# INTERNATIONAL STANDARD ISO 2492



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

## Thin taper keys with or without gib head and their corresponding keyways (Dimensions in millimetres)

*Clavetage par clavettes inclinées minces, avec ou sans talon (Dimensions en millimètres)*

**First edition — 1974-08-15**

**UDC 621.886.6 : 621.824.44** **Ref. No. ISO 2492-1974 (E)**

**Descriptors :** fasteners, cotter pins, dimensions, specifications.

Price based on 3 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 2492 was drawn up by Technical Committee ISO/TC 16, *Keys and keyways,* and circulated to the Member Bodies in August 1971.

It has been approved by the Member Bodies of the following countries :

| | | |
|---|---|---|
| Austria | India | Spain |
| Belgium | Japan | Sweden |
| Canada | Netherlands | Switzerland |
| Czechoslovakia | New Zealand | United Kingdom |
| Egypt, Arab Rep. of | Norway | U.S.S.R. |
| France | Romania | |
| Germany | South Africa, Rep. of | |

No Member Body expressed disapproval of the document.



Printed in Switzerland

# Thin taper keys with or without gib head and their corresponding keyways (Dimensions in millimetres)

## 1 SCOPE

This International Standard specifies the dimensional characteristics of thin taper keys with or without gib head and of their corresponding flat or keyway in shaft and hub.

It also specifies the material of these keys and gives the relation which should be observed between the diameter of shaft and the section of key.

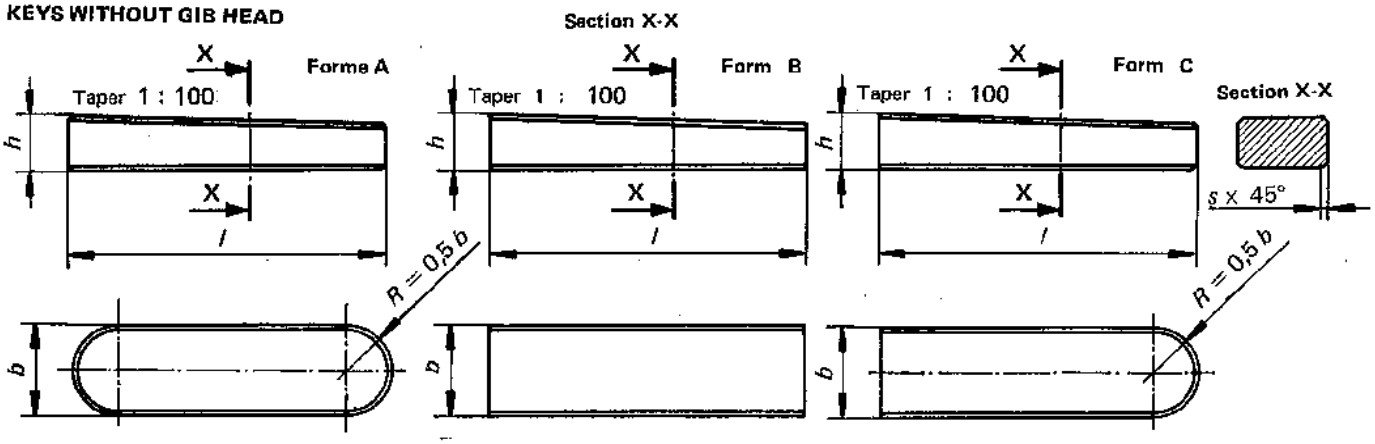
## 2 FIELD OF APPLICATION

This International Standard is of general application for cylindrical shaft ends. It is recommended that the values given be adhered to even for special applications.

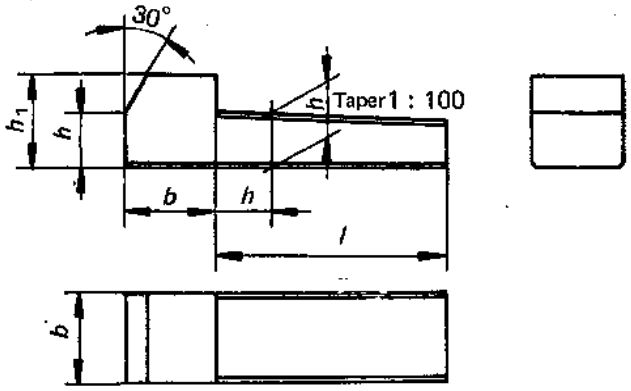
This kind of key is suitable for special applications, for example for keying in thin walls. For normal cases and when required because of the forces to be transmitted, the normal taper keys and corresponding keyways in accordance with ISO/R 774 are to be used.

## 3 SHAPES, DIMENSIONS AND TOLERANCES OF KEYS

**KEYS WITHOUT GIB HEAD**




**KEY WITH GIB HEAD**




Values in millimetres

| Width $b$ | | Thickness $h$ | | Chamfer[1] $s$ | | Length[2] $l$ | | Gib head $h_1$ |
|---|---|---|---|---|---|---|---|---|
| nominal | tolerance h9[3] | nominal | tolerance h11[3] | min. | max. | Range from | Range to | nom. |
| 8 | 0 −0,036 | 5 | 0 −0,075 | 0,25 | 0,40 | 20 | 70 | 8 |
| 10 | | 6 | | 0,40 | 0,60 | 25 | 90 | 10 |
| 12 | 0 −0,043 | 6 | | 0,40 | 0,60 | 32 | 125 | 10 |
| 14 | | 6 | | 0,40 | 0,60 | 36 | 140 | 10 |
| 16 | | 7 | 0 −0,090 | 0,40 | 0,60 | 45 | 180 | 11 |
| 18 | | 7 | | 0,40 | 0,60 | 50 | 200 | 11 |
| 20 | 0 −0,052 | 8 | | 0,60 | 0,80 | 56 | 220 | 12 |
| 22 | | 9 | | 0,60 | 0,80 | 63 | 250 | 14 |
| 25 | | 9 | | 0,60 | 0,80 | 70 | 280 | 14 |
| 28 | | 10 | | 0,60 | 0,80 | 80 | 320 | 16 |
| 32 | 0 −0,062 | 11 | 0 −0,110 | 0,60 | 0,80 | 90 | 360 | 18 |
| 36 | | 12 | | 1,00 | 1,20 | 100 | 400 | 20 |
| 40 | | 14 | | 1,00 | 1,20 | 125 | 400 | 22 |
| 45 | | 16 | | 1,00 | 1,20 | 140 | 400 | 25 |
| 50 | | 18 | | 1,00 | 1,20 | 160 | 400 | 28 |

1) Only the longitudinal edges and those of the rounded ends shall be chamfered; the other edges shall be merely broken.

2) Lengths of the keys : 20, 22, 25, 28, 32, 36, 40, 45, 50, 56, 63, 70, 80, 90, 100, 110, 125, 140, 160, 180, 200, 220, 250, 280, 320, 360 and 400.

3) The tolerances h9 and h11 apply only to the dimensions of the section of the key.

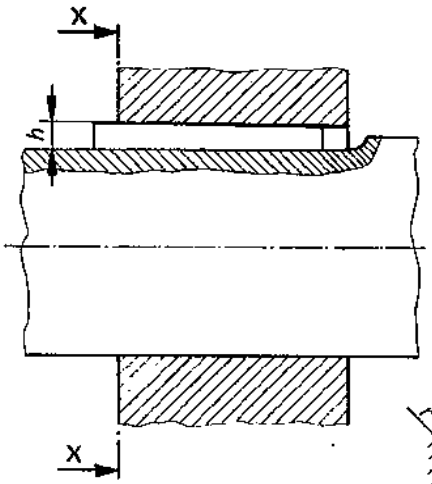
## 4 MATERIAL

Steel having a tensile strength of not less than 590 N/mm² (60 kgf/mm²) in the finished condition, unless another specification is agreed between the interested parties.

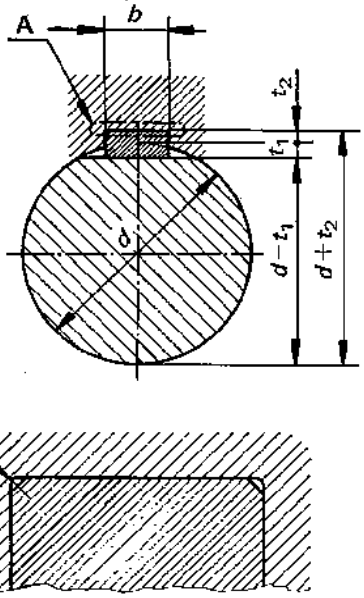
NOTE – The mechanical properties of the steel will be completed later.

## 5 DIMENSIONS AND TOLERANCES OF THE FLAT AND OF THE KEYWAY

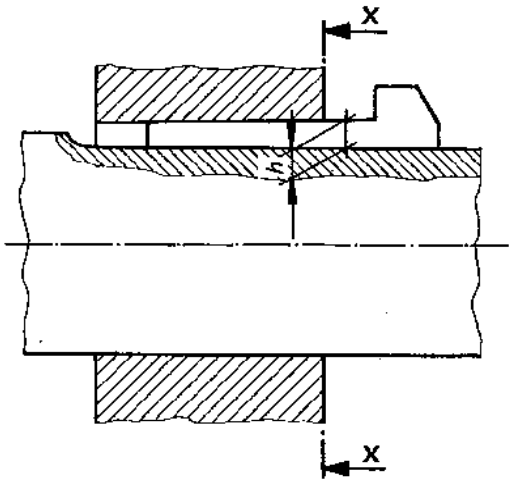
KEY WITHOUT GIB HEAD

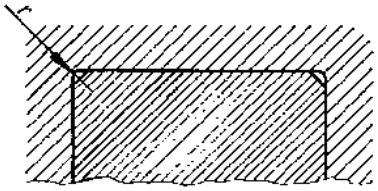



Section X-X




KEY WITH GIB HEAD




Detail A

Values in millimetres

| Shaft | | Key[1] | Keyway (hub) | | | | | | Flat[3] (shaft) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Diameter $d$ | | Section $b \times h$ | Width $b$ | | Depth[2] $t_2$ | | Radius $r$ | | Height[2] $t_1$ | |
| over | to | | nom. | tol. D10 | nom. | tol. | max. | min. | nom. | tol. |
| 22 | 30 | 8 × 5 | 8 | + 0,098 + 0,040 | 1,7 | + 0,1 0 | 0,25 | 0,16 | 3 | + 0,1 0 |
| 30 | 38 | 10 × 6 | 10 | | 2,2 | | 0,40 | 0,25 | 3,5 | |
| 38 | 44 | 12 × 6 | 12 | + 0,120 + 0,050 | 2,2 | | 0,40 | 0,25 | 3,5 | |
| 44 | 50 | 14 × 6 | 14 | | 2,2 | | 0,40 | 0,25 | 3,5 | |
| 50 | 58 | 16 × 7 | 16 | | 2,4 | + 0,2 0 | 0,40 | 0,25 | 4 | + 0,2 0 |
| 58 | 65 | 18 × 7 | 18 | | 2,4 | | 0,40 | 0,25 | 4 | |
| 65 | 75 | 20 × 8 | 20 | + 0,149 + 0,065 | 2,4 | | 0,60 | 0,40 | 5 | |
| 75 | 85 | 22 × 9 | 22 | | 2,9 | | 0,60 | 0,40 | 5,5 | |
| 85 | 95 | 25 × 9 | 25 | | 2,9 | | 0,60 | 0,40 | 5,5 | |
| 95 | 110 | 28 × 10 | 28 | | 3,4 | | 0,60 | 0,40 | 6 | |
| 110 | 130 | 32 × 11 | 32 | + 0,180 + 0,080 | 3,4 | | 0,60 | 0,40 | 7 | |
| 130 | 150 | 36 × 12 | 36 | | 3,9 | | 1,00 | 0,70 | 7,5 | |
| 150 | 170 | 40 × 14 | 40 | | 4,4 | | 1,00 | 0,70 | 9 | |
| 170 | 200 | 45 × 16 | 45 | | 5,4 | | 1,00 | 0,70 | 10 | |
| 200 | 230 | 50 × 18 | 50 | | 6,4 | | 1,00 | 0,70 | 11 | |

1) The relation between the diameter of the shaft and the section of the key must be strictly respected.

2) The depth of the keyway in the hub and the height of the flat on the shaft should be obtained by direct measurement or by measuring the dimensions $(d-t_1)$ and $(d+t_2)$. The tolerances applicable to $t_1$ and $t_2$ apply to these two composite dimensions $(d-t_1)$ and $(d+t_2)$, but the sign for the tolerance given in table 2 for $t_1$ has to be reversed. Keyway depths should not be measured from the side corner. The tolerance on $t_1$ and $t_2$ is approximatively equal to the tolerance k12 which would be obtained by adopting the thickness $h$ of the key as nominal size.

The depth $t_2$ shall be measured at the end of the hub, at the side where the key enters.

3) Subject to agreement between customer and manufacturer, the flat on the shaft may be replaced by a keyway with the same width (including tolerances) as that of the keyway in the hub and with a depth equal (including tolerances) to the height of the flat.

NOTE – The assembly of a taper key requires the taper of the key to be fitted. The dimensions and tolerances given above have been determined in such a way as to permit this in every case.