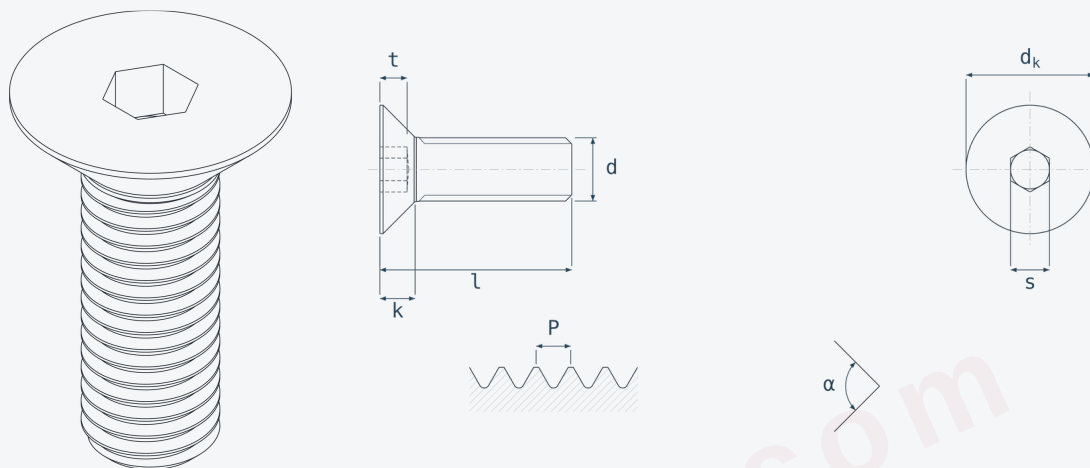


ISO 10642 Countersunk Socket Head Screw



STANDARD

ISO 10642 Hexagon Socket Countersunk Head Screw

THREAD

ISO metric coarse pitch

SIZES

M2 - M20 · lengths 6 – 300 mm

MATERIAL

Carbon Steel, Alloy Steel, Stainless Steel

PROPERTY CLASS

8.8, 10.9, 12.9 (ISO 898-1) · A2-70, A4-80 (ISO 3506-1)

SURFACE

Zinc Plated, Dacromet, Blackened, Phosphate, Plain, Passivated

Dimensions follow the standard named on this sheet. Material properties and batch test results come with the order's certificate or test report.

BASIS OF SPECIFICATION

DIMENSIONS

ISO 10642:2004

CARBON STEEL / ALLOY STEEL

ISO 898-1:2013

STAINLESS STEEL

ISO 3506-1:2020

PRODUCT GRADE

A

THREAD LENGTH

to be agreed

MINIMUM USABLE THREAD LENGTH

to be agreed

DIMENSIONS

mm · ISO 10642

d	P	s	dk	dk _{min}	k _{nom.}	b l ≤ 125
M2	0.4	1.3	4.7	3.7	1.35	—
M2.5	0.45	1.5	5.88	4.8	1.69	—
M3	0.5	2	6.72	5.54	1.86	18
M4	0.7	2.5	8.96	7.53	2.48	20
M5	0.8	3	11.2	9.43	3.1	22
M6	1	4	13.44	11.34	3.72	24
M8	1.25	5	17.92	15.24	4.96	28
M10	1.5	6	22.4	19.22	6.2	32
M12	1.75	8	26.88	23.12	7.44	36
M14	2	10	30.8	26.52	8.4	40
M16	2	10	33.6	29.01	8.8	44
M20	2.5	12	40.32	36.05	10.16	52

P thread pitch s hex socket size dk head diameter k nominal head height b thread length

MECHANICAL PROPERTIES

ISO 898-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness
8.8 up to M16	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV
8.8 over M16	830 MPa	Rp0.2 min. 660 MPa	A min. 12 %	255 - 335 HV
10.9	1040 MPa	Rp0.2 min. 940 MPa	A min. 9 %	320 - 380 HV
12.9	1220 MPa	Rp0.2 min. 1100 MPa	A min. 8 %	385 - 435 HV

MECHANICAL PROPERTIES

ISO 3506-1

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

MARKING

Steel (not usual - marked only if the purchaser requires it): If the purchaser requires marking, the system of 10.3 applies: manufacturer identification mark and property class symbol. Position: Where the head shape allows it. Sizes: All sizes. Clause: ISO 898-1:2013, 10.3.3.5 Other types of bolts and screws. "Marking is not usual for screws with flat countersunk head, oval countersunk head, cheese head, pan head or similar head shapes that are slotted, cross-recessed, or with socket or other internal driving feature."

Stainless steel (required): Stainless steel grade (Clause 6), property class symbol (Table 13, or Table 14 with a leading zero for reduced loadability) and manufacturer identification mark. Position: 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

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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 $b \geq 3d$ in accordance with 9.1), and with the manufacturer's identification mark in accordance with 10.2."

Steel and stainless pull in opposite directions here, so read the two lines separately. Both material standards are held in full and were checked clause by clause.

ISO 898-1 10.3.3.2, which makes marking compulsory for socket head parts, covers cap screws such as ISO 4762 - it does not cover countersunk heads. This is a reduced-loadability product, so the stainless property class symbol comes from ISO 3506-1 Table 14 and carries a leading zero: 045, 050, 060, 070, 080, 0100, 0110 - 070, not 70.

Footnote to Table 14: where $b < 3d$, so that the threaded length is too short for a tensile test, the property class shall not be marked.

DOCUMENTS

EN 10204 3.1 material certificate, dimensional inspection report and mechanical test report, on request.

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