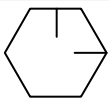

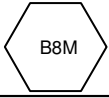
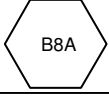

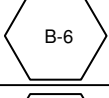
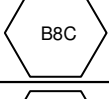
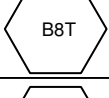
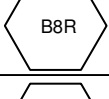


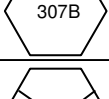
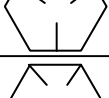
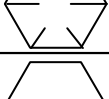
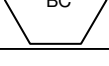
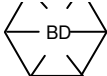

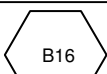

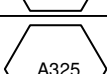
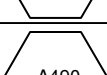


ASTM & SAE Grade Markings for Steel Bolts and Screws					
Grading * Marking	Specification	Material	Bolt & Screw Size, Inches	Min. Yield Strength	Min. Tensile Strength
	18 - 8 18 Chromium 8 Nickel	"300" Series Stainless Steel	All Diameters	30,000**	70,000**
	ASTM-A193 / A320 GR B8 CL-1	Solution Treated 304 - 304L Stainless Steel	All Diameters	30,000	75,000
	ASTM-A193 / A320 GR B8M CL-1	Solution Treated 316 - 316L Stainless Steel	All Diameters	30,000	75,000
	ASTM A193 / A320 GR B8A CL-1A	304 - 304L Stainless Steel Solution Treated In Finished Condition	All Diameters	30,000	75,000
	ASTM A193 / A320 GR B8MA CL-1A	316 - 316L Stainless Steel Solution Treated In Finished Condition	All Diameters	30,000	75,000
	ASTM A193 GR B6	410 Stainless Steel Quenched and Tempered	1/4" thru 4"	85,000	110,000
	ASTM A193 GR B8C CL1	347 Stainless Steel Solution Treated	All Diameters	30,000	75,000
	ASTM A193 GR B8T CL1	321 Stainless Steel Solution Treated	All Diameters	30,000	75,000
	ASTM A193 GR B8R	Nitronic 50 Solution Treated	All Diameters	55,000	100,000
	ASTM A193 GR B8S	Nitronic 60 Solution Treated	All Diameters	50,000	95,000
	ASTM F593 Cond. AH	17 - 4 PH (Type 630) Annealed and Age Hardened	1/4" thru 1-1/2"	105,000	135,000
	ASTM-A307 GR-A	Low or Medium Carbon Steel	1/4" thru 4"	-----	60,000
	ASTM-A307 GR-B	Low or Medium Carbon Steel	1/4" thru 4"	-----	60,000 100,000 Max.
	ASTM-A449 J429 GR5	Medium Carbon Steel Quenched and Tempered	1/4" thru 1" 1" thru 1-1/2" 1-1/2" thru 3"	85,000 74,000 55,000	120,000 105,000 90,000
	J429 GR8	Medium Carbon Alloy Steel Quenched and Tempered	1/4" thru 1-1/2"	120,000	150,000
	ASTM A354 GR BC	Alloy Steel Quenched and Tempered	1/4" thru 2-1/2" over 2-1/2" - 4"	109,000 99,000	125,000 115,000

	ASTM A354 GR BD	Alloy Steel Quenched and Tempered	1/4" thru 2-1/2" over 2-1/2" - 4"	130,000 115,000	150,000 140,000
	ASTM A193 GR B7	Chrom - Moly - Steel Quenched and Tempered	2-1/2" & under over 2-1/2" thru 4" over 4" thru 7"	105,000 95,000 75,000	125,000 115,000 100,000
	ASTM A193 GR B16	Chrom - Moly - Vanadium - Steel Quenched and Tempered	2-1/2" & under over 2-1/2" thru 4" over 4" thru 7"	105,000 95,000 75,001	125,000 115,000 100,000
	ASTM A325 Type 1	Medium Carbon Steel Quenched and Tempered	1/2" thru 1" 1-1/8" thru 1-1/2"	85,000 74,000	120,000 105,000
	ASTM A325 Type 3	Weather Resistant Steel Quenched and Tempered	1/2" thru 1" 1-1/8" thru 1-1/2"	85,000 74,000	120,000 105,000
	ASTM A490	Alloy Steel Quenched and Tempered	1/2" thru 1-1/2"	120,000	150,000

* Manufacturer's ID also appears.

** Cold forming greatly increases these values. Actual properties will be considerably higher