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.

DIN 912 · UNI 5931

Dimensional range

M3-M48

Thread

Metric · coarse pitch

Configuration

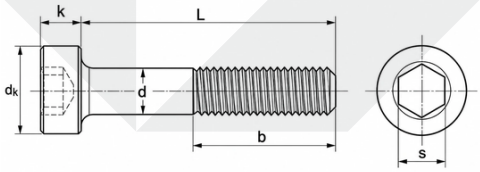
Thread coverage depends on L

References

DIN 912 · UNI 5931



Technical drawing



d

nominal diameter

dk

head diameter

k

head height

s

hexagon socket size

t

socket depth

L

underhead length

b

reference thread length

Variants and dimensional data

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

Dimensions in mm. Identification drawing, not a manufacturing drawing.

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 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.

Table dimensions refer to the stated execution. DIN/UNI, polymer and special variants require verification of their own dimensions; they do not automatically inherit reference geometry, weight or performance.

Materials, classes, finishes and treatments

Executions are distinguished by reference, material, class and finish. DIN, ISO and UNI references do not imply dimensional equivalence or availability of every size in each material. Supply and batch documents require quotation confirmation.

Execution reference	Material	Class / hardness	Documented finishes
DIN 912	Steel	8.8	Black zinc plated; GEOMET 321A; Geomet 321b; Plain; Yellow zinc plated; Yellow zinc plated Cr III 12 µm with sealer; Zinc plated
ISO 4762	Steel	8.8	GEOMET 321A; Plain; Yellow zinc plated; Zinc plated
DIN 912	Stainless A2	To be specified	To be specified
DIN 912	Steel	10.9	GEOMET 321A; Geomet 500a; Plain; Zinc plated
DIN 912	Steel	12.9	Dacro 320a; GEOMET 321A; Geomet 500a; Plain; Yellow zinc plated Cr III 12 µm with sealer; Yellow zinc plated and baked; Zinc plated
DIN 912	Stainless A4	To be specified	To be specified
DIN 912	Stainless A4	80	To be specified
DIN912	Steel	10.9	Plain
DIN 912	Steel	12.9	Plain
UNI 5931	Steel	10.9	Zinc plated
ISO 4762	Steel	10.9	Plain
DIN912	Steel	12.9	Plain
UNI 5931	Steel	8.8	GEOMET 321A; Plain
DIN 9128	Steel	8.8	GEOMET 321A
UNI 5931	Steel	12.9	GEOMET 321A
DIN 933	Steel	10.9	Hot-dip galvanized
DIN EN ISO 4762 ex DIN 912	Polyamide	Not applicable	Natural colour
DIN 912	Stainless A5 · 1.4571	To be specified	To be specified
DIN 912	Duplex · 1.4462	To be specified	To be specified
DIN 912	Stainless HCR · 1.4529	To be specified	To be specified
DIN 912	Nylon PA66	Not applicable	To be specified

“To be specified” is a requirement not established by this selection; it does not imply class 70/80, HV hardness or an automatic finish. Steel property classes do not apply to nylon/polyamide; PA6 and PA66 are distinguished only where stated. For nuts with non-metallic inserts, the material shown is the body material.

Documentation

Document	Status
Declaration of conformity	Subject to order agreement
Material certificate	Subject to order agreement
EN 10204 2.2 test report	Subject to order agreement
EN 10204 3.1 inspection certificate	Subject to order agreement
Dimensional inspection report	Subject to order agreement
Coating report	Subject to order agreement
Other documentation	Subject to order agreement

Batch documents are not automatically included: specify your requirements in the RFQ.

ISO, DIN and UNI: key differences

ISO 4762:2004

Main standard used for the dimensions in this data sheet.

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.