







**BOLTS
IDENTIFICATION ~ TORQUE ~ CLAMP ~ STRENGTH**

GRADE 2 				GRADE 5  				GRADE 8 				
Diameter	Proof Load	Yield Strength	Tensile Strength	Diameter	Proof Load	Yield Strength	Tensile Strength	Proof Load: 120,000 Yield Strength: 130,000 Tensile Strength: 150,000				
1/4 - 3/4"	55,000	57,000	74,000	1/4 - 1"	85,000	92,000	120,000					
3/4 - 1-1/2"	33,000	36,000	60,000	3/4 - 1-1/2"	74,000	81,000	105,000					
Low or medium Carbon Steel				Medium Carbon Steel, Quenched and Tempered				Carbon Alloy Steel, Quenched and Tempered				
Size	Clamp Load - Lbs.	Assembly Torque		Minimum Tensile - Lbs.	Clamp Load - Lbs.	Assembly Torque		Minimum Tensile - Lbs.	Clamp Load - Lbs.	Assembly Torque		Minimum Tensile - Lbs.
		Dry	Lub.			Dry	Lub.			Dry	Lub.	
1/4-20	1320	66*	50*	2700	2000	8	75*	4450	2850	12	9	6600
1/4-28	1500	76*	56*	2900	2300	10	86*	4840	3250	14	10	7200
5/16-18	2160	11	11	4400	3350	17	13	7190	4700	25	18	10700
5/16-24	2400	12	12	4700	3700	19	14	7670	5200	25	20	11500
3/8-16	3200	20	15	6400	4950	30	23	10530	7000	45	35	15800
3/8-24	3620	23	17	8800	5600	35	25	14400	7900	50	35	21600
1/2-13	5850	50	35	11500	9000	75	55	19000	12750	110	80	28600
1/2-20	6600	55	40	12500	10500	90	65	20500	14370	120	90	30800
5/8-11	9350	100	75	18500	14400	150	110	30100	20350	220	170	45200
5/8-18	10550	110	85	20000	16370	180	130	32600	23000	240	180	49000
3/4-10	13800	175	130	27000	21300	260	200	44200	30100	380	280	66300
3/4-16	15400	200	150	29000	23800	300	220	47400	33500	420	320	71100
7/8-9	11450	170	125	30000	29405	320	320	53100	41600	600	460	91000
1-8	15000	250	190	39500	38600	640	480	69500	54500	900	680	119200
1-1/8-7	18900	350	270	50000	42300	800	600	87800	68900	1280	960	150500
1-1/4-7	24000	500	380	63000	53800	1120	840	110300	87200	1820	1360	189200
1-3/8-6	28600	670	490	75500	64100	1460	1100	132200	104000	2380	1780	226700
1-1/2-6	34800	870	650	91000	78000	1910	1460	159600	126500	3160	2360	273600

18-8 Series STAINLESS 				STAINLESS - ANSI 316 				
Proof Load: None Yield Strength: 30,000 Tensile Strength: 75,000				Diameter	Proof Load	Yield Strength	Tensile Strength	
				1/4 - 3/4"	None	100,000	125,000	
				3/4 - 1"	None	80,000	115,000	
				1 - 1-1/4"	None	65,000	105,000	
				1-1/4 - 1-1/2"	None	50,000	100,000	
Size	Clamp Load - Lbs.	Assembly Torque		Minimum Tensile - Lbs.	Clamp Load - Lbs.	Assembly Torque		Minimum Tensile - Lbs.
		Dry	Lub.			Dry	Lub.	
1/4-20	1350	68*	51*	2780	2100	9	7	4600
1/4-28	1500	77*	58*	3020	2400	10	7	5000
5/16-18	2200	12	9	4400	3400	18	13	7400
5/16-24	2400	13	10	4700	3800	20	15	7900
3/8-16	3200	20	15	6500	5100	32	24	10900
3/8-24	3700	23	17	9000	5700	36	27	15000
1/2-13	5900	50	37	11900	9350	78	58	19800
1/2-20	6700	56	42	12800	10550	88	66	21400
5/8-11	9500	100	75	18800	14950	156	117	31400
5/8-18	10800	113	84	20400	16850	176	132	34000
3/4-10	14100	177	132	27600	20300	276	121	42300
3/4-16	15700	197	148	29600	22670	308	191	45400
7/8-9	11700	171	128	37900	16850	246	213	58100
1-8	15300	256	192	49700	22900	368	290	69500
1-1/8-7	19300	363	272	62700	25400	386	411	87800
1-1/4-7	24500	512	384	78800	32200	548	480	110300
1-3/8-6	29200	671	503	94400	38400	629	629	125900
1-1/2-6	35600	891	668	114000	46700	835	835	152000