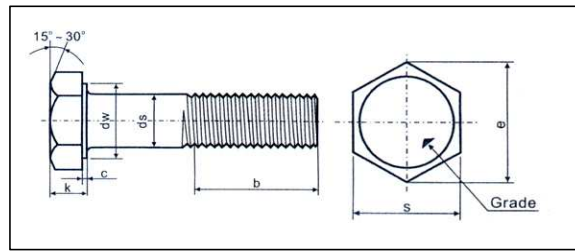


High Tensile 10.9 Hexagon Bolts



Size		M10	M12	(M14)	M16	(M18)	M20	(M22)	M24	(M27)	M30	M36
Dimensions												
Pitch		1.5	1.75	2	2	2.5	2.5	2.5	3	3	3.5	4
Thread Length (b)	≤ 125mm	26	30	34	38	42	46	50	54	60	66	78
	125mm	32	36	40	44	48	52	56	50	66	72	84
	> 200mm	45	49	53	57	61	65	69	73	79	85	97
c	min.	0.15	0.15	0.15	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	max.	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
ds	min.	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67	26.48	29.48	35.38
	max.	10	12	14	16	18	20	22	24	27	30	36
dw	min.	15.6	17.4	20.5	22.5	25.3	28.2	30	33.6	38	42.7	51.1
e	min.	18.9	21.1	24.49	26.75	30.14	33.53	35.72	39.98	45.2	50.85	60.79
Head Depth (k)	nom.	6.4	7.5	8.8	10	11.5	12.5	14	15	17	18.7	22.5
	min.	6.22	7.32	8.62	9.82	11.28	12.28	13.65	14.65	16.65	18.28	22.08
	max.	6.58	7.68	8.98	10.18	11.72	12.72	14.35	15.35	17.35	19.12	22.92
Across Flats (s)	nom.	17	19	22	24	27	30	32	36	41	46	55
	min.	16.73	18.67	21.67	23.67	26.67	29.67	31.61	35.38	40	45	53.8
Mechanical Properties												
Breakload Single Shear - kN	Shank	51	74		131		204	245	294	396	459	662
	Thread	34	50		94		146	175	211	266	337	493
Tensile Load -kN	Stress Area mm ²	58	84.3	115	157	192	245	303	356	459	561	817
	Load kN	60.32	87.67	119.6	163.28	199.68	254.8	315.12	367.12	477.36	583.44	849.68
Yield Load -kN	Stress Area mm ²	58	84.3	115	157	192	245	303	356	459	561	817
	Load kN	54.52	79.24	108.1	147.58	180.48	230.3	284.82	331.82	431.46	527.34	767.98
Recommended Assembly Torques	Bolt Tension to 65% of Proof Load	31.3	45.5	62.1	84.5	103	132	164	190	248	303	441
	Assembly Torque Nm	63	109	174	270	371	528	722	914	1339	1817	3173

*Please note: Diameters shown in () should be avoided for new design

Ultimate Tensile Strength Load is derived from Stress Area in mm², multiplied by minimum Tensile strength

Tensile Strength 1040 Mpa

Hardness (HRC) 32-39

Elongation % 9%