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**Rolling bearings — Needle roller bearing  
track rollers — Boundary dimensions and  
tolerances**

*Roulements — Roulements à aiguilles, galets de came — Dimensions  
d'encombrement et tolérances*

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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 7063 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*, Subcommittee SC 5, *Needle roller bearings*.

This second edition cancels and replaces the first edition (ISO 7063:1982), which has been technically revised, as well as ISO 6278:1980, which has been withdrawn.

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# Rolling bearings — Needle roller bearing track rollers — Boundary dimensions and tolerances

## 1 Scope

This International Standard specifies the boundary dimensions and the tolerances of needle roller bearing track rollers, yoke and stud types.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1132-1:2000, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 5593:1997, *Rolling bearings — Vocabulary*

ISO 15241:2001, *Rolling bearings — Symbols for quantities*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1132-1 and ISO 5593 apply.

## 4 Symbols

For the purposes of this document, the symbols listed in ISO 15241 and the following apply.

The symbols (except those for tolerances) shown in Figures 1 and 2, and the values given in Tables 1 to 8 denote nominal dimensions unless specified otherwise.

$B$	overall width of inner ring and side washers of yoke-type track roller
$B_1$	distance from face of stud to face of side washer of stud-type track roller
$B_2$	length of shank on stud
$B_3$	distance from face of side washer to centre of radial lubrication hole
$C$	outer ring width
$C_1$	distance from face of outer ring to face of side washer
$D$	outside diameter of outer ring
$d$	bore diameter
$d_1$	stud diameter
$G$	designation of thread on stud

$K_{ea}$	radial runout of outer ring of assembled track roller
$l_G$	length of thread on stud
$r$	chamfer dimension of outer ring, radial and axial
$r_{s \min}$	smallest single chamfer dimension on outer ring
$r_1$	chamfer dimension of inner ring, radial and axial
$r_{1s \min}$	smallest single chamfer dimension on inner ring
$\Delta_{Bs}$	deviation of a single overall width of inner ring and side washers
$\Delta_{B2s}$	deviation of a single shank length
$\Delta_{Cs}$	deviation of a single outer ring width
$\Delta_{Dmp}$	deviation of mean outside diameter in a single plane
$\Delta_{dmp}$	deviation of mean bore diameter in a single plane
$\Delta_{d1s}$	deviation of a single stud diameter

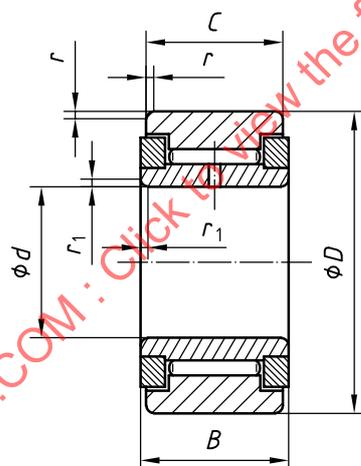


Figure 1 — Yoke-type

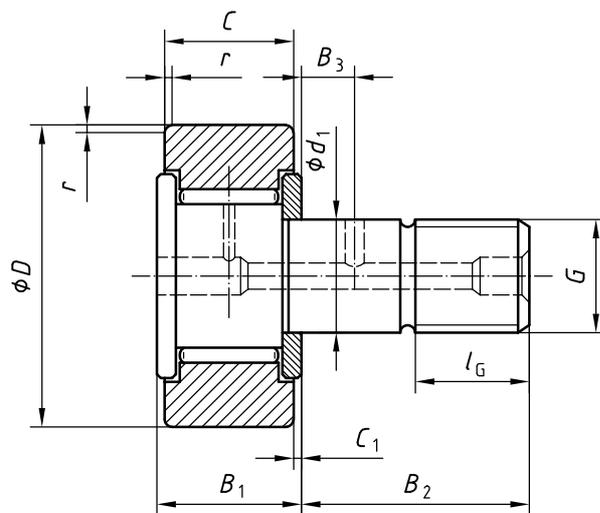


Figure 2 — Stud-type

5 Boundary dimensions

5.1 Track rollers — Yoke-type

Boundary dimensions for the yoke-type are given in Tables 1 and 2.

NOTE The track rollers may be manufactured with or without a cage and with or without seals.

Table 1 — Track rollers — Yoke-type — Light series

Dimensions in millimetres

$D^a$	$d$	$B$	$C$	$r_{s\ min}^b$	$r_{1s\ min}^{b, c}$
16	5	12	11	0,15	0,15
19	6	12	11	0,15	0,15
24	8	15	14	0,3	0,3
30	10	15	14	0,6	0,3
32	12	15	14	0,6	0,3
35	15	19	18	0,6	0,3
40	17	21	20	1	0,3
47	20	25	24	1	0,3
52	25	25	24	1	0,3
62	30	29	28	1	0,3
72	35	29	28	1	0,6
80	40	32	30	1	0,6
85	45	32	30	1	0,6
90	50	32	30	1	0,6

<sup>a</sup> The outside surface may be cylindrical or crowned.

<sup>b</sup> No maximum value is specified for chamfer dimensions  $r$  and  $r_1$ .

<sup>c</sup> A circumferential counter bore may be provided as an alternative to the chamfer on the inner ring.

**Table 2 — Track rollers — Yoke-type — Heavy series**

Dimensions in millimetres

$D^a$	$d$	$B$	$C$	$r_{s \min}^b$	$r_{1s \min}^{b, c}$
32	10	18	17	0,6	0,3
37	12	21	20	1	0,3
42	15	24	22	1	0,3
47	17	27	25	1	0,3
58	20	34	32	1	0,3
72	25	40	38	1	0,3
85	30	48	46	1,5	0,3
100	35	56	54	1,5	0,6
110	40	63	61	2	0,6
125	45	71	69	2	0,6
140	50	80	76	2,5	0,6
160	60	90	86	2,5	0,6
190	70	103	99	2,5	0,6
210	80	115	111	2,5	1
240	90	132	128	3	1

<sup>a</sup> The outside surface may be cylindrical or crowned.

<sup>b</sup> No maximum value is specified for chamfer dimensions  $r$  and  $r_1$ .

<sup>c</sup> A circumferential counter bore may be provided as an alternative to the chamfer on the inner ring.

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## 5.2 Track rollers — Stud-type

Boundary dimensions for the stud-type are given in Tables 3 and 4.

NOTE The track rollers may be manufactured with or without a cage and with or without seals. The provision of an axial hole for lubrication in the threaded end of the stud is optional. A radial hole in the shank of the stud is also optional, but where such provision is made for lubrication purposes dimension  $B_3$  applies. Lubrication hole diameters are not specified.

**Table 3 — Track rollers — Stud-type — Light series**

Dimensions in millimetres

$D^a$	$d_1$	$C$	$G$	$l_G$	$B_1$ max.	$B_2$	$B_3$	$C_1$	$r_{s\ min}^b$
13	5	9	M5 × 0,8	7	10	13	—	0,5	0,15
16	6	11	M6 × 1	8	12,2	16	—	0,6	0,15
19	8	11	M8 × 1,25	10	12,2	20	—	0,6	0,15
22	10	12	M10 × 1 <sup>c</sup>	12	13,2	23	—	0,6	0,3
26	10	12	M10 × 1 <sup>c</sup>	12	13,2	23	—	0,6	0,3
30	12	14	M12 × 1,5	13	15,2	25	6	0,6	0,6
32	12	14	M12 × 1,5	13	15,2	25	6	0,6	0,6
35	16	18	M16 × 1,5	17	19,6	32,5	8	0,8	0,6
40	18	20	M18 × 1,5	19	21,6	36,5	8	0,8	1
47	20	24	M20 × 1,5	21	25,6	40,5	9	0,8	1
52	20	24	M20 × 1,5	21	25,6	40,5	9	0,8	1
62	24	29	M24 × 1,5	25	30,6	49,5	11	0,8	1
72	24	29	M24 × 1,5	25	30,6	49,5	11	0,8	1
80	30	35	M30 × 1,5	32	37	63	15	1	1
85	30	35	M30 × 1,5	32	37	63	15	1	1
90	30	35	M30 × 1,5	32	37	63	15	1	1

<sup>a</sup> The outside surface may be cylindrical or crowned.

<sup>b</sup> No maximum value is specified for chamfer dimension  $r$ .

<sup>c</sup> These track rollers are also manufactured with M10 × 1,25.

Table 4 — Track rollers — Stud-type — Heavy series

Dimensions in millimetres

$D^a$	$d_1$	$C$	$G$	$l_G$	$B_1$ max.	$B_2$	$B_3$	$C_1$	$r_s$ min <sup>b</sup>
13	6	9	M6 × 1	8	10	15	—	0,5	0,3
16	8	11	M8 × 1,25	10	12	19	—	0,5	0,3
19	10	11	M10 × 1 <sup>c</sup>	12	12	22	—	0,5	0,3
24	12	14	M12 × 1,5	14	15	26	—	0,5	0,3
32	14	17	M14 × 1,5	16	18	30	7	0,5	0,6
37	16	20	M16 × 1,5	18	21	35	8	0,5	1
42	20	22	M20 × 1,5	21	24	41	10	1	1
47	24	25	M24 × 1,5	25	27	48	11	1	1
58	30	32	M30 × 1,5	30	34	59	14	1	1
72	36	38	M36 × 3	41	40	76	17	1	1
85	42	46	M42 × 3	46	48	87	20	1	1,5
100	48	54	M48 × 3	53	56	100	23	1	1,5
110	56	61	M56 × 4	61	63	115	—	1	2
125	64	69	M64 × 4	68	71	129	—	1	2
140	72	76	M72 × 4	73	79	143	—	2	2,5
160	80	86	M80 × 4	80	89	157	—	2	2,5
190	80	99	M80 × 4	80	102	160	—	2	2,5
210	90	111	M90 × 4	88	114	178	—	2	2,5
240	100	128	M100 × 4	96	131	197	—	2	3

<sup>a</sup> The outside surface may be cylindrical or crowned.

<sup>b</sup> No maximum value is specified for chamfer dimension  $r_s$ .

<sup>c</sup> These track rollers are also manufactured with M10 × 1,25.

## 6 Tolerances

### 6.1 Track rollers - Yoke-type

Tolerances for yoke-type are given in Tables 5 and 6.

**Table 5 — Outer ring**

Tolerance values in micrometres

$D$ mm		$\Delta_{Dmp}$				$\Delta_{Cs}$		$K_{ea}$ max.
		Outside surface				high	low	
>	$\leq$	cylindrical		crowned				
		high	low	high	low	high	low	
10	30	0	-21	0	-50	0	-120	15
30	50	0	-25	0	-50	0	-120	20
50	80	0	-30	0	-50	0	-120	25
80	120	0	-35	0	-50	0	-120	35
120	150	0	-40	0	-50	0	-120	40
150	180	0	-40	0	-50	0	-150	45
180	240	0	-46	0	-50	0	-200	50

**Table 6 — Inner ring**

Tolerance values in micrometres

$d$ mm		$\Delta_{dmp}$		$\Delta_{Bs}$	
>	$\leq$	high	low	high	low
2,5	10	0	-8	0	-270
10	18	0	-8	0	-330
18	30	0	-10	0	-390
30	50	0	-12	0	-460
50	80	0	-15	0	-540
80	120	0	-20	0	-630