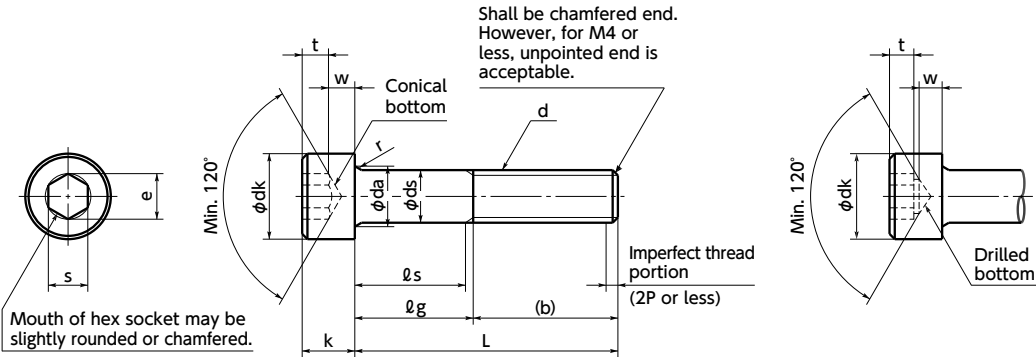


Hexagon Socket Head Cap Screws

Excerpts from ISO 4762:2004, JIS B 1176:2015

Shape and dimensions of hex socket head cap screws



Unit: mm

Nominal diameter of thread (d)	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
Thread pitch	0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
b*1 (Reference)	15	16	17	18	20	22	24	28	32	36	44	52	60
dk	Max.*2	3.00	3.8	4.5	5.5	7	8.5	10	13	16	18	24	30
	Max.*3	3.14	3.98	4.68	5.68	7.22	8.72	10.22	16.27	18.27	24.33	30.33	36.39
	Min.	2.86	3.62	4.32	5.32	6.78	8.28	9.78	12.73	15.73	17.73	23.67	29.67
da	Max.	2	2.6	3.1	3.6	4.7	5.7	6.8	9.2	11.2	13.7	17.7	22.4
ds	Max.	1.60	2	2.5	3	4	5	6	8	10	12	16	20
	Min.	1.46	1.86	2.36	2.86	3.82	4.82	5.82	7.78	9.78	11.73	15.73	19.67
e	Min.*4*5	1.733	1.733	2.303	2.873	3.443	4.583	5.723	6.863	9.149	11.429	15.996	19.437
	Max.	1.60	2	2.5	3	4	5	6	8	10	12	16	20
k	Min.	1.46	1.86	2.36	2.86	3.82	4.82	5.70	7.64	9.64	11.57	15.57	19.48
r	Min.	0.1	0.1	0.1	0.1	0.2	0.2	0.25	0.4	0.4	0.6	0.8	0.8
s*5	Nominal Diameter	1.5	1.5	2	2.5	3	4	5	6	8	10	14	19
	Max.	1.58	1.58	2.08	2.58	3.08	4.095	5.14	6.14	8.175	10.175	14.212	19.275
	Min.	1.52	1.52	2.02	2.52	3.02	4.02	5.02	6.02	8.025	10.025	14.032	19.065
t	Min.	0.7	1	1.1	1.3	2	2.5	3	4	5	6	8	10
v	Max.	0.16	0.2	0.25	0.3	0.4	0.5	0.6	0.8	1	1.2	1.6	2.4
dw	Min.	2.72	3.48	4.18	5.07	6.53	8.03	9.38	12.33	15.33	17.23	23.17	28.87
w	Min.	0.55	0.55	0.85	1.15	1.4	1.9	2.3	3.3	4	4.8	6.8	10.4

- *1 Shall be applied to non-shaded nominal diameters between thick stepwise lines.
- *2 Shall be applied to unknurled head
- *3 Shall be applied to knurled head
- *4 $e_{min} = 1.14 s_{min}$
- *5 See JIS B 1016 for gauge inspection of hex socket dimensions s and e .

Unit: mm

Nominal diameter of thread (d)	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
L*	ϕs and ϕg												
Nominal Diameter Length	ϕs min	ϕg min	ϕs max	ϕg max	ϕs min	ϕg min	ϕs max	ϕg max	ϕs min	ϕg min	ϕs max	ϕg max	ϕs min
2.5	2.3	2.7											
3	2.8	3.2											
4	3.76	4.24											
5	4.76	5.24											
6	5.76	6.24											
8	7.71	8.29											
10	9.71	10.29											
12	11.65	12.35											
16	15.65	16.35											
20	19.58	20.42	2	4									
25	24.58	25.42		5.75	8	4.5	7						
30	29.58	30.42			9.5	12	6.5	10	4	8			
35	34.5	35.5				11.5	15	9	13	6	11		
40	39.5	40.5				16.5	20	14	18	11	16	5.75	12
45	44.5	45.5						19	23	16	21	10.75	17
50	49.5	50.5						24	28	21	26	15.75	22
55	54.4	55.6							26	31	20.75	27	10.5
60	59.4	60.6								31	36	25.75	32
65	64.4	65.6									30.75	37	25.5
70	69.4	70.6									35.75	42	30.5
80	79.4	80.6									45.75	52	40.5
90	89.3	90.7										50.5	58
100	99.3	100.7										60.5	68
110	109.3	110.7											65.25
120	119.3	120.7											75.25
130	129.2	130.8											
140	139.2	140.8											
150	149.2	150.8											
160	159.2	160.8											
180	179.2	180.8											
200	199.075	200.9											

* Range of nominal length generally distributed is between thick stepwise lines. Shaded nominal length shall be full thread, and length of imperfect thread under head shall be 3P or less.
Non-shaded values show ϕg and ϕs values based on the next formula: $\phi g_{max} = \phi nom - b$, $\phi s_{min} = \phi g_{max} - 5P$