
**Tools for pressing — Ball-lock punch
retainers —**

Part 1:

**Types A and B, rectangular and square
for light duty**

*Outillage de presse — Porte-poinçons pour poinçons à bille —
Partie 1: Types A et B, rectangulaire et carré pour tôles minces*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11900-1 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This second edition cancels and replaces the first edition (ISO 11900-1:1994), of which it constitutes a minor revision. In particular, the references given in Clause 2 have been updated, and the indication of surface textures has been updated in accordance with ISO 1302:2002.

ISO 11900 consists of the following parts, under the general title *Tools for pressing — Ball-lock punch retainers*:

- *Part 1: Types A and B, rectangular and square for light duty*
- *Part 2: Types C and D, reduced for light duty*
- *Part 3: Type E, reduced for heavy duty*

Tools for pressing — Ball-lock punch retainers —

Part 1: Types A and B, rectangular and square for light duty

1 Scope

This part of ISO 11900 specifies the dimensions and tolerances, in millimetres, of ball-lock punch retainers, type A (rectangular) and type B (square), for light duty, and of their backing plates. The main use of ball-lock punch retainers and their backing plates is the retention of ball-lock punches, in accordance with ISO 10071-1, when punching holes in steel sheets.

It gives material guidelines and hardness requirements, and specifies the designation of ball-lock punch retainers in accordance with this part of ISO 11900.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 273:1979, *Fasteners — Clearance holes for bolts and screws*

ISO 4762:2004, *Hexagon socket head cap screws*

ISO 8735:1997, *Parallel pins with internal thread, of hardened steel and martensitic stainless steel*

ISO 10071-1:—¹⁾, *Tools for pressing — Ball-lock punches — Part 1: Ball-lock punches for light duty*

3 Dimensions

3.1 General tolerance

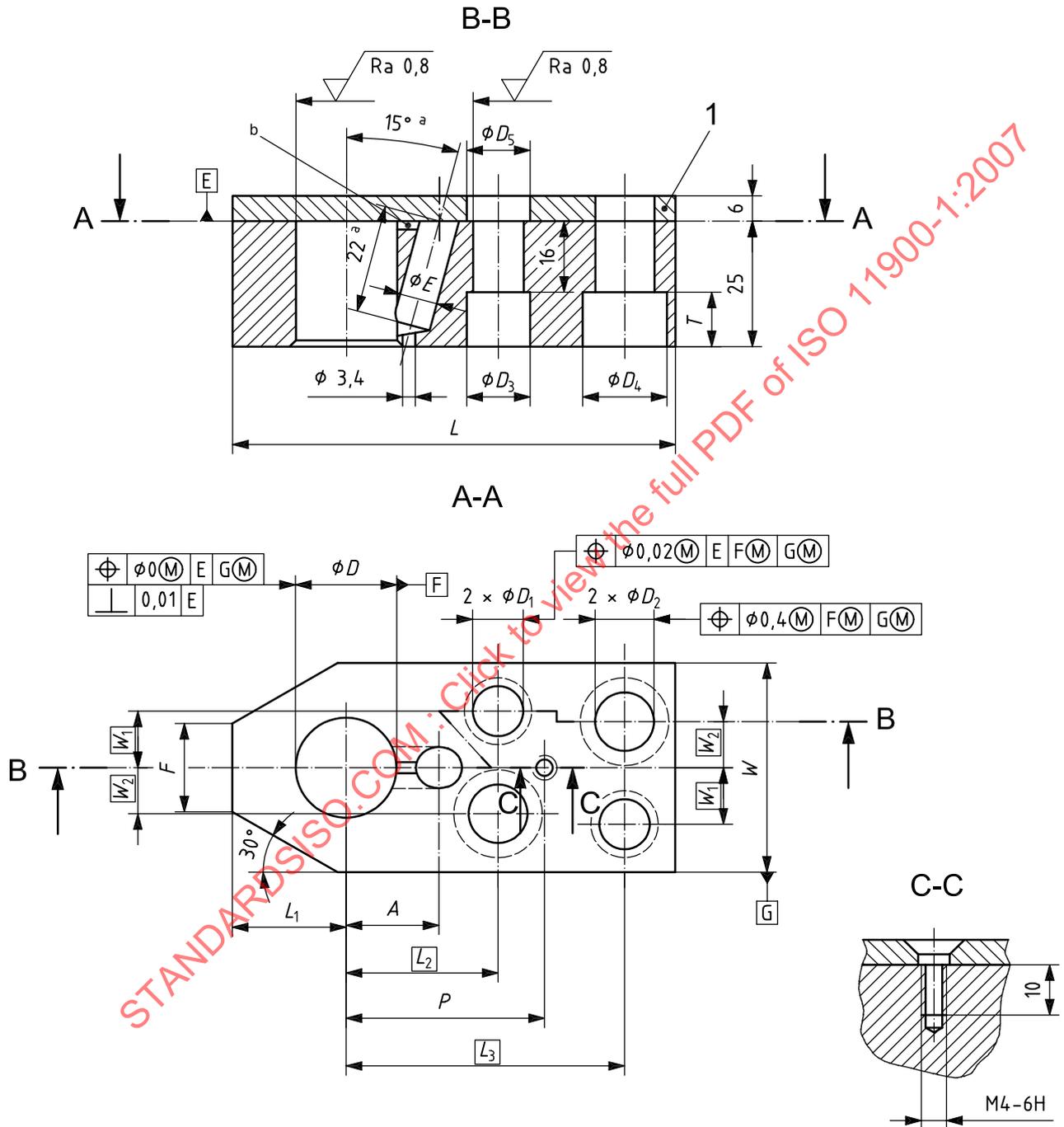
The general tolerance for all dimensions not individually toleranced is $\pm 0,25$ mm.

1) To be published. (Revision of ISO 10071-1:2001)

3.2 Type A ball-lock punch retainer (rectangular)

The dimensions of rectangular ball-lock punch retainers, of type A, shall conform to the indications in Figure 1 and Table 1.

Surface roughness values in micrometres



Key

- 1 backing plate
- a The tolerance on the 15° angle and on the dimension 22 mm is left to the manufacturer's discretion.
- b Air slot 2 mm \times 2 mm.

Figure 1 — Type A ball-lock punch retainer (rectangular)

Table 1 — Dimensions of type A ball-lock punch retainers (rectangular)

<i>D</i> H6	<i>L</i>	<i>W</i>	<i>D</i> ₁ ^a G6	<i>D</i> ₂ ^b H12	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>W</i> ₁	<i>W</i> ₂	<i>T</i>	<i>D</i> ₃	<i>D</i> ₄	<i>D</i> ₅ H13	<i>A</i> ^c	<i>E</i> ± 0,02	<i>P</i> ± 0,1	<i>F</i>
6	75	32	8	9	15	25	50	9	7	9	9	16	9	9,65	6,05	38	18
10														12	8,05		
13														13,5	8,05		
16														15	8,05		
20	85	40	10	11	22	28	53	11	9	11	11	18	11	17	8,05	41	20
25														19,5	8,05		
<p>^a Hole for parallel hardened pins (dowel pins) in accordance with ISO 8735.</p> <p>^b Counterbore in accordance with ISO 273 for M8 and M10 head cap screws in accordance with ISO 4762.</p> <p>^c Tolerance on this dimension is left to the manufacturer's discretion.</p>																	

Table 2 — Dimensions of type B ball-lock punch retainers (square)

D	$L \times W$	D_1^a	D_2^b	L_1	W_1	W_2	T	D_3	D_4	D_5	A^c	E	G
H6		G6	H12							H13		$\pm 0,02$	$\pm 0,1$
6	45 × 45	8	9	13	13	15	9	9	16	9	9,65	6,05	15
10											12	8,05	
13											13,5	8,05	
16											15	8,05	
20	56 × 56	10	11	16	16	19	11	11	18	11	17	8,05	19
25	63 × 63		13,5	20	20	22,5	13		20		19,5	8,05	22
<p>^a Hole for parallel hardened pins (dowel pins) in accordance with ISO 8735.</p> <p>^b Counterbore in accordance with ISO 273 for M8, M10 and M12 head cap screws in accordance with ISO 4762.</p> <p>^c Tolerance on this dimension is left to the manufacturer's discretion.</p>													

4 Material and corresponding hardness

The hardness is left to the manufacturer's discretion. The hardness shall be 43 HRC to 56 HRC for ball-lock punch retainers and 50 HRC to 60 HRC for backing plates.

5 Designation

Ball-lock punch retainers in accordance with this part of ISO 11900 shall be designated by:

- "Ball-lock retainer";
- a reference to this part of ISO 11900, i.e. ISO 11900-1;
- the type;
- the diameter, D , in millimetres.

EXAMPLE A type A ball-lock punch retainer of diameter $D = 6$ mm is designated as follows:

Ball-lock retainer ISO 11900-1-A-6