UDC 621.882.15-472.3 : 621.882.215.091.6 December 1980

Countersinks
for Countersunk Head Screws

DIN 74 Part 1

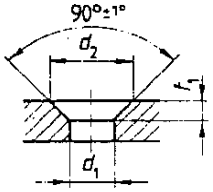
Senkungen für Senkschrauben

Dimensions in mm

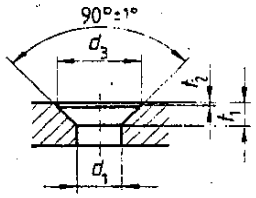
1 Dimensions and designation

Shape A for countersunk head screws in accordance with DIN 963 and DIN 965
Oval head countersunk screws in accordance with DIN 964 and DIN 966
Self-cutting screws shape F and G in accordance with DIN 7513 and shape D and E in accordance with DIN 7516
Thread-grooving screws shape K, L, M and N in accordance with DIN 7500
Countersunk head wood screws in accordance with DIN 97 and DIN 7997
Raised countersunk (oval) head wood screws in accordance with DIN 95 and DIN 7995

Medium (m) type



Fine (f) type



Designation of a countersink of shape A, medium (m) execution for a 4 mm screw thread diameter:

Countersink DIN 74 – A m 4

Table 1.

For screw thread diameter [1]		1	1,2	1,4	1,6	1,8	2	2,5	3	3,5	4	4,5 [4]
Type m	d_1 [2] H13	1,2	1,4	1,6	1,8	2,1	2,4	2,9	3,4	3,9	4,5	5
	d_2 H13	2,4	2,8	3,3	3,7	4,1	4,6	5,7	6,5	7,6	8,6	9,5
	t_1 ≈	0,6	0,7	0,8	0,9	1	1,1	1,4	1,6	1,9	2,1	2,3
Type f	d_1 [3] H12	1,1	1,3	1,5	1,7	2	2,2	2,7	3,2	3,7	4,3	4,8
	d_3 H12	2	2,5	2,8	3,3	3,8	4,3	5	6	7	8	9
	t_1 ≈	0,7	0,8	0,9	1	1,2	1,2	1,5	1,7	2	2,2	2,4
	t_2 $^{+0,1}_{0}$	0,2	0,15	0,15	0,2	0,2	0,15	0,35	0,25	0,3	0,3	0,3

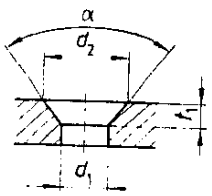
For screw thread diameter [1]		5	5,5 [4]	6	7 [4]	8	10	12	14	16	18	20
Type m	d_1 [2] H13	5,5	6	6,6	7,6	9	11	13,5	15,5	17,5	20	22
	d_2 H13	10,4	11,4	12,4	14,4	16,4	20,4	23,9	26,9	31,9	36,4	40,4
	t_1 ≈	2,5	2,7	2,9	3,3	3,7	4,7	5,2	5,7	7,2	8,2	9,2
Type f	d_1 [3] H12	5,3	5,8	6,4	7,4	8,4	10,5	13	15	17	19	21
	d_3 H12	10	10,8	11,5	13	15	19	23	26	30	34	37
	t_1 ≈	2,6	2,8	3	3,5	4	5	5,7	6,2	7,7	8,7	9,7
	t_2 $^{+0,1}_{0}$	0,2	0,3	0,45	0,45	0,7	0,7	0,7	0,7	1,2	1,2	1,7

[1] In the case of wood screws: nominal diameter
[2] Through hole medium in accordance with DIN ISO 273 (except for screw thread diameter 5.5)
[3] Through hole fine in accordance with DIN ISO 273 (except for screw thread diameter 5.5)
[4] Applies only to wood screws

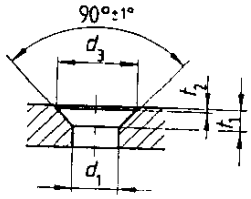
Continued on pages 2 to 4
Explanations on page 4

Shape B for hexagon socket countersunk (flat) head screws DIN 7991

Medium (m) type



Fine (f) type



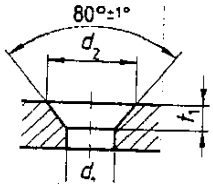
Designation of a countersink of shape B, fine (f) type, for a 4 mm screw thread diameter:

Countersink DIN 74 – B f 4

Table 2.

For screw thread diameter		3	4	5	6	8	10	12	14	16	18	20	22	24
Type m	d_1 [2] H13	3,4	4,5	5,5	6,6	9	11	13,5	15,5	17,5	20	22	24	26
	d_2 H13	6,6	9	11	13	17,2	21,5	25,5	28,5	31,5	35	38	38	41
	t_1 ≈	1,6	2,3	2,8	3,2	4,1	5,3	6	6,5	7	7,5	8	12,5	13,5
	α ±1°	90°											60°	
Type f	d_1 [3] H12	3,2	4,3	5,3	6,4	8,4	10,5	13	15	17	19	21	–	–
	d_3 H12	6,3	8,3	10,4	12,4	16,5	20,5	25	28	31	34	37	–	–
	t_1 ≈	1,7	2,4	2,9	3,3	4,4	5,5	6,5	7	7,5	8	8,5	–	–
	t_2 $^{+0,1}_{0}$	0,2	0,3			0,4	0,5						–	–

Shape C for countersunk (flat) head tapping screws in accordance with DIN 7972 and DIN 7982
raised countersunk (oval) head tapping screws in accordance with DIN 7973 and DIN 7983



Designation of a countersink of shape C, for a nominal diameter of 4.2 mm:

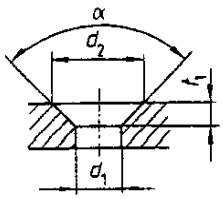
Countersink DIN 74 – C 4.2

Table 3.

For nominal diameter		2,2	2,9	3,5	3,9	4,2	4,8	5,5	6,3
d_1	H12	2,4	3,1	3,7	4,2	4,5	5,1	5,8	6,7
d_2	H12	4,6	5,9	7,2	8,1	8,7	10,1	11,4	13
t_1	≈	1,3	1,7	2,1	2,3	2,5	3	3,4	3,8

For [2]) and [3]) see page 1

Shape E for countersunk head bolts in accordance with DIN 7969 (for steel structures)



Designation of a countersink of shape E, for a screw thread diameter of 12 mm:

Countersink DIN 74 – E 12

Table 4.

For screw thread diameter		10	12	16	20	22	24
d_1 [2]	H12	10,5	13	17	21	23	25
d_2	H13	19	24	31	34	37	40
t_1	≈	5,5	7	9	11,5	12	13
α	±1°	75°			60°		

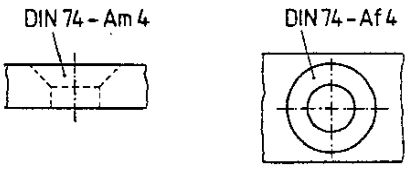
If different depths of countersink t_1 are required for certain individual countersinks, the depth of countersink (e.g. 3 mm for an A f 4 countersink) shall be indicated in the designation, e.g.:

Countersink DIN 74 – A f 4 x 3

2 Entries on drawings

Example 1

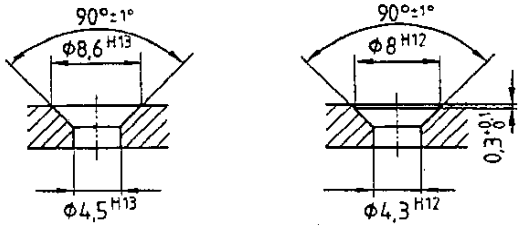
When using code designations



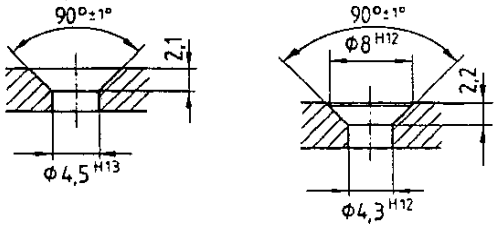
Example 2

When using dimension entries

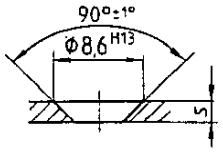
2a) when indicating the diameter of the countersink



2b) when indicating the depth of the countersink



2c) in the case of components with $s \leq t_1$



The connecting piece should, if necessary, be countersunk subsequently

[2] See page 1

Further Standards

DIN 74 Part 2 Countersinks for cheese head screws
DIN 74 Part 3 Counterbores for hexagon bolts and nuts

Explanations

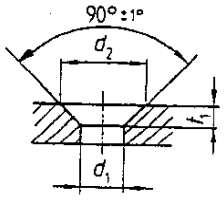
The first edition of DIN 74 Part 1 was published in July 1971, and in the main it specified the countersinks for the new countersunk head screws in accordance with ISO 2009 and ISO 2010 (DIN 963 and DIN 964), in respect of which the previous countersinks in accordance with DIN 75 could not be used without restrictions, for reasons of interchangeability. A corresponding conversion of these countersinks to the countersunk head screws in accordance with ISO could however not be made, because the old Standards relating to countersunk head screws, viz. DIN 63 and following DIN's were still to be retained for a further indefinite transition period with the remark "Not to be used on new designs and constructions". In line with this, the title headings of DIN 74 Part 1 and DIN 75 Part 1 have differentiated between "Countersunk head screws, new type" and "countersunk head screws, old type".

Because the final intention was that DIN 74 Part 1 should wholly supersede DIN 75 Part 1, the July 1971 edition of DIN 74 Part 1 also incorporated the countersinks for other types of countersunk head screws from DIN 75 Part 1, e.g. countersunk (flat) head tapping screws, hexagon socket countersunk (flat) head screws and countersunk head wood screws, without necessitating any appreciable alteration of the countersink dimensions. This applied in particular to countersunk head wood screws, in respect of which the shape D countersinks in accordance with DIN 75 Part 1 were incorporated with identical dimensions in DIN 74 Part 1 under the heading of shape D countersinks.

In 1975, the existing Standards on countersunk head wood screws (DIN 95, DIN 97, DIN 7995 and DIN 7997) were converted to head dimensions in accordance with ISO. As a result, the shape A countersinks in accordance with DIN 74 Part 1 could now be used equally for countersunk head wood screws. This Standard has, therefore, been amended accordingly, and thread-grooving countersunk head screws in accordance with DIN 7500 have also been incorporated in it.

It can be assumed that the manufacture of countersunk head wood screws is unlikely to be converted at a single stroke to the new shape of countersunk heads, and also that substantial stocks of the old screws are still in existence. As in addition a large number of design documents still incorporate the old countersinks, these old countersinks are reproduced once again below for reference purposes.

Previous shape D for countersunk head wood screws in accordance with DIN 97 (old type)
Countersunk head wood screws in accordance with DIN 7997 (old type)
Raised countersunk (oval) head wood screws in accordance with DIN 95 (old type)
Raised countersunk (oval) head wood screws in accordance with DIN 7995 (old type)



For nominal diameter		1,4	1,7	2	2,4	2,7	3	3,5	4	4,5	5	5,5	6	7	8	9	10
d_1	H12	1,5	1,8	2,2	2,6	2,9	3,2	3,7	4,3	4,8	5,3	5,8	6,4	7,4	8,4	9,5	10,5
d_2	H12	2,9	3,5	4,2	5	5,6	6,2	7,2	8,3	9,3	10,3	11,3	12,4	14,4	16,4	18,5	20,5
t_1	≈	0,7	0,9	1	1,2	1,4	1,5	1,8	2	2,3	2,5	2,8	3	3,5	4	4,5	5

In the case of the shape A and B countersinks, the through holes for type m, for the screw thread diameters 12, 14 and 16 have been changed from d_1 = 14, 16 and 18 mm to d_1 = 13.5, 15.5 and 17.5 mm, in harmonization with the Standard on through holes for screws DIN ISO 273 (which supersedes DIN 69). The countersink diameters d_2 have been adapted accordingly.