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

**Part 2:
Types C and D, reduced for light duty**

*Outillage de presse — Porte-poinçons pour poinçons à bille —
Partie 2: Types C et D, réduits pour tôles minces*
(standards.iteh.ai)

[ISO 11900-2:2001](https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001)

[https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-
a997-04274263ace9/iso-11900-2-2001](https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001)



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 11900-2:2001

<https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001>

© ISO 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

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 3.

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 part of ISO 11900 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 11900-2 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

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*

[ISO 11900-2:2001](https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001)

<https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 11900-2:2001

<https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001>

Tools for pressing — Ball-lock punch retainers —

Part 2: Types C and D, reduced for light duty

1 Scope

This part of ISO 11900 specifies the dimensions and tolerances, in millimetres, of reduced ball-lock punch retainers, type C and type D, for light duty, and of their backing plug, the main use being retention of ball-lock punches in accordance with ISO 10071-1, when punching holes in steel sheets.

It also 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 normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 11900. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 11900 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 273:1979, *Fasteners — Clearance holes for bolts and screws*.
<http://standards.iso.org/standards/info/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001>

ISO 4762:1997, *Hexagon socket head cap screws*.

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

ISO 10071-1:2001, *Tools for pressing — Ball-lock punches — Part 1: Ball-lock punches for light duty*.

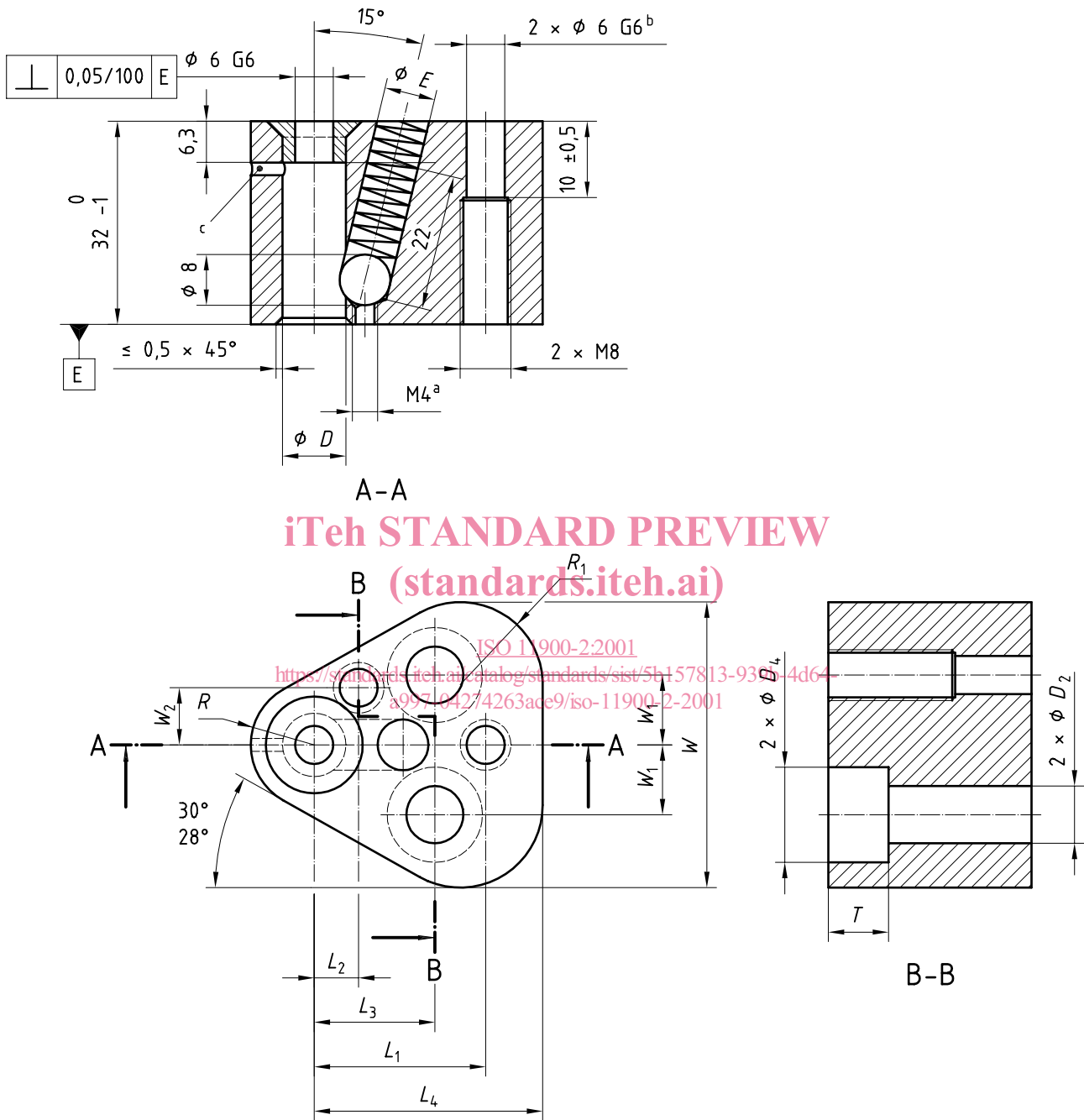
3 Dimensions

3.1 General tolerance

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

3.2 Type C reduced ball-lock punch retainer

See Figure 1 and Table 1.



- a Optional
- b Hole for parallel hardened pins (dowels pins) in accordance with ISO 8735
- c Venting hole

Figure 1 — Type C reduced ball-lock punch retainer

Table 1 — Dimensions of type C reduced ball-lock punch retainers

<i>D</i>	<i>W</i>	<i>D</i> ₂ ^a	<i>D</i> ₄	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>L</i> ₄	<i>W</i> ₁	<i>W</i> ₂	<i>T</i>	<i>E</i>	<i>R</i>	<i>R</i> ₁	Screw
H6	$\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	± 0,3	± 0,3	± 0,01	± 0,01	± 0,1	$\begin{smallmatrix} 0 \\ -2 \end{smallmatrix}$	± 0,13	± 0,01	± 0,3	± 0,02	max.	max.	
10	45	9	15	26,92	7,5	19	36	11,1	9	9,5	8,05	10	13	M8
13	51			29,97	6,5		39	14,3	12			13	16	
16	54			31,75	6		41	15,9	13,5			15	17	
20	61	11	18	33,53	5		44	17,5	16,5	11,5		18	21	M10
25	70	13,5	20	40,64	7	23,8	49	19,8	22	13,5		23	25	M12
32	70	13,5	20	40,64	7	23,8	49	19,8	22	13,5		23	25	M12

^a Counterbore in accordance with ISO 273 and M8, M10 and M12 head cap screws in accordance with ISO 4762.

iTeh STANDARD PREVIEW (standards.iteh.ai)

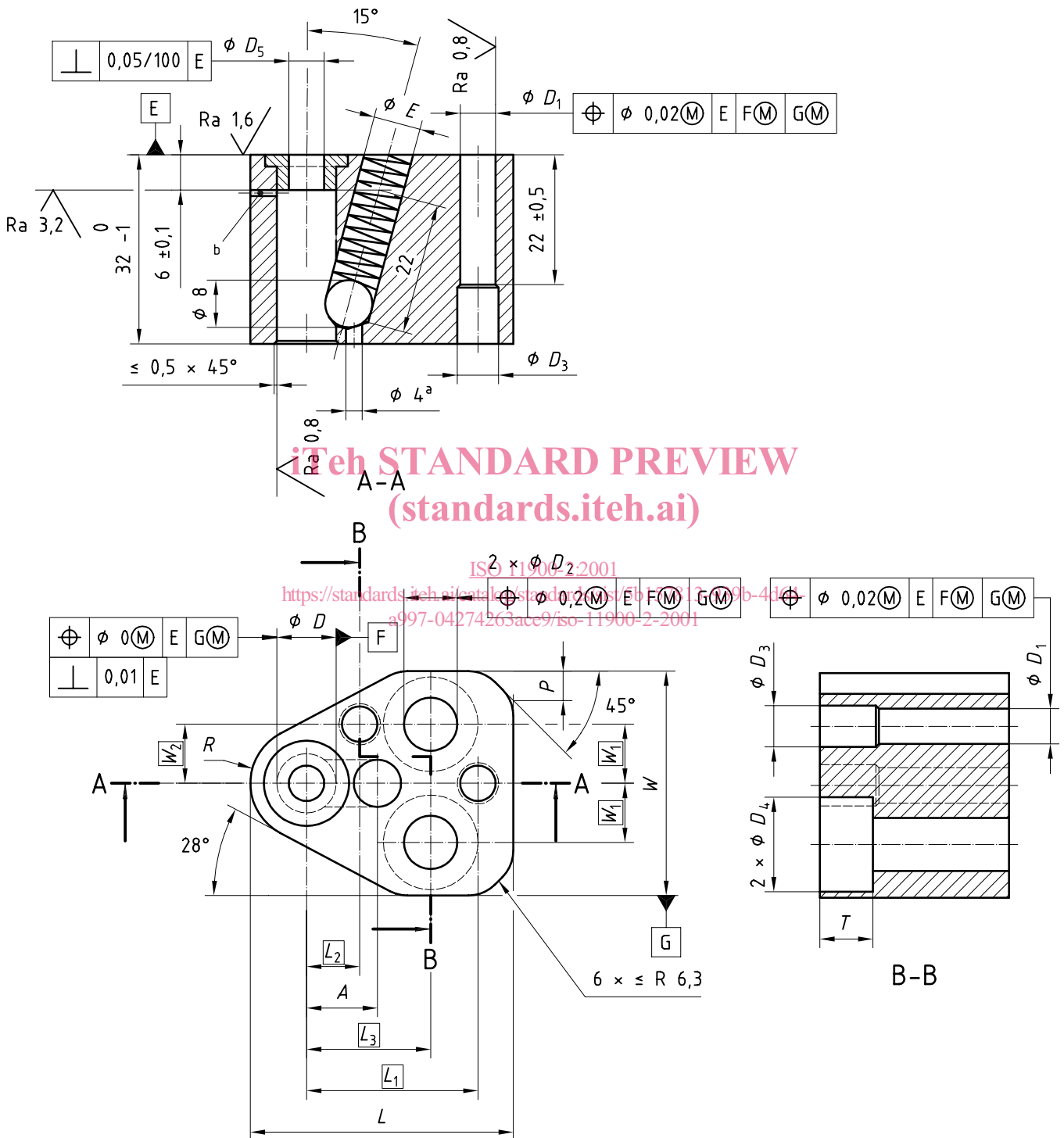
ISO 11900-2:2001

<https://standards.iteh.ai/catalog/standards/sist/5b157813-939b-4d64-a997-04274263ace9/iso-11900-2-2001>

3.3 Type D reduced ball-lock punch retainer

See Figure 2 and Table 2.

Surface roughness values in micrometres



- a Optional
- b Venting hole

Figure 2 — Type D reduced ball-lock punch retainer

Table 2 — Dimensions of type D reduced ball-lock punch retainers

D H6	L	W	D_1^a G6	D_2^b H12	L_1	L_2	L_3	W_1	W_2	T	D_3	D_4	A^c	E $\pm 0,02$	P	R	D_5 G6
10	44,5	38	6	9	29	9	21	10	10	9	7	16	12	8,05	5	9,5	6
13	50,5	47			32	11	23	13	13				13,5		6,5	12,5	
16	53,5	52		11	34	12	26	12	13	11		18	15		7	14	
20	60	55	11,5			27	14	17	17		8		17,5				
25	69,5	63	8	13	39	12	30	15	21	13	9	20	19,5		9	22	8
32	69,5	63			13	39	12	30	15	21			13		19,5	9	

^a Hole for parallel hardened pins (dowel pins) in accordance with ISO 8735.

^b Counterbore in accordance with ISO 273 and M8, M10 and M12 head cap screws in accordance with ISO 4762.

^c Tolerance on this dimension is left to the manufacturer's discretion.

4 Material and corresponding hardness

The hardness is left to the manufacturers discretion. The hardness should be (46 ± 3) HRC for ball-lock punch retainers and (50 ± 5) HRC for backing plugs respectively.

5 Designation

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

- "Ball-lock retainer";
- reference to this part of ISO 11900, i.e. ISO 11900-2;
- the type;
- the diameter D , in millimetres.

EXAMPLE A ball-lock punch retainer of type C with a diameter $D = 10$ mm is designated as follows:

Ball-lock retainer ISO 11900-2-C-10