
Tools for pressing — Guide bushes —
Part 11:
Form F, ball cage bushes, flanged, type
2

Outils de presse — Bagues de guidage —

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



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This second edition results from the reinstatement of ISO 9448-11:1992, which was withdrawn in 2006 and with which it is technically identical.

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

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

The dimensions of type 2 flanged ball cage bushes (form F) shall conform to the indications in [Figure 1](#) and [Table 1](#).

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



- Figure 1 — Form F, flanged ball cage bushes, type 2**

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	$\pm 0,3$	72	79	89	106	135	153	183							
T	$\pm 0,1$	6,3	6,3	6,3	6,3	10	10	10							
l_1															
nom.	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	40	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

3 Material

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:

- "Guide bush";
- a reference to this part of ISO 9448, i.e. ISO 9448-11;
- its form;
- its guiding diameter, D_1 , in millimetres;
- 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

Bibliography

- [1] ISO 6508-1:2005, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

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