Transformed

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION
R 239

DRILL CHUCK TAPERS

1st EDITION
December 1961

BRIEF HISTORY

The ISO Recommendation R 239, *Drill Chuck Tapers*, was drawn up by Technical Committee ISO/TC 29, *Small Tools*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1952 and led, in 1958, to the adoption of a Draft ISO Recommendation.

In September 1959, this Draft ISO Recommendation (No. 305) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Austria	Hungary	Portugal
Belgium	India	Romania
Burma	Italy	Sweden
Czechoslovakia	Mexico	Switzerland
France	Netherlands	United Kingdom
Germany	Pakistan	U.S.A.
Greece	Poland	U.S.S.R.

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1961, to accept it as an ISO RECOMMENDATION.

ISO Recommendation	R 239	December 1961

DRILL CHUCK TAPERS

INTRODUCTION

I. SCOPE

This ISO Recommendation relates to drill chuck tapers and deals with two distinct types:

1. Morse taper type . . . . Tables 1.1 and 1.2,
2. Jacobs taper type . . . . Tables 2.1 and 2.2.

For each type of taper, this ISO Recommendation comprises two tables giving respectively:

(1) the dimensions in millimetres and

(2) the corresponding dimensions in inches.

II. INTERCHANGEABILITY

For each type of taper, Morse or Jacobs, complete interchangeability is assured between the two systems of units of measurement, millimetres and inches, as the dimensions expressed in any one system have been converted from those expressed in the other with sufficiently close approximation, having regard to the magnitude of the tolerances.

III. MORSE TAPER TYPE

Tables 1.1 and 1.2 relate to drill chuck tapers of the Morse taper type.

The tapered portions are identical with Morse tapers:

1 for tapers B10 and B12,

2 for tapers B16 and B18,

3 for tapers B22 and B24.

The length of each of these tapers is, of course, distinctly less than the overall length of the corresponding Morse taper; each taper may be regarded as corresponding approximately

either to that part of the Morse taper nearest the small end (e.g.: B10)

or to the part nearest the large end (e.g.: B12).

IV. JACOBS TAPER TYPE

Tables 2.1 and 2.2 merely reproduce and classify the normal dimensions of Jacobs tapers; they also observe the generally accepted designations, in spite of their somewhat illogical appearance.

In effect, the range of increasing values for diameter D contains two 2 tapers, the first of which is a short taper 2, and between the tapers 2 and 3, there are two interpolated tapers which bear the out-of-series numbers 33 and 6 respectively.

1. MORSE TAPER TYPE
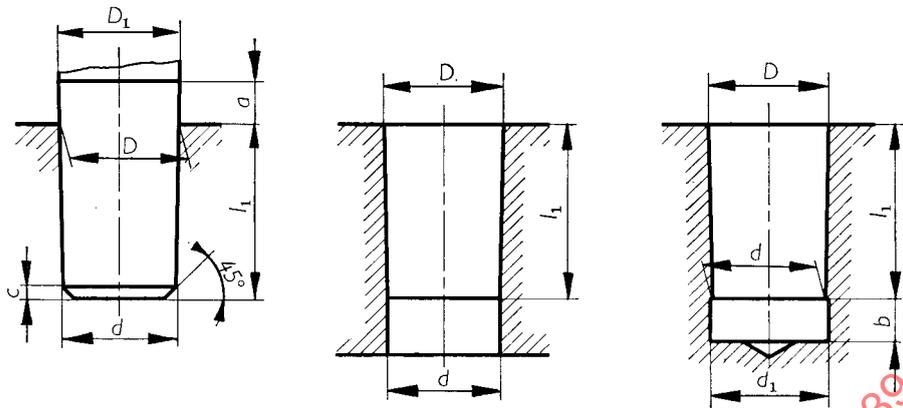
1.1 Dimensions in millimetres

Reference No.	D	D_1*	d*	d_1	l_1	a max.	b	c	Taper Morse	Taper on diameter
B10	10.094	10.3	9.4	9.8	14.5	3.5	3.5	1.0	1	0.049 88
B12	12.065	12.2	11.1	11.5	18.5					
B16	15.733	16.0	14.5	15.0	24.0	5.0	4.0	1.5	2	0.049 95
B18	17.780	18.0	16.2	16.8	32.0					
B22	21.793	22.0	19.8	20.5	40.5	5.0	4.5	2.0	3	0.050 20
B24	23.825	24.1	21.3	22.0	50.5					

1.2 Dimensions in inches

Reference No.	D	D_1*	d*	d_1	l_1	a max.	b	c	Taper Morse	Taper on diameter
B10	0.397 4	0.403 6	0.368 9	$^{25}/_{64}$	0.571	$^1/_8$	$^1/_8$	$^3/_{64}$	1	0.049 88
B12	0.475 0	0.481 2	0.438 7	$^{29}/_{64}$	0.728					
B16	0.619 4	0.628 8	0.572 2	$^{19}/_{32}$	0.945	$^3/_{16}$	$^5/_{32}$	$^1/_{16}$	2	0.049 95
B18	0.700 0	0.709 4	0.637 1	$^{21}/_{32}$	1.260					
B22	0.858 0	0.867 4	0.778 0	$^{13}/_{16}$	1.594	$^3/_{16}$	$^3/_{16}$	$^5/_{64}$	3	0.050 20
B24	0.938 0	0.947 4	0.838 2	$^7/_8$	1.988					

* D_1 and d = calculated values given for information.

(The effective values are obtained by applying the rate of taper and the basic dimension D to the actual values of a and l_1 respectively.)