

DIN 603

Mushroom head square neck bolts



Standard	DIN 603		
Product Type	Mushroom head square neck bolts		
Material	Carbon Steel, Stainless Steel, Alloy Steel		
Property Class	4.8, 8.8, 10.9 (ISO 898-1) · A2-70, A4-80 (ISO 3506-1)		
Surface Finish	Zinc Plated, Hot Dip Galvanized, Dacromet, Blackened, Phosphate, Plain, Passivated		
Size Range	M5 - M20	Length Range	16-200 mm
Thread	ISO metric coarse pitch		

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Carbon steel / Alloy steel mechanical properties to	DIN EN ISO 898-1
Stainless steel mechanical properties to	DIN EN ISO 3506-1
Dimensions edition	to be agreed
Length tolerance	to be agreed
Thread length	to be agreed
Minimum usable thread length	to be agreed

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 898-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
4.8	420 MPa	Rpf min. 340 MPa (not a test value)	Af min. 0.24	130 - 220 HV	ISO 898-1
8.8	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV	ISO 898-1 (d ≤ M16)
10.9	1040 MPa	Rp0.2 min. 940 MPa	A min. 9 %	320 - 380 HV	ISO 898-1

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

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

d	P	ds (max)	ds (min)	(max)	(min)	(max)	(min)	dk (max)	dk (min)	k (max)	k (min)
Diameter - mm	Thread Pitch - mm	Body Diameter - mm	Body Diameter - mm	Square Neck Width - mm	Square Neck Width - mm	Square Neck Height - mm	Square Neck Height - mm	Head Diameter - mm	Head Diameter - mm	Head Height - mm	Head Height - mm
M6	1	6	5.52	6.48	5.52	4.6	3.4	16.55	15.45	3.88	3.12
M8	1.25	8	7.42	8.58	7.42	5.6	4.4	20.65	19.35	4.88	4.12
M10	1.5	10	9.42	10.58	9.42	6.6	5.4	24.65	23.35	5.38	4.62
M12	1.75	12	11.3	12.7	11.3	8.75	7.25	30.65	29.35	6.95	6.05
M16	2	16	15.3	16.7	15.3	12.9	11.1	38.8	37.2	8.95	8.05

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

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

d	P	ds (max)	ds (min)	(max)	(min)	(max)	(min)	dk (max)	dk (min)	k (max)	k (min)
Diameter - mm	Thread Pitch - mm	Body Diameter - mm	Body Diameter - mm	Square Neck Width - mm	Square Neck Width - mm	Square Neck Height - mm	Square Neck Height - mm	Head Diameter - mm	Head Diameter - mm	Head Height - mm	Head Height - mm
M5	0.8	5	4.52	5.48	4.52	4.1	2.9	13.55	12.45	3.3	2.7
M20	2.5	20	19.16	20.84	19.16	15.9	14.1	46.8	45.2	11.05	9.95

MARKING
Steel — Required

What	Manufacturer identification mark and the property class symbol (Table 19)
Where	On the head, embossed or indented (Figure 13)
Sizes	d >= 5 mm
Clause	ISO 898-1:2013, 10.3.3.3 Cup head square neck bolts

Clause 3 of DIN 603:1981-10 sets no marking symbol; the strength category is written into the designation when one is specified: Mushroom head bolt DIN 603 - M 10 x 70 - 4.6.

The material column carries steel only. Strength category 3.6 or 4.6 is at the manufacturer choice; 8.8 or other steels and strength categories are by agreement only.

A set marking exists for this product: where the bolt is supplied with DIN 555 hexagon nuts of class 5 or 4, the symbol Mu is added to the designation, for example DIN 603 - M 10 x 70 - Mu.

Thread tolerance is 8g, not 6g, to DIN 13 Part 13, and the product grade is C, previously type g.

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: Dimensional values follow the selected execution standard. Material properties and batch test results are included only when declared or supported by the applicable certificate or test report.