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REF: Hex, Socket (Allen) and Torx Bolt and Screw Wrench Sizes

With the charts below and knowing or deducing the nut / bolt thread size, you can figure what size wrench is needed.

If you are not sure of the thread size, you can reference the [Hardware P/N & Descriptions](#) pages in the Sportsterpedia to find bolt sizes for IH and Evo Sportsters.

And likewise, if you know the wrench size, you can sometimes deduce the thread size (barring course or fine threading).

Measuring a Hex Bolt / Nut Size

Let's say you have a bolt / nut you need to remove but you don't know what size wrench to use.

First and foremost, use the appropriate wrench type (6 point hex requires a 6 point wrench).

Using a 12 point wrench on a 6 point hex will eventually result in either rounding the hex corners or stripping / breaking the wrench.

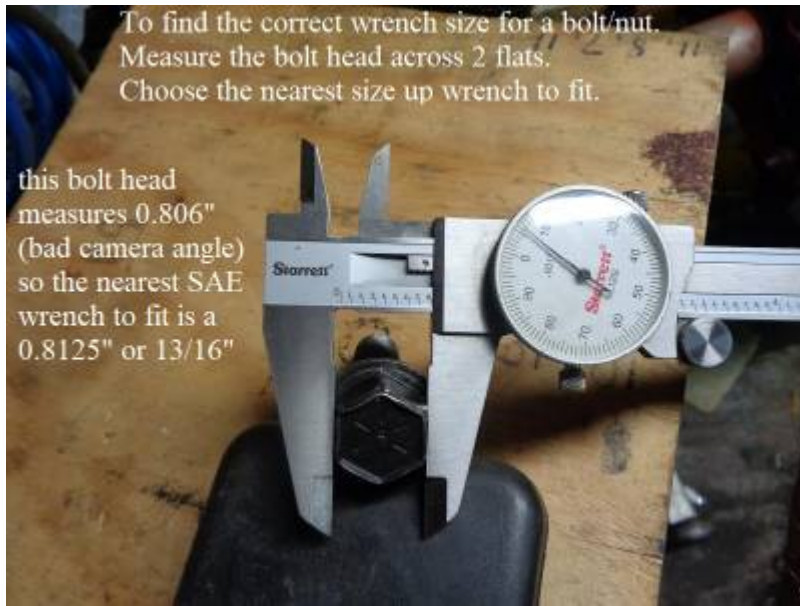
Likewise, if a 6 point wrench even fits on a 12 point nut / bolt, it will not be able to keep enough torque on the corners and will end up stripping them.

You can measure across two opposite flats of a hex bolt / nut with a tape measure or yard stick. But it will not be as accurate as using a caliper.

Either way, get the measurement and choose a wrench that falls in the nearest size up from the hex size. Wrenches come in standard sizes and most, but not all, hex bolts / nuts are made with standard wrench sizes in mind.

The real trouble comes when companies use "special manufacturing Specs" (most likely so you'll have to buy their tool to fit the part).

In the pic below, an engine sprocket nut from a Buell XB crank was measured at .806" (20.47mm). The next size up SAE wrench size is .8125" or 13/16" (20.6375mm).



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Hex Bolt and Socket (Allen) Screw Wrench Sizes

US Hex Bolt and Socket (Allen) Screw Wrench Size			Metric Hex Bolt and Socket (Allen) Screw Wrench Size		
Nominal Thread Diameter	Hex Bolt Wrench Size	Hex Socket Wrench Size	Nominal Thread Diameter	Hex Bolt Wrench Size	Hex Socket Wrench Size
#6	1/4"	-	M4	7mm	3mm
#8	1/4"	-	M5	8mm	4mm
#10	5/16"	-	M6	10mm	5mm
#12	5/16"	-	M8	13mm	6mm
1/4"	7/16"	3/16"	M10	17mm	8mm
5/16"	1/2"	1/4"	M12	19mm	10mm
3/8"	9/16"	5/16"	M14	22mm	12mm
7/16"	5/8"	3/8"	M16	24mm	14mm
1/2"	3/4"	3/8"	M18	27mm	14mm
9/16"	1-3/16"	7/16"	M20	30mm	17mm
5/8"	1-5/16"	1/2"	M22	32mm	17mm
3/4"	1-1/8"	5/8"	M24	36mm	19mm
7/8"	1-5/16"	3/4"	M30	46mm	22mm
1"	1-1/2"	3/4"			
1-1/8"	1-11/16"	7/8"			
1-1/4"	1-7/8"	7/8"			
1-3/8"	2-1/16"	1"			
1- 1/2"	2-1/4"	1"			
1-3/4"	2-5/8"	1-1/4"			

2"	3"	1-1/2"			
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Torx Screw Wrench Sizes

Screw Size	Torx Socket Set Screw	Torx Socket Cap Screw	Torx Pan Head Screw	Torx Flat Head Screw	Torx Fillister Head Screw	Torx Truss Head Screw	Torx Oval Head Screw	Torx Hex Head Screw	Torx Internal Washer Head Screw
#2	T3	-	T7	T6	-	-	-	-	T7
#3	T5	-	T8	T7	-	-	-	-	T8
#4	T6	T10	T9	T8	T9	-	-	T9	T9
#5	T7	T10	T10	T9	T10	-	T10	T10	T10
#6	T7	T15	T15	T10	T15	T10	T15	T15	T15
#8	T8	T25	T20	T15	T20	T15	T20	T20	T20
#10	T10	T27	T25	T20	T25	T20	T25	T25	T25
#12	T10	T27	T27	T25	T27	T25	T27	T27	T27
1/4"	T20	T30	T30	T27	T30	T27	T30	T30	T30
5/16"	T27	T45	-	T40	T40	T30	T40	T40	-
3/8"	T30	T50	T45	T40	T45	T40	T45	T45	-
7/16"	T40	T55	T50	T50	T50	T45	T50	-	-
1/2"	T45	T55	T55	T55	T55	T50	T50	-	-

SAE to Metric Hex Wrench Conversions

When you reference the hex wrench chart below, be aware that using a larger size wrench will increase the chances of stripping the bolt head corners. In some cases, you may want to try using a size above the one recommended in the chart to see if it fits by chance. Not every metric size has a perfect SAE counterpart and vice-versa. There is no perfect substitute for the right size tool.

SAE Hex Wrench Size	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	13/16"	7/8"	15/16"
SAE Bolt Size	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	9/16"	5/8"
Metric Hex Wrench Size	8mm	10mm	11mm	13mm	14mm	16mm	19mm	21mm	22mm	24mm

SAE to Metric Hex Key (Allen Head) Conversions

When you reference the hex key chart below, be aware that using a smaller size bit will increase the chances of stripping the corners. ²⁾ In some cases, you may want to try using a size above the one recommended in the chart to see if it fits by chance. Not every metric size has a perfect SAE counterpart and vice-versa. There is no perfect substitute for the right size tool.

SAE Hex Key	5/64"	3/32"	7/64"	1/8"	5/32"	3/16"	7/32"	1/4"	5/16"	3/8"
Metric Hex Key	2mm	2-1/2mm	3mm	3-1/2mm	4mm	5mm	6mm	7mm	8mm	10mm

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photo by Hippysmack

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<https://handtoolesentials.com/blog/tools/sae-to-metric-conversions-hex-keys/#:~:text=SAE%20to%20Metric%20Conversions%20for%20Hex%20Keys%20Chart,%203.5%20mm%20%206%20more%20rows%20>

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