INTERNATIONAL STANDARD 494

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

Parallel shank twist drills — Long series

Forets à queue cylindrique — Série longue

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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 494 and found it technically suitable for transformation. International Standard ISO 494 therefore replaces ISO Recommendation R 494-1966 to which it is technically identical.

ISO Recommendation R 494 was approved by the Member Bodies of the following countries :

Austria	Germany	Portugal
Belgium	Hungary	Spain
Brazil	India	Sweden
Canada	Italy	Switzerland
Chile	Japan	Turkey
Colombia	Korea, Rep. of	United Kingdom
Czechoslovakia	Netherlands	U.S.S.R.
Denmark	New Zealand	Yugoslavia
France	Poland	

The Member Body of the following country expressed disapproval of the Recommendation on technical grounds :

U.S.A.

The Member Body of the following country disapproved the transformation of ISO/R 494 into an International Standard :

Austria

Printed in Switzerland

Parallel shank twist drills — Long series

1 SCOPE AND FIELD OF APPLICATION

This International Standard lays down the dimensions of parallel shank twist drills, long series.

It supplements ISO 235/I, *Parallel shank twist drills, jobber and stub series, Morse taper shank twist drills and core drills.*

It comprises three tables giving respectively :

a) the recommended dimensions in millimetres;

b) the recommended dimensions in inches;

c) the corresponding lengths, in millimetres and in inches, set out as functions of diameter steps.

2 INTERCHANGEABILITY

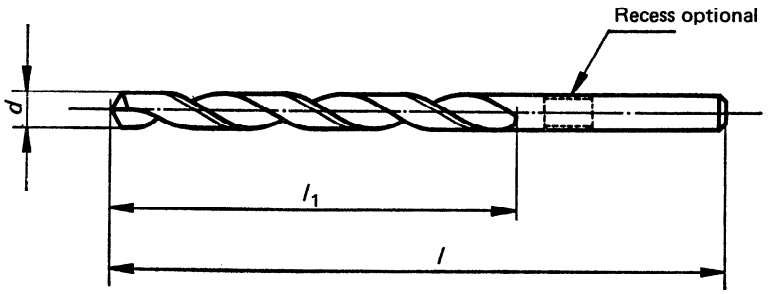
The numerical tables have been drawn up in such a way as to ensure that the standard dimensions in millimetres and inches correspond as closely as possible.

To this end, the complete range of diameters has been subdivided into a number of steps, the limits of which have been derived from the preferred number series for the metric values and converted directly from those for the inch values; the lengths remain the same for the metric and for the inch values, within a given step.

The recommended diameters in the two systems of units of measurement differ, however, and the number of recommended diameters, in a given step, also differs in one system from that in the other.

Finally, the tolerance on the diameter of the cutting portion has been standardized solely on the basis of the metric values of h8, converted directly into inches for inch drills.

3 DIMENSIONS



3.1 Recommended dimensions in millimetres

d	l_1	l	d	l_1	l	d	l_1	l	d	l_1	l
1,00	33	56	3,60	73	112	6,20	97	148	8,80	115	175
1,10	37	60	3,70			6,30			8,90		
1,20	41	65	3,80	78	119	6,40			9,00		
1,30			3,90			6,50			9,10		
1,40	45	70	4,00			6,60			9,20		
1,50			4,10			6,70			9,30		
1,60	50	76	4,20			6,80	102	156	9,40		
1,70			4,30	82	126	6,90			9,50		
1,80	53	80	4,40			7,00			9,60	121	184
1,90			4,50			7,10			9,70		
2,00	56	85	4,60			7,20			9,80		
2,10			4,70			7,30			9,90		
2,20	59	90	4,80	87	132	7,40			10,00		
2,30			4,90			7,50			10,10		
2,40	62	95	5,00			7,60	109	165	10,20		
2,50			5,10			7,70			10,30		
2,60			5,20			7,80			10,40		
2,70	66	100	5,30			7,90			10,50		
2,80			5,40	91	139	8,00			10,60		
2,90			5,50			8,10			10,70	128	195
3,00			5,60			8,20			10,80		
3,10	69	106	5,70			8,30			10,90		
3,20			5,80			8,40			11,00		
3,30			5,90			8,50			11,10		
3,40	73	112	6,00			8,60	115	175	11,20		
3,50			6,10	97	148	8,70			11,30		

Recommended dimensions in millimetres (*concluded*)

d	l_1	l	d	l_1	l	d	l_1	l	d	l_1	l
11,40			13,90	140	214	20,00	166	254	26,25	190	290
11,50			14,00			20,25			26,50		
11,60	128	195	14,25			20,50			26,75		
11,70			14,50	144	220	20,75	171	261	27,00		
11,80			14,75			21,00			27,25		
11,90			15,00			21,25			27,50	195	298
12,00			15,25			21,50			27,75		
12,10			15,50	149	227	21,75	176	268	28,00		
12,20			15,75			22,00			28,25		
12,30			16,00			22,25			28,50		
12,40			16,25			22,50			28,75		
12,50			16,50	154	235	22,75			29,00		
12,60	134	205	16,75			23,00	180	275	29,25	201	307
12,70			17,00			23,25			29,50		
12,80			17,25			23,50			29,75		
12,90			17,50	158	241	23,75			30,00		
13,00			17,75			24,00			30,25		
13,10			18,00			24,25			30,50		
13,20			18,25			24,50	185	282	30,75		
13,30			18,50	162	247	24,75			31,00	207	316
13,40			18,75			25,00			31,25		
13,50			19,00			25,25			31,50		
13,60	140	214	19,25			25,50	190	290			
13,70			19,50	166	254	25,75					
13,80			19,75			26,00					

3.2 Recommended dimensions in inches

d	l_1	l
3/64	1 5/8	2 9/16
1/16	1 31/32	3
5/64	2 7/32	3 11/32
3/32	2 7/16	3 3/4
7/64	2 19/32	3 15/16
1/8	2 23/32	4 3/16
9/64	2 7/8	4 13/32
5/32	3 1/16	4 11/16
11/64	3 7/32	4 31/32
3/16	3 7/16	5 3/16
13/64		
7/32	3 19/32	5 15/32
15/64		
1/4	3 13/16	5 13/16
17/64	4	6 1/8
9/32		
19/64	4 9/32	6 1/2
5/16		
21/64		
11/32	4 17/32	6 7/8
23/64		
3/8	4 3/4	7 1/4
25/64		
13/32		
27/64	5 1/32	7 11/16
7/16		
29/64		
15/32	5 9/32	8 1/16
31/64		
1/2		
33/64		
17/32	5 1/2	8 7/16
35/64		
9/16	5 11/16	8 21/32
37/64		
19/32	5 7/8	8 15/16
39/64		
5/8		
41/64	6 1/16	9 1/4
21/32		
43/64	6 7/32	9 1/2
11/16		
45/64		
23/32	6 3/8	9 23/32
47/64		
3/4	6 17/32	10
49/64		
25/32		
51/64	6 23/32	10 9/32
13/16		
53/64		
27/32	6 15/16	10 9/16
55/64		
7/8		
57/64	7 3/32	10 13/16
29/32		
59/64		
15/16	7 9/32	11 3/32
61/64		
31/32		
63/64	7 15/32	11 13/32
1		
1 1/64		
1 1/32		
1 3/64	7 11/16	11 3/4
1 1/16		
1 5/64		
1 3/32		
1 7/64	7 29/32	12 1/8
1 1/8		
1 9/64		
1 5/32		
1 11/64		
1 3/16	8 5/32	12 7/16
1 13/64		
1 7/32		
1 15/64		

NOTES relating to the tables in 3.1 and 3.2

1 *Intermediate sizes*

When intermediate sizes are specially required, reference should be made to the general table in 3.3 for the corresponding lengths.

2 *Cutting portion*

— Tolerance on diameter d measured near the point : h8.
For dimensions in inches, direct conversion into inches of the metric values of the tolerance h8.

— Back taper : at the manufacturer's discretion.

— Hand of cutting, unless otherwise specified : right.

3 *Shank*

These drills are normally made without driving tenon.

4 *Tolerance on lengths*

See the general table in 3.3.