INTERNATIONAL STANDARD

ISO 9448-11

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Tools for pressing — Guide bushes —

Part 11:
Form F, ball cage bushes, flanged, type 2

Outillage de presse — Bagues de guidage —

Partie 11: Forme F, bagues à collerette à brider pour guidage à billes, type 2

Reference number
ISO 9448-11:1992(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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9448-11 was prepared by Technical Committee ISO/TC 29, *Small tools*, Sub-Committee SC 8, *Tools for pressing and moulding*.

ISO 9448 consists of the following parts, under the general title *Tools for pressing — Guide bushes*:

— *Part 1: Forms*

— *Part 2: Form A, gliding bushes, plain, type 1*

— *Part 3: Form B, ball cage bushes, plain, type 1*

— *Part 4: Form C, gliding bushes, headed, type 1*

— *Part 5: Form D, ball cage bushes, headed, type 1*

— *Part 6: Form E, gliding bushes, flanged, type 1*

— *Part 7: Form F, ball cage bushes, flanged, type 1*

— *Part 8: Form G, gliding bushes, stepped, type 1*

— *Part 9: Form B, ball cage bushes, plain, type 2*

— *Part 10: Form E, gliding bushes, flanged, type 2*

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— *Part 11: Form F, ball cage bushes, flanged, type 2*

Annex A of this part of ISO 9448 is for information only.

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Tools for pressing — Guide bushes —

Part 11:
Form F, ball cage bushes, flanged, type 2

1 Scope

This part of ISO 9448 specifies the main dimensions and tolerances, in millimetres, of guide bushes of form F, flanged ball cage bushes, type 2, intended for use in press tools and to be mounted in the clamp plate with transition fit and fixed to the plate by means of guide clamps.

It gives guidance on the materials, and specifies the hardness and the designation of bushes in accordance with this part of ISO 9448.

2 Dimensions

See figure 1 and table 1.

Details not stated, such as chamfers, radii, lubrication grooves, etc., are left to the manufacturer's discretion.

3 Material and corresponding hardness

The material is left to the manufacturer's discretion and the hardness shall be (63 ± 1) HRC.

4 Designation

A guide bush in accordance with this part of ISO 9448 shall be designated by

a) "Guide bush";

b) a reference to this part of ISO 9448;

c) its form;

d) its guiding diameter, D_1, in millimetres;

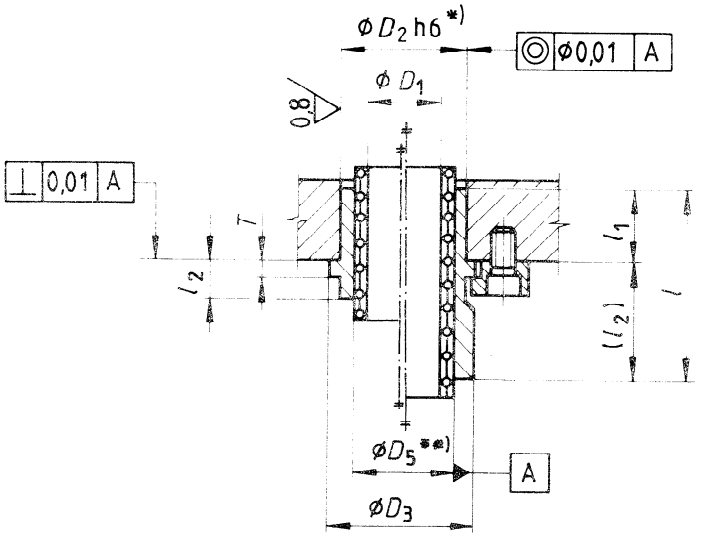
e) its length, l_1, in millimetres.

EXAMPLE

A guide bush of form F, flanged ball cage bush, type 2, of guiding diameter $D_1 = 25$ mm, and of length $l_1 = 25$ mm is designated as follows:

Guide bush ISO 9448-11 F - 25 × 25

Surface roughness values in micrometres



Number of guide clamps at the manufacturer's discretion

*) Intended to fit in a hole having a tolerance H7.

**) The manufacturer shall determine the internal diameter D_5 of the bush, using the tolerance M5. This diameter is intended to be lapped or ground to ensure the proper preloading of the balls between the pillar and the bush, as determined by the manufacturer. This lapping or grinding operation shall be carried out to give a surface roughness R_a = 0,05 µm and this diameter shall act as a reference diameter to the concentricity and perpendicularity tolerances.

Figure 1

Table 1

D_1		25		32		40		50		63		80		100	
D_2 h6		40		50		63		80		90		112		140	
D_3		56		63		71		90		112		125		160	
D_4	± 0,3	72		79		89		106		135		153		183	
T	+ 0,1	6,3		6,3		6,3		6,3		10		10		10	
l_1 nom.	l_1 tol.	l	l_2	l	l_2	l	l_2	l	l_2	l	l_2	l	l_2	l	l_2
25	±2,0 ±2,5	35	10												
32		42	10	42	10										
40	±3 ±4	52	12	52	12	52	12								
50		90	40	65	15	65	15	65	15						
63				108	45	78	15	78	15	81	18				
80						130	50	98	18	98	18	100	20		
100	±3 ±5							163	63	120	20	120	20	120	20
125										188	63	145	20	145	20
160												231	71	180	20
200														280	80

Annex A
(informative)

Bibliography

[1] ISO 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K).*

[2] ISO 9448-1:1991, *Tools for pressing — Guide bushes — Part 1: Forms.*

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