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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Implants for surgery — Metal bone plates — Holes corresponding to screws with asymmetrical thread and spherical under-surface

Implants chirurgicaux — Plaques métalliques pour os — Logements des vis à filetage asymétrique et à embase sphérique

Reference number
ISO 5836: 1988 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 5836 was prepared by Technical Committee ISO/TC 150, *Implants for surgery.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Implants for surgery — Metal bone plates — Holes corresponding to screws with asymmetrical thread and spherical under-surface

1 Scope and field of application

This International Standard specifies the dimensions and tolerances of holes in bone plates used as surgical implants so as to facilitate correct fixing using screws complying with ISO 5835.

NOTES

1 This International Standard does not deal with the shape and dimensions of the plates or with the spacing (centre-to-centre distance) of the holes.

2 The interrelationship of International Standards dealing with bone screws, bone plates and relevant tools is shown for information in annex A.

2 Reference

ISO 5835, *Implants for surgery — Metal bone screws with hexagonal drive connection — Spherical under-surface of head — Dimensions.* [1)]

1) At present at the stage of draft.

3 Dimensions and tolerances

3.1 Type A (with cylindrical hole)

Type A holes shall be as given in figure 1 and table 1.

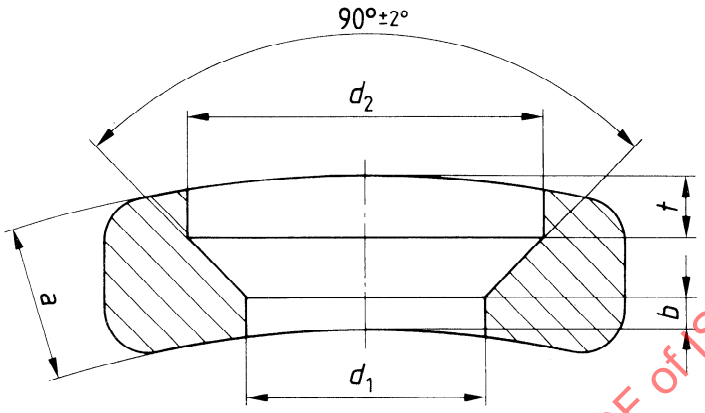

Figure 1 — Type A hole

Table 1 — Dimensions of type A hole

Dimensions in millimetres

d_1 $^{+0,2}_{0}$	d_2 $^{+0,2}_{0}$	b min.	Cylindrical part of countersink (dependent on a) t $^{0}_{-0,2}$	a ref.	Screws in accordance with ISO 5835
1,6	3,1	0,15	0,4	1,3	HA 1,5
1,9	3,2	0,25			
2,1	4,1	0,1	0,4	1,5	HA 2
2,6	4,3	0,25			
2,9	5,2	0,15	0,6	1,9	HA 2,7
3,4	5,4	0,3			
3,7	6,2	0,25	0,9	2,4	HA 3,5
4,2	6,4	0,4			HA 3,5; HA 4; HB 4
4,7	8,2	0,35	1,4	3,5	HA 4,5
5,5		0,75			
5,2	8,2	0,6	1,4	3,5	HA 5
6		1			
6,6		1,3			HB 6,5

NOTE — The values b and t in table 1 relate to plates of thickness a_{ref}. If the thickness of the plate is greater than a_{ref}, the value of t shall not exceed that shown in table 1 so as not to weaken the plate. The value of b would then be increased. If the thickness of the plate is less than a_{ref}, the value of b shall not be less than is shown in table 1 so as to prevent protrusion of the head of the screw through the plate. The value of t would then be reduced and may reach zero.

The formulae below present the above statements in mathematical terms :

if $a \geqslant a_{ref}$ $\quad t = t_1$

if $a < a_{ref}$ $\quad t = t_1 - (a_{ref} - a)$

if $a \leqslant a_{ref}$ $\quad b = b_1$

if $a > a_{ref}$ $\quad b = b_1 + (a - a_{ref})$

where a_{ref}, t_1 and b_1 are the values of a, b and t in table 1.

3.2 Type B (with conical hole)

Type B holes shall be as given in figure 2.

Dimensions in millimetres

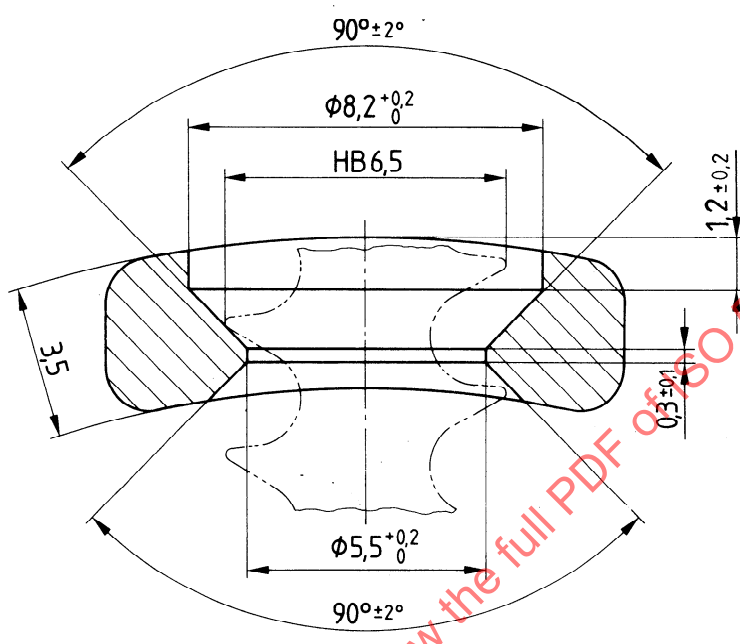

Figure 2 — Type B hole for HB 6,5 screw specified in ISO 5835

3.3 Type C (with thread)

Type C holes shall be as given in figure 3 and table 2.

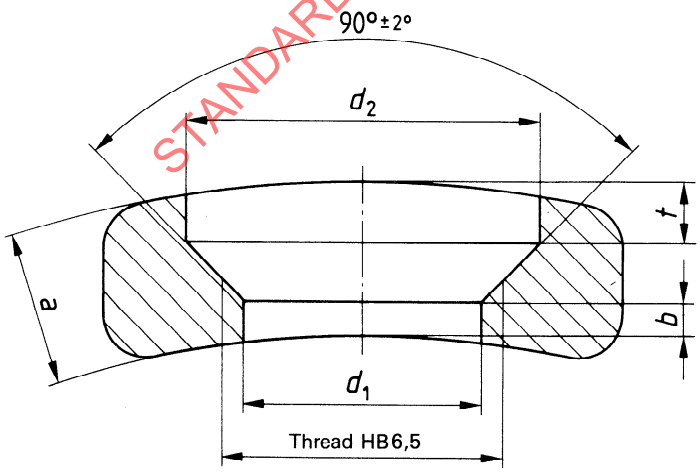

Figure 3 — Type C hole for HB 6,5 screw specified in ISO 5835

Table 2 — Dimensions of type C holes

Dimensions in millimetres

d_1 +0,2 0	d_2 +0,2 0	b min.	Cylindrical part of countersink (dependent on a) t 0 −0,2	a ref.
4,7	8,2	0,35	1,4	3,5
5,5		0,75		

NOTE — See note below table 1.

3.4 Type D (with spherical countersink)

Type D1, D2 or D3 holes shall be as given in figures 4, 5 or 6 respectively and table 3.

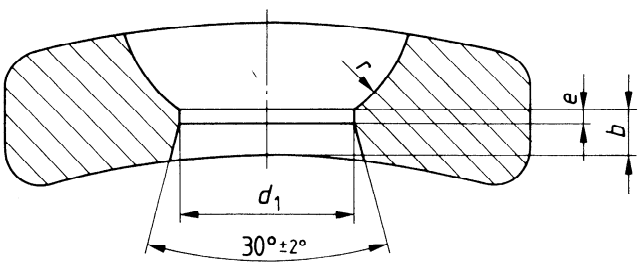

Figure 4 — Type D1 hole

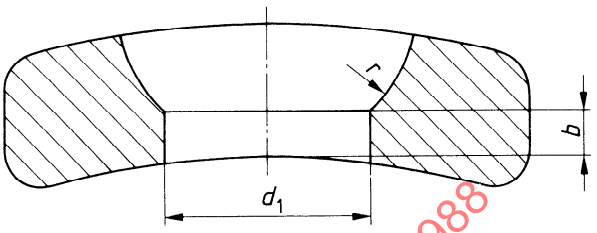

Figure 5 — Type D2 hole

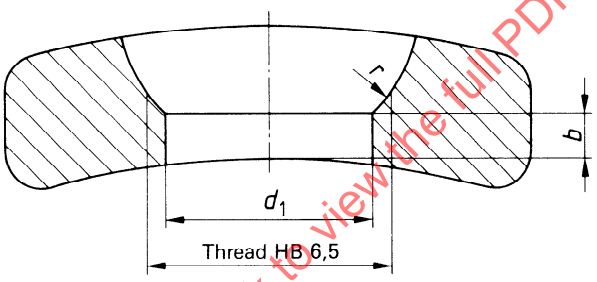

Figure 6 — Type D3 hole

Table 3 — Dimensions of types D1, D2 and D3 holes

Dimensions in millimetres

d_1 $^{+0,2}_{0}$	r $^{+0,075}_{+0,050}$	e $^{+0,15}_{0}$	b min.	Screws in accordance with ISO 5835
1,6	1,5	0,1	0,2	HA 1,5
1,9				
2,1	2	0,2	0,4	HA 2
2,6				
2,9	2,5	0,2	0,4	HA 2,7
3,4				
3,7	3	0,2	0,4	HA 3,5
4,2				HA 3,5; HA 4; HB 4
4,7[1]	4	0,4	0,5	HA 4,5
5,5[1]				HB 6,5
5,2[1]	4	0,4	0,5	HA 4,5; HA 5
5,9[1]				HB 6,5
6,6[2]	4	0,4	0,5	HB 6,5

1) Diameter d_1 may be threaded for the passage of an HB 6,5 screw.

2) This value should be used only in exceptional cases.