

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 104

BALL AND ROLLER BEARINGS  
BOUNDARY DIMENSIONS

1<sup>st</sup> EDITION

April 1959

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

## BRIEF HISTORY

The ISO Recommendation R 104, *Ball and Rollers Bearings - Boundary Dimensions*, was drawn up by Technical Committee ISO/TC 4, *Ball and Roller Bearings*, the Secretariat of which is held by the Sveriges Standardiseringskommission (SIS).

The proposals drawn up by the ISO/TC 4 Secretariat for the subject-matter of this ISO Recommendation were discussed by the Technical Committee during its fourth meeting, held in Madrid, in May 1955, and during its fifth meeting, held in Vienna, in September 1956; they were adopted as a Draft ISO Recommendation.

On 15 November 1957, the Draft ISO Recommendation (No 154) was distributed to all the ISO Member Bodies and was approved by the following Member Bodies:

Austria	India	Spain
Bulgaria	Italy	Sweden
Burma	Japan	Switzerland
Canada	Netherlands	Union of
Finland	New Zealand	South-Africa
France	Poland	United Kingdom
Germany	Portugal	U.S.A.
Hungary	Romania	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 April 1959, to accept it as an ISO RECOMMENDATION.

## BALL AND ROLLER BEARINGS

### BOUNDARY DIMENSIONS

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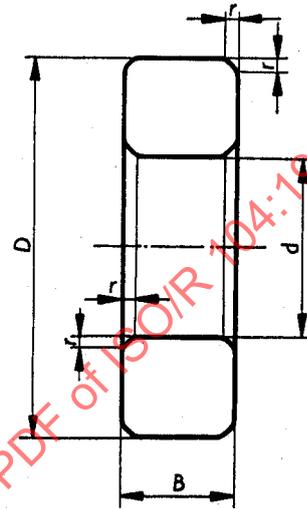
## 1. RADIAL BEARINGS

(except tapered roller bearings)

## INTERMEDIATE BOUNDARY DIMENSIONS

## Symbols

- $d$  = Bearing bore diameter
- $D$  = Bearing outside diameter
- $B$  = Bearing width (inner and outer rings)
- $r$  = Inner and outer ring chamfer dimension (height and width)
- $r_{\min.}$  = Minimum chamfer dimension indicating the maximum shaft or housing fillet radius which the bearing corner will clear
- $r_{\max.}$  = Maximum chamfer dimension indicating the minimum shaft or housing shoulder which the bearing face must contact
- $r_{\text{nominal}}$  = Nominal chamfer dimension



## 1.1 Diameter series 8

Dimensions in millimetres

Bore diameter $d$	Outside diameter $D$	Dimension series													
		08	18	28	38	48	58	68	08			18 — 68			
		Width $B$							Chamfer $r$						
								min.	max.	nomi- nal	min.	max.	nomi- nal		
22	34	4	7	—	10	—	16	22	0.3	0.8	0.5	0.3	0.8	0.5	
28	40	4	7	—	10	—	16	22	0.3	0.8	0.5	0.3	0.8	0.5	
32	44	4	7	—	10	—	16	22	0.3	0.8	0.5	0.3	1	0.5	

## 1.2 Diameter series 9

Dimensions in millimetres

Bore diameter <i>d</i>	Outside diameter <i>D</i>	Dimension series												
		09	19	29	39	49	59	69	09		19 — 69			
		Width <i>B</i>							Chamfer <i>r</i>					
								min.	max.	nomi- nal	min.	max.	nomi- nal	
22	39	7	9	11	13	17	23	30	0.3	0.8	0.5	0.3	1	0.5
28	45	7	9	11	13	17	23	30	0.3	0.8	0.5	0.3	1	0.5
32	52	7	10	13	15	20	27	36	0.3	0.8	0.5	0.6	1.5	1

## 1.3 Diameter series 0

Dimensions in millimetres

Bore diameter <i>d</i>	Outside diameter <i>D</i>	Dimension series												
		00	10	20	30	40	50	60	00		10 — 60			
		Width <i>B</i>							Chamfer <i>r</i>					
								min.	max.	nomi- nal	min.	max.	nomi- nal	
22	44	8	12	14	16	22	30	40	0.3	0.8	0.5	0.6	1.5	1
28	52	8	12	15	18	24	32	43	0.3	1	0.5	0.6	1.5	1
32	58	9	13	16	20	26	35	47	0.3	1	0.5	1	2.2	1.5

## 2. DOUBLE-DIRECTION THRUST BEARINGS WITH FLAT SEATS

### BOUNDARY DIMENSIONS

#### Symbols

$d$  = Maximum shaft shoulder diameter = bore diameter of small-bore washer of corresponding single-direction thrust bearing

$d_1$  = Bore diameter of centre washer

$D$  = Outside diameter of large-bore washers = maximum outside diameter of centre washer

$H$  = Bearing height

$a$  = Thickness of centre washer

$r$  = Chamfer dimension (height and width) of outside surface of large-bore washers

$r_1$  = Chamfer dimension (height and width) of bore of centre washer

$r_{\min.}, r_{1\min.}$  = Minimum chamfer dimension indicating the maximum shaft or housing fillet radius which the bearing corner will clear

$r_{\max.}, r_{1\max.}$  = Maximum chamfer dimension

$r_{\text{nominal}}, r_{1\text{nominal}}$  = Nominal chamfer dimension

