

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 355

PART 1

**iTeh STANDARD PREVIEW**  
ROLLING BEARINGS  
(standards.iteh.ai)  
TAPERED ROLLER BEARINGS  
BOUNDARY DIMENSIONS

<https://standards.iteh.ai/catalog/standards/sist/8d7bbeeb-22c0-463c-ab79-e57f67bd976e/iso-r-355-1-1963>

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ISO/R 355-1:1963

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## BRIEF HISTORY

The ISO Recommendation R 355, *Tapered Roller 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).

Work on this question by the Technical Committee began in 1949 and led to the presentation of two Draft ISO Recommendations, one concerning Metric Series and the other Inch Series.

In November 1957, the Draft ISO Recommendation concerning the Metric Series (No. 154, chapters 2 and 3), was circulated to all the ISO Member Bodies for enquiry. As the results of this consultation were not considered satisfactory, the Technical Committee presented a second Draft ISO Recommendation, which was circulated to all the Member Bodies in January 1959, and which was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Austria	Germany	Spain
Brazil	Hungary	Sweden
Burma	India	Switzerland
Canada	Italy	Republic of
Czechoslovakia	Japan	South Africa
Finland	Poland	United Kingdom
France	Romania	U.S.S.R.

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

The Draft ISO Recommendation concerning the Inch Series (No. 279), was circulated in May 1959 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:

Australia	Greece	Romania
Austria	Hungary	Spain
Burma	India	Sweden
Canada	Italy	Switzerland
Chile	Japan	United Kingdom
Czechoslovakia	Netherlands	U.S.A.
France	Poland	
Germany	Portugal	

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

These two combined Draft ISO Recommendations were then submitted by correspondence to the ISO Council, which decided, in December 1963, to accept them as an ISO RECOMMENDATION.

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iTeh STANDARD PREVIEW

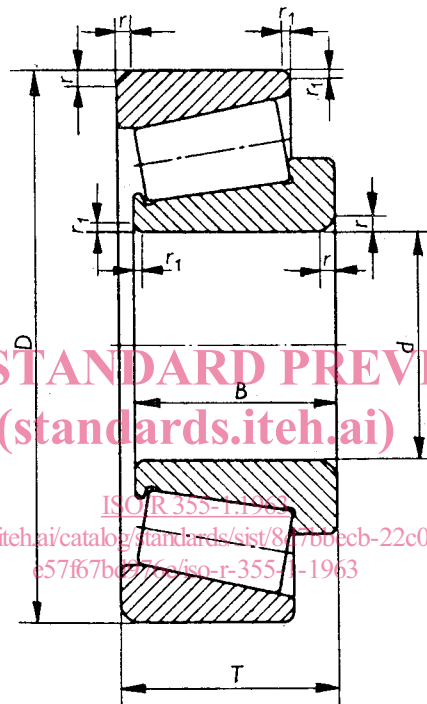
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**ROLLING BEARINGS**  
**TAPERED ROLLER BEARINGS**  
**BOUNDARY DIMENSIONS**

**1. METRIC SERIES**



$d$  = bearing bore diameter

$D$  = bearing outside diameter

$B$  = inner ring width

$T$  = bearing width \* (width over bearing rings)

$r$  = chamfer dimension \*\* (height and width) on inner and outer ring backfaces

$r_1$  = chamfer dimension \*\* (height and width) on inner and outer ring frontfaces

\* Attention is called to the fact that the cage may project beyond the bearing width.

\*\* Nominal chamfer dimensions do not control the shape of the bearing corner.

## 1.1 Diameter series 2

## 1.1.1 Dimensions in millimetres

Bore diameter <i>d</i>	Outside diameter <i>D</i>	Dimension series				Chamfer	
		02		22		<i>r</i> nominal	<i>r</i> <sub>1</sub> nominal
		Inner ring width <i>B</i>	Bearing width <i>T</i>	Inner ring width <i>B</i>	Bearing width <i>T</i>		
10	30	9	9.7	14	14.7	1	0.3
12	32	10	10.75	14	14.75	1	0.3
15	35	11	11.75	14	14.75	1	0.3
17	40	12	13.25	16	17.25	1.5	0.5
20	47	14	15.25	18	19.25	1.5	0.5
22	50	14	15.25	18	19.25	1.5	0.5
25	52	15	16.25	18	19.25	1.5	0.5
28	58	16	17.25	19	20.25	1.5	0.5
30	62	16	17.25	20	21.25	1.5	0.5
32	65	17	18.25	21	22.25	1.5	0.5
35	72	17	18.25	23	24.25	2	0.8
40	80	18	19.75	23	24.75	2	0.8
45	85	19	20.75	23	24.75	2	0.8
50	90	20	21.75	23	24.75	2	0.8
55	100	21	22.75	25	26.75	2.5	0.8
60	110	22	23.75	28	29.75	2.5	0.8
65	120	23	24.75	31	32.75	2.5	0.8
70	125	24	26.25	31	33.25	2.5	0.8
75	130	25	27.25	31	33.25	2.5	0.8
80	140	26	28.25	33	35.25	3	1
85	150	28	30.5	36	38.5	3	1
90	160	30	32.5	40	42.5	3	1
95	170	32	34.5	43	45.5	3.5	1.2
100	180	34	37	46	49	3.5	1.2
105	190	36	39	50	53	3.5	1.2
110	200	38	41	53	56	3.5	1.2
120	215	—	—	58	61.5	3.5	1.2
130	230	—	—	64	67.75	4	1.5
140	250	—	—	68	71.75	4	1.5
150	270	—	—	73	77	4	1.5

## 1.1.2 Dimensions in inches

Bore diameter $d$	Outside diameter $D$	Dimension series				Chamfer	
		02		22		$r$ nominal	$r_1$ nominal
		Inner ring width $B$	Bearing width $T$	Inner ring width $B$	Bearing width $T$		
0.39370	1.18110	0.3543	0.3819	0.5512	0.5787	0.039	0.012
0.47244	1.25984	0.3937	0.4232	0.5512	0.5807	0.039	0.012
0.59055	1.37795	0.4331	0.4626	0.5512	0.5807	0.039	0.012
0.66929	1.57480	0.4724	0.5217	0.6299	0.6791	0.059	0.020
0.78740	1.85039	0.5512	0.6004	0.7087	0.7579	0.059	0.020
0.86614	1.96850	0.5512	0.6004	0.7087	0.7579	0.059	0.020
0.98425	2.04724	0.5906	0.6398	0.7087	0.7579	0.059	0.020
1.10236	2.28346	0.6299	0.6791	0.7480	0.7972	0.059	0.020
1.18110	2.44094	0.6299	0.6791	0.7874	0.8366	0.059	0.020
1.25984	2.55906	0.6693	0.7185	0.8268	0.8760	0.059	0.020
1.37795	2.83465	0.6693	0.7185	0.9055	0.9547	0.079	0.031
1.57480	3.14961	0.7087	0.7776	0.9055	0.9744	0.079	0.031
1.77165	3.34646	0.7480	0.8169	0.9055	0.9744	0.079	0.031
1.96850	3.54331	0.7874	0.8563	0.9055	0.9744	0.079	0.031
2.16535	3.93701	0.8268	0.8957	0.9843	1.0531	0.098	0.031
2.36220	4.33071	0.8661	0.9350	1.1024	1.1713	0.098	0.031
2.55906	4.72441	0.9055	0.9744	1.2205	1.2894	0.098	0.031
2.75591	4.92126	0.9449	1.0335	1.2205	1.3091	0.098	0.031
2.95276	5.11811	0.9843	1.0728	1.2205	1.3091	0.098	0.031
3.14961	5.51181	1.0236	1.1122	1.2992	1.3878	0.118	0.039
3.34646	5.90551	1.1024	1.2008	1.4173	1.5157	0.118	0.039
3.54331	6.29921	1.1811	1.2795	1.5748	1.6732	0.118	0.039
3.74016	6.69291	1.2598	1.3583	1.6929	1.7913	0.138	0.047
3.93701	7.08661	1.3386	1.4567	1.8110	1.9291	0.138	0.047
4.13356	7.48031	1.4173	1.5354	1.9685	2.0866	0.138	0.047
4.33071	7.87402	1.4961	1.6142	2.0866	2.2047	0.138	0.047
4.72441	8.46457	—	—	2.2835	2.4213	0.138	0.047
5.11811	9.05512	—	—	2.5197	2.6673	0.157	0.059
5.51181	9.84252	—	—	2.6772	2.8248	0.157	0.059
5.90551	10.62992	—	—	2.8740	3.0315	0.157	0.059

## 1.2 Diameter series 3

## 1.2.1 Dimensions in millimetres

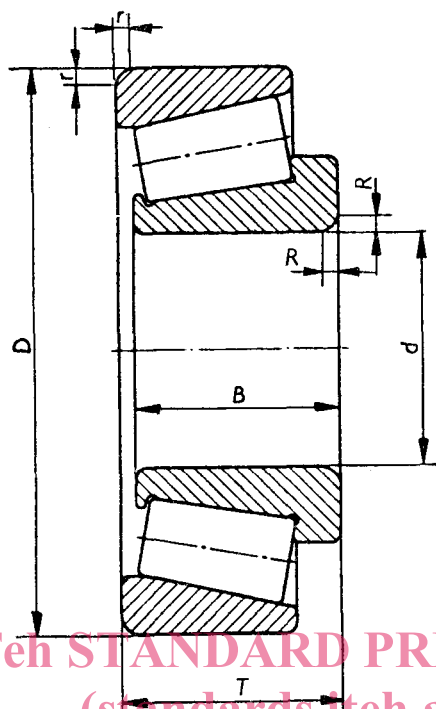
Bore diameter <i>d</i>	Outside diameter <i>D</i>	Dimension series				Chamfer	
		03		23		<i>r</i> nominal	<i>r</i> <sub>1</sub> nominal
		Inner ring width <i>B</i>	Bearing width <i>T</i>	Inner ring width <i>B</i>	Bearing width <i>T</i>		
10	35	11	11.9	17	17.9	1	0.3
12	37	12	12.9	17	17.9	1.5	0.5
15	42	13	14.25	17	18.25	1.5	0.5
17	47	14	15.25	19	20.25	1.5	0.5
20	52	15	16.25	21	22.25	2	0.8
22	56	16	17.25	21	22.25	2	0.8
25	62	17	18.25	24	25.25	2	0.8
28	68	18	19.75	24	25.75	2	0.8
30	72	19	20.75	27	28.75	2	0.8
32	75	20	21.75	28	29.75	2	0.8
35	80	21	22.75	31	32.75	2.5	0.8
40	90	23	25.25	33	35.25	2.5	0.8
45	100	25	27.25	36	38.25	2.5	0.8
50	110	27	29.25	40	42.25	3	1
55	120	29	31.5	43	45.5	3	1
60	130	31	33.5	46	48.5	3.5	1.2
65	140	33	36	48	51	3.5	1.2
70	150	35	38	51	54	3.5	1.2
75	160	37	40	55	58	3.5	1.2
80	170	39	42.5	58	61.5	3.5	1.2
85	180	41	44.5	60	63.5	4	1.5
90	190	43	46.5	64	67.5	4	1.5
95	200	45	49.5	67	71.5	4	1.5
100	215	—	—	73	77.5	4	1.5
105	225	—	—	77	81.5	4	1.5
110	240	—	—	80	84.5	4	1.5
120	260	—	—	86	90.5	4	1.5
130	280	—	—	93	98.75	5	2
140	300	—	—	102	107.75	5	2
150	320	—	—	108	114	5	2



## 1.2.2 Dimensions in inches

Bore diameter $d$	Outside diameter $D$	Dimension series				Chamfer	
		03		23		$r$ nominal	$r_1$ nominal
		Inner ring width $B$	Bearing width $T$	Inner ring width $B$	Bearing width $T$		
0.39370	1.37795	0.4331	0.4635	0.6693	0.7047	0.039	0.012
0.47244	1.45669	0.4724	0.5079	0.6693	0.7047	0.059	0.020
0.59055	1.65354	0.5118	0.5610	0.6693	0.7185	0.059	0.020
0.66929	1.85039	0.5512	0.6004	0.7480	0.7972	0.059	0.020
0.78740	2.04724	0.5906	0.6398	0.8268	0.8760	0.079	0.031
0.86614	2.20472	0.6299	0.6791	0.8268	0.8760	0.079	0.031
0.98425	2.44094	0.6693	0.7185	0.9449	0.9941	0.079	0.031
1.10236	2.67717	0.7087	0.7776	0.9449	1.0138	0.079	0.031
1.18110	2.83465	0.7480	0.8169	1.0630	1.1319	0.079	0.031
1.25984	2.95276	0.7874	0.8563	1.1024	1.1713	0.079	0.031
1.37795	3.14961	0.8268	0.8957	1.2205	1.2894	0.098	0.031
1.57480	3.54331	0.9055	0.9941	1.2992	1.3878	0.098	0.031
1.77165	3.93701	0.9843	1.0728	1.4173	1.5059	0.098	0.031
1.96850	4.33071	1.0630	1.1516	1.5748	1.6634	0.118	0.039
2.16535	4.72441	1.1417	1.2402	1.6929	1.7913	0.118	0.039
2.36220	5.11811	1.2205	1.3189	1.8110	1.9094	0.138	0.047
2.55906	5.51181	1.2992	1.4173	1.8898	2.0079	0.138	0.047
2.75591	5.90551	1.3780	1.4961	2.0079	2.1260	0.138	0.047
2.95276	6.29921	1.4567	1.5748	2.1654	2.2835	0.138	0.047
3.14961	6.69291	1.5354	1.6732	2.2835	2.4213	0.138	0.047
3.34646	7.08661	1.6142	1.7520	2.3622	2.5000	0.157	0.059
3.54331	7.48031	1.6929	1.8307	2.5197	2.6575	0.157	0.059
3.74016	7.87402	1.7717	1.9488	2.6378	2.8150	0.157	0.059
3.93701	8.46457	—	—	2.8740	3.0512	0.157	0.059
4.13356	8.85827	—	—	3.0315	3.2087	0.157	0.059
4.33071	9.44882	—	—	3.1496	3.3268	0.157	0.059
4.72441	10.23622	—	—	3.3858	3.5630	0.157	0.059
5.11811	11.02362	—	—	3.6614	3.8878	0.197	0.079
5.51181	11.81102	—	—	4.0157	4.2421	0.197	0.079
5.90551	12.59843	—	—	4.2520	4.4882	0.197	0.079

## 2. INCH SERIES



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$d$  = bearing bore diameter

$D$  = bearing outside diameter

$B$  = inner ring width

$T$  = bearing width \* (width over bearing rings)

$R$  = chamfer dimension \*\* (height and width) on inner ring backface

$r$  = chamfer dimension \*\* (height and width) on outer ring backface

\* Attention is called to the fact that the cage may project beyond the bearing width.

\*\* Chamfer dimensions do not control the shape of the bearing corner (see, however, definition of "Low limit" in the relevant ISO Recommendation).

## 2.1 Line 1

## 2.1.1 Dimensions in inches

Bore diameter $d$	Outside diameter $D$	Inner ring width $B$	Bearing width $T$	Chamfer	
				$R_{\min.}^*$	$r_{\min.}^{**}$
0.625	1.4380	0.4375	0.4375	0.062	0.062
0.750	1.6250	0.4391	0.4687	0.040	0.046
0.875	1.8750	0.5625	0.5625	0.062	0.062
1.000	1.9687	0.5614	0.5625	0.040	0.062
1.125	2.1875	0.5625	0.5625	0.062	0.062
1.250	2.3280	0.6600	0.6250	0.140	0.046
1.375	2.5625	0.7200	0.7100	0.140	0.046
1.500	2.7170	0.7500	0.7100	0.078	0.062
1.750	2.8750	0.7188	0.7188	0.062	0.062
2.000	3.1875	0.7188	0.7188	0.062	0.062
2.250	3.5000	0.7188	0.7500	0.062	0.062
2.500	3.7500	0.7500	0.8125	0.062	0.062
2.750	4.2500	0.9688	0.9688	0.062	0.062
3.000	4.5625	1.0625	1.0625	0.062	0.062
3.500	5.1250	1.1250	1.1250	0.093	0.093
4.000	5.7500	1.2500	1.2500	0.093	0.093
4.500	6.5625	1.4375	1.4375	0.125	0.125
5.000	7.1875	1.5000	1.5625	0.140	0.125
5.500	7.8750	1.5625	1.6250	0.140	0.125
6.000	8.3750	1.6250	1.6250	0.140	0.125

\*  $R_{\min.}$  = minimum chamfer dimension indicating the maximum shaft fillet radius, which the bearing corner will clear.

\*\*  $r_{\min.}$  = minimum chamfer dimension indicating the maximum housing fillet radius, which the bearing corner will clear.