INTERNATIONAL STANDARD

ISO 9401

First edition
1991-07-01

Machine tools — Jaw mountings on power chucks

Machines-outils — Dentelures pour mors de mandrins

Reference number
ISO 9401:1991(E)

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.

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.

International Standard ISO 9401 was prepared by Technical Committee ISO/TC 39, *Machine tools*.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Machine tools — Jaw mountings on power chucks

Section 1: General

1.1 Scope

This International Standard specifies 90° and 60° serrations and the T-nuts applicable to 90° and 60° serrations for mounting the top jaws on the base jaws of power chucks, in order to ensure interchangeability.

1.2 Normative reference

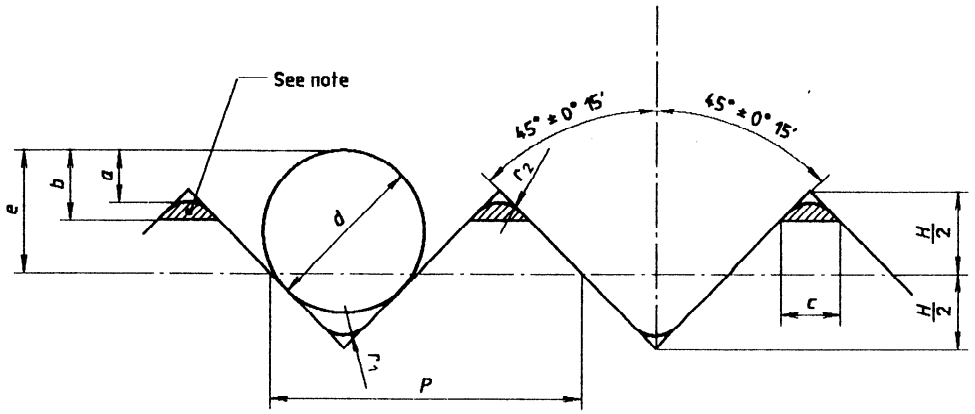
The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 965-3:1980, *ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional threads.*

Section 2: 90° serrations

2.1 Sizes for interchangeability — 90° serrations

See figure 1 and table 1.



NOTE — Any profile contained within the hatched area is acceptable.

Figure 1

Table 1

Dimensions in millimetres

Designation	P	$H/2$	r_1	r_2 min.	Checking dimensions a min.	Checking dimensions b max.	c max.	d [1]	e
1/16″ × 90°	1,587 5	0,397	0,12 to 0,18	0,25	0,64	0,71	0,35	1,1	0,93
3/32″ × 90°	2,381 25	0,595	0,15 to 0,25	0,4	0,97	1,08	0,57	1,65	1,4

1) The pin diameters given are recommended values. If pins of non-standard diameter are used, the manufacturer shall be responsible for recalculating the dimensions such that the form and geometry conform with the ISO standard form.

2.2 Maximum permissible cumulative pitch deviation — 90° serrations

See table 2.

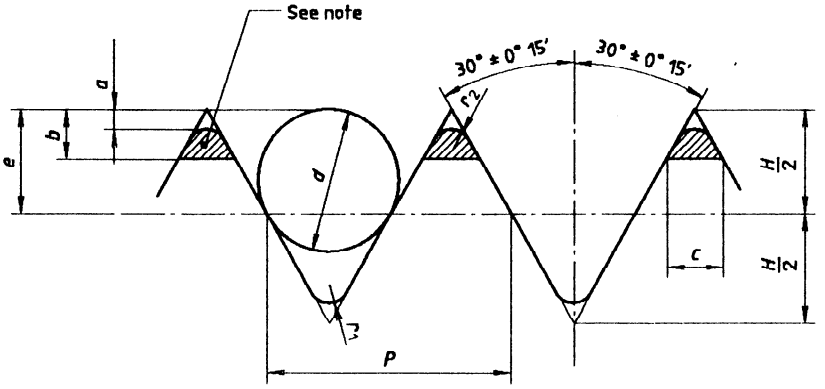
Table 2

Permissible deviation	Designation			
	1/16″ × 90°		3/32″ × 90°	
mm	Measuring length mm	Number of teeth	Measuring length mm	Number of teeth
± 0,008	25,4	16	26,194	11
± 0,012	50,8	32	50,006	21
± 0,016	76,2	48	76,2	32
± 0,02	101,6	64	102,394	43
± 0,024	127	80	126,206	53
± 0,028	152,4	96	152,4	64

Section 3: 60° serrations

3.1 Sizes for interchangeability — 60° serrations

See figure 2 and table 3.



NOTE — Any profile contained within the hatched area is acceptable.

Figure 2

Table 3

Dimensions in millimetres

Designation	P	$H/2$	r_1	r_2 min.	Checking dimensions a min.	Checking dimensions b max.	c max.	d [1]	e
1,5 × 60°	1,5	0,65	0,12 to 0,2	0,24	0,24	0,435	0,502	0,866	0,65
2,5 × 60°	2,5	1,083	0,2 to 0,3	0,36	0,36	0,675	0,779	1,443	1,083

1) The pin diameters given are recommended values. If pins of non-standard diameter are used, the manufacturer shall be responsible for recalculating the dimensions such that the form and geometry conform with the ISO standard form.

3.2 Maximum permissible cumulative pitch deviation — 60° serrations

See table 4.

Table 4

Permissible deviation	Designation			
	1,5 × 60°		2,5 × 60°	
	Measuring length	Number of teeth	Measuring length	Number of teeth
mm	mm		mm	
±0,008	30	20	30	12
±0,013	60	40	60	24
±0,018	90	60	90	36
±0,023	120	80	120	48
±0,028	150	100	150	60

Section 4: T-nuts

4.1 Sizes for interchangeability — T-nuts

See figure 3 and table 5.

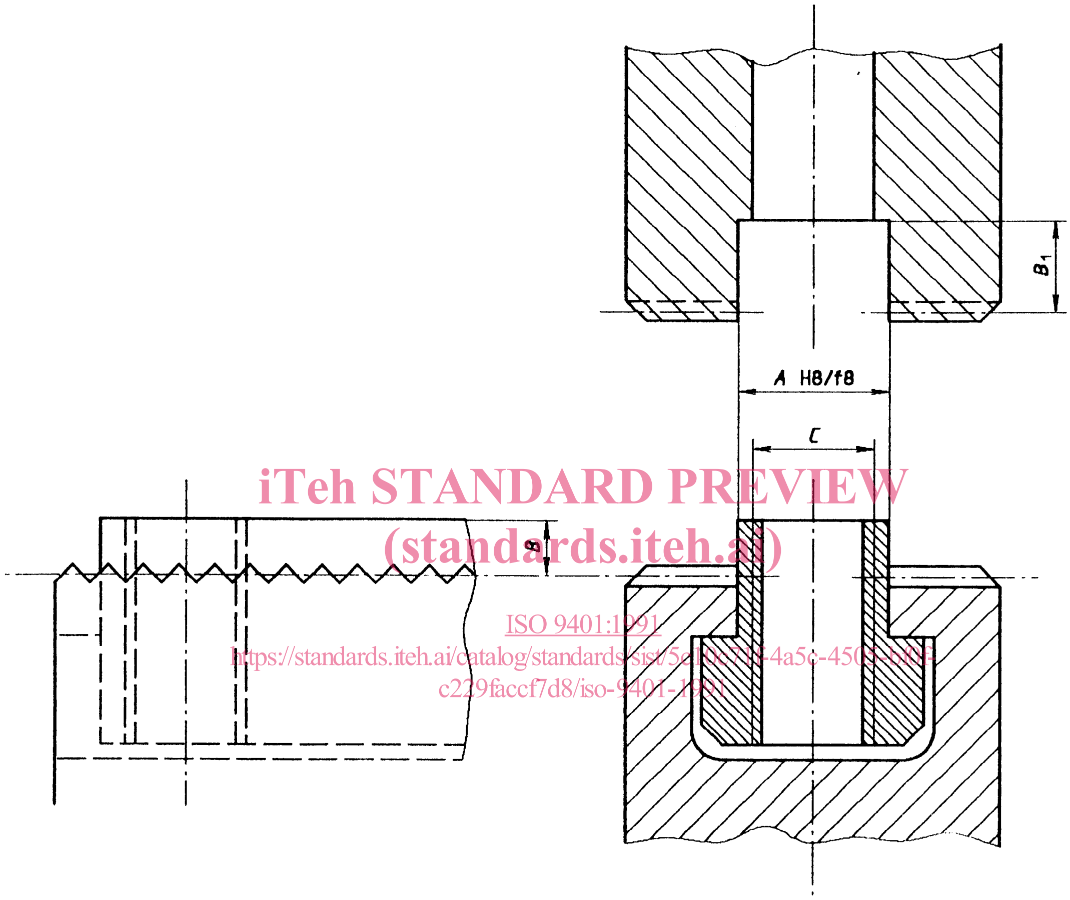


Figure 3

Table 5

Dimensions in millimetres

Nominal size of chuck		160	200	250	315	400	500	630
T-nut	A	14	17	21	21	25,5	25,5	25,5
	B	2,5	2,5	2,5	2,5	3,5	3,5	3,5
	B_1	4,5	4,5	4,5	4,5	5,5	5,5	5,5
	C [1]	M10	M12	M16	M16	M20	M20	M20
Designation of the serration		1/16″ × 90° 1,5 × 60°				3/32″ × 90° 2,5 × 60°		

1) Tolerance grade of thread, 6H (see ISO 965-3).