

DIN 912

Hex Socket Head Cap Screw



Standard	DIN 912		
Product Type	Hex Socket Head Cap Screw		
Material	Stainless Steel, Carbon Steel, Alloy Steel		
Property Class	A2-70, A4-80 (ISO 3506-1) · 8.8, 10.9, 12.9 (ISO 898-1)		
Surface Finish	Passivated, Plain, Zinc Plated, Dacromet, Blackened, Phosphate		
Size Range	M1.4 - M100	Length Range	6-300 mm
Thread	ISO metric coarse pitch, with fine pitch options		

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Dimensions to	DIN 912:1983-12
Carbon steel / Alloy steel mechanical properties to	DIN ISO 898 Part 1
Stainless steel mechanical properties to	ISO 3506-1:2020
Product grade	A
Thread length	to be agreed
Minimum usable thread length	to be agreed

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 3506-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
A2-70	700 MPa	Rp0.2 min. 450 MPa	0,4d mm	-	ISO 3506-1
A4-80	800 MPa	Rp0.2 min. 600 MPa	0,3d mm	-	ISO 3506-1

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 898-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
8.8	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV	ISO 898-1 (d ≤ M16)
8.8	830 MPa	Rp0.2 min. 660 MPa	A min. 12 %	255 - 335 HV	ISO 898-1 (d > M16)
10.9	1040 MPa	Rp0.2 min. 940 MPa	A min. 9 %	320 - 380 HV	ISO 898-1
12.9	1220 MPa	Rp0.2 min. 1100 MPa	A min. 8 %	385 - 435 HV	ISO 898-1

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

d	P	s	dk	k	d	P	s	dk	k
Diameter - mm	Thread Pitch - mm	Hex Socket Size - mm	Head Diameter - mm	Nominal Head Height - mm	Diameter - mm	Thread Pitch - mm	Hex Socket Size - mm	Head Diameter - mm	Nominal Head Height - mm
M3	0.5	2.5	5.5	3	M10	1.5	8	16	10
M4	0.7	3	7	4	M12	1.75	10	18	12
M5	0.8	4	8.5	5	M16	2	14	24	16
M6	1	5	10	6	M20	2.5	17	30	20
M8	1.25	6	13	8	M24	3	19	36	24

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

Not held in stock. Available to order; minimum order quantity applies.

d	P	s	dk	k	d	P	s	dk	k
Diameter - mm	Thread Pitch - mm	Hex Socket Size - mm	Head Diameter - mm	Nominal Head Height - mm	Diameter - mm	Thread Pitch - mm	Hex Socket Size - mm	Head Diameter - mm	Nominal Head Height - mm
M1.4	0.3	1.3	2.6	1.4	M36	4	27	54	36
M1.6	0.35	1.5	3	1.6	M42	4.5	32	63	42
M2	0.4	1.5	3.8	2	M48	5	36	72	48
M2.5	0.45	2	4.5	2.5	M56	5.5	41	84	56
M14	2	12	21	14	M64	6	46	96	64
M18	2.5	14	27	18	M72	6	55	108	72
M22	2.5	17	33	22	M80	6	65	120	80
M27	3	19	40	27	M90	6	75	135	90
M30	3.5	22	45	30	M100	6	85	150	100
M33	3.5	24	50	33					

MARKING

Steel — Required

What	Manufacturer identification mark and the property class symbol (Table 19)
Where	Preferably indented on the side of the head; alternatively indented or embossed on the top of the head
Sizes	d >= 5 mm
Clause	ISO 898-1:2013, 10.3.3.2 Hexagon and hexalobular socket head cap screws

Stainless steel — Required

What	Stainless steel grade (Clause 6), property class symbol (Table 13, or Table 14 with a leading zero for reduced loadability) and manufacturer identification mark
Where	For cap screws and cheese head bolts and screws, preferably on the top of the head, indented or embossed, or on the side of the head, indented; other head shapes on the head
Sizes	d >= 5 mm
Clause	ISO 3506-1:2020, 10.3.2 Hexagon socket or hexalobular socket bolts and screws

"Hexagon socket bolts and screws and hexalobular socket bolts and screws of nominal thread diameter d >= 5 mm shall be marked for all stainless steel grades and all property classes, with the stainless steel grade in accordance with Clause 6, with the property class symbol in accordance with Table 13 (fasteners with full loadability) or Table 14 (fasteners with reduced loadability that can be tensile tested with b >= 3d in accordance with 9.1), and with the manufacturer's identification mark in accordance with 10.2."

Clause 3 of DIN 912:1983-12 sets no marking symbol of its own. Property classes follow DIN ISO 898 Part 1 for steel and ISO 3506 with DIN 267 Part 11 for stainless steel, so their marking rules apply.

The classes are banded by diameter: steel 8.8, 10.9 and 12.9 up to and including M39, by agreement above; stainless A2-70 and A4-70 up to and including M20, A2-50 and A4-50 above M20 up to and including M39, C3 up to M39, and by agreement above M39.

Clause 4 designation: Hexagon socket head cap screw DIN 912 - M 12 x 60 - 12.9.

Thread tolerance is 5g6g for class 12.9 and 6g for the other classes; the standard notes 6g applies to screws without surface protection so that normal coating thicknesses to DIN 267 Part 9 can be accommodated.

Surface as delivered: steel black oxide, thermal or chemical; stainless steel and non-ferrous metal bright. Any other electroplating or surface protection is agreed at the time of ordering.

Confirm the ordered property class before production.

INSPECTION DOCUMENTS WE CAN ISSUE

EN 10204 3.1 material certificate	Can be included when agreed in the order.
Dimensional inspection report	Can be provided for the agreed inspection scope.
Certificate of conformity	Can be issued against the confirmed order requirements.
Mechanical test report	Available when the required tests are agreed before production.
Chemical analysis report	Available when the material verification scope is agreed.
Coating inspection report	Can record the coating checks agreed for the order.

REFERENCES & NOTES

Note: DIN 912 is a withdrawn legacy standard; the current standard for this product is ISO 4762. This sheet is built to DIN 912. Dimensions can differ between the two - check the recorded correspondence on our website before substituting one for the other.