
INTERNATIONAL STANDARD



529

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

Short machine taps and hand taps

Tarauds courts à machine et à main

First edition – 1975-11-15

iTeh STANDARD PREVIEW
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ISO 529:1975

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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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 29 has reviewed ISO Recommendation R 529 and found it technically suitable for transformation. International Standard ISO 529 therefore replaces ISO Recommendation R 529-1966 together with its Amendment 1-1971 and Addendum 1-1972 to which it is technically identical.

[ISO 529:1975](#)

ISO Recommendation R 529 was approved by the Member Bodies of the following countries :

| | | |
|----------------|-------------|----------------|
| Argentina | Denmark | Portugal |
| Austria | France | Spain |
| Belgium | Germany | Switzerland |
| Brazil | Hungary | Turkey |
| Canada | Italy | United Kingdom |
| Chile | Netherlands | Yugoslavia |
| Colombia | New Zealand | |
| Czechoslovakia | Poland | |

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Sweden
U.S.A.
U.S.S.R.

The Member Body of the following country disapproved the transformation of ISO/R 529 into an International Standard :

Austria

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Short machine taps and hand taps

1 SCOPE AND FIELD OF APPLICATION

This International Standard lays down the following general dimensions of short machine taps and hand taps, as a function of the thread diameter and pitch :

- length of thread;
- overall length;
- shank diameter and dimensions of driving square;
- dimensions of the connecting portion between the shank and threaded part.

It contains two sections :

- Section one : Dimensions in millimetres;
- Section two : Dimensions in inches.

NOTE – The dimensions in inches given in tables 20 to 36 of section two are exact conversions of the dimensions in millimetres given in tables 1 to 17 of section one.

Tables 20 to 36 should facilitate the adoption of metric values by countries using inches. The elimination of section two is expected after five years.

Each section contains six groups of tables (tables 1 to 17 for dimensions in millimetres and tables 20 to 36 for dimensions in inches), corresponding respectively to the following threads :

Metric threads :

- coarse pitch
- fine pitch

Inch threads :

- Unified Coarse threads (UNC)
- Unified Fine threads (UNF)

British Standard Whitworth (BSW) and British Standard Fine (BSF) – non-recommended

British Association (BA) – non-recommended.

Taps are standardized only for threads, in millimetres or in inches, having a pitch greater than that of the Unified Extra Fine thread (UNEF).

However, in the annexes are given :

- in tables 18 and 37 : the minimum permissible values l_0 of length of thread, as determined by tests carried out in different countries;
- in tables 19 and 38 : the values of overall length and shank diameter which may be used for the manufacture of taps outside this standard.

The standardized lengths of thread l , always at least equal to l_0 , have been chosen in such a way as to permit the use of the same blank for several consecutive pitches.

Tables 1 to 17 and 20 to 36 are followed by a note giving details of tolerances and marking applying to all the standard taps covered by these tables.

2 REFERENCES

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

ISO/R 286, *ISO System of limits and fits – Part 1: General, tolerances and deviations.*

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

SECTION ONE – DIMENSIONS IN MILLIMETRES

3 COARSE PITCH METRIC THREADS

3.1 Full-diameter shank taps with plain connecting portion

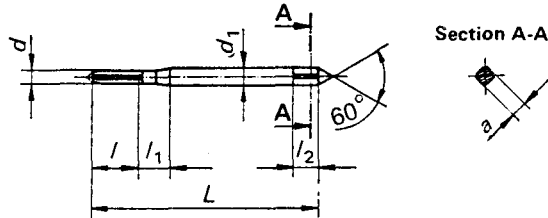


TABLE 1

| Designation | d nominal | Pitch | d ₁ h9 | l | L | l ₁ | Square | |
|-------------|-----------|-------|----------------------|-----|------|----------------|----------|----------------|
| | | | | | | | a h11 | l ₂ |
| M 1 | 1,0 | 0,25 | 2,50 | 5,5 | 38,5 | 4,5 | 2,00 | 4 |
| M 1,1 | 1,1 | | | | | | | |
| M 1,2 | 1,2 | | | | | | | |
| M 1,4 | 1,4 | 0,35 | 2,80 | 7,0 | 40,0 | 5,0 | 2,24 | 4 |
| M 1,6 | 1,6 | | | | | | | |
| M 1,8 | 1,8 | 0,40 | 3,00 | 8,0 | 41,0 | 5,5 | 2,40 | 5 |
| M 2 | 2,0 | | | | | | | |
| M 2,2 | 2,2 | 0,45 | 3,20 | 9,5 | 44,5 | 6,0 | 2,50 | 5 |
| M 2,5 | 2,5 | | | | | | | |

3.2 Full-diameter shank taps with recess

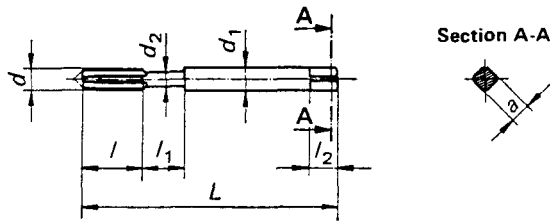


TABLE 2

| Designation | d nominal | Pitch | d ₁ h9 | l | L | d ₂ min. | l ₁ | Square | |
|-------------|-----------|-------|----------------------|------|------|------------------------|----------------|----------|----------------|
| | | | | | | | | a h11 | l ₂ |
| M 3 | 3,0 | 0,50 | 3,15 | 11,0 | 48,0 | 2,12 | 7,0 | 2,50 | 5 |
| M 3,5 | 3,5 | 0,60 | 3,55 | 13,0 | 50,0 | 2,50 | | 2,80 | |
| M 4 | 4,0 | 0,70 | 4,00 | 13,0 | 53,0 | 2,80 | 8,0 | 3,15 | 6 |
| M 4,5 | 4,5 | 0,75 | 4,50 | | | 3,15 | | | |
| M 5 | 5,0 | 0,80 | 5,00 | 16,0 | 58,0 | 3,55 | 9,0 | 4,00 | 7 |
| M 6 | 6,0 | 1,00 | 6,30 | 19,0 | 66,0 | 4,50 | 11,0 | 5,00 | 8 |
| M 7 | 7,0 | | 7,10 | | | 5,30 | | 5,60 | |
| M 8 | 8,0 | 1,25 | 8,00 | 22,0 | 72,0 | 6,00 | 13,0 | 6,30 | 9 |
| M 9 | 9,0 | | 9,00 | | | 7,10 | 14,0 | 7,10 | 10 |
| M 10 | 10,0 | 1,50 | 10,00 | 24,0 | 80,0 | 7,50 | 15,0 | 8,00 | 11 |

3.3 Relieved-shank taps

NOTES

1 Tolerances

a) Thread and overall length

Values in millimetres

| Nominal diameter of tap | | Maximum deviation on <i>l</i> and <i>L</i> |
|-------------------------|-----------|--|
| over | including | |
| — | 5,5 | 0 - 2,5 |
| 5,5 | 12,0 | 0 - 3,2 |
| 12,0 | 39,0 | 0 - 5,0 |
| 39,0 | — | 0 - 6,3 |

b) Shank diameters and driving squares

Tolerances in accordance with ISO 237.

— on diameter d_1 :

h9* for precision shanks,

h11* for non-precision shanks;

— on the across flats dimension a :

h11* ,

h12* (including errors of form of the square and of its position in relation to the shank).

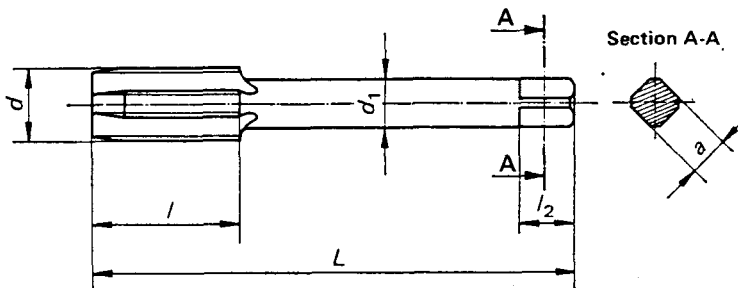


TABLE 3

| Designation | <i>d</i> nominal | Pitch | d_1 h9 | <i>l</i> | <i>L</i> | Square | |
|-------------|------------------|-------|----------|----------|----------|---------|-------------|
| | | | | | | a h11 | <i>l</i> /2 |
| M 3 | 3 | 0,5 | 2,24 | 11 | 48 | 1,80 | 4 |
| M 3,5 | 3,5 | 0,6 | 2,50 | 13 | 50 | 2,00 | 4 |
| M 4 | 4 | 0,7 | 3,15 | 13 | 53 | 2,50 | 5 |
| M 4,5 | 4,5 | 0,75 | 3,55 | 16 | 58 | 2,80 | 5 |
| M 5 | 5 | 0,8 | 4,00 | 16 | 58 | 3,15 | 6 |
| M 6 | 6 | 1 | 4,50 | 19 | 66 | 3,55 | 7 |
| M 7 | 7 | | 5,60 | | | | |
| M 8 | 8 | 1,25 | 6,30 | 22 | 72 | 5,00 | 8 |
| M 9 | 9 | | 7,10 | | | | |
| M 10 | 10 | 1,50 | 8,00 | 24 | 80 | 6,30 | 9 |
| M 11 | 11,0 | | 25,0 | | | | |
| M 12 | 12,0 | 1,75 | 9,00 | 29,0 | 89 | 7,10 | 10 |
| M 14 | 14,0 | 2,00 | 11,20 | 30,0 | 95 | 9,00 | 12 |
| M 16 | 16,0 | | 12,50 | | | | |
| M 18 | 18,0 | 2,50 | 14,00 | 37,0 | 112 | 11,20 | 14 |
| M 20 | 20,0 | | 16,00 | | | | |
| M 22 | 22,0 | 3,00 | 18,00 | 45,0 | 130 | 14,00 | 18 |
| M 24 | 24,0 | | 20,00 | | | | |
| M 27 | 27,0 | 3,50 | 20,00 | 48,0 | 138 | 18,00 | 22 |
| M 30 | 30,0 | | 22,40 | | | | |
| M 33 | 33,0 | 4,00 | 25,00 | 57,0 | 162 | 22,40 | 26 |
| M 36 | 36,0 | | 28,00 | | | | |
| M 39 | 39,0 | 4,50 | 31,50 | 67,0 | 187 | 28,00 | 31 |
| M 42 | 42,0 | | 35,50 | | | | |
| M 45 | 45,0 | 5,00 | 40,00 | 76,0 | 221 | 35,50 | 38 |
| M 48 | 48,0 | | 44,00 | | | | |
| M 52 | 52,0 | 5,50 | 48,00 | 82,0 | 234 | 39,00 | 41 |
| M 56 | 56,0 | | 52,00 | | | | |
| M 60 | 60,0 | 6,00 | 56,00 | 91,0 | 259 | 45,00 | 44 |
| M 64 | 64,0 | | 60,00 | | | | |
| M 68 | 68,0 | 64,00 | 97,0 | 285 | 51,00 | 50 | |

2 Marking

The tap shall be marked, on the shank, by any means not impairing the metal surface.

Marking shall consist of the following :

Thread

In accordance with the standard designation (see tables 1 to 17, first column) completed by

— an indication of the class of tap thread (ISO 1, ISO 2 or ISO 3, in accordance with ISO 2857);

— a clear mark (the letter L for example) for left-hand threads.

Serial taps

A mark indicating the order in which the taps should be used, except for the finishing tap.

Material :

— High speed steel taps : High speed steel taps shall be marked HSS.

— Taps made from other steels than high speed steel : The marking of taps made from steels other than high speed steel is left to the discretion of the manufacturer or should be specified in the national standards.

* See ISO/R 286.

4 FINE PITCH METRIC THREADS

4.1 Full-diameter shank taps with plain connecting portion

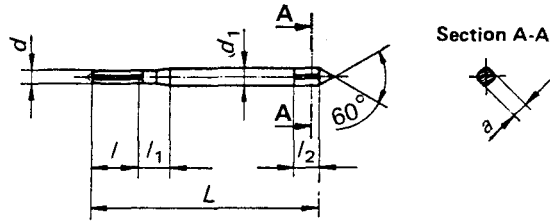


TABLE 4

| Designation | d nominal | Pitch | d ₁ h9 | l | L | l ₁ | Square | |
|--------------|-----------|-------|-------------------|-----|------|----------------|--------|----------------|
| | | | | | | | a h11 | l ₂ |
| M 1 × 0,2 | 1,0 | 0,2 | 2,50 | 5,5 | 38,5 | 4,5 | 2,00 | 4 |
| M 1,1 × 0,2 | 1,1 | | | | | | | |
| M 1,2 × 0,2 | 1,2 | | | | | | | |
| M 1,4 × 0,2 | 1,4 | | | 7,0 | 40,0 | 5,0 | | |
| M 1,6 × 0,2 | 1,6 | | | | | | | |
| M 1,8 × 0,2 | 1,8 | | | | | | | |
| M 2 × 0,25 | 2,0 | 0,25 | 2,80 | 9,5 | 44,5 | 6,0 | 2,24 | 5 |
| M 2,2 × 0,25 | 2,2 | 0,35 | 2,80 | 9,5 | 44,5 | 6,0 | 2,24 | 5 |
| M 2,5 × 0,35 | 2,5 | | | | | | | |

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4.2 Full-diameter shank taps with recess

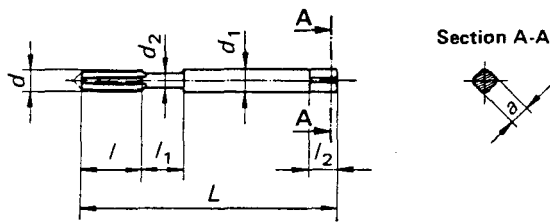


TABLE 5

| Designation | d nominal | Pitch | d ₁ h9 | l | L | d ₂ min. | l ₁ | Square | | | |
|--------------|-----------|-------|-------------------|------|------|---------------------|----------------|--------|----------------|------|------|
| | | | | | | | | a h11 | l ₂ | | |
| M 3 × 0,35 | 3,0 | 0,35 | 3,15 | 11,0 | 48,0 | 2,12 | 7,0 | 2,50 | 5 | | |
| M 3,5 × 0,35 | 3,5 | | 3,55 | 13,0 | 50,0 | 2,50 | | 2,80 | | | |
| M 4 × 0,5 | 4,0 | 0,5 | 4,00 | 13,0 | 53,0 | 2,80 | 8,0 | 3,15 | 6 | | |
| M 4,5 × 0,5 | 4,5 | | 4,50 | | | 3,15 | | 3,55 | | | |
| M 5 × 0,5 | 5,0 | | 5,00 | 16,0 | 58,0 | 3,55 | 9,0 | 4,00 | 7 | | |
| M 5,5 × 0,5 | 5,5 | | 5,60 | 17,0 | 62,0 | 4,00 | | 4,50 | | | |
| M 6 × 0,75 | 6,0 | 0,75 | 6,30 | 19,0 | 66,0 | 4,50 | 11,0 | 5,00 | 8 | | |
| M 7 × 0,75 | 7,0 | | 7,10 | | | 5,30 | | 5,60 | | | |
| M 8 × 1 | 8,0 | 1 | 8,00 | 19,0 | 69,0 | 6,00 | 13,0 | 6,30 | 9 | | |
| M 9 × 1 | 9,0 | | 9,00 | | | 7,10 | | 7,10 | | 7,10 | 10 |
| M 10 × 1 | 10,0 | | 1,25 | | | 10,00 | | 20,0 | | 76,0 | 7,50 |
| M 10 × 1,25 | | | | | | | | | | | |

4.3 Relieved-shank taps

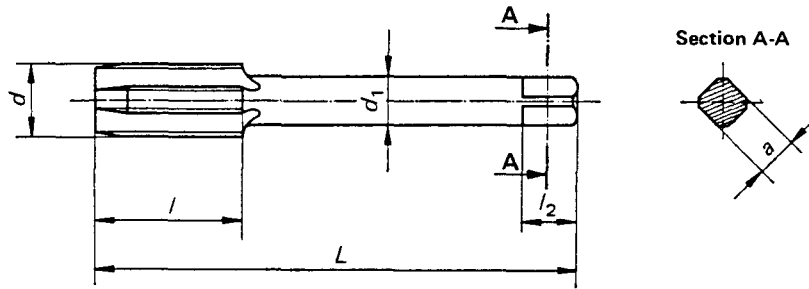


TABLE 6

| Designation | d nominal | Pitch | d ₁ h9 | l | L | Square | |
|--------------|-----------|-------|----------------------|-------|--------|----------|----------------|
| | | | | | | a h11 | l ₂ |
| M 3 × 0,35 | 3 | 0,35 | 2,24 | 11 | 48 | 1,80 | 4 |
| M 3,5 × 0,35 | 3,5 | | 2,50 | | 50 | 2,00 | |
| M 4 × 0,5 | 4 | 0,5 | 3,15 | 13 | 53 | 2,50 | 5 |
| M 4,5 × 0,5 | 4,5 | | 3,55 | | | | |
| M 5 × 0,5 | 5 | | 4,00 | 16 | 58 | 3,15 | 6 |
| M 5,5 × 0,5 | 5,5 | | 17 | 62 | | | |
| M 6 × 0,75 | 6 | 0,75 | 4,50 | 19 | 66 | 3,55 | 7 |
| M 7 × 0,75 | 7 | | 5,60 | | | | |
| M 8 × 1 | 8 | 1 | 6,30 | 19 | 69 | 5,00 | 8 |
| M 9 × 1 | 9 | | 7,10 | | | | |
| M 10 × 1 | 10 | 1,25 | 8,00 | 20 | 76 | 6,30 | 9 |
| M 10 × 1,25 | | | | | | | |
| M 12 × 1,25 | 12,0 | 1,5 | 9,0 | 24,0 | 84,0 | 7,1 | 10 |
| M 12 × 1,5 | | | | | | | |
| M 14 × 1,25 | 14,0 | 1,25 | 11,2 | 25,0 | 90,0 | 9,0 | 12 |
| M 14 × 1,5 | | | | | | | |
| M 15 × 1,5 | 15,0 | 1,5 | 12,5 | 32,0 | 102,0 | 10,0 | 13 |
| M 16 × 1,5 | | | | | | | |
| M 17 × 1,5 | 17,0 | 2 | 14,0 | 29,0* | 104,0* | 11,2 | 14 |
| M 18 × 1,5 | | | | | | | |
| M 18 × 2 | 18,0 | 1,5 | 14,0 | 29,0* | 104,0* | 11,2 | 14 |
| M 20 × 1,5 | | | | | | | |
| M 20 × 2 | 20,0 | 2 | 16,0 | 33,0* | 113,0* | 12,5 | 16 |
| M 22 × 1,5 | | | | | | | |
| M 22 × 2 | 22,0 | 1,5 | 18,0 | 37,0 | 127,0 | 14,0 | 18 |
| M 24 × 1,5 | | | | | | | |
| M 24 × 2 | 24,0 | 2 | 18,0 | 35,0 | 120,0 | 14,0 | 18 |
| M 25 × 1,5 | | | | | | | |
| M 25 × 2 | 25,0 | 1,5 | 20,0 | 37,0 | 127,0 | 16,0 | 20 |
| M 27 × 1,5 | | | | | | | |
| M 27 × 2 | 27,0 | 2 | 20,0 | 37,0 | 127,0 | 16,0 | 20 |
| M 28 × 1,5 | | | | | | | |
| M 28 × 2 | 28,0 | 1,5 | 20,0 | 37,0 | 127,0 | 16,0 | 20 |
| M 30 × 1,5 | | | | | | | |
| M 30 × 2 | 30,0 | 2 | 20,0 | 37,0 | 127,0 | 16,0 | 20 |
| M 30 × 3 | | | | | | | |
| M 32 × 1,5 | 32,0 | 1,5 | 22,4 | 37,0 | 137,0 | 18,0 | 22 |
| M 32 × 2 | | | | | | | |
| M 33 × 1,5 | 33,0 | 2 | 22,4 | 37,0 | 137,0 | 18,0 | 22 |
| M 33 × 2 | | | | | | | |
| M 33 × 3 | | 3 | | 51,0 | 151,0 | | |

TABLE 6 (concluded)

| Designation | d nominal | Pitch | d ₁ h9 | l | L | Square | |
|-------------|-----------|-------|----------------------|-------|-------|----------|----------------|
| | | | | | | a h11 | l ₂ |
| M 35 × 1,5 | 35,0 | 1,5 | 25,0 | 39,0 | 144,0 | 20,0 | 24 |
| M 36 × 1,5 | | 2 | | | | | |
| M 36 × 2 | | 3 | | | | | |
| M 36 × 3 | | | | | | | |
| M 39 × 1,5 | 39,0 | 1,5 | 28,0 | 39,0 | 149,0 | 22,4 | 26 |
| M 39 × 2 | | 2 | | | | | |
| M 39 × 3 | | 3 | | | | | |
| M 40 × 1,5 | 40,0 | 1,5 | 28,0 | 39,0 | 149,0 | 22,4 | 26 |
| M 40 × 2 | | 2 | | | | | |
| M 40 × 3 | | 3 | | | | | |
| M 42 × 1,5 | 42,0 | 1,5 | 28,0 | 39,0 | 149,0 | 22,4 | 26 |
| M 42 × 2 | | 2 | | | | | |
| M 42 × 3 | | 3 | | | | | |
| M 42 × 4 | | | | | | | |
| M 45 × 1,5 | 45,0 | 1,5 | 31,5 | 45,0 | 165,0 | 25,0 | 28 |
| M 45 × 2 | | 2 | | | | | |
| M 45 × 3 | | 3 | | | | | |
| M 45 × 4 | | | | | | | |
| M 48 × 1,5 | 48,0 | 1,5 | 31,5 | 45,0 | 165,0 | 25,0 | 28 |
| M 48 × 2 | | 2 | | | | | |
| M 48 × 3 | | 3 | | | | | |
| M 48 × 4 | | | | | | | |
| M 50 × 1,5 | 50,0 | 1,5 | 35,5 | 45,0 | 175,0 | 28,0 | 31 |
| M 50 × 2 | | 2 | | | | | |
| M 50 × 3 | | 3 | | | | | |
| M 52 × 1,5 | 52,0 | 1,5 | 35,5 | 45,0 | 175,0 | 28,0 | 31 |
| M 52 × 2 | | 2 | | | | | |
| M 52 × 3 | | 3 | | | | | |
| M 52 × 4 | | | | | | | |
| M 55 × 1,5 | 55,0 | 1,5 | 35,5 | 45,0 | 175,0 | 28,0 | 31 |
| M 55 × 2 | | 2 | | | | | |
| M 55 × 3 | | 3 | | | | | |
| M 55 × 4 | | | | | | | |
| M 56 × 1,5 | 56,0 | 1,5 | 35,5 | 45,0 | 175,0 | 28,0 | 31 |
| M 56 × 2 | | 2 | | | | | |
| M 56 × 3 | | 3 | | | | | |
| M 56 × 4 | | | | | | | |
| M 70 × 6 | 70,0 | 6 | 45,0 | 79,0 | 234,0 | 35,5 | 38 |
| M 72 × 6 | 72,0 | | | | | | |
| M 75 × 6 | 75,0 | | | | | | |
| M 76 × 6 | 76,0 | | | | | | |
| M 80 × 6 | 80,0 | | | | | | |
| M 85 × 6 | 85,0 | | | | | | |
| M 90 × 6 | 90,0 | 50,0 | 83,0 | 258,0 | 40,0 | 42 | |
| M 95 × 6 | 95,0 | | | | | | |
| M 100 × 6 | 100,0 | 56,0 | 89,0 | 279,0 | 45,0 | 46 | |

* As an exception to this rule, the following values, which give to this table a continuously rising gradation, can also be included if the manufacturer wishes :

for the taps

| | | |
|-----------|------------|-----------|
| M18 × 1,5 | } / = 33,0 | L = 108,0 |
| M18 × 2 | | |
| M20 × 1,5 | | |
| M20 × 2 | | |

for the taps

| | | |
|-----------|------------|-----------|
| M22 × 1,5 | } / = 35,0 | L = 115,0 |
| M22 × 2 | | |

NOTE - Tolerances and marking, see notes on page 3

5 UNIFIED COARSE (UNC) THREADS

5.1 Full-diameter shank taps with plain connecting portion

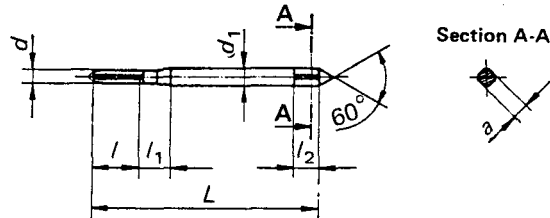


TABLE 7

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | l ₁ | Square | |
|----------------|-----------|-------------------|-------------------|-----|------|----------------|--------|----------------|
| | | | | | | | a h11 | l ₂ |
| No. 1 - 64-UNC | 1,854 | 0,397 | 2,50 | 8,0 | 41,0 | 5,5 | 2,00 | 4 |
| No. 2 - 56-UNC | 2,184 | 0,454 | 2,80 | 9,5 | 44,5 | 6,0 | 2,24 | 5 |
| No. 3 - 48-UNC | 2,515 | 0,529 | | | | | | |

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ISO 529:1975

5.2 Full-diameter shank taps with recess

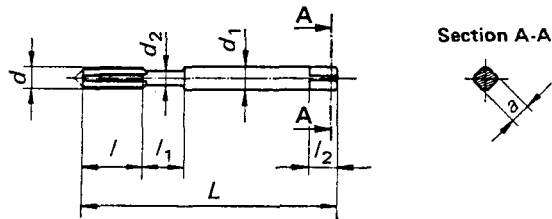


TABLE 8

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | d ₂ min. | l ₁ | Square | |
|-----------------|-----------|-------------------|-------------------|------|------|---------------------|----------------|--------|----------------|
| | | | | | | | | a h11 | l ₂ |
| No. 4 - 40-UNC | 2,845 | 0,635 | 3,15 | 11,0 | 48,0 | 2,12 | 7,0 | 2,50 | 5 |
| No. 5 - 40-UNC | 3,175 | | | | | 2,36 | | | |
| No. 6 - 32-UNC | 3,505 | 0,794 | 3,55 | 13,0 | 50,0 | 2,50 | 8,0 | 3,55 | 6 |
| No. 8 - 32-UNC | 4,166 | | 4,50 | | | | | | |
| No. 10 - 24-UNC | 4,826 | 1,058 | 5,00 | 16,0 | 58,0 | 3,55 | 9,0 | 4,00 | 7 |
| No. 12 - 24-UNC | 5,486 | | 5,60 | | | 4,25 | | 4,50 | |
| 1/4 - 20-UNC | 6,350 | 1,270 | 6,30 | 19,0 | 66,0 | 4,50 | 11,0 | 5,00 | 8 |
| 5/16 - 18-UNC | 7,938 | 1,411 | 8,00 | 22,0 | 72,0 | 6,00 | 13,0 | 6,30 | 9 |
| 3/8 - 16-UNC | 9,525 | 1,588 | 10,00 | 24,0 | 80,0 | 7,50 | 15,0 | 8,00 | 11 |

5.3 Relieved-shank taps

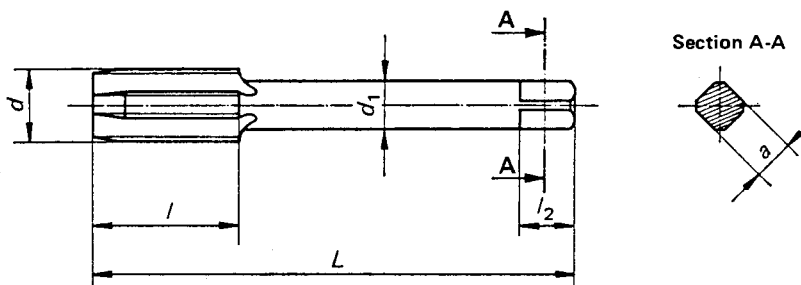


TABLE 9

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | Square | | | | |
|-------------------|--------------|----------------------|----------------------|-------|-------|----------|-----|-------|------|----|
| | | | | | | a h11 | l/2 | | | |
| No. 5 - 40-UNC | 3,175 | 0,635 | 2,24 | 11 | 48 | 1,80 | 4 | | | |
| No. 6 - 32-UNC | 3,505 | 0,794 | 2,50 | 13 | 50 | 2,00 | | | | |
| No. 8 - 32-UNC | 4,166 | 1,058 | 3,15 | 16 | 53 | 2,50 | 5 | | | |
| No. 10 - 24-UNC | 4,826 | | 3,55 | | 58 | 2,80 | | | | |
| No. 12 - 24-UNC | 5,486 | 4,00 | 17 | 62 | 3,15 | 6 | | | | |
| 1/4 - 20-UNC | 6,350 | 4,50 | 19 | 66 | 3,55 | | | | | |
| 5/16 - 18-UNC | 7,938 | 1,41 | 6,30 | 22 | 72 | 5,00 | 8 | | | |
| 3/8 - 16-UNC | 9,525 | 1,588 | 7,10 | 24 | 80 | 5,60 | | | | |
| 7/16 - 14-UNC | 11,112 | 1,814 | 8,0 | 25,0 | 85,0 | 6,3 | 9 | | | |
| 1/2 - 13-UNC | 12,700 | 1,594 | 9,0 | 29,0 | 89,0 | 7,1 | 10 | | | |
| 9/16 - 12-UNC | 14,288 | 2,117 | 11,2 | 30,0 | 95,0 | 9,0 | 12 | | | |
| 5/8 - 11-UNC | 15,875 | 2,309 | 12,5 | 32,0 | 102,0 | 10,0 | 13 | | | |
| 3/4 - 10-UNC | 19,050 | 2,540 | 14,0 | 37,0 | 112,0 | 11,2 | 14 | | | |
| 7/8 - 9-UNC | 22,225 | 2,822 | 16,0 | 38,0 | 118,0 | 12,5 | 16 | | | |
| 1 - 8-UNC | 25,400 | 3,175 | 18,0 | 45,0 | 130,0 | 14,0 | 18 | | | |
| 1 1/8 - 7-UNC | 28,575 | 3,629 | 20,0 | 48,0 | 138,0 | 16,0 | 20 | | | |
| 1 1/4 - 7-UNC | 31,750 | | 22,4 | 51,0 | 151,0 | 18,0 | 22 | | | |
| 1 3/8 - 6-UNC | 34,925 | 4,233 | 25,0 | 57,0 | 162,0 | 20,0 | 24 | | | |
| 1 1/2 - 6-UNC | 38,100 | | 28,0 | 60,0 | 170,0 | 22,4 | 26 | | | |
| 1 3/4 - 5-UNC | 44,450 | 5,080 | 31,5 | 67,0 | 187,0 | 25,0 | 28 | | | |
| 2 - 4 1/2-UNC | 50,800 | 5,644 | 35,5 | 70,0 | 200,0 | 28,0 | 31 | | | |
| 2 1/4 - 4 1/2-UNC | 57,150 | | 40,0 | 76,0 | 221,0 | 31,5 | 34 | | | |
| 2 1/2 - 4-UNC | 63,500 | 45,0 | 79,0 | 224,0 | | | | | | |
| 2 3/4 - 4-UNC | 69,850 | | | 234,0 | 35,5 | 38 | | | | |
| 3 - 4-UNC | 76,200 | 6,350 | 50,0 | 83,0 | 258,0 | 40,0 | 42 | | | |
| 3 1/4 - 4-UNC | 82,550 | | | 86,0 | 261,0 | | | | | |
| 3 1/2 - 4-UNC | 88,900 | | | 56,0 | 89,0 | | | 279,0 | 45,0 | 46 |
| 3 3/4 - 4-UNC | 95,250 | | | | | | | | | |
| 4 - 4-UNC | 101,600 | | | | | | | | | |

NOTE — Tolerances and marking, see notes on page 3

6 UNIFIED FINE (UNF) THREADS

6.1 Full-diameter shank taps with plain connecting portion

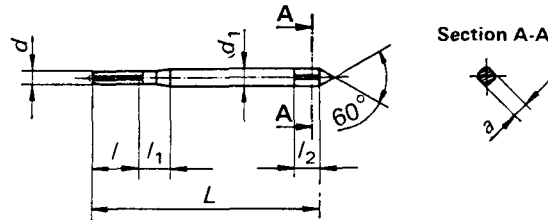


TABLE 10

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | l ₁ | Square | |
|----------------|-----------|-------------------|-------------------|-----|------|----------------|--------|----------------|
| | | | | | | | a h11 | l ₂ |
| No. 0 - 80-UNF | 1,524 | 0,318 | 2,50 | 8,0 | 41,0 | 5,0 | 2,00 | 4 |
| No. 1 - 72-UNF | 1,854 | 0,353 | | | | | | |
| No. 2 - 64-UNF | 2,184 | 0,397 | 2,80 | 9,5 | 44,5 | 6,0 | 2,24 | 5 |
| No. 3 - 56-UNF | 2,515 | 0,454 | | | | | | |

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ISO 529:1975

<https://standards.iteh.ai/catalog/standards/sist/ca270a7a-af35-4054-aa6f-617e9685ec7f/iso-529-1975>

6.2 Full-diameter shank taps with recess

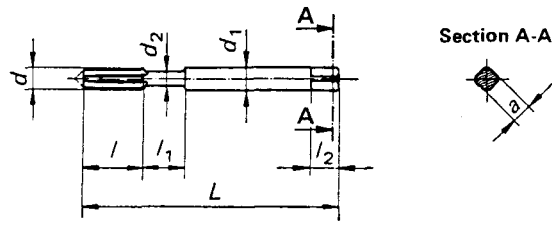


TABLE 11

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | d ₂ min. | l ₁ | Square | |
|-----------------|-----------|-------------------|-------------------|------|------|---------------------|----------------|--------|----------------|
| | | | | | | | | a h11 | l ₂ |
| No. 4 - 48-UNF | 2,845 | 0,529 | 3,15 | 11,0 | 48,0 | 2,12 | 7,0 | 2,50 | 5 |
| No. 5 - 44-UNF | 3,175 | 0,577 | | | | | | | |
| No. 6 - 40-UNF | 3,505 | 0,635 | 3,55 | 13,0 | 50,0 | 2,50 | 8,0 | 2,80 | 6 |
| No. 8 - 36-UNF | 4,166 | 0,706 | | | | | | | |
| No. 10 - 32-UNF | 4,826 | 0,794 | 5,00 | 16,0 | 58,0 | 3,55 | 9,0 | 4,00 | 7 |
| No. 12 - 28-UNF | 5,486 | 0,907 | | | | | | | |
| 1/4 - 28-UNF | 6,350 | | 6,30 | 19,0 | 66,0 | 4,50 | 11,0 | 5,00 | 8 |
| 5/16 - 24-UNF | 7,938 | 8,00 | | | | | | | |
| 3/8 - 24-UNF | 9,525 | 1,058 | 10,00 | 20,0 | 76,0 | 7,50 | 15,0 | 8,00 | 11 |

6.3 Relieved-shank taps

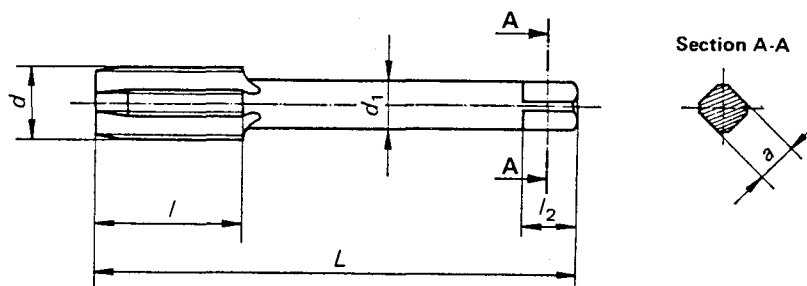


TABLE 12

| Designation | d nominal | Approximate pitch | d ₁ h9 | l | L | Square | |
|-----------------|--------------|----------------------|----------------------|-------|-------|----------|----------------|
| | | | | | | a h11 | l ₂ |
| No. 5 - 44-UNF | 3,175 | 0,577 | 2,24 | 11 | 48 | 1,80 | 4 |
| No. 6 - 40-UNF | 3,505 | 0,635 | 2,50 | 13 | 50 | 2,00 | |
| No. 8 - 36-UNF | 4,166 | 0,706 | 3,15 | | 16 | 53 | 2,50 |
| No. 10 - 32-UNF | 4,826 | 0,794 | 3,55 | 17 | 58 | 2,80 | |
| No. 12 - 28-UNF | 5,486 | 0,907 | 4,00 | 19 | 62 | 3,15 | 6 |
| 1/4 - 28-UNF | 6,350 | | 4,50 | | 66 | 3,55 | |
| 5/16 - 24-UNF | 7,938 | 1,058 | 6,30 | 20 | 69 | 5,00 | 8 |
| 3/8 - 24-UNF | 9,525 | | 7,10 | | 76 | 5,60 | |
| 7/16 - 20-UNF | 11,112 | 1,270 | 8,00 | 25,0 | 82,0 | 6,30 | 9 |
| 1/2 - 20-UNF | 12,700 | | 9,00 | | 84,0 | 7,10 | |
| 9/16 - 18-UNF | 14,288 | 1,411 | 11,20 | 29,0 | 90,0 | 9,00 | 12 |
| 5/8 - 18-UNF | 15,875 | | 12,50 | | 95,0 | 10,00 | |
| 3/4 - 16-UNF | 19,050 | 1,588 | 14,00 | 33,0 | 104,0 | 11,20 | 14 |
| 7/8 - 14-UNF | 22,225 | 1,814 | 16,00 | | 113,0 | 12,50 | |
| 1 - 12-UNF | 25,400 | 2,117 | 18,00 | 37,0 | 120,0 | 14,00 | 18 |
| 1 1/8 - 12-UNF | 28,575 | | 20,00 | | 127,0 | 16,00 | |
| 1 1/4 - 12-UNF | 31,750 | | 22,40 | 39,0 | 137,0 | 18,00 | 22 |
| 1 3/8 - 12-UNF | 34,925 | | 25,00 | | 144,0 | 20,00 | |
| 1 1/2 - 12-UNF | 38,100 | | 28,00 | 149,0 | 22,40 | 26 | |

NOTE — Tolerances and marking, see notes on page 3