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INTERNATIONAL STANDARD ISO 3097

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Rolling bearings — Radial needle roller bearings — Metric series — Dimension series 48 and 49 — Tolerances — Normal tolerance class

Roulements — Roulements à aiguilles — Séries métriques — Séries de dimensions 48 et 49 — Tolérances — Classe de tolérances normales

First edition — 1974-08-01

UDC 621.822.8

Ref. No. ISO 3097-1974 (E)

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

Price based on 2 pages

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 3097 was drawn up by Technical Committee ISO/TC 4, *Rolling bearings,* and circulated to the Member Bodies in February 1973.

It has been approved by the Member Bodies of the following countries :

Australia	Hungary	Spain
Austria	India	Sweden
Belgium	Italy	Switzerland
Brazil	Japan	Thailand
Bulgaria	Mexico	Turkey
Canada	Netherlands	United Kingdom
France	Poland	U.S.S.R.
Germany	Romania	

This International Standard has also been approved by the International Union of Railways (UIC).

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

U.S.A.

Printed in Switzerland

Rolling bearings — Radial needle roller bearings — Metric series — Dimension series 48 and 49 — Tolerances — Normal tolerance class

1 SCOPE AND FIELD OF APPLICATION

This International Standard gives the tolerances for complete radial needle roller bearings in dimension series 48 and 49, for which the boundary dimensions are given in ISO/R 1206.

In addition, this International Standard gives the tolerances for such needle roller bearings without inner rings, which have dimensions related to dimension series 49 and given in ISO/R 1206.

It does not apply to drawn cup needle roller bearings

2 SYMBOLS

d = the inner ring bore diameter, nominal

Δ_{dmp} = the deviation of a single mean bore diameter[1] of the inner ring (difference between a single mean bore diameter and the nominal bore diameter)

V_{dmp} = the variation of single mean bore diameter[1] of the inner ring (difference between the largest and the smallest actual single mean bore diameters)

D = *the outer ring outside diameter, nominal*

Δ_{Dmp} = the deviation of a single mean outside diameter[1] of the outer ring

V_{Dmp} = the variation of single mean outside diameter[1] of the outer ring

F_w = the needle roller complement bore diameter, nominal

F_{wmin} = the smallest single diameter of the needle roller complement bore[2]

Δ_{Fwmin} = the deviation of the smallest single diameter of the needle roller complement bore (difference between F_{wmin} and F_w)

B = the inner ring width, nominal

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

V_{Bs} = the variation of the inner ring width

C = the outer ring width, nominal

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

V_{Cs} = the variation of the outer ring width

K_{ia} = the radial runout of an assembled bearing inner ring

K_{ea} = the radial runout of an assembled bearing outer ring

3 TOLERANCE VALUES

TABLE 1 — **Inner ring**

Deviations and variations in micrometres

d mm		Δ_{dmp}		V_{dmp}	K_{ia}	Δ_{Bs}		V_{Bs}
over	incl.	high	low	max.	max.	high	low	max.
2,5	10	0	− 8	4	10	0	− 120	15
10	18	0	− 8	4	10	0	− 120	20
18	30	0	− 10	5	13	0	− 120	20
30	50	0	− 12	6	15	0	− 120	20
50	80	0	− 15	8	20	0	− 150	25
80	120	0	− 20	10	25	0	− 200	25
120	180	0	− 25	13	30	0	− 250	30
180	250	0	− 30	15	40	0	− 300	30
250	315	0	− 35	18	50	0	− 350	35
315	400	0	− 40	20	60	0	− 400	40

1) "single mean diameter" is defined as the mean diameter in a single radial plane.

2) "the smallest single diameter of the needle roller complement bore" is defined as the diameter of the cylinder which, when used as bearing inner ring, results in zero bearing radial internal clearance in at least one radial direction.