SLOVENSKI STANDARD
SIST EN 4539-2:2020

01-januar-2020

Aeronavtika - Kroglasti drsni ležaji iz korozijsko odpornega jekla s samomazalno oblogo - Z zvišano obremenitvijo pri nizkih oscilacijah - Široka serija - Mere in obremenitve - Palčne mere

Aerospace series - Bearings, spherical plain, in corrosion resisting steel with self-lubricating liner - Elevated load under low oscillations -Wide series - Dimensions and loads - Inch series

Luft- und Raumfahrt - Gelenklager aus korrosionsbeständigem Stahl mit selbstschmierender Beschichtung, hohe Belastung bei geringer Drehbewegung, breite Reihe - Maße und Belastungen, Teil 2: Inch Reihe

Série aérospatiale - Rotules, en acier résistant à la corrosion à garniture autolubrifiante - à charge élevée sous faibles oscillations - Série large - Dimensions et charges - Partie 2 : Série en inches

Ta slovenski standard je istoveten z: **EN 4539-2:2019**

ICS:

21.100.10	Drsni ležaji	Plain bearings
49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction

SIST EN 4539-2:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4539-2

October 2019

ICS 49.035

English Version

Aerospace series - Bearing, spherical, plain, in corrosion resisting steel with self-lubricating liner - Elevated load under low oscillations - Wide series - Dimensions and loads - Part 2: Inch series

Série aérospatiale - Rotules lisses, en acier résistant à la corrosion à garniture autolubrifiante - À charge élevée sous faibles oscillations - Série large - Dimensions et charges - Partie 2 : Série en inches

Luft- und Raumfahrt - Gelenklager aus korrosionsbeständigem Stahl mit selbstschmierender Beschichtung - Hohe Belastung, gering oszillierend - Breite Reihe - Maße und Belastungen - Teil 2: Inch-Reihe

This European Standard was approved by CEN on 2 December 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 4539-2:2019) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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

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1 Scope

This European standard specifies the characteristics of spherical plain bearing in corrosion resistant steel, with self-lubricating liner, wide series, elevated load under low oscillations applications.

They shall be used in the temperature range −55 °C to 163 °C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 2030, *Aerospace series — Steel X105CrMo17 (1.3544) — Hardened and tempered — Bars — $D_e \leq 150$ mm*

EN 2424, *Aerospace series — Marking of aerospace products*

EN 3161, *Aerospace series — Steel FE-PM3801 (X5CrNiCu17-4) — Air melted, solution treated and precipitation treated, bar a or $D \leq 200$ mm, $R_m \geq 930$ MPa*

EN 4540, *Aerospace series — Bearings, sperical plain, in corrosion resisting steel with self-lubricating liner, Elevated load under low oscillations — Technical specification*

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

ISO 8075, *Aerospace — Surface treatment of hardenable stainless steel parts*

3 Symbols and definitions

The tolerance definitions are given in ISO 1132-1.

Δ_{dmp} = single plane mean bore diameter deviation;

Δ_{ds} = deviation of a single bore diameter;

Δ_{Dmp} = single plane mean outside diameter deviation;

Δ_{Ds} = deviation of a single outside diameter;

α = angle of tilt of the outer ring with respect to the inner ring, the spherical surface of the outer ring being completely in contact with the inner ring.

4 Required characteristics

4.1 Configuration, dimensions, tolerances and masses

See Figure 1 and Figure 2 and Table 1. The dimensions are expressed in millimeters and apply after surface treatment.

4.2 Surface roughness

See Figure 1 and Figure 2. The values are expressed in micrometers and apply before surface treatment.

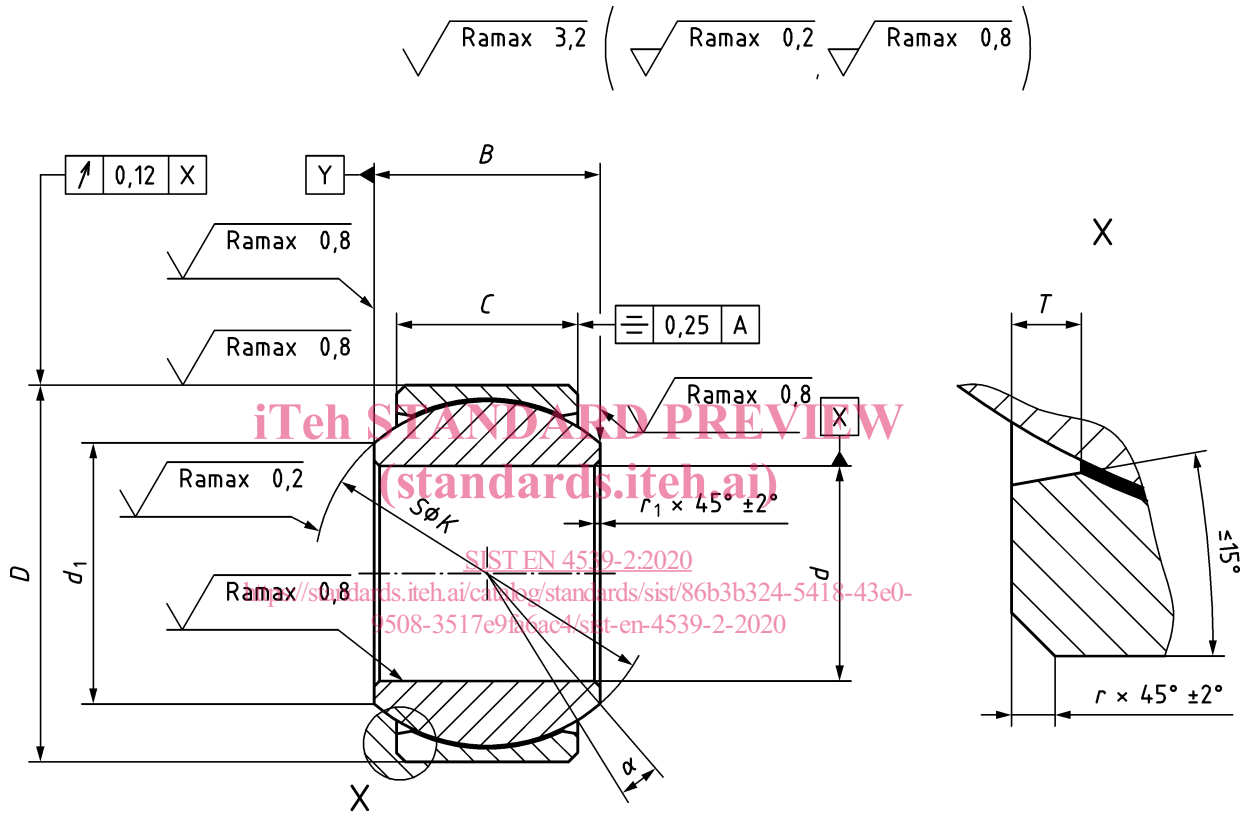
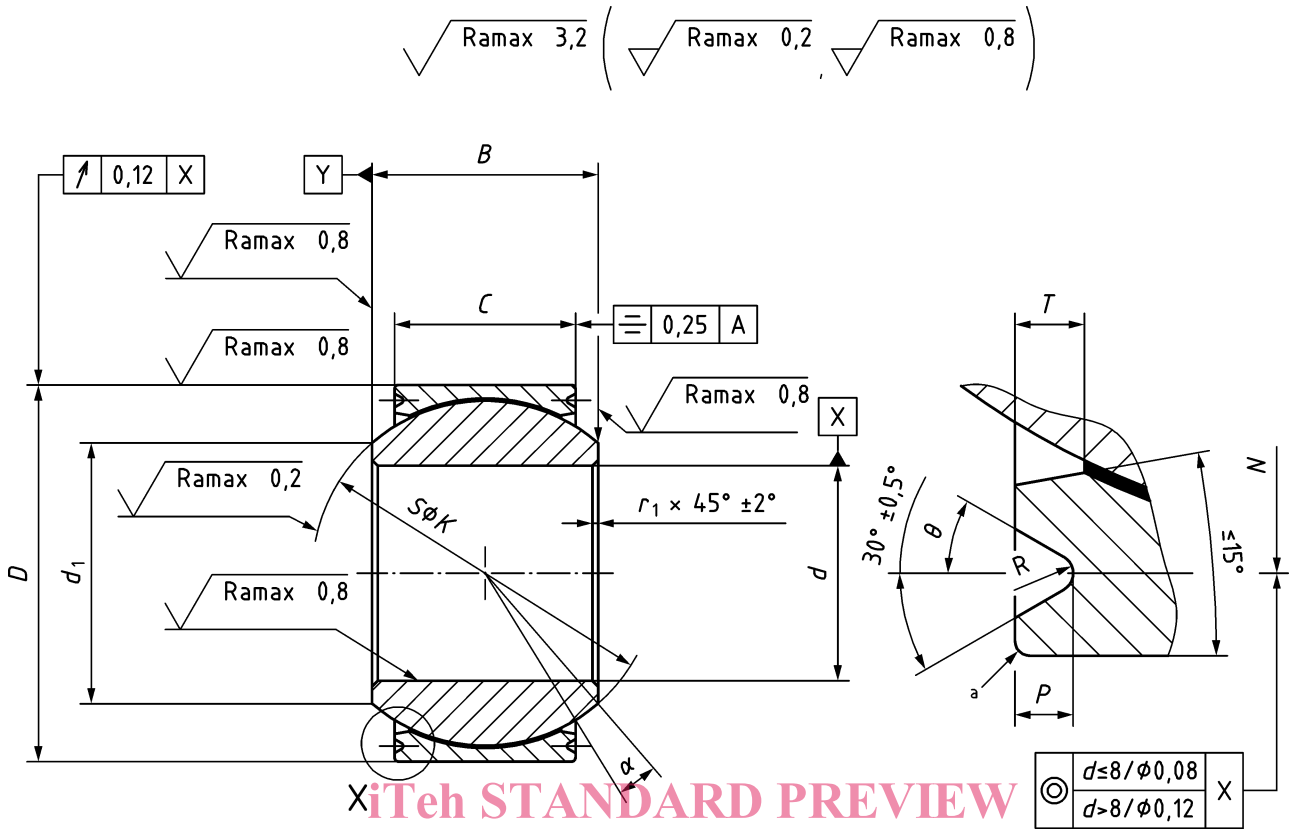


Figure 1 — Bearing without swaging groove, code S



Key

a break sharp corner (0,12 max.)

Figure 2 — Bearing with swaging grooves, code R

Table 1

d		*B*	*C*	*D*	Tolerances µm				d_1[a]	*K*	*N*	*P*	*R*	*r*	r_1	*T*	*α*[b]	*θ*	Mass g/piece
Code	Nom.	0 −0,06	±1		Δ_{dmp}	Δ_{ds}	Δ_{Dmp}	Δ_{Ds}	min	≈	+0,1 −0,203	0 −0,25				max	min	±0,5	≈
03	4,826	11,1	8,306	15,875	0 −13	+3 −13	0 −13	+3 −15	7,62	13,487	14,3	0,7	0,127 to 0,305	0,38 to 0,635	0,127 to 0,381	0,762	15°	20° min	14
04	6,35																		
05	7,937		8,052	17,462					9,144	15,062	15,875						14°	30°	14
06	9,525	12,7	10,312	20,637					11,836	17,449	18,08	0,9	0,254 to 0,432	0,508 to 0,762		0,889	8°		27
07	11,113	14,275	11,227	23,812					13,64	19,837	21,26						10°		36
08	12,7	15,875	12,827	25,4					15,417	22,225	22,86						9°		45
09	14,288	17,449	13,614	28,575					18,313	25,4	26,03					1,016	10°		61
10	15,875	19,05	14,402	30,163					18,973	26,975	27,6						12°		77
12	19,05	22,225	16,002	34,925					21,462	31,25	31,77	1,4		0,762 to 1,016		1,143	13°		109
14	22,225		19,177	41,275					25,273	34,925	38,12						6°		159
16	25,4	34,925	25,527	53,975		+3 −15			32,23	47,625	50,82						12°		440
20	31,75	38,1	28,702	60,325					37,15	53,161	57,23		0,254 to 0,508						500
24	38,1	42,849	31,064	68,260					44,45	60,412	65,16	1,5					13°		700
28	44,45	64,024	33,452	76,2					49,9	67,868	73,1						12°		900
32	50,8	49,189	35,052	82,55					58,166	74,611	79,45								1050

[a] Attention should be paid to the possible indentation of the support mountings by the inner ring bearing faces.

[b] Maximum values for the user.