

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 299

MACHINE TOOL TABLES

T SLOTS AND CORRESPONDING BOLTS

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2nd EDITION

March 1971

This second edition supersedes the first edition

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## BRIEF HISTORY

The ISO Recommendation R 299, *T slots for machine tools*, was drawn up by Technical Committee ISO/TC 39, *Machine tools*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led, to the adoption of Draft ISO Recommendation No. 452, which was circulated to all the ISO Member Bodies for enquiry. It was approved by 26 Member Bodies. No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

## BRIEF HISTORY RELATING TO THE SECOND EDITION

The Secretariat of Technical Committee ISO/TC 39, *Machine tools*, decided to revise the ISO Recommendation R 299-1963 and adopted Draft ISO Recommendation No. 1960 on this question. It also adopted Draft ISO Recommendation No. 1961, which was a complement to this ISO Recommendation.

These Draft ISO Recommendations were circulated to all ISO Member Bodies for enquiry in February 1970. They were approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Italy	Switzerland
Czechoslovakia*	Japan	Thailand
France	Korea, Dem. P. Rep. of	Turkey
Germany	Netherlands	U.A.R.
Greece	Poland	United Kingdom**
Hungary	South Africa, Rep. of	U.S.S.R.
Ireland	Spain	
Israel	Sweden	

\* The Czechoslovakia Member Body approved Draft No. 1961 only.

\*\* The United Kingdom Member Body approved Draft No. 1960 but opposed the approval of Draft No. 1961.

These two Draft ISO Recommendations were then submitted by correspondence as a single document to the ISO Council, which decided to accept it as a second edition of the ISO Recommendation R 299, under the new title : *Machine tool tables – T slots and corresponding bolts*.

The present edition cancels and replaces the first edition of ISO Recommendation R 299-1963.

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ISO/R 299:1971

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## MACHINE TOOL TABLES

### T SLOTS AND CORRESPONDING BOLTS

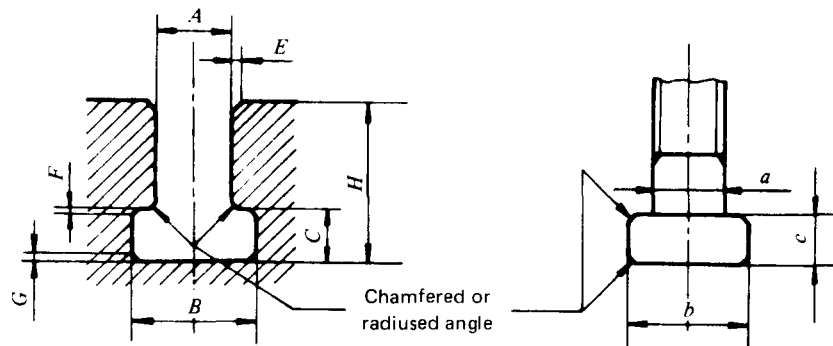
#### 1. SCOPE

This ISO Recommendation specifies the dimensions and the spacing of T slots for machine tool tables. It also specifies the dimensions of bolts to be used in these slots.

#### 2. DIMENSIONS OF SLOTS AND BOLTS

The dimensions of T slots and of the corresponding bolts are specified in Table 1, both in millimetres and in inches, except for sizes below 10 mm and above 42 mm, for which there are no corresponding values in inches. The corresponding values ensure practical interchangeability between machines made in either of the two systems of measurement, as well as, in many cases, interchangeability with existing machines.

For tenon slots, there is no interchangeability from one system of measurement to the other, since the nominal dimension *A* is not identical in millimetres and in inches.



*E, F and G* : 45°-chamfer height or radius

TABLE 1

Dimensions in millimetres

Slot										Bolt		
<i>A</i>	<i>B</i>		<i>C</i>		<i>H</i>		<i>E</i>	<i>F</i>	<i>G</i>	<i>a</i>	<i>b</i>	<i>c</i>
	min.	max.	min.	max.	min.	max.						
5	10	11	3	3.5	8	10	1	0.6	1	4	9	2.5
6	11	12.5	5	6	11	13	1	0.6	1	5	10	4
8	14.5	16	7	8	15	18	1	0.6	1	6	13	6
10	16	18	7	8	17	21	1	0.6	1	8	15	6
12	19	21	8	9	20	25	1	0.6	1	10	18	7
14	23	25	9	11	23	28	1.6	0.6	1.6	12	22	8
18	30	32	12	14	30	36	1.6	1	1.6	16	28	10
22	37	40	16	18	38	45	1.6	1	2.5	20	34	14
28	46	50	20	22	48	56	1.6	1	2.5	24	43	18
36	56	60	25	28	61	71	2.5	1	2.5	30	53	23
42	68	72	32	35	74	85	2.5	1.6	4	36	64	28
48	80	85	36	40	84	95	2.5	2	6	42	75	32
54	90	95	40	44	94	106	2.5	2	6	48	85	36

Dimensions in inches

Slot										Bolt		
<i>A</i>	<i>B</i>		<i>C</i>		<i>H</i>		<i>E</i>	<i>F</i>	<i>G</i>	<i>a</i>	<i>b</i>	<i>c</i>
	min.	max.	min.	max.	min.	max.						
$\frac{11}{32}$	$\frac{41}{64}$	$\frac{23}{32}$	$\frac{1}{4}$	$\frac{19}{64}$	$\frac{13}{16}$	$\frac{21}{32}$	$\frac{3}{64}$	$\frac{1}{32}$	$\frac{3}{64}$	$\frac{5}{16}$	$\frac{19}{32}$	$\frac{15}{64}$
$\frac{7}{16}$	$\frac{3}{4}$	$\frac{53}{64}$	$\frac{19}{64}$	$\frac{11}{32}$	1	$\frac{13}{16}$	$\frac{3}{64}$	$\frac{1}{32}$	$\frac{3}{64}$	$\frac{3}{8}$	$\frac{11}{16}$	$\frac{9}{32}$
$\frac{9}{16}$	$\frac{29}{32}$	$\frac{63}{64}$	$\frac{23}{64}$	$\frac{7}{16}$	$1\frac{1}{8}$	$\frac{15}{16}$	$\frac{1}{16}$	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{5}{16}$
$\frac{11}{16}$	$1\frac{3}{16}$	$1\frac{17}{64}$	$\frac{29}{64}$	$\frac{17}{32}$	$1\frac{7}{16}$	$1\frac{3}{16}$	$\frac{1}{16}$	$\frac{3}{64}$	$\frac{1}{16}$	$\frac{5}{8}$	$1\frac{1}{8}$	$\frac{13}{32}$
$\frac{13}{16}$	$1\frac{7}{16}$	$1\frac{9}{16}$	$\frac{19}{32}$	$\frac{43}{64}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$\frac{1}{16}$	$\frac{3}{64}$	$\frac{1}{16}$	$\frac{3}{4}$	$1\frac{5}{16}$	$\frac{17}{32}$
$1\frac{1}{16}$	$1\frac{13}{16}$	$1\frac{31}{32}$	$\frac{25}{32}$	$\frac{55}{64}$	$2\frac{3}{16}$	$1\frac{7}{8}$	$\frac{1}{16}$	$\frac{3}{64}$	$\frac{7}{64}$	1	$1\frac{11}{16}$	$\frac{11}{16}$
$1\frac{5}{16}$	$2\frac{3}{16}$	$2\frac{11}{32}$	1	$1\frac{1}{8}$	$2\frac{13}{16}$	$2\frac{7}{16}$	$\frac{7}{64}$	$\frac{3}{64}$	$\frac{7}{64}$	$1\frac{1}{4}$	$2\frac{1}{16}$	$\frac{15}{16}$
$1\frac{9}{16}$	$2\frac{11}{16}$	$2\frac{27}{32}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$3\frac{3}{8}$	$2\frac{15}{16}$	$\frac{7}{64}$	$\frac{1}{16}$	$\frac{5}{32}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{3}{16}$

Slots : Tolerances on *A* : H12 for fixing slots,  
H8 for tenon slots.

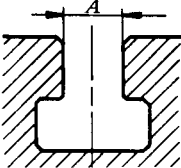
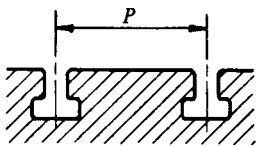
Bolts : Tolerances on *a, b, c* : usual tolerances for bolts and nuts.

NOTE. — Though the assembly by bolts is the only one shown, any other device complying with the same interchangeability conditions may be regarded as in agreement with this ISO Recommendation.

3. SPACING OF SLOTS

For each dimension  $A$  of standardized T slots, three values of pitch,  $P$ , are given in Table 2, from which the manufacturer is advised, unless there is a justifiable reason to do otherwise, to choose the one best fitted to the dimensions of a given table or plate and to the number of slots required for its use, additionally taking into account the advantage of providing, whenever possible, symmetrically arranged slots about a median slot. When there is an even number of slots, the reference slot should be clearly indicated on the machine table itself.

TABLE 2

			
Slot width $A$		Pitch $P$	
mm	in	mm	in
5	—	20 — 25 — 32	—
6	—	25 — 32 — 40	—
8	—	32 — 40 — 50	—
10	$\frac{11}{32}$	40 — 50 — 63	$1\frac{1}{2}$ — 2 — $2\frac{1}{2}$
12	$\frac{7}{16}$	50 — 63 — 80	2 — $2\frac{1}{2}$ — 3
14	$\frac{9}{16}$	63 — 80 — 100	$2\frac{1}{2}$ — 3 — 4
18	$\frac{11}{16}$	80 — 100 — 125	3 — 4 — 5
22	$\frac{13}{16}$	100 — 125 — 160	4 — 5 — $6\frac{1}{2}$
28	$1\frac{1}{16}$	125 — 160 — 200	5 — $6\frac{1}{2}$ — 8
36	$1\frac{5}{16}$	160 — 200 — 250	$6\frac{1}{2}$ — 8 — 10
42	$1\frac{9}{16}$	200 — 250 — 320	8 — 10 — 13
48	—	250 — 320 — 400	—
54	—	320 — 400 — 500	—

Where values of  $P$  greater or less than those given in Table 2 are absolutely necessary, they should be chosen from the values of the R 10 series of preferred numbers; where intermediate values are required, they should be chosen from the values of the R 20 series.