INTERNATIONAL STANDARD

ISO 1173

Third edition
2001-04-01

Assembly tools for screws and nuts — Drive ends for hand- and machine-operated screwdriver bits and connecting parts — Dimensions, torque testing

Outils de manœuvre pour vis et écrous — Entraînements des embouts tournevis à main et à machine et éléments de connexion — Dimensions, couple d'essai

Reference number
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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 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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 1173 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts, pliers and nippers*.

This third edition cancels and replaces the second edition (ISO 1173:1988), which has been technically revised.

Annex A of this International Standard is for information only.

Assembly tools for screws and nuts — Drive ends for hand- and machine-operated screwdriver bits and connecting parts — Dimensions, torque testing

1 Scope

This International Standard specifies the dimensions and torque testing of drive ends for hand- and machine-operated screwdriver bits as well as to driving spindles of screw driving machines.

It ensures the interchangeability of tool bits and tool holders.

This International Standard defines only the distinctive features of individual drive ends. Details of design, e.g. of fixing devices, are left to the user of this International Standard.

2 Dimensions

See Figures 1 to 8 and Tables 1 to 8.

Details not given shall be chosen appropriately.

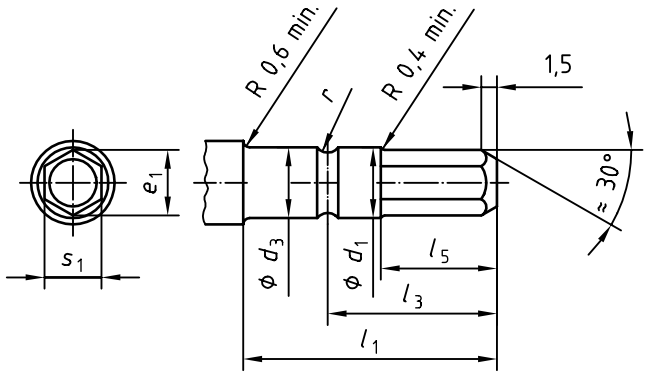
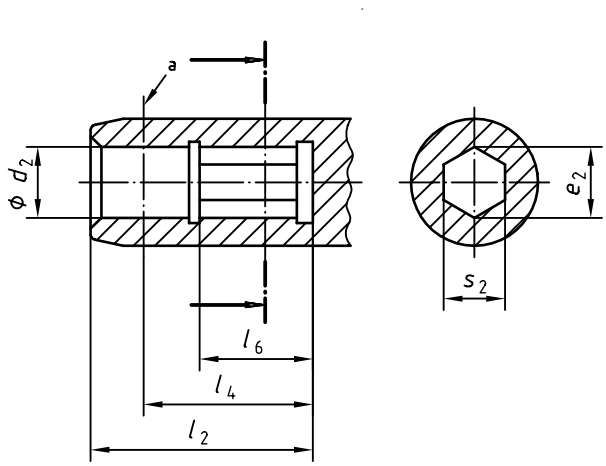


Figure 1 — Male hexagon form A



a Retaining system of the manufacturer's choice

Figure 2 — Female hexagon form B

Table 1 — Male hexagon form A

Dimensions in millimetres

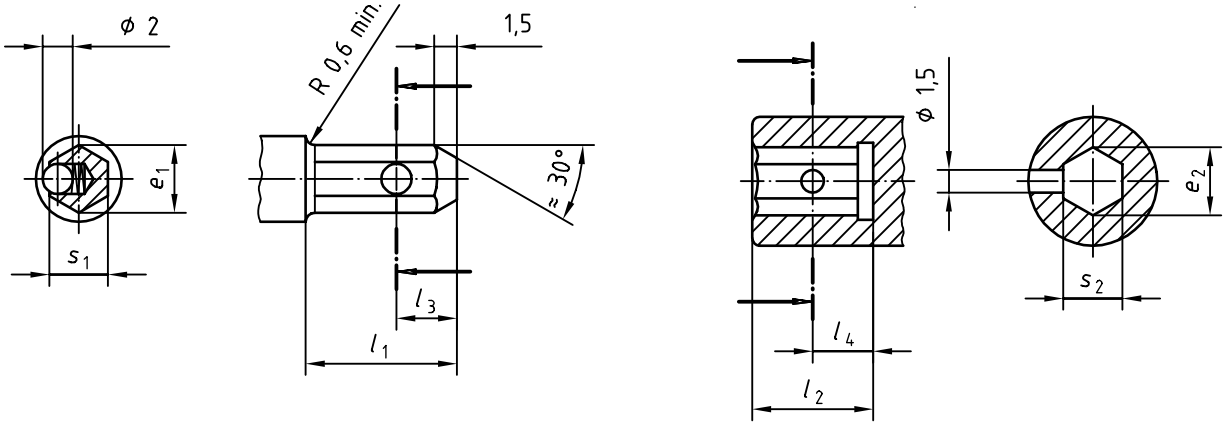
Form	Nominal dimension	s_1		d_1	d_3	e_1		l_1	l_3	l_5	r
		max.	min.	h9	h12	max.	min.	min.	$^{0}_{-0,2}$	$^{+0,4}_{0}$	min.
A	3	3	2,96	3,6	3	3,39	3,34	19,5	11,9	7,4	1
	5,5	5,50	5,45	6,7	5,7	6,21	6,16	24	16	10,9	1,25

Table 2 — Female hexagon form B

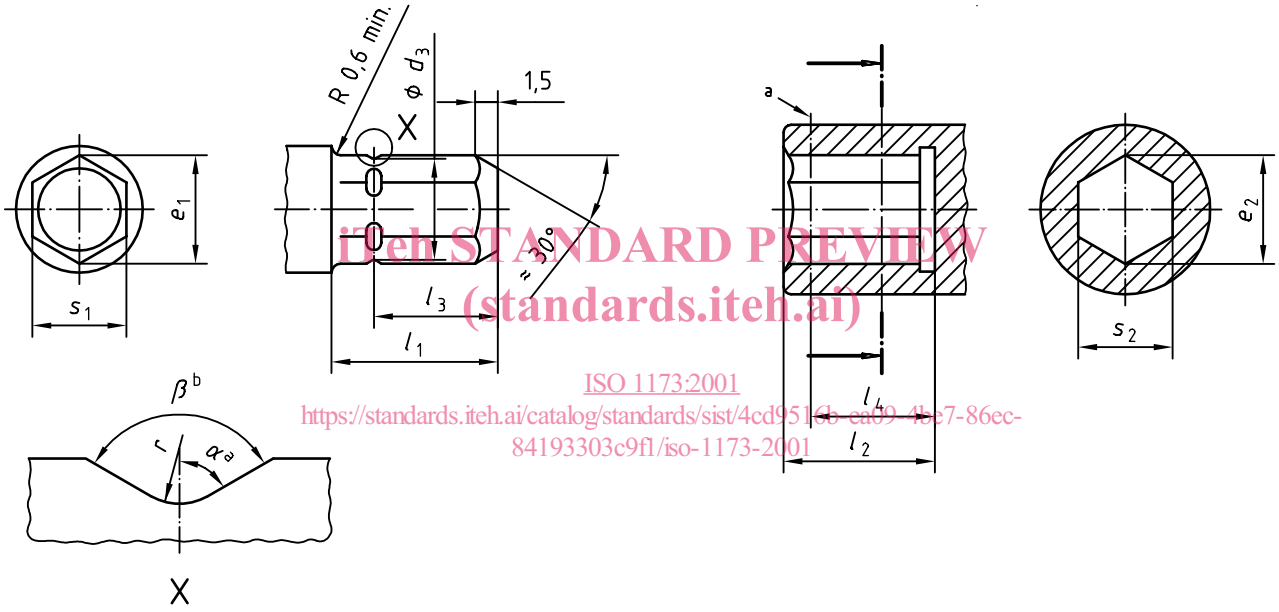
Dimensions in millimetres

Form	Nominal dimension	s_2		d_2	e_2	l_2	l_4	l_6
		max.	min.	D10	min.	± 0,1	$^{+0,2}_{0}$	$^{0}_{-0,4}$
B	3	3,06	3,02	3,6	3,41	16,5	11,9	7,2
	5,5	5,58	5,53	6,7	6,25	21	16	10,7

Nominal dimension 4



Nominal dimensions 6,3, 8 and 12,5



a $40° \leqslant \alpha \leqslant 60°$

b $80° \leqslant \beta \leqslant 120°$

Figure 3 — Male hexagon form C

a Retaining system of the manufacturer's choice.

Figure 4 — Female hexagon form D

Table 3 — Male hexagon form C

Dimensions in millimetres

Form	Nominal dimension	s_1		d_3	e_1		l_1	l_3	r
		max.	min.	h12	max.	min.	min.	$^{0}_{-0,2}$	min.
C	4	3,96	3,91	—	4,48	4,42	9	4	—
	6,3	6,35	6,29	6,7	7,18	7,11	11	8,2	0,3
	8	7,93	7,87	8,2	8,96	8,90	13,5	10,2	
	12,5	12,70	12,63	13,5	14,35	14,27	15,9	12,7	

Table 4 — Female hexagon form D

Dimensions in millimetres

Form	Nominal dimension	s_2		e_2	l_2	l_4
		max.	min.	min.	± 0,1	$^{+0,2}_{0}$
D	4	4,04	3,99	4,51	8	4
	6,3	6,45	6,39	7,22	10	8,2
	8	8,03	7,97	9	12,5	10,2
	12,5	12,80	12,75	14,4	14,9	12,7

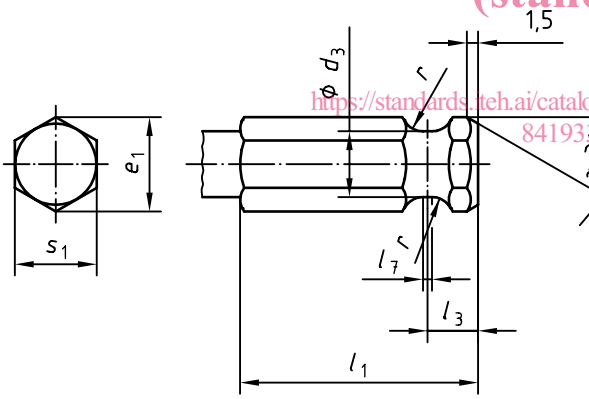
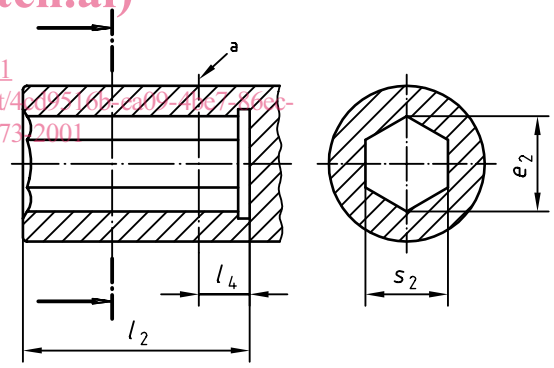


Figure 5 — Male hexagon form E



a Retaining system of the manufacturer's choice.

Figure 6 — Female hexagon form F

Table 5 — Male hexagon form E

Dimensions in millimetres

Form	Nominal dimension	s_1		d_3	e_1		l_1	l_3	l_7	r
		max.	min.	h12	max.	min.	min.	$^{0}_{-0,1}$	≈	min.
E	6,3	6,35	6,29	4,7	7,18	7,11	25	9,5	1	2,4
	(8) [a]	7,93	7,87	6,3	8,96	8,90	27	5,4	1,2	2,4
	11,2	11,11	11,04	8,7	12,56	12,48	31,5	6,7	1,2	2,8

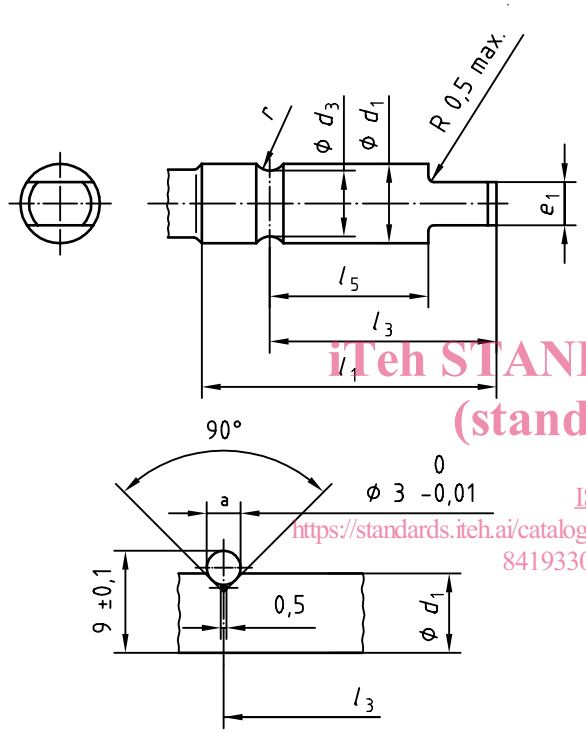
a Non-preferred dimension.

Table 6 — Female hexagon form F

Dimensions in millimetres

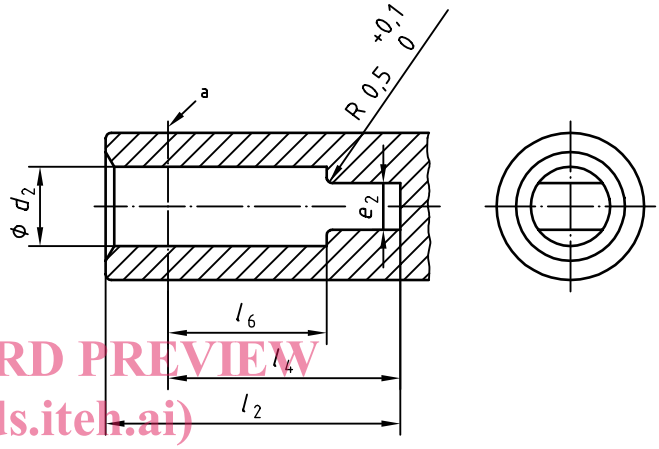
Form	Nominal dimension	s_2 max.	s_2 min.	e_2 min.	l_2 max.	l_4 $^{+0,1}_{0}$
F	6,3	6,45	6,39	7,22	24	9,5
	(8) [a]	8,03	7,97	9	25,5	5,4
	11,2	11,23	11,16	12,61	30	6,7

[a] Non-preferred dimension.



[a] Arrangement with test role for the determination of the groove depth.

Figure 7 — Male flat end form G



[a] Retaining system of the manufacturer's choice.

Figure 8 — Female flat end form H

Table 7 — Male flat end form G

Dimensions in millimetres

Form	Nominal dimension	d_1 f8	d_3 h12	e_1 max.	e_1 min.	l_1 min.	l_3 ± 0,2	l_5 ± 0,2	r min.
G	7	7	5,8	3,86	3,74	26	20	14	1,5

Table 8 — Female flat end form H

Dimensions in millimetres

Form	Nominal dimension	d_2 H10	e_2 $^{+0,1}_{0}$	l_2 max.	l_4 min.	l_6 ± 0,2
H	7	7	4,1	26	20,5	14