
INTERNATIONAL STANDARD



578

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Rolling bearings — Tapered roller bearings — Inch series — Tolerance classes 4 (normal tolerance), 3, 0 and 00

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Descriptors : rolling bearings, roller bearings, taper roller bearings, dimensional tolerances.

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.

International Standard ISO 578 (originally Draft International Standard ISO/DIS 2263) was drawn up by Technical Committee ISO/TC 4, *Rolling bearings*.

It was approved in September 1971 by the Member Bodies of the following countries :

Australia	Germany	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	India	Spain
Canada	Ireland	Sweden
Czechoslovakia	Italy	Switzerland
Egypt, Arab Rep. of	Korea, Rep. of	Thailand
France	Netherlands	United Kingdom

The Member Body of the following country expressed disapproval of the document on technical grounds :

U.S.S.R.

This International Standard cancels and replaces ISO Recommendation R 578/I-1969.

Rolling bearings – Tapered roller bearings – Inch series – Tolerance classes 4 (normal tolerance), 3, 0 and 00

1 SCOPE AND FIELD OF APPLICATION

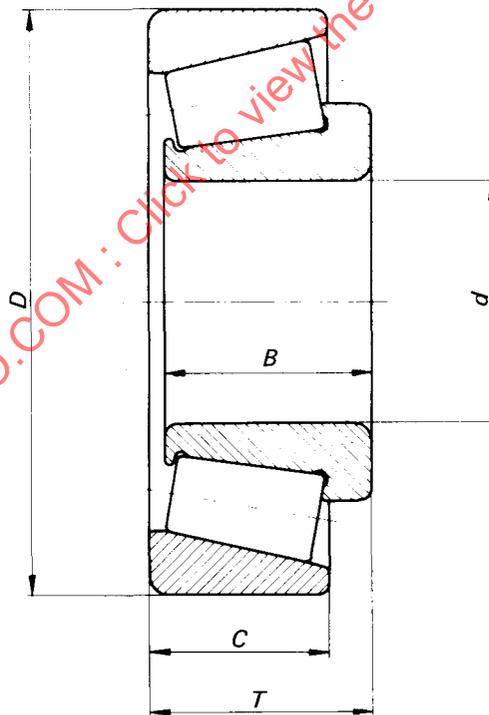
This International Standard specifies the tolerances for boundary dimensions and running accuracy of tapered roller bearings of the inch series, tolerance classes 4 (normal tolerance), 3, 0 and 00.

Tolerances for chamfer dimensions are given in ISO/R 1123.

2 REFERENCE

ISO/R 1123, *Rolling bearings – Tapered roller bearings – Inch series – Chamfer dimension limits.*

3 SYMBOLS



d = bearing bore diameter, nominal

D = bearing outside diameter, nominal

B = inner ring width, nominal

C = outer ring width, nominal

T = bearing width (width over bearing rings), nominal

NOTE – The cage may project beyond the bearing width.

4 TOLERANCES

4.1 Inner ring bore, inner ring width and bearing width

SYMBOLS

Δ_{ds} = the deviation of a single bore diameter

Δ_{Bs} = the deviation of a single inner ring width

Δ_{Tm} = the bearing width deviation

TABLE 1

Tolerance class	d		Δ_{ds}		Δ_{Bs}		Δ_{Tm}	
	over	incl.	high	low	high	low	high	low
4	inches		Values in 0.000 1 inch					
	0	3	+ 5	0	+ 30	- 100	+ 80	0
	(3)	4	+ 10	0	+ 30	- 100	+ 80	0
	(4)	6	+ 10	0	+ 30	- 100	+ 140	- 100
3	0	6	+ 5	0	+ 30	- 100	+ 80	- 80
0	0	6	+ 5	0	+ 30	- 100	+ 80	- 80
00	0	6	+ 3	0	+ 30	- 100	+ 80	- 80
4	millimetres		Values in micrometres					
	0	76,2	+ 13	0	+ 76	- 254	+ 203	0
	(76,2)	101,6	+ 25	0	+ 76	- 254	+ 203	0
	(101,6)	152,4	+ 25	0	+ 76	- 254	+ 356	- 254
	3	0	152,4	+ 13	0	+ 76	- 254	+ 203
0	0	152,4	+ 13	0	+ 76	- 254	+ 203	- 203
00	0	152,4	+ 8	0	+ 76	- 254	+ 203	- 203

4.2 Outer ring outside diameter, outer ring width and assembled bearing run-outs

SYMBOLS

Δ_{Ds} = the deviation of a single outside diameter

Δ_{Cs} = the deviation of a single outer ring width

K_{ia} = the radial run-out of an assembled bearing inner ring

K_{ea} = the radial run-out of an assembled bearing outer ring

S_{ia} = the raceway run-out with backface of an assembled bearing inner ring

S_{ea} = the raceway run-out with backface of an assembled bearing outer ring.

TABLE 2

Tolerance class	D		Δ_{Ds}		Δ_{Cs}		K_{ia} K_{ea}	S_{ia} S_{ea}
	over	incl.	high	low	high	low	max.	max.
4	inches		Values in 0.000 1 inch					
	0 (12)	12 14	+ 10 + 20	0 0	+ 20 + 20	- 100 - 100	20 20	20 20
3	0 (12)	12 14	+ 5 + 10	0 0	+ 20 + 20	- 100 - 100	3 7	3 7
	0	12	+ 5	0	+ 20	- 100	1.5	1.5
00	0	10.5	+ 3	0	+ 20	- 100	0.75	0.75
4	millimetres		Values in micrometres					
	0 (304,8)	304,8 355,6	+ 25 + 51	0 0	+ 51 + 51	- 254 - 254	51 51	51 51
3	0 (304,8)	304,8 355,6	+ 13 + 25	0 0	+ 51 + 51	- 254 - 254	8 18	8 18
	0	304,8	+ 13	0	+ 51	- 254	4	4
00	0	266,7	+ 8	0	+ 51	- 254	2	2

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