INTERNATIONAL STANDARD

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Fork-lift trucks — Hook-on type fork arms and fork arm carriages — Mounting dimensions

Chariots élévateurs à fourche — Bras de fourche à tenons et tabliers porte-fourches — Dimensions de montage

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Foreword

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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 2328 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, *Safety of powered industrial trucks*.

This fourth edition cancels and replaces the third edition (ISO 2328:2007), which has been technically revised.

Fork-lift trucks — Hook-on type fork arms and fork arm carriages — Mounting dimensions

1 Scope

This International Standard specifies the dimensions of, and additional requirements for, fork carriers and hook-on type fork arms, to permit the interchangeability of these fork arms and/or other attachments, relative to the truck-rated capacity and fork arm type, on fork-lift trucks up to and including a rated capacity of 10 999 kg.

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 2331, *Fork lift trucks — Hook-on type fork arms — Vocabulary*

ISO 3691-1, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2331 and ISO 3691-1 apply.

4 Requirements

4.1 Dimensions

The mounting dimensions of the fork arms and fork carrier for type A (short drop) and type B (long drop) fork arms (the position of the lower hook determining the type of fork arm) shall be in accordance with Figures 1, 2 and 3 and Tables 1 and 2. The fork arm removal/mounting slot on the lower fork carrier is optional and shall be in accordance with 4.3. Fork arm location slots to the dimensions specified in Table 2 shall be provided at a suitable spacing on the fork carrier. In order to locate attachments, one slot shall be situated on the top edge of the fork carrier centreline. However, when an offset lower slot is provided to avoid unintentional disengagement, then the lower slot shall be offset from the fork carrier centreline by dimension w (see Figure 1); this slot shall be 3 mm deeper than k_2 (see Figure 3), to facilitate the attachment and fork arm mounting.

4.2 Stops

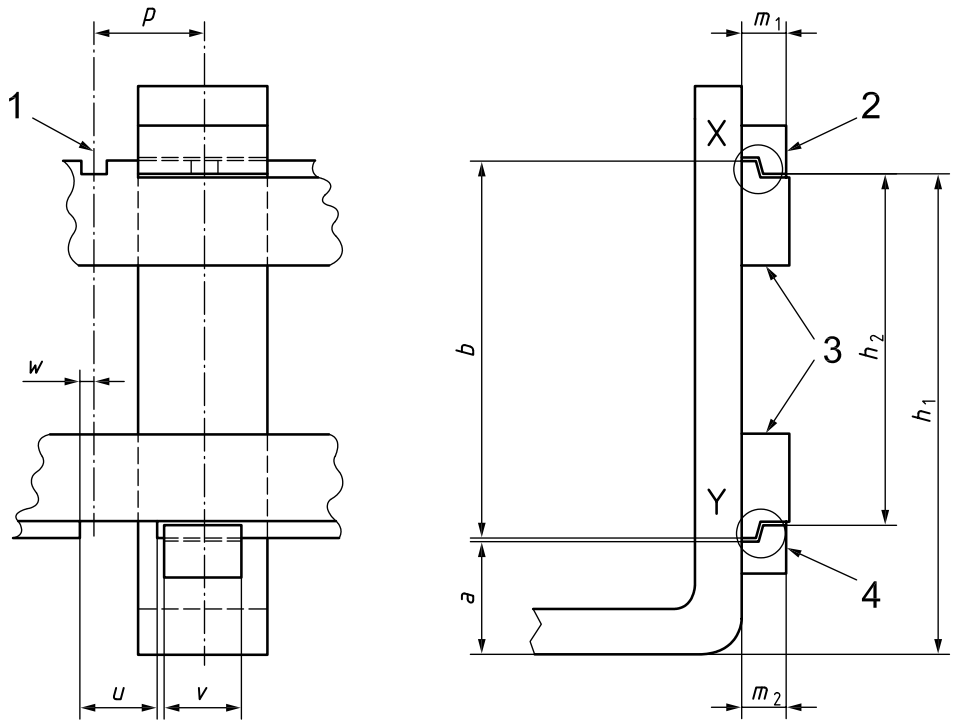
Stops shall be provided in order to prevent lateral disengagement of the fork arms from the extremities of the fork carrier. If these stops are not permanent, i.e. welded, then the instruction handbook shall contain warnings that the truck is not to be used if the stops are not correctly in place.

4.3 Slot on the lower carriage

If a fork arm removal/mounting slot is provided in the lower edge of the fork carrier, it shall be positioned as shown in Figure 3, that shown in the detailed view X–X being optional. If the positioning of the slots in the upper and lower fork carrier could enable the fork arm or attachment to become inadvertently disengaged from the carrier, then other means (e.g. mechanical) shall be provided to prevent this from occurring.

Where the exclusive means of preventing unintentional fork arm disengagement is by an offset lower slot, then the instruction handbook shall contain the following warning notice:

WARNING — If the fork/locking pin is not fully engaged, the fork could become unintentionally disengaged.



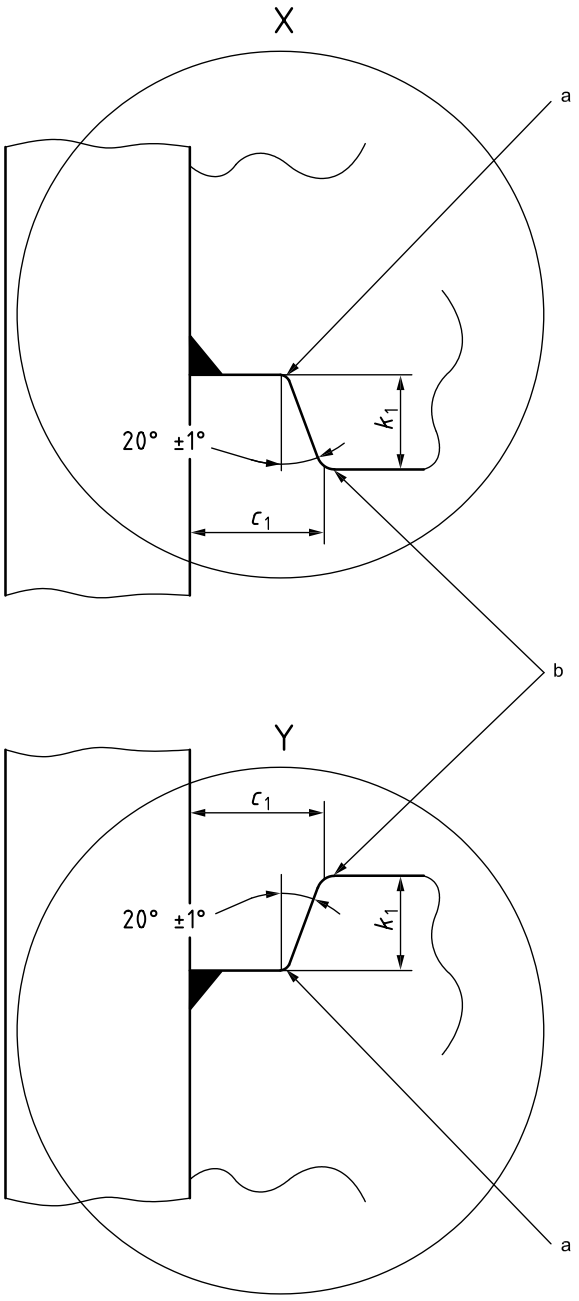
Key

1 carriage centreline
2 upper hook
3 fork carrier
4 lower hook

NOTE 1 For the values of the dimensions, see Tables 1 and 2.

NOTE 2 h_1 and h_2 are fork arm dimensions; a and b are fork carrier dimensions.

Figure 1 — Hook-on type fork arm mounted on fork carrier



Key

X detail of upper hook

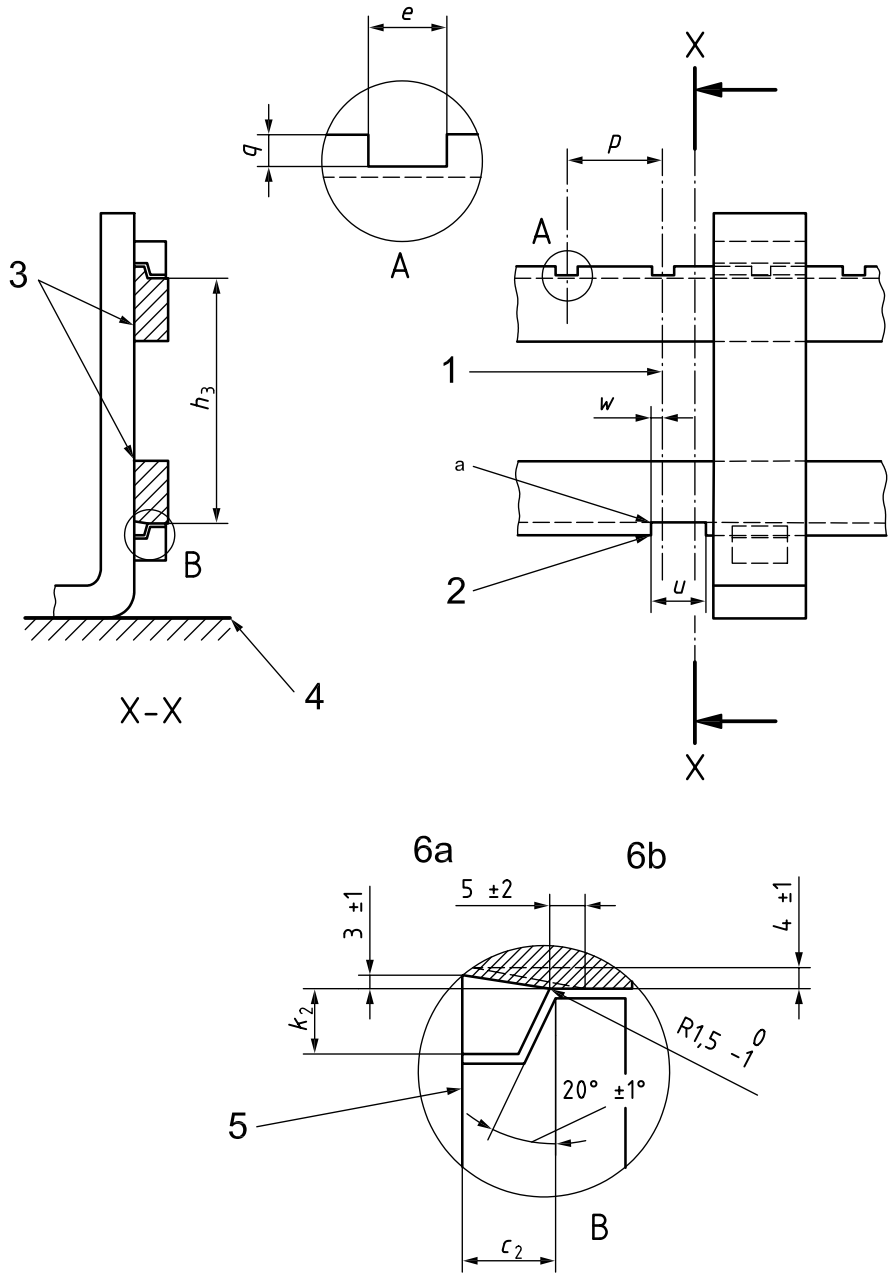
Y detail of lower hook

NOTE For the values of the dimensions, see Table 1.

a Upper and lower fork hooks may be rounded or chamfered for clearance (see Table 1).

b Maximum radius 1,0 mm.

Figure 2 — Fork arm hook detail



Key

1 carriage centreline
2 slot on right side when looking at front face of the fork arm carrier
3 hook-on type fork arm carrier
4 bottom of fork arm (ground level)
5 lower hook of fork arm or attachment lug
6a optional front slope for ease of attachment mounting
6b optional front square cut-out for ease of attachment mounting

NOTE For the values of the dimensions, see Tables 1 and 2.

[a] Maximum radius 5 mm.

Figure 3 — Hook-on type fork arm carrier

Table 1 — Mounting dimensions of hook-on type fork arms

Dimensions in millimetres

Truck rated capacity at rated distance of centre load		Fork arm type	a	c_1	h_1	h_2		m_1	m_2	k_1	Lower hook v
Class	kg/mm		ref.	$^{+1,0}_{0}$	±3,0		tol.	max.	max.	min.	max.
1	Up to 999/ 400 and 600[a]	A	76	16,5	394	306	$^{+1,0}_{0}$	28	26	14	90
		B	114		432						
2	1 000 to 2 500/ 500 and 600[b]	A	76	16,5	470	382		31	29	14	90
		B	152		546						
3	2 501 to 4 999/ 500 and 600[b]	A	76	22	568	477		40	38	17	115
		B	203		695						
4	5 000 to 8 000/ 600	A	127	26	743	598	$^{+1,5}_{0}$	47	45	20	139
		B	254		870						
5	8 001 to 10 999/ 600	A	127	35	830	680		65	63	26	164
		B	257		960						

[a] 600 mm is used in the USA.

[b] 600 mm is used in the USA, Asia and Australia.

Table 2 — Mounting dimensions of fork carriers

Dimensions in millimetres

Truck rated capacity at rated distance of centre load		Fork arm type	a	b	c_2	e	h_3		k_2	q[a]	Lower slot u	Slot offset from	p
Class	kg/mm		ref.	ref.	$^{0}_{-1,0}$	±0,8		tol.	$^{0}_{-1,5}$	min.	±2,0	±1,5	max.
1	Up to 999/ 400 and 600[b]	A	76	331	16	16	305	$^{0}_{-1,0}$	13	8	95	13	160
		B	114										
2	1 000 to 2 500/ 500 and 600[c]	A	76	407	16	16	381		13	8	95	13	160
		B	152										
3	2 501 to 4 999/ 500 and 600[c]	A	76	508	21,5	19	476	$^{0}_{-1,5}$	16	10	120	20	160
		B	203										
4	5 000 to 8 000/ 600	A	127	635	25,5	19	597		19	12	145	27,5	160
		B	254										
5	8 001 to 10 999/ 600	A	127	728	34	25	678		25	16	171	30	160
		B	257										

[a] The centre slot shall be 3 mm deeper to facilitate attachment and fork arm mounting.

[b] 600 mm is used in the USA.

[c] 600 mm is used in the USA, Asia and Australia.

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