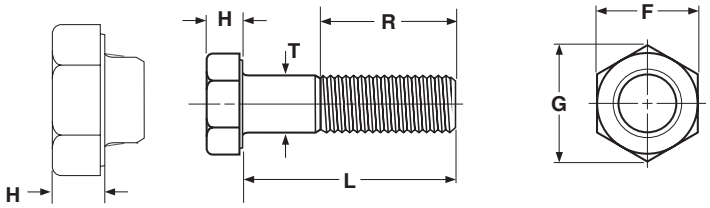
CAP SCREWS & BOLTS

Hex Cap Screws DIN 931



METRIC - DIN 931 Hex Head Cap Screws, Coarse Thread

DIN 931

Nominal Size	Thread Pitch	R		H		F		T		G
		Threaded Length		Head Height		Width Across Flats		Body Diameter		Width Across Corners
		L <= 125 mm	L>125mm <=200mm	Max	Min	Max	Min	Max	Min	Min
M6	1	18	24	4.15	3.85	10	9.78	6	5.82	11.05
M8	1.25	22	28	5.45	5.15	13	12.73	8	7.78	14.38
M10	1.5	26	32	6.58	6.22	17	16.73	10	9.78	17.77
M12	1.75	30	36	7.68	7.32	19	18.67	12	11.73	20.03
M16	2	38	44	10.18	9.82	24	23.67	16	15.73	26.75
M20	2.5	46	52	12.72	12.28	30	29.67	20	19.67	33.53
M24	3	54	60	15.22	14.78	36	35.38	24	23.67	39.98

Tolerance on Length				
	12-16mm: ±0.35	20-30mm: ±0.42	35-50mm: ±0.5	55-80mm: ±0.6
	90-120: ±0.7		130-180mm: ±0.8	

Description	An externally threaded fastener with hexagonal head, washer-face beneath the head, a metric thread pitch, made from medium carbon steel and heat-treated. Threaded shank does not extend completely to the head.	An externally threaded fastener with hexagonal head, washer-face beneath the head, a metric thread pitch, made from high alloy steel and heat-treated. Threaded shank does not extend completely to the head.
Applications/ Advantages	Has greater tensile strength than Class 4.6, 4.8 and 5.8 bolts.	Has greater tensile strength than Class 8.8 bolts; is most comparable but not exactly equivalent to U.S. Grade 8 cap screws.
Material	***Class 8.8***	***Class 10.9***
	Class 8.8 bolts can be made from a carbon steel which conforms to the following chemical composition-- ***Carbon***: 0.25-0.55%; ***Phosphorus***: 0.035% maximum; ***Sulfur***: 0.035% maximum.	Class 10.9 bolts can be made from an alloy steel which conforms to the following chemical composition-- ***Carbon***: 0.20-0.55%; ***Phosphorus***: 0.035% maximum; ***Sulfur***: 0.035% maximum; and shall contain one or more of the following elements: Chromium, Nickel, Molybdenum or Vanadium
Heat Treatment	Class 8.8 bolts shall be heat treated by quenching in a liquid medium from above the transformation temperature and reheating to a tempering temperature of 425°C.	Class 10.9 bolts shall be heat treated by quenching in oil from above the transformation temperature and reheating to a tempering temperature of 425°C.
Core Hardness	***For diameters less than or equal to 16mm:*** Rockwell C22 - 32 *For diameters greater than 16mm:* Rockwell C23 - 34	*All diameters:* Rockwell C32 - 39
Yield Strength	***For diameters less than or equal to 16mm:*** 92,800 psi. minimum *For diameters greater than 16mm:* 95,700 psi. minimum	*All diameters:* 136,300 psi. minimum
Tensile Strength	***For diameters less than or equal to 16mm:*** 116,000 psi. minimum *For diameters greater than 16mm:* 120,350 psi. minimum	*All diameters:* 150,800 psi. minimum
Plating	See Appendix-A for plating information	See Appendix-A for plating information