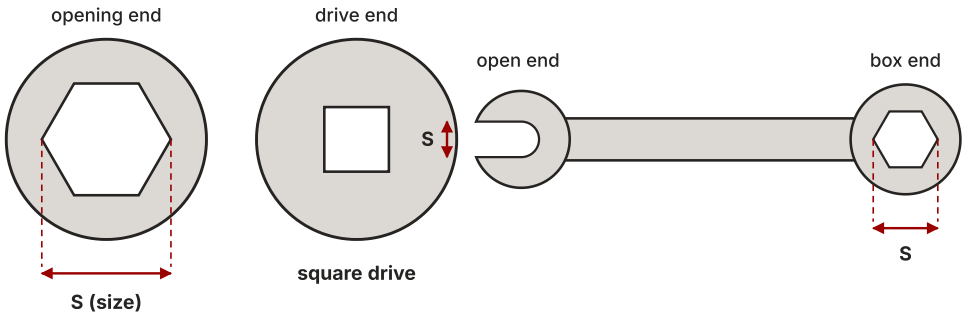
Socket & Wrench Sizes

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Inch and metric socket and wrench sizes: decimal and mm equivalents, the nearest size in the other system, which hex bolt or nut each size fits, square drive sizes, and hand vs impact sockets.

A **socket** or **wrench** is sized by its opening: the distance **across the flats** of the hex it fits, the same number as the bolt head or nut's wrench size — not the bolt's diameter. Inch sizes go in 1/32″ and 1/16″ steps, metric sizes in millimeters; an inch and a metric size are never exactly the same. A socket also has a **square drive** (1/4″, 3/8″, 1/2″, 3/4″, 1″) that matches the ratchet, breaker bar or impact wrench that turns it.



S is the size on the socket or wrench: across the flats of the hex it fits. Not to scale.

Inch socket and wrench sizes — what each size fits

SIZE	FITS (NOMINAL ACROSS FLATS)
5/32″	none on our chart
3/16″	none on our chart
7/32″	none on our chart
1/4″	none on our chart
9/32″	none on our chart
5/16″	none on our chart
11/32″	none on our chart
3/8″	none on our chart
13/32″	none on our chart
7/16″	1/4″ hex cap screw / bolt; 1/4″ hex nut
15/32″	none on our chart
1/2″	5/16″ hex cap screw / bolt; 5/16″ hex nut; 1/4″ heavy hex nut
17/32″	none on our chart
9/16″	3/8″ hex cap screw / bolt; 3/8″ hex nut; 5/16″ heavy hex nut
19/32″	none on our chart
5/8″	7/16″ hex cap screw / bolt
21/32″	none on our chart
11/16″	7/16″ hex nut; 3/8″ heavy hex nut
23/32″	none on our chart
3/4″	1/2″ hex cap screw / bolt; 1/2″ hex nut; 7/16″ heavy hex nut
25/32″	none on our chart
13/16″	9/16″ hex cap screw / bolt
27/32″	none on our chart
7/8″	1/2″ heavy hex bolt; 9/16″ hex nut; 1/2″ heavy hex nut
29/32″	none on our chart
15/16″	5/8″ hex cap screw / bolt; 5/8″ hex nut; 9/16″ heavy hex nut
31/32″	none on our chart
1″	none on our chart
1-1/16″	5/8″ heavy hex bolt; 5/8″ heavy hex nut
1-1/8″	3/4″ hex cap screw / bolt; 3/4″ hex nut

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SIZE	FITS (NOMINAL ACROSS FLATS)
1-3/16″	none on our chart
1-1/4″	3/4″ heavy hex bolt; 3/4″ heavy hex nut
1-5/16″	7/8″ hex cap screw / bolt; 7/8″ hex nut
1-3/8″	none on our chart
1-7/16″	7/8″ heavy hex bolt; 7/8″ heavy hex nut
1-1/2″	1″ hex cap screw / bolt; 1″ hex nut
1-9/16″	none on our chart
1-5/8″	1″ heavy hex bolt; 1″ heavy hex nut
1-11/16″	1-1/8″ hex cap screw / bolt; 1-1/8″ hex nut
1-3/4″	1-1/8″ heavy hex bolt (our sources differ)
1-13/16″	1-1/8″ heavy hex nut (1-1/8″ heavy hex bolt (our sources differ))
1-7/8″	1-1/4″ hex cap screw / bolt; 1-1/4″ hex nut
1-15/16″	none on our chart
2″	1-1/4″ heavy hex bolt; 1-1/4″ heavy hex nut
2-1/16″	1-3/8″ hex cap screw / bolt; 1-3/8″ hex nut
2-1/8″	none on our chart
2-3/16″	1-3/8″ heavy hex nut
2-1/4″	1-1/2″ hex cap screw / bolt; 1-1/2″ hex nut
2-5/16″	none on our chart
2-3/8″	1-1/2″ heavy hex nut
2-7/16″	none on our chart
2-1/2″	none on our chart
2-9/16″	1-5/8″ heavy hex nut
2-5/8″	none on our chart
2-11/16″	none on our chart
2-3/4″	1-3/4″ heavy hex nut
2-13/16″	none on our chart
2-7/8″	none on our chart
2-15/16″	none on our chart
3″	none on our chart
3-1/16″	none on our chart
3-1/8″	2″ heavy hex nut
3-3/16″	none on our chart
3-1/4″	none on our chart
3-5/16″	none on our chart
3-3/8″	none on our chart
3-7/16″	none on our chart
3-1/2″	2-1/4″ heavy hex nut
3-7/8″	2-1/2″ heavy hex nut
4-1/4″	2-3/4″ heavy hex nut
4-5/8″	3″ heavy hex nut
5″	3-1/4″ heavy hex nut
5-3/8″	3-1/2″ heavy hex nut
5-3/4″	3-3/4″ heavy hex nut
6-1/8″	4″ heavy hex nut

The hex cap screw / bolt and heavy hex bolt (ASME B18.2.1) and hex / heavy hex nut (ASME B18.2.2) whose nominal width across flats is this size, where two or more of our sources agree.

Inch socket and wrench sizes — mm equivalents

SIZE	DECIMAL	MM	NEAREST METRIC, DIFF. (MM)
5/32″	0.1562	3.97	4 mm, +0.03
3/16″	0.1875	4.76	5 mm, +0.24

SIZE	DECIMAL	MM	NEAREST METRIC, DIFF. (MM)
7/32″	0.2188	5.56	6 mm, +0.44
1/4″	0.2500	6.35	6 mm, −0.35
9/32″	0.2812	7.14	7 mm, −0.14
5/16″	0.3125	7.94	8 mm, +0.06
11/32″	0.3438	8.73	9 mm, +0.27
3/8″	0.3750	9.52	10 mm, +0.48
13/32″	0.4062	10.32	10 mm, −0.32
7/16″	0.4375	11.11	11 mm, −0.11
15/32″	0.4688	11.91	12 mm, +0.09
1/2″	0.5000	12.70	13 mm, +0.30
17/32″	0.5312	13.49	13 mm, −0.49
9/16″	0.5625	14.29	14 mm, −0.29
19/32″	0.5938	15.08	15 mm, −0.08
5/8″	0.6250	15.88	16 mm, +0.12
21/32″	0.6562	16.67	17 mm, +0.33
11/16″	0.6875	17.46	17 mm, −0.46
23/32″	0.7188	18.26	18 mm, −0.26
3/4″	0.7500	19.05	19 mm, −0.05
25/32″	0.7812	19.84	20 mm, +0.16
13/16″	0.8125	20.64	21 mm, +0.36
27/32″	0.8438	21.43	21 mm, −0.43
7/8″	0.8750	22.22	22 mm, −0.22
29/32″	0.9062	23.02	23 mm, −0.02
15/16″	0.9375	23.81	24 mm, +0.19
31/32″	0.9688	24.61	25 mm, +0.39
1″	1.0000	25.40	25 mm, −0.40
1-1/16″	1.0625	26.99	27 mm, +0.01
1-1/8″	1.1250	28.57	29 mm, +0.43
1-3/16″	1.1875	30.16	30 mm, −0.16
1-1/4″	1.2500	31.75	32 mm, +0.25
1-5/16″	1.3125	33.34	33 mm, −0.34
1-3/8″	1.3750	34.92	35 mm, +0.08
1-7/16″	1.4375	36.51	37 mm, +0.49
1-1/2″	1.5000	38.10	38 mm, −0.10
1-9/16″	1.5625	39.69	40 mm, +0.31
1-5/8″	1.6250	41.27	41 mm, −0.27
1-11/16″	1.6875	42.86	43 mm, +0.14
1-3/4″	1.7500	44.45	44 mm, −0.45
1-13/16″	1.8125	46.04	46 mm, −0.04
1-7/8″	1.8750	47.62	48 mm, +0.38
1-15/16″	1.9375	49.21	49 mm, −0.21
2″	2.0000	50.80	51 mm, +0.20
2-1/16″	2.0625	52.39	52 mm, −0.39
2-1/8″	2.1250	53.97	54 mm, +0.03
2-3/16″	2.1875	55.56	56 mm, +0.44
2-1/4″	2.2500	57.15	57 mm, −0.15
2-5/16″	2.3125	58.74	59 mm, +0.26
2-3/8″	2.3750	60.32	60 mm, −0.32
2-7/16″	2.4375	61.91	62 mm, +0.09
2-1/2″	2.5000	63.50	64 mm, +0.50
2-9/16″	2.5625	65.09	65 mm, −0.09
2-5/8″	2.6250	66.67	67 mm, +0.33
2-11/16″	2.6875	68.26	68 mm, −0.26

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SIZE	DECIMAL	MM	NEAREST METRIC, DIFF. (MM)
2-3/4″	2.7500	69.85	70 mm, +0.15
2-13/16″	2.8125	71.44	71 mm, −0.44
2-7/8″	2.8750	73.02	73 mm, −0.02
2-15/16″	2.9375	74.61	75 mm, +0.39
3″	3.0000	76.20	76 mm, −0.20
3-1/16″	3.0625	77.79	78 mm, +0.21
3-1/8″	3.1250	79.38	79 mm, −0.38
3-3/16″	3.1875	80.96	81 mm, +0.04
3-1/4″	3.2500	82.55	83 mm, +0.45
3-5/16″	3.3125	84.14	84 mm, −0.14
3-3/8″	3.3750	85.72	86 mm, +0.28
3-7/16″	3.4375	87.31	87 mm, −0.31
3-1/2″	3.5000	88.90	89 mm, +0.10
3-7/8″	3.8750	98.42	98 mm, −0.42
4-1/4″	4.2500	107.95	108 mm, +0.05
4-5/8″	4.6250	117.47	117 mm, −0.47
5″	5.0000	127.00	127 mm, same
5-3/8″	5.3750	136.53	137 mm, +0.47
5-3/4″	5.7500	146.05	146 mm, −0.05
6-1/8″	6.1250	155.57	156 mm, +0.43

Computed from 25.4 mm = 1 inch. Difference: + the metric size is that much larger, − smaller. Not the same size — use the size marked on the fastener.

Metric socket and wrench sizes — what each size fits

SIZE	FITS (METRIC HEX CAP)
4 mm	none on our chart
4.5 mm	none on our chart
5 mm	none on our chart
5.5 mm	M3 DIN 933 / 931
6 mm	none on our chart
7 mm	M4 DIN 933 / 931 and ISO 4017 / 4014
8 mm	M5 DIN 933 / 931 and ISO 4017 / 4014
9 mm	none on our chart
10 mm	M6 DIN 933 / 931 and ISO 4017 / 4014
11 mm	none on our chart
12 mm	none on our chart
13 mm	M8 DIN 933 / 931 and ISO 4017 / 4014
14 mm	none on our chart
15 mm	none on our chart
16 mm	none on our chart
17 mm	M10 DIN 933 / 931
18 mm	M12 ISO 4017 / 4014
19 mm	M12 DIN 933 / 931
20 mm	none on our chart
21 mm	none on our chart
22 mm	M14 DIN 933 / 931
23 mm	none on our chart
24 mm	M16 DIN 933 / 931 and ISO 4017 / 4014
25 mm	none on our chart
26 mm	none on our chart
27 mm	M18 DIN 933 / 931
28 mm	none on our chart

SIZE	FITS (METRIC HEX CAP)
29 mm	none on our chart
30 mm	M20 DIN 933 / 931 and ISO 4017 / 4014
31 mm	none on our chart
32 mm	M22 DIN 933 / 931
33 mm	none on our chart
34 mm	none on our chart
35 mm	none on our chart
36 mm	M24 DIN 933 / 931 and ISO 4017 / 4014
37 mm	none on our chart
38 mm	none on our chart
39 mm	none on our chart
40 mm	none on our chart
41 mm	M27 DIN 933 / 931
46 mm	M30 DIN 933 / 931
50 mm	M33 DIN 933 / 931
55 mm	M36 DIN 933 / 931

The metric hex cap screw whose nominal width across flats is this size, DIN 933 / 931 and ISO 4017 / 4014, where two or more of our sources agree. DIN and ISO heads are not always the same size (M12: 19 mm DIN, 18 mm ISO) — check which the bolt is.

Metric socket and wrench sizes — inch equivalents

SIZE	INCH	NEAREST INCH, DIFFERENCE (MM)
4 mm	0.157″	5/32″, −0.03
4.5 mm	0.177″	3/16″, +0.26
5 mm	0.197″	3/16″, −0.24
5.5 mm	0.217″	7/32″, +0.06
6 mm	0.236″	1/4″, +0.35
7 mm	0.276″	9/32″, +0.14
8 mm	0.315″	5/16″, −0.06
9 mm	0.354″	11/32″, −0.27
10 mm	0.394″	13/32″, +0.32
11 mm	0.433″	7/16″, +0.11
12 mm	0.472″	15/32″, −0.09
13 mm	0.512″	1/2″, −0.30
14 mm	0.551″	9/16″, +0.29
15 mm	0.591″	19/32″, +0.08
16 mm	0.630″	5/8″, −0.12
17 mm	0.669″	21/32″, −0.33
18 mm	0.709″	23/32″, +0.26
19 mm	0.748″	3/4″, +0.05
20 mm	0.787″	25/32″, −0.16
21 mm	0.827″	13/16″, −0.36
22 mm	0.866″	7/8″, +0.22
23 mm	0.906″	29/32″, +0.02
24 mm	0.945″	15/16″, −0.19
25 mm	0.984″	31/32″, −0.39
26 mm	1.024″	1″, −0.60
27 mm	1.063″	1-1/16″, −0.01
28 mm	1.102″	1-1/8″, +0.57
29 mm	1.142″	1-1/8″, −0.42
30 mm	1.181″	1-3/16″, +0.16
31 mm	1.220″	1-1/4″, +0.75
32 mm	1.260″	1-1/4″, −0.25

SIZE	INCH	NEAREST INCH, DIFFERENCE (MM)
33 mm	1.299″	1-5/16″, +0.34
34 mm	1.339″	1-5/16″, −0.66
35 mm	1.378″	1-3/8″, −0.08
36 mm	1.417″	1-7/16″, +0.51
37 mm	1.457″	1-7/16″, −0.49
38 mm	1.496″	1-1/2″, +0.10
39 mm	1.535″	1-9/16″, +0.69
40 mm	1.575″	1-9/16″, −0.31
41 mm	1.614″	1-5/8″, +0.27
46 mm	1.811″	1-13/16″, +0.04
50 mm	1.969″	1-15/16″, −0.79
55 mm	2.165″	2-3/16″, +0.56

Computed from 25.4 mm = 1 inch; nearest 1/32″ up to 1″, 1/16″ above. Difference: + the inch size is that much larger, − smaller.

Square drive sizes

DRIVE	SQUARE (IN)	SQUARE (MM)
1/4″ drive	1/4″	6.35 mm
3/8″ drive	3/8″	9.52 mm
1/2″ drive	1/2″	12.70 mm
3/4″ drive	3/4″	19.05 mm
1″ drive	1″	25.40 mm

The drive size is the nominal size of the square. mm computed from 25.4 mm = 1 inch.

Good to know

Use impact sockets on impact tools. Hand (chrome) sockets are for ratchets and hand tools; on an impact wrench or impact driver they can crack or shatter. Wright Tool: “Never use chrome sockets on impact guns, they should only be used with handheld ratchets.” Grey Pneumatic: “Only use impact sockets with power driven or impact tools.”

Inch and metric sizes are not the same. Some come close (the tables show how close), but a loose fit rounds off the corners of the nut. Use the size marked on the fastener; for a bolt or nut size, see our wrench size chart.

Quick answers

What size socket or wrench fits a 1/2 inch bolt?

A **3/4″** socket or wrench fits a 1/2″ hex cap screw or hex bolt; a 1/2″ heavy hex nut takes **7/8″**.

What size wrench fits a 7/16 hex nut?

A 7/16″ hex nut takes a **11/16″** wrench (ASME B18.2.2), per our chart.

What socket size fits an M8, M10 or M12 bolt?

M8: **13 mm** (DIN 933 and ISO 4017). M10 (DIN 933): **17 mm**. M12: **19 mm** DIN 933, **18 mm** ISO 4017 — check which the bolt is.

Is a 19 mm socket the same as 3/4 inch?

Close but not the same: 3/4″ is 19.05 mm, 0.05 mm bigger than 19 mm (computed from 25.4 mm per inch). Use the size marked on the fastener.

Can I use a chrome (hand) socket on an impact wrench?

No. Wright Tool and Grey Pneumatic both say to use only impact sockets on impact tools; hand sockets can crack or shatter.

Reference values drawn from the governing standards. For critical applications, confirm against the standard and the manufacturer’s published data. Technical information disclaimer →