

Socket and Wrench Sizes: Metric vs. SAE

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In general, you should use the smallest socket or wrench (spanner) that fits over a nut or bolt without force. Some metric sizes (millimeter, mm) are almost the same as SAE sizes (fractional, imperial, inch, standard). Metric tools are normally for metric fasteners and SAE tools are for SAE fasteners.

Original	Converted	Nearest	Ratio	Comment
5/32 in	3.969 mm	4 mm	1.00787	good
4 mm	5.039 / 32 in	5/32 in	0.99219	good
4.5 mm	5.669 / 32 in	3/16 in	1.05833	
3/16 in	4.762 mm	5 mm	1.04987	
5 mm	6.299 / 32 in	3/16 in	0.95250	
5.5 mm	6.929 / 32 in	7/32 in	1.01023	close
7/32 in	5.556 mm	5.5 mm	0.98988	close
6 mm	7.559 / 32 in	1/4 in	1.05833	
1/4 in	6.350 mm	6 mm	0.94488	
7 mm	8.819 / 32 in	9/32 in	1.02054	
9/32 in	7.144 mm	7 mm	0.97988	
5/16 in	7.938 mm	8 mm	1.00787	good
8 mm	10.079 / 32 in	5/16 in	0.99219	good
11/32 in	8.731 mm	9 mm	1.03078	
9 mm	11.339 / 32 in	11/32 in	0.97014	
3/8 in	9.525 mm	10 mm	1.04987	
10 mm	6.299 / 16 in	3/8 in	0.95250	
11 mm	6.929 / 16 in	7/16 in	1.01023	close
7/16 in	11.112 mm	11 mm	0.98988	close
12 mm	7.559 / 16 in	1/2 in	1.05833	
1/2 in	12.700 mm	13 mm	1.02362	
13 mm	8.189 / 16 in	1/2 in	0.97692	
14 mm	8.819 / 16 in	9/16 in	1.02054	
9/16 in	14.288 mm	14 mm	0.97988	
15 mm	9.449 / 16 in	9/16 in	0.95250	
5/8 in	15.875 mm	16 mm	1.00787	good
16 mm	10.079 / 16 in	5/8 in	0.99219	good
17 mm	10.709 / 16 in	11/16 in	1.02721	
11/16 in	17.462 mm	17 mm	0.97351	
18 mm	11.339 / 16 in	11/16 in	0.97014	

19 mm	11.969 / 16 in	3/4 in	1.00263	very good
3/4 in	19.050 mm	19 mm	0.99738	very good
20 mm	12.598 / 16 in	13/16 in	1.03187	
13/16 in	20.638 mm	21 mm	1.01757	
21 mm	13.228 / 16 in	13/16 in	0.98274	
22 mm	13.858 / 16 in	7/8 in	1.01023	close
7/8 in	22.225 mm	22 mm	0.98988	close
23 mm	14.488 / 16 in	7/8 in	0.96630	
15/16 in	23.812 mm	24 mm	1.00787	good
24 mm	15.118 / 16 in	15/16 in	0.99219	good
25 mm	15.748 / 16 in	1 in	1.01600	
1 in	25.400 mm	25 mm	0.98425	
26 mm	16.378 / 16 in	1 in	0.97692	
1-1/16 in	26.987 mm	27 mm	1.00046	very good
27 mm	17.008 / 16 in	1-1/16 in	0.99954	very good
28 mm	17.638 / 16 in	1-1/8 in	1.02054	
1-1/8 in	28.575 mm	29 mm	1.01487	
29 mm	18.268 / 16 in	1-1/8 in	0.98534	
30 mm	18.898 / 16 in	1-3/16 in	1.00542	good
1-3/16 in	30.162 mm	30 mm	0.99461	good
31 mm	19.528 / 16 in	1-1/4 in	1.02419	
1-1/4 in	31.750 mm	32 mm	1.00787	good
32 mm	20.157 / 16 in	1-1/4 in	0.99219	good

The comments “good” and “very good” are subjective. Here, “good” means less than one percent error and “very good” means less than 0.5% error. Depending upon what you are working with, you may have more or less tolerance for error.

Sockets and wrenches are manufactured to standards: ANSI, ASME, DIN, ISO, JIS, etc. There is no guarantee that specified dimensions will be the same in metric and SAE even when a size might be equivalent.

Sizes larger than 1-1/4" or 32mm are industrial and do not have a regular progression in their size numbers.