

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 464

ROLLING BEARINGS
BEARINGS WITH LOCATING SNAP RING
DIMENSIONS

1st EDITION
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BRIEF HISTORY

The ISO Recommendation R 464, *Rolling Bearings. Bearings with Locating Snap Ring. Dimensions*, was drawn up by Technical Committee ISO/TC 4, *Rolling Bearings*, the Secretariat of which is held by the Sveriges Standardiseringskommission (SIS).

This ISO Recommendation cancels and replaces section 4 of the ISO Recommendation R 15-1955, *Ball and Roller Bearings*.

Work on this question by the Technical Committee began in 1956 and led, in 1962, to the adoption of a Draft ISO Recommendation.

In October 1962, this Draft ISO Recommendation (No. 360) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	France	Romania
Austria	Germany	Spain
Belgium	Hungary	Sweden
Brazil	India	Switzerland
Bulgaria	Ireland	United Kingdom
Burma	Italy	U.S.A.
Canada	Japan	U.S.S.R.
Chile	Netherlands	Yugoslavia
Czechoslovakia	New Zealand	

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 1965, to accept it as an ISO RECOMMENDATION.

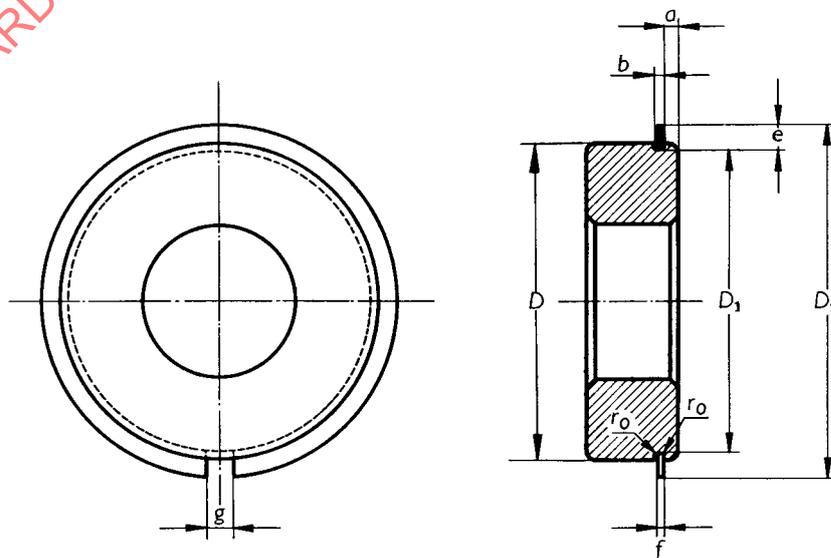
ROLLING BEARINGS
BEARINGS WITH LOCATING SNAP RING
DIMENSIONS

The snap ring groove dimensions and the snap ring dimensions are given as follows:

1. Dimension series 18 and 19 pages 4 and 5
 - 1.1 Snap ring groove dimensions
 - 1.2 Snap ring dimensions
2. Diameter series 0, 2, 3 and 4 pages 6 and 7
 (except dimensions series 00, 82 and 83)
 - 2.1 Snap ring groove dimensions
 - 2.2 Snap ring dimensions.

The following symbols are used:

D	= bearing outside diameter
D_1	= snap ring groove diameter
D_2	= outside diameter of snap ring
a	= snap ring groove location
b	= snap ring groove width
e	= snap ring section height
f	= snap ring thickness
g	= snap ring gap
r_o	= fillet radii at snap ring groove bottom



1. DIMENSION SERIES 18 AND 19

1.1 Snap ring groove dimensions

Dimensions in millimetres

Bearing outside diameter D	Diameter D_1		Distance a				Groove width b		Fillet radii r_o
			Dimension series 18		Dimension series 19		b max.	b min.	
	D_1 max.	D_1 min.	a max.	a min.	a max.	a min.			r_o max.
22	20.8	20.5	—	—	1.05	0.9	1.05	0.8	0.2
24	22.8	22.5	—	—	1.05	0.9	1.05	0.8	0.2
28	26.7	26.4	—	—	1.3	1.15	1.2	0.95	0.25
30	28.7	28.4	—	—	1.3	1.15	1.2	0.95	0.25
32	30.7	30.4	1.3	1.15	—	—	1.2	0.95	0.25
34	32.7	32.4	1.3	1.15	—	—	1.2	0.95	0.25
37	35.7	35.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25
39	37.7	37.4	—	—	1.7	1.55	1.2	0.95	0.25
40	38.7	38.4	1.3	1.15	—	—	1.2	0.95	0.25
42	40.7	40.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25
44	42.7	42.4	1.3	1.15	—	—	1.2	0.95	0.25
45	43.7	43.4	—	—	1.7	1.55	1.2	0.95	0.25
47	45.7	45.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25
52	50.7	50.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25
55	53.7	53.4	—	—	1.7	1.55	1.2	0.95	0.25
58	56.7	56.4	1.3	1.15	—	—	1.2	0.95	0.25
62	60.7	60.3	—	—	1.7	1.55	1.2	0.95	0.25
65	63.7	63.3	1.3	1.15	—	—	1.2	0.95	0.25
68	66.7	66.3	—	—	1.7	1.55	1.2	0.95	0.25
72	70.7	70.3	1.7	1.55	1.7	1.55	1.2	0.95	0.25
78	76.2	75.8	1.7	1.55	—	—	1.6	1.3	0.4
80	77.9	77.5	—	—	2.1	1.9	1.6	1.3	0.4
85	82.9	82.5	1.7	1.55	2.1	1.9	1.6	1.3	0.4
90	87.9	87.5	1.7	1.55	2.1	1.9	1.6	1.3	0.4
95	92.9	92.5	1.7	1.55	—	—	1.6	1.3	0.4
100	97.9	97.5	1.7	1.55	2.5	2.3	1.6	1.3	0.4
105	102.6	102.1	—	—	2.5	2.3	1.6	1.3	0.4
110	107.6	107.1	2.1	1.9	2.5	2.3	1.6	1.3	0.4
115	112.6	112.1	2.1	1.9	—	—	1.6	1.3	0.4
120	117.6	117.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4
125	122.6	122.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4
130	127.6	127.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4
140	137.6	137.1	2.5	2.3	3.3	3.1	2.2	1.9	0.6
145	142.6	142.1	—	—	3.3	3.1	2.2	1.9	0.6
150	147.6	147.1	2.5	2.3	3.3	3.1	2.2	1.9	0.6
165	161.8	161.3	3.3	3.1	3.7	3.5	2.2	1.9	0.6
175	171.8	171.3	3.3	3.1	—	—	2.2	1.9	0.6
180	176.8	176.3	—	—	3.7	3.5	2.2	1.9	0.6
190	186.8	186.3	3.3	3.1	3.7	3.5	2.2	1.9	0.6
200	196.8	196.3	3.3	3.1	—	—	2.2	1.9	0.6

Chamfer at groove side of outer ring should clear a fillet radius of:

- 0.3 mm in dimension series 18 up to and including $D = 78$ mm and
in dimension series 19 up to and including $D = 47$ mm;
- 0.5 mm in dimension series 18 over $D = 78$ mm and
in dimension series 19 over $D = 47$ mm.

1. DIMENSION SERIES 18 AND 19 (concluded)

1.2 Snap ring dimensions

Dimensions in millimetres

Bearing outside diameter D	Diameter * D_2	Snap ring section height e		Snap ring thickness f		g * approx.
	D_2 max.	e max.	e min.	f max.	f min.	
22	24.8	2.0	1.85	0.7	0.6	2
24	26.8	2.0	1.85	0.7	0.6	2
28	30.8	2.05	1.9	0.85	0.75	3
30	32.8	2.05	1.9	0.85	0.75	3
32	34.8	2.05	1.9	0.85	0.75	3
34	36.8	2.05	1.9	0.85	0.75	3
37	39.8	2.05	1.9	0.85	0.75	3
39	41.8	2.05	1.9	0.85	0.75	3
40	42.8	2.05	1.9	0.85	0.75	3
42	44.8	2.05	1.9	0.85	0.75	3
44	46.8	2.05	1.9	0.85	0.75	4
45	47.8	2.05	1.9	0.85	0.75	4
47	49.8	2.05	1.9	0.85	0.75	4
52	54.8	2.05	1.9	0.85	0.75	4
55	57.8	2.05	1.9	0.85	0.75	4
58	60.8	2.05	1.9	0.85	0.75	4
62	64.8	2.05	1.9	0.85	0.75	4
65	67.8	2.05	1.9	0.85	0.75	4
68	70.8	2.05	1.9	0.85	0.75	5
72	74.8	2.05	1.9	0.85	0.75	5
78	82.7	3.25	3.1	1.12	1.02	5
80	84.4	3.25	3.1	1.12	1.02	5
85	89.4	3.25	3.1	1.12	1.02	5
90	94.4	3.25	3.1	1.12	1.02	5
95	99.4	3.25	3.1	1.12	1.02	5
100	104.4	3.25	3.1	1.12	1.02	5
105	110.7	4.04	3.89	1.12	1.02	5
110	115.7	4.04	3.89	1.12	1.02	5
115	120.7	4.04	3.89	1.12	1.02	5
120	125.7	4.04	3.89	1.12	1.02	7
125	130.7	4.04	3.89	1.12	1.02	7
130	135.7	4.04	3.89	1.12	1.02	7
140	145.7	4.04	3.89	1.7	1.6	7
145	150.7	4.04	3.89	1.7	1.6	7
150	155.7	4.04	3.89	1.7	1.6	7
165	171.5	4.85	4.7	1.7	1.6	7
175	181.5	4.85	4.7	1.7	1.6	10
180	186.5	4.85	4.7	1.7	1.6	10
190	196.5	4.85	4.7	1.7	1.6	10
200	206.5	4.85	4.7	1.7	1.6	10

* The dimensions given for D_2 and g apply to mounted snap rings. The rings should fit in the grooves without radial slackness and are therefore somewhat expanded in mounted condition.

2. DIAMETER SERIES 0, 2, 3 AND 4

(except dimension series 00, 82 and 83)

2.1 Snap ring groove dimensions

Dimensions in millimetres

Bearing outside diameter D	Diameter D_1		Distance a				Groove width b		Fillet radii r_o
			Diameter series 0		Diameter series 2, 3 and 4		b max.	b min.	r_o max.
	D_1 max.	D_1 min.	a max.	a min.	a max.	a min.			
30	28.17	27.91	—	—	2.06	1.9	1.65	1.35	0.4
32	30.15	29.9	2.06	1.9	2.06	1.9	1.65	1.35	0.4
35	33.17	32.92	2.06	1.9	2.06	1.9	1.65	1.35	0.4
37	34.77	34.52	—	—	2.06	1.9	1.65	1.35	0.4
40	38.1	37.85	—	—	2.06	1.9	1.65	1.35	0.4
42	39.75	39.5	2.06	1.9	2.06	1.9	1.65	1.35	0.4
44	41.75	41.5	2.06	1.9	—	—	1.65	1.35	0.4
47	44.6	44.35	2.06	1.9	2.46	2.31	1.65	1.35	0.4
50	47.6	47.35	—	—	2.46	2.31	1.65	1.35	0.4
52	49.73	49.48	2.06	1.9	2.46	2.31	1.65	1.35	0.4
55	52.6	52.35	2.08	1.88	—	—	1.65	1.35	0.4
56	53.6	53.35	—	—	2.46	2.31	1.65	1.35	0.4
58	55.6	55.35	2.08	1.88	2.46	2.31	1.65	1.35	0.4
62	59.61	59.11	2.08	1.88	3.28	3.07	2.2	1.9	0.6
65	62.6	62.1	—	—	3.28	3.07	2.2	1.9	0.6
68	64.82	64.31	2.49	2.29	3.28	3.07	2.2	1.9	0.6
72	68.81	68.3	—	—	3.28	3.07	2.2	1.9	0.6
75	71.83	71.32	2.49	2.29	3.28	3.07	2.2	1.9	0.6
80	76.81	76.3	2.49	2.29	3.28	3.07	2.2	1.9	0.6
85	81.81	81.31	—	—	3.28	3.07	2.2	1.9	0.6
90	86.79	86.28	2.87	2.67	3.28	3.07	3	2.7	0.6
95	91.82	91.31	2.87	2.67	—	—	3	2.7	0.6
100	96.8	96.29	2.87	2.67	3.28	3.07	3	2.7	0.6
110	106.81	106.3	2.87	2.67	3.28	3.07	3	2.7	0.6
115	111.81	111.3	2.87	2.67	—	—	3	2.7	0.6
120	115.21	114.71	—	—	4.06	3.86	3.4	3.1	0.6
125	120.22	119.71	2.87	2.67	4.06	3.86	3.4	3.1	0.6
130	125.22	124.71	2.87	2.67	4.06	3.86	3.4	3.1	0.6
140	135.23	134.72	3.71	3.45	4.9	4.65	3.4	3.1	0.6
145	140.23	139.73	3.71	3.45	—	—	3.4	3.1	0.6
150	145.24	144.73	3.71	3.45	4.9	4.65	3.4	3.1	0.6
160	155.22	154.71	3.71	3.45	4.9	4.65	3.4	3.1	0.6
170	163.65	163.14	3.71	3.45	5.69	5.44	3.8	3.5	0.6
180	173.66	173.15	3.71	3.45	5.69	5.44	3.8	3.5	0.6
190	183.64	183.13	—	—	5.69	5.44	3.8	3.5	0.6
200	193.65	193.14	5.69	5.44	5.69	5.44	3.8	3.5	0.6

Chamfer at groove side of outer ring should clear a fillet radius of:

0.3 mm in diameter series 0 up to and including $D = 35$ mm,0.5 mm in diameter series 0 over $D = 35$ mm and for all diameters
in diameter series 2, 3 and 4.

2. DIAMETER SERIES 0, 2, 3 AND 4 (concluded)

2.2 Snap ring dimensions

Dimensions in millimetres

Bearing outside diameter <i>D</i>	Diameter * <i>D_s</i>	Snap ring section height <i>e</i>		Snap ring thickness <i>f</i>		<i>g</i> * approx.
	<i>D_s</i> max.	<i>e</i> max.	<i>e</i> min.	<i>f</i> max.	<i>f</i> min.	
30	34.7	3.25	3.1	1.12	1.02	3
32	36.7	3.25	3.1	1.12	1.02	3
35	39.7	3.25	3.1	1.12	1.02	3
37	41.3	3.25	3.1	1.12	1.02	3
40	44.6	3.25	3.1	1.12	1.02	3
42	46.3	3.25	3.1	1.12	1.02	3
44	48.3	3.25	3.1	1.12	1.02	3
47	52.7	4.04	3.89	1.12	1.02	4
50	55.7	4.04	3.89	1.12	1.02	4
52	57.9	4.04	3.89	1.12	1.02	4
55	60.7	4.04	3.89	1.12	1.02	4
56	61.7	4.04	3.89	1.12	1.02	4
58	63.7	4.04	3.89	1.12	1.02	4
62	67.7	4.04	3.89	1.7	1.6	4
65	70.7	4.04	3.89	1.7	1.6	4
68	74.6	4.85	4.7	1.7	1.6	5
72	78.6	4.85	4.7	1.7	1.6	5
75	81.6	4.85	4.7	1.7	1.6	5
80	86.6	4.85	4.7	1.7	1.6	5
85	91.6	4.85	4.7	1.7	1.6	5
90	96.5	4.85	4.7	2.46	2.36	5
95	101.6	4.85	4.7	2.46	2.36	5
100	106.5	4.85	4.7	2.46	2.36	5
110	116.6	4.85	4.7	2.46	2.36	5
115	121.6	4.85	4.7	2.46	2.36	5
120	129.7	7.21	7.06	2.82	2.72	7
125	134.7	7.21	7.06	2.82	2.72	7
130	139.7	7.21	7.06	2.82	2.72	7
140	149.7	7.21	7.06	2.82	2.72	7
145	154.7	7.21	7.06	2.82	2.72	7
150	159.7	7.21	7.06	2.82	2.72	7
160	169.7	7.21	7.06	2.82	2.72	7
170	182.9	9.6	9.45	3.1	3	10
180	192.9	9.6	9.45	3.1	3	10
190	202.9	9.6	9.45	3.1	3	10
200	212.9	9.6	9.45	3.1	3	10

* The dimensions given for *D_s* and *g* apply to mounted snap rings. The rings should fit in the grooves without radial slackness and are therefore somewhat expanded in mounted condition.

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