INTERNATIONAL STANDARD 1117

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

Bonded abrasive products — Grinding-wheel dimensions (Part 2)

Produits abrasifs agglomérés — Dimensions des meules (Deuxième partie)

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Descriptors : tools, abrasives, grinding wheels, dimensions.

Price based on 21 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.

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 1117 and found it technically suitable for transformation. International Standard ISO 1117 therefore replaces ISO Recommendation R 1117-1969 to which it is technically identical.

ISO Recommendation R 1117 was approved by the Member Bodies of the following countries :

Australia	Israel	Sweden
Belgium	Italy	Switzerland
Czechoslovakia	Japan	Thailand
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Peru	U.S.A.
Greece	Poland	U.S.S.R.
Hungary	Portugal	Yugoslavia
India	South Africa, Rep. of	
Ireland	Spain	

No Member Body expressed disapproval of the Recommendation.

The Member Bodies of the following countries disapproved the transformation of ISO/R 1117 into an International Standard :

Austria
Sweden
Switzerland

Printed in Switzerland

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Bonded abrasive products — Grinding-wheel dimensions (Part 2)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the dimensions of different types of grinding wheels. Outside diameters, thicknesses and hole diameters are in accordance with ISO 525, save for the exceptions indicated by a reference mark.

The dimensions are expressed in both millimetres and inches. The holes being identical, wheels of the metric series and those of the inch series can be mounted on the same machines; however, the overall dimensions possibly being slightly different, wheels of both series can only be considered as equivalent.

The symbols for dimensions used are in accordance with those of ISO 525. They may be replaced in national standards by those in conformity with the rules prevailing in the country concerned, until international agreement regarding a single reference system is reached.

The figures accompanying the tables are only rough sketches which permit reference to the useful dimensions; particularly, for cup grinding wheels and for plain grinding wheels with a recess, the inset angles should be replaced by a fillet to avoid any initiation of rupture, but permitting, however, correct application of the pieces on the shaft.

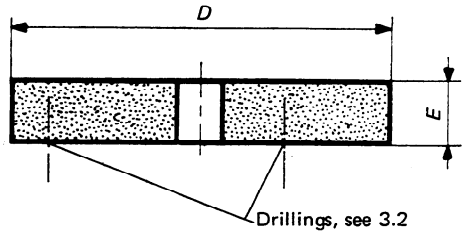
NOTE — The dimensions of other types of grinding wheels are given in ISO/R 603 and ISO 2933.

2 REFERENCE

ISO 525, *Bonded abrasive products — General features — Designation, ranges of dimensions, and profiles.*

3 THREADED INSERT DISKS

3.1 Dimensions



3.1.1 *Workpieces held in hand*

Dimensions in millimetres				Dimensions in inches			
	E				E		
D	Speed not exceeding 35 m/s	Speed higher than 35 m/s	Drilling, see 3.2	D	Speed not exceeding 115 ft/s	Speed higher than 115 ft/s	Drilling, see 3.2
300	50	50	Nuts M10	12		2	Nuts $\frac{3}{8}$ UNC
350				14			
400				16			
450				18			
500				20			
600				24			
750				30			
900				36			
1060				42			
1346*				53*			
1829*				72*			

3.1.2 *Workpieces held mechanically* — Speed not exceeding 35 m/s (115 ft/s).

Dimensions in millimetres			Dimensions in inches		
D	E	Drillings, see 3.2	D	E	Drillings, see 3.2
300	90*	Nuts M10	12	$3\frac{1}{2}$*	Nuts $\frac{3}{8}$ UNC
350			14		
400			16		
450			18		
500			20		
600			24		
750			30		
900			36		
1060	50		42	2	
1346*			53*		
1829*			72*		

3.2 Drillings

The following drawings correspond to the drillings and to the boring of the fixing plate seen from the face.

Some of the nuts may be omitted in the wheels but it is recommended that such as are used should correspond to one point of the drillings provided for.

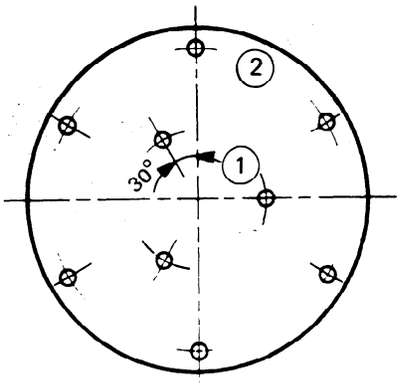
For wheels with a diameter *D* of 300, 350, 400, 450, 500, 600 and 750 mm, or of 12, 14, 16, 18, 20, 24 and 30 in, the nuts are equally spaced on the corresponding circle.

The dimensions of the nuts shall be indicated on the wheels.

* Dimensions not included in ISO 525.

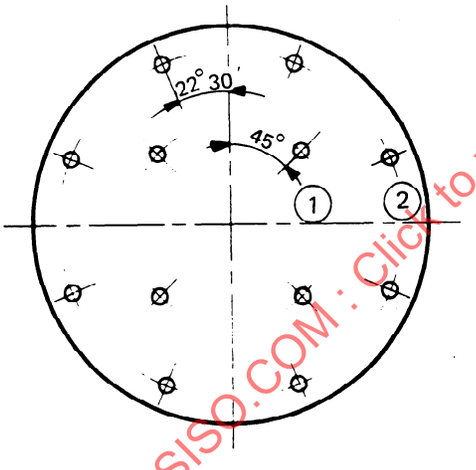
3.2.1 *Drillings : metric series*

Dimensions in millimetres
D = 300, 350 and 400 mm



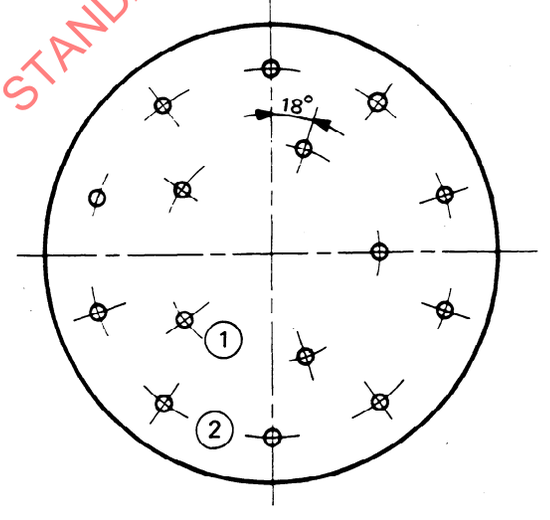
D = 300 mm

Drilling circles		Number of holes
Indexes	Diameters	
1	120,65	3 at 120°
2	266,70	6 at 60°



D = 350 mm

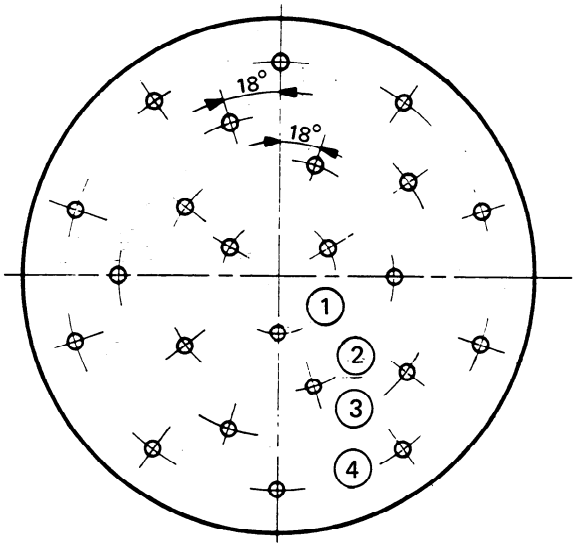
Drilling circles		Number of holes
Indexes	Diameters	
1	177,80	4 at 90°
2	304,80	8 at 45°



D = 400 mm

Drilling circles		Number of holes
Indexes	Diameters	
1	190,50	5 at 72°
2	323,85	10 at 36°

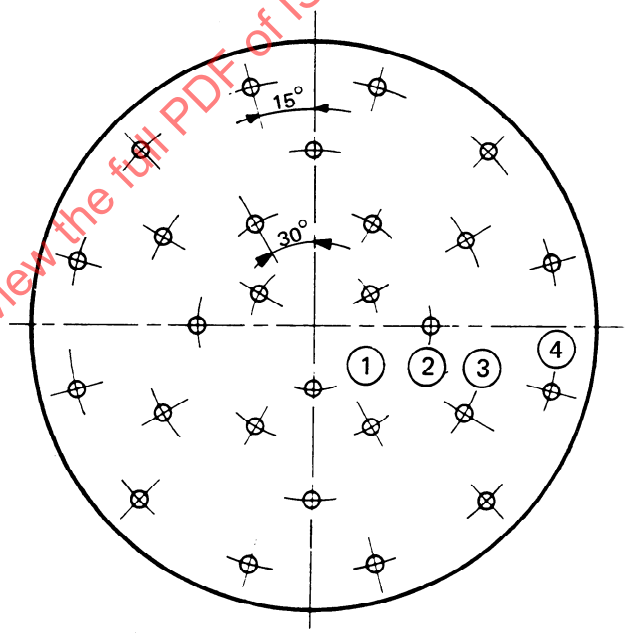
Dimensions in millimetres
D = 450, 500 and 600 mm



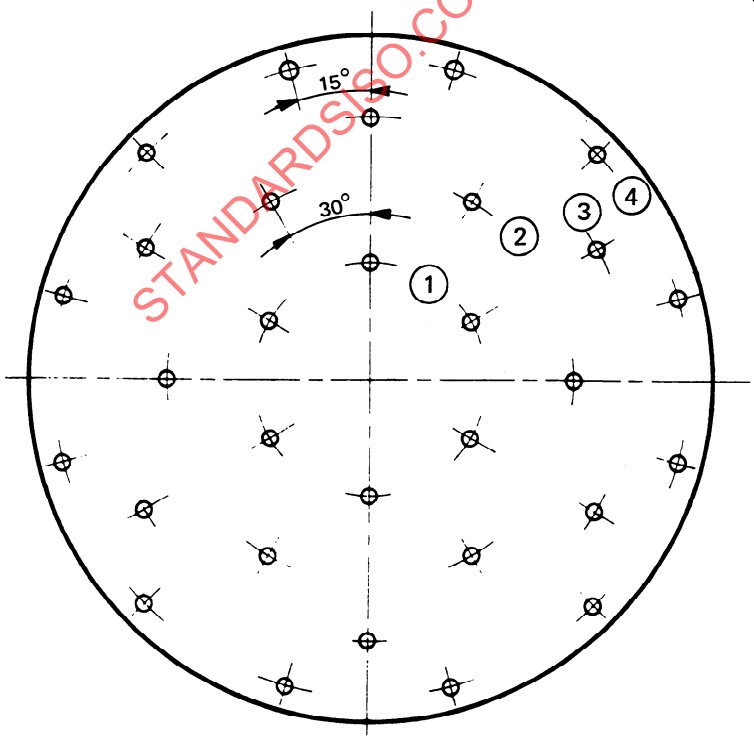
D = 450 mm

Drilling circles		Number of holes
Indexes	Diameters	
①	101,60	3 at 120°
②	203,20	5 at 72°
③	279,40	5 at 72°
④	374,65	10 at 36°

Drilling circles		Number of holes
Indexes	Diameters	
①	107,95	3 at 120°
②	203,20	6 at 60°
③	304,80	6 at 60°
④	431,80	12 at 30°



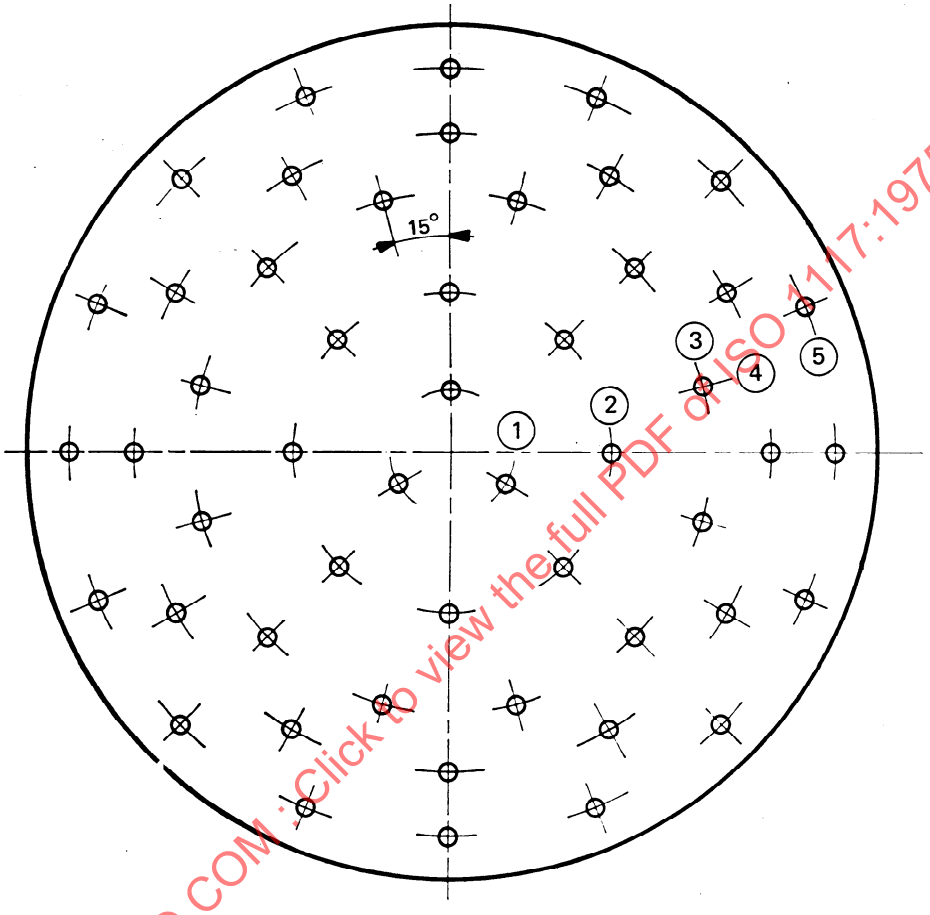
D = 500 mm



D = 600 mm

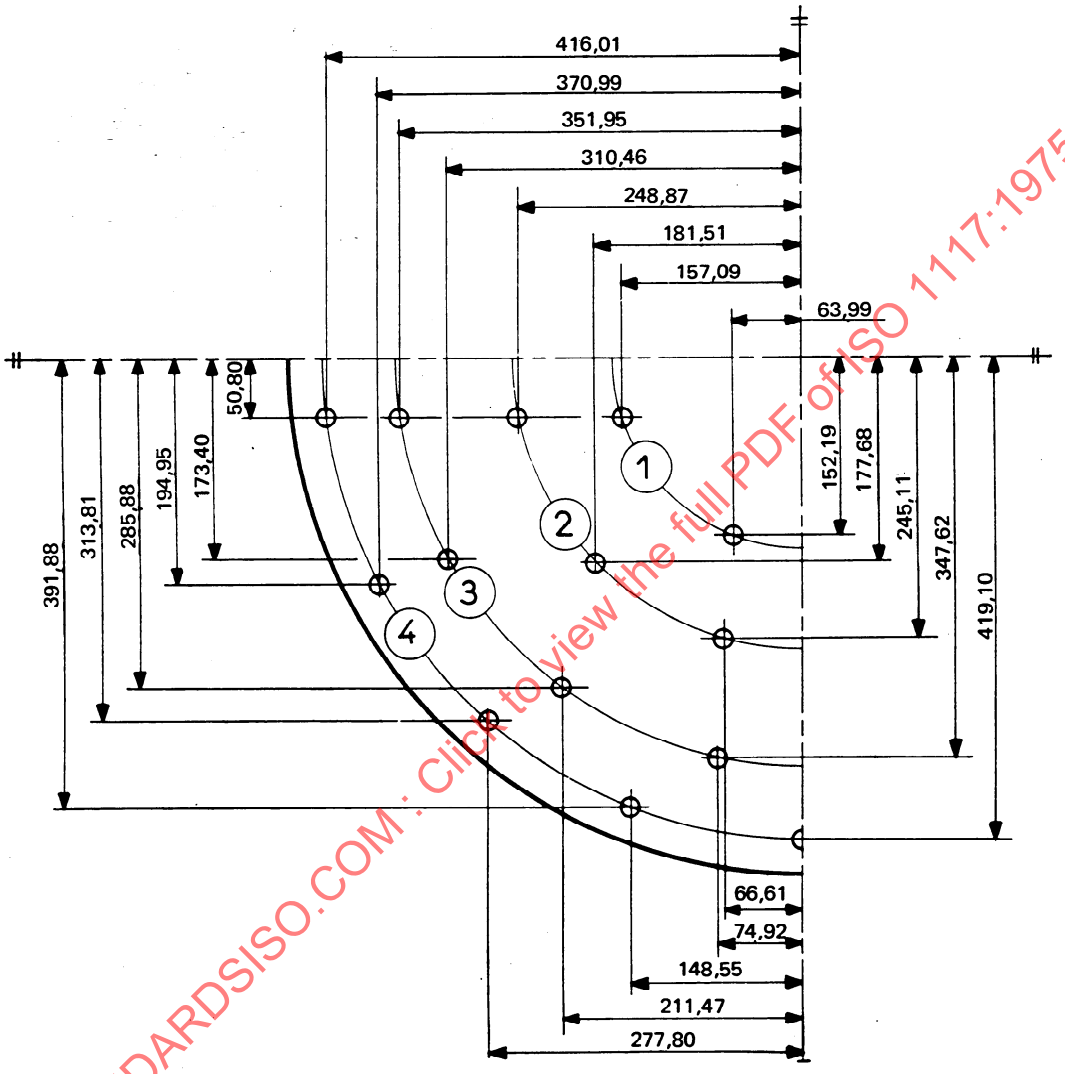
Drilling circles		Number of holes
Indexes	Diameters	
①	203,20	6 at 60°
②	330,20	6 at 60°
③	457,20	6 at 60°
④	558,80	12 at 30°

Dimensions in millimetres
$D = 750$ mm



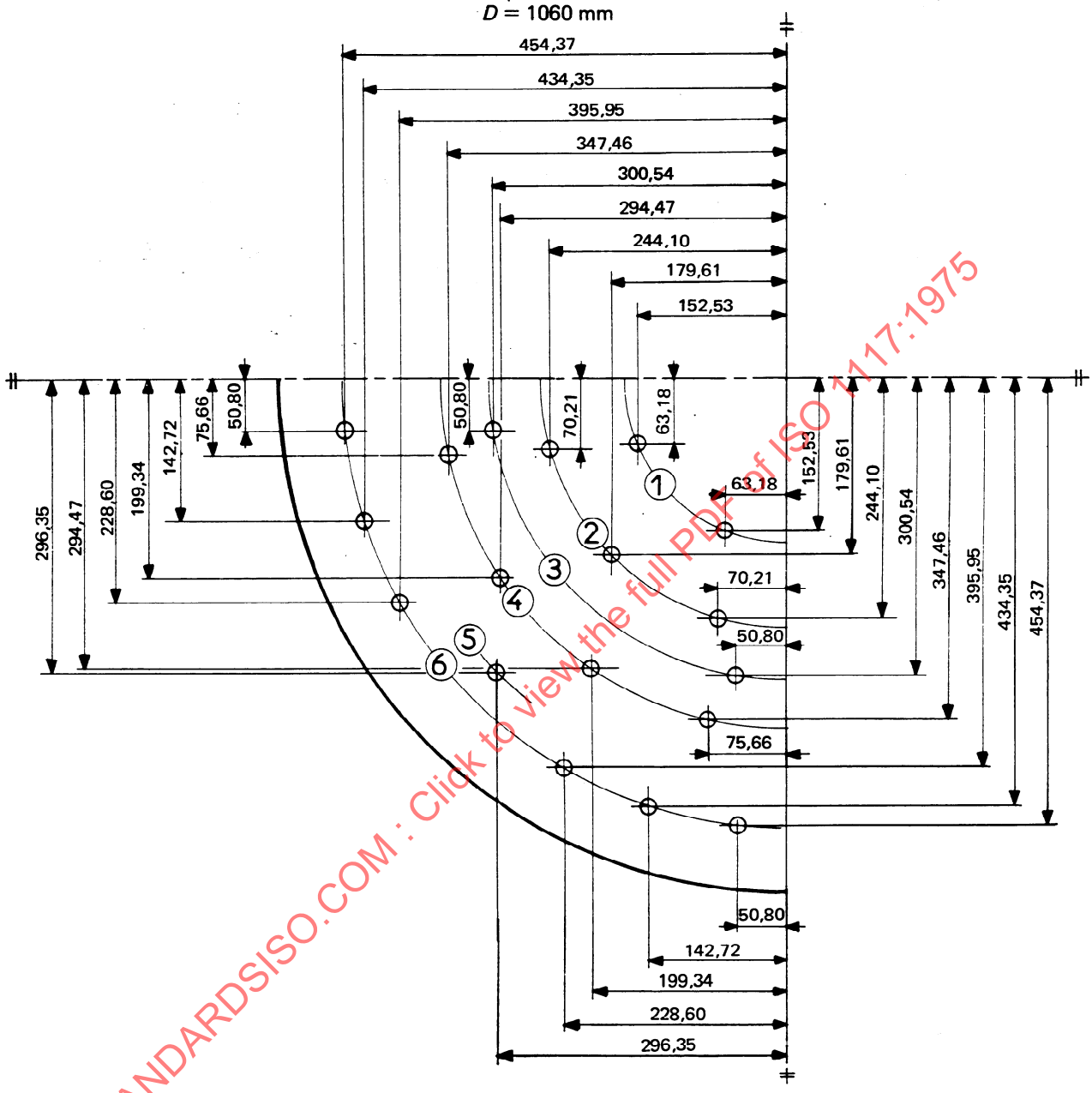
Drilling circles		Number of holes
Indexes	Diameters	
①	107,95	3 at 120°
②	279,40	8 at 45°
③	457,20	12 at 30°
④	558,80	12 at 30°
⑤	673,10	16 at 22°30′

Dimensions in millimetres
$D = 900$ mm



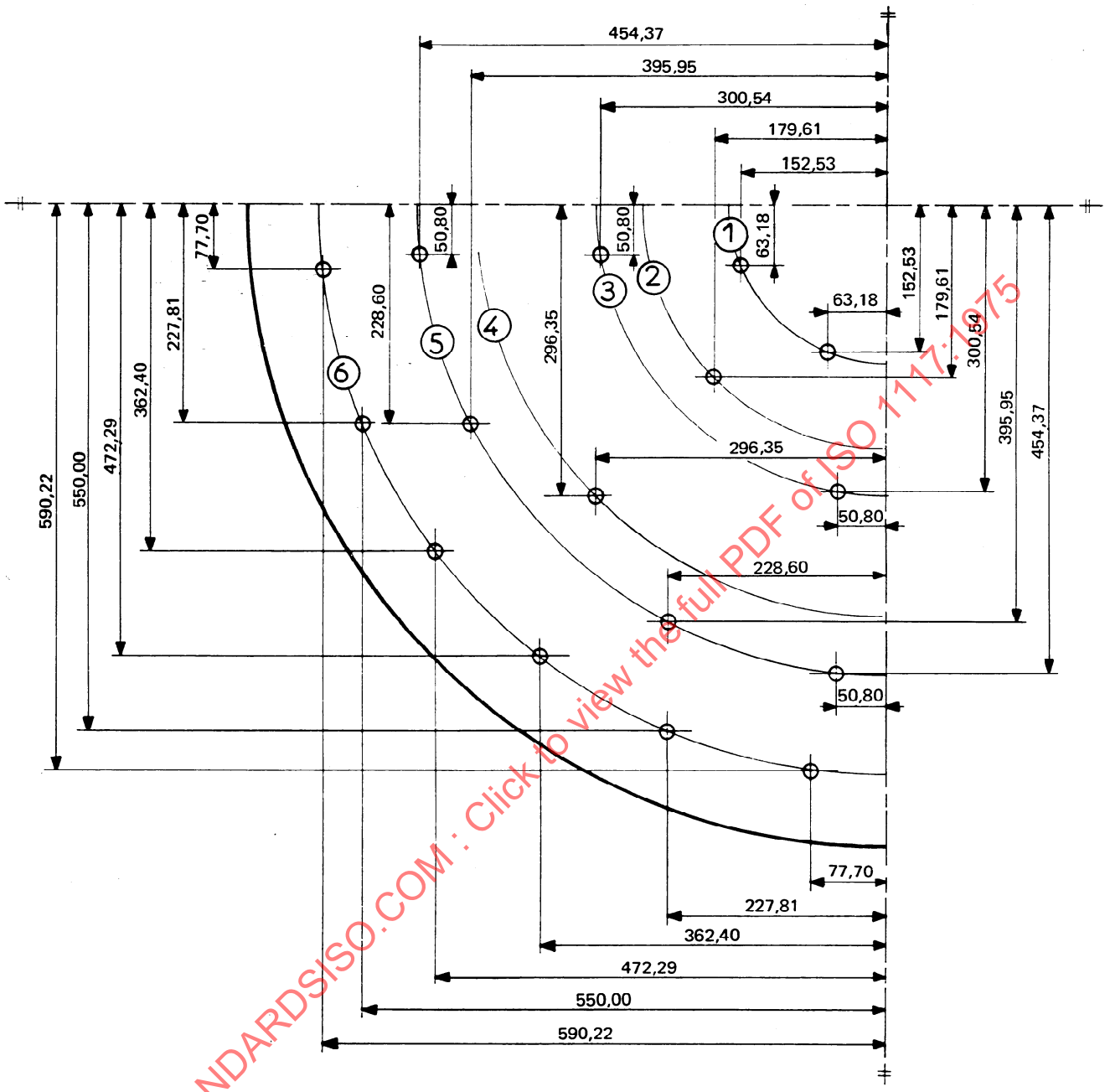
Drilling circles		Number of holes
Indexes	Approximate diameters	
①	330,2	8
②	508,0	12
③	711,2	16
④	838,2	18

Dimensions in millimetres
$D = 1060$ mm



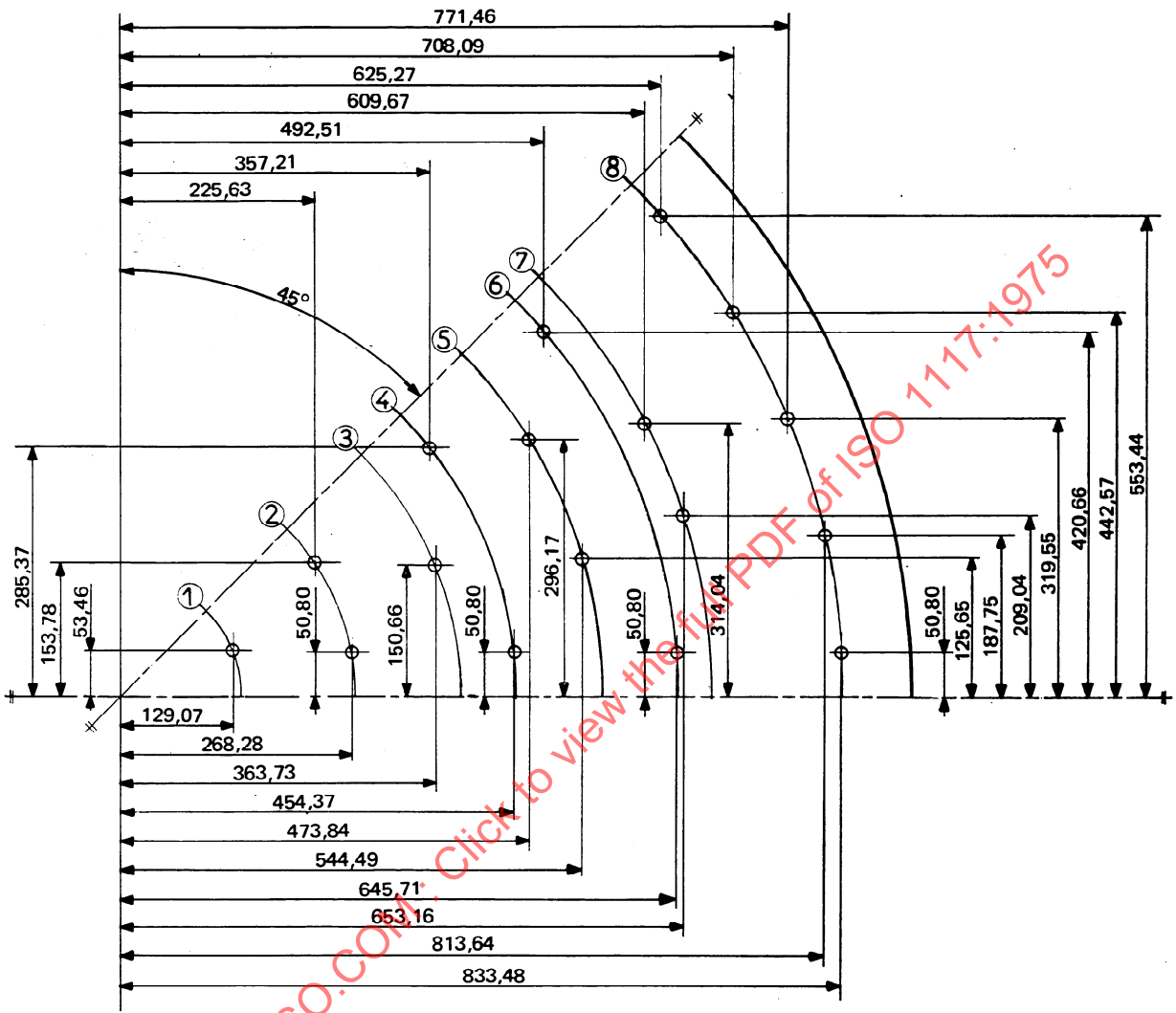
Drilling circles		Number of holes
Indexes	Approximate diameters	
①	330,2	8
②	508,0	12
③	609,6	8
④	711,2	16
⑤	838,2	4
⑥	914,4	24

Dimensions in millimetres
D = 1346 mm



Drilling circles		Number of holes
Indexes	Approximate diameters	
①	330,20	8
②	508,00	4
③	609,60	8
④	838,20	4
⑤	914,40	16
⑥	1190,62	24

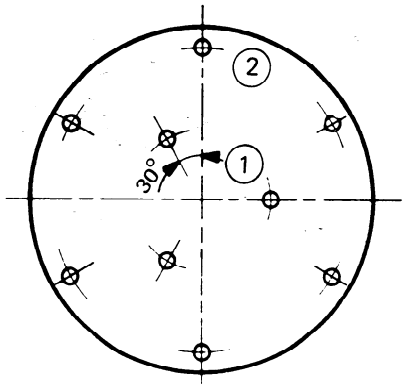
Dimensions in millimetres
$D = 1829$ mm



Drilling circles		Number of holes
Indexes	Approximate diameters	
①	279,40	8
②	546,10	16
③	787,40	8
④	914,40	16
⑤	1117,60	16
⑥	1295,40	16
⑦	1371,60	16
⑧	1670,05	40

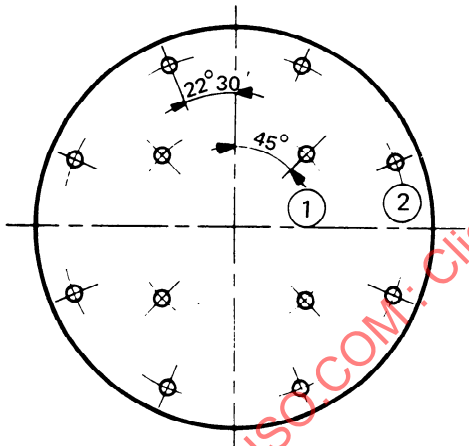
3.2.2 *Drillings : inch series*

Dimensions in inches
D = 12, 14 and 16 in



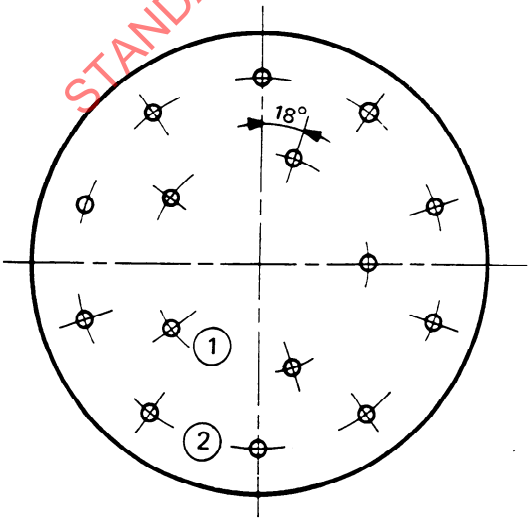
D = 12 in

Drilling circles		Number of holes
Indexes	Diameters	
1	$4\frac{3}{4}$	4 at 120°
2	$10\frac{1}{2}$	6 at 60°



D = 14 in

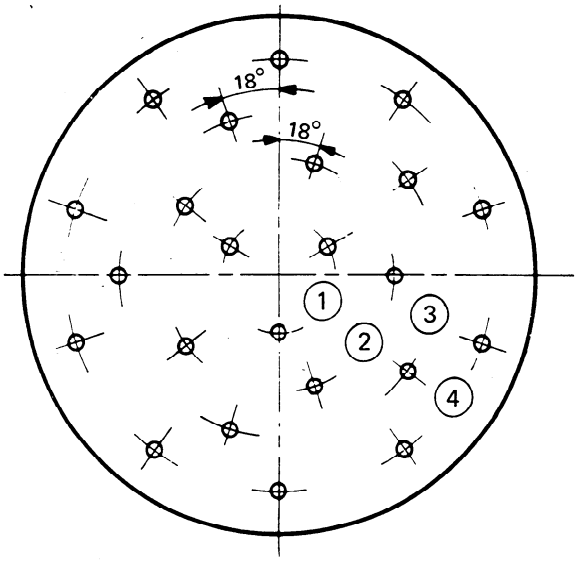
Drilling circles		Number of holes
Indexes	Diameters	
1	7	4 at 90°
2	12	8 at 45°



D = 16 in

Drilling circles		Number of holes
Indexes	Diameters	
1	$7\frac{1}{2}$	5 at 72°
2	$12\frac{3}{4}$	10 at 36°

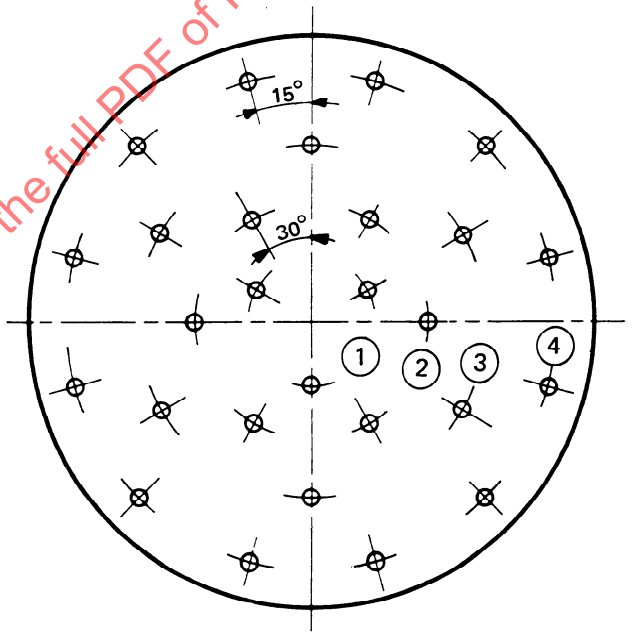
Dimensions in inches
D = 18, 20 and 24 in



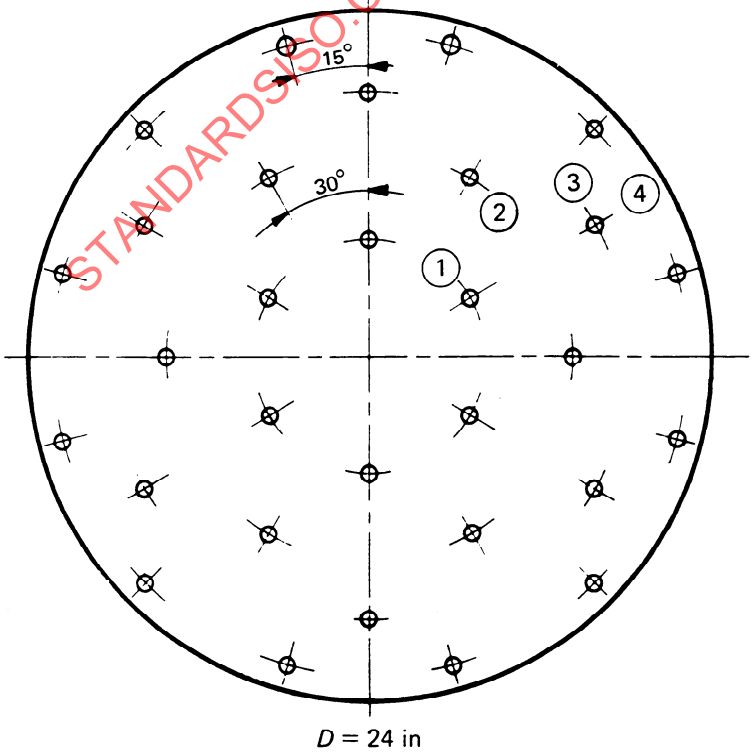
D = 18 in

Drilling circles		Number of holes
Indexes	Diameters	
①	4	3 at 120°
②	8	5 at 72°
③	11	5 at 72°
④	$14\frac{3}{4}$	10 at 36°

Drilling circles		Number of holes
Indexes	Diameters	
①	$4\frac{1}{4}$	3 at 120°
②	8	6 at 60°
③	12	6 at 60°
④	17	12 at 30°



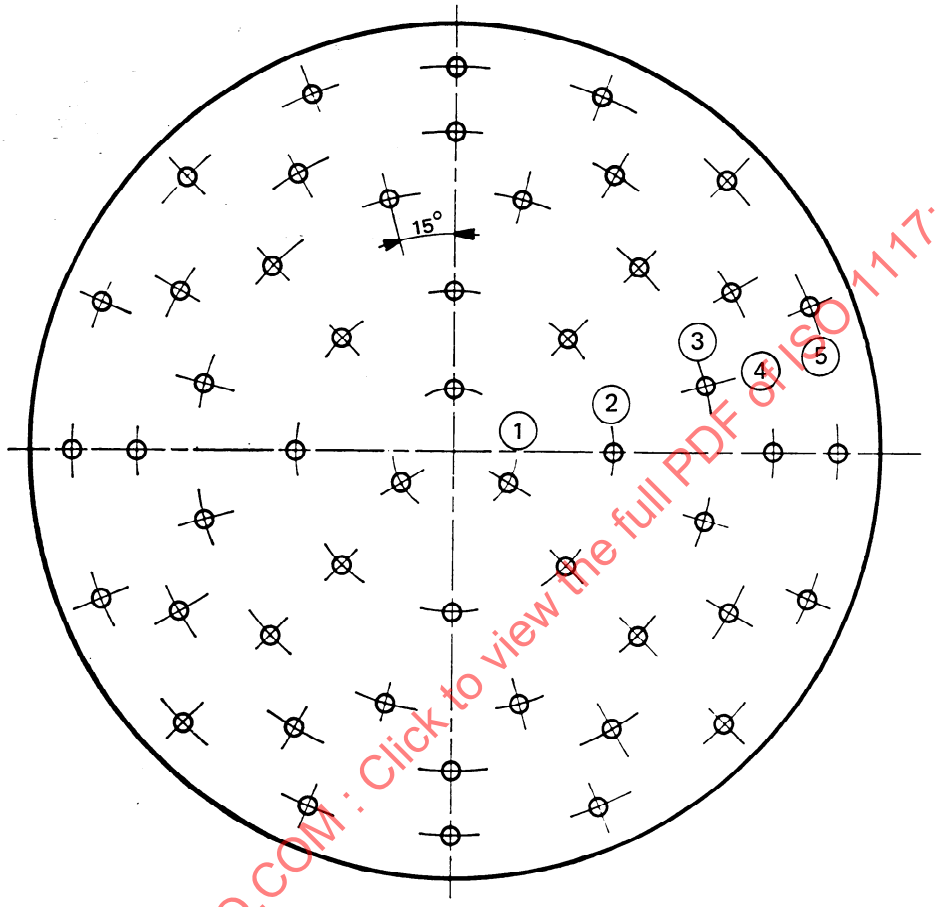
D = 20 in



D = 24 in

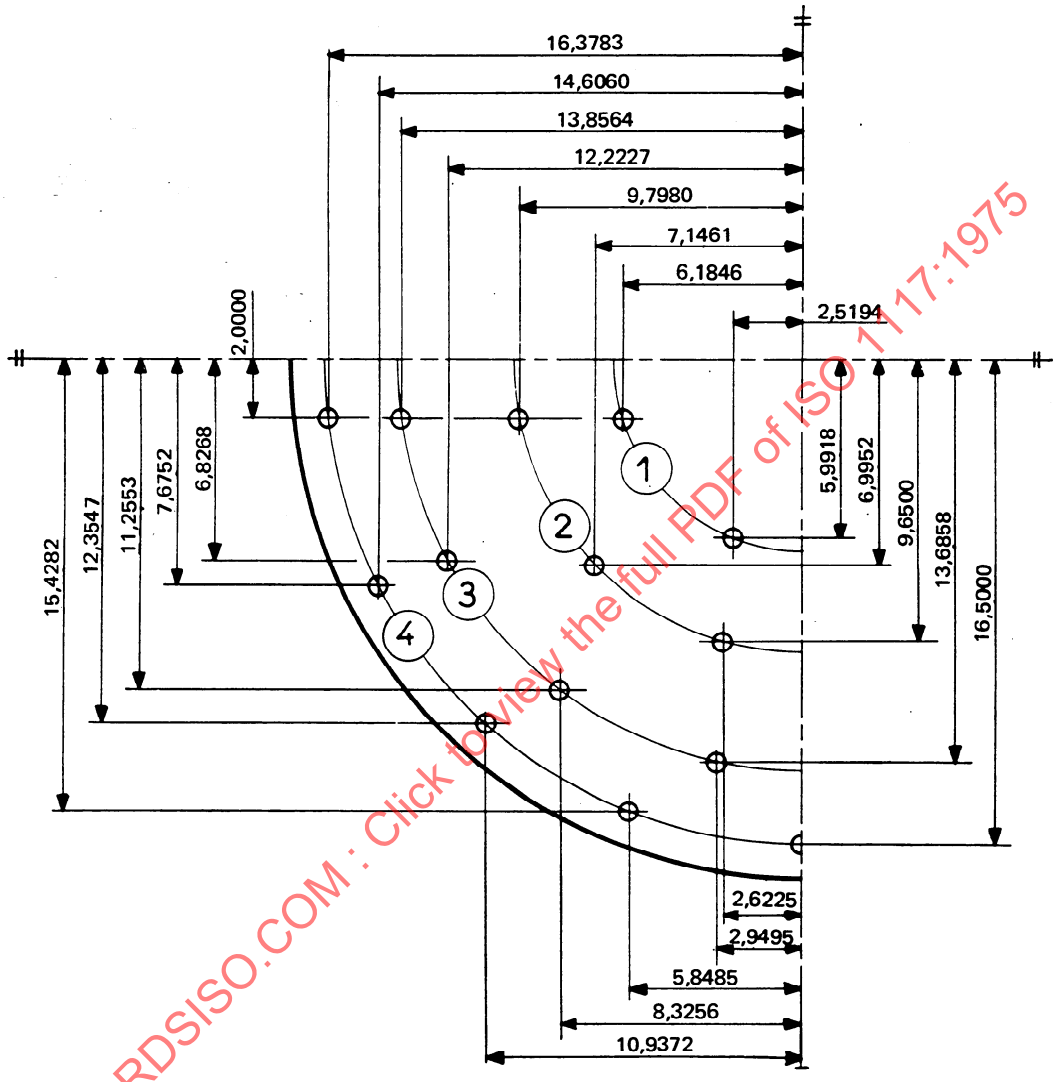
Drilling circles		Number of holes
Indexes	Diameters	
①	8	6 at 60°
②	13	6 at 60°
③	18	6 at 60°
④	22	12 at 30°

Dimensions in inches
$D = 30$ in



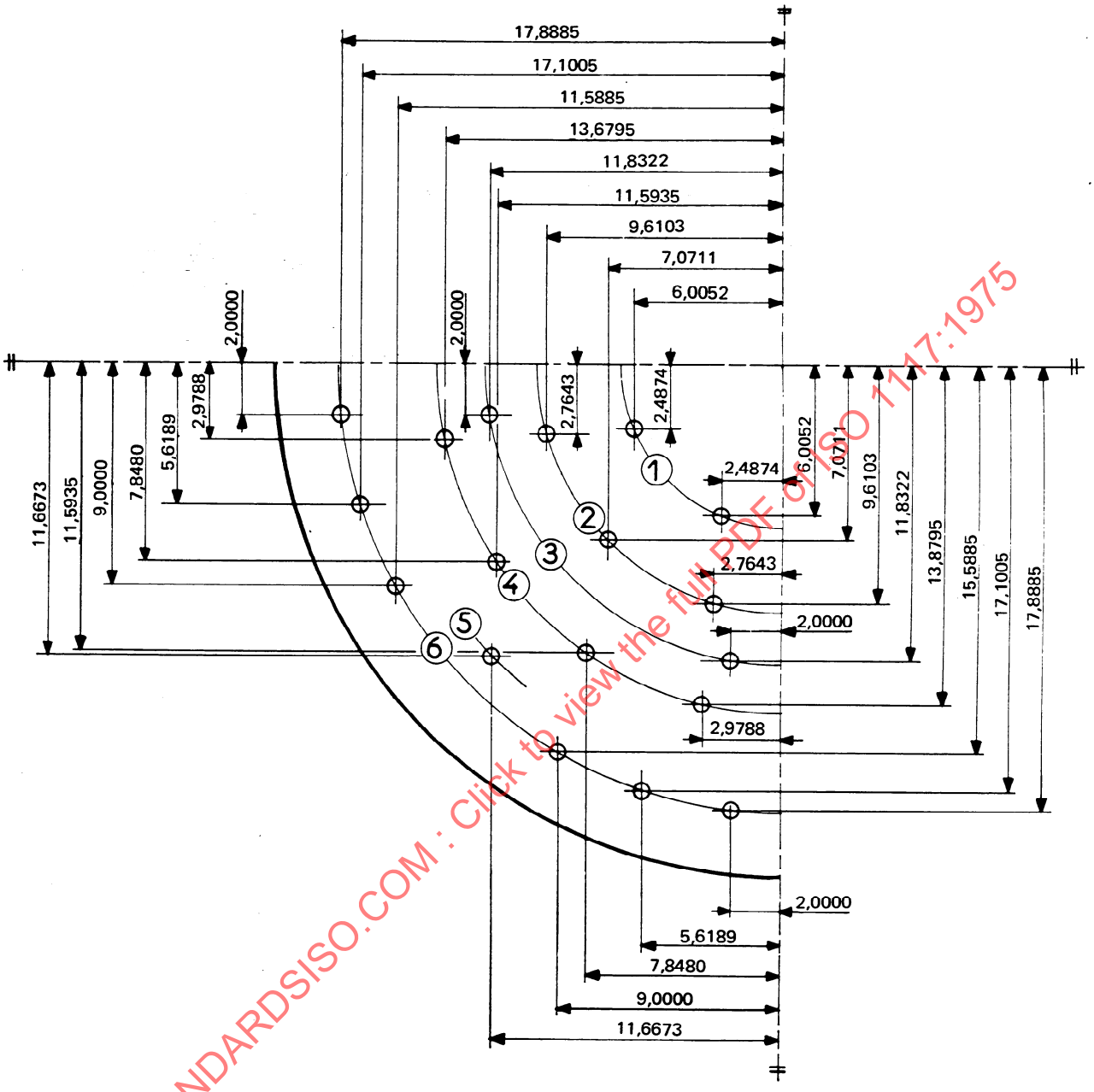
Drilling circles		Number of holes
Indexes	Diameters	
①	$4\frac{1}{4}$	3 at 120°
②	11	8 at 45°
③	18	12 at 30°
④	22	12 at 30°
⑤	$26\frac{1}{2}$	16 at 22°30′

Dimensions in inches
$D = 36$ in



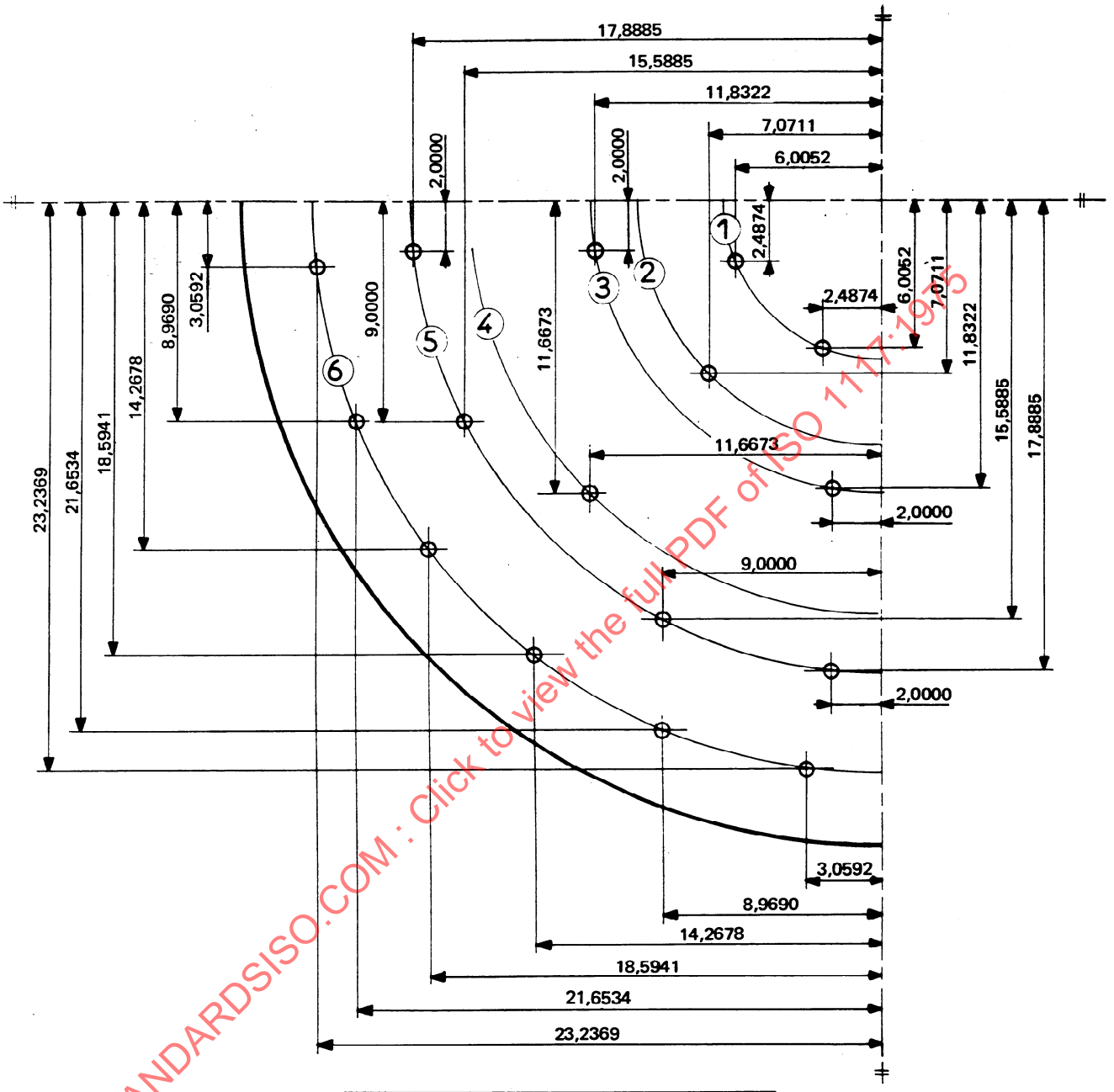
Drilling circles		Number of holes
Indexes	Approximate diameters	
①	13	8
②	20	12
③	28	16
④	33	18

Dimensions in inches
$D = 42$ in



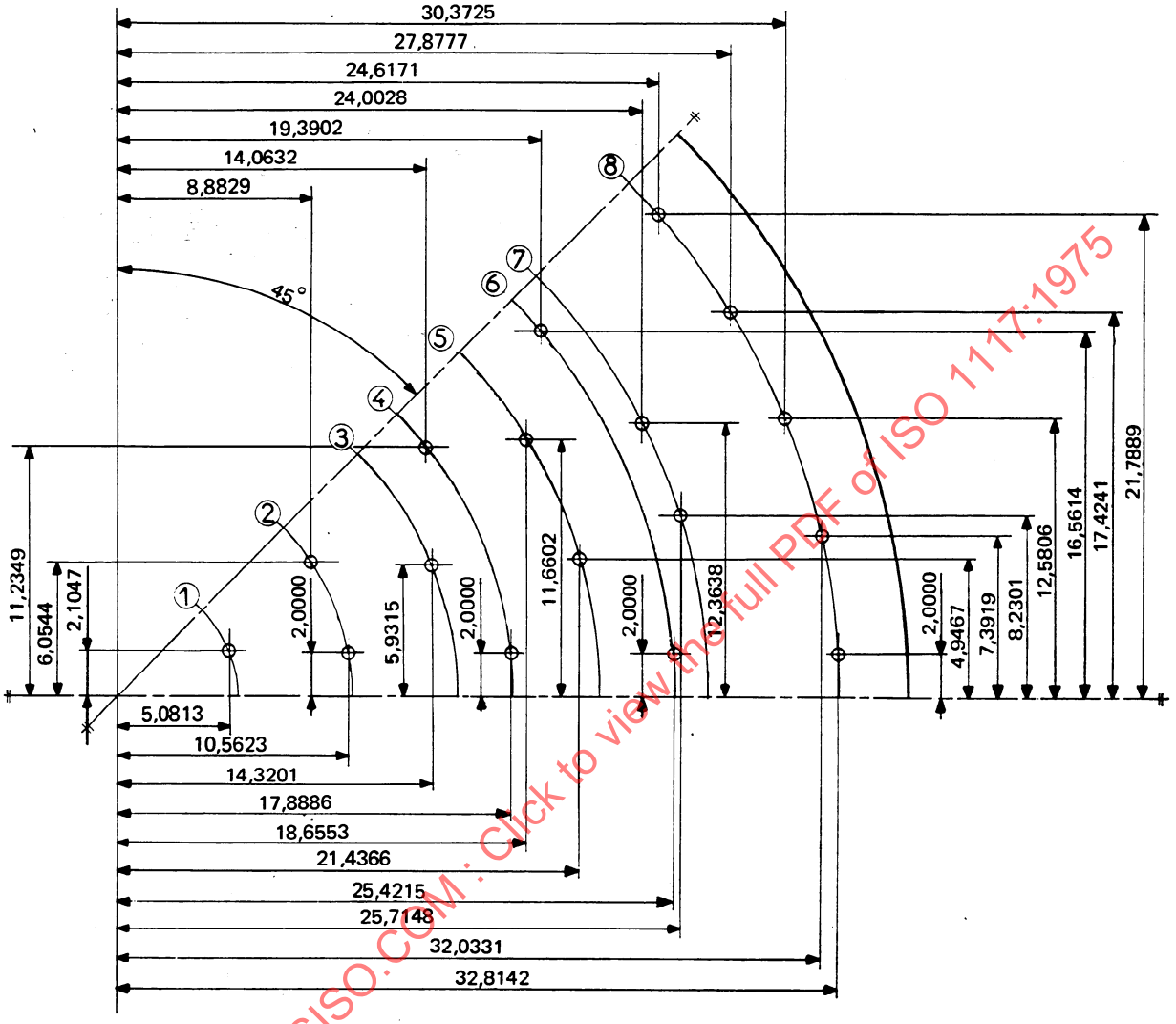
Drilling circles		Number of holes
Indexes	Approximate diameters	
①	13	8
②	20	12
③	24	8
④	28	16
⑤	33	4
⑥	36	24

Dimensions in inches
$D = 53$ in



Drilling circles		Number of holes
Indexes	Approximate diameters	
①	13	8
②	20	4
③	24	8
④	33	4
⑤	36	16
⑥	$46\frac{7}{8}$	24

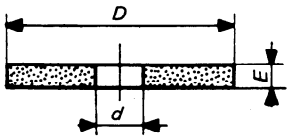
Dimensions in inches
$D = 72$ in



Drilling circles		Number of holes
Indexes	Approximate diameters	
①	11	8
②	$21\frac{1}{2}$	16
③	31	8
④	36	16
⑤	44	16
⑥	51	16
⑦	54	16
⑧	$65\frac{3}{4}$	40

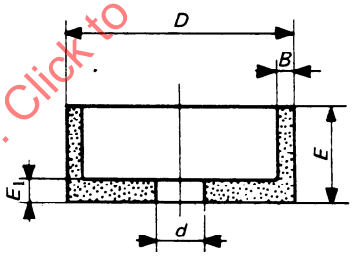
4 WHEELS FOR TOOL AND CUTTER GRINDING

4.1 **Plain wheels** (Type 1)



Dimensions in millimetres						Dimensions in inches					
D	*E*				*d**	*D*	*E*				*d**
150	6	10	13	16	32	6	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	1.260
180						7					
200						8					

4.2 **Straight cup wheels** (Type 6)



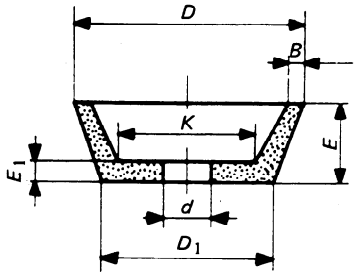
Dimensions in millimetres					Dimensions in inches				
D	*E*	*d**	*B*	E_1	*D*	*E*	*d**	*B*	E_1
50	32	13	5	6	2	$1\frac{1}{4}$	0.5118	$\frac{3}{16}$	$\frac{1}{4}$
80	40		6	10	3	$1\frac{1}{2}$		$\frac{1}{4}$	$\frac{3}{8}$
100	40	20	8		4	$1\frac{1}{2}$	0.7874	$\frac{5}{16}$	
125	50	32	8	13	5	2	1.2600	$\frac{5}{16}$	$\frac{1}{2}$
150	63		10	16	6	$2\frac{1}{2}$		$\frac{3}{8}$	$\frac{5}{8}$

* Regardless of the rule, the following values from the transitional series of holes are permissible by special agreement in place of the nearest value of *d* in the tables above :

millimetres : 12,70 — 19,05 — 31,75

inches : $\frac{1}{2}$ — $\frac{3}{4}$ — $1\frac{1}{4}$

4.3 Taper cup wheels (Type 11)*



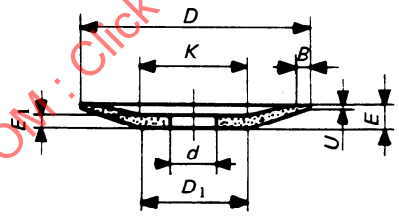
Dimensions in millimetres						
D	*E*	*d***	D_1	*K*	*B*	E_1
50	32	13	27	22	4	6
80			57	46	6	
100	40	20	71	56	8	10
125		32	96	81		
150	50		114	96	10	13

NOTE — Holes of non-standard diameter wheels should be selected only from those shown in this International Standard and the following angles in relation to the rotational axis should be respected :

20° for the external generator;

25° for the internal generator.

4.4 Dish wheels (Type 12)*



Dimensions in millimetres						
D	*E*	*d***	$D_1 = K$	*B*	E_1	*U*
80	10	13	31	4	6	2,5
100	13	20	36	5	7	3,2
125	13	32	61	6	7	
150	16		66	8	9	
200	20		90	10	12	

NOTE — Holes of non-standard diameter wheels should be selected only from those shown in this International Standard and the 17° angle of the external generator in relation to the rotation plane should be respected.

* No dimensions in inches are provided for taper cup wheels and dish wheels.

** Regardless of the rule, the following values from the transitional series of holes are permissible by special agreement in place of the nearest value of *d* in the tables above :

millimetres : 12,70 — 19,05 — 31,75

inches : $\frac{1}{2}$ — $\frac{3}{4}$ — $1\frac{1}{4}$