

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 603

BONDED ABRASIVE PRODUCTS
GRINDING-WHEEL DIMENSIONS
(PART 1)

1st EDITION
August 1967

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BRIEF HISTORY

The ISO Recommendation R603, *Bonded Abrasive Products—Grinding-Wheel Dimensions (Part 1)*, 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 1950 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In September 1964, this Draft ISO Recommendation (No. 736) 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:

Argentina	Hungary	Poland
Australia	India	Spain
Austria	Iran	Sweden
Belgium	Israel	Switzerland
Canada	Italy	Turkey
Chile	Japan	U.A.R.
Czechoslovakia	Korea, Rep. of	United Kingdom
France	Netherlands	U.S.A.
Germany	New Zealand	Yugoslavia

One Member Body opposed the approval of the Draft:
U.S.S.R.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in August 1967, to accept it as an ISO RECOMMENDATION.

BONDED ABRASIVE PRODUCTS GRINDING-WHEEL DIMENSIONS

(Part 1)

CONTENTS

	<i>Page</i>
Foreword	3
1. Plain grinding-wheels for fettling and general sharpening (Type 1)	4
1.1 Low-speed fettling, minor and general sharpening (for hand use)	4
1.2 High-speed fettling	4
2. High-speed cup grinding-wheels for portable machines (Types 6 and 11)	5
2.1 Straight cup grinding-wheels (Type 6)	5
2.2 Taper cup grinding-wheels (Type 11)	5
3. Grinding-wheels for cutting and slitting, without reinforcement (Type 1)	5
4. Plain grinding-wheels for external cylindrical grinding (Types 1, 5 and 7)	6
4.1 Plain grinding-wheels without recess (Type 1)	6
4.2 Plain grinding-wheels with one recess (Type 5)	7
4.3 Plain grinding-wheels with two recesses (Type 7)	8
5. Surface grinding-wheels (Types 1 and 2)	9
5.1 Plain grinding-wheels (Type 1)	9
5.2 Cylinder grinding-wheels (Type 2)	9
6. Centreless grinding-wheels (Types 1, 5 and 7)	10
6.1 Centreless grinding-wheels	10
6.2 Centreless control grinding-wheels	10
7. Plain grinding-wheels for saw sharpening (Type 1)	11
7.1 Grinding-wheels for saws other than metal-slitting saws	11
7.2 Thin grinding-wheels for metal-slitting saws	11
8. Segments of grinding-wheels with isosceles trapezoidal section	12

FOREWORD

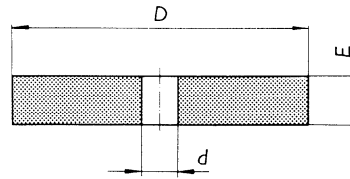
Except where otherwise indicated, the dimensions shown for these grinding wheels are in accordance with those in ISO Recommendation R 525-1966, *Bonded Abrasive Products—General Features (Designation—Ranges of Dimensions—Profiles)*.

The letter symbols used for dimensions in this ISO Recommendation conform to those shown in ISO Recommendation R 525. Readers are reminded that they may be replaced in national standards by symbols conforming to the current practice of the country concerned until international agreement on a uniform system of symbols is reached.

The illustrations accompanying the tables are purely diagrammatic; for cup grinding-wheels and plain recessed wheels in particular, the internal angles should be replaced by radii which obviate any tendency for cracks to form, but which nevertheless permit correct assembly of the components on the spindle.

The dimensions in this ISO Recommendation are expressed in both millimetres and inches. As the holes are identical, wheels from the metric series and those from the inch series can be mounted on the same machines; since the overall dimensions may be slightly different in the two systems, however, wheels of either series can be considered only as equivalent to each other.

1. PLAIN GRINDING WHEELS FOR FETTLING AND GENERAL SHARPENING
(Type 1)



1.1 Low-speed fettling, minor and general sharpening
(for hand use)

Dimensions in millimetres				Dimensions in inches					
D	E			d	D	E			d
80	6	10		13	3	1/4	3/8		0.5118
100		13	20	16	4		1/2	3/4	0.6299
125			20 25	20	5		3/4	1	0.7874
150			20 25		6		3/4	1	
200			20 25		8		3/4	1	
250			20 25 32	32	10		3/4	1 1/4	1.26
300			25 32 40		12		1	1 1/4 1 1/2	
350			32 40 50		14		1 1/4	1 1/2 2	
400			40 50 63	40	16		1 1/2	2 2 1/2	1.5748
500			50 63 80	50.8	20		2	2 1/2 3	2
600			63 80	76.2	24		2 1/2	3	3
750			80		30				3

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1.2 High-speed fettling

1.2.1 on portable grinding-machines

1.2.2 on fixed or swing-frame grinding-machines

Dimensions in millimetres				Dimensions in inches					
D	E			d	D	E			d
80	6	10		10	3	1/4	3/8		0.3937
100		20 25		13	4		3/4	1	0.5118
125		20 25		16	5		3/4	1	0.6299
150		20 25		16	6		3/4	1	
200		25		16	8			1	

Dimensions in millimetres				Dimensions in inches					
D	E			d	D	E			d
350	50			127.0	14	2			5
400	50	63		152.4	16	2	2 1/2		6
500	50	63	80	152.4	20	2	2 1/2	3	
600		63	80	152.4	24		2 1/2	3	
750		80	100	304.8	30			3 4	12
900		80	100	304.8	36			3 4	

NOTE. – 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:

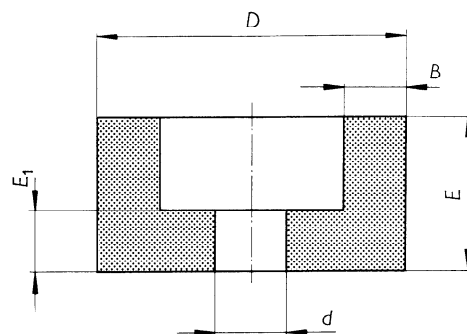
in millimetres 12.7 15.88 19.05 31.75 38.1
 in inches 1/2 5/8 3/4 1 1/4 1 1/2

2. HIGH-SPEED CUP GRINDING-WHEELS FOR PORTABLE MACHINES

(Types 6 and 11)

2.1 Straight cup grinding-wheels (Type 6)

Dimensions in millimetres				
D	E	d*	B	E ₁
100	50	22.23	20	20
125			25	
150			40	
Dimensions in inches				
D	E	d*	B	E ₁
4	2	7/8	3/4	3/4
5			1	
6			1 1/2	

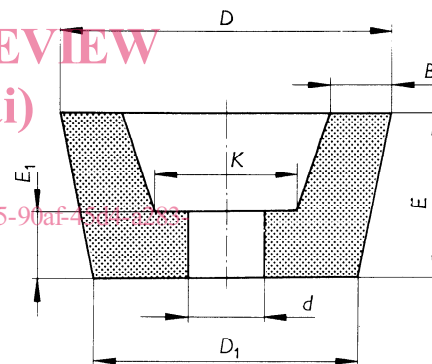


Grinding-wheels with nuts. – For grinding-wheels which have a nut instead of a hole, for preference always adopt the UNIFIED thread 5/8 – 11 UNC for this nut.

*Exceptions to the recommended series of holes in ISO Recommendation R 525-1966.

2.2 Taper cup grinding-wheels (Type 11)

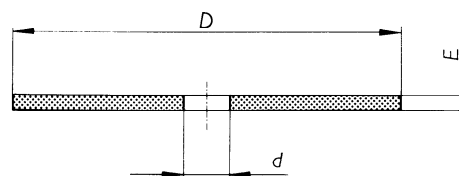
Dimensions in millimetres						
D	D ₁	E	d*	B	E ₁	K min.
100	80	50	22.23	20	20	45
125	100			25		54
150	120			40		
Dimensions in inches						
D	D ₁	E	d*	B	E ₁	K min.
4	3	2	7/8	3/4	3/4	1 13/16
5	3 3/4			1		2 1/8
6	4 3/4			1 1/2		



*Exceptions to the recommended series of holes in ISO Recommendation R 525-1966.

3. GRINDING-WHEELS FOR CUTTING AND SLITTING, WITHOUT REINFORCEMENT (Type 1)

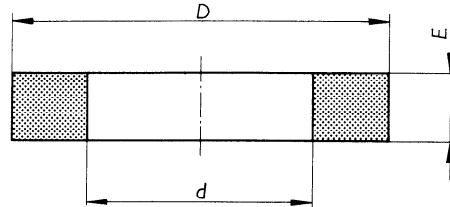
Dimensions in millimetres			Dimensions in inches		
D	E	d	D	E	d
100	1	20	4	3/64	0.7874
150	1.6		6	1/16	
200	2		8	5/64	
250	2.5	25	10	3/32	0.9843
300			12		
400	3.2		16	1/8	
500	4		20	5/32	
600			24		



NOTE. – The following values from the transitional series of holes are permissible by special agreement in place of the nearest value of d in the adjoining Table:
 in millimetres 19.05 25.4
 in inches 3/4 1

4. PLAIN GRINDING-WHEELS FOR EXTERNAL CYLINDRICAL GRINDING
(Types 1, 5 and 7)

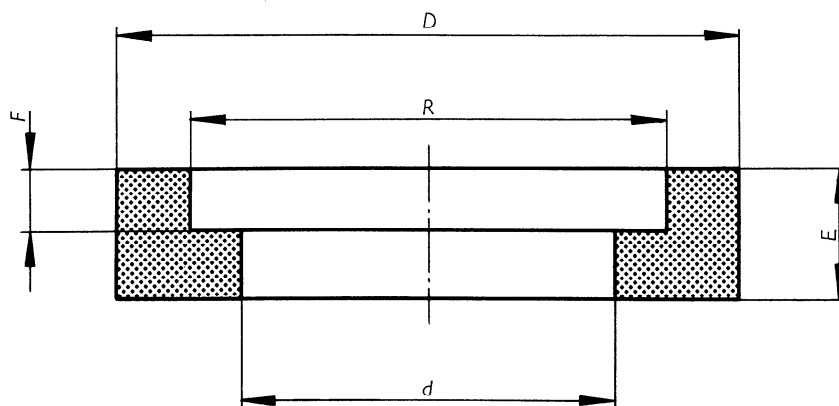
4.1 Plain grinding-wheels without recess (Type 1)



Dimensions in millimetres									
D	E					d			
250	20	25				127			
300	20	25	32	40	50				
350		25	32	40	50				
400			32	40	50		63		
450*			32	40	50		63	80	
500*			40	50	63		80		
600			50	63	80		100		
750				63	80		100	125	304.8
900				63	80	100	125		
1060				63	80	100	125		
1250				63	80	100	125	508	
Dimensions in inches									
D	E					d			
10	¾	1				5			
12	¾	1	1¼	1½	2				
14		1	1¼	1½	2				
16			1¼	1½	2		2½		
18*			1¼	1½	2		2½	3	
20*				1½	2		2½	3	
24				2	2½		3	4	
30					2½		3	4	5
36					2½	3	4	5	
42					2½	3	4	5	
48					2½	3	4	5	20

* For grinding-wheels with diameters $D = 450$ and 500 mm (18 and 20 in), the hole diameter $d = 203.2$ mm (8 in) is permissible for the time being, as a possible substitute for the values shown in the Table.

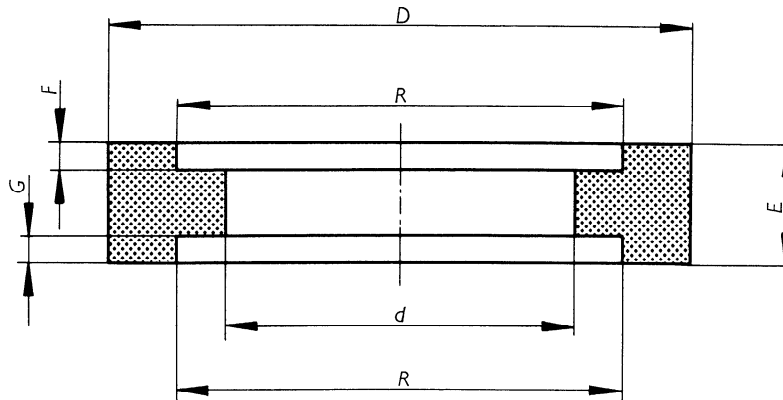
4.2 Plain grinding-wheels with one recess (Type-5)



Dimensions in millimetres					Dimensions in inches				
D	E	d	R	F	D	E	d	R	F
300	40		190	13	12	1½		7½	½
350	40			13	14	1½			½
	50					2			
450*	40	127	215	13	18*	1½	5	8½	½
	50					2			
	63					2½			
	80			25		3			
500*	40			13	20*	1½			½
	50					2			
	63					2½			
	80			25		3			
600	63			13	24	2½	12	15½	½
	80			25		3			1
	100	304.8	390	50		4			2
750	63			13	30	2½			½
	80			25		3			1
	100			50		4			2
900	63			13	36	2½			½
	80			25		3			1
	100			50		4			2

* For grinding-wheels with diameters D = 450 and 500 mm (18 and 20 in), the values of d = 203.2 mm (8 in) and R = 270 mm (10 5/8 in) are permissible for the time being, as possible substitutes for the values shown in the Table.

4.3 Plain grinding-wheels with two recesses (Type 7)



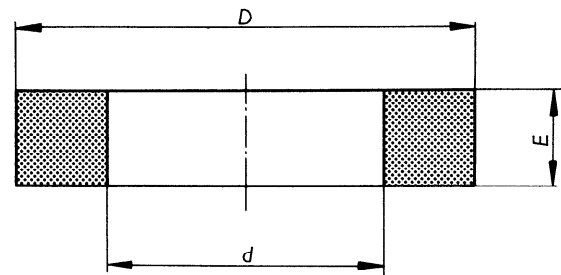
Dimensions in millimetres						Dimensions in inches							
D	E	d	R	F	G	D	E	d	R	F	G		
300	40	127	190	6	6	12	1½	5	7½	¼	¼		
	50			13	13		2		½	½			
350	40	127	215	6	6	14	1½	5	8½	¼	¼		
	50						2						
450*	40	127	215	6	6	18*	1½	5	8½	¼	¼		
	50						2						
	63						2½					½	½
500*	40	127	215	6	6	20*	1½	5	8½	¼	¼		
	50						2						
	63						2½					½	½
	80						3						
600	50	304.8	390	6	6	24	2	12	15½	¼	¼		
	63						2½						
	80						3					½	½
	100						4						
750	80	304.8	390	13	13	30	3	12	15½	½	½		
	100						4					1½	
900	80	304.8	390	13	13	36	3	12	15½	½	½		

* For grinding-wheels with diameters $D = 450$ and 500 mm (18 and 20 in), the values of $d = 203.2$ mm (8 in) and $R = 270$ mm ($10\frac{3}{4}$ in) are permissible for the time being, as possible substitutes for the values shown in the Table.

5. SURFACE GRINDING-WHEELS
(Types 1 and 2)

5.1 Plain grinding-wheels (Type 1)

Dimensions in millimetres									
<i>D</i>	<i>E</i>								<i>d</i>
150	13								32
180*	13								
200	13	20							
250		20	25	32					76.2
300		20	25	32	50	80			127
400				32	50	80	100		
500					50	80	100	160	304.8
600					50	80	100	160	
750					50	80	100	160	
Dimensions in inches									
<i>D</i>	<i>E</i>								<i>d</i>
6	1/2								1.26
7*	1/2								
8	1/2	3/4							
10		3/4	1	1 1/4					3
12		3/4	1	1 1/4	2	3			5
16				1 1/4	2	3	4		
20					2	3	4	6	12
24					2	3	4	6	
30					2	3	4	6	



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NOTE. – A 31.75 mm (1 1/4 in) hole from the transitional series of holes is permissible by special agreement in place of the value *d* = 32 mm (1.26 in) in the adjoining Table.

* Intermediate diameter to be avoided wherever possible.

5.2 Cylinder grinding-wheels (Type 2)

Dimensions in millimetres			Dimensions in inches		
<i>D</i>	<i>E</i>	<i>B</i>	<i>D</i>	<i>E</i>	<i>B</i>
200	100	20	8	4	3/4
250		25	10		1
300		32	12		1 1/4
350	125	40	14	5	1 1/2
400			16		
450			18		

