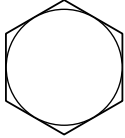

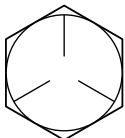


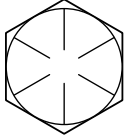



Identification Grade Marks	Specification	Fastener Description	Material	Normal Size Range (IN)	Mechanical Properties		
					Proof Load (psi)	Yield Strength Min (psi)	Tensile Strength Min (psi)
	SAE J429 Grade 1	Bolts, Screws, Studs	Low or Medium Carbon Steel	1/4 thru 1-1/2	33,000	33,000	60,000
	ASTM A307 Grades A & B		Low Carbon Steel	1/4 thru 4	—	—	60,000
	SAE J429 Grade 2		Low or medium Carbon Steel	1/4 thru 3/4 Over 3/4 to 1-1/2	55,00 30,0000		74,000 60,000
	ASTM A193 Grade B7	Bolts, Screws, Studs for High Temperature Service	AISI 4140 4142 or 4145	1/4 thru 2-1/2 Over 2-1/2 thru 4 Over 4 thru 7	— — —	105,000 95,000 75,000	125,000 115,000 100,000
	ASTM A193 Grade B7	Bolts, Screws, Studs for High Temperature Service	AISI 4140 4142 or 4145	1/4 thru 2-1/2 Over 2-1/2 thru 4 Over 4 thru 7	— — —	105,000 95,000 75,000	125,000 115,000 100,000
	ASTM A325 Type 1	High Strength Structural Bolts	Medium Carbon Steel, Quenched and Tempered	1/2 thru 1 1-1/8 thru 1-1/2	85,000 74,000	92,000 81,000	120,000 105,000
	ASTM A325 Type 2	High Strength Structural Bolts	Low Carbon Martensitic Steel, Quenched and Tempered	1/2 thru 1	85,000	92,000	120,000
	SAE J429 Grade B ASTM A354 Grades BO	Bolts, Screws, Studs	Medium Carbon Alloy Steel, Quenched and Tempered Alloy Steel Quenched and Tempered	1/4 thru 1-1/2	120,000	130,000	150,000
	ASTM A490	High Strength Structural Bolts	Alloy Steel Quenched and Tempered	1/2 thru 1-1/2	120,000	130,000	150,000 min 170,000 max