
International Standard



5414/1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**Tool chucks (end mill holders) with clamp screws for
flatted parallel shank tools —
Part 1 : Dimensions of the driving system of tool shanks**

*Mandrins porte-outils, à vis de blocage, pour outils à queue cylindrique à méplat — Partie 1 : Dimensions du système
d'entraînement des queues d'outils*

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Descriptors : tools, chucks, tool holders, shanks, parallel shanks, dimensions.

Price based on 2 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5414/1 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in November 1980.

It has been approved by the member bodies of the following countries :

Australia
Austria
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China
Czechoslovakia
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Romania
South Africa, Rep. of
Spain
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USSR

No member body expressed disapproval of the document.

Tool chucks (end mill holders) with clamp screws for flatted parallel shank tools — Part 1 : Dimensions of the driving system of tool shanks

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1 Scope and field of application

This part of ISO 5414 lays down the dimensions of tool chucks (end mill holders) with clamp screws designed for driving of flatted parallel shanks and specifies the clamp screws used.

It also gives the maximum diameter of the chuck nose.

Two types of drives are defined :

- chucks with bores of $d_1 < 20$ mm are intended for driving parallel shank tools with a single flat; these tools being provided with either a single or a double cutting part;
- chucks with bores of $d_1 \geq 25$ mm are intended for driving parallel shank tools with a double flat; these tools being provided with a single cutting part only.

The connecting dimensions of the various types of chucks are dealt with in ISO 5414/2.

The flatted parallel shanks mounted into these chucks shall conform with ISO 3338/2.

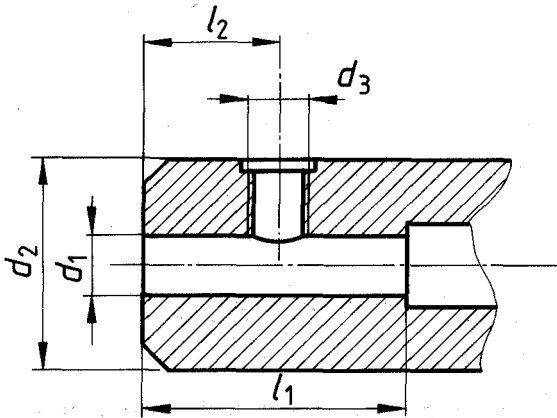
2 References

ISO 3338/2, *Parallel shanks for milling cutters — Part 2 : Dimensional characteristics of flatted parallel shanks.*

ISO 5414/2, *Tool chucks (end mill holders) with clamp screws for flatted parallel shank tools — Part 2 : Connecting dimensions of chucks.*

3 Dimensions

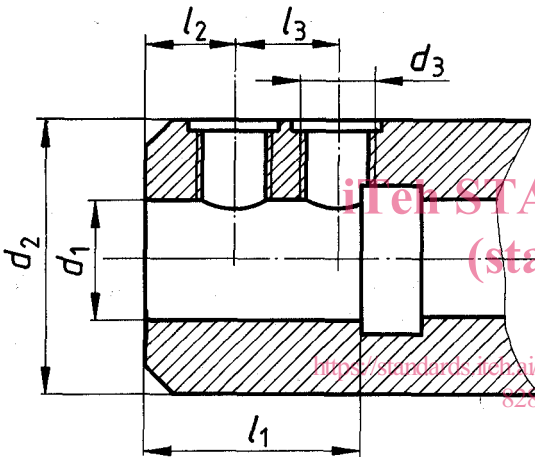
3.1 Chucks for tool shanks with single flat



Dimensions in millimetres

d_1	l_1	l_2	d_2	d_3
H5	± 1	$\pm 0,5$	$\begin{matrix} 0 \\ - 1 \end{matrix}$	6H
6	35	18	25	M 6
8	35	18	28	M 8
10	39	20	35	M 10
12	44	22,5	42	M 12
16	47	24	48	M 14
20	49	25	52	M 16

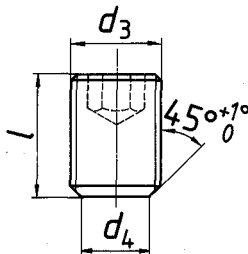
3.2 Chucks for tool shanks with double flat



Dimensions in millimetres

d_1	l_1	l_2	l_3	d_2		d_3
H5	± 1	$\pm 0,5$	$\pm 0,5$			6H
25	54	24	25	65	$\begin{matrix} 0 \\ - 1 \end{matrix}$	M 18 x 2
32	58	24	28	72		M 20 x 2
40	68	30	32	90		M 20 x 2
50	78	35	35	100	max.	M 24 x 2
63	88	40	40	130		M 24 x 2

3.3 Clamp screw



Dimensions in millimetres

d_3	d_4	$l^{(1)}$	Boring chucks, d_1
6h	$\begin{matrix} + 0,1 \\ 0 \end{matrix}$		
M 6	4,2	10	6
M 8	5,5	10	8
M 10	7	12	10
M 12	8	16	12
M 14	10	16	16
M 16	11	16	20
M 18 x 2	12	20	25
M 20 x 2	14	20	32
M 20 x 2	14	25	40
M 24 x 2	18	25	50
M 24 x 2	18	33	63

1) The values given represent the screw nominal length for boring chucks up to 32 mm included. For larger chucks, l values are given for guidance and calculated from maximum values of d_2 . In the case of reduced d_2 bore, the screw length shall be re-calculated making sure that the engagement length is appropriate.