Dimension table DIN 933 / DIN 931 (ISO 4017 / ISO 4014) — hexagon bolts

Dimensions in mm. DIN 933 (full thread) was superseded by ISO 4017, DIN 931 (partial thread) by ISO 4014. Our bolts follow the DIN widths across flats (M10 = 17, M12 = 19, M14 = 22, M22 = 32 mm); ISO uses 16, 18, 21 and 34 mm there. Tightening torques are guide values from VDI 2230 (friction coefficient 0.10, 90 % of the yield strength); verify them for critical joints. No table torques apply to stainless steel: tighten by feel and use anti-seize paste against galling.

Dimensions

size	pitch P	width across flats s	head height k	across corners e
M3	0.5	5.5	2	6.01
M4	0.7	7	2.8	7.66
M5	0.8	8	3.5	8.79
M6	1	10	4	11.05
M8	1.25	13	5.3	14.38
M10	1.5	17	6.4	18.9
M12	1.75	19	7.5	21.1
M14	2	22	8.8	24.49
M16	2	24	10	26.75
M18	2.5	27	11.5	30.14
M20	2.5	30	12.5	33.53
M22	2.5	32	14	35.72
M24	3	36	15	39.98
M27	3	41	17	45.2
M30	3.5	46	18.7	50.85
M33	3.5	50	21	55.37
M36	4	55	22.5	60.79
M39	4	60	25	66.44
M42	4.5	65	26	71.3
M48	5	75	30	82.6

Thread length b for DIN 931 (partial thread)

length l	thread length b
up to 125 mm	2 × d + 6
126 to 200 mm	2 × d + 12
over 200 mm	2 × d + 25

Tightening torques, steel (Nm)

size	8.8	10.9
M3	1.15	1.68
M4	2.64	3.88
M5	5.2	7.6
M6	9	13.2
M8	21.5	32
M10	42.5	62.5

M12	73.5	108
M14	118	173
M16	180	264
M20	362	520
M24	625	890

Property classes

8.8	steel, tensile strength 800 N/mm², yield strength 640 N/mm² (ISO 898-1)
10.9	steel, tensile strength 1,000 N/mm², yield strength 900 N/mm² (ISO 898-1)
A2-70 / A4-70	stainless steel, tensile strength 700 N/mm², 0.2 % proof stress 450 N/mm² (ISO 3506-1)
A2-50 / A4-50	stainless steel, large sizes, tensile strength 500 N/mm², 0.2 % proof stress 210 N/mm²
A4-80	stainless steel, tensile strength 800 N/mm², 0.2 % proof stress 600 N/mm²