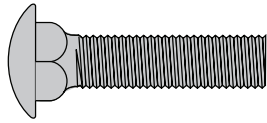


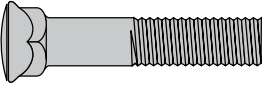
Bolts



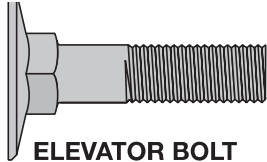
ANCHOR BOLT



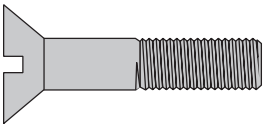
CARRIAGE BOLT



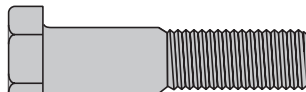
DOME HEAD PLOW BOLT



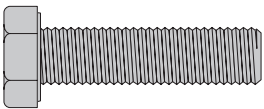
ELEVATOR BOLT



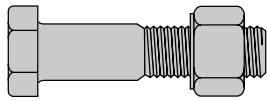
FLAT HEAD SCREW



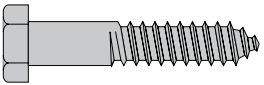
HEX CAP SCREWS



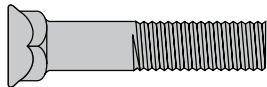
HEX HEAD TAP BOLT



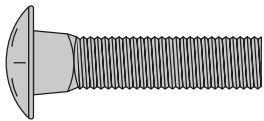
HEAVY HEX STRUCTURAL BOLT WITH NUTS



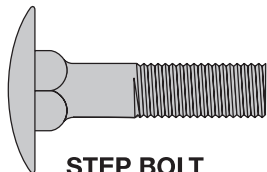
HEX LAG SCREW



No. 3 PLOW BOLT



SHAKER SCREEN BOLT



STEP BOLT

STANDARD BOLT LENGTHS

Size	Grade 2	Grade 5	Grade 8
1/4 - 20	1/2" to 8"	3/8" to 8"	1/2" to 8"
5/16 - 18	3/8" to 8"	3/8" to 8"	1/2" to 8"
3/8 - 16	1/2" to 12"	1/2" to 10"	1/2" to 8"
7/16 - 14	3/4" to 6"	3/4" to 10"	3/8" to 8"
1/2 - 13	1/2" to 24"	1/2" to 15"	3/4" to 15"
9/16 - 12	-	1" to 15"	1" to 15"
5/8 - 11	1" to 24"	1" to 15"	1" to 15"
3/4 - 10	1" to 24"	1" to 15"	1" to 15"
7/8 - 9	1-1/4" to 24"	1-1/2" to 15"	1-1/2" to 15"
1 - 8	1-1/2" to 24"	1-1/2" to 15"	2" to 15"
1-1/8 - 7	2" to 24"	2" to 15"	2-1/2" to 16"
1-1/4 - 7	2-1/2" to 24"	2" to 15"	2-1/2" to 16"
1-3/8 - 6	-	-	3" to 16"
1-1/2 - 6	3" to 24"	3" to 16"	4" to 16"
1-3/4 - 5	5" to 24"	5" to 16"	4" to 16"
2 - 4 1/2	8" to 24"	5" to 18"	4" to 16"

Materials*

- A307
- A307B
- A325
- A449
- B8
- B8M
- Grade 5
- Grade 8
- Grade 9
- Aluminum
- Brass
- Bronze
- Monel
- Nylon
- Stainless Steel














Plating*

- Black Oxide
- Brass
- Cad
- Chrome
- Hot Dip Galvanized
- Nickel
- Zinc

* Other materials and platings available upon request



FASTENER IDENTIFICATION MARKING

Grade Identification Marking	Specification	Material	Nominal Size (In.)	Proof Load Stress (ksi)	Tensile Strength Min (ksi)	Hardness Rockwell	
						Min	Max
	SAE J429 - Grade 1	Low or Medium Carbon Steel	1/4 thru 1-1/2	33	60	B70	B100
	SAE J429 - Grade 2		1/4 thru 3/4 over 3/4 thru 1-1/2	55 33	74 60	B80 B70	B100
	ASTM A 307 - Grade A		1/4 thru 4	-	60	B69	B100
	ASTM A 307 - Grade B		1/4 thru 4	-	60 min 100 max	B69	B95
	SAE J429 - Grade 5	Medium Carbon Steel, Quenched and Tempered	1/4 thru 1 over 1 thru 1-1/2	85 74	120 105	C25 C19	C34 C30
	ASTM A 449 - Type 1		over 1-1/2 thru 3	55	90	183	235
	SAE J429 - Grade 5.1	Low or Medium Carbon Steel, Quenched and Tempered	No. 6 thru 1/2	85	120	C25	C40
	SAE J429 - Grade 5.2	Low or Medium Carbon Steel, Quenched and Tempered	1/4 thru 1	85	120	C26	C36
	ASTM A 449 - Type 2					C25	C34
	ASTM A 325 - Type 1	Medium Carbon Steel, Quenched and Tempered	1/2 thru 1 over 1 to 1 1/2	85 74	120 105	C24 C19	C35 C31
	ASTM A 325 - Type 2	Low or Medium Carbon Steel, Quenched and Tempered					
	ASTM A 325 - Type 3	Atmospheric Corrosion Resistant Steel Quenched and Tempered					
	ASTM A 354 - Grade BC	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 2-1/2 over 2-1/4 to 4	105 95	125 115	C26 C22	C36 C33
	SAE J429 - Grade 8	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 2-1/2	120	150	C33	C39
	ASTM A354 - Grade BD		1/4 thru 2-1/2 over 2-1/4 to 4	120 105	150 140	C33 C31	C39 C39
	SAE J429 - Grade 8.2	Low Carbon Martensite Steel, Quenched and Tempered	1/4 thru 1	120	150	C33	C39
	ASTM A 490 - Type 1	Medium Carbon Alloy Steel, Quenched and Tempered	1/2 thru 1-1/2	120	150 min 170 max	C33	C38
	ASTM A 490 - Type 2	Low Carbon Martensite Steel, Quenched and Tempered	1/2 thru 1	120	150 min 170 max	C33	C38
	ASTM A 490 - Type 3	Atmospheric Corrosion Resistant Steel Quenched and Tempered	1/2 thru 1-1/2	120	150 min 170 max	C33	C38

*Upon request complete physical and chemical documentation available. Including heat and lot numbers.