
International Standard



3031

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

Needle roller bearings — Thrust needle roller and cage assemblies, thrust washers — Dimensions and tolerances

Roulements à aiguilles — Cages à aiguilles axiales et plaques de butée — Dimensions et tolérances

Second edition — 1979-10-15

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Descriptors : bearings, rolling bearings, needle bearings, thrust bearings, dimensions, 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 3031 was developed by Technical Committee ISO/TC 4, *Rolling bearings*, and was circulated to the member bodies in August 1978.

It has been approved by the member bodies of the following countries :

| | | |
|----------------|------------------------|----------------|
| Australia | India | Spain |
| Austria | Italy | Sweden |
| Belgium | Korea, Dem. P. Rep. of | Switzerland |
| Canada | Mexico | United Kingdom |
| Chile | Netherlands | USA |
| Czechoslovakia | Poland | USSR |
| France | Romania | Yugoslavia |
| Hungary | South Africa, Rep. of | |

The member body of the following country expressed disapproval of the document on technical grounds :

Germany, F.R.

This second edition cancels and replaces the first edition (i.e. ISO 3031-1974).

Needle roller bearings — Thrust needle roller and cage assemblies, thrust washers — Dimensions and tolerances

1 Scope and field of application

This International Standard lays down the boundary dimensions and tolerances for thrust needle roller and cage assemblies. Furthermore, it recommends dimensions and tolerances for thrust washers, i.e. raceway members, which can be used either as shaft or housing washers.

3.2 Dimensions and tolerances

Table 1 — Dimensions and tolerances of thrust needle roller and cage assemblies

Dimensions in millimetres

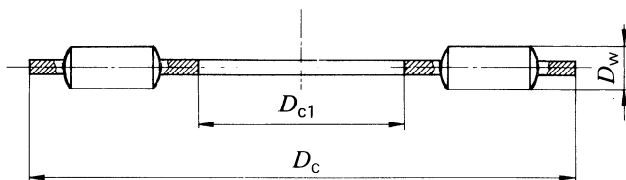
| D_{c1} E11 | D_c c12 | D_w |
|-----------------|--------------|-------|
| 6 | 19 | 2 |
| 7 | 20 | 2 |
| 8 | 21 | 2 |
| 9 | 22 | 2 |
| 10 | 24 | 2 |
| 12 | 26 | 2 |
| 14 | 27 | 2 |
| 15 | 28 | 2 |
| 16 | 29 | 2 |
| 17 | 30 | 2 |
| 18 | 31 | 2 |
| 20 | 35 | 2 |
| 22 | 37 | 2 |
| 25 | 42 | 2 |
| 28 | 45 | 2 |
| 30 | 47 | 2 |
| 32 | 49 | 2 |
| 35 | 52 | 2 |
| 40 | 60 | 3 |
| 45 | 65 | 3 |
| 50 | 70 | 3 |
| 55 | 78 | 3 |
| 60 | 85 | 3 |
| 65 | 90 | 3 |
| 70 | 95 | 4 |
| 75 | 100 | 4 |
| 80 | 105 | 4 |
| 85 | 110 | 4 |
| 90 | 120 | 4 |
| 100 | 135 | 4 |
| 110 | 145 | 4 |
| 120 | 155 | 4 |
| 130 | 170 | 5 |
| 140 | 180 | 5 |
| 150 | 190 | 5 |
| 160 | 200 | 5 |

2 Reference

ISO 199, *Rolling bearings — Thrust ball bearings — Tolerances.*

3 Thrust needle roller and cage assemblies

3.1 Symbols



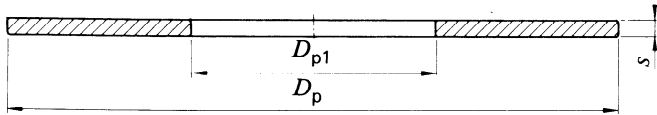
D_c = cage outside diameter, nominal

D_{c1} = cage bore diameter, nominal

D_w = needle roller diameter, nominal

4 Thrust washers

4.1 Symbols



D_p = thrust washer outside diameter, nominal
 D_{p1} = thrust washer bore diameter, nominal
 s = thrust washer thickness, nominal

4.2 Dimensions and tolerances

Table 2 – Dimensions and tolerances of thrust washers
 Dimensions in millimetres

| D_{p1} E12 | D_p e13 | s | |
|-----------------|--------------|----------------------|---|
| | | a | b |
| | | $_{-0.012}^{+0.012}$ | |
| 6 | 19 | 0,8 | 1 |
| 7 | 20 | 0,8 | 1 |
| 8 | 21 | 0,8 | 1 |
| 9 | 22 | 0,8 | 1 |
| 10 | 24 | 0,8 | 1 |
| 12 | 26 | 0,8 | 1 |
| 14 | 27 | 0,8 | 1 |
| 15 | 28 | 0,8 | 1 |
| 16 | 29 | 0,8 | 1 |
| 17 | 30 | 0,8 | 1 |
| 18 | 31 | 0,8 | 1 |
| 20 | 35 | 0,8 | 1 |
| 22 | 37 | 0,8 | 1 |
| 25 | 42 | 0,8 | 1 |
| 28 | 45 | 0,8 | 1 |
| 30 | 47 | 0,8 | 1 |
| 32 | 49 | 0,8 | 1 |
| 35 | 52 | 0,8 | 1 |
| 40 | 60 | 0,8 | 1 |
| 45 | 65 | 0,8 | 1 |
| 50 | 70 | 0,8 | 1 |
| 55 | 78 | 0,8 | 1 |
| 60 | 85 | 0,8 | 1 |
| 65 | 90 | 0,8 | 1 |
| 70 | 95 | 0,8 | 1 |
| 75 | 100 | 0,8 | 1 |
| 80 | 105 | 0,8 | 1 |
| 85 | 110 | 0,8 | 1 |
| 90 | 120 | 0,8 | 1 |
| 100 | 135 | — | 1 |
| 110 | 145 | — | 1 |
| 120 | 155 | — | 1 |
| 130 | 170 | — | 1 |
| 140 | 180 | — | 1 |
| 150 | 190 | — | 1 |
| 160 | 200 | — | 1 |

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