads are the same as ISO; only the head is smaller. Sizes not listed here have not been verified for this chart.

Metric hex nuts — ISO 4032 vs DIN 934

Size	ISO 4032 across flats	ISO 4032 thickness	DIN 934 across flats	DIN 934 thickness
M3	5.5 mm	2.4 mm	5.5 mm	2.4 mm
M4	7 mm	3.2 mm	7 mm	3.2 mm
M5	8 mm	4.7 mm	8 mm	4.0 mm
M6	10 mm	5.2 mm	10 mm	5.0 mm
M8	13 mm	6.8 mm	13 mm	6.5 mm
M10	16 mm	8.4 mm	17 mm	8.0 mm
M12	18 mm	10.8 mm	19 mm	10.0 mm
M14	21 mm	12.8 mm	22 mm	11.0 mm
M16	24 mm	14.8 mm	24 mm	13.0 mm
M20	30 mm	18.0 mm	30 mm	16.0 mm
M24	36 mm	21.5 mm	36 mm	19.0 mm
M30	46 mm	25.6 mm	46 mm	24.0 mm

SAE (inch) bolts

Size	UNC TPI	UNF TPI	Wrench	Clearance hole	Tap drill
1/4"	20	28	7/16"	9/32"	#7 / #3
5/16"	18	24	1/2"	11/32"	F / I
3/8"	16	24	9/16"	13/32"	5/16" / Q
7/16"	14	20	5/8"	15/32"	U / 25/64"
1/2"	13	20	3/4"	17/32"	27/64" / 29/64"
9/16"	12	18	13/16"	19/32"	31/64" / 33/64"
5/8"	11	18	15/16"	21/32"	17/32" / 37/64"
3/4"	10	16	1-1/8"	25/32"	21/32" / 11/16"
7/8"	9	14	1-5/16"	29/32"	49/64" / 13/16"
1"	8	12	1-1/2"	1-1/16"	7/8" / 59/64"
1-1/8"	7	12	1-11/16"	1-3/16"	63/64" / 1-3/64"
1-1/4"	7	12	1-7/8"	1-5/16"	1-7/64" / 1-11/64"
1-3/8"	6	12	2-1/16"	1-7/16"	1-7/32" / 1-19/64"
1-1/2"	6	12	2-1/4"	1-9/16"	1-11/32" / 1-27/64"