





### WHEN USING CHART





1. Use high stress lubricant under the bolt head as well as on the threads. (Use torque-figures directly.)
  2. Increase torque by 20% if engine oil or grease is used as lubricant. (Don't torque bolts dry.) (Follow manufacturers specific specs available.)
  3. Reduce torque by 20% when new Cadmium plated bolts are used.
- CAUTION:** Bolts threaded into aluminum may require much less torque.

## U.S. STANDARD

GRADE OF BOLT		SAE 1 & 2	SAE 5	SAE 6	SAE 8		
MIN. TENSILE STRENGTH		64,000 P.S.I.	105,000 P.S.I.	133,000 P.S.I.	150,000 P.S.I.		
GRADE MARKINGS ON HEAD						SOCKET OR WRENCH SIZE	
U.S. STANDARD		TORQUE (IN FOOT POUNDS)				U.S. REGULAR	
BOLT DIA.	U.S. DEC. EQUIV.					BOLT HEAD	NUT
1/4	.250	5	7	10	10.5	3/8	7/16
5/16	.3125	9	14	19	22	1/2	9/16
3/8	.375	15	25	34	37	9/16	5/8
7/16	.4375	24	40	55	60	5/8	3/4
1/2	.500	37	60	85	92	3/4	13/16
9/16	.5625	53	88	120	132	7/8	7/8
5/8	.625	74	120	167	180	15/16	1.
3/4	.750	120	200	280	296	1-1/8	1-1/8
7/8	.875	190	302	440	473	1-5/16	1-5/16
1.	1.000	282	466	660	714	1-1/2	1-1/2

MULTIPLY READINGS BY 12 FOR INCH POUND VALUES

## METRIC STANDARD

GRADE OF BOLT		5D	8G	10K	12K		
MIN. TENSILE STRENGTH		71,160 P.S.I.	113,800 P.S.I.	142,200 P.S.I.	170,679 P.S.I.		
GRADE MARKINGS ON HEAD						SOCKET OR WRENCH SIZE	
METRIC		TORQUE (IN FOOT POUNDS)				METRIC	
BOLT DIA.	U.S. DEC. EQUIV.					BOLT HEAD	NUT
6mm	.2362	5	6	8	10	10mm	10mm
8mm	.3150	10	16	22	27	14mm	14mm
10mm	.3937	19	31	40	49	17mm	17mm
12mm	.4720	34	54	70	86	19mm	19mm
14mm	.5512	55	89	117	137	22mm	22mm
16mm	.6299	83	132	175	208	24mm	24mm
18mm	.709	111	182	236	283	27mm	27mm
22mm	.8661	182	284	394	464	32mm	32mm
24mm	.945	261	419	570	689	36mm	36mm