

## Wing screws with rounded wings

**DIN**  
**316**

ICS 21.060.10

Supersedes  
June 1983 edition.

Descriptors: Wing screws.

Flügelschrauben, runde Flügelform

*In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.***Foreword**

This standard has been prepared by the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee), Technical Committee *Schrauben und Muttern ohne Werkzeugantrieb*.  
See DIN 318 for wing screws with edged wings.

**Amendments**

The following amendments have been made to the June 1983 edition.

- a) Specific grades for malleable cast iron and copper-zinc alloys are no longer included.
- b) The minimum tensile strength of steel and product grade B are no longer specified.
- c) For wing screws of product grade C, the tolerance class has been changed from 8g to 6g.
- d) The bearing face of wing screws is specified as being unmachined.

**Previous editions**

DIN 316: 1920-10, 1925-04, 1943-10, 1956-01, 1970-11, 1983-06.

Dimensions in mm

**1 Scope**

This standard specifies requirements for M4 to M24 wing screws with rounded wings, of product grade C and made of malleable cast iron, steel or copper-zinc alloy.

**2 Normative references**

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the titles of the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

- DIN 13-13 ISO metric screw threads – Series of preferred sizes for screws, bolts and nuts from 1 mm to 52 mm diameter and limits of sizes
- DIN 78 Thread ends and lengths of projection of bolt ends for ISO metric screw threads in accordance with the DIN 13 series

Continued on pages 2 to 4.

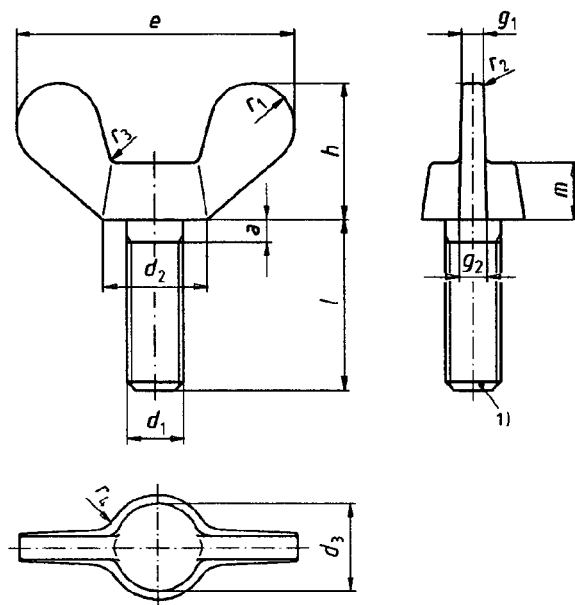
Translation by DIN-Sprachendienst.

In case of doubt, the German-language original should be consulted as the authoritative text.

DIN 318	Wing screws, edged wings*)
DIN 4000-2	Tabular layout of article characteristics for bolts, screws, studs and nuts
DIN EN ISO 4042	Threaded components – Electroplated coatings (ISO/DIS 4042 : 1996)*)
DIN EN ISO 4759-1	Tolerances for fasteners – Part 1: Bolts, screws and nuts – Product grades A, B and C (ISO/DIS 4759-1 : 1997)*)
ISO 3269 : 1988	Fasteners – Acceptance inspection
ISO 8992 : 1986	Fasteners – General requirements for bolts, screws, studs and nuts

### 3 Dimensions

See figure 1 and table 1.



1) Threads may have a chamfered end (DIN 78-K end) or rounded end (DIN 78-L end), screws with an as-rolled end also being permitted.

Figure 1

\*) At present at draft stage.

Table 1: Screw dimensions

Thread size ( $d_1$ )			M4	M5	M6	M8	M10	M12	M16	M20	M24
$P^1)$			0,7	0,8	1	1,25	1,5	1,75	2	2,5	3
$a$	max.		2,1	2,4	3	4	4,5	5,3	6	7,5	9
$d_2$	max.		8	11	13	16	20	23	29	35	44
	min.		6	8	10	13	17	20	26	32	41
$d_3$	max.		7	9	11	12,5	16,5	19,5	23	29	37,5
	min.		5,5	7,5	9	10,5	14,5	17,5	21	27	35
$e$	max.		20	26	33	39	51	65	73	90	110
	min.		18	24	30	36	48	62	70	86	106
$g_1$	max.		1,9	2,3	2,3	2,8	4,4	4,9	6,4	6,9	9,4
	min.		1,1	1,5	1,5	2	3,6	4,1	5,6	6,1	8,6
$g_2$	max.		2,3	2,8	3,3	4,4	5,4	6,4	7,5	8	10,5
	min.		1,7	2,3	2,7	3,6	4,6	5,6	6,5	7	9,5
$h$	max.		10,5	13	17	20	25	33,5	37,5	46,5	56,5
	min.		8,5	11	15	18	23	31	35	44	53,5
$m$	max.		4,6	6,5	8	10	12	14	17	21	25
	min.		3,2	4	5	6,5	8	10	13	16	20
$r_1$	$\approx$		3	4	5	6	8	10	11	14	18
$r_2$	$\approx$		Rounded				1	1	1,2	1,6	2,5
$r_3$	$\approx$		0,5	1	1	1	1,2	1,2	1,6	2	2,5
$r_4$	$\approx$		2	2,5	3	3	5	6	7	8	9
$f^2)$											
Nominal size	min.	max.									
6	5,40	6,60									
8	7,25	8,75									
10	9,25	10,75									
12	11,10	12,90		Range of							
(14)	13,10	14,90									
16	15,10	16,90									
(18)	17,10	18,90		commercially							
20	18,95	21,05									
25	23,95	26,05									
30	28,95	31,05		available lengths							
35	33,75	36,25									
40	38,75	41,25									
50	48,75	51,25									
60	58,50	61,50									

1) Thread pitch.

2) Bracketed sizes should be avoided where possible.

## 4 Technical delivery conditions

**Table 2: Technical delivery conditions**

Material		
Malleable cast iron (GT) (GTS or GTW)*)		
Steel (St) (forged or cold worked)*)		
Copper-zinc alloy (CuZn) (malleable or casting alloy)*)		
Austenitic steel (A) (grade at the manufacturer's discretion)		
General requirements		As specified in ISO 8992.
Thread	Tolerance	6g
	As specified in	DIN 13-13.
Limit deviations and geometrical tolerances	Product grade	C
	As specified in	DIN EN ISO 4759-1.
Surface finish		As processed. Bearing face unmachined. DIN EN ISO 4042 shall apply with regard to electroplating.
Acceptance inspection		As specified in ISO 3269.
*) At the manufacturer's discretion.		

Wing screws may be made from two pieces, as long as they are joined in such a manner that their performance is equal to that of one-piece screws.

## 5 Designation

Designation of an M6 wing screw with rounded wings, made of malleable cast iron (GT), with a nominal length, *l*, of 20 mm:

Wing screw DIN 316 – M6 × 20 – GT

## Tabular layout of article characteristics

The DIN 4000-2-6 tabular layout of article characteristics shall apply to the wing screws covered in this standard.