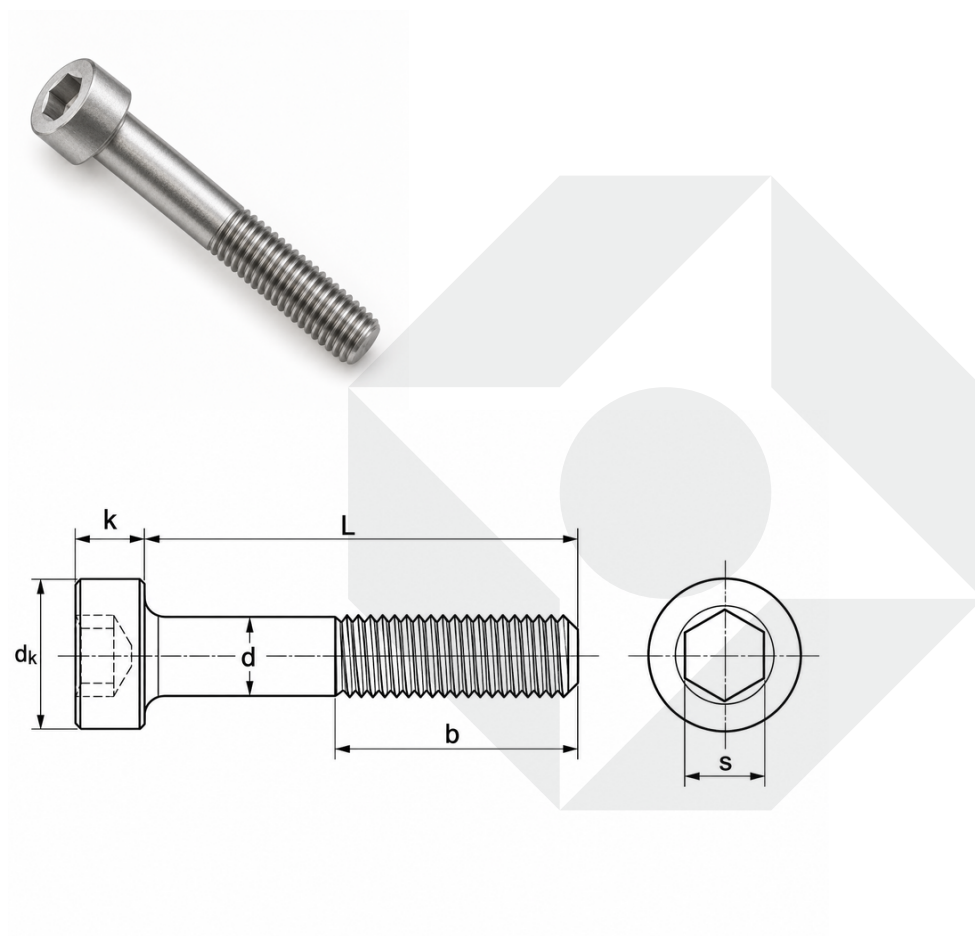


ISO 4762:2004

Hexagon socket head cap screw

A cylindrical head with an internal hexagon drive for mechanical assemblies with axial tool access. Screw length determines whether the shank is partially or fully threaded.

Reference dimensions M3–M48, with commercial lengths selectable by diameter. Other diameters and lengths can be assessed on request, including dedicated production.



d : nominal diameter · d_k : head diameter · k : head height · s : hexagon socket size · t : socket depth · L : underhead length · b : reference thread length

Identification drawing, not a manufacturing drawing.

Dimensional range

Dimensions in millimetres.

M	Pitch P	dk max.	k max.	s	t min.
3	0.5	5.5	3	2.5	1.3
4	0.7	7	4	3	2
5	0.8	8.5	5	4	2.5
6	1	10	6	5	3
8	1.25	13	8	6	4
10	1.5	16	10	8	5
12	1.75	18	12	10	6
14	2	21	14	12	7
16	2	24	16	14	8
18	2.5	27	18	14	9
20	2.5	30	20	17	10
22	2.5	33	22	17	11
24	3	36	24	19	12
27	3	40	27	19	13.5
30	3.5	45	30	22	15.5
33	3.5	50	33	24	18
36	4	54	36	27	19
39	4	58	39	27	21
42	4.5	63	42	32	24
45	4.5	68	45	32	26
48	5	72	48	36	28

Reference thread length b depends on diameter, not on the three ISO 4014 length bands. Short screws may be fully threaded. The b value alone does not define the shank: incomplete thread and plain-shank limits must also be checked for the requested size.

Commercial lengths by diameter

Commercial reference lengths; availability requires confirmation for each configuration. For short screws, check full threading and incomplete thread under the head. The M45 reference thread length remains ND pending resolution of a source discrepancy.

M	L (mm)
M3	6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50
M4	6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90
M5	6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110
M6	8, 10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200
M8	10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280
M10	10, 12, 14, 16, 18, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 125, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290
M12	16, 20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M14	20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M16	20, 22, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M18	30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M20	30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M22	35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M24	40, 45, 50, 55, 60, 65, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M27	45, 50, 55, 60, 65, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M30	45, 50, 55, 60, 65, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M33	80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300
M36	80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300
M39	80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300
M42	80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300
M45	To specification
M48	100, 120, 140, 160, 170, 180, 200

Materials and classes

Material	Class / hardness	M	Supply
Steel to mechanical specification	8.8	M3–M24	On request
Steel to mechanical specification	10.9	M3–M24	On request
Steel to mechanical specification	12.9	M3–M24	On request
A2 stainless steel	70	M3–M24	On request
A4 stainless steel	70	M3–M24	On request
A4 stainless steel	80	M3–M24	On request

Finishes and treatments

Finish	Material	Class	M
Black oxide	Steel to mechanical specification	8.8	M3–M24
Electroplated zinc	Steel to mechanical specification	8.8	M3–M24
Black oxide	Steel to mechanical specification	10.9	M3–M24
Black oxide	Steel to mechanical specification	12.9	M3–M24
Plain / as manufactured	A2 stainless steel	70	M3–M24
Plain / as manufactured	A4 stainless steel	70	M3–M24
Plain / as manufactured	A4 stainless steel	80	M3–M24

Select the finish for the material/property-class combination. Hydrogen relief and lubrication are separate process requirements, not certificates and not implied by the coating name.

Standards, documents and enquiry

Commercial reference lengths; availability requires confirmation for each configuration. For short screws, check full threading and incomplete thread under the head. The M45 reference thread length remains ND pending resolution of a source discrepancy.

Commercial practice also includes class 8.8 bolts, class 8 nuts and 100 HV washers supplied to DIN 125 A / UNI 6592 references. Suitability must be checked against the joint conditions. For ISO 7089 washers, the reference hardness is 200 HV for bolts up to class 8.8 and nuts up to class 8, and 300 HV for bolts up to class 10.9 and nuts up to class 10. Commercial practice and standard requirements remain distinct.

DIN 912

Related family reference. Confirm edition, tolerances and mechanical requirements before substituting a component specified under a different standard.

UNI 5931

Related family reference. Confirm edition, tolerances and mechanical requirements before substituting a component specified under a different standard.

Supply documentation

Declaration of conformity; Material certificate; EN 10204 2.2 test report; EN 10204 3.1 inspection certificate; Dimensional inspection report; Coating report; Other documentation

Documents are subject to order agreement; no batch certificate is automatically included.

Related components

ISO 4014, ISO 4017, ISO 4032, ISO 7089. Match nominal diameter, pitch, strength, material, finish and joint conditions.

Request a quote

Specify standard, diameter, pitch and length where applicable, material, property class or hardness, finish, quantity and documents. Other sizes and dedicated production can be assessed on request, with agreed minimum quantities.

Reference technical configurations: these do not represent stock quantities.

Other materials and specifications

For requirements beyond the tabulated combinations, enquire about aluminium, brass, nylon, duplex, superduplex or an ASTM specification. Alloy or grade, dimensions, mechanical requirements and finish are defined for the enquiry; the geometric reference does not automatically imply conformity with the product standard.