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Torque Specifications

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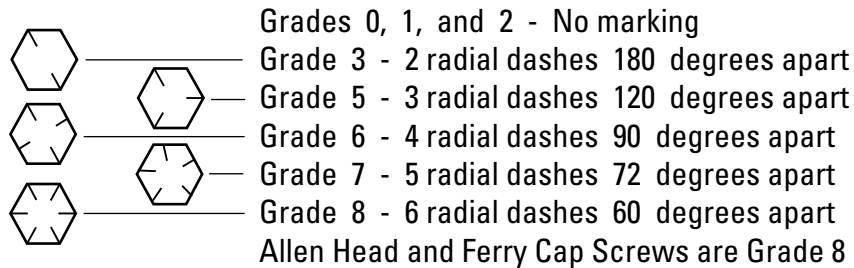
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Torque Specifications

North American made hex head cap screws have radial lined on their heads that indicate their tensile strength. When replacing a fastener, use a quality at least equal to or greater than the original fastener used on the machine. The more marks on the head, the higher the quality; thus, bolts of the same diameter vary in strength and require a correspondingly different tightening torque or preload. Remembering that torque is the turning effort or force applied to the fastener to preload it, or place it in tension, and is normally expressed in inch-pounds (in.lb) or foot-pounds (ft.lb). A one pound weight or force applied to a lever arm one foot long exerts one foot-pound, or twelve inch-pounds of torque. *Where possible always use OEM torque values.*

SAE bolt head markings



Torque Table

all torque values are expressed in FT-LB

Size	Grade #2	Grade #5	Grade #6	Grade #7	Grade #8
1/4 - 20	5.5	9.7	11.0	11.5	13.0
1/4 - 28	6.0	11.0	12.0	13.0	15.0
5/16 - 18	10.0	18.0	20.0	21.0	24.0
5/16 - 24	11.4	20.0	23.0	24.0	27.5
3/8 - 16	21.7	39.0	43.0	45.0	52.0
3/8 - 24	24.5	44.0	49.0	51.0	59.0
7/16 - 14	32.4	58.0	65.0	76.0	78.0
7/16 - 20	38.4	69.0	77.0	80.0	92.0
1/2 - 13	43.5	87.0	97.0	102.0	116.0
1/2 - 20	54.6	103.0	115.0	121.0	138.0
9/16 - 12	57.7	111.0	123.0	129.0	147.0
9/16 - 18	68.0	131.0	146.0	153.0	175.0
5/8 - 11	86.0	173.0	192.0	201.0	230.0
5/8 - 18	102.0	200.0	224.0	235.0	269.0
3/4 - 10	152.0	290.0	324.0	336.0	389.0
3/4 - 16	182.0	345.0	384.0	403.0	461.0
7/8 - 9	222.0	500.0	555.0	583.0	666.0
7/8 - 14	261.0	585.0	653.0	685.0	784.0
1 - 8	307.0	690.0	769.0	807.0	923.0
1 - 14	370.0	830.0	925.0	967.0	1111.0

Courtesy: Premier Industrial Corp.

Method of Applying Torque

Always run fasteners up snug (do not over tighten) with a regular wrench and then observe the following four steps.

1. Run each fastener in the proper sequence up to 1/3 of their recommended torque setting.
2. Repeat the process running up to 2/3 of the required torque setting.
3. Repeat the process again, running every fastener up to full torque.
4. Repeat step #3 to be positive you have not missed a fastener.