
**Aerospace — Airframe needle track roller,
yoke type, single-row, sealed — Metric
series**

*Aéronautique et espace — Galets de came à aiguilles pour étrier,
à une rangée, avec joints, pour cellule d'aéronef — Série métrique*



Foreword

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International Standard ISO 13416 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 15, *Airframe bearings*.

Annex A forms an integral part of this International Standard.

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Aerospace — Airframe needle track roller, yoke type, single-row, sealed — Metric series

1 Scope

This International Standard specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible radial static loads of metric series, single-row, yoke type needle track rollers used in airframe applications.

The airframe needle track rollers covered by this International Standard are designed to operate in the temperature range $-54\text{ }^{\circ}\text{C}$ to $+121\text{ }^{\circ}\text{C}$.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 683-17:—¹⁾, *Heat-treated steels, alloy steels and free-cutting steels — Part 17: Ball and roller bearing steels*.

ISO 1132:1980, *Rolling bearings — Tolerances — Definitions*.

ISO 2082:1986, *Metallic coatings — Electroplated coatings of cadmium on iron or steel*.

ISO 2859-1:—²⁾, *Sampling procedures for inspection by attributes — Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection*.

ISO 4520:1981, *Chromate conversion coatings on electroplated zinc and cadmium coatings*.

ISO 5593:1997, *Rolling bearings — Vocabulary*.

ISO 6158:1984, *Metallic coatings — Electroplated coatings of chromium for engineering purposes*.

ISO 13411:1997, *Aerospace — Airframe needle roller, cylindrical roller and track roller bearings — Technical specification*.

AMS 2417E:1993, *Plating, zinc-nickel alloy*.³⁾

¹⁾ To be published. (Revision of ISO 683-17:1976)

²⁾ To be published. (Revision of ISO 2859-1:1989)

³⁾ Available from: SAE International
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Warrendale, PA 15096-0001
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For the purposes of this International Standard, the definitions given in ISO 5593 apply.

4.1 For the purposes of this International Standard, the symbols given in ISO 1132 apply. The symbols (except those for tolerances) shown in the figures and the values given in the tables denote nominal dimensions unless specified otherwise.

4.2 The following additional symbols for bearings covered by this International Standard also apply.

B overall width (over faces of end washers)

C_s permissible static radial load

d_a clamping face diameter

R crown radius of outer ring

5 Required characteristics

5.1 Dimensions — Tolerances — Internal clearances — Loads

For values, see table 1. For configuration, see figure 1.

Table 1

Dimensions in millimetres,
tolerance and clearance values in micrometres

Diameter code	d	D	B	C + 50 – 96	Tolerance values				r_s min.	r_{1s} min.	R min.	d_a min.	Internal clearance		C_s kN	Mass kg ≈
					Δ_{dmp}	Δ_{Bs}	Δ_{Dmp}	K_{ea} max.					Radial, G_r max.	Axial, G_a max.		
05	5	16	12	11	0 – 12	+ 24 – 260	+ 50 – 26	40	0,3	0,3	192	10	40	76	6,88	0,01
06	6	19	12	11							228	12			8,8	0,02
08	8	24	15	14							288	14			13,7	0,04
10	10	32	18	17							384	20			24,8	0,09
12	12	37	21	20		+ 24 – 320			1		444	22			28,8	0,14
15	15	42	24	22							504	26			39,5	0,19
17	17	47	27	25							564	29			48,2	0,27
20	20	58	34	32							696	36			80,8	0,53
25	25	72	40	38		+ 24 – 380			1,5		864	44			126	0,98
30	30	85	48	46							1 020	54			208	1,65
35	35	100	56	54	+ 24 – 450		0,6	1 200		65	306	2,68				