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

Spherical plain bearing rod ends — Dimension series E and JK — Boundary dimensions and tolerances

Embouts à rotule — Séries de dimensions E et JK — Dimensions d'encombrement et tolérances

Reference number
ISO 6126 : 1987 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6126 was prepared by Technical Committee ISO/TC 4, *Rolling bearings.*

This second edition cancels and replaces the first edition (ISO 6126 : 1982), of which it constitutes a minor revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Spherical plain bearing rod ends — Dimension series E and JK — Boundary dimensions and tolerances

1 Scope and field of application

This International Standard lays down the boundary dimensions of spherical plain bearing rod ends, dimension series E (cartridge design) and dimension series JK (integral design). Furthermore it specifies the tolerances for boundary dimensions.

Boundary dimensions and tolerances specified in this International Standard may not necessarily apply to spherical plain bearing rod ends for airframe application.

2 References

ISO 272, *Fasteners — Hexagon products — Widths across flats.*

ISO 286, *ISO system of limits and fits.*

ISO 582, *Rolling bearings — Metric series — Chamfer dimension limits.*

ISO 965-1, *ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data.*

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

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters ⩾ 1,6 and ⩽ 150 mm and product grades A, B and C.*

ISO 6124-1, *Spherical plain radial bearings, joint type — Boundary dimensions — Part 1: Dimension series E and G.*

ISO 6125, *Spherical plain radial bearings; joint type — Tolerances.*

3 Symbols

B = inner ring width, nominal

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

C_1 = width of rod end eye

d = bearing bore diameter, nominal

D = bearing outside diameter, nominal

d_1 = outer diameter of inner ring face

d_2 = rod end eye outer diameter

d_3 = diameter of threads, nominal

d_4 = rod end shank diameter

d_5 = shank shoulder diameter

h = centre height of rod end with male thread

Δ_{hs} = deviation of the actual centre height, rod end with male thread

h_1 = centre height of rod end with female thread

Δ_{h1s} = deviation of the actual centre height, rod end with female thread

l_1 = length of external thread

l_2 = overall length of rod end with male thread

l_3 = length of internal thread

l_4 = overall length of rod end with female thread

l_5 = height of flats and shank shoulder

r_1 = inner ring chamfer, height and width

$r_{1\,s\,min}$ = smallest permissible single r_1

s = width across flats

α = angle of permissible tilt

4 Dimensions and tolerances

4.1 Spherical plain bearing rod ends, dimension series E (cartridge design)

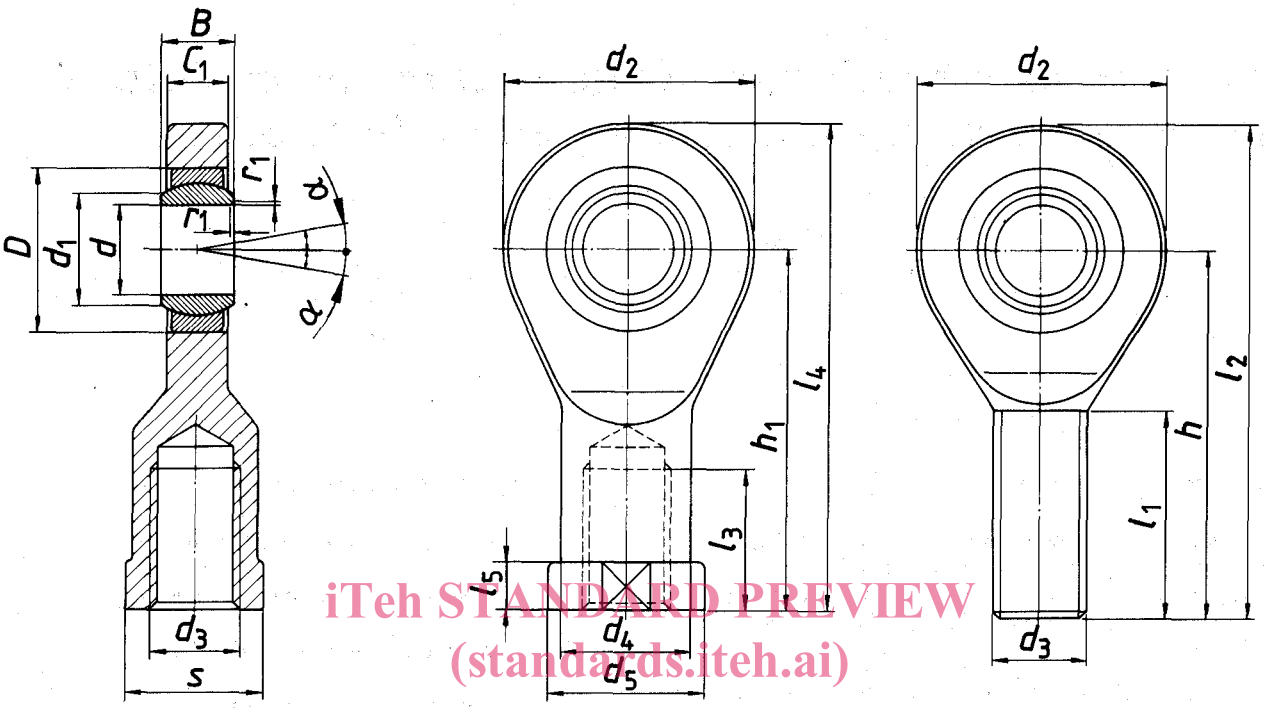

Table 1 — Dimensions

Dimensions in millimetres, angle in degrees

	With male or female thread								With male thread			With female thread					
d	D	d_1 min.	B	$r_{1\,s\,min}$	α	d_3	C_1 max.	d_2 max.	h	l_1 min.	l_2 max.	h_1	l_3 min.	l_4 max.	l_5 max.	d_4 max.	d_5 max.
5	14	7	6	0,3	13	M5	4,5	21	36	16	48	30	11	42	5	10	13
6	14	8	6	0,3	13	M6	4,5	21	36	16	48	30	11	42	5	11	13
8	16	10	8	0,3	15	M8	6,5	24	42	21	55	36	15	49	5	13	16
10	19	13	9	0,3	12	M10	7,5	29	48	26	63	43	15	58	6,5	16	19
12	22	15	10	0,3	10	M12	8,5	34	54	28	71	50	18	67	7	19	22
15	26	18	12	0,3	8	M14	10,5	40	63	34	83	61	21	81	8	22	26
17	30	20	14	0,3	10	M16	11,5	46	69	36	92	67	24	90	10	25	29
20	35	24	16	0,3	9	M20 × 1,5	13,5	53	78	43	105	77	30	104	10	28	34
25	42	29	20	0,6	7	M24 × 2	18	64	94	53	126	94	36	126	12	35	42
30	47	34	22	0,6	6	M30 × 2	20	73	110	65	147	110	45	147	15	42	50
35	55	39	25	0,6	6	M36 × 3	22	82	140	82	182	125	60	167	15	48	58
40	62	45	28	0,6	7	M39 × 3	24	92	150	86	198	142	65	190	18	52	65
45	68	50	32	0,6	7	M42 × 3	28	102	163	92	217	145	65	199	20	58	70
50	75	55	35	0,6	6	M45 × 3	31	112	185	104	246	160	68	221	20	62	75
60	90	66	44	1	6	M52 × 3	39	135	210	115	282	175	70	247	20	70	88
70	105	77	49	1	6	M56 × 4	43	160	235	125	318	200	80	283	20	80	98
80	120	88	55	1	6	M64 × 4	48	180	270	140	365	230	85	325	25	95	110

NOTES

1 *Bearing dimensions in accordance with dimension series E in ISO 6124-1.*

2 Threads may be right- or left-hand.

3 If $d_4 = d_5$, then l_5 is minimum height of flats.

4 Width across flats, s: values are not specified in this International Standard; they shall, however, be chosen from ISO 272.

5 Values of α are approximate.

Table 2 — Tolerances

Dimensions and tolerances in millimetres

d	Δ_{hs}		Δ_{h1s}		Bearing	d_3	s
	high	low	high	low			
5	+ 0,8	−1,2	+ 0,65	−1,05	Tolerances of the bearing dimensions as specified in ISO 6125	6g external thread 6H internal thread in accordance with ISO 965-1	Tolerances in accordance with ISO 4759-1, product grade C
6	+ 0,8	−1,2	+ 0,65	−1,05			
8	+ 0,8	−1,2	+ 0,8	−1,2			
10	+ 0,8	−1,2	+ 0,8	−1,2			
12	+ 0,8	−1,2	+ 0,8	−1,2			
15	+ 0,8	−1,2	+ 0,8	−1,2			
17	+ 0,8	−1,2	+ 0,8	−1,2			
20	+ 0,8	−1,2	+ 0,8	−1,2			
25	+ 1	−1,7	+ 1	−1,7			
30	+ 1	−1,7	+ 1	−1,7			
35	+ 1,4	−2,1	+ 1,4	−2,1			
40	+ 1,4	−2,1	+ 1,4	−2,1			
45	+ 1,4	−2,1	+ 1,4	−2,1			
50	+ 1,8	−2,7	+ 1,8	−2,7			
60	+ 1,8	−2,7	+ 1,8	−2,7			
70	+ 2,25	−3,4	+ 2,25	−3,4			
80	+ 2,25	−3,4	+ 2,25	−3,4			

4.2 Spherical plain bearing rod ends, dimension series JK (integral design)

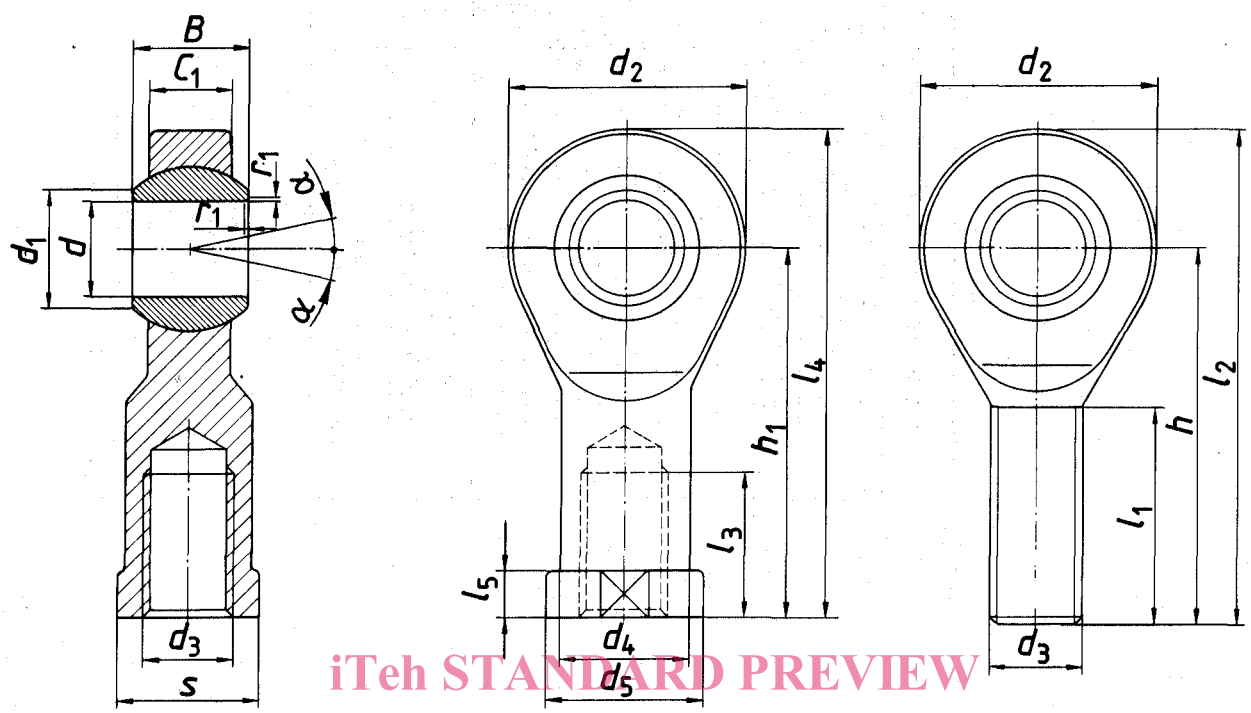

Table 3 — Dimensions

Dimensions in millimetres, angle in degrees

d	With male or female thread							With male thread			With female thread					
	d_1 min.	B	$r_{1\,s\,min}$	α	d_3	C_1 max.	d_2 max.	h	l_1 min.	l_2 max.	h_1	l_3 min.	l_4 max.	l_5 max.	d_4 max.	d_5 max.
5	7,7	8	0,3	4	M5	7,5	18	33	19	42	27	8	36	4	9	12
6	8,9	9	0,3	9	M6	7,5	20	36	21	46	30	9	40	5	10	13
8	10,3	12	0,3	12	M8	9,5	24	42	25	54	36	12	48	5	12,5	16
10	12,9	14	0,6	10	M10	11,5	30	48	28	63	43	15	58	6,5	15	19
12	15,4	16	0,6	12	M12	12,5	34	54	32	71	50	18	67	6,5	17,5	22
14	16,8	19	0,6	14	M14	14,5	38	60	36	79	57	21	76	8	20	25
16	19,3	21	0,6	14	M16	15,5	42	66	37	87	64	24	85	8	22	27
18	21,8	23	0,6	13	M18 × 1,5	17,5	46	72	41	95	71	27	94	10	25	31
20	24,3	25	0,6	14	M20 × 1,5	18,5	50	78	45	103	77	30	102	10	27,5	34
22	25,8	28	0,6	14	M22 × 1,5	21	56	84	48	112	84	33	112	12	30	37
25	29,5	31	0,6	14	M24 × 2	23	60	94	55	124	94	36	124	12	33,5	42
28	32,2	35	0,6	14	M27 × 2	26	66	103	62	136	103	41	136	14	37	46
30	34,8	37	0,6	15	M30 × 2	27	70	110	66	145	110	45	145	15	40	50

NOTES

1 Threads may be right- or left-hand.

2 If $d_4 = d_5$, then l_5 is minimum height of flats.

3 Width across flats, s: values are not specified in this International Standard; they shall, however, be chosen from ISO 272.

4 Values of α are approximate.

Table 4 — Tolerances

Dimensions in millimetres

d	Δ_{Bs}		Δ_{hs}		Δ_{h1s}		d	d_3	r_1	s
	high	low	high	low	high	low				
5	0	−0,15	+ 0,8	−1,2	+ 0,65	−1,05	H7 in accordance with ISO 286	6g external thread 6H internal thread in accordance with ISO 965-1	Maximum chamfer dimension limits in accordance with ISO 582, table 1	Tolerances in accordance with ISO 4759-1, product grade C
6	0	−0,15	+ 0,8	−1,2	+ 0,65	−1,05				
8	0	−0,15	+ 0,8	−1,2	+ 0,8	−1,2				
10	0	−0,15	+ 0,8	−1,2	+ 0,8	−1,2				
12	0	−0,15	+ 0,8	−1,2	+ 0,8	−1,2				
14	0	−0,2	+ 0,8	−1,2	+ 0,8	−1,2				
16	0	−0,2	+ 0,8	−1,2	+ 0,8	−1,2				
18	0	−0,2	+ 0,8	−1,2	+ 0,8	−1,2				
20	0	−0,2	+ 0,8	−1,2	+ 0,8	−1,2				
22	0	−0,2	+ 1	−1,7	+ 1	−1,7				
25	0	−0,2	+ 1	−1,7	+ 1	−1,7				
28	0	−0,2	+ 1	−1,7	+ 1	−1,7				
30	0	−0,2	+ 1	−1,7	+ 1	−1,7				

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Descriptors : bearings, plain bearings, spherical bearings, dimensions.

Price based on 5 pages