INTERNATIONAL STANDARD

ISO 529

Second edition
1993-01-15

Short machine taps and hand taps

Tarauds courts à machine et à main

Reference number
ISO 529:1993(E)

Contents

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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

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.*

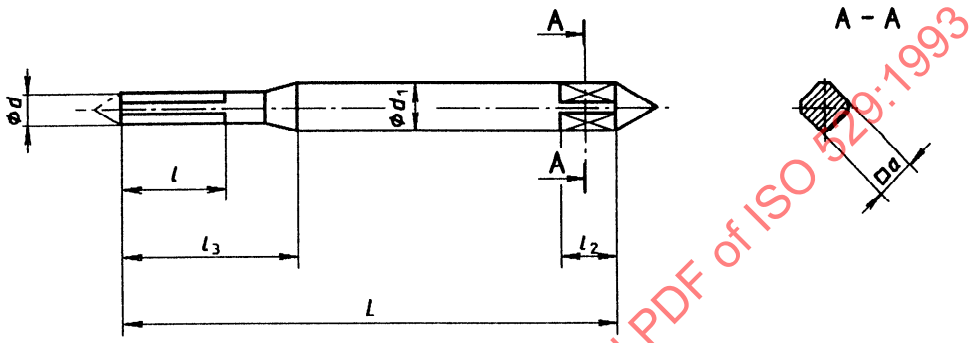
ISO 2857:1973, *Ground thread taps for ISO metric threads of tolerances 4H to 8H and 4G to 6G coarse and fine pitches — Manufacturing tolerances on the threaded portion.*

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

Section 2: ISO metric threads

2.1 Threads up to M25

2.1.1 Full-diameter shank taps with plain connecting portion



Dimensions in millimetres

Designation		d	Pitch		d_1	l [1]	L	l_3	Square	
Coarse pitch	Fine pitch	nom.	coarse	fine	h9 [2]	max.	h16		a h11 [3]	l_2 ± 0,8
M1	M1 × 0,2	1	0,25	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	0,3			7	40	12		
M1,6	M1,6 × 0,2	1,6	0,35			8	41	13		
M1,8	M1,8 × 0,2	1,8								
M2	M2 × 0,25	2	0,4	0,25				13,5		
M2,2	M2,2 × 0,25	2,2	0,45		2,8	9,5	44,5	15,5	2,24	5
M2,5	M2,5 × 0,35	2,5		0,35						

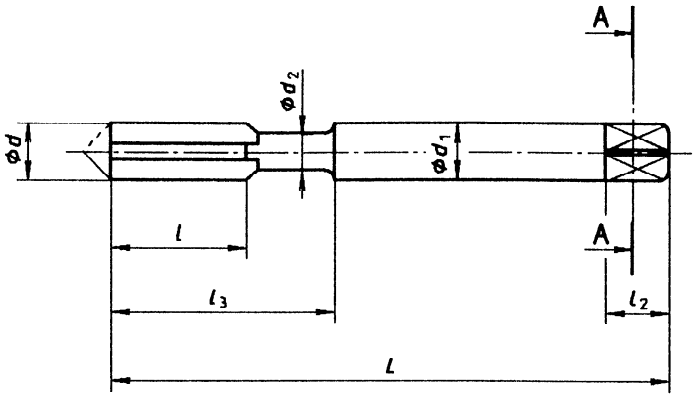
1) Manufacturers, if they wish, may increase the thread length to

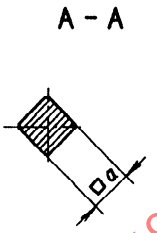
$$l + \frac{l_3 - l}{2}$$

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	Pitch		d_1	l [1]	b	d_2 [1]	l_3	Square	
Coarse pitch	Fine pitch	nom.	coarse	fine	h9[2]	max.	h16	min.		a h11[3]	l_2 ± 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		3,55	
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	7,1	10
M10	M10 × 1	10	1,5		10	24	80	7,5	39	8	11
	M10 × 1,25			1,25							

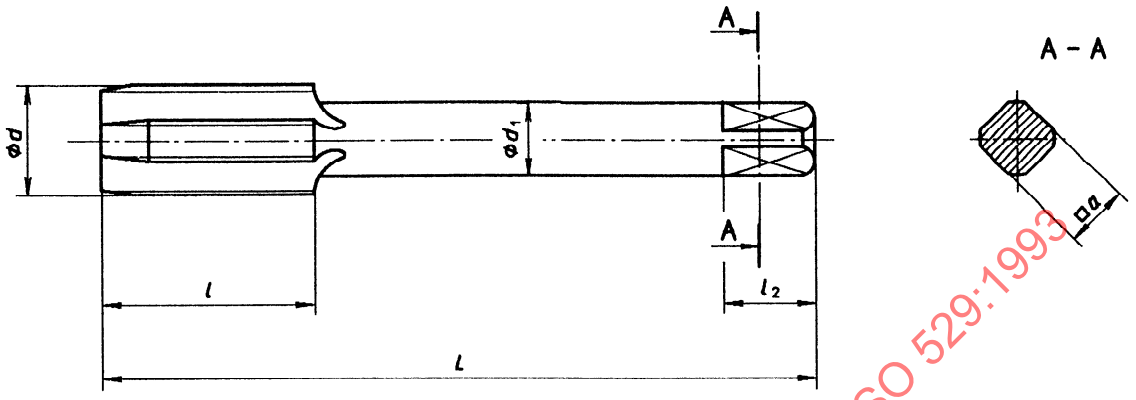
1) The recess of full diameter shank taps with recess is optional at the manufacturer's discretion. If the recess is not required such taps shall have a thread length equal to

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

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	Pitch		d_1	l	L	Square	
Coarse pitch	Fine pitch	nom.	coarse	fine	h9[1]	max.	h16	a h11[2]	l_2 ± 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	13	50	2	
M4	M4 × 0,5	4	0,7	0,5	3,15		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	16	58	3,15	6
—	M5,5 × 0,5	5,5	—			17	62		
M6	M6 × 0,75	6	1	0,75	4,5	19	66	3,55	
M7	M7 × 0,75	7			5,6			4,5	7
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		8	24	80	6,3	9
	M10 × 1,25			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					

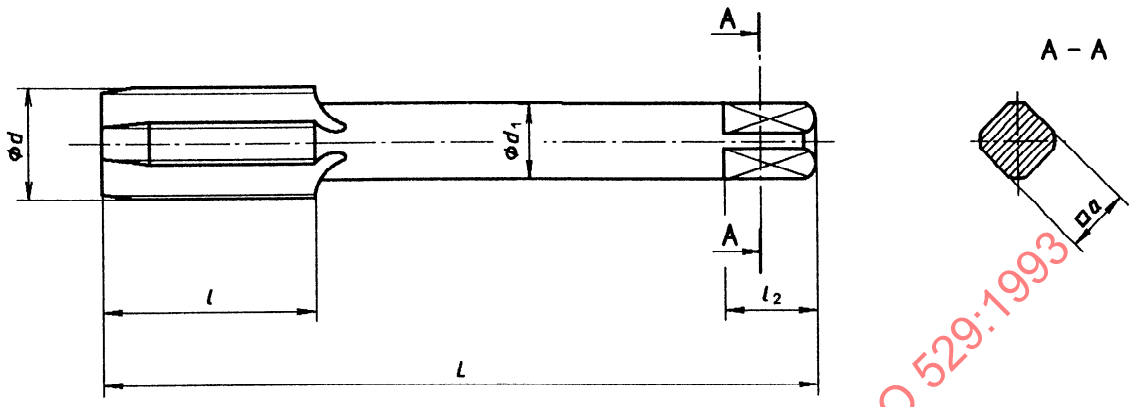
Designation		d	Pitch		d_1	l	L	Square	
Coarse pitch	Fine pitch	nom.	coarse	fine	h9[1]	max.	h16	a h11[2]	l_2 ± 0,8
M14	M14 × 1,25	14	2	1,25	11,2	30	95	9	12
	M14 × 1,5			1,5					
—	M15 × 1,5	15							
M16	M16 × 1,5	16			12,5	32	102	10	13
—	M17 × 1,5	17	—						
M18	M18 × 1,5	18	2,5		14	37	112	11,2	14
	M18 × 2			2					
M20	M20 × 1,5	20		1,5					
	M20 × 2			2					
M22	M22 × 1,5	22		1,5	16	38	118	12,5	16
	M22 × 2			2					
M24	M24 × 1,5	24	3	1,5	18	45	130	14	18
	M24 × 2			2					
—	M25 × 1,5	25	—	1,5					
	M25 × 2			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



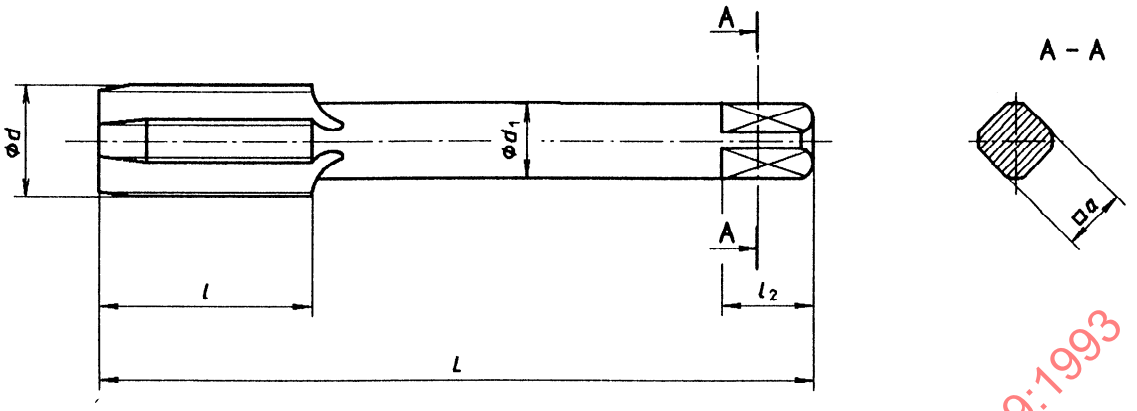
Dimensions in millimetres

Designation	d nom.	Pitch	d_1 h9[1]	l max.	L h16	Square a h11[2]	Square l_2 ± 1,6
M27	27	3	20	45	135	16	20
M30	30	3,5		48	138		
M33	33		22,4	51	151	18	22
M36	36	4	25	57	162	20	24
M39	39		28	60	170	22,4	26
M42	42	4,5					
M45	45		31,5	67	187	25	28
M48	48	5					
M52	52		35,5	70	200	28	31
M56	56	5,5					
M60	60		40	76	221	31,5	34
M64	64	6		79	224		
M68	68		45		234	35,5	38

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[1]	l max.	L h16	Square	
						a h11[2]	l_2 ± 1,6
M27 × 1,5	27	1,5	20	37	127	16	20
M27 × 2		2					
M28 × 1,5	28	1,5					
M28 × 2		2					
M30 × 1,5	30	1,5					
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					
M33 × 2		2					
M33 × 3		3		51	151		
M35 × 1,5	35	1,5	25	39	144	20	24
M36 × 1,5	36						
M36 × 2		2					
M36 × 3		3		57	162		

Designation	d nom.	Pitch	d_1 h9[1)]	l max.	L h16	Square	
						a h11[2)]	l_2 ± 1,6
M39 × 1,5	39	1,5	28	39	149	22,4	26
M39 × 2		2					
M39 × 3		3		60	170		
M40 × 1,5	40	1,5		39	149		
M40 × 2		2					
M40 × 3		3		60	170		
M42 × 1,5	42	1,5		39	149		
M42 × 2		2					
M42 × 3		3		60	170		
M42 × 4		4					
M45 × 1,5	45	1,5	31,5	45	165	25	28
M45 × 2		2					
M45 × 3		3		67	187		
M45 × 4		4					
M48 × 1,5	48	1,5		45	165		
M48 × 2		2					
M48 × 3		3		67	187		
M48 × 4		4					
M50 × 1,5	50	1,5		45	165		
M50 × 2		2					
M50 × 3		3		67	187		

Designation	d nom.	Pitch	d_1 h9[1]	l max.	L h16	Square	
						a h11[2]	l_2 ± 1,6
M52 × 1,5	52	1,5	35,5	45	175	28	31
M52 × 2		2					
M52 × 3		3		70	200		
M52 × 4		4					
M55 × 1,5	55	1,5		45	175		
M55 × 2		2					
M55 × 3		3		70	200		
M55 × 4		4					
M56 × 1,5	56	1,5		45	175		
M56 × 2		2					
M56 × 3		3		70	200		
M56 × 4		4					
M70 × 6	70	6	45	79	234	35,5	38
M72 × 6	72						
M75 × 6	75						
M76 × 6	76		50	83	258	40	42
M80 × 6	80						
M85 × 6	85			86	261		
M90 × 6	90						
M95 × 6	95		56	89	279	45	46
M100 × 6	100						

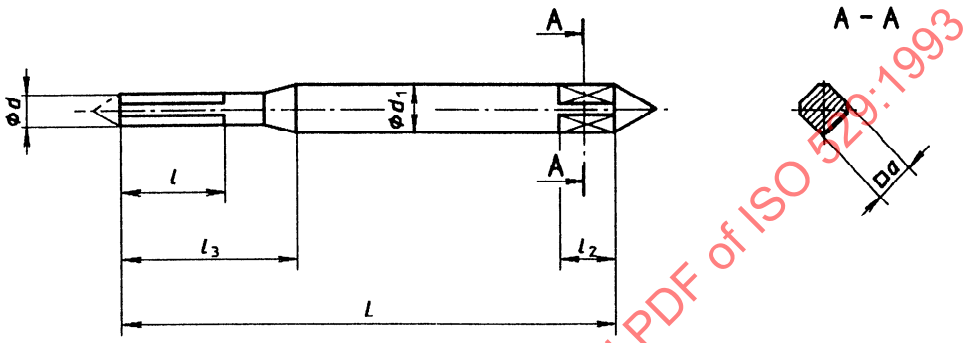
1) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.

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.

Section 3: ISO inch threads, "Unified coarse" (UNC) and "Unified fine" (UNF) series

3.1 "Unified" series threads up to 25,4 mm

3.1.1 Full-diameter shank taps with plain connecting portion



Dimensions in millimetres

Designation		d	Pitch ≈		d_1	l [1]	L	l_3	Square	
UNC	UNF	nom.	UNC	UNF	h9 [2]	max.	h16		a h11 [3]	l_2 ± 0,8
—	No.0-80-UNF	1,524	—	0,318	2,5	8	41	13	2	4
No.1-64-UNC	No.1-72-UNF	1,854	0,397	0,353				13,5		
No.2-56-UNC	No.2-64-UNF	2,184	0,454	0,397	2,8	9,5	44,5	15,5	2,24	5
No.3-48-UNC	No.3-56-UNF	2,515	0,529	0,454						

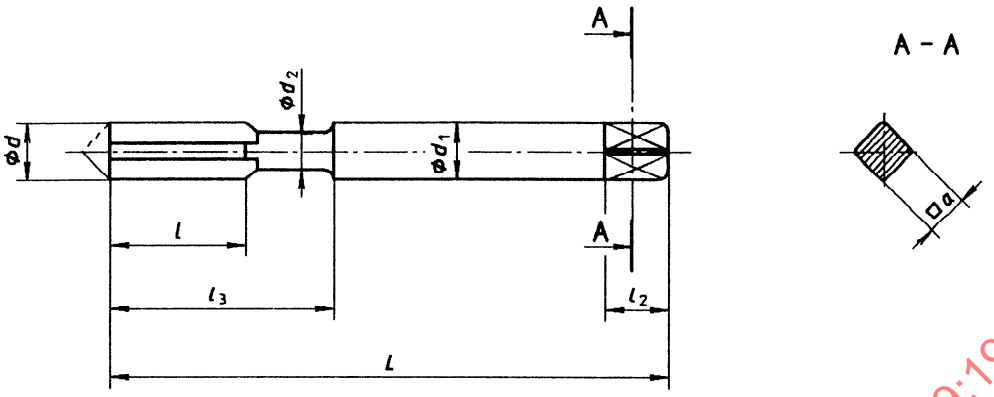
1) Manufacturers if they wish may increase the thread length to

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

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.

3.1.2 Full-diameter shank taps with recess



Dimensions in millimetres

Designation		d	Pitch ≈		d_1	l [1]	L	d_2 [1]	l_3	Square	
UNC	UNF	nom.	UNC	UNF	h9 [2]	max.	h16	min.		a h11 [3]	l_2 ± 0,8
No.4-40-UNC	No.4-48-UNF	2,845	0,635	0,529	3,15	11	48	2,12	18	2,5	5
No.5-40-UNC	No.5-44-UNF	3,175		0,577				2,36			
No.6-32-UNC	No.6-40-UNF	3,505	0,794	0,635	3,55	13	50	2,5	20	2,8	
No.8-32-UNC	No.8-36-UNF	4,166		0,706	4,5		53	3,15	21	3,55	6
No.10-24-UNC	No.10-32-UNF	4,826	1,058	0,794	5	16	58	3,55	25	4	7
No.12-24-UNC	No.12-28-UNF	5,486		0,907	5,6	17	62	4,25	26	4,5	
1/4-20-UNC	1/4-28-UNF	6,35	1,27		6,3	19	66	4,5	30	5	8
5/16-18-UNC	5/16-24-UNF	7,938	1,411	1,058	8	22	72	6	35	6,3	9
3/8-16-UNC	3/8-24-UNF	9,525	1,588		10	24	80	7,5	39	8	11

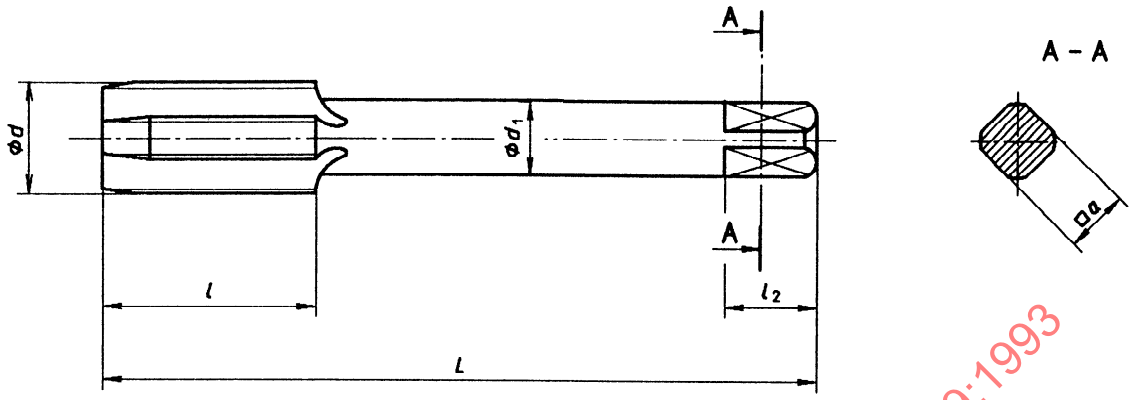
1) The recess of full-diameter shank taps with recess is optional at the manufacturer's discretion. If the recess is not required such taps shall have a thread length equal to

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

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.

3.1.3 Relieved-shank taps



Dimensions in millimetres

Designation		d	Pitch ≈		d_1	l	L	Square	
UNC	UNF	nom.	UNC	UNF	h9[1]	max.	h16	a h11[2]	l_2 ± 0,8
No.5-40-UNC	No.5-44-UNF	3,175	0,635	0,577	2,24	11	48	1,8	4
No.6-32-UNC	No.6-40-UNF	3,505	0,794	0,635	2,5	13	50	2	
No.8-32-UNC	No.8-36-UNF	4,166		0,706	3,15		53	2,5	5
No.10-24-UNC	No.10-32-UNF	4,826	1,058	0,794	3,55	16	58	2,8	
No.12-24-UNC	No.12-28-UNF	5,486		0,907	4	17	62	3,15	6
1/4-20-UNC	1/4-28-UNF	6,35	1,27		4,5	19	66	3,55	
5/16-18-UNC	5/16-24-UNF	7,938	1,411	1,058	6,3	22	72	5	8
3/8-16-UNC	3/8-24-UNF	9,525	1,588		7,1	24	80	5,6	
7/16-14-UNC	7/16-20-UNF	11,112	1,814	1,27	8	25	85	6,3	9
1/2-13-UNC	1/2-20-UNF	12,7	1,954		9	29	89	7,1	10
9/16-12-UNC	9/16-18-UNF	14,288	2,117	1,411	11,2	30	95	9	12
5/8-11-UNC	5/8-18-UNF	15,875	2,309		12,5	32	102	10	13
3/4-10-UNC	3/4-16-UNF	19,05	2,54	1,588	14	37	112	11,2	14
7/8-9-UNC	7/8-14-UNF	22,225	2,822	1,814	16	38	118	12,5	16
1-8-UNC	1-12-UNF	25,4	3,175	2,117	18	45	130	14	18

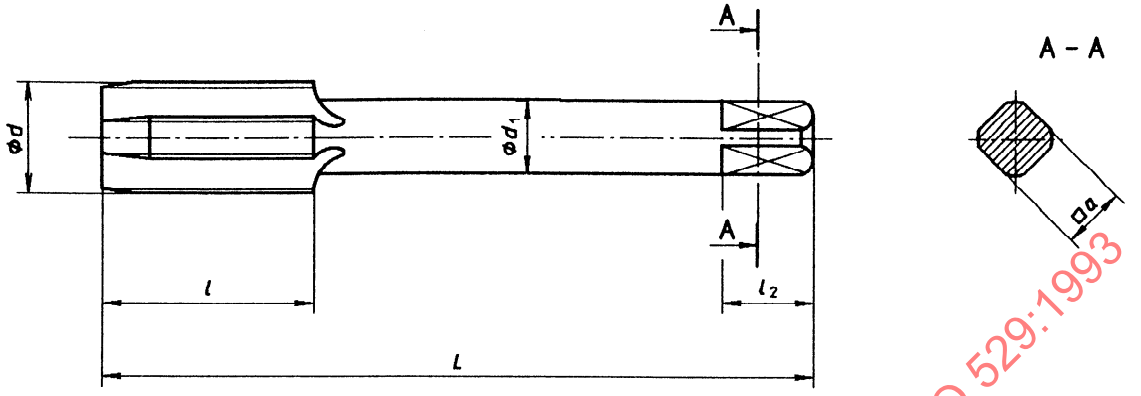
1) In accordance with ISO 237, tolerance h9 applies to precision shanks for non-precision shanks, the tolerance is h11.

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.

NOTE 3 Some shank diameters are not in accordance with the table in annex A.

3.2 "Unified" series threads above 25,4 mm

3.2.1 Relieved-shank taps for "Unified coarse" series threads

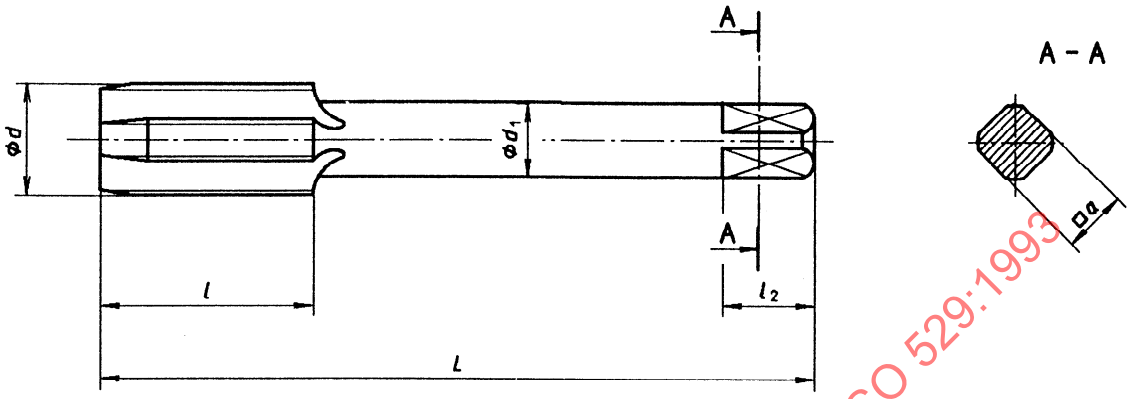


Dimensions in millimetres

Designation	d nom.	Pitch ≈	d_1 h9[1]	l max.	L h16	Square a h11[2]	Square l_2 ± 1,6
1 1/8-7-UNC	28,575	3,629	20	48	138	16	20
1 1/4-7-UNC	31,75		22,4	51	151	18	22
1 3/8-6-UNC	34,925	4,233	25	57	162	20	24
1 1/2-6-UNC	38,1		28	60	170	22,4	26
1 3/4-5-UNC	44,45	5,08	31,5	67	187	25	28
2-4 1/2-UNC	50,8	5,644	35,5	70	200	28	31
2 1/4-4 1/2-UNC	57,15		40	76	221	31,5	34
2 1/2-4-UNC	63,5	6,35		79	224		
2 3/4-4-UNC	69,85		45		234	35,5	38
3-4-UNC	76,2		50	83	258	40	42
3 1/4-4-UNC	82,55			86	261		
3 1/2-4-UNC	88,9						
3 3/4-4-UNC	95,25		56	89	279	45	46
4-4-UNC	101,6						

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 including errors of form of the square and of its position to the shank.

3.2.2 Relieved-shank taps for “Unified fine” series threads



Dimensions in millimetres

Designation	d nom.	Pitch ≈	d_1 h9[1]	l max.	L h16	Square	
						a h11[2]	l_2 ± 1,6
1 1/8-12-UNF	28,575	2,117	20	37	127	16	20
1 1/4-12-UNF	31,75		22,4		137	18	22
1 3/8-12-UNF	34,925		25	39	144	20	24
1 1/2-12-UNF	38,1		28		149	22,4	26

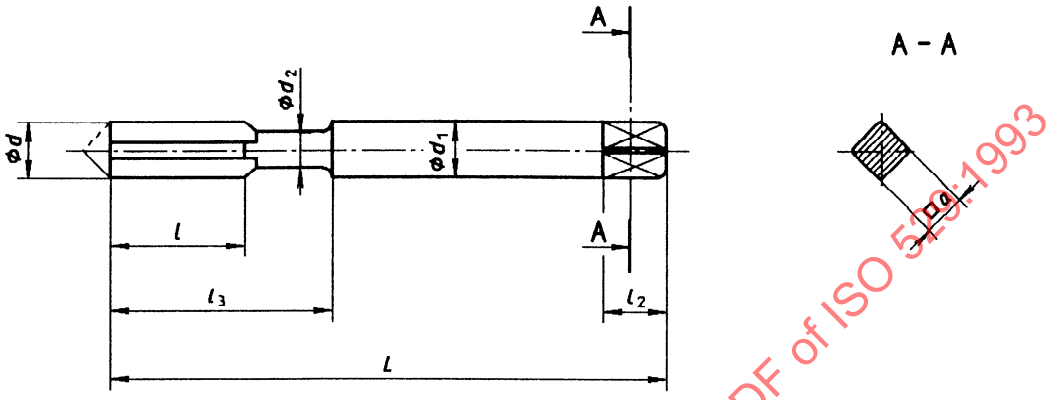
1) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.

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.

Section 4: Non-recommended inch threads

4.1 "British Standard Whitworth" (BSW) and "British Standard Fine" (BSF) threads

4.1.1 Full-diameter shank taps with recess



Dimensions in millimetres

Designation		d	Pitch ≈		d_1	l [1]	L	d_2 [1]	l_3	Square	
BSW	BSF	nom.	BSW	BSF	h9 [2]	max.	h16	min.		a h11 [3]	l_2 ± 0,8
1/8-40-BSW	—	3,175	0,635		3,15	11	48	2,36	18	2,5	5
3/16-24-BSW	3/16-32-BSF	4,762	1,058	0,794	5	16	58	3,55	25	4	7
—	7/32-28-BSF	5,556	—	0,907	5,6	17	62	4,25	26	4,5	
1/4-20-BSW	1/4-26-BSF	6,35	1,27	0,977	6,3	19	66	4,5	30	5	8
—	9/32-26-BSF	7,144	—		7,1			5,6		5,6	
5/16-18-BSW	5/16-22-BSF	7,938	1,411	1,154	8	22	72	6	35	6,3	9
3/8-16-BSW	3/8-20-BSF	9,525	1,588	1,27	10	24	80	7,5	39	8	11

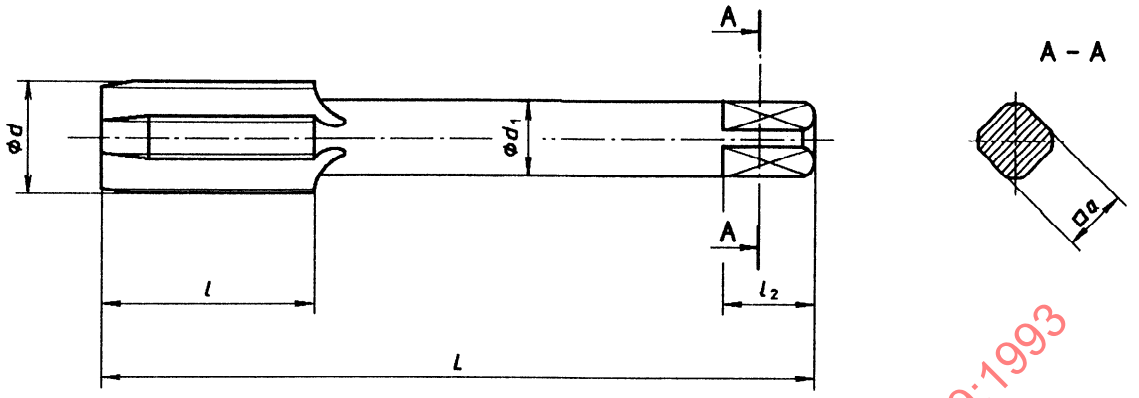
1) The recess of full-diameter shank taps with recess is optional at the manufacturer's discretion. If the recess is not required such taps shall have a thread length equal to

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

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.

4.1.2 Relieved-shank taps



Dimensions in millimetres

Designation		d	Pitch ≈		d_1	l	L	Square		
BSW	BSF	nom.	BSW	BSF	h9[1]	max.	h16	a h11[2]	l_2 nom.	l_2 tol.
1/8-40-BSW	—	3,175	0,635	—	2,24	11	48	1,8	4	± 0,8
3/16-24-BSW	3/16-32-BSF	4,762	1,058	0,794	3,55	16	58	2,8	5	
—	7/32-28-BSF	5,556	—	0,907	4	17	62	3,15	6	
1/4-20-BSW	1/4-26-BSF	6,35	1,27	0,977	4,5	19	66	3,55		
—	9/32-26-BSF	7,144	—		5,6			4,5	7	
5/16-18-BSW	5/16-22-BSF	7,938	1,411	1,154	6,3	22	72	5	8	
3/8-16-BSW	3/8-20-BSF	9,525	1,588	1,27	7,1	24	80	5,6		
7/16-14-BSW	7/16-18-BSF	11,112	1,814	1,411	8	25	85	6,3	9	
1/2-12-BSW	1/2-16-BSF	12,7	2,117	1,588	9	29	89	7,1	10	
9/16-12-BSW	9/16-16-BSF	14,288			11,2	30	95	9	12	
5/8-11-BSW	5/8-14-BSF	15,875	2,309	1,814	12,5	32	102	10	13	
11/16-11-BSW	11/16-14-BSF	17,462			14	37	112	11,2	14	
3/4-10-BSW	3/4-12-BSF	19,05	2,54	2,117						
7/8-9-BSW	7/8-11-BSF	22,225	2,822	2,309	16	38	118	12,5	16	
1-8-BSW	1-10-BSF	25,4	3,175	2,54	18	45	130	14	18	

Designation		d	Pitch ≈		d_1	l	L	Square		
BSW	BSF	nom.	BSW	BSF	h9[1]	max.	h16	a h11[2]	l_2 nom.	l_2 tol.
1 1/8-7-BSW	1 1/8-9-BSF	28,575	3,629	2,822	20	48	138	16	20	± 1,6
1 1/4-7-BSW	1 1/4-9-BSF	31,75			22,4	51	151	18	22	
—	1 3/8-8-BSF	34,925	—	3,175	25	57	162	20	24	
1 1/2-6-BSW	1 1/2-8-BSF	38,1	4,233		28	60	170	22,4	26	
—	1 5/8-8-BSF	41,275	—							
1 3/4-5-BSW	1 3/4-7-BSF	44,45	5,08	3,629	31,5	67	187	25	28	
2-4 1/2-BSW	2-7-BSF	50,8	5,644		35,5	70	200	28	31	
2 1/4-4-BSW	2 1/4-6-BSF	57,15	6,35	4,233	40	76	221	31,5	34	
2 1/2-4-BSW	2 1/2-6-BSF	63,5				79	224			
2 3/4-3 1/2-BSW	2 3/4-6-BSF	69,85	7,257		45		234	35,5	38	
3-3 1/2-BSW	3-5-BSF	76,2		5,08	50	83	258	40	42	
3 1/4-3 1/4-BSW	3 1/4-5-BSF	82,55	7,815			86	261			
3 1/2-3 1/4-BSW	3 1/2-4 1/2-BSF	88,9		5,644						
3 3/4-3-BSW	3 3/4-4 1/2-BSF	95,25	8,467		56	89	279	45	46	
4-3-BSW	4-4 1/2-BSF	101,6								

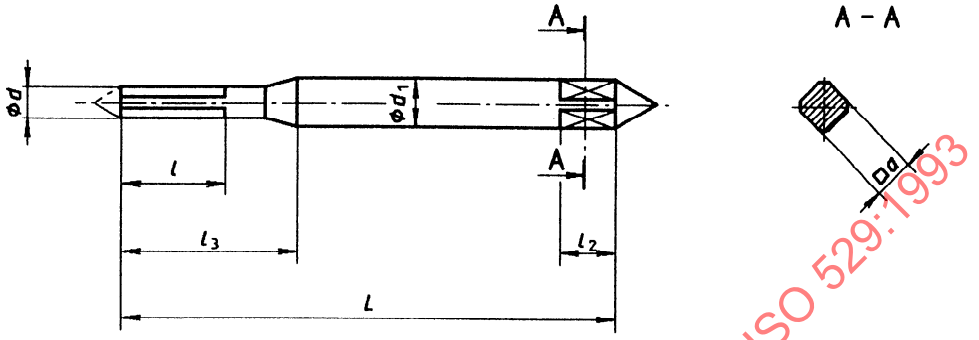
1) In accordance with ISO 237, tolerance h9 applies to precision shanks; for non-precision shanks, the tolerance is h11.

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.

NOTE 4 Some shank diameters are not in accordance with the table in annex A.

4.2 "British Association" (BA) threads

4.2.1 Full-diameter shank taps with plain connecting portion



Dimensions in millimetres

Designation	d nom.	Pitch	d_1 h9[2]	l[1] max.	L h16	l_3	Square	
							a h11[3]	l_2 ± 0,8
BA No. 14	1	0,23	2,5	5,5	38,5	10	2	4
BA No. 13	1,2	0,25						
BA No. 12	1,3	0,28		7	40	11,5		
BA No. 11	1,5	0,31		8	41	13		
BA No. 10	1,7	0,35						
BA No. 9	1,9	0,39				13,5		
BA No. 8	2,2	0,43	2,8	9,5	44,5	15,5	2,24	5
BA No. 7	2,5	0,48						
BA No. 6	2,8	0,53						

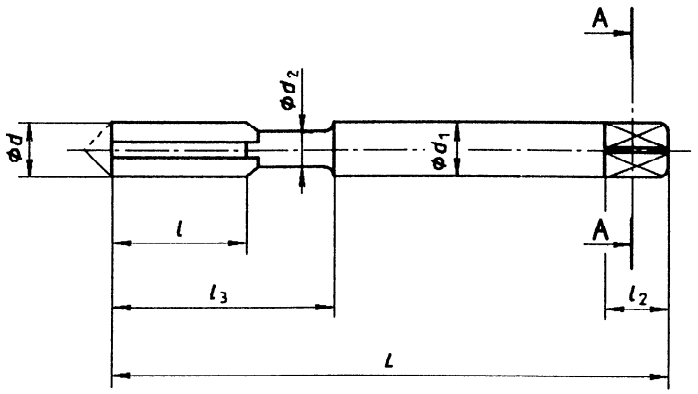
1) Manufacturers if they wish may increase the thread length to

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

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.

4.2.2 Full-diameter shank taps with recess



Dimensions in millimetres

Designation	d nom.	Pitch	d_1 h9[2]	l [1] max.	L h16	d_2 [1] min.	l_3	Square	
								a h11[3]	l_2 ± 0,8
BA No. 5	3,2	0,59	3,15	11	48	2,12	18	2,5	5
BA No. 4	3,6	0,66	3,55	13	50	2,5	20	2,8	
BA No. 3	4,1	0,73	4,5		53	3,15	21	3,55	6
BA No. 2	4,7	0,81	5	16	58	3,55	25	4	7
BA No. 1	5,3	0,9	5,6	17	62	4,25	26	4,5	
BA No. 0	6	1	6,3	19	66	4,5	30	5	8

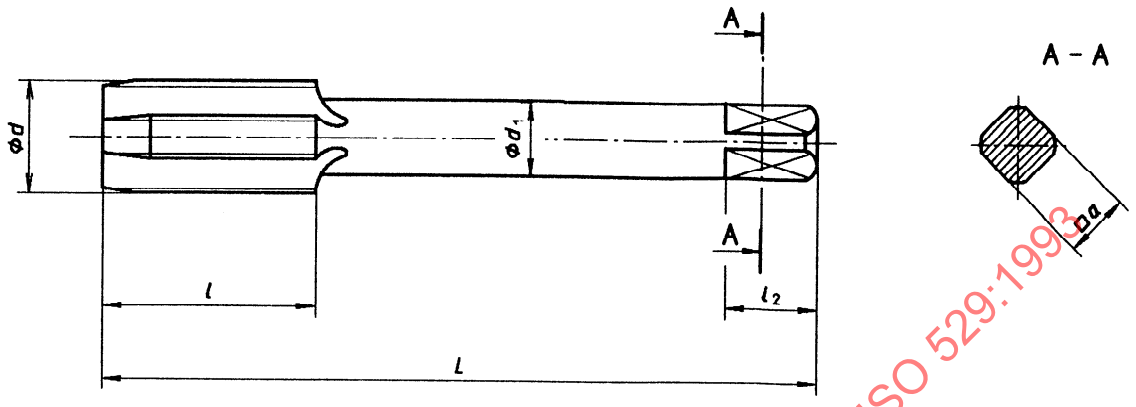
1) The recess of full-diameter shank taps with recess is optional at the manufacturer's discretion. If the recess is not required such taps shall have a thread length equal to

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

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.

4.2.3 Relieved-shank taps



Dimensions in millimetres

Designation	d nom.	Pitch	d_1 h9[1]	t max.	L h16	Square	
						a h11[2]	l_2 ± 0,8
BA No. 5	3,2	0,59	2,24	11	48	1,8	4
BA No. 4	3,6	0,66	2,5	13	50	2	
BA No. 3	4,1	0,73	3,15		53	2,5	5
BA No. 2	4,7	0,81	3,55	16	58	2,8	
BA No. 1	5,3	0,9	4	17	62	3,15	6
BA No. 0	6	1	4,5	19	66	3,55	

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.

NOTE 5 Some shank diameters are not in accordance with the table in annex A.