


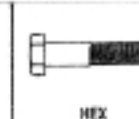








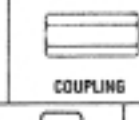
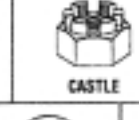



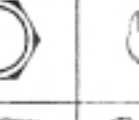


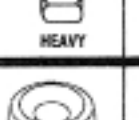


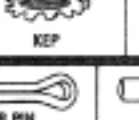



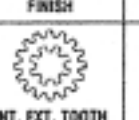

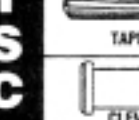
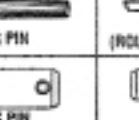











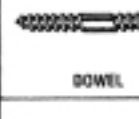
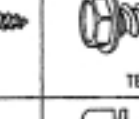
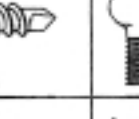
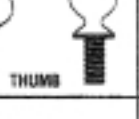
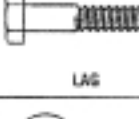
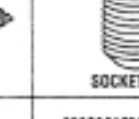


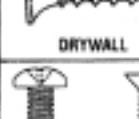

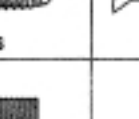
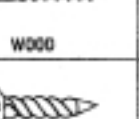




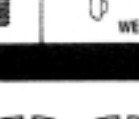
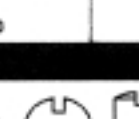


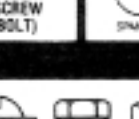



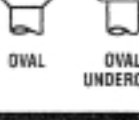

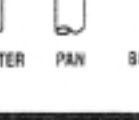
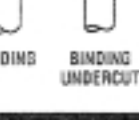
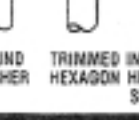
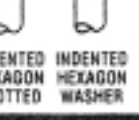







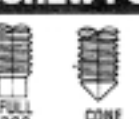

















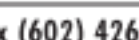



# FASTENER REFERENCE GUIDE

<b>BOLTS</b>																		
																		
<b>NUTS</b>																		
																		
<b>WASHERS</b>																		
																		
<b>STEEL, STAINLESS STEEL, BRASS, BRONZE</b>																		
<b>SCREWS</b>								<b>DRIVERS</b>										
																		
																		
																		
<b>HEAD STYLES</b>																		
																		
<b>TAPPING SCREW TYPES</b>						<b>MACHINE &amp; SET SCREW POINTS</b>												
																		

Santa Fe Springs, CA (562) 698-8800 • Rancho Cucamonga, CA (909) 581-6740 • Phoenix (602) 426-1422

## Threads Per Inch









SIZE	COURSE UNC	FINE UNC	BASIC MAJOR DIAM.
0		80	.0600
1	64	72	.0730
2	56	64	.0850
3	48	56	.0990
4	40	48	.1120
5	40	44	.1250
6	32	40	.1380
8	32	36	.1640
10	24	32	.1900
12	24	28	.2160
1/4	20	28	.2500
5/16	18	24	.3125
3/8	16	24	.3750
7/16	14	20	.4375
1/2	13	20	.5000
9/16	12	18	.5625
5/8	11	18	.6250
3/4	10	16	.7500
7/8	9	14	.8750
1	8	14	1.000

SIZE	COURSE UNC	FINE UNC	8 THRD SERIES	BASIC MAJOR DIAM.*
1-1/8	7	12	8	1.125
1-1/4	7	12	8	1.250
1-3/8	6	12	8	1.375
1-1/2	6	12	8	1.500
1-5/8	5-1/2		8	1.625
1-3/4	5	12	8	1.750
1-7/8	5		8	1.875
2	4-1/2	12	8	2.000
2-1/4	4-1/2		8	2.250
2-1/2	4		8	2.500
2-3/4	4		8	2.750
3	4		8	3.000
3-1/4	4		8	3.250
3-1/2	4		8	3.500
3-3/4	4		8	3.750
4	4		8	4.000

## USS Washers

BOLT SIZE	I.D. (Inches)	O.D. (Inches)	THICKNESS GAUGE	APPROX. NO. IN 100 LBS
3/16	1/4	9/16	18 (3/64)	36,200
1/4	5/16	3/4	16 (1/16)	14,900
5/16	3/8	7/8	14 (5/64)	9,000
3/8	7/16	1	14 (5/64)	6,700
7/16	1/2	1-1/4	14 (5/64)	4,100
1/2	9/16	1-3/8	12 (7/64)	2,600
9/16	5/8	1-1/2	12 (7/64)	2,200
5/8	11/16	1-3/4	10 (9/64)	1,300
3/4	13/16	2	9 (5/32)	910
7/8	15/16	2-1/4	8 (11/64)	650
1	1-1/16	2-1/2	8 (11/64)	530
1-1/8	1-1/4	2-3/4	8 (11/64)	450
1-1/4	1-3/8	3	8 (11/64)	380
1-3/8	1-1/2	3-1/4	7 (3/16)	300
1-1/2	1-5/8	3-1/2	7 (3/16)	260
1-5/8	1-3/4	3-3/4	7 (3/16)	200
1-3/4	1-7/8	4	7 (3/16)	200
1-7/8	2	4-1/4	7 (3/16)	175
2	2-1/8	4-1/2	7 (3/16)	150
2-1/4	2-3/8	4-3/4	5 (7/32)	121
2-1/2	2-5/8	5	4 (15/64)	104
2-3/4	2-7/8	5-1/4	3 (1/4)	91
3	3-1/8	5-1/2	2 (17/64)	77

## ASTM and SAE Grade Markings for Steel Bolts and Screws

Grade Marking	Specification	Material	Bolt and Screw Size, in.	Yield Strength min. psi	Tensile Strength min. psi
	SAE -- J429 Grade 1	Low or Medium Carbon Steel	1/4 thru 1 1/2	33,000	33,000
	ASTM -- A307		1/4 thru 4	-----	60,000
	SAE -- J429 Grade 2		1/4 thru 3/4	55,000	74,000
	SAE -- J429 Grade 5	Medium Carbon Steel, Quenched and Tempered	1/4 thru 1	85,000	120,000
	ASTM -- A449		Over 1 thru 1 1/2	74,000	105,000
			Over 1 1/2 thru 3	85,000	120,000
	ASTM -- A325 Grade 1	Medium Carbon Steel, Quenched and Tempered	1/2 thru 1	85,000	120,000
	ASTM -- A325 Grade 3	Weather Resistant Steel, Quenched and Tempered	1 1/8 thru 1 1/2	74,000	105,000
	ASTM -- A354 Grade B8	Low Alloy Steel, Quenched and Tempered	1/4 thru 2 1/2	80,000	105,000
	ASTM -- A354 Grade BC	Low Alloy Steel, Quenched and Tempered	Over 2 1/2 thru 4	75,000	100,000
	SAE -- J429 Grade 8	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 2 1/2	105,000	125,000
	SAE -- A354 Grade 8D	Alloy Steel, Quenched and Tempered	Over 2 1/2 thru 4	95,000	115,000
	ASTM -- A490	Alloy Steel, Quenched and Tempered	1/4 thru 1 1/2	130,000	180,000
	A193 Grade B7	Chromium-Molybdenum Steel, Quenched and Tempered	1/2 thru 1 1/2	120,000	180,000
	A193 Grade B16	Chromium-Molybdenum Vanadium Steel, Quenched and Tempered	2 1/2 and under	105,000	125,000
			Over 2 1/2 to 4 incl.	95,000	110,000
			Over 4 to 7 incl.	75,000	100,000

## SAE Washers

BOLT SIZE	I.D. (Inches)	O.D. (Inches)	THICKNESS GAUGE	APPROX. NO. IN 100 LBS
6 (1/8)	5/32	3/8	18 (3/64)	79,000
8 (5/32)	3/16	7/16	18 (3/64)	58,500
10 (3/16)	7/32	1/2	18 (3/64)	43,500
12 (7/32)	1/4	9/16	18 (3/64)	36,200
1/4	9/32	5/8	16 (1/16)	22,200
5/16	11/32	11/16	16 (1/16)	19,200
3/8	13/32	13/16	16 (1/16)	14,000
7/16	15/32	59/64	16 (1/16)	10,500
1/2	17/32	1-1/16	13 (3/32)	5,500
9/16	19/32	1-3/16	13 (3/32)	4,300
5/8	21/32	1-5/16	13 (3/32)	3,600
3/4	13/16	1-1/2	10 (9/64)	2,100
7/8	15/16	1-3/4	10 (9/64)	1,600
1	1-1/16	2	10 (9/64)	1,200
1-1/8	1-3/16	2-1/4	10 (9/64)	920
1-1/4	1-5/16	2-1/2	9 (5/32)	630
1-3/8	1-7/16	2-3/4	9 (5/32)	525
1-1/2	1-9/16	3	9 (5/32)	425

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