

# INTERNATIONAL STANDARD

**ISO**  
**529**

Second edition  
1993-01-15

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## Short machine taps and hand taps

*Tarauds courts à machine et à main*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

ISO 529:1993

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Reference number  
ISO 529:1993(E)

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## 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 529 was prepared by Technical Committee ISO/TC 29, *Small tools*, Sub-Committee SC 4, *Screwing taps and dies*.

This second edition cancels and replaces the first edition (ISO 529:1975), of which it constitutes a technical revision.

Annex A forms an integral part of this International Standard. Annexes B and C are for information only.

# Short machine taps and hand taps

## Section 1: General

### 1.1 Scope

This International Standard specifies the general dimensions of short machine taps and hand taps. These dimensions, established as functions of the thread diameter and pitch, are the following:

- length of thread (maximum);
  - overall length;
  - shank diameter and dimensions of driving square;
  - dimensions of the connecting portion between the shank and threaded part.
- This International Standard is applicable to taps intended for cutting the following threads:

- a) ISO metric threads
  - coarse pitch;
  - fine pitch.
- b) ISO inch threads
  - “Unified Coarse” series (UNC) and “Unified Fine” series (UNF).
- c) Inch threads, non-recommended
  - “British Standard Whitworth” (BSW) and “British Standard Fine” (BSF);
  - “British Association” (BA).

#### NOTES

1 The overall length, thread length and diameters of shank for taps whose thread diameter and pitch are not listed in tables are given in table A.1.

2 Annex B gives an abstract from ISO 237 for shank diameters and size of driving squares, for information.

Technical specifications for taps covered by this International Standard (including marking) are given in ISO 8830.

### 1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject

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to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 237:1975, *Rotating tools with parallel shanks — Diameters of shanks and sizes of driving squares.*

ISO 2857:1973, *Ground thread taps for ISO metric threads of tolerances 4H to 8H and 4G to 6G coarse and fine pitches — Manufacturing tolerances on the threaded portion.*

ISO 8830:1991, *High-speed steel machine taps with ground threads — Technical specifications.*

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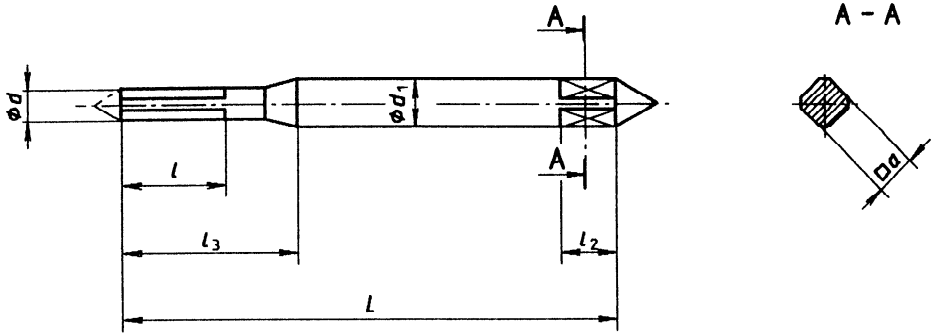
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Section 2: ISO metric threads

2.1 Threads up to M25

2.1.1 Full-diameter shank taps with plain connecting portion



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Dimensions in millimetres

Designation		d nom.	Pitch		d <sub>1</sub> h9 <sup>2)</sup>	l <sup>1)</sup> max.	L h16	l <sub>3</sub>	Square		
Coarse pitch	Fine pitch		coarse	fine					a h11 <sup>3)</sup>	l <sub>2</sub> ± 0,8	
M1	M1 × 0,2	1	0,2	0,2	2,5	5,5	38,5	10	2	4	
M1,1	M1,1 × 0,2	1,1									
M1,2	M1,2 × 0,2	1,2									
M1,4	M1,4 × 0,2	1,4				0,35	8	41			13
M1,6	M1,6 × 0,2	1,6									
M1,8	M1,8 × 0,2	1,8				0,25	2,8	9,5			44,5
M2	M2 × 0,25	2	0,4	13,5							
M2,2	M2,2 × 0,25	2,2	0,45	0,35							
M2,5	M2,5 × 0,35	2,5									

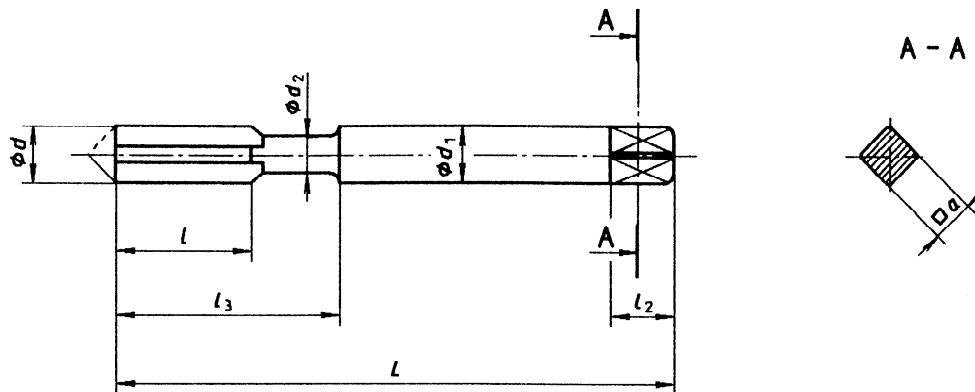
1) Manufacturers, if they wish, may increase the thread length to

$$l + \frac{l_3 - l}{2}$$

2) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.

3) In accordance with ISO 237, the tolerance is enlarged to h12 when including errors of form of the square and of its position in relation to the shank.

2.1.2 Full-diameter shank taps with recess



Dimensions in millimetres

Designation		d nom.	Pitch		d <sub>1</sub> h9 <sup>2)</sup>	l <sup>1)</sup> max.	L h16	d <sub>2</sub> <sup>1)</sup> min.	l <sub>3</sub>	Square	
Coarse pitch	Fine pitch		coarse	fine						a h11 <sup>3)</sup>	l <sub>2</sub> ± 0,8
M3	M3 × 0,35	3	0,5	0,35	3,15	11	48	2,12	18	2,5	5
M3,5	M3,5 × 0,35	3,5	0,6		3,55		50	2,5	20	2,8	
M4	M4 × 0,5	4	0,7	0,5	4	13	53	2,8	21	3,15	6
M4,5	M4,5 × 0,5	4,5	0,75		4,5			3,15			
M5	M5 × 0,5	5	0,8		5	16	58	3,55	25	4	7
—	M5,5 × 0,5	5,5	—		5,6	17	62	4	26	4,5	7
M6	M6 × 0,75	6	1	0,75	6,3	19	66	4,5	30	5	8
M7	M7 × 0,75	7			7,1			5,3		5,6	
M8	M8 × 1	8	1,25	1	8	22	72	6	35	6,3	9
M9	M9 × 1	9			9			7,1		36	
M10	M10 × 1	10	1,5	1,25	10	24	80	7,5	39	8	11
	M10 × 1,25										

1) The recess of full diameter shank taps with recess is optional at the manufacturer's discretion. If the recess is not required such taps shall have a thread length equal to

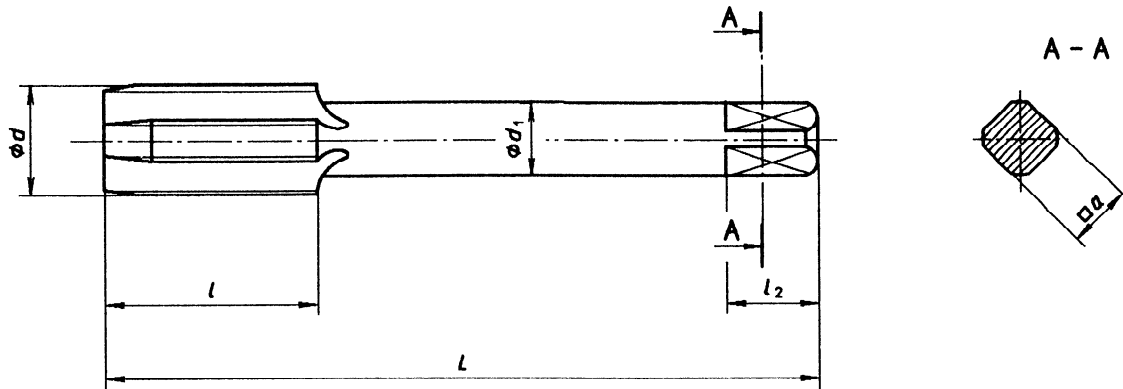
$$l + \frac{l_3 - l}{2}$$

2) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.

3) In accordance with ISO 237, the tolerance is enlarged to h12 when including errors of form of the square and of its position in relation to the shank.



2.1.3 Relieved-shank taps



Dimensions in millimetres

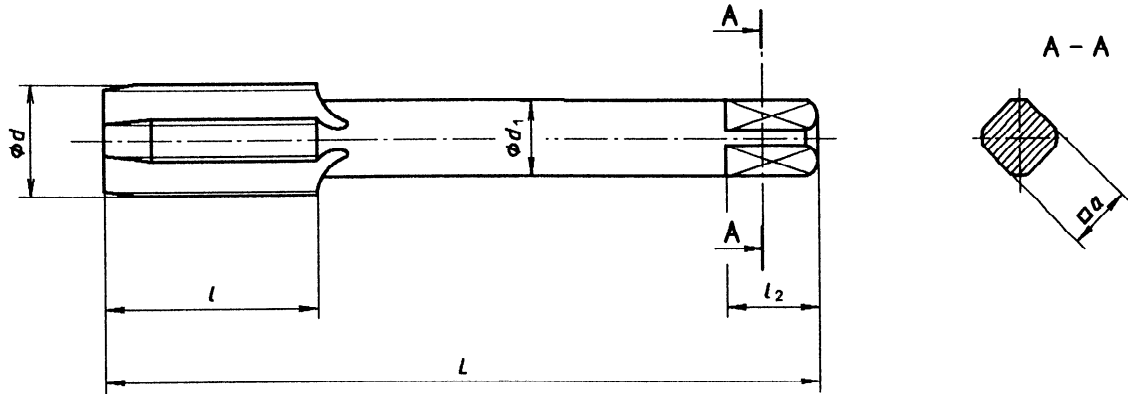
Designation		$d$ nom.	Pitch		$d_1$ h9 <sup>1)</sup>	$l$ max.	$L$ h16	Square	
Coarse pitch	Fine pitch		coarse	fine				$a$ h11 <sup>2)</sup>	$l_2$ $\pm 0,8$
M3	M3 × 0,35	3	0,5	0,35	2,24	11	48	1,8	4
M3,5	M3,5 × 0,35	3,5	0,6		2,5		50	2	
M4	M4 × 0,5	4	0,7	0,5	3,15	16	53	2,5	5
M4,5	M4,5 × 0,5	4,5	0,75		3,55			2,8	
M5	M5 × 0,5	5	0,8		4			3,15	
—	M5,5 × 0,5	5,5	—			17	62		6
M6	M6 × 0,75	6	1	0,75	4,5	19	66	3,55	7
M7	M7 × 0,75	7			5,6			4,5	
M8	M8 × 1	8	1,25	1	6,3	22	72	5	8
M9	M9 × 1	9			7,1			5,6	
M10	M10 × 1	10	1,5	1,25	8	24	80	6,3	9
	M10 × 1,25								
M11	—	11				25	85		
M12	M12 × 1,25	12	1,75	1,25	9	29	89	7,1	10
	M12 × 1,5			1,5					

Designation		<i>d</i> nom.	Pitch		<i>d</i> <sub>1</sub> h9 <sup>1)</sup>	<i>l</i> max.	<i>L</i> h16	Square	
Coarse pitch	Fine pitch		coarse	fine				<i>a</i> h11 <sup>2)</sup>	<i>l</i> <sub>2</sub> ± 0,8
M14	M14 × 1,25	14	2	1,25	11,2	30	95	9	12
	M14 × 1,5								
—	M15 × 1,5	15		1,5	12,5	32	102	10	13
M16	M16 × 1,5	16							
—	M17 × 1,5	17	—	14	37	112	11,2	14	
M18	M18 × 1,5	18	2						
	M18 × 2								
M20	M20 × 1,5	20	2,5						1,5
	M20 × 2								
M22	M22 × 1,5	22		1,5	18	45	130	14	18
	M22 × 2								
M24	M24 × 1,5	24	3	1,5	18	45	130	14	18
	M24 × 2								
—	M25 × 1,5	25		1,5	18	45	130	14	18
	M25 × 2								

- 1) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.  
 2) In accordance with ISO 237, the tolerance is enlarged to h12 when including errors of form of the square and of its position in relation to the shank.

2.2 Threads above M25

2.2.1 Relieved-shank taps for coarse pitch metric thread

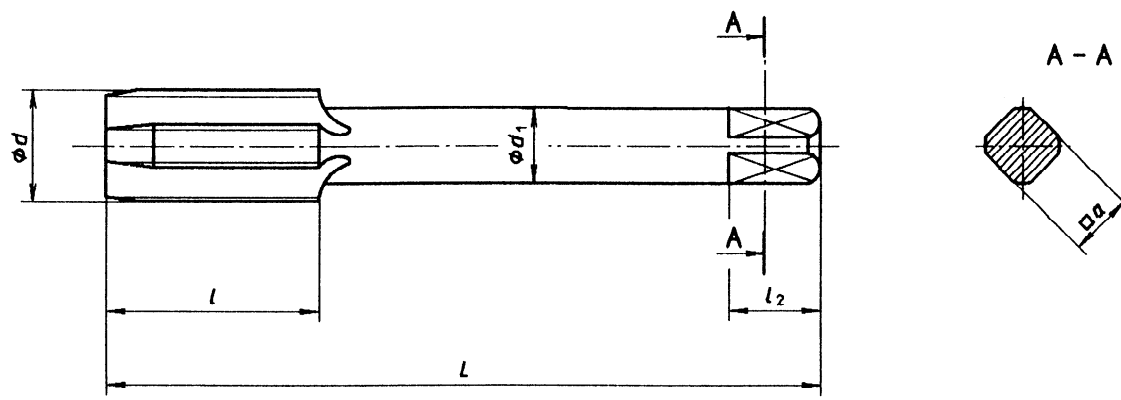


Dimensions in millimetres

Designation	d nom.	Pitch	d <sub>1</sub> h9 <sup>1)</sup>	l max.	L h16	Square	
						a h11 <sup>2)</sup>	l <sub>2</sub> ± 1,6
M27	27	3	20	45	135	16	20
M30	30	3,5	22,4	48	138		
M33	33		25	51	151	18	22
M36	36	4	25	57	162	20	24
M39	39		28	60	170	22,4	26
M42	42	4,5	31,5	67	187	25	28
M45	45						
M48	48	5	35,5	70	200	28	31
M52	52						
M56	56	5,5	40	76	221	31,5	34
M60	60						
M64	64	6	45	79	224	35,5	38
M68	68						

1) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.  
 2) In accordance with ISO 237, the tolerance is enlarged to h12 when including errors of form of the square and of its position to the shank.

2.2.2 Relieved-shank taps for fine pitch metric thread



Dimensions in millimetres

Designation	$d$ nom.	Pitch	$d_1$ h9 <sup>1)</sup>	$l$ max.	$L$ h16	Square	
						$a$ h11 <sup>2)</sup>	$l_2$ $\pm 1,6$
M27 × 1,5	27	1,5	20	37	127	16	20
M27 × 2		2					
M28 × 1,5	28	1,5	20	37	127	16	20
M28 × 2		2					
M30 × 1,5	30	1,5	22,4	37	137	18	22
M30 × 2		2					
M30 × 3		3		48	138		
M32 × 1,5	32	1,5	22,4	37	137	18	22
M32 × 2		2					
M33 × 1,5	33	1,5	22,4	37	137	18	22
M33 × 2		2					
M33 × 3		3		51	151		
M35 × 1,5	35	1,5	25	39	144	20	24
M36 × 1,5	36	1,5					
M36 × 2		2		57	162		
M36 × 3		3					