关节轴承

Spherical Plain Bearings

福建龙溪轴承（集团）股份有限公司

FUJIAN LONGXI BEARING (GROUP) CORPORATION LIMITED

Catalog 2020

公司简介

龙溪股份 LONGXI CO.,LTD

Introduction

福建龙溪轴承（集团）股份有限公司是生产经营关节轴承、圆锥滚子轴承、滚动功能部件及高端机械零部件的现代化国有控股上市集团公司，是中国机械工业核心竞争力100强企业，首批54家全国制造业单项冠军示范企业，是我国关节轴承行业领导者。

公司拥有全国唯一的关节轴承研究所和国家级关节轴承检测实验中心，是关节轴承国家标准和行业标准的主要起草单位、国内唯一参与国际ISO关节轴承标准起草单位，现拥有92个有效授权专利，其中42个授权发明专利。公司主导产品广泛应用于国民经济各行业的各类机械设备及国家重点工程如嫦娥、天宫、大飞机、国家天文台FAST项目、上海中心大厦等，为北京大兴机场、中微子、龙腾光热等国内战略性新兴领域独家配套，并大量出口欧美亚等四十多个工业发达国家和地区。公司既能研制AS和EN标准航空关节轴承，又能研制各类非标航空关节轴承，通过美国海军航空司令部（NAVAIR）实验室最严格的A标轴承认证，所研制的8类6000余种规格航空关节轴承被列入美国政府采购合格产品目录（QPL - AS81820）。公司借鉴国内外卓越的管理理念，沿用以过程管理为基础的质量管理体系模式，以GB/T 15498为基础平台，以ISO 9001、IATF 16949和GB/T19580为主线，综合ISO14001、OHSAS 18001及内部控制体系、廉洁风险防控等特定管理体系标准的要求，建立集质量、环境、安全、内控等体系的一体化管理标准体系。

Fujian Longxi Bearing (Group) Corporation Limited (hereinafter referred to as "LS") is a modernized state-owned listed company that specializes in the production of spherical plain bearings, tapered roller bearings, rolling functional components and high-end mechanical components. LS is also known as one of the Top 100 Enterprises of China Machinery Industry Core Competence, Key National Torch Plan High-Tech Enterprises, National Innovative Pilot Enterprises, the first batch of 54 National Manufacturing Individual Champion Demonstration Enterprises. LS is the leader of spherical plain bearing industry in China.

LS has the sole Research Institute of SPB in China, and the National SPB Inspection & Testing Center which approved by China National Accreditation Service for Conformity Assessment (CNAS). The technical center of LS is recognized as "National Certified Enterprise Technical Center". LS also has been approved to be the Secretariat Unit of National Standardization Technical Committee - SPB Sub-Technical Committee. Moreover, LS is the only Chinese organization who participated in the drafting of the international ISO SPB standards, and LS is also responsible for drawing up and auditing national and industrial standard for SPB. Currently, LS obtains 92 valid granted patents, of which 42 are authorized invention patents. The main product spherical plain bearing ranks first in the world in terms of variety, quantity and sales volume. And LS products are widely used in all kinds of machinery and equipment of national key projects in various sectors of the national economy, which including Chang'E lunar orbiter, Tiangong space laboratory, China large aircraft, National Observatory FAST project, Shanghai Center Tower, etc. LS is exclusive support for Beijing Daxing International Airport, neutrino, Longteng solar thermal. The products are sold well to more than 40 industrial developed countries and regions such as Europe, America and Asia. LS is capable of developing AS and EN standard aerospace SPBs as well as various kinds of non-standard products. Aerospace maintenance-free SPBs of LS are passed the high level - Type A qualification of NAVAIR with eight kinds of more than six thousand items were listed in QPL-AS81820. LS has established the management systems for quality, environment, occupational health & safety and Aerospace quality according to ISO 9001, IATF16949, GB/T19580, ISO14001, OHSAS18001 and AS9100C, and has passed the audit of TUV SUD Management Service GmbH.

公司资质

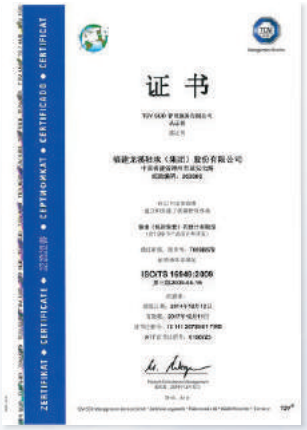
Qualification

AS9100C and ISO 9001

ISO9001

ISO14001

OHSAS18001



ISO/TS16949

ISO17025

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	GE…E 4～12	钢/钢 Steel/Steel	−50℃～+150℃	外圈有一道轴向缝，内、外圈材料均为轴承钢，淬火，磷化，滑动表面涂敷二硫化钼。除型号后置代号为 E 外,其余型号内、外圈均有润滑油槽油孔，后置代号有 -2RS 为外圈两端带有密封圈。 Outer ring of carbon chromium steel，fractured，hardened and phosphated，sliding surface treated with MoS2.Inner ring of carbon chromium steel，hardened and phosphated，sliding surface treated with MoS_2. All bearings have an annular groove and lubrication holes in each ring except those of the E design. Bearings of the 2RS design are fitted with seals at both sides.	39
	GE…ES 15～300	钢/钢 Steel/Steel	−50℃～+150℃		39
	GE…ES-2RS 15～300	钢/钢 Steel/Steel	−30℃～+130℃		39
	GEG…E 4～12	钢/钢 Steel/Steel	−50℃～+150℃	外圈有一道轴向缝，内、外圈材料均为轴承钢，淬火，磷化，滑动表面涂敷二硫化钼。除型号后置代号为 E 外,其余型号内、外圈均有润滑油槽油孔，后置代号有-2RS 为外圈两端带有密封圈。 Outer ring of carbon chromium steel，fractured，hardened and phosphated，sliding surface treated with MoS_2. Inner ring of carbon chromium steel ，hardened and phosphated，sliding surface treated with MoS_2. All bearings have an annular groove and lubrication n holes in each ring except those of the E design. Bearings of the 2RS design are fitted with seals at both sides.	40
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	GEG…ES-2RS 15～280	钢/钢 Steel/Steel	−30℃～+130℃		40
	GEEW…ES 12～320	钢/钢 Steel/Steel	−50℃～+150℃	内圈两端带伸出圆筒，外圈有一道轴向缝，内、外圈材料均为轴承钢，淬火，磷化，滑动表面涂敷二硫化钼，后置代号有-2RS 为外圈两端带有密封圈。 With cylindrical extensions at each side of inner ring. Outer ring of carbon chromium steel，fractured，hardened and phosphated，sliding surface treated with MoS_2. Inner ring of carbon chromium steel ，hardened and phosphated，sliding surface treated with MoS_2. Bearings of the 2RS design are fitted with seals at both sides.	41
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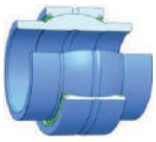
轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GE…XS/K 12～150	钢/钢 Steel/Steel	−50℃～+150℃	产品特点与 GEC…XS 系列相同。 As series GEC···XS.	44
	GEZ…ES 12.7～304.8	钢/钢 Steel/Steel	−50℃～+150℃	产品特点与 GE…ES 系列相同，但为英制尺寸。 As series GE…ES，but with inch dimensions.	45-46
	GEZ…ES-2RS 19.05～304.8	钢/钢 Steel/Steel	−30℃～+130℃	产品特点与 GE…ES-2RS 系列相同，但为英制尺寸。 As series GE…ES-2RS，but with inch dimensions.	45-46
	GEWZ…ES 12.7～152.4	钢/钢 Steel/Steel	−50℃～+150℃	产品特点与 GEEW…ES 系列相同，但为英制尺寸。 As series GEEW…ES，but with inch dimensions.	47
	GEWZ…ES-2RS 19.05～152.4	钢/钢 Steel/Steel	−30℃～+130℃	产品特点与 GEEM···ES-2RS 系列相同，但为英制尺寸。 As series GEEM…ES-2RS，but with inch dimensions.	47
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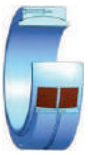
	GEGZ…ES-2RS 31.75～139.7	钢/钢 Steel/Steel	−30℃～+130℃	产品特点与 GEG···ES-2RS 系列相同，但为英制尺寸。 As series GEG…ES-2RS，but with inch dimensions.	48
	GEGZ…HS/K 31.75～139.7	钢/钢 Steel/Steel	−50℃～+150℃	外圈径向分成两半，中间有一隔套，内、外圈材料均为轴承钢，淬火，磷化，滑动表面涂敷二硫化钼。 Outer ring of carbon chromium steel, radially split twice , hardened and phosphated, One spacer in between, sliding surface treated with MoS_2. Inner ring of carbon chromium steel, hardened and phosphated, sliding surface treated with MoS_2.	49
	GEK…XS-2GS 25～60	钢/钢 Steel/Steel	−25℃～+120℃	外圈沿轴向剖分成两半，用锁圈固定，内、外圈材料均为轴承钢，淬火，内圈球面镀硬铬，外圈两端带有密封圈。 Outer ring axially split twice, held together by retaining rings. Outer ring of carbon chromium steel, hardened and fitted with seals at both sides. Inner ring of carbon chromium steel，hardened, sliding surface treated with hard chromium plating.	50

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GEC…XS 320～630	钢/钢 Steel/Steel	−50℃～+150℃	外圈沿轴向剖分成两半，用锁圈固定，内、外圈材料均为轴承钢，淬火，磷化，滑动表面涂敷二硫化钼，后置代号有-2RS 为外圈两端带有密封圈。	51
	GEC…XS-2RS 320～630	钢/钢 Steel/Steel	−30℃～+130℃	Outer ring axially split twice, held together by retaining rings. Outer and inner rings are made of carbon chromium steel and are hardened and phosphated, sliding surface treated with MoS_2. Bearings of the 2RS design are fitted with seals at both sides.	51
	GEBJ…S 5～50	钢/钢 Steel/Steel	−50℃～+150℃	外圈材料为碳钢，挤压成形；内圈材料为轴承钢，淬火，球面镀硬铬。	52
	GEFZ…S 4.83～25.4	钢/钢 Steel/Steel	−50℃～+150℃	Outer ring of carbon steel，pressed around the inner ring；Inner ring of carbon chromium steel，hardened，sliding surface treated with hard chromium plating.	53
	GEBK...S 5～30	钢/青铜 Steel/Bronze	−50℃～+150℃	外圈材料为碳钢，镶有青铜衬垫；内圈材料为轴承钢，淬火，球面镀硬铬。 Outer ring of carbon steel，with bronze liner；Inner ring of carbon chromium steel，hardened，sliding surface treated with hard chromium plating.	54

自润滑型向心关节轴承
Radial spherical plain bearings maintenance free

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GE…C 4～50	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃	外圈材料为碳钢，挤压成形，球面衬有 PTFE 复合材料；内圈材料为轴承钢，淬火，球面镀硬铬。 Outer ring of carbon steel，pressed around the inner ring， with sliding surface of PTFE composite material； Inner ring of carbon chromium steel，hardened，sliding surface treated with hard chromium plating.	65
	GEG…C 4～45	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃		65
	GEBJ…C 5～50	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃		66
	GEFZ…C 4.83～25.4	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃	产品特点与 GE…C 系列相同，但为英制尺寸。 As series GE...C，but with inch dimensions.	67
	GEFZ…T 4.83～25.4	钢/PTFE 编织物 Steel/PTFE fabric	−50℃～+150℃	外圈材料为碳钢，球面粘贴 PTFE 编织物，挤压成形，内圈材料为轴承钢，淬火，球面镀硬铬。 Outer ring of carbon steel, with sliding surface of PTFE fabric, pressed around the inner ring. Inner ring of carbon chromium steel，hardened, sliding surface treated with hard chromium plating.	68
	GEC…HC 320～1000	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃	外圈径向分为两半，用螺钉锁紧，材料为碳钢，磷化，球面衬有 PTFE 复合材料；内圈材料为轴承钢，淬火，球面镀硬铬，型号后置代号加 S，表示内圈有润滑油槽油孔。 Outer ring of carbon steel，phosphated, radially split twice，held together by screws，with sliding surface of PTFE composite material； Inner ring of carbon chromium steel，hardened，sliding surface treated with hard chromium plating. Bearings of the S design have an annular groove and lubrication holes in inner ring.	69
	GEC…HCS 320～1000	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃		69
	GEH…HC 100～1000	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃		70-71
	GEH…HCS 100～1000	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃		70-71

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GE...ETL-2RS 15～120	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃	外圈有一道轴向缝，两端带有密封圈，材料为轴承钢，淬火，磷化，球面粘贴 PTFE 编织物；内圈材料为轴承钢，淬火，球面镀硬铬。型号后置代号为 XTL，表示外圈沿轴向剖分成两半，用锁圈固定。 Outer ring of carbon chromium steel , fractured , hardened and phosphated , with two seals at both sides , with sliding surface of PTFE fabric ; Inner ring of carbon chromium steel , hardened , sliding surface treated with hard chromium plating. Outer ring of the XTL design axially split twice, held together by retaining rings.	72
	GE...XTL-2RS 140～300	钢 /PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃		72
	GE...HTL-2RS 120～300	钢 /PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃	除了两端有密封圈外，其他产品特点与 GEC...HTL系列相同。 Except there are two seals at both sides, other characteristics of the products is similar to GEC...HTL series.	73
	GEG..ETL-2RS 15～110	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃	产品特点与 GE...E(X)TL-2RS 系列相同。 As series GE...E(X)TL-2RS.	74
	GEG...XTL-2RS 120～280	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃		74
	GEEW...ETL-2RS 12～63	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃	内圈两端带伸出圆筒，外圈有一道轴向缝，两端带有密封圈，材料为轴承钢，淬火，磷化，球面粘贴 PTFE 编织物；内圈材料为轴承钢，淬火，球面镀硬铬。型号后置代号为 XTL，表示外圈沿轴向剖分成两半，用锁圈固定。 With cylindrical extensions at each side of inner ring.Outer ring of carbon chromium steel, fractured, hardened and phosphated, with two seals at both sides, with sliding surface of PTFE fabric; Inner ring of carbon chromium steel, hardened, sliding surface treated with hard chromium plating. Outer ring of the XTL design axially split twice, held together by retaining rings.	75
	GEEW...XTL-2RS 70～320	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃		75
	GEEM...ETL-2RS 20～60	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃		76
	GEEM...XTL-2RS 70～120	钢/PTFE 编织物 Steel/PTFE fabric	-30℃～+130℃		76

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GE..ETL-2RS/X 15～60	钢/PTFE编织物 Steel/PTFE fabric	−25℃～+120℃	外圈有一道轴向缝，材料为不锈钢，淬火，球面粘贴 PTFE 编织物；内圈材料为不锈钢，淬火。型号后置代号为 XT，表示外圈沿轴向剖分成两半，用锁圈固定。	77
	GE...XTL-2GS/X 70～300	钢/PTFE编织物 Steel/PTFE fabric	−25℃～+120℃	Outer ring of stainless steel, fractured, hardened, with sliding surface of PTFE fabric ; Inner ring of stainless steel, hardened. Outer ring of the XT design axially split twice, held together by retaining rings.	77
	GEZ...ETL-2RS 19.05～152.4	钢/PTFE编织物 Steel/PTFE fabric	−30℃～+130℃	产品特点与 GE...ETL-2RS 系列相同，但为英制尺寸。 As series GE...ETL-2RS，but with inch dimensions.	78
	GEC...XTL 320～630	钢/PTFE编织物 Steel/PTFE fabric	−50℃～+150℃	外圈沿轴向剖分成两半，用锁圈固定，外圈材料为轴承钢，淬火，球面粘贴 PTFE 编织物；内圈材料为轴承钢，淬火，球面镀硬铬，后置代号有 2RS 为外圈两端带有密封圈。 Outer ring of carbon chromium steel，hardened, axially split twice, held together by retaining rings, sliding surface of PTFE fabric. Inner ring of carbon chromium steel，hardened，sliding surfac e treated with hard chromium plating. Outer ring of the 2RS design fitted with seals at both sides.	79
	GEC...XTL-2RS 320～630	钢/PTFE编织物 Steel/PTFE fabric	−30℃～+130℃		79
	GEH...XTL 100～600	钢/PTFE编织物 Steel/PTFE fabric	−50℃～+150℃		80
	GEH...XTL-2RS 100～600	钢/PTFE编织物 Steel/PTFE	−30℃～+130℃		80
	GEC...HTL 320～1000	钢/PTFE编织物 Steel/PTFE fabric	−50℃～+150℃	外圈径向分为两半，用螺钉锁紧，材料为碳钢，磷化，球面粘贴 PTFE 编织物；内圈材料为轴承钢，淬火，球面镀硬铬。 Outer ring of carbon steel，radially split twice，held together by screws，phosphated，sliding surface of PTFE fabric. Inner ring of carbon chromium steel, hardened and sliding surface treated with hard chromium plating	81
	GEH...HTL 100～1000	钢/PTFE编织物 Steel/PTFE fabric	−50℃～+150℃		82
	GEH...HF/Q 440～1000	钢/铜合金 Steel/Copper alloy	−50℃～+150℃	外圈径向分为两半，用螺钉锁紧，材料为碳钢，磷化，球面镀硬铬；内圈材料为铜合金，球面镶嵌固体自润滑材料。 Outer ring of carbon steel，phosphated, radially split twice，held together by screws，sliding surface treated with hard chromium plating. Inner ring of copper alloy and sliding surface inserted with solid lubricant.	83

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GE…XF/Q 100～300	钢/铜合金 Steel/Copper alloy	−50℃～+150℃	外圈沿轴向剖分成两半，用锁圈固定，外圈材料为轴承钢，淬火，磷化，球面镀硬铬；内圈材料为铜合金，球面镶嵌固体自润滑材料。 Outer ring of carbon chromium steel, axially split twice, held together by retaining ring , hardened and phosphated , sliding surface treated with hard chromium plating. Inner ring of copper alloy and sliding surface inserted with solid lubricant.	84
	GEC…XF/Q 320～630	钢/铜合金 Steel/Copper alloy	−50℃～+150℃		84
	GEH…XF/Q 100～600	钢/铜合金 Steel/Copper alloy	−50℃～+150℃		85
	GE…N 10～60	钢/PTFE 塑料 Steel/PTFE plastic	−40℃～+75℃	内、外圈材料均为轴承钢，淬火，球面衬有 PTFE 塑料，内圈球面镀硬铬。 Outer ring of carbon chromium steel, hardened, with sliding surface of PTFE plastic. Inner ring of carbon chromium steel, hardened, sliding surface treated with hard chromium plating.	86
	GEG…N 8～50	钢/PTFE 塑料 Steel/PTFE plastic	−40℃～+75℃		86

角接触关节轴承
Angular contact spherical plain bearings

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GACZ…S 12.7～152.4	钢/钢 Steel/Steel	−50℃～+150℃	产品特点与 GAC···S 系列相同，但为英制尺寸。 As series GAC…S，but with inch dimensions.	91
	GAC…S 25～200	钢/钢 Steel/Steel	−50℃～+150℃	内、外圈材料均为轴承钢，淬火，磷化，外圈有润滑油槽油孔，内球面有两条交叉润滑槽，滑动表面涂敷二硫化钼。 Bearing rings of carbon chromium steel，hardened and phosphated，sliding surface treated with MoS_2. Outer ring have groove and lubrication holes, sliding surface with two cross lubrication grooves.	92
	GAC…TL 25～200	钢/PTFE 编织物 Steel/PTFE fabric	−50℃～+150℃	外圈材料为轴承钢，淬火，球面粘贴 PTFE 编织物；内圈材料为轴承钢，淬火，球面镀硬铬。 Outer rings of carbon chromium steel，hardened，with sliding surface of PTFE fabric；Inner ring of carbon chromium steel，hardened，sliding surface hard chromium plated.	93
	GAC…N 25～120	钢/PTFE 塑料 Steel/PTFE plastic	−40℃～+75℃	外圈材料为轴承钢，淬火，球面衬有 PTFE 塑料，内圈材料为轴承钢，淬火，球面镀硬铬。 Outer rings of carbon chromium steel, hardened，with sliding surface of PTFE plastic；Inner ring of carbon chromium steel，hardened，sliding surface treated with hard chromium plating.	94

推力关节轴承
Thrust spherical plain bearings

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	GX…S 10～200	钢/钢 Steel/Steel	−50℃～+150℃	轴、座圈材料均为轴承钢，淬火，磷化，座圈有润滑油槽油孔，滑动表面涂敷二硫化钼。 Bearing housing washer of carbon chromium steel, hardened and phosphated, have groove and lubrication holes. Shaft washer of carbon chromium steel, hardened and phosphated. Sliding surfaces treated with MoS_2.	99
	GX…TL 10～360	钢/PTFE 编织物 Steel/PTFE fabric	−50℃～+150℃	座圈材料为轴承钢，淬火，球面粘贴 PTFE 编织物；轴圈材料为轴承钢，淬火，球面镀硬铬。 Bearing housing washer of carbon chromium steel, hardened, with sliding surface of PTFE fabric. Shaft washer of carbon chromium steel, hardened, sliding surface hard chromium plated.	100
	GX…N 17～120	钢/PTFE 塑料 Steel/PTFE plastic	−40℃～+75℃	座圈材料为轴承钢，淬火，球面衬有 PTFE 塑料，轴圈材料为轴承钢，淬火，球面镀硬铬。 Bearing housing washer of carbon chromium steel, hardened, with sliding surface of PTFE plastic. Shaft washer of carbon chromium steel, hardened, sliding surface hard chromium plated.	101

杆端关节轴承
Rod ends

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	SI...E 5～12 SI...ES 15～80 SA...E 5～12 SA...ES 15～80	钢/钢 Steel/Steel	−50℃～+150℃	组装杆端关节轴承由杆端体和向心关节轴承 GE...E 或 GE...ES 组装而成，杆端体材料是碳钢，表面镀锌；除型号后置代号为 E 外,其余型号可通过油杯或杆端眼孔润滑。 Rod end with male or female thread is made up of a rod end and a radial spherical plain bearing of sreies GE...E or GE...ES，rod end of steel and zinc coated；Can be relubricated via a nipple or a hole in the rod end, except those of the E design.	107-108
	SIZJ... 4.83～19.05 SAZJ... 4.83～19.05	钢/钢 Steel/Steel	−50℃～+150℃	挤压杆端关节轴承杆端体材料是碳钢，表面镀锌，挤压成形，内圈材料是轴承钢，淬火，球面镀硬铬。 Rod end of steel and zinc coated，with male or female thread press around the inner ring；inner ring of carbon chromium steel，spherical surface with chromium plating.	109-110
	SIBP...S 5～30 SABP...S 5～30 SIZP...S 4.83～25.4 SAZP...S 4.83～25.4	钢/青铜 Steel/Bronze	−50℃～+150℃	镶垫杆端关节轴承杆端体材料是碳钢，表面镀锌，滑动表面镶入青铜衬垫；内圈材料是轴承钢，淬火，球面镀硬铬，除了孔径小于 6.35 外，其余均可通过油杯润滑。 Rod end of steel and zinc coated，with male or female thread ，spherical surface with bronze liner；inner ring of carbon chromium steel，spherical surface with chromium plating；Can be relubricated via a nipple or a hole in the rod end，except hole diameter d≤6.35.	111-114
	SI...C 5～30 SA...C 5～30	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃	自润滑组装杆端关节轴承是由杆端体和自润滑向心关节轴承 GE...C 组装而成，杆端体材料是碳钢，表面镀锌；无需润滑。 Maintenance-free rod end with male or female thread is made up of a rod end and maintenance-free radial spherical plain bearing of series GE...C，rod end of steel and zinc coated；maintenance-free.	115-116
	SI...ETL-2RS 15～80 SA...ETL-2RS 15～80	钢/PTFE 编织物 Steel/PTFE fabric	−30℃～+130℃	自润滑组装杆端关节轴承是由杆端体和自润滑向心关节轴承 GE...ETL-2RS 组装而成，杆端体材料是碳钢，表面镀锌；无需润滑。 Maintenance-free rod end with male or female thread is made up of a rod end and maintenance-free radial spherical plain bearing of series GE...ETL-2RS，rod end of steel and zinc coated；maintenance-free.	115-116
	SIJK...C 5～30 SAJK...C 5～30 SIK...C 5～20 SAK...C 5～20	钢/PTFE 复合材料 Steel/PTFE composite material	−50℃～+150℃	自润滑组装杆端关节轴承杆端体材料是碳钢，表面镀锌；外圈材料是青铜，滑动表面衬有 PTFE 复合材料，无需润滑；内圈材料是轴承钢，淬火，球面镀硬铬。 Rod end of steel and zinc coated，with male or female thread；outer ring of bronze，with sliding surface of PTFE composite material，maintenance-free；inner ring of carbon chromium steel，spherical surface with hard chromium plating.	117-119
	SIBP...N 5～20 SABP...N 5～20 SIZP...N 4.83～19.05 SAZP...N 4.83～19.05	钢/PTFE 塑料 Steel/PTFE plastic	−40℃～+75℃	自润滑组装杆端关节轴承是由杆端体、内圈和 PTFE 塑料组成，杆端体材料是碳钢，表面镀锌，无需润滑；内圈材料是轴承钢，淬火，球面镀硬铬。 Maintenance-free rod end with male or female thread is made up of a rod end, inner ring and PTFE plastic；Rod end of steel and zinc coated，maintenance-free; inner ring of carbon chromium steel，spherical surface with hard chromium plating.	120-122

带座带锁口杆端关节轴承
Rod ends for hydraulic components

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	SK…E 10～12 SK…ES 15～80	钢/钢 Steel/Steel	−50℃～+150℃	焊接型杆端关节轴承由杆端体和向心关节轴承GE…E 或 GE…ES 组装而成，杆端体材料是易焊接钢，杆端柄部装有弹性销，便于焊接时定位；可通过油杯或杆端眼孔润滑。 Rod end with welding shank is made up of a rod end and a radial spherical plain bearing of series GE…E or GE…ES，rod end of weldable steel，with dowel pin in shank bottom and 45°welding chamfer；Can be relubricated via a nipple or a hole in the rod end.	127
	SF…ES 15～120	钢/钢 Steel/Steel	−50℃～+150℃	焊接型杆端关节轴承由杆端体和向心关节轴承GE…ES 或 GEEW…ES 组装而成，用挡圈固定，杆端体材料是易焊接钢，带有长方形焊接面；可通过油杯润滑。 Rod end with welding shank is made up of a rod end and a radial spherical plain bearing of series GE…ES or GEEW…ES，fixed in housing by snap rings，rod end of weldable steel，with rectangular welding face；Can be relubricated via a nipple .	128
	SFEW…ES 20～110	钢/钢 Steel/Steel	−50℃～+150℃		129
	SIR…ES 20～120	钢/钢 Steel/Steel	−50℃～+150℃	带锁口杆端关节轴承由杆端体和向心关节轴承GE…ES 组装而成，用挡圈固定，d＜60，杆端体材料是碳钢，60≤d≤90，杆端体材料是碳钢或球墨铸铁，d＞90，杆端体材料是球墨铸铁，SIR…ES 杆端体的内螺纹带有锁口，配有螺钉紧固；SIRN…ES 杆端体无锁紧螺钉,均可通过油杯润滑。 Rod end with locking slot is made up of a rod end and a radial spherical plain bearing of series GE…ES，fixed in housing by snap rings，rod end of carbon steel (d<60); carbon steel or spheroidal graphite cast iron (60≤d≤90); spheroidal graphite cast iron (d＞90). Thread can be closed because shank is slotted，thread clamping by two hexagon socket screws of series SIR…ES；without socket screw of SIRN…ES; All can be relubricated via a nipple.	130
	SIRN…ES 20～120	钢/钢 Steel/Steel	−50℃～+150℃		131
	SIGEW…ES 12～320	钢/钢 Steel/Steel	−50℃～+150℃	带锁口杆端关节轴承由杆端体和向心关节轴承GEEW…ES 组装而成，用挡圈固定，d＜63，杆端体材料是碳钢，63≤d≤80，杆端体材料是碳钢或球墨铸铁，d＞80，杆端体材料是球墨铸铁，杆端体的内螺纹带有锁口，配有螺钉紧固；可通过油杯润滑。 Rod end with locking slot is made up of a rod end and a radial spherical plain bearing of series GEEW…ES，fixed in housing by snap rings，rod end of carbon steel (d＜63); carbon steel or spheroidal graphite cast iron (63≤d≤80); spheroidal graphite cast iron (d＞80).Thread can be closed because shank is slotted，thread clamping by two hexagon socket screws；Can be relubricated via a nipple.	132

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	SIQ...ES 12～100	钢/钢 Steel/Steel	−50℃～+150℃	带锁口杆端关节轴承由杆端体和向心关节轴承GE...ES 组装而成，杆端体材料是碳钢，杆端体的内螺纹带有锁口，配有螺钉紧固；可通过油杯润滑。 Rod end with locking slot is made up of a rod end and a radial spherical plain bearing of series GE...ES，rod end of carbon steel，Thread can be closed because shank is slotted， thread clamping by two hexagon socket screws；Can be relubricated via a nipple.	133
	SIA...ES 25～160	钢/钢 Steel/Steel	−50℃～+150℃	带锁口杆端关节轴承由杆端体和向心关节轴承GE...ES 组装而成，用挡圈固定，d≤50，杆端体材料是碳钢，d＞50，杆端体材料是球墨铸铁，杆端体的内螺纹带有锁口，配有螺钉紧固；可通过油杯润滑。 Rod end with locking slot is made up of a rod end and a radial spherical plain bearing of series GE...ES，fixed in housing by snap rings，rod end of carbon steel (d≤50) or spheroidal graphite cast iron (d＞50)，Thread can be closed because shank is slotted，thread clamping by two hexagon socket screws；Can be relubricated via a nipple.	134

球头杆端关节轴承
Ball joint rod ends

轴承 Bearing	系列、尺寸范围 Series and bore diameter range	滑动摩擦副 Sliding contact surfaces	使用温度范围 Permissible operating temperature range	产品特点 Design characteristics	页码 Page
	SQG… 5～14	钢/钢 Steel/Steel	−50℃～+150℃	弯杆型球头杆端关节轴承球头座和球头杆的材料均为碳钢。 Ball joint housing and shank are of carbon steel and zinc coated.	137
	SQZ…-RS 5～22	钢/锌基合金 Steel/Zinc base alloy	−25℃～+120℃	直杆型球头杆端关节轴承球头座由特殊的锌基合金铸成，球头杆的材料是碳钢。 Ball joint housing is made up of zinc base alloy，ball joint shank of carbon steel.	138
	SQ…-RS 5～22	钢/锌基合金 Steel/Zinc base alloy	−25℃～+120℃	弯杆型球头杆端关节轴承球头座由特殊的锌基合金铸成，球头杆的材料是碳钢。 Ball joint housing is made up of zinc base alloy，ball joint shank of carbon steel.	139
	SQY…-RS 4.83～19.05	钢/锌基合金 Steel/Zinc base alloy	−25℃～+120℃	产品特点与 SQ…-RS 系列相同，但为英制螺纹。 As series SQ…-RS，but with inch screw thread.	139
	SQIZJ… 4～19	钢/钢 Steel/Steel	−50℃～+150℃	弯杆型球头杆端关节轴承杆端体材料为碳钢，表面镀锌，挤压成形，内圈材料是轴承钢，淬火，球面镀硬铬，球头杆的材料是碳钢。 Ball joint rod end of steel and zinc coated，with male or female thread press around the inner ring；inner ring of carbon chromium steel，spherical surface with chromium plating，ball joint shank of carbon steel.	140
	SQAZJ… 4～19	钢/钢 Steel/Steel	−50℃～+150℃		141

We, Fujian Longxi Bearing (Group) Corporation Limited, hereby certify that our LS bearings do not contain the hazardous substances restricted by ROHS Directive.

符号说明
Symbol description

p	接触应力，MPa Contact stress, MPa	$\Delta L1s$	球头杆端关节轴承中心高偏差，mm Center height deviation of ball joint rod ends, mm
k	动载荷系数，MPa Dynamic load factor, MPa	r_s	内倒角，mm Inner chamfer, mm
k_0	静载荷系数，MPa Static load factor, MPa	r_{1s}	外倒角，mm External chamfer, mm
C_d	基本额定动载荷，kN Basic dynamic load rating, kN	α°	倾斜角，° Tilt angle,°
P	当量动载荷，kN Equivalent dynamic load, kN	Fa	轴向外载荷，N Axial load, N
d	轴承内孔公称直径，mm Bearing bore diameter，nominal, mm	Fr	径向外载荷，N Radial load, N
Δdmp	单一平面平均内径偏差，mm Single plane mean bore diameter deviation, mm	f	摆动频率，min^{-1} Oscillation frequency, min^{-1}
V_{dp}	单一径向平面内径变动量，mm Bore diameter variation in a single radial plane, mm	f_p	载荷变动频率，min^{-1} Frequency of load variation, min^{-1}
V_{dmp}	平均内径变动量，mm Mean bore diameter variation, mm	K_M	与摩擦副材料有关 Material factor
B	内圈公称宽度，mm Width of inner ring, nominal, mm	L	关节轴承初始润滑寿命，oscillation Initial lubricating life of bearings, oscillation
ΔBs	内圈单一宽度偏差，mm Deviation of a single width of the inner ring, mm	t	温度，℃ Temperature, ℃
D	轴承公称外径，mm Bearing outside diameter, nominal, mm	v	平均滑动速度， mm/s Mean sliding velocity, mm/s
ΔDmp	单一平面平均外径偏差，mm Single plane mean outside diameter deviation, mm	X_r	向心关节轴承当量动载荷系数 Equivalent dynamic load factor of spherical plain bearing
V_{Dp}	单一径向平面外径变动量，mm Outside diameter variation in a single radial plane, mm	X_{ra}	角接触关节轴承当量动载荷系数 Equivalent dynamic load factor of angular contact spherical plain bearing
V_{Dmp}	平均外径变动量，mm Mean outside diameter variation, mm	Y_a	推力关节轴承当量动载荷系数 Equivalent dynamic load factor of thrust spherical plain bearing
C	外圈公称宽度，mm Width of outer ring，nominal, mm	α_k	载荷特性寿命系数 Load type factor
ΔCs	外圈单一宽度偏差，mm Deviation of a single width of the outer ring, mm	α_p	载荷寿命系数 Load factor
d_k	球径，mm Ball diameter, mm	α_t	温度寿命系数 Temperature factor
T	角接触关节轴承公称宽度，mm Width of the angular contact spherical plain bearing, nominal, mm	α_v	滑动速度寿命系数 Sliding velocity factor
ΔTs	角接触关节轴承实际宽度偏差，mm Actual deviation of width of the angular contact spherical plain bearing, mm	α_z	润滑寿命系数 Lubrication factor
H	推力关节轴承公称高度，mm Height of the thrust spherical plain bearing, nominal, mm	β	摆角，° Oscillation, °
ΔHs	推力关节轴承实际高度偏差，mm Actual deviation of height of the spherical plain thrust bearing, mm	ζ	轴承类型系数 Bearing type factor
Δhs	杆端关节轴承或球头杆端关节轴承中心高偏差，mm Center height deviation of rod ends or ball joint rod ends, mm	α_h	多次润滑间隔寿命系数 Re-lubrication factor

TL 型高性能自润滑关节轴承

LS 设计了全新结构的 PTFE织物，并采用改性树脂与 PTFE织物浸渍，改善了织物纤维与树脂之间的浸润情况，开发出采用具有优异粘结性能与摩擦磨损性能的新 PTFE衬垫（图 1）制造出来的自润滑关节轴承。在同等条件下比较，新 PTFE衬垫的粘结强度是原有衬垫的 2~3倍，摩擦磨损试验寿命是原有衬垫的 3~4倍（图 2）。

TL 型自润滑关节同时还具有以下的优点：

•具有更低的摩擦系数；

•具有更低的吸湿率和较好的防水性能；

•具有更好的抗变形能力。

新旧型号的对照如表 1 所示。

TL type high performance maintenance-free spherical plain bearings

LS designed the new structure of the PTFE fabric and improved the resin matrix. The new PTFE fabric has better wettability with the improved resin. Base on the new PTFE fabric and the improved resin we develop the high performance liner(Fig.1) and TL type bearings. Under the same condition, The new PTFE fabric liner has better bonding strength(2 to 3 times of the old one) and wear resistance(the service life is 3 to 4 times of the old one, Fig.2).

Meanwhile, the new PTFE fabric liner also provides the following benefits:

•low friction coefficient;

•low affinity to moisture, which provides water repellent properties;

•better resistance to deformation under load.

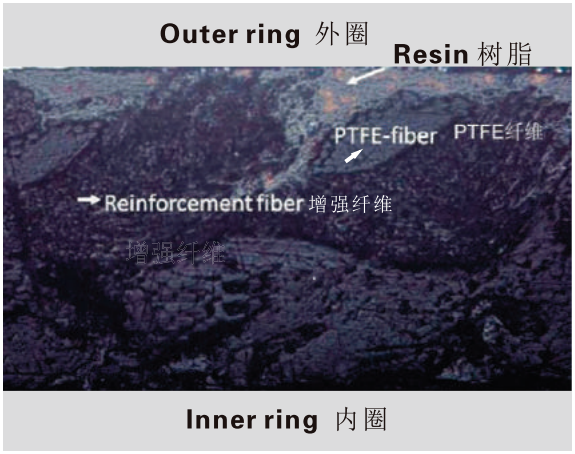


图 1 新 PTFE衬垫的横截面图

Fig.1 Cross-section of new PTFE fabric liner

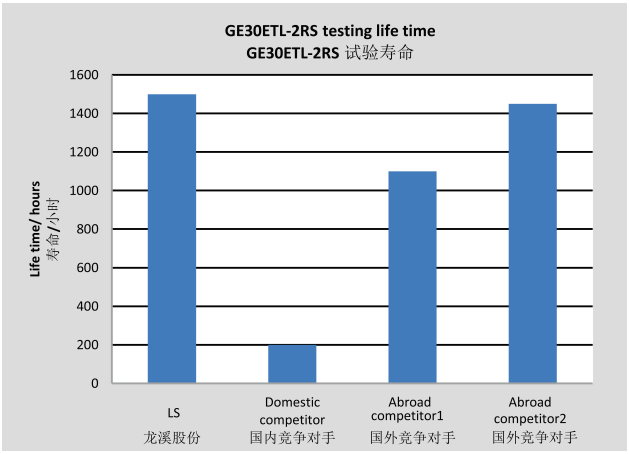


图 2 与国内外竞争对手试验寿命对比

Fig.2 Testing life time comparison with comperitors home and abroad

表1 PTFE 织物自润滑型关节轴承新旧型号对照表

Table 1 The designation difference between bearings with new and old PTFE fabric liner

新型号 New designation	旧型号 Old designation	新型号 New designation	旧型号 Old designation
GE…ETL-2RS	GE…ET-2RS	GEH…XTL	GEH…XT
GE…XTL-2RS	GE…XT-2RS	GEH…XTL-2RS	GEH…XT-2RS
GEG…ETL-2RS	GEG…ET-2RS	GEC…HTL	GEC…HT
GEG…XTL-2RS	GEG…XT-2RS	GEH…HTL	GEH…HT
GE…ETL-2GS/X	GE…ET-2GS/X	GAC…TL	GAC…T
GE…XTL-2GS/X	GE…XT-2GS/X	GX…TL	GX…T
GEZ…ETL-2RS	GEZ…ET-2RS	SI…ETL-2RS	SI…ET-2RS
GEC…XTL	GEC…XT	SA…ETL-2RS	SA…ET-2RS
GEC…XTL-2RS	GEC…XT-2RS		

轴承的承载能力

•额定载荷 确定关节轴承的额定载荷尚无标准的方法，也没有标准化的定义。由于不同制造商对额定载荷的定义各不相同，因此无法比较不同制造商生产的关节轴承的额定载荷。

•基本额定动载荷代表关节轴承在滑动接触面处于相对运动时，在室温下所能承受的最大载荷（图3）。我们采用基本额定动载荷及其它影响系数来确定关节轴承的额定寿命。在确定应用场合的最大动载荷时，应考虑所需的额定寿命。产品表中所列的基本额定动载荷是以动载荷系数 k（表2）和有效的滑动表面投影面积为基础。

•基本额定静载荷代表关节轴承在滑动接触面无相对运动时，在室温下所能承受的最大载荷（图4），而滑动接触面不致于发生不允许的变形、破裂或损坏。处于动载下的关节轴承，如同时还承受大的冲击载荷时，也应考虑额定静载荷，这种情形下的总载荷不能超过额定静载荷。产品表中所列的基本额定静载荷是以静载荷系数 k_0（表 2）和有效的滑动表面投影面积为基础。

对于杆端关节轴承，其基本额定静载荷必须考虑杆端体的强度。杆端体材料屈服强度应至少是杆端关节轴承额定静载荷的 1.2 倍。

Load carrying capacity

Load rating There is no standardized method for determining the load ratings of spherical plain bearings, nor is there any standardized definition. As different manufacturers define load ratings differently, it is not possible to compare the load ratings of bearings produced by one manufacturer with those of another.

Basic dynamic load rating It represents the maximum load that a spherical plain bearing can accommodate at room temperature when there is movement between the sliding contact surfaces (Fig. 3). The basic dynamic load rating is used, together with other influencing factors, to determine the basic rating life of spherical plain bearings. The maximum load in any application should always be considered in relation to the required rating life. The basic dynamic load ratings quoted in the product tables are based on the specific load factor K (table 1) and the effective projected sliding surface.

Basic static load rating It represents the maximum permissible load that a spherical plain bearing without inadmissible deforming, fracturing or damaging the sliding contact surfaces can accommodate when there is no relative movement between the sliding contact surfaces (Fig. 4). The basic static load rating must also be considered when bearings are dynamically loaded and subjected to additional heavy shock loads. The total load in these cases must not exceed the basic static load rating. The basic static load ratings quoted for spherical plain bearings are based on a specific static load factor K_0(table 1) and the effective projected sliding surface.

For rod ends, it is the strength of the housing at room temperature, under a constant load acting in the direction of the shank axis, that is the determining factor. The basic static load rating represents a safety factor of at least 1.2 relative to the yield strength of the material of the rod end housing, under the above conditions.

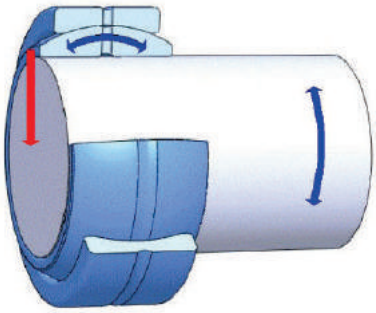


图 3 基本额定动载荷

Fig.3 Basic dynamic load rating

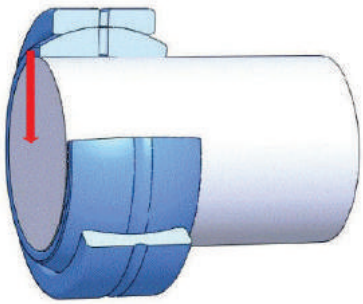


图 4 基本额定静载荷

Fig.4 Basic static load rating

轴承载荷

当考虑轴承的载荷时，应区别以下几种情况：

•载荷方向

— 径向载荷（图 5 ）
— 轴向载荷（图 6 ）
— 组合载荷（图 7 ）

•载荷类型

— 动载荷（加载时承载面有相对滑动）
— 静载荷（加载时承载面无相对滑动）

•载荷状态

— 恒定载荷（载荷方向和大小不变）图 8
— 交变载荷（载荷方向交替变换）图 9

Bearing load

When considering load, a distinction is made between:

Load direction

– radial load (fig.5)
– axial load (fig.6)
– combined (axial and radial) load (fig.7)

Type of load

– dynamic load, i.e. there is relative sliding movement in the loaded bearing
– static load, i.e. there is no relative movement in the loaded bearing.

Load conditions

– constant load (fig.8), i.e. the direction in which the load is applied does not change and the same part of the bearing (loaded zone) is always subjected to the load.
– alternating load (fig.9), i.e. change of load direction so that zones at opposite positions in the bearing are alternately loaded and unloaded.

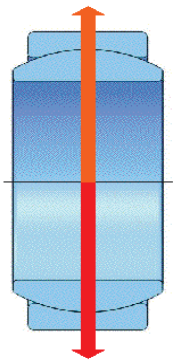


图 5 径向载荷
Fig.5 Radial load

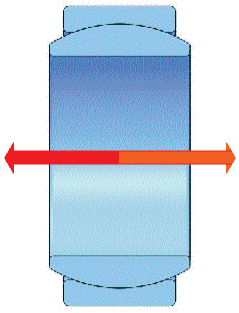


图 6 轴向载荷
Fig.6 Axial load

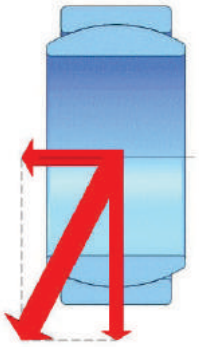


图 7 组合载荷
Fig.7 Combined load

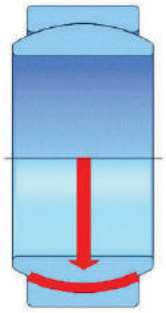


图 8 恒定载荷
Fig. 8 Constant load

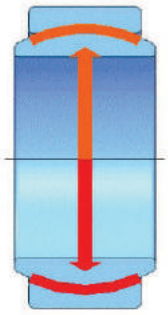


图 9 交变载荷
Fig. 9 Alternating load

当量载荷

•当量动载荷 是一恒定的载荷，在该载荷下，关节轴承工作表面接触应力水平与实际载荷相当。

•向心关节轴承的当量动载荷 向心关节轴承能够承受一定的轴向载荷(F_a)，主要承受径向载荷(F_r)。当组合载荷的大小恒定时，可采用以下公式计算当量动载荷：

$P = X_rF_r$

$X_r=0.978\times21.546^{Fa/Fr}$ 见图表 1.

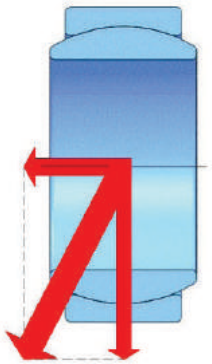


图10 向心关节轴承组合载荷

Fig.10 combined load of spherical plain bearing

Equivalent bearing load

Equivalent dynamic load which is a constant load. The contact pressure on the working surface is equivalent to the actual load under which load.

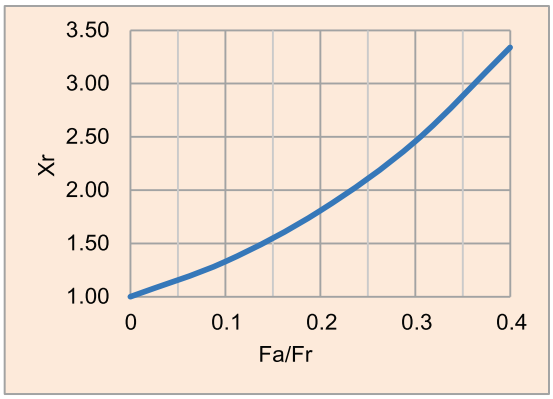
Radial spherical plain bearings

Radial spherical plain bearings can accommodate a certain magnitude of axial load Fa in addition to a simultaneously acting radial load Fr. When the resultant load is constant in magnitude, the equivalent dynamic bearing load can be calculated using:

$P=X_rF_r$

Factor Xr for radial spherical plain bearings is calculated by the formula:

$Xr=0.978\times21.546^{Fa/Fr}$



图表 1 向心关节轴承 Xr 因子

Diagram1 Xr for radial spherical plain bearings

•角接触关节轴承的当量动载荷

当角接触关节轴承受恒定的径向和轴向载荷作用时（图11），其当量动载荷为：

$P = X_{ra}F_r$

$0\leqslant F_a/F_r\leqslant2.35$ 时，$X_{ra}=1.009\times1.4714^{Fa/Fr}$

$2.35<F_a/F_r\leqslant3$ 时，

$X_{ra}=0.7678\times F_a/F_r+0.6966$，见图表 2。

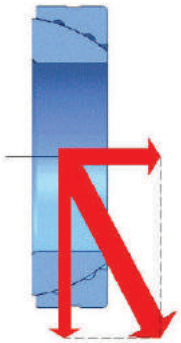


图11角接触关节轴承联合载荷

Fig.11 combined load of angular contact spherical plain bearing

Angular contact spherical plain bearings

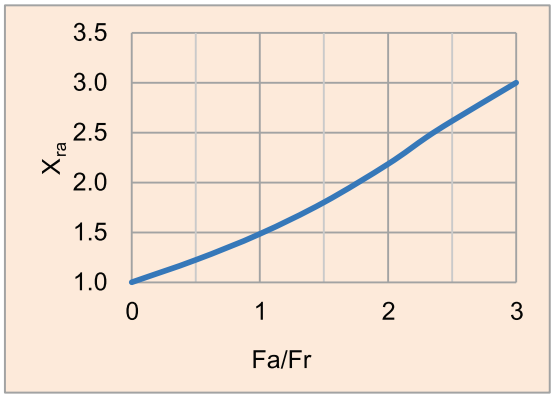
When the resultant load (fig.11) is constant in magnitude, then use the formula：

$P = X_{ra}F_r$

When $0\leqslant F_a/F_r\leqslant2.35$, $X_{ra}=1.009*1.4714^{Fa/Fr}$

When $2.35<F_a/F^r\leqslant3$,

$X_{ra}=0.7678\times F_a/F_r+0.6966$



图表 2 角接触关节轴承 X_{ra} 因子

Diagram 2 Factor X_{ra} for angular contact spherical plain bearings

•推力关节轴承的当量动载荷

当推力关节轴承承受恒定的轴向和径向载荷作用时（图12），其当量动载荷为：

$P = Y_aF_a$

$Ya = 0.998 \times 2.6254^{Fr/Fa}$，见图表 3。

Thrust spherical plain bearings

Thrust spherical plain bearings can accommodate a radial load Fr in addition to an axial load Fa (fig.12).

When the resultant load is constant in magnitude, then use the formula：

$P = Y_aF_a$

In which, $Ya = 0.998 \times 2.6254^{Fr/Fa}$

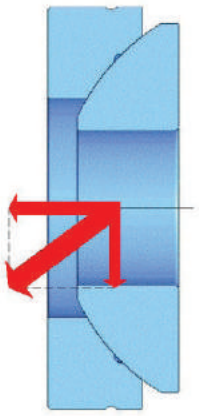
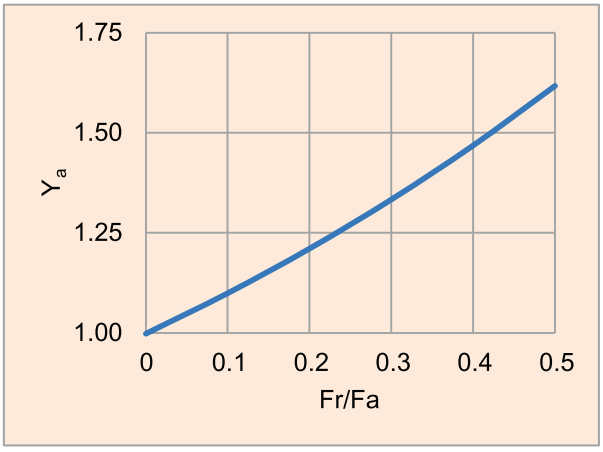


图12 推力关节轴承联合载荷

Fig.12 combined load of thrust spherical plain bearing



图表3 推力关节轴承的 Y_a 因子

Diagram 3 Y_a factor of thrust spherical plain bearing

基本额定寿命

在关节轴承的摩擦副中，由于润滑膜无法完全隔离摩擦副的两个表面，摩擦副的两个表面直接接触，从而不可避免地造成一定程度的磨损，导致轴承游隙变大。

在考虑关节轴承的寿命时，应区分额定寿命和使用寿命。额定寿命是一个理论指导值，用于估算使用寿命。使用寿命取决于实际工作条件，是轴承在运行中的实际寿命。

额定寿命是以大量实验测试为依据，在一段时间内对轴承进行实验，直至轴承游隙或摩擦系数增加到规定值（表3），此表中的数值仅供参考，对于某些精度要求不高的情况，当出现游隙增大值超过表中所列的数值时，仍然可能可以使用，具体可与 LS 公司工程师联系。额定寿命考虑到多种影响因素，可以用运转小时或往复摆动次数为单位来表示。

由于使用寿命的影响因素过于复杂，无法确定和估计所有影响因素，因此无法计算使用寿命。因此，使用寿命一般不同于额定寿命，具体情况取决于应用条件。

Basic rating life

For spherical plain bearings, a lubricant film that fully separates the sliding contact surfaces cannot be formed. Therefore, the sliding contact surfaces make direct contact with each other, resulting in a certain and unavoidable degree of wear. This increases the internal clearance in the bearing.

Regarding the life of spherical plain bearings, a distinction is made between the basic rating life and the service life. The basic rating life is a theoretical guideline value, used to estimate the service life. Service life depends on the actual operating conditions and is the actual life achieved by the bearing in service.

The basic rating life is based on a large number of laboratory tests. The bearings were tested for an operating period until a specific increase in bearing clearance or friction occurred (table 3).The value in the table is just only for reference, in some cases that do not require very high precision, the bearing is still usable even the increase of the internal clearance is larger than the value listed in the table, for more detail you can contact with LS engineers. The basic rating life considers several influencing factors and can be expressed in operating hours or the number of oscillating movements.

The service life cannot be calculated as it is too complex to determine and evaluate all the influencing factors. Therefore, depending on the application conditions, the service life may differ from the basic rating life.

表2

滑动摩擦副	动载荷系数 k	静载荷系数 k_0
钢-钢	100	500
钢-青铜	50	80
钢-PTFE织物衬垫	300	500
钢-PTFE复合材料	100	200
钢-铜合金	100	200

Table 2

Sliding contact surface	Dynamic load factor k	Static load factor k_0
Steel/steel	100	500
Steel/bronze	50	80
Steel/PTFE fabric liner	300	500
Steel/PTFE composite	100	200
Steel/copper alloy	100	200

表3

基本额定寿命测试失效一般准则		
滑动摩擦副	游隙增大值/mm	摩擦系数
钢-钢	$>0.004d_k$	0.2
钢-青铜	$>0.004d_k$	0.25
钢-PTFE复合材料	0.2	0.25
钢-PTFE织物衬垫	0.3	0.15
钢-铜合金	$>0.004d_k$	0.2

Table 3

Failure criteria for basic rating life tests		
Sliding contact surface	Increase in bearing clearance/mm	Coefficient of friction μ
Steel/steel	$>0.004d_k$	0.2
Steel/bronze	$>0.004d_k$	0.25
Steel/PTFE composite	0.2	0.25
Steel/PTFE fabric liner	0.3	0.15
Steel/copper alloy	$>0.004d_k$	0.2

基本额定寿命计算

关节轴承的寿命与轴承的承载能力和使用条件有关。

•接触应力

为了获得适当的使用寿命，轴承的接触应力必须适合于工况条件。接触应力代表产生于轴承的表面应力，对评价轴承的应用起到决定性的作用。

$$p=k\cdot\frac{P}{C_d}$$

p=接触应力	N/mm^2
k=载荷系数	N/mm^2
C_d=基本额定动载荷	kN
P=当量动载荷	kN

其中，C_d/P 称为载荷比，可参考表 4 列出的指导值进行计算。

表4

滑动摩擦副	载荷比 Cd/P
钢-钢	2
钢-青铜	2
钢-PTFE织物衬垫	2
钢-PTFE复合材料	1.6
钢-铜合金	2

•平均滑动速度

关节轴承工作球面的平均滑动速度可按以下公式计算：

$$v=2.9089\times10^{-4}\beta f\zeta d_k$$

其中：β 为摆角（如图 13 所示），f 为摆动频率，d_k 为滑动球面公称球径，ζ 为轴承类型参数（见表 5）。

表5

轴承类型	向心轴承	角接触轴承	推力轴承
ζ	1	0.9	0.7

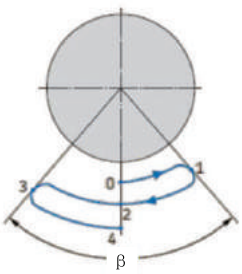


图13 摆角示意图

Basic rating life calculation

The basic rating life depends on the load capacity and operating condition.

Contact Stress

In order to achieve adequate service life, the bearing contact stress must be compatible with the operating conditions. The bearing contact stress represents the surface stress occurred in the bearing , which plays a key role in the evaluation of the bearings' application.

$$p=k\cdot\frac{P}{C_d}$$

p=contact stress	N/mm2
k=load factor	N/mm2
C_d=Dynamic load rating	KN
P=Equivalent dynamic load	KN

You can get the C_d/P value in table 4 to calculate the contact stress.

Table 4

Sliding contact surface	Load ratioCd/P
Steel/steel	2
Steel/bronze	2
Steel/PTFE fabric liner	2
Steel/PTFE composite	1.6
Steel/copper alloy	2

Mean sliding velocity

The mean sliding velocity for constant movement can be calculated by using the formula:

$$v=2.9089\times10^{-4}\beta f\zeta d_k$$

In the formula, β is oscillation angle（Fig.13），f is frequency，d_k is the nominal spherical diameter and ζ is the bearing type parameter (table 5).

Table 5

Bearing type	Spherical plain bearing	Angular contact spherical plain bearing	thrust spherical plain bearing
ζ	1	0.9	0.7

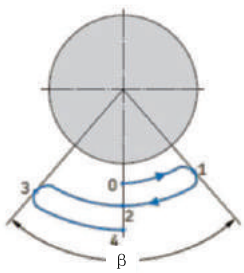


Fig.13 Oscillation β

•关节轴承的 pv 值极限

关节轴承工作表面的 pv 值应加以限制，否则轴承会过热，导致轴承寿命缩短。pv 即接触应力与平均滑动速度的乘积。不同摩擦副的 pv 极限值见表6，当实际的 pv 超过表中的数值时，请联系 LS 公司的工程师。

The limited pv value of bearings

The pv value of bearings should be limited under a certain value, high pv value will shorten the service life of bearings. pv value is the product of the contact stress p and mean sliding velocity v. Table 5 lists the limited pv value for different sliding contact surface. When the real pv exceed the limited value listed in the table, please contact with LS engineers.

表6 不同摩擦副的 p、v 及 pv 极限值

Table 6 the limited pv value for different sliding contact surface

摩擦副 sliding contact surface	钢-钢 steel - steel	钢-青铜 steel - bronze	钢-PTFE 织物衬垫 steel - PTFE fabric liner	钢-PTFE 复合材料 Steel/PTFE composite
p(MPa)	100	50	300	100
v(mm/s)	100	100	300	300
pv(MPa mm/s)	400	400	2000	300

•关节轴承初始润滑寿命

关节轴承初始润滑寿命为：

$$L = \alpha_k\alpha_t\alpha_p\alpha_v\alpha_z \frac{K_M}{v}\cdot\frac{C_d}{P}$$

公式中的各系数分别按表7-表 9 选取。

The initial lubrication life of bearings

The initial lubrication life of bearings can be calculated by the following formula：

$$L = \alpha_k\alpha_t\alpha_p\alpha_v\alpha_z \frac{K_M}{v}\cdot\frac{C_d}{P}$$

You can get the each parameter in the formula in table7 to table9.

表 7 系数

Table 7 factors

系数 Factors	摩擦副材料 sliding contact surface				备注 Notes
	钢-钢 steel-steel	钢-青铜 steel-bronze	钢-PTFE 织物衬垫 steel-PTFE fabric liner	钢-PTFE 复合材料 steel-PTFE composite	
K_M	830	207600	2.592×10^5	2.946×10^5	—
α_k	1	1	1	1	恒定载荷 Constant load
	1	1	$0.6062-6.0207\times10^{-3}f_p p^{1.11}$	$0.6062-3.1309\times10^{-3}f_p p^{1.25}$	脉动载荷 Pulse load
	2	2	$0.433-4.3005\times10^{-3}f_p p^{1.11}$	$0.433-2.2364\times10^{-3}f_p p^{1.25}$	交变载荷 Alternating load
α_t	1	1	1	1	t≤60℃
	0.9	$1.15-2.5\times10^{-3}t$	$1.225-3.75\times10^{-3}t$	2.2-0.02t	60℃＜t≤100℃
	0.8	2.1-0.012t	1.35-0.005t	—	100℃＜t≤150℃
	0.6	—	—	—	150℃＜t≤200℃
α_v	$v^{0.86}\beta^{0.84}f^{0.64}$	$v^{0.4}f^{0.8}$	$\frac{f}{1.00475^{\lambda v}\times1.0093^{\beta}}$	$\frac{f}{1.00344^{\lambda v}}$	—
α_p	G/p^b				
λ	—	—	1.0193^p	1.0399^p	—
注：表中的 λ、G、b 为计算变量，G、b 值在表 8 中查取 Notes: λ、G、b is variable in this table, you can get the G、b value in table 8					

表8 G、b 值

Table8 G、b value

p		摩擦副材料 sliding contact surface							
		钢-钢		钢-青铜		钢-PTFE 织物衬垫		钢-PTFE 复合材料	
		steel-steel		steel-bronze		steel-PTFE fabric liner		steel-PTFE composite	
超过 over	到 incl.	G	b	G	b	G	b	G	b
—	10	2.000	0	0.25	0	15.3460	0.0488	4.5102	0.2230
10	25	80.533	1.465	1	0.6	15.3460	0.0488	4.5102	0.2230
25	45	80.533	1.465	1	0.6	22.9060	0.1732	13.7170	0.5686
45	65	80.533	1.465	—	—	47.7259	0.366	13.7170	0.5686
65	100	80.533	1.465	—	—	157.9193	0.6527	13.7170	0.5686
100	300	—	—	—	—	402.0115	0.8556	—	—

表 9 系数 α_z

Table9 factor α_z

润滑类型 lubricating type	油脂润滑 grease lubricating		自润滑 self-lubricating
	无油槽 without oil groove	有油槽 with oil groove	
α_z	0.1~0.5	0.3~1	0.5~1

•关节轴承多次润滑寿命

对于需维护的脂润滑关节轴承，应定期更换轴承中的润滑剂，此时寿命可采用以下公式进行计算：

$$L_R = \alpha_h\alpha_\beta L \text{ 或 } L_{Rh} = \alpha_h\alpha_\beta L_h$$

其中，α_h 为多次润滑间隔寿命系数，α_β 为多次润滑摆角寿命系数。α_h 可按以下公式计算：

$$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3-0.0166n^2+0.3326n+0.6834$$

公式中，n 为润滑频次，

$$n = \frac{\text{初始润滑寿命 L}}{\text{润滑间隔时间 h}}$$

α_β 值可根据表10进行选取。

Re-lubrication life of bearings

When the bearing is regularly re-lubricated after the initial lubrication, the life of the bearing can be calculated by the following formula：

$$L_R = \alpha_h\alpha_\beta L \quad \text{or} \quad L_{Rh} = \alpha_h\alpha_\beta L_h$$

α_h is the factor depending on the frequency of re-lubrication, which can be calculated by the following formula：

$$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3-0.0166n^2+0.3326n+0.6834$$

In which, n is the frequency of re-lubrication.

$$n = \frac{\text{Initial lubrication life L}}{\text{Re-lubrication interval h}}$$

α_β is the factor depending on the oscillation angle whose value can be got in the table10.

表10 摆角寿命系数 α_β 的取值

Table10 the factor depending on the oscillation angle

β（°）	≤7	10	15	20	25	30	35	40
α_p	0.8	1	2.4	3.7	4.6	5.2	5.2	5.2

•选型计算示例

已知条件：

受力方式：只有径向力 Fr＝16KN

受力性质：交变载荷

摆动角度：β＝ 30°

摆动频率：f ＝10次/分钟

工作温度：80℃max.

要求：基本动载荷寿命 5000小时。

计算过程：

首先，选择钢对钢向心关节轴承，它适用于交变载荷性质的工况，并初步假定每隔 40 小时重润滑一次。

其次，按负荷系数表可知，钢对钢摩擦副的载荷比 $C_d/P=2$，可求得基本额定动载荷 $C_d=2P=2F_r=32KN$。

查 LS 的关节轴承样本可得，额定载荷大于 32KN 的最小型号为 GE25ES 其额定动载荷为 48KN，因此，初步选定该轴承。

以下对 GE25ES的基本额定寿命进行计算：根据关节轴承初始润滑寿命计算公式，需要计算以下参数：

$$p = k\times\frac{P}{C_d} = 100\times\frac{16}{48} = 33.3\ \ N/mm^2$$

$$v = 2.9089\times10^{-4}\beta f\zeta d_k$$
$$= 2.9089\times10^{-4}\times30\times10\times1\times35.5$$
$$= 3.10\ \ mm/s$$

由于载荷性质为交变载荷，则 $\alpha_k= 2$;

最高工作温度为 80℃，则 $\alpha_t= 0.9$（见表7）

$\alpha_p = G/p^b = 80.533\div33.3^{1.465} = 0.4731$

$\alpha_v = v^{0.86}\beta^{0.84}f^{0.64}$

$=3.10^{0.86}\times30^{0.84}\times10^{0.64}$

$=200.96$

$\alpha_z = 1$

$K_M = 830$

把以上各参数代入关节轴承初始润滑寿命计算公式：

$$L = \alpha_k\alpha_t\alpha_p\alpha_v\alpha_z\frac{K_M}{v}\cdot\frac{C_d}{P}$$

$$= 2\times0.9\times0.4731\times200.96\times\frac{830\times48}{3.10\times16}$$

$=137459$ 摆次

换算成工作时间，则

$L_h=L\div f\div60=137459\div10\div60=229$ 小时

根据假定的润滑间隔时间 40 小时

则润滑频次应为 $n=229\div40=5.73$

把 n 代入 α_h 的计算公式

Selection calculation example

Given date

Purely radial load that alternates direction: F_r=16 KN;

Oscillation angle β（Fig.13）is 30°

Frequency of oscillation f =10 min^{-1},

Maximum operating temperature: +80℃

Requirements

The bearing must have a basic rating life of 5000 h.

Calculation and selection

Because a bearing in this application must accommodate an alternating load, a steel/steel radial spherical plain bearing is the appropriate choice. Re-lubrication is planned after every 40 hours of operation.

If, for the first check, a guideline value of 2 is used for the load ratio C_d/P (table 4), the required basic dynamic load rating C_d for the bearing is

$C_d = 2\ P = 2F_r = 32\ KN$

In LS catalog, you can find that the smallest type of bearing whose dynamic load rating is higher than 32KN is GE25ES. it's dynamic load rating is 48KN and sphere diameter d_k is 35.5mm.

In order to calculate the basic rating life of the bearing, we have to calculate the following parameters according to the calculation formula of initial lubrication life of bearings.

$$p = k\times\frac{P}{C_d} = 100\times\frac{16}{48} = 33.3\ \ N/mm^2$$

$$v = 2.9089\times10^{-4}\beta f\zeta d_k$$
$$= 2.9089\times10^{-4}\times30\times10\times1\times35.5$$
$$= 3.10\ \ mm/s$$

Because the load is alternating direction load, so $\alpha_k= 2$

the highest temperature is 80℃， so $\alpha_t = 0.9$ （Table7）

$\alpha_p = G/p^b = 80.533\div33.3^{1.465} = 0.4731$

$\alpha_v = v^{0.86}\beta^{0.84}f^{0.64}$

$=3.10^{0.86}\times30^{0.84}\times10^{0.64}$

$=200.96$

$\alpha_z = 1$

$K_M = 830$

Put all the parameters above into the calculation formula of initial lubrication life of bearings.

$$L = \alpha_k\alpha_t\alpha_p\alpha_v\alpha_z\frac{K_M}{v}\cdot\frac{C_d}{P}$$

$$= 2\times0.9\times0.4731\times200.96\times\frac{830\times48}{3.10\times16}$$

$=137459$ oscillations

Convert it to the operating time:

$L_h=L\div f\div60=137459\div10\div60=229$ hours

The re-lubrication interval is 40 hours

So the re-lubrication frequency n = 229÷40=5.73

Put the value of n into the calculation formula of α_h

则

$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3$
$-0.0166n^2+0.3326n+0.6834$
$=2.15$

摆角 β =30° ，根据表10可得 $\alpha_\beta=5.2$

则多次润滑寿命

$L_{Rh}=\alpha_h\alpha_\beta L_h$
$=2.15\times5.2\times229$
=2560小时，小于要求的基本额定寿命5000小时。

有两种方案进行重新选型：

（1）增大润滑频次；

（2）选择更大规格的轴承。

•增大润滑频次：

采用从额定寿命反推回去计算润滑频次的方法。

$\alpha_h=5000\div(\alpha_\beta L_h)=5000\div5.2\div229=4.20$

则 α_h 应大于 4.20。

从 α_h 的计算公式可以得到，

当 n=22时，$\alpha_h=4.22>4.20$

则润滑间隔时间 h=229÷22≈10.5小时。

因此，如果重复润滑间隔时间缩短为小于10.5小时，选择GE25ES轴承可满足要求。

•选择更大规格的轴承：

选择高一个规格的 GE30ES轴承，采用上述同样的计算方法：

$$p=k\times\frac{P}{C_d}=100\times\frac{16}{62}=25.8\ \text{N/mm}^2$$

$$v=2.9089\times10^{-4}\beta f\zeta d_k$$
$$=2.9089\times10^{-4}\times30\times10\times1\times40.7$$
$$=3.55\ \text{mm/s}$$

$\alpha_p=G/p^b=80.533\div25.8^{1.465}=0.6886$

$\alpha_v=v^{0.86}\beta^{0.84}f^{0.64}$
$=3.55^{0.86}\times30^{0.84}\times10^{0.64}$
$=226.03$

$$L=\alpha_k\alpha_t\alpha_p\alpha_v\alpha_z\frac{K_M}{v}\cdot\frac{C_d}{P}$$

$$=2\times0.9\times0.6886\times226.03\times\frac{830\times62}{3.55\times16}$$

=253684 摆次，换算成工作时间：

$L_h=L\div f\div60=253684\div f\div60=422.8$

润滑频次 n=422.8÷40=10.57

$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3$
$-0.0166n^2+0.3326n+0.6834$
$=2.93$

$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3-0.0166n^2+0.3326n+0.6834$
$=2.15$

According to table10, we can get $\alpha_\beta=5.2$ when β=30°.

So the re-lubrication life of bearing is

$L_{Rh}=\alpha_h\alpha_\beta L_h$
$=2.15\times5.2\times229$
=2560hours, which is less than the requirement of the basic rating life 5000 hours.

In this case, there are two kinds of method to re-selection.

(1) To increase the re-lubrication frequency;

(2) To select a larger size bearing.

To increase the re - lubrication frequency

In order to get the suitable re-lubrication frequency n, firstly we calculate the factor depending on the frequency of re-lubrication α_h.

$\alpha_h=5000\div(\alpha_\beta L_h)=5000\div5.2\div229=4.20$, which is the critical value.

So the α_h should be larger than 4.20.

From the calculation formula of α_h, we can know that $\alpha_h=4.22$ when the re-lubrication frequency n=22.

So, the re-lubrication interval h = 229÷22≈10.5 hours.

The GE25ES bearing shall meet the requirement if the re-lubrication interval is shorten to less than 10.5 hours.

To select a larger size bearing

We can also select a larger size bearing, GE30ES whose basic dynamic load rating is 62KN and sphere diameter is 40.7mm. The calculation method is similar.

$$p=k\times\frac{P}{C_d}=100\times\frac{16}{62}=25.8\ \text{N/mm}^2$$

$$v=2.9089\times10^{-4}\beta f\zeta d_k$$
$$=2.9089\times10^{-4}\times30\times10\times1\times40.7$$
$$=3.55\ \text{mm/s}$$

$\alpha_p=G/p^b=80.533\div25.8^{1.465}=0.6886$

$\alpha_v=v^{0.86}\beta^{0.84}f^{0.64}$
$=3.55^{0.86}\times30^{0.84}\times10^{0.64}$
$=226.03$

$$L=\alpha_k\alpha_t\alpha_p\alpha_v\alpha_z\frac{K_M}{v}\cdot\frac{C_d}{P}$$

$$=2\times0.9\times0.6886\times226.03\times\frac{830\times62}{3.55\times16}$$

=253684oscillations

$L_h=L\div f\div60=253684\div f\div60=422.8$

The re-lubrication frequency n=422.8÷40=10.57

$\alpha_h=7.45\times10^{-8}n^5-1.1\times10^{-5}n^4+6.05\times10^{-4}n^3-0.0166n^2+0.3326n+0.6834$
$=2.93$

$L_{Rh} = \alpha_h \alpha_\beta L_h$

=2.93×5.2×422.8

=6441小时

大于要求的基本额定寿命 5000小时。

因此，如果按 40 小时重复润滑一次，选择GE30ES轴承可满足给定的使用要求。

$L_{Rh} = \alpha_h \alpha_\beta L_h$

=2.93×5.2×422.8

=6441 hours ,

which is larger than the requirement of the basic rating life 5000 hours.

So, to select GE30ES bearing is another way to meet the requirement if you don't change the re-lubrication interval.

摩擦

关节轴承的摩擦主要取决于摩擦副的组合、载荷和滑动速度。由于相关联的影响因素很多，所以无法提供准确的摩擦系数值。

摩擦系数在轴承使用寿命过程中会发生变化，磨合良好的轴承摩擦系数最低，初始磨合和损坏过程中会有一部分时间的摩擦系数较高。

出于安全原因，在摩擦系数特别重要的应用场合，建议采用表 11 列出的摩擦系数最大值确定额定功率。

表 11

滑动摩擦副	摩擦系数	
	min	max
钢－钢	0.08	0.20
钢－青铜	0.10	0.25
钢－PTFE 编织物	0.02	0.15
钢－PTFE 复合材料	0.05	0.25
钢－铜合金	0.05	0.25

轴承游隙

轴承游隙是指在一定的测量力下，一个套圈相对于另一套圈在径向或轴向移动的总的距离。

有必要区别轴承安装前游隙和安装后工作游隙。由于套圈是通过过盈或过渡配合安装，套圈受到膨胀或压缩，轴承的初始游隙总是大于工作游隙。

如果轴承在所推荐的配合下安装并在正常条件下运转，选用基本组游隙对于轴承的工作游隙是合适的。如果内、外圈都用过盈配合安装或者使用温度较高或较低时，可选用比正常组游隙较大或较小的游隙值。

Friction

The friction in a spherical plain bearing depends primarily on the sliding contact surface combination, the load and the sliding velocity. Because there are so many influencing factors that are not mutually independent, it is not possible to quote exact values for the coefficient of friction.

The coefficient of friction changes during the service life of the bearing. The coefficient of friction for the bearing running-in well is the lowest. There is part of the time for the higher friction coefficient during the process of initial running-in and damage.

For security reasons, in the applications where friction is particularly important, LS recommends determining the power ratings by using the maximum values for the coefficient of friction that are listed in table 11.

Table 11

Contact surface combination	Coefficient of friction	
	min	max
Steel/steel	0.08	0.20
Steel/bronze	0.10	0.25
Steel/PTFE fabric	0.02	0.15
Steel/PTFE composite material	0.05	0.25
Steel/copper alloy	0.05	0.25

Bearing internal clearance

Bearing internal clearance is defined as the total distance through which one ring can be moved radially(radial internal clearance) or axially(axial internal clearance) relative to the other ring under a certain measuring force.

It is necessary to distinguish between the internal clearance of a bearing before it is mounted and the internal clearance of a mounted bearing in operation (working clearance). Because the rings are mounted with interference or transition fit, the rings will expand or compress, the bearing's initial clearance is always larger than the working clearance.

If the bearing is mounted with recommended fit and runs under the normal condition, the normal group of initial internal clearance is appropriate to the bearing's working clearance . If the inner and outer rings are mounted with interference fit or the working temperature is higher or lower, we can select larger or smaller clearance value than the normal group.

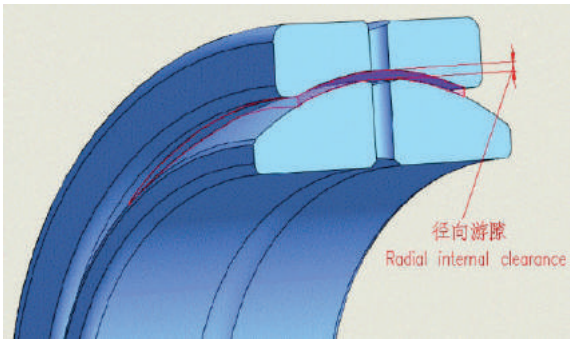


图 14　径向游隙
Fig.14　Radial internal clearance

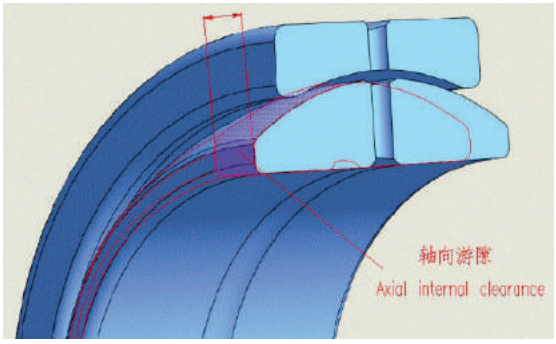


图15　轴向游隙
Fig.15　Axial internal clearance

润滑

对于钢对钢润滑型向心关节轴承，润滑的目的是减少磨损、降低摩擦和防止咬合。同时，润滑脂有防腐蚀作用。在工作过程中，周期性润滑可明显提高轴承使用寿命。

对于钢对 PTFE 编织物自润滑型向心关节轴承，使用过程中编织物中的 PTFE 会转移到内圈球面。润滑一般会干扰这种转移，从而降低轴承的使用寿命。所以，这种轴承是不允许润滑的。

对于钢对 PTFE 复合材料向心关节轴承，通常在工作中是不需要润滑的，但在需要防腐蚀和改善密封情况下，在轴承或轴承周围空间填加锂基脂是允许的。

MoS_2：在跑合阶段，添加二硫化钼有助于轴承的跑合，减少磨损。二硫化钼处理可分为湿式和干式两种处理方式。湿式二硫化钼处理采用涂敷方式处理；干式二硫化钼处理采用喷涂方式处理，采用干式二硫化钼处理效果优于湿式二硫化钼处理。如果客户需采用干式二硫化钼处理，订货时请联系我们。

Lubrication

For steel/steel spherical plain bearing requiring maintenance, the purpose of lubrication is reducing wear, reducing friction and preventing holding-on.Also the grease can prevent corrosion. Periodic lubrication can obviously improve the service life of the bearing during the running.

For steel/PTFE fabric spherical plain bearing free of maintenance, there is a transfer of PTFE from fabric to the sphere surface of the inner ring when in operation. Lubrication can generally interfere with the transfer, and shorten bearing life. Therefore，lubrication is not allowed for this kind of bearing.

For steel/PTFE composite spherical plain bearing, lubrication is generally not required. But when corrosion resistance and improving sealing is in need, filling the surrounding space of the bearing with lithium base grease is allowed.

MoS_2：Adding MoS_2 contributes to the running-in of bearing and the reducing of wear during the running-in stage. MoS_2 is treated with two kinds of way: wet-type and dry-type. Wet-type MoS_2 is treated with dipping, and dry-type is treated with spray. The effect of dry-type MoS_2 treating is superior to wet-type MoS_2 treating. If customer need dry-type MoS_2 treating, please contact with us when ordering.

密封

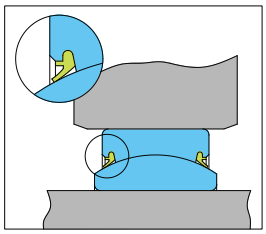
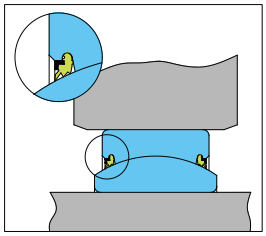
大多数轴承都需装有密封圈来抵挡污物和湿气的进入。密封有效性对轴承的使用寿命起着决定性的影响。LS 密封圈有两种结构形式，见表12。

Sealing

Most of the bearings must be equipped with seals to prevent the dirt and moisture from entering. The efficiency of the sealing has a decisive influence to the service life of the bearing. LS seal has two types, see table12.

表 12

Table 12

密封圈 Seal	简图 Illustration	产品特征 Design characteristics	适合环境 Suitability
2RS密封圈 2RS design		聚酯弹性体密封圈 Polyester elastomer seal （－30℃～＋130℃） 尼龙密封圈 Nylon seal （－30℃～＋130℃）	1. 结构紧凑的要求 2. 空间限制 3. 组合密封 4. 转动的要求 5. 长寿命的要求 1.For compact bearing arrangements, mainly indoors 2.For cramped spaces 3.For high sealing demands when combined with an outboard seal 4.For arrangements with bearings that rotate 5.For long service life with minimal maintenance
2GS密封圈 2GSdesign		带骨架的橡胶密封圈 Rubber seal with sheet ste insert （－25℃～＋120℃）	1. 结构紧凑的要求 2. 较高密封的要求 3. 转动的要求 4. 长寿命的要求 5. 泥或沙工况的要求 1.For compact bearing arrangements 2.For high sealing demands 3.For arrangements with bearings that rotate 4.For long service life with minimal maintenance 5.For difficult operating conditions in the presence of sand or mud

精度

外圈的尺寸和公差为表面处理和开缝前的数值。

开缝后，外圈外径变得有点不圆，但当轴承装入轴承座以后，外径就会恢复圆形(见图 16)。

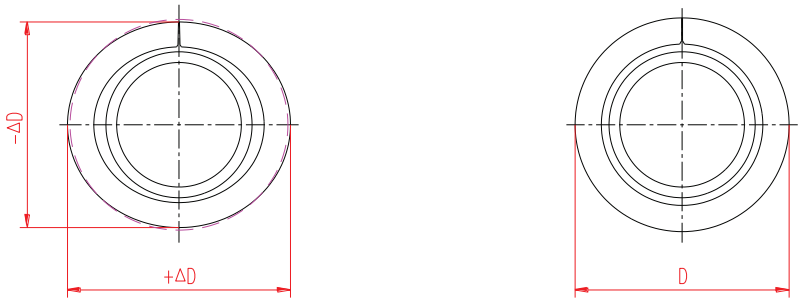
未安装的轴承外径的测量值不能做为外径原始实际值。

Accuracy

The dimensions and the tolerances apply before surface treatment and splitting for outer ring.

The outer ring becomes slightly out of round due to splitting. But when the bearing is mounted into the bearing housing, the roundness of the outer ring will be restored (fig.16).

The measured value of the bearing's outside diameter without mounting cannot be used as the original actual value of the outside diameter.



安装前外径圆度
Out of roundness before mounting

安装后外径圆度
Correct roundness after mounting

图 16
Fig.16

安装

为了便于安装，轴或者座孔的端面必须有一个 10° ～20° 的导入角，这样，轴承比较容易装入，且不会因为轴承的倾斜而损坏了装配面(见图 17)。

对于外圈开缝的向心关节轴承，缝必须垂直于主要载荷方向，否则轴承使用寿命会缩短。润滑孔必须位于承载方向，这样才能保证在承载区域提供较好的润滑(见图 18)。

Mounting

For ease of mounting, the end faces of the shafts and the housings must have an opening angle of 10° to 20°. So the bearing can be more easily mounted and there is little risk of damage to the assembly surfaces caused by tilting of the bearing(Fig.17).

For radial spherical plain bearings with split outer ring, the joint must be perpendicular to the main direction of the load, otherwise the service life is reduced. The lubrication holes must be in the loading direction so as to ensure good lubrication distribution in the load area (Fig.18).

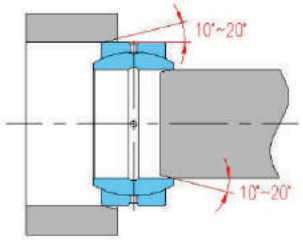


图 17
Fig.17

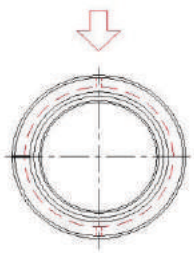


图 18
Fig.18

注意事项

1. 安装面必须保持干净且没有污物。
2. 轴承不允许接触潮湿和腐蚀性溶剂，特别是滑动球面。
3. 轴承必须与轴或座孔保持同心。

•机械安装

1. 不允许用锤子敲击轴承的方法来安装。
2. 安装力必须直接和均匀地施加于所配合的套圈。如果安装力通过滑动球面传递，会损坏轴承(见图19)。
3. 如果轴承同时安装进轴承座和轴，安装工具必须同时压住轴承内、外圈端面(见图20)。
4. 较大的轴承必须用特殊的安装工具(见图21)。

Matters needing attention

1.The assembly surface must be clean and no dirt.

2.The bearing must be protected from moist and corrosive solvents, especially the sliding sphere.

3. The bearing must maintain concentric with shaft or housing bore.

Mechanical assistance mounting

1. Direct blows with a hammer on the bearing rings for mounting must be avoided.

2. The installation force must directly and evenly applied to the rings. If the force is transferd through the sliding sphere ，the bearings may damage (fig.19).

3. If bearings are mounted on the shaft and in a housing at the same time，the mounting tools must be pressed simultaneously on the endfaces of the inner and outer ring(fig.20).

4. Larger bearing must be mounted in a special tool(fig.21).

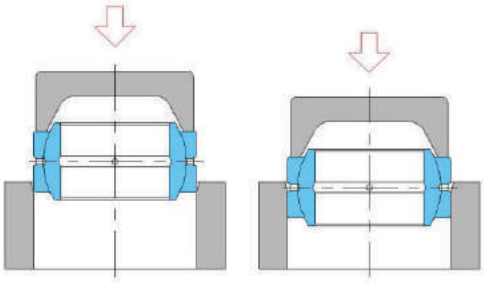


图19
Fig.19

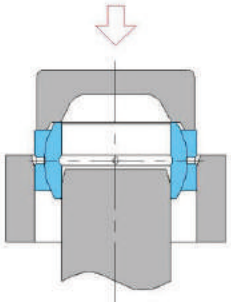


图20
Fig.20

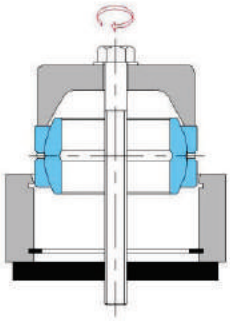


图21
Fig.21

•加热辅助安装

当轴承不易安装时，可以在安装前对轴承或轴承座进行加热，但应注意：

1. 关节轴承不允许加热超过 130℃，较高温度会破坏密封圈。
2. 关节轴承不允许采用油浴加热安装，否则：

① 对于自润滑轴承，油浴加热会削弱自润滑系统。

② 对于钢对钢关节轴承，会稀释了球面上上的二硫化钼。

3. 关节轴承不允许用明火加热，否则：

Thermal assistance mounting

When the bearing is difficult to install, heating the bearing and the housing can be done before mounting, but we should pay attention to that:

1.Spherical plain bearing must not be heated above +130℃，higher temperatures will damage the seal.

2.Spherical plain bearing must not be heated in an oil bath，or else：

① For self-lubricating bearing, oil bath heating weakens the lubrication system.

② For steel/steel spherical plain bearing, oil bath heating dilute molybdenum disulfide concentration on the sphere.

3. Spherical plain bearing must not be heated with naked flame，or else：

① 材料承受过多的局部热量，它的硬度会降低。此外轴承的应力会降低。

② 密封圈熔化。

③ 自润滑层破坏。

•冷却辅助安装

轴承安装也可以采用冷却方式，但应注意：

钢对钢向心关节轴承的套圈在-61℃时，组织会产生变化，可能使体积增大。由于配合间隙的变化，轴承可能卡死。

•胶粘剂固定安装

如果采用推荐的配合，没有必要使用胶粘剂固定套圈。当为使轴承易于安装而采用松配合时，应考虑轴与内圈、轴承座孔与外圈之间的固定方式，此时可以采用胶粘剂固定方式，但应注意，对于钢对钢向心关节轴承，胶粘剂只在以下情况下使用：

1. 安装表面必须清洁且没有油脂。
2. 必须确保润滑槽、孔不会被胶堵住。

① The material will undergo excessive localized heat and the hardness will reduce. Furthermore, the stress will reduce in the bearing.

② The seal will melt.

③ The self-lubricating layer will be damaged.

Cooling assistance mounting

Cooling also can be used for bearing mounting, but we should pay attention to that:

The rings of steel/steel spherical plain bearing will undergo microstructural change at temperatures about -61℃, which may cause the volume increased. Due to the change of fit clearance, the bearing is likely to be stuck.

Adhesive assistance mounting

If the recommended fit is used, it is not necessary to use adhesive on the bearing rings. When we should make the bearing easy to install and use the loose fit, consideration should be given about the fixed way between shaft and inner ring, housing bore and outer ring, so that we can use adhesive for fixing. But we should pay attention to that for steel/steel spherical plain bearing, adhesive is only used in the following cases:

1. The assembly surface must be clean and no grease.
2. Make sure that lubrication grooves and lubrication holes are not blocked by adhesive.

润滑型向心关节轴承

Radial spherical plain bearings requiring maintenance

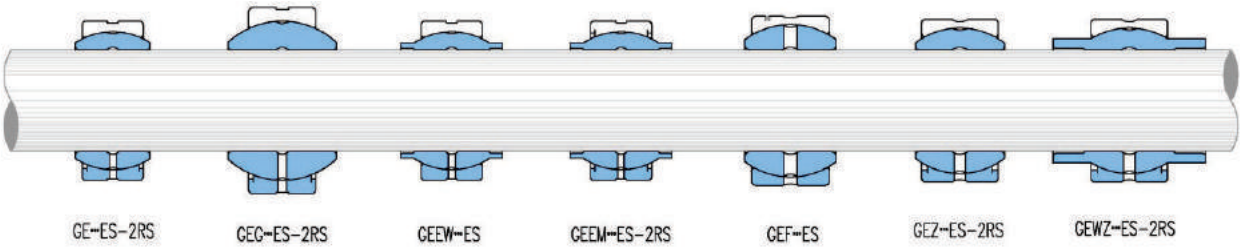
向心关节轴承是由带有内球面的外圈和带有外球面的内圈构成一对滑动摩擦副，主要用于机械同心度要求不高，工作表面压力较大且又要做低速摆动、倾斜或迴转运动的机械机构中。LS向心关节轴承的滑动摩擦副可由不同材料组成，主要有两种：润滑型(钢对钢)向心关节轴承和自润滑向心关节轴承。

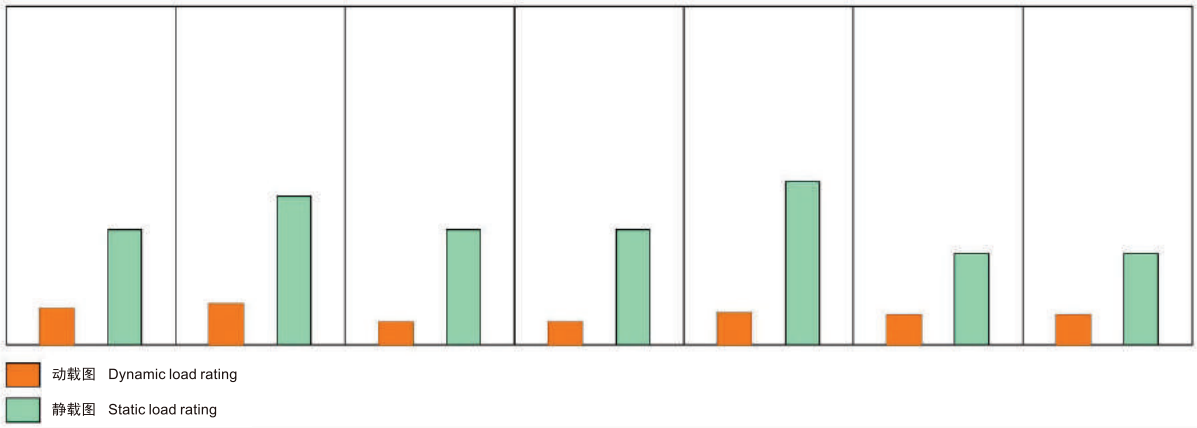
润滑型(钢对钢)向心关节轴承滑动表面一般经过淬火，磷化和涂敷二硫化钼，具有耐磨损、抗腐蚀的特点。这种轴承在正常情况下，周期性润滑是必须的。由于滑动表面具有很高的强度，这种轴承特别适合于承受交变重载、冲击载荷和静态重载。

Radial spherical plain bearings have an inner ring with a sphered convex outside surface and an outer ring with a correspondingly sphered but concave inside surface. Their design makes them particularly suitable for bearing arrangements where alignment movements between shaft and housing have to be accommodated, or where oscillating or recurrent tilting or slewing movements must be permitted at relatively slow sliding speeds. LS radial spherical plain bearings are available with different sliding contact surface combinations, i.e. the sliding surfaces of inner and outer rings are made from different materials. There are two main groups：spherical plain bearings requiring maintenance(steel-on-steel) and maintenance-free spherical plain bearings.

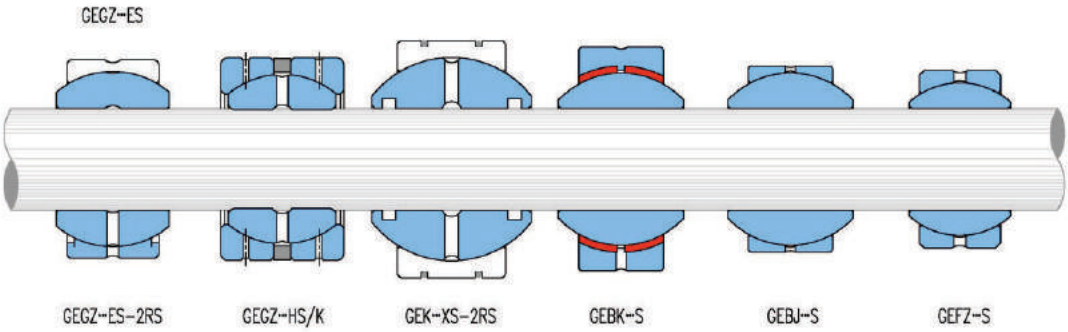
Redial spherical plain bearings requiring maintence(steel-on-steel) generally have hardened sliding contact surface on both rings. The surfaces are treated with molybdenum disulphide and phosphated. It has characteristics of wear-resistance and wear-corrosion. Bearings with this sliding contact surface combination require regular relubrication. The high strength of the sliding contact surfaces makes these bearings especially suitable for bearing arrangements where heavy loads of alternating direction, shock loads or heavy static loads have to be accommodated.

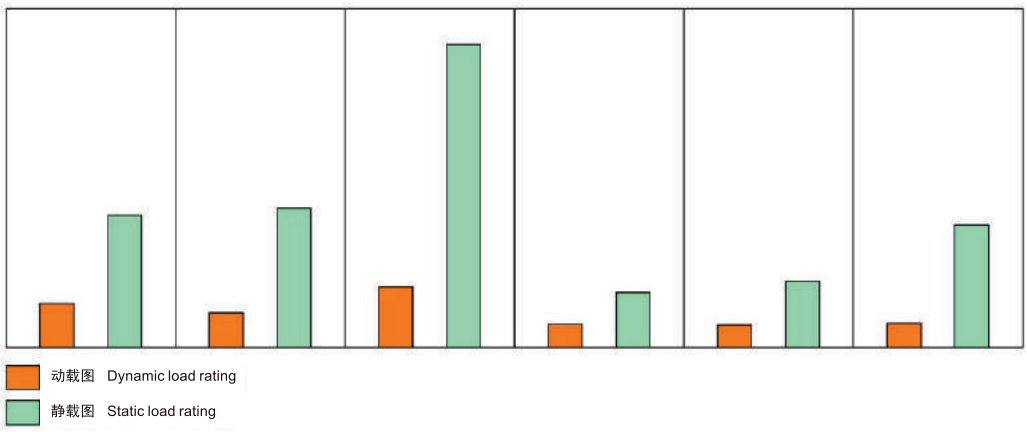
润滑型向心关节轴承
Radial spherical plain bearings requiring maintenance





润滑型向心关节轴承
Radial spherical plain bearings requiring maintenance





E、G、EW、EM、F、C、H、GE...XS/K 系列公差 Tolerances for series E、G、EW、EM、F、C、H、GE...XS/K

内圈 Inner ring

μm

d mm		Δdmp		Δdmp*		Vdp	Vdmp	Vdp*	Vdmp*	ΔBs		ΔBs*	
超过 over	到 incl.	max	min	max	min	max	max	max	max	max	min	max	min
—	18	0	-8	+18	0	8	6	18	14	0	-120	0	-180
18	30	0	-10	+21	0	10	8	21	16	0	-120	0	-210
30	50	0	-12	+25	0	12	9	25	19	0	-120	0	-250
50	80	0	-15	+30	0	15	11	30	22	0	-150	0	-300
80	120	0	-20	+35	0	20	15	35	26	0	-200	0	-350
120	180	0	-25	+40	0	25	19	40	30	0	-250	0	-400
180	250	0	-30	+46	0	30	23	46	35	0	-300	0	-460
250	315	0	-35	+52	0	35	26	52	39	0	-350	0	-520
315	400	0	-40	+57	0	40	30	57	43	0	-400	0	-570
400	500	0	-45	—	—	45	34	—	—	0	-450	—	—
500	630	0	-50	—	—	50	38	—	—	0	-500	—	—
630	800	0	-75	—	—	75	56	—	—	0	-750	—	—
800	1000	0	-100	—	—	135	75	—	—	0	-1000	—	—

带*号为 GEEW...ES 的公差 The deviations in the columns with symbol * apply to spherical plain bearings of series GEEW...ES.

外圈 Outer ring

μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
—	18	0	-8	10	6	0	-240
18	30	0	-9	12	7	0	-240
30	50	0	-11	15	8	0	-240
50	80	0	-13	17	10	0	-300
80	120	0	-15	20	11	0	-400
120	150	0	-18	24	14	0	-500
150	180	0	-25	33	19	0	-500
180	250	0	-30	40	23	0	-600
250	315	0	-35	47	26	0	-700
315	400	0	-40	53	30	0	-800
400	500	0	-45	60	34	0	-900
500	630	0	-50	67	38	0	-1000
630	800	0	-75	100	56	0	-1100
800	1000	0	-100	135	75	0	-1200
1000	1250	0	-125	190	125	0	-1300
1250	1600	0	-160	240	160	0	-1600

GEBK...S 公差 Tolerances for series GEBK...S

内圈 Inner ring

μm

d mm		Δdmp		Vdp	Vdmp	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	6	+12	0	12	9	0	-100
6	10	+15	0	15	11	0	-100
10	18	+18	0	18	14	0	-100
18	30	+21	0	21	16	0	-100

外圈 Outer ring

μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
10	18	0	-11	15	8	+100	-100
18	30	0	-13	17	10	+100	-100
30	50	0	-16	20	11	+100	-100
50	80	0	-19	24	14	+100	-100

GEBJ…S 公差 Tolerances for series GEBJ…S

内圈 Inner ring μm

d mm		ΔdmP		VdP	VdmP	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	6	+12	0	12	9	0	−100
6	10	+15	0	15	11	0	−100
10	18	+18	0	18	14	0	−100
18	30	+21	0	21	16	0	−100
30	50	+25	0	25	19	0	-100

外圈 Outer ring μm

D mm		ΔDmP		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
10	18	0	−11	15	8	0	−240
18	30	0	−13	17	10	0	−240
30	50	0	−16	20	11	0	−240
50	80	0	−19	24	14	0	−300
80	120	0	-22	29	17	0	-400

GEFZ…S 公差 Tolerances for series GEFZ…S

内圈 Inner ring μm

d mm		ΔdmP		VdP	VdmP	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	6	+38	-13	12	9	+130	−130
6	10	+38	-13	15	11	+130	−130
10	18	+38	-13	18	14	+130	−130
18	30	+38	-13	21	16	+130	−130

外圈 Outer ring μm

D mm		ΔDmP		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
10	18	0	−18	24	14	+130	−130
18	30	0	−18	24	14	+130	−130
30	50	0	−18	24	14	+130	−130

GEK…XS-2GS 公差 Tolerances for series GEK…XS-2GS

内圈 Inner ring μm

d mm		ΔdmP		VdP	VdmP	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
18	30	+33	0	30	22	+50	−110
30	50	+39	0	35	26	+50	−110
50	60	+46	0	46	35	+50	−140

外圈 Outer ring μm

D mm		ΔDmP		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
50	80	+30	+11	24	14	0	−130
80	120	+35	+13	29	17	0	−130
120	150	+40	+15	33	19	0	−130

Z、GZ、WZ系列公差Tolerances for series Z、GZ、WZ

内圈 Inner ring μm

d mm		ΔdmP		VdP	VdmP	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	50.8	0	−13	13	10	0	-130
50.8	76.2	0	−15	15	11	0	-130
76.2	120.65	0	−20	20	15	0	-130
120.65	152.4	0	−25	25	19	0	-130
152.4	203.2	0	−30	30	23	0	-130
203.2	254	0	−30	30	23	0	-130
254	304.8	0	−35	35	26	0	-130

外圈 Outer ring μm

D mm		ΔDmP		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
—	50.8	0	-13	17	10	0	-130
50.8	80.963	0	-15	20	11	0	-130
80.963	120.65	0	-20	27	15	0	-130
120.65	177.8	0	-25	33	19	0	-130
177.8	222.25	0	-30	40	23	0	-130
222.25	304.8	0	-35	47	26	0	-130
304.8	381	0	-40	53	30	0	-130
381	457.2	0	-45	60	34	0	-130

尺寸和公差符号说明详见 P13 Details of dimension and tolerance symbols see page 13

钢对钢向心关节轴承径向游隙 Radial internal clearance of steel-on-steel radial spherical plain bearings

GE…E，GE…ES，GE…ES-2RS，GEEW…ES，GEEM…ES-2RS 系列

Series GE…E，GE…ES，GE…ES-2RS，GEEW…ES，GEEM…ES-2RS μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	12	8	32	32	68	68	104
12	20	10	40	40	82	82	124
20	35	12	50	50	100	100	150
35	60	15	60	60	120	120	180
60	90	18	72	72	142	142	212
90	140	18	85	85	165	165	245
140	200	18	100	100	192	192	284
200	240	18	110	110	214	214	318
240	300	18	125	125	239	239	353
300	320	18	135	135	261	261	387

GEG…E，GEG…ES，GEG…ES-2RS 系列 Series GEG…E，GEG…ES，GEG…ES-2RS μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	10	8	32	32	68	68	104
10	17	10	40	40	82	82	124
17	30	12	50	50	100	100	150
30	50	15	60	60	120	120	180
50	80	18	72	72	142	142	212
80	120	18	85	85	165	165	245
120	180	18	100	100	192	192	284
180	220	18	110	110	214	214	318
220	280	18	125	125	239	239	353

GEF…ES 系列 Series GEF…ES μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	12	8	32	32	68	68	104
12	20	10	40	40	82	82	124
20	35	12	50	50	100	100	150
35	55	15	60	60	120	120	180
55	80	18	72	72	142	142	212
80	120	18	85	85	165	165	245
120	150	18	100	100	192	192	284

GEBJ…S，GEFZ…S 系列　Series GEBJ…S，GEFZ…S　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
—	8	20	60
8	14	40	90
14	20	50	110
20	35	60	120
35	50	80	150

GE…XS/K 系列　Series GE…XS/K　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
—	15	70	125
15	30	75	140
30	50	85	150
50	65	90	160
65	80	95	170
80	100	100	185
100	120	110	200
120	150	120	215

GEZ…ES,GEZ…ES-2RS,GEWZ…ES,GEWZ…ES-2RS 系列
Series GEZ…ES,GEZ…ES-2RS,GEWZ…ES,GEWZ…ES-2RS　μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	15.875	10	50	50	150	150	220
15.875	50.8	10	80	80	180	180	250
50.8	76.2	30	100	100	200	200	270
76.2	152.4	60	130	130	230	230	300
152.4	203.2	80	180	180	300	300	380
203.2	254	100	200	200	330	330	410
254	304.8	120	230	230	350	350	430

GEGZ…ES，GEGZ…ES-2RS 系列　Series GEGZ…ES，GEGZ…ES-2RS　μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
12.7	44.45	10	80	80	180	180	250
44.45	69.85	30	100	100	200	200	270
69.85	139.7	60	130	130	230	230	300

GEGZ…HS/K 系列　Series GEGZ…HS/K　μm

d mm		轴向游隙 Axial clearance	
超过 over	到 incl.	min	max
12.7	57.15	76	178
57.15	82.55	100	200
82.55	139.7	150	250

GEBK…S 系列　Series GEBK…S　　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
–	30	0	35

GEC…XS，GEC…XS-2RS 系列　Series GEC…XS，GEC…XS-2RS　　μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
300	340	18	125	125	239	239	353
340	420	18	135	135	261	261	387
420	530	18	145	145	285	285	425
530	670	18	160	160	320	320	475

GEK…XS-2GS 系列　Series GEK…XS-2GS　　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
20	35	100	200
35	60	120	250

轴配合 Shaft fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination 润滑型 requiring maintenance
各种载荷，间隙或过渡配合 Loads of all kinds，clearance or transition fit	h6 轴淬火 hardened shaft
各种载荷，过盈配合 Loads of all kinds，interference fit	m6

支承座配合 Housing fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination 润滑型 requiring maintenance
轻载 Light loads 可轴向移动 Axial displacement required	H7
重载 Heavy loads	M7
轻合金支承座 Light alloy housings	N7

轴径公差 Shaft diameter tolerances

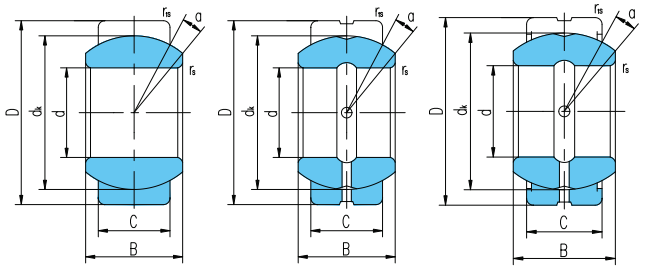
轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances μm							
		g6		h6		k6		m6	
超过 over	到 incl.	high	low	high	low	high	low	high	low
3	6	-4	-12	0	-8	+9	+1	+12	+4
6	10	-5	-14	0	-9	+10	+1	+15	+6
10	18	-6	-17	0	-11	+12	+1	+18	+7
18	30	-7	-20	0	-13	+15	+2	+21	+8
30	50	-9	-25	0	-16	+18	+2	+25	+9
50	80	-10	-29	0	-19	+21	+2	+30	+11
80	120	-12	-34	0	-22	+25	+3	+35	+13
120	180	-14	-39	0	-25	+28	+3	+40	+15
180	250	-15	-44	0	-29	+33	+4	+46	+17
250	315	-17	-49	0	-32	+36	+4	+52	+20
315	400	-18	-54	0	-36	+40	+4	+57	+21
400	500	-20	-60	0	-40	+45	+5	+63	+23
500	630	-22	-66	0	-44	+44	0	+70	+26
630	800	-24	-74	0	-50	+50	0	+80	+30
800	1000	-26	-82	0	-56	+56	0	+90	+34

支承座孔公差 Housing bore tolerances

支承座孔径 Housing bore diameter mm		支承座孔公差 Housing bore tolerances μm							
		H7		K7		M7		N7	
超过 over	到 incl.	low	high	low	high	low	high	low	high
10	18	0	+18	-12	+6	-18	0	-23	-5
18	30	0	+21	-15	+6	-21	0	-28	-7
30	50	0	+25	-18	+7	-25	0	-33	-8
50	80	0	+30	-21	+9	-30	0	-39	-9
80	120	0	+35	-25	+10	-35	0	-45	-10
120	150	0	+40	-28	+12	-40	0	-52	-12
150	180	0	+40	-28	+12	-40	0	-52	-12
180	250	0	+46	-33	+13	-46	0	-60	-14
250	315	0	+52	-36	+16	-52	0	-66	-14
315	400	0	+57	-40	+17	-57	0	-73	-16
400	500	0	+63	-45	+18	-63	0	-80	-17
500	630	0	+70	-70	0	-96	-26	-114	-44
630	800	0	+80	-80	0	-110	-30	-130	-50
800	1000	0	+90	-90	0	-124	-34	-146	-56
1000	1250	0	+105	-105	0	-145	-40	-171	-66
1250	1600	0	+125	-125	0	-173	-48	-203	-78

滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel



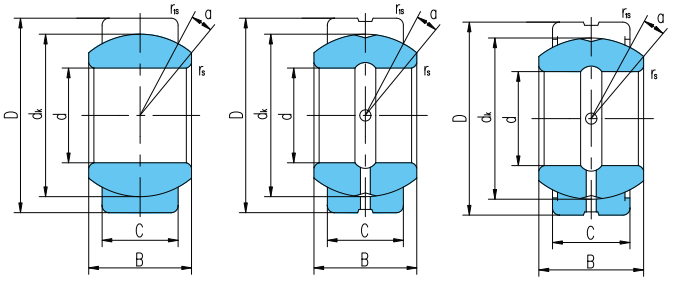
GE...E　　GE...ES　　GE...ES-2RS

轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE4E		4	12	5	3	8	0.3	0.3	16	2	10	0.003
GE5E		5	14	6	4	10	0.3	0.3	13	3.4	17	0.005
GE6E		6	14	6	4	10	0.3	0.3	13	3.4	17	0.004
GE8E		8	16	8	5	13	0.3	0.3	15	5.5	27	0.007
GE10E		10	19	9	6	16	0.3	0.3	12	8.1	40	0.011
GE12E		12	22	10	7	18	0.3	0.3	10	10	53	0.017
GE15ES	GE15ES-2RS	15	26	12	9	22	0.3	0.3	8	16	84	0.026
GE17ES	GE17ES-2RS	17	30	14	10	25	0.3	0.3	10	21	106	0.040
GE20ES	GE20ES-2RS	20	35	16	12	29	0.3	0.3	9	30	146	0.064
GE25ES	GE25ES-2RS	25	42	20	16	35.5	0.6	0.6	7	48	240	0.115
GE30ES	GE30ES-2RS	30	47	22	18	40.7	0.6	0.6	6	62	310	0.149
GE35ES	GE35ES-2RS	35	55	25	20	47	0.6	1	6	79	399	0.228
GE40ES	GE40ES-2RS	40	62	28	22	53	0.6	1	7	99	495	0.318
GE45ES	GE45ES-2RS	45	68	32	25	60	0.6	1	7	127	637	0.421
GE50ES	GE50ES-2RS	50	75	35	28	66	0.6	1	6	156	780	0.562
GE55ES	GE55ES-2RS	55	85	40	32	74	0.6	1	7	200	1000	0.864
GE60ES	GE60ES-2RS	60	90	44	36	80	1	1	6	245	1220	1.03
GE70ES	GE70ES-2RS	70	105	49	40	92	1	1	6	313	1560	1.57
GE80ES	GE80ES-2RS	80	120	55	45	105	1	1	6	400	2000	2.32
GE90ES	GE90ES-2RS	90	130	60	50	115	1	1	5	488	2440	2.79
GE100ES	GE100ES-2RS	100	150	70	55	130	1	1	7	607	3030	4.44
GE110ES	GE110ES-2RS	110	160	70	55	140	1	1	6	654	3270	4.83
GE120ES	GE120ES-2RS	120	180	85	70	160	1	1	6	950	4750	8.11
GE140ES	GE140ES-2RS	140	210	90	70	180	1	1	7	1070	5350	11.2
GE160ES	GE160ES-2RS	160	230	105	80	200	1	1	8	1360	6800	14.1
GE180ES	GE180ES-2RS	180	260	105	80	225	1.1	1.1	6	1530	7650	18.5
GE200ES	GE200ES-2RS	200	290	130	100	250	1.1	1.1	7	2120	10600	28.4
GE220ES	GE220ES-2RS	220	320	135	100	275	1.1	1.1	8	2320	11600	35.7
GE240ES	GE240ES-2RS	240	340	140	100	300	1.1	1.1	8	2550	12700	39.7
GE260ES	GE260ES-2RS	260	370	150	110	325	1.1	1.1	7	3030	15190	51.5
GE280ES	GE280ES-2RS	280	400	155	120	350	1.1	1.1	6	3570	17850	64.9
GE300ES	GE300ES-2RS	300	430	165	120	375	1.1	1.1	7	3800	19100	77.6

内径 φ50≤d ≤φ200mm 外圈内球面可设计交叉润滑槽，图示见 P142图 1，轴承型号需加 “/J”，例如：GE80ES/J

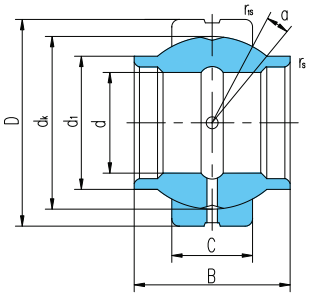
φ50≤d ≤φ200mm，the sliding surface of outer ring can be designed crossed grooves，sketch map see page P142 figure1，suffix “/J”is added to bearing number，e.g.GE80ES/J

滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel



轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEG4E		4	14	7	4	10	0.3	0.3	20	3.4	17	0.005
GEG5E		5	16	9	5	13	0.3	0.3	21	5.5	27	0.009
GEG6E		6	16	9	5	13	0.3	0.3	21	5.5	27	0.008
GEG8E		8	19	11	6	16	0.3	0.3	21	8.1	40	0.014
GEG10E		10	22	12	7	18	0.3	0.3	18	10	53	0.021
GEG12E		12	26	15	9	22	0.3	0.3	18	16	84	0.036
GEG15ES	GEG15ES-2RS	15	30	16	10	25	0.3	0.3	16	21	106	0.048
GEG17ES	GEG17ES-2RS	17	35	20	12	29	0.3	0.3	19	30	146	0.080
GEG20ES	GEG20ES-2RS	20	42	25	16	35.5	0.3	0.6	17	48	240	0.152
GEG25ES	GEG25ES-2RS	25	47	28	18	40.7	0.6	0.6	17	62	310	0.199
GEG30ES	GEG30ES-2RS	30	55	32	20	47	0.6	1	17	79	399	0.296
GEG35ES	GEG35ES-2RS	35	62	35	22	53	0.6	1	16	99	495	0.402
GEG40ES	GEG40ES-2RS	40	68	40	25	60	0.6	1	17	127	637	0.535
GEG45ES	GEG45ES-2RS	45	75	43	28	66	0.6	1	15	156	780	0.698
GEG50ES	GEG50ES-2RS	50	90	56	36	80	0.6	1	17	245	1220	1.42
GEG60ES	GEG60ES-2RS	60	105	63	40	92	1	1	17	313	1560	2.09
GEG70ES	GEG70ES-2RS	70	120	70	45	105	1	1	16	400	2000	3.01
GEG80ES	GEG80ES-2RS	80	130	75	50	115	1	1	14	488	2440	3.61
GEG90ES	GEG90ES-2RS	90	150	85	55	130	1	1	15	607	3030	5.50
GEG100ES	GEG100ES-2RS	100	160	85	55	140	1	1	14	654	3270	6.04
GEG110ES	GEG110ES-2RS	110	180	100	70	160	1	1	12	950	4750	9.74
GEG120ES	GEG120ES-2RS	120	210	115	70	180	1	1	16	1070	5350	15.1
GEG140ES	GEG140ES-2RS	140	230	130	80	200	1	1	16	1360	6800	18.9
GEG160ES	GEG160ES-2RS	160	260	135	80	225	1.1	1.1	16	1530	7650	24.8
GEG180ES	GEG180ES-2RS	180	290	155	100	250	1.1	1.1	14	2120	10600	35.9
GEG200ES	GEG200ES-2RS	200	320	165	100	275	1.1	1.1	15	2320	11600	44.9
GEG220ES	GEG220ES-2RS	220	340	175	100	300	1.1	1.1	16	2550	12700	50.9
GEG240ES	GEG240ES-2RS	240	370	190	110	325	1.1	1.1	15	3030	15190	65.3
GEG260ES	GEG260ES-2RS	260	400	205	120	350	1.1	1.1	15	3570	17850	82.0
GEG280ES	GEG280ES-2RS	280	430	210	120	375	1.1	1.1	15	3800	19100	96.6

滑动摩擦副：钢 / 钢
Sliding contact surfaces Steel / Steel



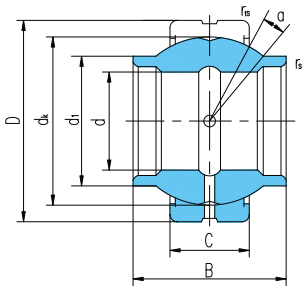
轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_1 max	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEEW12ES*	12	22	12	7	15.5	18	0.3	0.3	4	10	53	0.017
GEEW15ES	15	26	15	9	18.5	22	0.3	0.3	5	16	84	0.028
GEEW16ES	16	28	16	9	20	23	0.3	0.3	4	17	85	0.034
GEEW17ES	17	30	17	10	21	25	0.3	0.3	7	21	106	0.043
GEEW20ES	20	35	20	12	25	29	0.3	0.3	4	30	146	0.069
GEEW25ES	25	42	25	16	30.5	35.5	0.6	0.6	4	48	240	0.124
GEEW30ES	30	47	30	18	34	40.7	0.6	0.6	4	62	310	0.159
GEEW32ES	32	52	32	18	37	43	0.6	1	4	65	328	0.207
GEEW35ES	35	55	35	20	40	47	0.6	1	4	79	399	0.248
GEEW40ES	40	62	40	22	46	53	0.6	1	4	99	495	0.349
GEEW45ES	45	68	45	25	52	60	0.6	1	4	127	637	0.468
GEEW50ES	50	75	50	28	57	66	0.6	1	4	156	780	0.62
GEEW60ES	60	90	60	36	68	80	1	1	4	245	1220	1.11
GEEW63ES	63	95	63	36	71.5	83	1	1	4	253	1260	1.27
GEEW70ES	70	105	70	40	78	92	1	1	4	313	1560	1.69
GEEW80ES	80	120	80	45	91	105	1	1	4	400	2000	2.55
GEEW90ES	90	130	90	50	99	115	1	1	4	488	2440	3.04
GEEW100ES	100	150	100	55	113	130	1	1	4	607	3030	4.87
GEEW110ES	110	160	110	55	124	140	1	1	4	654	3270	5.53
GEEW125ES	125	180	125	70	138	160	1	1	4	950	4750	8.19
GEEW160ES	160	230	160	80	177	200	1	1	4	1360	6800	15.8
GEEW200ES	200	290	200	100	221	250	1.1	1.1	4	2120	10600	31.7
GEEW250ES	250	400	250	120	317	350	1.1	1.1	4	3750	17800	101
GEEW320ES	320	520	320	160	405	450	1.1	1.1	4	6200	30500	225

* 仅外圈有润滑槽孔。A lubrication groove and holes in the outer ring only.

内径 d≥φ15mm，可提供带密封圈的向心关节轴承。Can supply spherical plain bearing with two seals for bore diameter d≥φ15mm.

滑动摩擦副：钢 / 钢

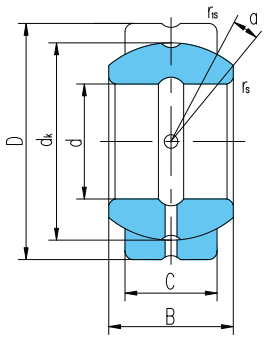
Sliding contact surfaces：Steel / Steel



轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_1 max	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEEM20ES-2RS	20	35	24	12	24	29	0.3	0.3	6	30	146	0.072
GEEM25ES-2RS	25	42	29	16	29	35.5	0.3	0.6	4	48	240	0.13
GEEM30ES-2RS	30	47	30	18	34	40.7	0.3	0.6	4	62	310	0.16
GEEM35ES-2RS	35	55	35	20	40	47	0.6	1	4	79	399	0.25
GEEM40ES-2RS	40	62	38	22	45	53	0.6	1	4	99	495	0.34
GEEM45ES-2RS	45	68	40	25	52	60	0.6	1	4	127	637	0.45
GEEM50ES-2RS	50	75	43	28	57	66	0.6	1	4	156	780	0.59
GEEM60ES-2RS	60	90	54	36	68	80	0.6	1	3	245	1220	1.06
GEEM70ES-2RS	70	105	65	40	78	92	0.6	1	4	313	1560	1.66
GEEM80ES-2RS	80	120	74	45	90	105	0.6	1	4	400	2000	2.47
GEEM90ES-2RS	90	130	80	50	99	115	1	1	4	488	2440	2.88
GEEM100ES-2RS	100	150	90	55	113	130	1	1	4	607	3030	4.65
GEEM120ES-2RS	120	180	108	70	133	160	1	1	4	950	4750	8.44

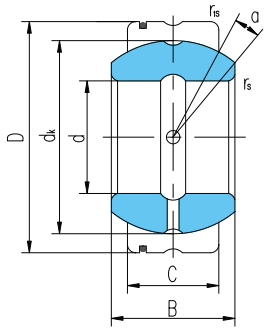
滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

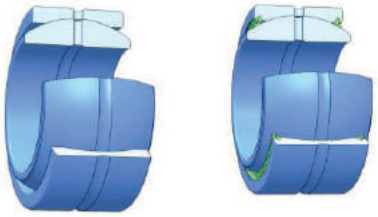


轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEF12ES	12	22	11	9	18	0.5	0.5	7	13	68	0.019
GEF15ES	15	26	13	11	22	0.5	0.5	6	20	102	0.031
GEF20ES	20	32	16	14	28	0.5	0.5	4	33	166	0.054
GEF22ES	22	37	19	16	32	0.5	0.5	6	43	217	0.088
GEF25ES	25	42	21	18	36	0.5	0.5	5	55	275	0.128
GEF30ES	30	50	27	23	45	1	1	6	87	439	0.232
GEF35ES	35	55	30	26	50	1	1	5	110	552	0.291
GEF40ES	40	62	33	28	55	1	1	6	130	654	0.392
GEF45ES	45	72	36	31	62	1	1	5	163	816	0.609
GEF50ES	50	80	42	36	72	1	1	5	220	1100	0.885
GEF55ES	55	90	47	40	80	1	1	6	272	1360	1.29
GEF60ES	60	100	53	45	90	1	1	6	344	1720	1.84
GEF65ES	65	105	55	47	94	1	1	5	375	1870	2.03
GEF70ES	70	110	58	50	100	1	1	5	425	2125	2.28
GEF75ES	75	120	64	55	110	1	1	5	510	2570	3.08
GEF80ES	80	130	70	60	120	1	1	5	610	3060	4.04
GEF85ES	85	135	74	63	125	1	1	6	669	3340	4.44
GEF90ES	90	140	76	65	130	1	1	5	718	3590	4.79
GEF95ES	95	150	82	70	140	1	1	5	833	4165	6.07
GEF100ES	100	160	88	75	150	1.5	1.5	5	956	4780	7.56
GEF110ES	110	170	93	80	160	1.5	1.5	5	1080	5440	8.63
GEF115ES	115	180	98	85	165	1.5	1.5	5	1190	5960	10.4
GEF120ES	120	190	105	90	175	1.5	1.5	6	1330	6690	12.5
GEF130ES	130	200	110	95	185	1.5	1.5	5	1490	7460	14.0
GEF150ES	150	220	120	105	205	1.5	1.5	5	1820	9140	17.2

滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel

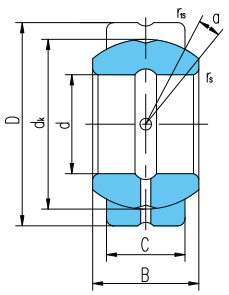


轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE12XS/K	12	22	11	9	18	0.5	0.5	7	13	68	0.019
GE15XS/K	15	26	13	11	22	0.5	0.5	6	20	102	0.031
GE20XS/K	20	32	16	14	28	0.5	0.5	4	33	166	0.054
GE22XS/K	22	37	19	16	32	0.5	0.5	6	43	217	0.088
GE25XS/K	25	42	21	18	36	0.5	0.5	5	55	275	0.128
GE30XS/K	30	50	27	23	45	1	1	6	87	439	0.232
GE35XS/K	35	55	30	26	50	1	1	5	110	552	0.291
GE40XS/K	40	62	33	28	55	1	1	6	130	654	0.392
GE45XS/K	45	72	36	31	62	1	1	5	163	816	0.609
GE50XS/K	50	80	42	36	72	1	1	5	220	1100	0.885
GE55XS/K	55	90	47	40	80	1	1	6	272	1360	1.29
GE60XS/K	60	100	53	45	90	1	1	6	344	1720	1.84
GE65XS/K	65	105	55	47	94	1	1	5	375	1870	2.03
GE70XS/K	70	110	58	50	100	1	1	5	425	2125	2.28
GE75XS/K	75	120	64	55	110	1	1	5	510	2570	3.08
GE80XS/K	80	130	70	60	120	1	1	5	610	3060	4.04
GE85XS/K	85	135	74	63	125	1	1	6	669	3340	4.44
GE90XS/K	90	140	76	65	130	1	1	5	718	3590	4.79
GE95XS/K	95	150	82	70	140	1	1	5	833	4165	6.07
GE100XS/K	100	160	88	75	150	1.5	1.5	5	956	4780	7.56
GE110XS/K	110	170	93	80	160	1.5	1.5	5	1080	5440	8.63
GE115XS/K	115	180	98	85	165	1.5	1.5	5	1190	5960	10.4
GE120XS/K	120	190	105	90	175	1.5	1.5	6	1330	6690	12.5
GE130XS/K	130	200	110	95	185	1.5	1.5	5	1490	7460	14.0
GE150XS/K	150	220	120	105	205	1.5	1.5	5	1820	9140	17.2

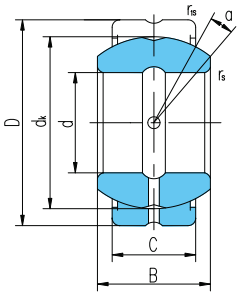


滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel



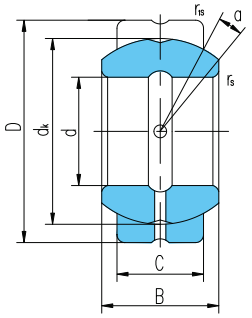
GEZ...ES



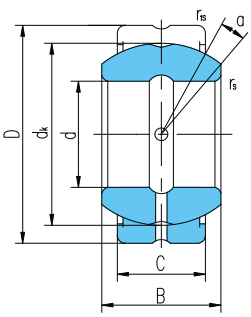
GEZ...ES-2RS

轴承型号 Bearing number		外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEZ12ES		12.7	22.225	11.1	9.525	18	0.15	0.6	6	13	41	0.022
		0.5	0.875	0.437	0.375	0.709	0.006	0.024				
GEZ15ES		15.875	26.988	13.894	11.913	23	0.15	0.6	6	22	65	0.036
		0.625	1.0625	0.547	0.469	0.906	0.006	0.024				
GEZ19ES	GEZ19ES-2RS	19.05	31.75	16.662	14.275	27.5	0.3	0.6	6	31	95	0.053
		0.75	1.25	0.656	0.562	1.083	0.012	0.024				
GEZ22ES	GEZ22ES-2RS	22.225	36.513	19.431	16.662	32	0.3	0.6	6	42	127	0.085
		0.875	1.4375	0.765	0.656	1.26	0.012	0.024				
GEZ25ES	GEZ25ES-2RS	25.4	41.275	22.225	19.05	36.5	0.3	0.6	6	56	166	0.121
		1	1.625	0.875	0.75	1.437	0.012	0.024				
GEZ31ES	GEZ31ES-2RS	31.75	50.8	27.762	23.8	45.5	0.6	0.6	6	86	260	0.23
		1.25	2	1.093	0.937	1.791	0.024	0.024				
GEZ34ES	GEZ34ES-2RS	34.925	55.563	30.15	26.187	49	0.6	1	5	102	310	0.35
		1.375	2.1875	1.187	1.031	1.929	0.024	0.04				
GEZ38ES	GEZ38ES-2RS	38.1	61.913	33.325	28.575	54.7	0.6	1	6	125	375	0.42
		1.5	2.4375	1.312	1.125	2.154	0.024	0.04				
GEZ44ES	GEZ44ES-2RS	44.45	71.438	38.887	33.325	63.9	0.6	1	6	170	510	0.64
		1.75	2.8125	1.531	1.312	2.516	0.024	0.04				
GEZ50ES	GEZ50ES-2RS	50.8	80.963	44.45	38.1	73	0.6	1	6	224	670	0.93
		2	3.1875	1.75	1.5	2.874	0.024	0.04				
GEZ57ES	GEZ57ES-2RS	57.15	90.488	50.013	42.85	82	0.6	1	6	280	850	1.3
		2.25	3.5625	1.969	1.687	3.228	0.024	0.04				
GEZ63ES	GEZ63ES-2RS	63.5	100.013	55.55	47.625	92	1	1	6	355	1060	1.85
		2.5	3.9375	2.187	1.875	3.622	0.04	0.04				
GEZ69ES	GEZ69ES-2RS	69.85	111.125	61.112	52.375	100	1	1	6	415	1250	2.4
		2.75	4.375	2.406	2.062	3.937	0.04	0.04				
GEZ76ES	GEZ76ES-2RS	76.2	120.65	66.675	57.15	109.5	1	1	6	500	1500	3.1
		3	4.75	2.625	2.25	4.311	0.04	0.04				
GEZ82ES	GEZ82ES-2RS	82.55	130.175	72.238	61.9	119	1	1	6	585	1760	3.8
		3.25	5.125	2.844	2.437	4.685	0.04	0.04				
GEZ88ES	GEZ88ES-2RS	88.9	139.7	77.775	66.675	128	1	1	6	680	2040	4.8
		3.5	5.5	3.062	2.625	5.039	0.04	0.04				
GEZ95ES	GEZ95ES-2RS	95.25	149.225	83.337	71.425	137	1	1	6	780	2360	5.8
		3.75	5.875	3.281	2.812	5.394	0.04	0.04				
GEZ101ES	GEZ101ES-2RS	101.6	158.75	88.9	76.2	146	1	1	6	900	2650	7
		4	6.25	3.5	3	5.748	0.04	0.04				
GEZ107ES	GEZ107ES-2RS	107.95	168.275	94.463	80.95	155	1	1	6	1000	3000	8.4
		4.25	6.625	3.719	3.187	6.102	0.04	0.04				

滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel



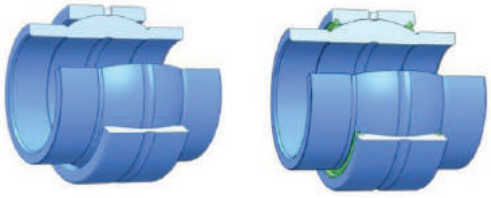
GEZ…ES



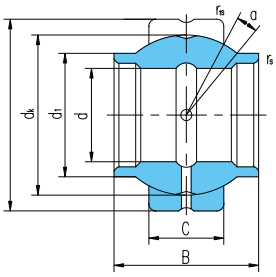
GEZ…ES-2RS

轴承型号 Bearing number		外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEZ114ES	GEZ114ES-2RS	114.3	177.8	100.013	85.725	164.5	1	1	6	1120	3400	9.8
		4.5	7	3.937	3.375	6.476	0.04	0.04				
GEZ120ES	GEZ120ES-2RS	120.65	187.325	105.562	90.475	173.5	1	1	6	1250	3750	11.5
		4.75	7.375	4.156	3.562	6.831	0.04	0.04				
GEZ127ES	GEZ127ES-2RS	127	196.85	111.125	95.25	183	1	1	6	1400	4150	13.5
		5	7.75	4.375	3.75	7.205	0.04	0.04				
GEZ152ES	GEZ152ES-2RS	152.4	222.25	120.65	104.775	207	1	1	5	1730	5200	17.5
		6	8.75	4.75	4.125	8.15	0.04	0.04				
GEZ165ES	GEZ165ES-2RS	165.1	247.65	123.825	103.175	223	1.1	1.1	7	1830	5500	22.9
		6.5	9.75	4.875	4.062	8.78	0.043	0.043				
GEZ177ES	GEZ177ES-2RS	177.8	266.7	133.35	111.125	240	1.1	1.1	7	2120	6390	28.6
		7	10.5	5.25	4.375	9.449	0.043	0.043				
GEZ190ES	GEZ190ES-2RS	190.5	285.75	142.875	119.05	257	1.1	1.1	7	2440	7340	35.1
		7.5	11.25	5.625	4.687	10.118	0.043	0.043				
GEZ203ES	GEZ203ES-2RS	203.2	304.8	152.4	127	275	1.1	1.1	7	2770	8350	42.6
		8	12	6	5	10.827	0.043	0.043				
GEZ215ES	GEZ215ES-2RS	215.9	323.85	161.925	134.925	292	1.1	1.1	7	3130	9420	51.1
		8.5	12.75	6.375	5.312	11.496	0.043	0.043				
GEZ228ES	GEZ228ES-2RS	228.6	342.9	171.45	142.875	309	1.1	1.1	7	3510	10500	60.7
		9	13.5	6.75	5.625	12.165	0.043	0.043				
GEZ241ES	GEZ241ES-2RS	241.3	361.95	180.975	150.8	326	1.1	1.1	7	3910	11700	71.4
		9.5	14.25	7.125	5.937	12.835	0.043	0.043				
GEZ254ES	GEZ254ES-2RS	254	381	190.5	158.75	343	1.1	1.1	7	4340	13050	83.3
		10	15	7.5	6.25	13.504	0.043	0.043				
GEZ266ES	GEZ266ES-2RS	266.7	400.05	200.025	166.675	360	1.1	1.1	7	4780	14300	96.4
		10.5	15.75	7.875	6.562	14.173	0.043	0.043				
GEZ279ES	GEZ279ES-2RS	279.4	419.1	209.55	174.625	377	1.1	1.1	7	5250	15700	110.8
		11	16.5	8.25	6.875	14.843	0.043	0.043				
GEZ292ES	GEZ292ES-2RS	292.1	438.15	219.075	182.55	395	1.1	1.1	7	5740	17200	126.7
		11.5	17.25	8.625	7.187	15.551	0.043	0.043				
GEZ304ES	GEZ304ES-2RS	304.8	457.2	228.6	190.5	412	1.1	1.1	7	6250	18700	143.9
		12	18	9	7.5	16.22	0.043	0.043				

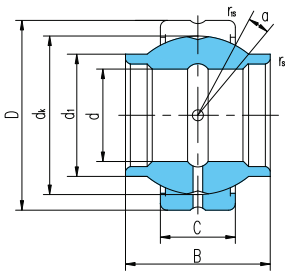
内径 d ≤φ152.4mm 内圈外球面可设计交叉润滑槽，图示见P142图 2，轴承型号需加 “/J”，例如：GEZ57ES/J
d ≤φ152.4mm，the sliding surface of inner ring can be designed crossed grooves，sketch map see page P142 figure2，suffix “/J”is added to bearing number，e.g.GEZ57ES/J



滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel

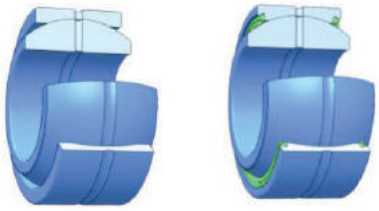


GEWZ...ES

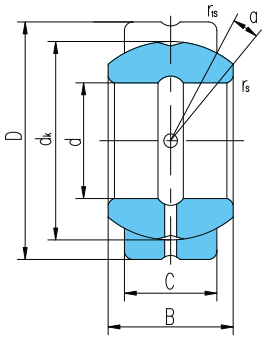


GEWZ...ES-2RS

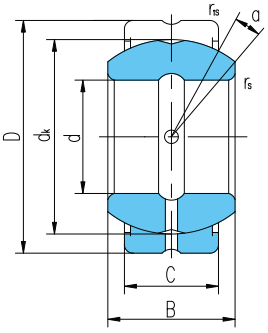
轴承型号 Bearing number		外形尺寸 Dimensions mm/inch									额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_1 max	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEWZ12ES		12.700	22.225	19.050	9.525	15.875	18	0.15	0.6	5	13	41	0.024
		0.5	0.875	0.75	0.375	0.625	0.709	0.006	0.024				
GEWZ15ES		15.875	26.988	23.800	11.913	19.812	23	0.15	0.6	5	22	65	0.038
		0.625	1.0625	0.937	0.469	0.78	0.906	0.006	0.024				
GEWZ19ES	GEWZ19ES-2RS	19.050	31.750	28.575	14.275	23.368	27.5	0.3	0.6	5	31	95	0.064
		0.75	1.25	1.125	0.562	0.92	1.083	0.012	0.024				
GEWZ22ES	GEWZ22ES-2RS	22.225	36.513	33.325	16.662	27.178	32	0.3	0.6	5	42	127	0.098
		0.875	1.4375	1.312	0.656	1.07	1.26	0.012	0.024				
GEWZ25ES	GEWZ25ES-2RS	25.400	41.275	38.100	19.050	30.988	36.5	0.3	0.6	5	56	166	0.142
		1	1.625	1.5	0.75	1.22	1.437	0.012	0.024				
GEWZ31ES	GEWZ31ES-2RS	31.750	50.800	47.625	23.800	38.735	45.5	0.6	0.6	5	86	260	0.271
		1.25	2	1.875	0.937	1.525	1.791	0.024	0.024				
GEWZ34ES	GEWZ34ES-2RS	34.925	55.563	52.375	26.187	42.418	49	0.6	1	5	102	310	0.373
		1.375	2.1875	2.062	1.031	1.67	1.929	0.024	0.04				
GEWZ38ES	GEWZ38ES-2RS	38.100	61.913	57.150	28.575	46.99	54.7	0.6	1	5	125	375	0.494
		1.5	2.4375	2.25	1.125	1.85	2.154	0.024	0.04				
GEWZ44ES	GEWZ44ES-2RS	44.450	71.438	66.675	33.325	54.991	63.9	0.6	1	5	170	510	0.762
		1.75	2.8125	2.625	1.312	2.165	2.516	0.024	0.04				
GEWZ50ES	GEWZ50ES-2RS	50.800	80.963	76.200	38.100	62.484	73	0.6	1	5	224	670	1.11
		2	3.1875	3	1.5	2.46	2.874	0.024	0.04				
GEWZ57ES	GEWZ57ES-2RS	57.150	90.488	85.725	42.850	70.104	82	0.6	1	5	280	850	1.57
		2.25	3.5625	3.375	1.687	2.76	3.228	0.024	0.04				
GEWZ63ES	GEWZ63ES-2RS	63.500	100.013	95.250	47.625	77.724	92	1	1	5	355	1060	2.15
		2.5	3.9375	3.75	1.875	3.06	3.622	0.04	0.04				
GEWZ69ES	GEWZ69ES-2RS	69.850	111.125	104.775	52.375	85.852	100	1	1	5	415	1250	2.9
		2.75	4.375	4.125	2.062	3.38	3.937	0.04	0.04				
GEWZ76ES	GEWZ76ES-2RS	76.200	120.65	114.300	57.150	93.345	109.5	1	1	5	500	1500	3.59
		3	4.75	4.5	2.25	3.675	4.311	0.04	0.04				
GEWZ82ES	GEWZ82ES-2RS	82.550	130.17	123.825	61.900	101.219	119	1	1	5	585	1760	4.69
		3.25	5.125	4.875	2.437	3.985	4.685	0.04	0.04				
GEWZ88ES	GEWZ88ES-2RS	88.900	139.70	133.35	66.675	109.22	128	1	1	5	680	2040	5.86
		3.5	5.5	5.25	2.625	4.3	5.039	0.04	0.04				
GEWZ95ES	GEWZ95ES-2RS	95.250	149.225	142.875	71.425	116.586	137	1	1	5	780	2360	7.11
		3.75	5.875	5.625	2.812	4.59	5.394	0.04	0.04				
GEWZ101ES	GEWZ101ES-2RS	101.600	158.750	152.400	76.200	124.587	146	1	1	5	900	2650	8.56
		4	6.25	6	3	4.905	5.748	0.04	0.04				
GEWZ114ES	GEWZ114ES-2RS	114.30	177.80	171.45	85.725	140.335	164.5	1	1	5	1120	3400	12.24
		4.5	7	6.75	3.375	5.525	6.476	0.04	0.04				
GEWZ127ES	GEWZ127ES-2RS	127.00	196.85	190.50	95.250	155.705	183	1	1	5	1400	4150	16.63
		5	7.75	7.5	3.75	6.13	7.205	0.04	0.04				
GEWZ152ES	GEWZ152ES-2RS	152.40	222.25	209.55	104.775	178.308	207	1	1	5	1730	5200	20.7
		6	8.75	8.25	4.125	7.02	8.15	0.04	0.04				



滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel



GEGZ…ES

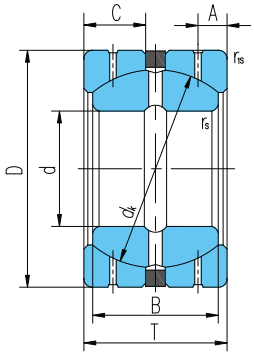


GEGZ…ES-2RS

轴承型号 Bearing number		外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEGZ31ES	GEGZ31ES-2RS	31.750	61.913	35.306	28.575	54.7	0.6	1	8	125	375	0.454
		1.25	2.4375	1.39	1.125	2.154	0.024	0.04				
GEGZ38ES	GEGZ38ES-2RS	38.100	71.438	40.132	33.325	63.9	0.6	1	7	170	510	0.726
		1.5	2.8125	1.58	1.312	2.516	0.024	0.04				
GEGZ44ES	GEGZ44ES-2RS	44.450	80.963	46.228	38.100	73	0.6	1	7	224	670	1.14
		1.75	3.1875	1.82	1.5	2.874	0.024	0.04				
GEGZ50ES	GEGZ50ES-2RS	50.800	90488	52.578	42.850	82	0.6	1	8	280	850	1.68
		2	3.5625	2.07	1.687	3.228	0.024	0.04				
GEGZ57ES	GEGZ57ES-2RS	57.150	100.013	58.877	47.625	92	0.6	1	8	355	1060	2.01
		2.25	3.9375	2.318	1.875	3.622	0.024	0.04				
GEGZ63ES	GEGZ63ES-2RS	63.500	111.125	64.643	52.375	100	1	1	8	415	1250	2.95
		2.5	4.375	2.545	2.062	3.937	0.04	0.04				
GEGZ69ES	GEGZ69ES-2RS	69.850	120.650	70.866	57.150	109.5	1	1	8	500	1500	3.63
		2.75	4.75	2.79	2.25	4.311	0.04	0.04				
GEGZ76ES	GEGZ76ES-2RS	76.200	130.175	76.759	61.900	119	1	1	8	585	1760	4.36
		3	5.125	3.022	2.437	4.685	0.04	0.04				
GEGZ82ES	GEGZ82ES-2RS	82.550	139.700	82.931	66.675	128	1	1	8	680	2040	5.31
		3.25	5.5	3.265	2.625	5.039	0.04	0.04				
GEGZ88ES	GEGZ88ES-2RS	88.900	149.225	90.424	71.425	137	1	1	9	780	2360	6.81
		3.5	5.875	3.56	2.812	5.394	0.04	0.04				
GEGZ95ES	GEGZ95ES-2RS	95.250	158.750	94.945	76.200	146	1	1	9	900	2650	8.85
		3.75	6.25	3.738	3	5.748	0.04	0.04				
GEGZ101ES	GEGZ101ES-2RS	101.600	177.800	107.315	85.725	164.5	1	1	9	1120	3400	10.2
		4	7	4.225	3.375	6.476	0.04	0.04				
GEGZ114ES	GEGZ114ES-2RS	114.300	196.850	119.126	95.250	183	1	1	9	1400	4150	13.6
		4.5	7.75	4.69	3.75	7.205	0.04	0.04				
GEGZ139ES	GEGZ139ES-2RS	139.700	222.250	125.730	104.775	207	1	1	6	1730	5200	20.4
		5.5	8.75	4.95	4.125	8.15	0.04	0.04				

滑动摩擦副：钢 / 钢

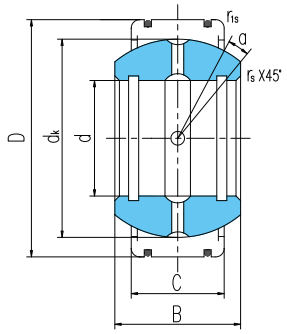
Sliding contact surfaces Steel Steel



轴承型号 Bearing number	外形尺寸 Dimensions mm/inch									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	T	A	d_k	r_s min	r_{1s} max	动载荷 Dynamic	静载荷 Static	
GEGZ31HS/K	31.750	61.913	35.306	16.764	38.1	7.925	54.7	0.6	2.54	99	395	0.65
	1.25	2.4375	1.39	0.66	1.5	0.312	2.154	0.024	0.1			
GEGZ38HS/K	38.100	71.438	40.132	20.066	44.704	8.331	63.9	0.6	2.54	135	540	1.04
	1.5	2.8125	1.58	0.79	1.76	0.328	2.516	0.024	0.1			
GEGZ44HS/K	44.450	80.963	46.228	23.368	51.308	9.525	73	0.6	3.56	180	720	1.41
	1.75	3.1875	1.82	0.92	2.02	0.375	2.874	0.024	0.14			
GEGZ50HS/K	50.800	90.488	52.578	26.67	57.912	11.506	82	0.6	3.56	230	920	1.95
	2	3.5625	2.07	1.05	2.28	0.453	3.228	0.024	0.14			
GEGZ57HS/K	57.150	100.013	58.877	29.972	64.516	12.7	92	0.6	3.56	295	1180	2.62
	2.25	3.9375	2.318	1.18	2.54	0.5	3.622	0.024	0.14			
GEGZ63HS/K	63.500	111.125	64.643	32.385	71.12	13.081	100	1	4.6	345	1380	3.57
	2.5	4.375	2.545	1.275	2.8	0.515	3.937	0.04	0.18			
GEGZ69HS/K	69.850	120.650	70.866	35.687	77.724	14.681	109.5	1	4.6	420	1680	4.55
	2.75	4.75	2.79	1.405	3.06	0.578	4.311	0.04	0.18			
GEGZ76HS/K	76.200	130.175	76.759	39.243	84.836	16.662	119	1	4.6	500	2000	5.70
	3	5.125	3.022	1.545	3.34	0.656	4.685	0.04	0.18			
GEGZ82HS/K	82.550	139.700	82.931	42.545	91.44	17.856	128	1	4.6	585	2340	7.02
	3.25	5.5	3.265	1.675	3.6	0.703	5.039	0.04	0.18			
GEGZ88HS/K	88.900	149.225	90.424	45.847	98.044	19.431	137	1	4.6	675	2700	8.54
	3.5	5.875	3.56	1.805	3.86	0.765	5.394	0.04	0.18			
GEGZ95HS/K	95.250	158.750	94.945	49.149	104.648	19.837	146	1	4.6	775	3100	10.2
	3.75	6.25	3.738	1.935	4.12	0.781	5.748	0.04	0.18			
GEGZ101HS/K	101.600	177.800	107.315	55.753	117.856	22.225	164.5	1	4.6	1000	4000	15.1
	4	7	4.225	2.195	4.64	0.875	6.476	0.04	0.18			
GEGZ114HS/K	114.300	196.850	119.126	62.357	131.064	25.4	183	1	4.6	1230	4920	20.2
	4.5	7.75	4.69	2.455	5.16	1	7.205	0.04	0.18			
GEGZ139HS/K	139.700	222.250	125.730	66.421	139.192	34.798	207	1	4.6	1480	5920	25.1
	5.5	8.75	4.95	2.615	5.48	1.37	8.15	0.04	0.18			

滑动摩擦副：钢／钢

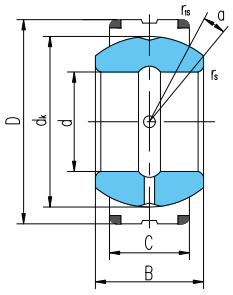
Sliding contact surfaces：Steel ／ Steel



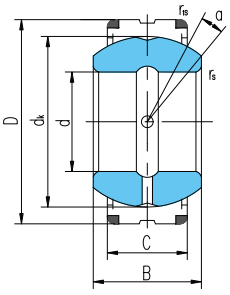
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEK25XS-2GS	25	68	40	28	50	0.6	1	19	117	590	0.707
GEK30XS-2GS	30	70	47	32	60	0.6	1	19	163	813	0.814
GEK35XS-2GS	35	80	54	38	70	0.6	1	17	226	1130	1.23
GEK40XS-2GS	40	90	64	44	80	0.6	1	19	298	1490	2
GEK45XS-2GS	45	100	72	52	90	0.6	1	17	398	1990	2.84
GEK50XS-2GS	50	110	80	58	100	1	1	17	493	2450	3.81
GEK55XS-2GS	55	125	90	64	110	1	1	19	598	2990	5.49
GEK60XS-2GS	60	135	98	72	120	1	1	17	732	3660	6.93

滑动摩擦副：钢 / 钢

Sliding contact surfaces ：Steel / Steel



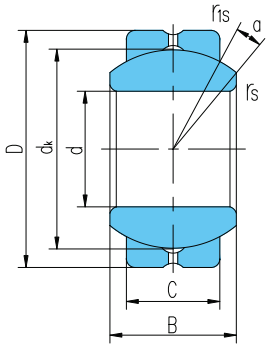
GEC…XS



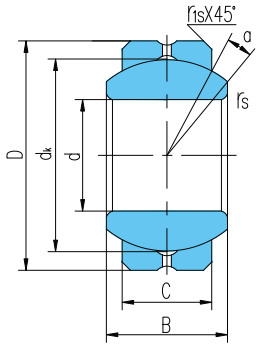
GEC…XS-2RS

轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEC320XS	GEC320XS-2RS	320	440	160	135	380	1.1	3	4	4400	22000	78
GEC340XS	GEC340XS-2RS	340	460	160	135	400	1.1	3	3	4650	23200	83
GEC360XS	GEC360XS-2RS	360	480	160	135	420	1.1	3	3	4800	24000	87
GEC380XS	GEC380XS-2RS	380	520	190	160	450	1.5	4	4	6300	31500	129
GEC400XS	GEC400XS-2RS	400	540	190	160	470	1.5	4	3	6550	32500	135
GEC420XS	GEC420XS-2RS	420	560	190	160	490	1.5	4	3	6800	34500	141
GEC440XS	GEC440XS-2RS	440	600	218	185	520	1.5	4	3	8650	42300	196
GEC460XS	GEC460XS-2RS	460	620	218	185	540	1.5	4	3	9000	45000	204
GEC480XS	GEC480XS-2RS	480	650	230	195	565	2	5	3	9800	49000	239
GEC500XS	GEC500XS-2RS	500	670	230	195	585	2	5	3	10200	51000	248
GEC530XS	GEC530XS-2RS	530	710	243	205	620	2	5	3	11400	57000	294
GEC560XS	GEC560XS-2RS	560	750	258	215	655	2	5	4	12700	64000	345
GEC600XS	GEC600XS-2RS	600	800	272	230	700	2	5	3	14600	73500	413
GEC630XS	GEC630XS-2RS	630	850	300	260	740	3	6	3	17600	88000	538

滑动摩擦副：钢／钢
Sliding contact surfaces：Steel／Steel



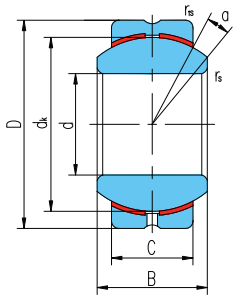
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEBJ5S	5	13	8	6	11.112	0.3	0.3	13	3.2	9	0.006
GEBJ6S	6	16	9	6.75	12.7	0.3	0.3	13	4.1	12	0.010
GEBJ8S	8	19	12	9	15.88	0.3	0.3	14	6.5	20	0.018
GEBJ10S	10	22	14	10.5	19.05	0.3	0.6	13	9.6	28	0.027
GEBJ12S	12	26	16	12	22.23	0.3	0.6	13	12	37	0.043
GEBJ14S	14	28	19	13.5	25.4	0.3	0.6	16	16	49	0.055
GEBJ16S	16	32	21	15	28.58	0.3	0.6	15	20	61	0.081
GEBJ18S	18	35	23	16.5	31.75	0.6	0.6	15	25	74	0.103
GEBJ20S	20	40	25	18	34.93	0.6	0.6	14	30	89	0.149
GEBJ22S	22	42	28	20	38.1	0.6	0.6	15	36	108	0.176
GEBJ25S	25	47	31	22	42.86	0.6	0.6	15	45	130	0.242
GEBJ30S	30	55	37	25	50.8	0.6	0.6	17	61	178	0.378
GEBJ35S	35	62	43	28	57.15	0.6	1	19	76	224	0.522
GEBJ40S	40	75	49	33	66.67	0.6	1	17	105	308	0.931
GEBJ50S	50	90	60	45	82.5	0.6	1	13	178	519	1.69



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEFZ4S	4.83	14.29	7.14	5.54	10.31	0.3	0.38	11	3	15	0.006
	0.19	0.5625	0.281	0.218	0.406	0.012	0.015				
GEFZ6S	6.35	16.67	8.71	6.35	12.70	0.3	0.56	13	4.4	22	0.010
	0.25	0.6562	0.343	0.25	0.5	0.012	0.022				
GEFZ7S	7.94	19.05	9.53	7.14	14.27	0.3	0.81	11	6	28	0.014
	0.3125	0.75	0.375	0.281	0.562	0.012	0.032				
GEFZ9S	9.53	20.64	10.31	7.92	16.66	0.3	0.81	9	7.4	37	0.018
	0.375	0.8125	0.406	0.312	0.656	0.012	0.032				
GEFZ11S	11.11	23.02	11.10	8.71	17.45	0.3	0.81	9	8.4	42	0.021
	0.4375	0.9062	0.437	0.343	0.687	0.012	0.032				
GEFZ12S	12.70	25.40	12.70	9.91	20.65	0.3	0.81	9	12	58	0.029
	0.5	1	0.5	0.39	0.813	0.012	0.032				
GEFZ14S	14.29	27.78	14.27	11.10	23.01	0.3	0.81	9	15	73	0.042
	0.5625	1.0937	0.562	0.437	0.906	0.012	0.032				
GEFZ15S	15.88	30.16	15.88	12.70	25.40	0.3	0.81	8	19	94	0.053
	0.625	1.1875	0.625	0.5	1	0.012	0.032				
GEFZ19S	19.05	36.51	19.05	15.06	30.15	0.3	1.12	9	28	141	0.094
	0.75	1.4375	0.75	0.593	1.187	0.012	0.044				
GEFZ22S	22.23	39.69	22.23	17.86	33.32	0.6	1.12	9	37	186	0.119
	0.875	1.5625	0.875	0.703	1.312	0.024	0.044				
GEFZ25S	25.40	44.45	25.40	20.24	38.10	0.6	1.12	9	49	245	0.173
	1	1.75	1	0.797	1.5	0.024	0.044				



滑动摩擦副：钢／青铜

Sliding contact surfaces：Steel／Bronze

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEBK5S	5	16	8	6	11.112	0.3	0.3	13	3.3	7.8	0.009
GEBK6S	6	18	9	6.75	12.7	0.3	0.3	13	4.3	9.8	0.013
GEBK8S	8	22	12	9	15.88	0.3	0.3	14	6.8	16	0.024
GEBK10S	10	26	14	10.5	19.05	0.3	0.6	14	10	23	0.039
GEBK12S	12	30	16	12	22.23	0.3	0.6	13	13	31	0.058
GEBK14S	14	34	19	13.5	25.4	0.3	0.6	16	17	40	0.084
GEBK16S	16	38	21	15	28.58	0.3	0.6	15	21	50	0.118
GEBK18S	18	42	23	16.5	31.75	0.6	0.6	15	26	61	0.16
GEBK20S	20	46	25	18	34.93	0.6	0.6	15	31	73	0.21
GEBK22S	22	50	28	20	38.1	0.6	0.6	15	38	88	0.26
GEBK25S	25	56	31	22	42.86	0.6	0.6	15	47	110	0.39
GEBK28S	28	62	35	25	47.63	0.6	0.6	15	59	138	0.50
GEBK30S	30	66	37	25	50.8	0.6	0.6	17	63	148	0.61

自润滑型向心关节轴承

Radial spherical plain bearings maintenance-free

自润滑向心关节轴承滑动摩擦副有四种：钢对PTFE复合材料、钢对PTFE编织物、钢对铜合金和钢对PTFE塑料。钢对PTFE编织物自润滑向心关节轴承的动载荷承载能力比钢对PTFE复合材料自润滑向心关节轴承高。这类轴承具有较低的摩擦系数，工作中不需维护。它们应用于需要较长使用寿命或工作中无法润滑的机械机构中。

Maintenance-free spherical plain bearing sliding contact surfaces have four groups: steel-on-PTFE composite material ,steel-on-PTFE fabric , steel-on-copper alloy and steel-on-PTFE plastic. Dynamic load support capability of steel-on-PTFE fabric spherical plain bearings is higher than that of steel-on-PTFE composite material. They have very low friction and can be operated without maintenance. They are used for applications where long bearing lives are required without maintenance, or where operating conditions, such as inadequate lubrication or the absence of lubrication make the use of steel-on-steel bearing inadvisable.

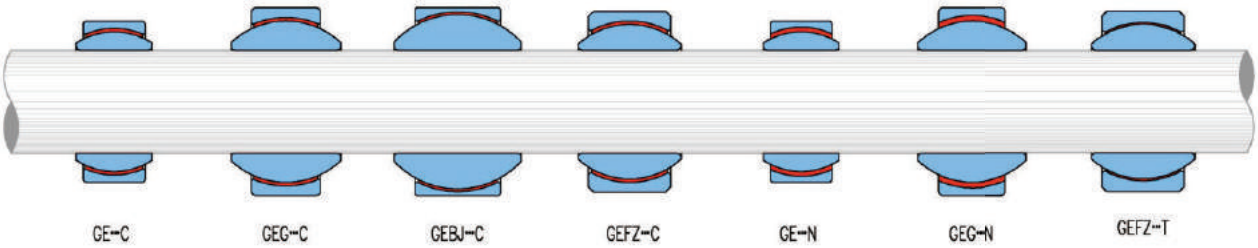
TL型自润滑向心关节轴承

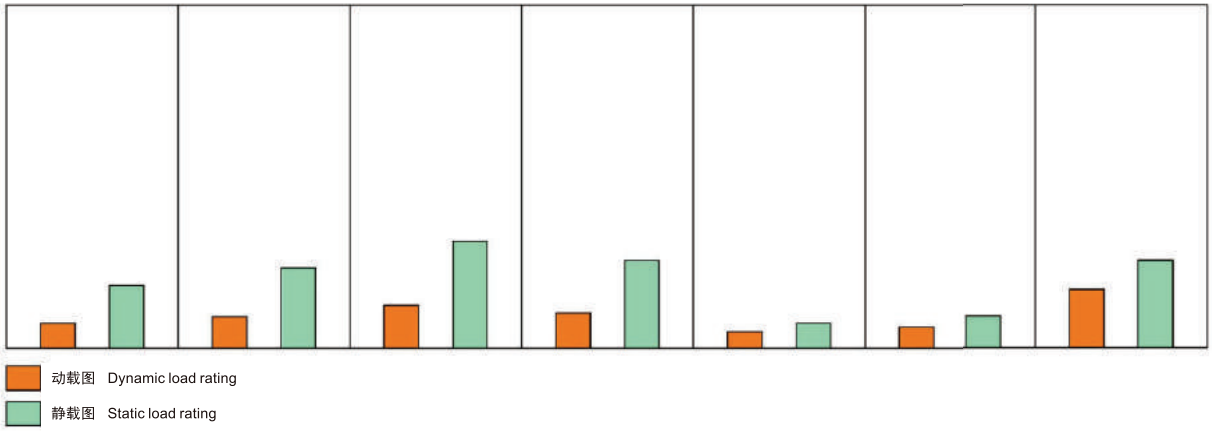
LS设计了全新结构的PTFE织物，并采用改性树脂与PTFE织物浸渍，改善了织物纤维与树脂之间的浸润情况，开发出采用具有优异粘结性能与摩擦磨损性能的新PTFE衬垫制造出来的自润滑关节轴承。在同等条件下比较，新PTFE衬垫的粘结强度是原有衬垫的2~3倍，摩擦磨损试验寿命是原有衬垫的3~4倍。

TL type high performance maintenance-free spherical plain beraings

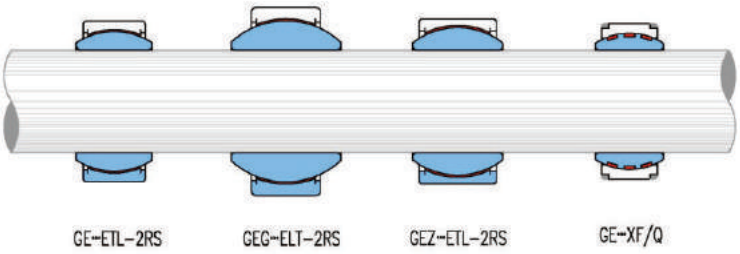
LS designed the new structure of the PTFE fabric and improved the resin matrix. The new PTFE fabric has better wettability with the improved resin. Base on the new PTFE fabric and the improved resin we develop the high performance liner and TL type bearings. Under the same condition, The new PTFE fabric liner has better bonding strength(2 to 3 times of the old one) and wear resistance(the service life is 3 to 4 times of the old one).

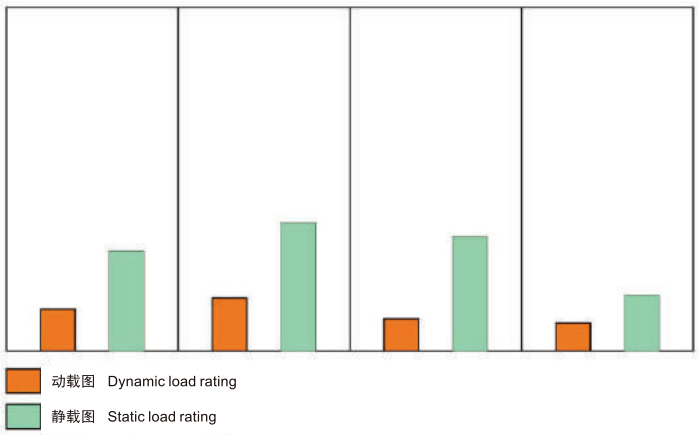
自润滑型向心关节轴承
Maintenancee-free radial spherical plain bearings



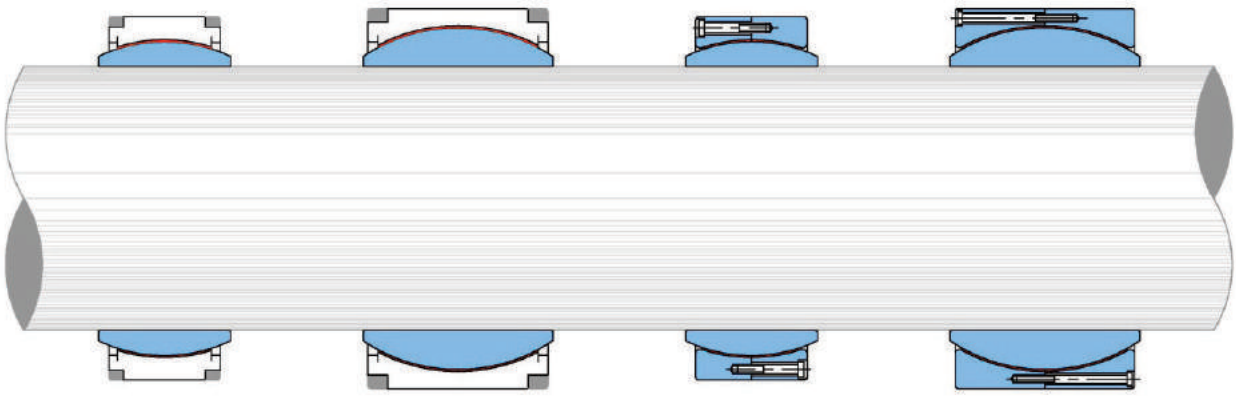


自润滑型向心关节轴承
Maintenancee-free radial spherical plain bearings

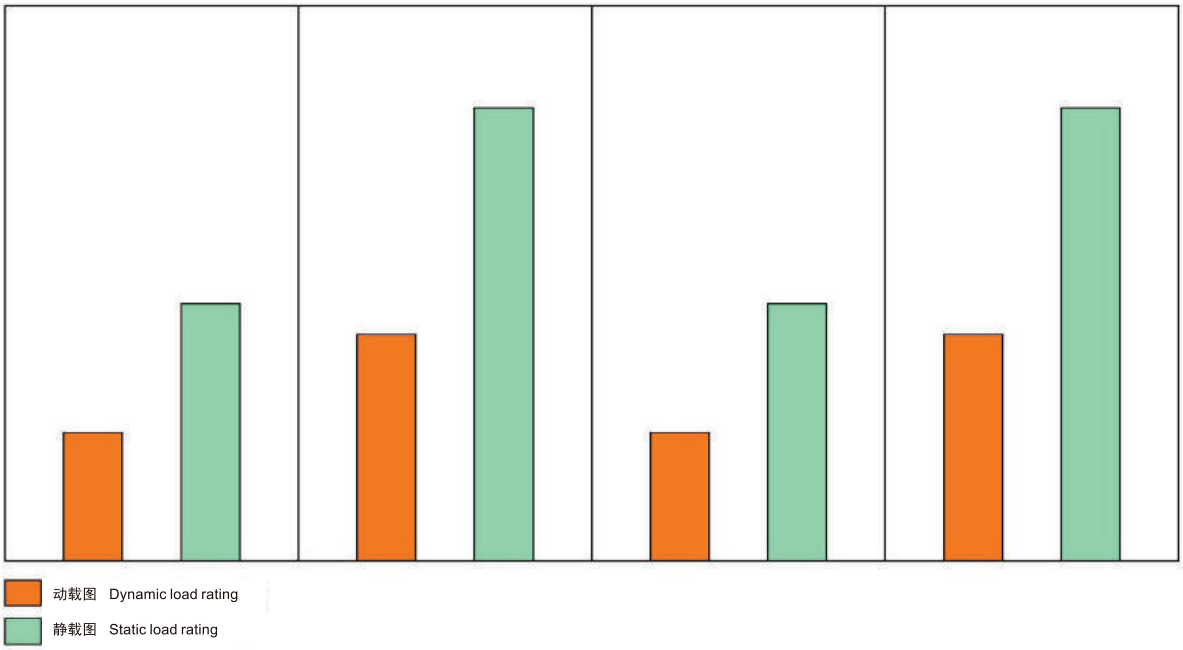




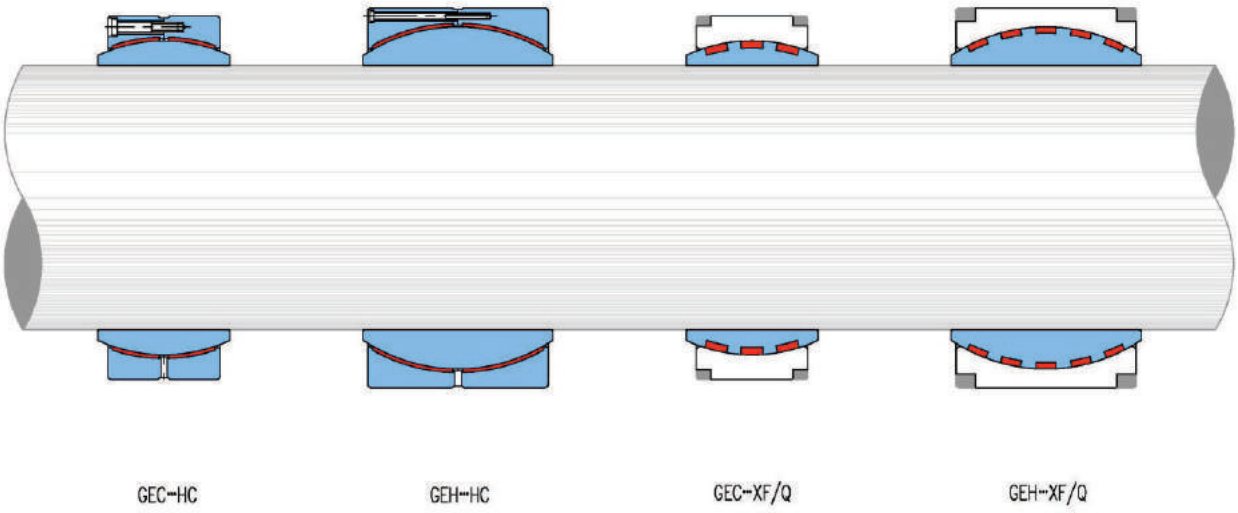
自润滑型向心关节轴承
Maintenancee-free radial spherical plain bearings

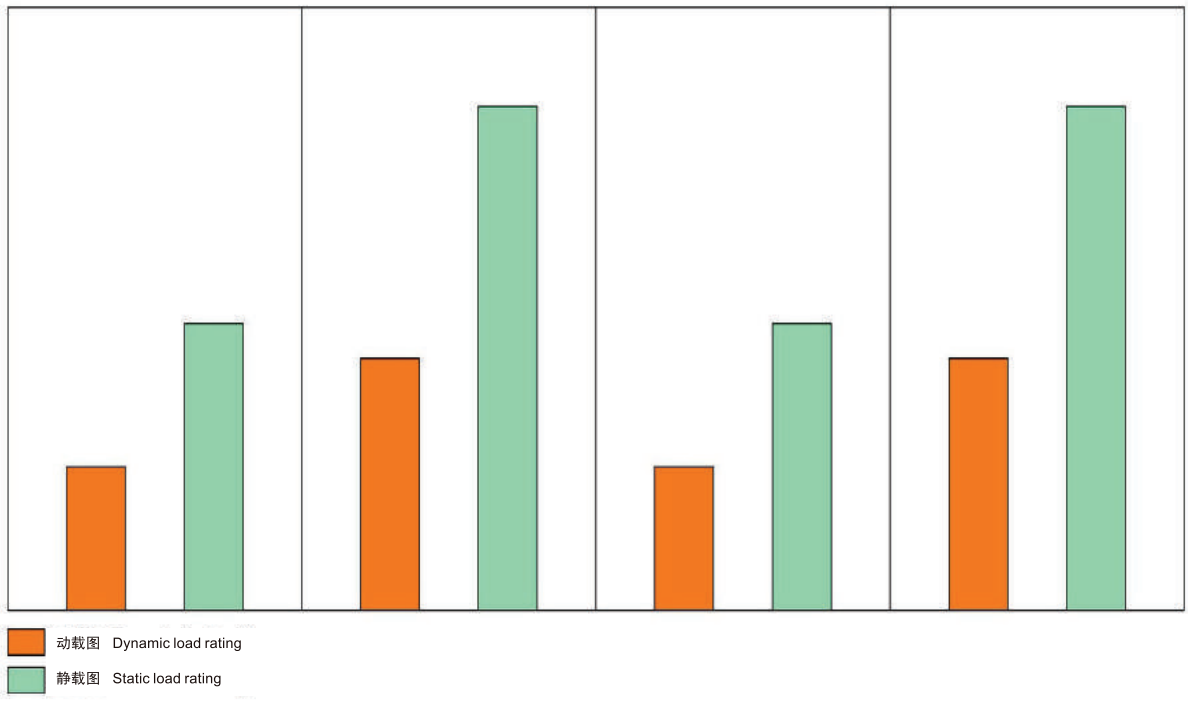


GEC-XTL-2RS　GEH-XTL-2RS　GEC-HTL　GEH-HTL



大型自润滑向心关节轴承
Maintenance-free large radiol spherical plain bearings





E、G、EW、EM、F、C、H 系列公差 Tolerances for series E、G、EW、EM、F、C、H

内圈 Inner ring

μm

d mm		Δ dmp		Δ dmp*		Vdp	Vdmp	Vdp*	Vdmp*	Δ Bs		Δ Bs*	
超过 over	到 incl.	max	min	max	min	max	max	max	max	max	min	max	min
—	18	0	-8	+18	0	8	6	18	14	0	-120	0	-180
18	30	0	-10	+21	0	10	8	21	16	0	-120	0	-210
30	50	0	-12	+25	0	12	9	25	19	0	-120	0	-250
50	80	0	-15	+30	0	15	11	30	22	0	-150	0	-300
80	120	0	-20	+35	0	20	15	35	26	0	-200	0	-350
120	180	0	-25	+40	0	25	19	40	30	0	-250	0	-400
180	250	0	-30	+46	0	30	23	46	35	0	-300	0	-460
250	315	0	-35	+52	0	35	26	52	39	0	-350	0	-520
315	400	0	-40	+57	0	40	30	57	43	0	-400	0	-570
400	500	0	-45	—	—	45	34	—	—	0	-450	—	—
500	630	0	-50	—	—	50	38	—	—	0	-500	—	—
630	800	0	-75	—	—	75	56	—	—	0	-750	—	—
800	1000	0	-100	—	—	135	75	—	—	0	-1000	—	—

带*号为 GEEW…ETL 的公差 The deviations in the columns with symbol * apply to spherical plain bearings of series GEEW…ETL.

外圈 Outer ring

μm

D mm		Δ Dmp		VDp	VDmp	Δ Cs	
超过 over	到 incl.	max	min	max	max	max	min
—	18	0	-8	10	6	0	-240
18	30	0	-9	12	7	0	-240
30	50	0	-11	15	8	0	-240
50	80	0	-13	17	10	0	-300
80	120	0	-15	20	11	0	-400
120	150	0	-18	24	14	0	-500
150	180	0	-25	33	19	0	-500
180	250	0	-30	40	23	0	-600
250	315	0	-35	47	26	0	-700
315	400	0	-40	53	30	0	-800
400	500	0	-45	60	34	0	-900
500	630	0	-50	67	38	0	-1000
630	800	0	-75	100	56	0	-1100
800	1000	0	-100	135	75	0	-1200
1000	1250	0	-125	190	125	0	-1300
1250	1600	0	-160	240	160	0	-1600

GEBJ···C 公差 Tolerances for series GEBJ···C

内圈 Inner ring μm

d mm		Δdmp		Vdp	Vdmp	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	6	+12	0	12	9	0	-100
6	10	+15	0	15	11	0	-100
10	18	+18	0	18	14	0	-100
18	30	+21	0	21	16	0	-100
30	50	+25	0	25	19	0	-100

外圈 Outer ring μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
10	18	0	-11	15	8	0	-240
18	30	0	-13	17	10	0	-240
30	50	0	-16	20	11	0	-240
50	80	0	-19	24	14	0	-300
80	120	0	-22	29	17	0	-400

GEFZ···C，GEFZ···T 公差 Tolerances for series GEFZ···C，GEFZ···T

内圈 Inner ring μm

d mm		Δdmp		Vdp	Vdmp	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	6	+38	-13	12	9	+130	-130
6	10	+38	-13	15	11	+130	-130
10	18	+38	-13	18	14	+130	-130
18	30	+38	-13	21	16	+130	-130

外圈 Outer ring μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
10	18	0	-18	24	14	+130	130
18	30	0	-18	24	14	+130	130
30	50	0	-18	24	14		130

Z、GZ、WZ 系列公差 Tolerances for series Z、GZ、WZ

内圈 Inner ring μm

d mm		Δdmp		Vdp	Vdmp	ΔBs	
超过 over	到 incl.	max	min	max	max	max	min
—	50.8	0	-13	13	10	0	-130
50.8	76.2	0	-15	15	11	0	-130
76.2	120.65	0	-20	20	15	0	-130
120.65	152.4	0	-25	25	19	0	-130
152.4	203.2	0	-30	30	23	0	-130
203.2	254	0	-30	30	23	0	-130
254	304.8	0	-35	35	26	0	-130

外圈 Outer ring μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
—	50.8	0	-13	17	10	0	-130
50.8	80.963	0	-15	20	11	0	-130
80.963	120.65	0	-20	27	15	0	-130
120.65	177.8	0	-25	33	19	0	-130
177.8	222.25	0	-30	40	23	0	-130
222.25	304.8	0	-35	47	26	0	-130
304.8	381	0	-40	53	30	0	-130
381	457.2	0	-45	60	34	0	-130

尺寸和公差符号说明详见P13
Details of dimension and tolerance symbols see page 13

钢对 PTFE 复合材料向心关节轴承径向游隙

Radial internal clearance of steel-on-PTFE composite material radial spherical plain bearings

GEH…HC 系列　Series GEH…HC　　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
90	120	85	285
120	180	100	335
180	220	100	355
220	240	110	356
240	280	110	380
280	300	135	415
300	380	135	490
380	400	135	510
400	480	145	550
480	500	145	570
500	600	160	610
600	630	160	640
630	750	170	670
750	800	170	700
800	950	195	770
950	1000	195	820

GEC…HC 系列　Series GEC…HC　　μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
300	340	135	350
340	400	135	360
400	500	145	390
500	530	160	420
530	630	160	440
630	670	170	460
670	800	170	490
800	850	195	530
850	1000	195	560

GE…C，GEBJ…C，GEFZ…C 系列　Series GE…C，GEBJ…C，GEFZ…C　　μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	12	2	20	4	28	20	55
12	20	3	25	5	35	25	60
20	30	4	30	6	44	30	75
30	50	5	35	7	53	35	80

GEG…C 系列　Series GEG…C

μm

d mm		C2 组 Group C2		基本组 Group normal		C3 组 Group C3	
超过 over	到 incl.	min	max	min	max	min	max
—	10	2	20	4	28	20	55
10	17	3	25	5	35	25	60
17	25	4	30	6	44	30	75
25	45	5	35	7	53	35	80

钢对 PTFE 编织物、钢对 PTFE 塑料、钢对铜合金向心关节轴承径向游隙

Radial internal clearance of steel-on-PTFE fabric、steel-on-PTFE plastic and steel-on-copper alloy radial spherical plain bearings

GE…ETL-2RS，GE…XTL-2RS，GE…HTL-2RS，GE…ETL-2RS/X，GE…XTL-2RS/X，GEZ…ETL-2RS，GEEW…ETL-2RS，GEEM…ETL-2RS，GEEW…XTL-2RS，GEEM…XTL-2RS，GEC…XTL-2RS，GEC…HTL，GEFZ…T，GE…N 系列，

Series GE…ETL-2RS， GE…XTL-2RS， GE…HTL-2RS， GE…ETL-2RS/X， GE…XTL-2RS/X， GEZ…ETL-2RS，GEEW…ETL-2RS，GEEM…ETL-2RS，GEEW…XTL-2RS，GEEM…XTL-2RS，GEC…XTL-2RS，GEC…HTL，GEFZ…T，GE…N

μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
—	12	0	32
12	20	0	40
20	35	0	50
35	60	0	60
60	90	0	72
90	140	0	85
140	240	0	100
240	300	0	110
300	340	0	125
340	420	0	135
420	530	0	145
530	670	0	160
670	950	0	170
950	1000	0	195

GEG…ETL-2RS，GEG…XTL-2RS，GEG…N 系列　Series GEG…ETL-2RS，GEG…XTL-2RS，GEG…N

μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
—	10	0	32
10	17	0	40
17	30	0	50
30	50	0	60
50	80	0	72
80	120	0	85
120	220	0	100
220	280	0	110

GEH…XTL-2RS，GEH…HLT 系列

Series GEH…XTL-2RS，GEH…HTL

μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
100	140	0	85
140	240	0	100
240	280	0	110
280	300	0	125
300	380	0	135
380	480	0	145
480	600	0	160
600	850	0	170
850	1000	0	195

GE…XF/Q，GEC…XF/Q，GEH…XF/Q，GEH…HF/Q 系列

Series GE…XF/Q，GEC…XF/Q，GEH…XF/Q，GEH…HF/Q

μm

d mm		基本组 Group normal	
超过 over	到 incl.	min	max
90	120	85	165
120	180	100	192
180	240	110	214
240	300	125	239
300	380	135	261
380	480	145	285
480	600	160	320
600	750	170	350
750	950	195	405
950	1000	220	470

轴配合 Shaft fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination 自润滑型 maintenance-free
各种载荷，间隙或过渡配合 Loads of all kinds，clearance or transition fit	h6，g6
各种载荷，过盈配合 Loads of all kinds，interference fit	k6

支承座配合 Housing fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination 自润滑型 maintenance-free
轻载 Light loads 可轴向移动 Axial displacement required	H7
重载 Heavy loads	K7
轻合金支承座 Light alloy housings	M7

轴径公差 Shaft diameter tolerances

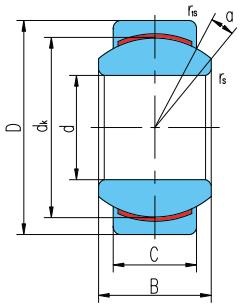
μm

轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances							
		g6		h6		k6		m6	
超过 over	到 incl.	high	low	high	low	high	low	high	low
3	6	-4	-12	0	-8	+9	+1	+12	+4
6	10	-5	-14	0	-9	+10	+1	+15	+6
10	18	-6	-17	0	-11	+12	+1	+18	+7
18	30	-7	-20	0	-13	+15	+2	+21	+8
30	50	-9	-25	0	-16	+18	+2	+25	+9
50	80	-10	-29	0	-19	+21	+2	+30	+11
80	120	-12	-34	0	-22	+25	+3	+35	+13
120	180	-14	-39	0	-25	+28	+3	+40	+15
180	250	-15	-44	0	-29	+33	+4	+46	+17
250	315	-17	-49	0	-32	+36	+4	+52	+20
315	400	-18	-54	0	-36	+40	+4	+57	+21
400	500	-20	-60	0	-40	+45	+5	+63	+23
500	630	-22	-66	0	-44	+44	0	+70	+26
630	800	-24	-74	0	-50	+50	0	+80	+30
800	1000	-26	-82	0	-56	+56	0	+90	+34

支承座孔公差 Housing bore tolerances

μm

支承座孔径 Housing bore diameter mm		支承座孔公差 Housing bore tolerances							
		H7		K7		M7		N7	
超过 over	到 incl.	low	high	low	high	low	high	low	high
10	18	0	+18	-12	+6	-18	0	-23	-5
18	30	0	+21	-15	+6	-21	0	-28	-7
30	50	0	+25	-18	+7	-25	0	-33	-8
50	80	0	+30	-21	+9	-30	0	-39	-9
80	120	0	+35	-25	+10	-35	0	-45	-10
120	150	0	+40	-28	+12	-40	0	-52	-12
150	180	0	+40	-28	+12	-40	0	-52	-12
180	250	0	+46	-33	+13	-46	0	-60	-14
250	315	0	+52	-36	+16	-52	0	-66	-14
315	400	0	+57	-40	+17	-57	0	-73	-16
400	500	0	+63	-45	+18	-63	0	-80	-17
500	630	0	+70	-70	0	-96	-26	-114	-44
630	800	0	+80	-80	0	-110	-30	-130	-50
800	1000	0	+90	-90	0	-124	-34	-146	-56
1000	1250	0	+105	-105	0	-145	-40	-171	-66
1250	1600	0	+125	-125	0	-173	-48	-203	-78

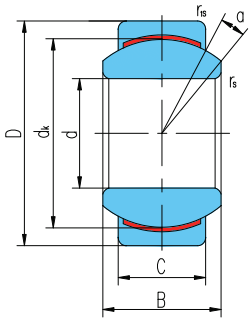


滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE4C	4	12	5	3	8	0.3	0.3	16	2.1	5.4	0.003
GE5C	5	14	6	4	10	0.3	0.3	13	3.6	9.1	0.005
GE6C	6	14	6	4	10	0.3	0.3	13	3.6	9.1	0.004
GE8C	8	16	8	5	13	0.3	0.3	15	5.8	14	0.007
GE10C	10	19	9	6	16	0.3	0.3	12	8.6	21	0.011
GE12C	12	22	10	7	18	0.3	0.3	10	11	28	0.017
GE15C	15	26	12	9	22	0.3	0.3	8	18	45	0.026
GE17C	17	30	14	10	25	0.3	0.3	10	22	56	0.040
GE20C	20	35	16	12	29	0.3	0.3	9	31	78	0.064
GE25C	25	42	20	16	35.5	0.6	0.6	7	51	127	0.115
GE30C	30	47	22	18	40.7	0.6	0.6	6	65	166	0.149
GE35C	35	55	25	20	47	0.6	1	6	84	211	0.228
GE40C	40	62	28	22	53	0.6	1	7	104	262	0.318
GE45C	45	68	32	25	60	0.6	1	7	135	337	0.421
GE50C	50	75	35	28	66	0.6	1	6	166	415	0.562
GEG4C	4	14	7	4	10	0.3	0.3	20	3.6	9.1	0.005
GEG5C	5	16	9	5	13	0.3	0.3	21	5.8	14	0.008
GEG6C	6	16	9	5	13	0.3	0.3	21	5.8	14	0.006
GEG8C	8	19	11	6	16	0.3	0.3	21	8.6	21	0.014
GEG10C	10	22	12	7	18	0.3	0.3	18	11	28	0.021
GEG12C	12	26	15	9	22	0.3	0.3	18	18	45	0.033
GEG15C	15	30	16	10	25	0.3	0.3	16	22	56	0.049
GEG17C	17	35	20	12	29	0.3	0.3	19	31	78	0.083
GEG20C	20	42	25	16	35.5	0.3	0.3	17	51	127	0.153
GEG25C	25	47	28	18	40.7	0.6	0.6	17	65	166	0.203
GEG30C	30	55	32	20	47	0.6	1	17	84	211	0.304
GEG35C	35	62	35	22	53	0.6	1	16	104	262	0.408
GEG40C	40	68	40	25	60	0.6	1	17	135	337	0.542
GEG45C	45	75	43	28	66	0.6	1	15	166	415	0.713

内、外圈可用不锈钢制造，轴承型号后面加“X”标识，即 GE…C/X。The inner and outer rings of the bearings is of stainless steel and the mark of the items has a letter “X”.That is GE…C/X.



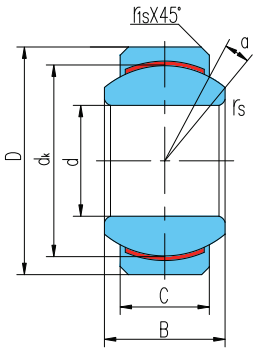
滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEBJ5C	5	13	8	6	11.112	0.3	0.3	13	6	15	0.007
GEBJ6C	6	16	9	6.75	12.7	0.3	0.3	13	7.7	19	0.011
GEBJ8C	8	19	12	9	15.88	0.3	0.3	14	13	32	0.018
GEBJ10C	10	22	14	10.5	19.05	0.3	0.6	13	18	45	0.029
GEBJ12C	12	26	16	12	22.23	0.3	0.6	13	24	60	0.047
GEBJ14C	14	28	19	13.5	25.4	0.3	0.6	16	31	77	0.055
GEBJ16C	16	32	21	15	28.58	0.3	0.6	15	38	96	0.087
GEBJ18C	18	35	23	16.5	31.75	0.6	0.6	15	47	117	0.109
GEBJ20C	20	40	25	18	34.93	0.6	0.6	14	56	141	0.156
GEBJ22C	22	42	28	20	38.1	0.6	0.6	15	68	171	0.184
GEBJ25C	25	47	31	22	42.86	0.6	0.6	15	84	212	0.254
GEBJ30C	30	55	37	25	50.8	0.6	0.6	17	113	283	0.396
GEBJ35C	35	62	43	28	57.15	0.6	1	19	144	360	0.522
GEBJ40C	40	75	49	33	66.67	0.6	1	17	198	495	0.931
GEBJ50C	50	90	60	45	82.5	0.6	1	13	334	835	1.69

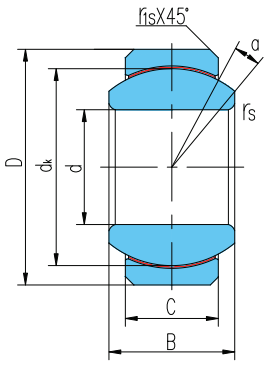
滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material

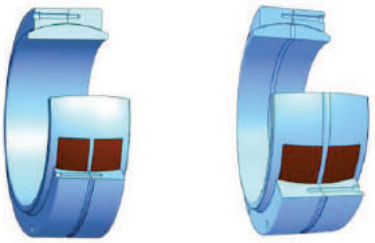


轴承型号 Bearing number	外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEFZ4C	4.83	14.29	7.14	5.54	10.31	0.3	0.38	11	5.1	12.8	0.006
	0.19	0.5625	0.281	0.218	0.406	0.012	0.015				
GEFZ6C	6.35	16.67	8.71	6.35	12.70	0.3	0.56	13	7.2	18.4	0.010
	0.25	0.6562	0.343	0.25	0.5	0.012	0.022				
GEFZ7C	7.94	19.05	9.53	7.14	14.27	0.3	0.81	11	9.1	22.9	0.014
	0.3125	0.75	0.375	0.281	0.562	0.012	0.032				
GEFZ9C	9.53	20.64	10.31	7.92	16.66	0.3	0.81	9	11.8	29.6	0.018
	0.375	0.8125	0.406	0.312	0.656	0.012	0.032				
GEFZ11C	11.11	23.02	11.10	8.71	17.45	0.3	0.81	9	13.6	34.1	0.021
	0.4375	0.9062	0.437	0.343	0.687	0.012	0.032				
GEFZ12C	12.70	25.40	12.70	9.91	20.65	0.3	0.81	9	18.4	46	0.029
	0.5	1	0.5	0.39	0.813	0.012	0.032				
GEFZ14C	14.29	27.78	14.27	11.10	23.01	0.3	0.81	9	23	57.4	0.042
	0.5625	1.0937	0.562	0.437	0.906	0.012	0.032				
GEFZ15C	15.88	30.16	15.88	12.70	25.40	0.3	0.81	8	29	72.5	0.053
	0.625	1.1875	0.625	0.5	1	0.012	0.032				
GEFZ19C	19.05	36.51	19.05	15.06	30.15	0.3	1.12	9	40.8	102.1	0.094
	0.75	1.4375	0.75	0.593	1.187	0.012	0.044				
GEFZ22C	22.23	39.69	22.23	17.86	33.32	0.6	1.12	9	53.5	133.8	0.119
	0.875	1.5625	0.875	0.703	1.312	0.024	0.044				
GEFZ25C	25.40	44.45	25.40	20.24	38.10	0.6	1.12	9	69.4	173.5	0.173
	1	1.75	1	0.797	1.5	0.024	0.044				

滑动摩擦副：钢 / PTFE 编织物
Sliding contact surfaces：Steel / PTFE fabric

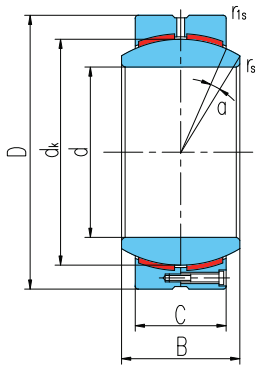


轴承型号 Bearing number	外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEFZ4T	4.83	14.29	7.14	5.54	10.31	0.3	0.38	11	7.4	11	0.006
	0.19	0.5625	0.281	0.218	0.406	0.012	0.015				
GEFZ6T	6.35	16.67	8.71	6.35	12.70	0.3	0.56	13	10	15	0.010
	0.25	0.6562	0.343	0.25	0.5	0.012	0.022				
GEFZ7T	7.94	19.05	9.53	7.14	14.27	0.3	0.81	11	13	19	0.014
	0.3125	0.75	0.375	0.281	0.562	0.012	0.032				
GEFZ9T	9.53	20.64	10.31	7.92	16.66	0.3	0.81	9	17	25	0.018
	0.375	0.8125	0.406	0.312	0.656	0.012	0.032				
GEFZ11T	11.11	23.02	11.10	8.71	17.45	0.3	0.81	9	19	28	0.021
	0.4375	0.9062	0.437	0.343	0.687	0.012	0.032				
GEFZ12T	12.70	25.40	12.70	9.91	20.65	0.3	0.81	9	26	39	0.029
	0.5	1	0.5	0.39	0.813	0.012	0.032				
GEFZ14T	14.29	27.78	14.27	11.10	23.01	0.3	0.81	9	33	49	0.042
	0.5625	1.0937	0.562	0.437	0.906	0.012	0.032				
GEFZ15T	15.88	30.16	15.88	12.70	25.40	0.3	0.81	8	41	61	0.053
	0.625	1.1875	0.625	0.5	1	0.012	0.032				
GEFZ19T	19.05	36.51	19.05	15.06	30.15	0.3	1.12	9	59	88	0.094
	0.75	1.4375	0.75	0.593	1.187	0.012	0.044				
GEFZ22T	22.23	39.69	22.23	17.86	33.32	0.6	1.12	9	89	133	0.119
	0.875	1.5625	0.875	0.703	1.312	0.024	0.044				
GEFZ25T	25.40	44.45	25.40	20.24	38.10	0.6	1.12	9	115	172	0.173
	1	1.75	1	0.797	1.5	0.024	0.044				

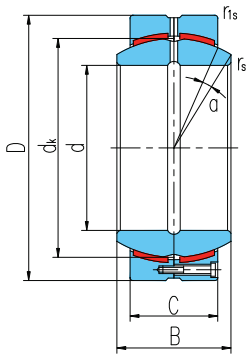


滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material



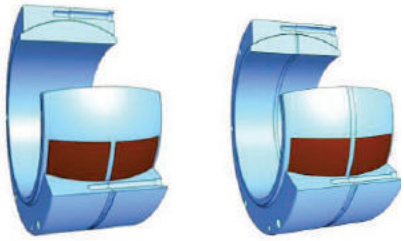
GEC…HC



GEC…HCS

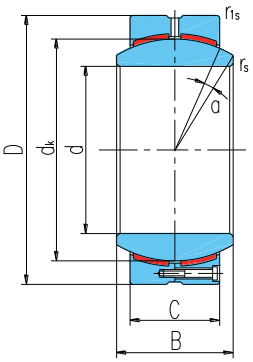
轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEC320HC	GEC320HCS	320	440	160	135	380	1.1	3	4	5130	10260	78
GEC340HC	GEC340HCS	340	460	160	135	400	1.1	3	3	5400	10800	83
GEC360HC	GEC360HCS	360	480	160	135	420	1.1	3	3	5670	11340	87
GEC380HC	GEC380HCS	380	520	190	160	450	1.5	4	4	7200	14400	129
GEC400HC	GEC400HCS	400	540	190	160	470	1.5	4	3	7520	15040	135
GEC420HC	GEC420HCS	420	560	190	160	490	1.5	4	3	7840	15680	141
GEC440HC	GEC440HCS	440	600	218	185	520	1.5	4	3	9620	19240	196
GEC460HC	GEC460HCS	460	620	218	185	540	1.5	4	3	9990	19980	204
GEC480HC	GEC480HCS	480	650	230	195	565	2	5	3	11000	22000	239
GEC500HC	GEC500HCS	500	670	230	195	585	2	5	3	11400	22800	248
GEC530HC	GEC530HCS	530	710	243	205	620	2	5	3	12710	25420	294
GEC560HC	GEC560HCS	560	750	258	215	655	2	5	4	14080	28160	345
GEC600HC	GEC600HCS	600	800	272	230	700	2	5	3	16100	32200	413
GEC630HC	GEC630HCS	630	850	300	260	740	3	6	3	19240	38480	538
GEC670HC	GEC670HCS	670	900	308	260	785	3	6	3	20410	40820	603
GEC710HC	GEC710HCS	710	950	325	275	830	3	6	3	22820	45640	703
GEC750HC	GEC750HCS	750	1000	335	280	875	3	6	3	24500	49000	790
GEC800HC	GEC800HCS	800	1060	355	300	930	3	6	3	27900	55800	933
GEC850HC	GEC850HCS	850	1120	365	310	985	3	6	3	30530	61060	1060
GEC900HC	GEC900HCS	900	1180	375	320	1040	3	6	3	33280	66560	1198
GEC950HC	GEC950HCS	950	1250	400	340	1100	4	7.5	3	37400	74800	1445
GEC1000HC	GEC1000HCS	1000	1320	438	370	1160	4	7.5	3	42920	85840	1768

可提供滑动摩擦副为钢 / 双金属或钢 / 聚甲醛的向心关节轴承。Can supply other spherical bearings with Sliding contact surfaces Steel / Double metal or Steel / Polyformaldehyde.

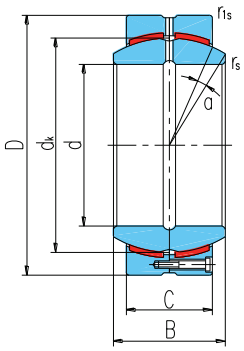


滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite

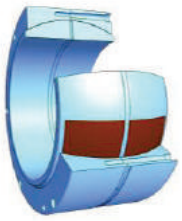


GEH...HC



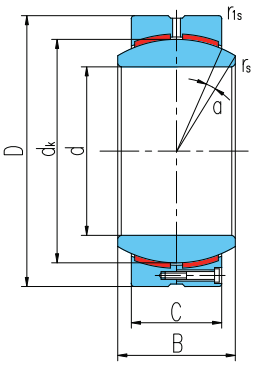
GEH...HCS

轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH100HC	GEH100HCS	100	150	71	67	135	1	1	2	900	1800	5.07
GEH110HC	GEH110HCS	110	160	78	74	145	1	1	2	1070	2140	6.21
GEH120HC	GEH120HCS	120	180	85	80	160	1	1	2	1280	2560	8.87
GEH140HC	GEH140HCS	140	210	100	95	185	1	1	2	1750	3500	14.6
GEH160HC	GEH160HCS	160	230	115	109	210	1	1	2	2280	4560	18.6
GEH180HC	GEH180HCS	180	260	128	122	240	1.1	1.1	2	2920	5840	26.7
GEH200HC	GEH200HCS	200	290	140	134	260	1.1	1.1	2	3480	6960	37.1
GEH220HC	GEH220HCS	220	320	155	148	290	1.1	1.1	2	4290	8580	49.4
GEH240HC	GEH240HCS	240	340	170	162	310	1.1	1.1	2	5020	10040	57.9
GEH260HC	GEH260HCS	260	370	185	175	340	1.1	1.1	2	5950	11900	75.2
GEH280HC	GEH280HCS	280	400	200	190	370	1.1	1.1	2	7030	14060	96
GEH300HC	GEH300HCS	300	430	212	200	390	1.1	1.1	2	7800	15600	117
GEH320HC	GEH320HCS	320	460	230	218	414	1.1	3	2	9020	18040	148
GEH340HC	GEH340HCS	340	480	243	230	434	1.1	3	2	9980	19960	163
GEH360HC	GEH360HCS	360	520	258	243	474	1.1	4	2	11510	23020	213
GEH380HC	GEH380HCS	380	540	272	258	494	1.5	4	2	12740	25480	236
GEH400HC	GEH400HCS	400	580	280	265	514	1.5	4	2	13620	27240	290
GEH420HC	GEH420HCS	420	600	300	280	534	1.5	4	2	14950	29900	319
GEH440HC	GEH440HCS	440	630	315	300	574	1.5	4	2	17220	34440	379
GEH460HC	GEH460HCS	460	650	325	308	593	1.5	4	2	18260	36520	404
GEH480HC	GEH480HCS	480	680	340	320	623	2	5	2	19930	39860	463
GEH500HC	GEH500HCS	500	710	355	335	643	2	5	2	21540	43080	529
GEH530HC	GEH530HCS	530	750	375	355	673	2	5	2	23890	47780	620
GEH560HC	GEH560HCS	560	800	400	380	723	2	5	2	27470	54940	770
GEH600HC	GEH600HCS	600	850	425	400	773	2	6	2	30920	61840	903
GEH630HC	GEH630HCS	630	900	450	425	813	3	6	2	34550	69100	1092
GEH670HC	GEH670HCS	670	950	475	450	862	3	6	2	38790	77580	1270
GEH710HC	GEH710HCS	710	1000	500	475	912	3	6	2	43320	86640	1465
GEH750HC	GEH750HCS	750	1060	530	500	972	3	6	2	48600	97200	1750
GEH800HC	GEH800HCS	800	1120	565	530	1022	3	6	2	54160	108320	2029
GEH850HC	GEH850HCS	850	1220	600	565	1112	3	7.5	2	62820	125640	2704

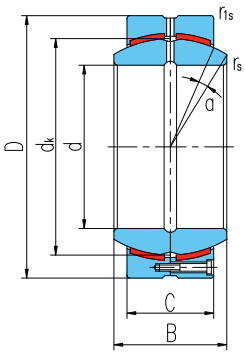


滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces： Steel / PTFE composite



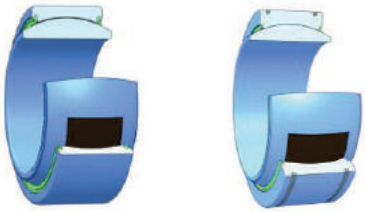
GEH…HC



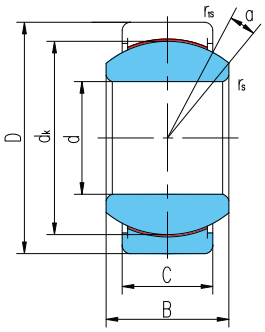
GEH…HCS

轴承型号 Bearing number		外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
		d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH900HC	GEH900HCS	900	1250	635	600	1142	3	7.5	2	68520	137040	2806
GEH950HC	GEH950HCS	950	1360	670	635	1242	4	7.5	2	78860	157720	3752
GEH1000HC	GEH1000HCS	1000	1450	710	670	1312	4	7.5	2	87900	175800	4612

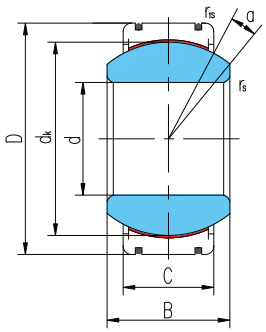
可提供滑动摩擦副为钢 / 双金属或钢 / 聚甲醛的向心关节轴承。Can supply other spherical bearings with Sliding contact surfaces Steel / Double metal or Steel / Polyformaldehyde.



滑动摩擦副：钢 / PTFE 编织物
Sliding contact surfaces：Steel / PTFE fabric



GE…ETL-2RS



GE…XTL-2RS

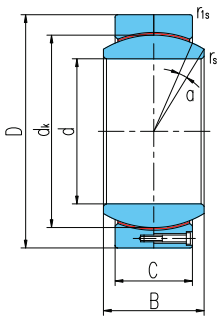
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE15ETL-2RS	15	26	12	9	22	0.3	0.3	8	47	79	0.026
GE17ETL-2RS	17	30	14	10	25	0.3	0.3	10	60	100	0.040
GE20ETL-2RS	20	35	16	12	29	0.3	0.3	9	83	139	0.064
GE25ETL-2RS	25	42	20	16	35.5	0.6	0.6	7	135	225	0.115
GE30ETL-2RS	30	47	22	18	40.7	0.6	0.6	6	175	290	0.149
GE35ETL-2RS	35	55	25	20	47	0.6	1	6	225	375	0.228
GE40ETL-2RS	40	62	28	22	53	0.6	1	7	275	465	0.318
GE45ETL-2RS	45	68	32	25	60	0.6	1	7	360	600	0.421
GE50ETL-2RS	50	75	35	28	66	0.6	1	6	440	735	0.562
GE55ETL-2RS	55	85	40	32	74	0.6	1	7	560	940	0.864
GE60ETL-2RS	60	90	44	36	80	1	1	6	690	1150	1.03
GE70ETL-2RS	70	105	49	40	92	1	1	6	880	1470	1.57
GE80ETL-2RS	80	120	55	45	105	1	1	6	1130	1890	2.32
GE90ETL-2RS	90	130	60	50	115	1	1	5	1380	2300	2.79
GE100ETL-2RS	100	150	70	55	130	1	1	7	1710	2860	4.44
GE110ETL-2RS	110	160	70	55	140	1	1	6	1840	3080	4.83
GE120ETL-2RS	120	180	85	70	160	1	1	6	2680	4480	8.11
GE140XTL-2RS	140	210	90	70	180	1	1	7	3020	5040	11.2
GE160XTL-2RS	160	230	105	80	200	1	1	8	3840	6400	14.1
GE180XTL-2RS	180	260	105	80	225	1.1	1.1	6	4320	7200	18.5
GE200XTL-2RS	200	290	130	100	250	1.1	1.1	7	6000	10000	28.4
GE220XTL-2RS	220	320	135	100	275	1.1	1.1	8	6600	11000	35.7
GE240XTL-2RS	240	340	140	100	300	1.1	1.1	8	7200	12000	39.7
GE260XTL-2RS	260	370	150	110	325	1.1	1.1	7	8580	14300	51.5
GE280XTL-2RS	280	400	155	120	350	1.1	1.1	6	10000	16800	64.9
GE300XTL-2RS	300	430	165	120	375	1.1	1.1	7	10800	18000	77.6

可提供密封圈为“2GS”和不带密封圈的向心关节轴承。

Can supply spherical plain bearing with “2GS” seals or without seal.

本系列取代原有的GE...E(X)T-2RS 系列，GE...E(X)TL-2RS 的性能详见P14页。

This series replaces the original series GE. . . E(X)T-2RS，capability of GE. . . E(X)TL-2RS see page14.



滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric

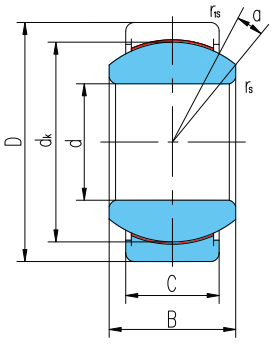
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE120HTL-2RS	120	180	85	70	160	1	1	6	3350	5580	8.11
GE140HTL-2RS	140	210	90	70	180	1	1	7	3770	6290	11.2
GE160HTL-2RS	160	230	105	80	200	1	1	8	4800	8000	14.1
GE180HTL-2RS	180	260	105	80	225	1.1	1.1	6	5400	9000	18.5
GE200HTL-2RS	200	290	130	100	250	1.1	1.1	7	7500	12500	28.4
GE220HTL-2RS	220	320	135	100	275	1.1	1.1	8	8250	13750	35.7
GE240HTL-2RS	240	340	140	100	300	1.1	1.1	8	9000	15000	39.7
GE260HTL-2RS	260	370	150	110	325	1.1	1.1	7	10720	17870	51.5
GE280HTL-2RS	280	400	155	120	350	1.1	1.1	6	12500	20830	64.9
GE300HTL-2RS	300	430	165	120	375	1.1	1.1	7	13500	22500	77.6

可提供密封圈为“2GS”和不带密封圈的向心关节轴承。

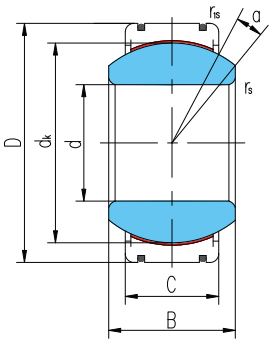
Can supply spherical plain bearing with “2GS” seals or without seal.

滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric



GEG…ETL-2RS



GEG…XTL-2RS

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEG15ETL-2RS	15	30	16	10	25	0.3	0.3	16	60	100	0.048
GEG17ETL-2RS	17	35	20	12	29	0.3	0.3	19	83	139	0.080
GEG20ETL-2RS	20	42	25	16	35.5	0.3	0.6	17	135	225	0.152
GEG25ETL-2RS	25	47	28	18	40.7	0.6	0.6	17	175	290	0.199
GEG30ETL-2RS	30	55	32	20	47	0.6	1	17	225	375	0.296
GEG35ETL-2RS	35	62	35	22	53	0.6	1	16	275	465	0.402
GEG40ETL-2RS	40	68	40	25	60	0.6	1	17	360	600	0.535
GEG45ETL-2RS	45	75	43	28	66	0.6	1	15	440	735	0.698
GEG50ETL-2RS	50	90	56	36	80	0.6	1	17	690	1150	1.42
GEG60ETL-2RS	60	105	63	40	92	1	1	17	880	1470	2.09
GEG70ETL-2RS	70	120	70	45	105	1	1	16	1130	1890	3.01
GEG80ETL-2RS	80	130	75	50	115	1	1	14	1380	2300	3.61
GEG90ETL-2RS	90	150	85	55	130	1	1	15	1710	2860	5.50
GEG100ETL-2RS	100	160	85	55	140	1	1	14	1840	3080	6.04
GEG110ETL-2RS	110	180	100	70	160	1	1	12	2680	4480	9.74
GEG120XTL-2RS	120	210	115	70	180	1	1	16	3020	5040	15.1
GEG140XTL-2RS	140	230	130	80	200	1	1	16	3840	6400	18.9
GEG160XTL-2RS	160	260	135	80	225	1.1	1.1	16	4320	7200	24.8
GEG180XTL-2RS	180	290	155	100	250	1.1	1.1	14	6000	10000	35.9
GEG200XTL-2RS	200	320	165	100	275	1.1	1.1	15	6600	11000	44.9
GEG220XTL-2RS	220	340	175	100	300	1.1	1.1	16	7200	12000	50.9
GEG240XTL-2RS	240	370	190	110	325	1.1	1.1	15	8580	14300	65.3
GEG260XTL-2RS	260	400	205	120	350	1.1	1.1	15	10000	16800	82.0
GEG280XTL-2RS	280	430	210	120	375	1.1	1.1	15	10800	18000	96.6

可提供密封圈为“2GS”和不带密封圈的向心关节轴承。

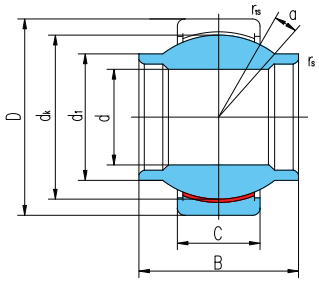
Can supply spherical plain bearing with “2GS” seals or without seal.

本系列取代原有的GEG...E(X)T-2RS 系列，GEG...E(X)TL-2RS 的性能详见P14页。

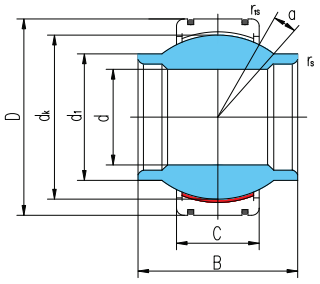
This series replaces the original series GEG...E(X)T-2RS，capability of GEG...E(X)TL-2RS see page14.

滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric



GEEW…ETL-2RS

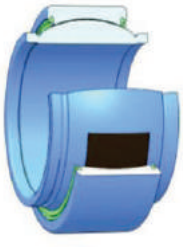


GEEW…XTL-2RS

轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight
	d	D	B	C	d_1 max	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	≈kg
GEEW12ETL	12	22	12	7	15.5	18	0.3	0.3	4	30	50	0.017
GEEW15ETL-2RS	15	26	15	9	18.5	22	0.3	0.3	5	47	79	0.028
GEEW16ETL-2RS	16	28	16	9	20	23	0.3	0.3	4	49	81	0.034
GEEW17ETL-2RS	17	30	17	10	21	25	0.3	0.3	7	60	100	0.043
GEEW20ETL-2RS	20	35	20	12	25	29	0.3	0.3	4	83	139	0.069
GEEW25ETL-2RS	25	42	25	16	30.5	35.5	0.6	0.6	4	135	225	0.124
GEEW30ETL-2RS	30	47	30	18	34	40.7	0.6	0.6	4	175	290	0.159
GEEW32ETL-2RS	32	52	32	18	37	43	0.6	1	4	185	308	0.207
GEEW35ETL-2RS	35	55	35	20	40	47	0.6	1	4	225	375	0.248
GEEW40ETL-2RS	40	62	40	22	46	53	0.6	1	4	275	465	0.349
GEEW45ETL-2RS	45	68	45	25	52	60	0.6	1	4	360	600	0.468
GEEW50ETL-2RS	50	75	50	28	57	66	0.6	1	4	440	735	0.62
GEEW60ETL-2RS	60	90	60	36	68	80	1	1	4	690	1150	1.11
GEEW63ETL-2RS	63	95	63	36	71.5	83	1	1	4	715	119	1.27
GEEW70XTL-2RS	70	105	70	40	78	92	1	1	4	880	1470	1.69
GEEW80XTL-2RS	80	120	80	45	91	105	1	1	4	1130	1890	2.55
GEEW90XTL-2RS	90	130	90	50	99	115	1	1	4	1380	2300	3.04
GEEW100XTL-2RS	100	150	100	55	113	130	1	1	4	1710	2860	4.87
GEEW110XTL-2RS	110	160	110	55	124	140	1	1	4	1840	3080	5.53
GEEW125XTL-2RS	125	180	125	70	138	160	1	1	4	2685	4475	8.19
GEEW160XTL-2RS	160	230	160	80	177	200	1	1	4	3840	6400	15.8
GEEW200XTL-2RS	200	290	200	100	221	250	1.1	1.1	4	6000	10000	31.7
GEEW250XTL-2RS	250	400	250	120	317	350	1.1	1.1	4	10080	16800	101
GEEW320XTL-2RS	320	520	320	160	405	450	1.1	1.1	4	17280	28800	225

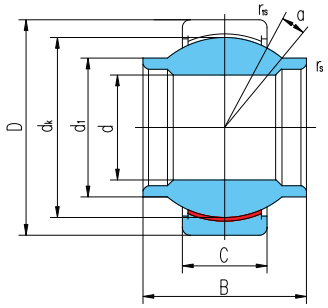
可提供密封圈为“2GS”和不带密封圈的向心关节轴承。

Can supply spherical plain bearing with “2GS” seals or without seal.

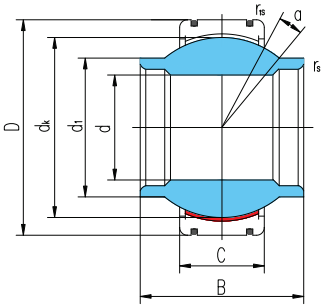


滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric



GEEM…ETL-2RS



GEEM…XTL-2RS

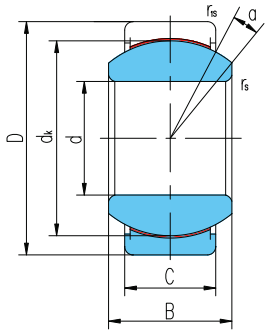
轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_1 max	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEEM20ETL-2RS	20	35	24	12	24	29	0.3	0.3	6	83	139	0.072
GEEM25ETL-2RS	25	42	29	16	29	35.5	0.3	0.6	4	135	225	0.13
GEEM30ETL-2RS	30	47	30	18	34	40.7	0.3	0.6	4	175	290	0.16
GEEM35ETL-2RS	35	55	35	20	40	47	0.6	1	4	225	375	0.25
GEEM40ETL-2RS	40	62	38	22	45	53	0.6	1	4	275	465	0.34
GEEM45ETL-2RS	45	68	40	25	52	60	0.6	1	4	360	600	0.45
GEEM50ETL-2RS	50	75	43	28	57	66	0.6	1	4	440	735	0.59
GEEM60ETL-2RS	60	90	54	36	68	80	0.6	1	3	690	1150	1.06
GEEM70XTL-2RS	70	105	65	40	78	92	0.6	1	4	880	1470	1.66
GEEM80XTL-2RS	80	120	74	45	90	105	0.6	1	4	1130	1890	2.47
GEEM90XTL-2RS	90	130	80	50	99	115	1	1	4	1380	2300	2.88
GEEM100XTL-2RS	100	150	90	55	113	130	1	1	4	1710	2860	4.65
GEEM120XTL-2RS	120	180	108	70	133	160	1	1	4	2680	4480	8.44

可提供密封圈为“2GS”和不带密封圈的向心关节轴承。

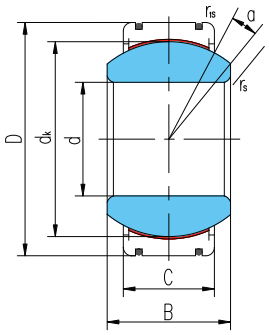
Can supply spherical plain bearing with “2GS” seals or without seal.

滑动摩擦副：不锈钢 / PTFE 编织物

Sliding contact surfaces：Stainless steel / PTFE



GE...ETL-2RS/X



GE...XTL-2RS/X

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE15ETL-2RS/X	15	26	12	9	22	0.3	0.3	8	47	79	0.026
GE17ETL-2RS/X	17	30	14	10	25	0.3	0.3	10	60	100	0.040
GE20ETL-2RS/X	20	35	16	12	29	0.3	0.3	9	83	139	0.064
GE25ETL-2RS/X	25	42	20	16	35.5	0.6	0.6	7	135	225	0.115
GE30ETL-2RS/X	30	47	22	18	40.7	0.6	0.6	6	175	290	0.149
GE35ETL- 2RS/X	35	55	25	20	47	0.6	1	6	225	375	0.228
GE40ETL- 2RS/X	40	62	28	22	53	0.6	1	7	275	465	0.318
GE45ETL- 2RS/X	45	68	32	25	60	0.6	1	7	360	600	0.421
GE50ETL- 2RS/X	50	75	35	28	66	0.6	1	6	440	735	0.562
GE55ETL-2RS/X	55	85	40	32	74	0.6	1	7	560	940	0.864
GE60ETL-2RS/X	60	90	44	36	80	1	1	6	690	1150	1.03
GE70XTL-2RS/X	70	105	49	40	92	1	1	6	880	1470	1.57
GE80XTL-2RS/X	80	120	55	45	105	1	1	6	1130	1890	2.32
GE90XTL-2RS/X	90	130	60	50	115	1	1	5	1380	2300	2.79
GE100XTL-2RS/X	100	150	70	55	130	1	1	7	1710	2860	4.44
GE110XTL-2RS/X	110	160	70	55	140	1	1	6	1840	3080	4.83
GE120XTL-2RS/X	120	180	85	70	160	1	1	6	2680	4480	8.11
GE140XTL-2RS/X	140	210	90	70	180	1	1	7	3020	5040	11.2
GE160XTL-2RS/X	160	230	105	80	200	1	1	8	3840	6400	14.1
GE180XTL-2RS/X	180	260	105	80	225	1.1	1.1	6	4320	7200	18.5
GE200XTL-2RS/X	200	290	130	100	250	1.1	1.1	7	6000	10000	28.4
GE220XTL-2RS/X	220	320	135	100	275	1.1	1.1	8	6600	11000	35.7
GE240XTL-2RS/X	240	340	140	100	300	1.1	1.1	8	7200	12000	39.7
GE260XTL-2RS/X	260	370	150	110	325	1.1	1.1	7	8580	14300	51.5
GE280XTL-2RS/X	280	400	155	120	350	1.1	1.1	6	10000	16800	64.9
GE300XTL-2RS/X	300	430	165	120	375	1.1	1.1	7	10800	18000	77.6

可提供密封圈为“2GS”和不带密封圈的向心关节轴承

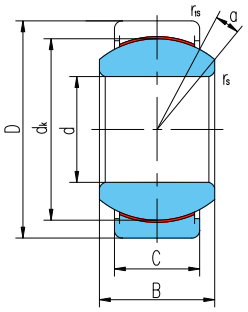
Can supply spherical plain bearing with “2GS”seals or without seal.

本系列取代原有的GE...E(X)T-2RS/X 系列，GE...E(X)TL-2RS/X 的性能详见P14页。

This series replaces the original series GE...E(X)T-2RS/X，capability of GE...E(X)TL-2RS/X see page 14.

滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric



轴承型号 Bearing number	外形尺寸 Dimensions mm/inch								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEZ19ETL-2RS	19.05	31.75	16.662	14.275	27.5	0.3	0.6	6	50	117	0.053
	0.75	1.25	0.656	0.562	1.081	0.012	0.024				
GEZ22ETL-2RS	22.225	36.513	19.431	16.662	32	0.3	0.6	6	69	160	0.085
	0.875	1.4375	0.756	0.656	1.258	0.012	0.024				
GEZ25ETL-2RS	25.4	41.275	22.225	19.05	36.5	0.3	0.6	6	104	250	0.121
	1	1.625	0.875	0.75	1.437	0.012	0.024				
GEZ31ETL-2RS	31.75	50.8	27.762	23.8	45.5	0.6	0.6	6	160	390	0.23
	1.25	2	1.093	0.937	1.788	0.024	0.024				
GEZ34ETL-2RS	34.925	55.563	30.15	26.187	49	0.6	1	5	190	460	0.35
	1.375	2.1875	1.187	1.031	1.926	0.024	0.04				
GEZ38ETL-2RS	38.1	61.913	33.325	28.575	54.7	0.6	1	6	235	560	0.42
	1.5	2.4375	1.312	1.125	2.154	0.024	0.04				
GEZ44ETL-2RS	44.45	71.438	38.887	33.325	63.9	0.6	1	6	320	765	0.64
	1.75	2.8125	1.531	1.312	2.511	0.024	0.04				
GEZ50ETL-2RS	50.8	80.963	44.45	38.1	73	0.6	1	6	415	1000	0.93
	2	3.1875	1.75	1.5	2.869	0.024	0.04				
GEZ57ETL-2RS	57.15	90.488	50.013	42.85	82	0.6	1	6	525	1260	1.3
	2.25	3.5625	1.969	1.687	3.223	0.024	0.04				
GEZ63ETL-2RS	63.5	100.013	55.55	47.625	92	1	1	6	655	1570	1.85
	2.5	3.9375	2.187	1.875	3.616	0.04	0.04				
GEZ69ETL-2RS	69.85	111.125	61.112	52.375	100	1	1	6	785	1880	2.4
	2.75	4.375	2.406	2.062	3.937	0.04	0.04				
GEZ76ETL-2RS	76.2	120.65	66.675	57.15	109.5	1	1	6	935	2250	3.1
	3	4.75	2.625	2.25	4.303	0.04	0.04				
GEZ82ETL-2RS	82.55	130.175	72.238	61.9	119	1	1	6	1100	2650	3.8
	3.25	5.125	2.844	2.437	4.685	0.04	0.04				
GEZ88ETL-2RS	88.9	139.7	77.775	66.675	128	1	1	6	1280	3070	4.8
	3.5	5.5	3.062	2.625	5.04	0.04	0.04				
GEZ95ETL-2RS	95.25	149.225	83.337	71.425	137	1	1	6	1460	3520	5.8
	3.75	5.875	3.281	2.812	5.393	0.04	0.04				
GEZ101ETL-2RS	101.6	158.75	88.9	76.2	146	1	1	6	1660	4000	7
	4	6.25	3.5	3	5.748	0.04	0.04				
GEZ107ETL-2RS	107.95	168.275	94.463	80.95	155	1	1	6	1880	4510	8.4
	4.25	6.625	3.719	3.187	6.102	0.04	0.04				
GEZ114ETL-2RS	114.3	177.8	100.013	85.725	164.5	1	1	6	2110	5070	9.8
	4.5	7	3.937	3.375	6.476	0.04	0.04				
GEZ120ETL-2RS	120.65	187.325	105.562	90.475	173.5	1	1	6	2350	5650	11.5
	4.75	7.375	4.156	3.562	6.83	0.04	0.04				
GEZ127ETL-2RS	127	196.85	111.125	95.25	183	1	1	6	2610	6270	13.5
	5	7.75	4.375	3.75	7.204	0.04	0.04				
GEZ152ETL-2RS	152.4	222.25	120.65	104.775	207	1	1	5	3250	7800	17.5
	6	8.75	4.75	4.125	8.15	0.04	0.04				

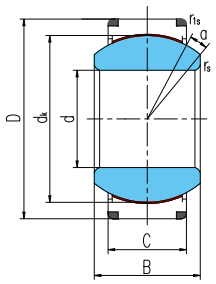
内、外圈可用不锈钢制造，轴承型号后面加“X”标识，即 GEZ…ETL-2RS/X; 可提供密封圈为“2GS”和不带密封圈的向心关节轴承。The inner and outer rings of the bearings is of stainless steel and the mark of the items has a letter “X”.That is GEZ…ETL-2RS/X;Can supply spherical plain bearing with “2GS” seals or without seal.

本系列取代原有的GEZ...ET-2RS 系列，GEZ...ETL-2RS 的性能详见P14页。

This series replaces the original series GEZ. . . ET-2RS，capability of GEZ. . . ETL-2RS see page 14.

滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE



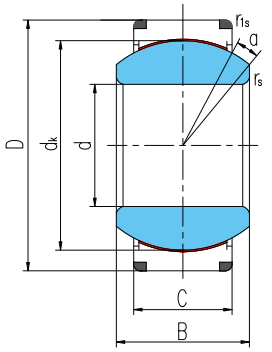
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEC320XTL-2RS	320	440	160	135	380	1.1	3	4	12310	20520	78
GEC340XTL-2RS	340	460	160	135	400	1.1	3	3	12960	21600	83
GEC360XTL-2RS	360	480	160	135	420	1.1	3	3	13600	22680	87
GEC380XTL-2RS	380	520	190	160	450	1.5	4	4	17280	28800	129
GEC400XTL-2RS	400	540	190	160	470	1.5	4	3	18040	30080	135
GEC420XTL-2RS	420	560	190	160	490	1.5	4	3	18810	31360	141
GEC440XTL-2RS	440	600	218	185	520	1.5	4	3	23080	38480	196
GEC460XTL-2RS	460	620	218	185	540	1.5	4	3	23970	39960	204
GEC480XTL-2RS	480	650	230	195	565	2	5	3	26440	44070	239
GEC500XTL-2RS	500	670	230	195	585	2	5	3	27370	45630	248
GEC530XTL-2RS	530	710	243	205	620	2	5	3	30500	50840	294
GEC560XTL-2RS	560	750	258	215	655	2	5	4	33790	56330	345
GEC600XTL-2RS	600	800	272	230	700	2	5	3	38640	64400	413
GEC630XTL-2RS	630	850	300	260	740	3	6	3	46170	76960	538

可提供不带密封圈的向心关节轴承。

Can supply spherical plain bearing without seal.

本系列取代原有的GEC...XT-2RS 系列，GEC...XTL-2RS 的性能详见P14页。

This series replaces the original series GEC...XT-2RS，capability of GEC...XTL-2RS see page 14.



滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric

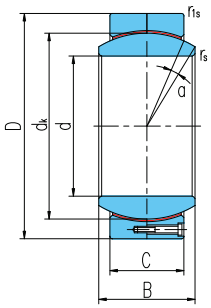
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH100XTL-2RS	100	150	71	67	135	1	1	2	2170	3610	5.07
GEH110XTL-2RS	110	160	78	74	145	1	1	2	2570	4290	6.21
GEH120XTL-2RS	120	180	85	80	160	1	1	2	3070	5120	8.87
GEH140XTL-2RS	140	210	100	95	185	1	1	2	4210	7030	14.6
GEH160XTL-2RS	160	230	115	109	210	1	1	2	5490	9150	18.6
GEH180XTL-2RS	180	260	128	122	240	1.1	1.1	2	7020	11710	26.7
GEH200XTL-2RS	200	290	140	134	260	1.1	1.1	2	8360	13930	37.1
GEH220XTL-2RS	220	320	155	148	290	1.1	1.1	2	10300	17160	49.4
GEH240XTL-2RS	240	340	170	162	310	1.1	1.1	2	12050	20080	57.9
GEH260XTL-2RS	260	370	185	175	340	1.1	1.1	2	14280	23800	75.2
GEH280XTL-2RS	280	400	200	190	370	1.1	1.1	2	16870	28120	96
GEH300XTL-2RS	300	430	212	200	390	1.1	1.1	2	18720	31200	117
GEH320XTL-2RS	320	460	230	218	414	1.1	3	2	21660	36100	148
GEH340XTL-2RS	340	480	243	230	434	1.1	3	2	23950	39920	163
GEH360XTL-2RS	360	520	258	243	474	1.1	4	2	27640	46070	213
GEH380XTL-2RS	380	540	272	258	494	1.5	4	2	30580	50980	236
GEH400XTL-2RS	400	580	280	265	514	1.5	4	2	32690	54480	290
GEH420XTL-2RS	420	600	300	280	534	1.5	4	2	35880	59800	319
GEH440XTL-2RS	440	630	315	300	574	1.5	4	2	41320	68880	379
GEH460XTL-2RS	460	650	325	308	593	1.5	4	2	43830	73050	404
GEH480XTL-2RS	480	680	340	320	623	2	5	2	47840	79740	463
GEH500XTL-2RS	500	710	355	335	643	2	5	2	51690	86160	529
GEH530XTL-2RS	530	750	375	355	673	2	5	2	57330	95560	620
GEH560XTL-2RS	560	800	400	380	723	2	5	2	65930	109890	770
GEH600XTL-2RS	600	850	425	400	773	2	6	2	74200	123680	903

可提供密封圈为“2GS”(d≤300mm)和不带密封圈的向心关节轴承。

Can supply spherical plain bearing with “2GS” seals(d≤300mm) or without seal.

本系列取代原有的GEH..XT-2RS 系列，GEH..XTL-2RS 的性能详见P14页。

This series replaces the original series GEH...XT-2RS，capability of GEH...XTL-2RS see page 14.



滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric

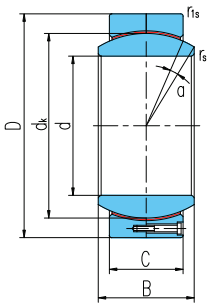
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEC320HTL	320	440	160	135	380	1.1	3	4	15390	25650	78
GEC340HTL	340	460	160	135	400	1.1	3	3	16200	27000	83
GEC360HTL	360	480	160	135	420	1.1	3	3	17010	28350	87
GEC380HTL	380	520	190	160	450	1.5	4	4	21600	36000	129
GEC400HTL	400	540	190	160	470	1.5	4	3	22560	37600	135
GEC420HTL	420	560	190	160	490	1.5	4	3	23520	39200	141
GEC440HTL	440	600	218	185	520	1.5	4	3	28860	48100	196
GEC460HTL	460	620	218	185	540	1.5	4	3	29970	49950	204
GEC480HTL	480	650	230	195	565	2	5	3	33050	55080	239
GEC500HTL	500	670	230	195	585	2	5	3	34220	57030	248
GEC530HTL	530	710	243	205	620	2	5	3	38130	63550	294
GEC560HTL	560	750	258	215	655	2	5	4	42240	70410	345
GEC600HTL	600	800	272	230	700	2	5	3	48300	80500	413
GEC630HTL	630	850	300	260	740	3	6	3	57720	96200	538
GEC670HTL	670	900	308	260	785	3	6	3	61230	102050	603
GEC710HTL	710	950	325	275	830	3	6	3	68470	114120	703
GEC750HTL	750	1000	335	280	875	3	6	3	73500	122500	790
GEC800HTL	800	1060	355	300	930	3	6	3	83700	139500	933
GEC850HTL	850	1120	365	310	985	3	6	3	91600	152670	1060
GEC900HTL	900	1180	375	320	1040	3	6	3	99840	166400	1198
GEC950HTL	950	1250	400	340	1100	4	7.5	3	112200	187000	1445
GEC1000HTL	1000	1320	438	370	1160	4	7.5	3	128760	214600	1768

本系列取代原有的GEC..HT 系列，GEC...HTL 的性能详见P14页。

This series replaces the original series GEC. . . HT，capability of GEC. . . HTL see page 14.

滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric



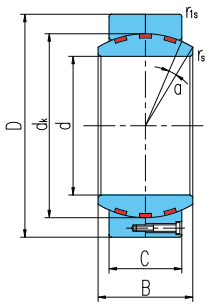
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH100HTL	100	150	71	67	135	1	1	2	2710	4520	5.07
GEH110HTL	110	160	78	74	145	1	1	2	3210	5360	6.21
GEH120HTL	120	180	85	80	160	1	1	2	3840	6400	8.87
GEH140HTL	140	210	100	95	185	1	1	2	5270	8780	14.6
GEH160HTL	160	230	115	109	210	1	1	2	6860	11440	18.6
GEH180HTL	180	260	128	122	240	1.1	1.1	2	8780	14640	26.7
GEH200HTL	200	290	140	134	260	1.1	1.1	2	10450	17420	37.1
GEH220HTL	220	320	155	148	290	1.1	1.1	2	12870	21460	49.4
GEH240HTL	240	340	170	162	310	1.1	1.1	2	15060	25110	57.9
GEH260HTL	260	370	185	175	340	1.1	1.1	2	17850	29750	75.2
GEH280HTL	280	400	200	190	370	1.1	1.1	2	21090	35150	96
GEH300HTL	300	430	212	200	390	1.1	1.1	2	23400	39000	117
GEH320HTL	320	460	230	218	414	1.1	3	2	27070	45120	148
GEH340HTL	340	480	243	230	434	1.1	3	2	29940	49910	163
GEH360HTL	360	520	258	243	474	1.1	4	2	34550	57590	213
GEH380HTL	380	540	272	258	494	1.5	4	2	38230	63720	236
GEH400HTL	400	580	280	265	514	1.5	4	2	40860	68100	290
GEH420HTL	420	600	300	280	534	1.5	4	2	44850	74760	319
GEH440HTL	440	630	315	300	574	1.5	4	2	51660	86100	379
GEH460HTL	460	650	325	308	593	1.5	4	2	54790	91320	404
GEH480HTL	480	680	340	320	623	2	5	2	59800	99680	463
GEH500HTL	500	710	355	335	643	2	5	2	64620	107700	529
GEH530HTL	530	750	375	355	673	2	5	2	71670	119450	620
GEH560HTL	560	800	400	380	723	2	5	2	82420	137370	770
GEH600HTL	600	850	425	400	773	2	6	2	92760	154600	903
GEH630HTL	630	900	450	425	813	3	6	2	103650	172760	1092
GEH670HTL	670	950	475	450	862	3	6	2	116370	193950	1270
GEH710HTL	710	1000	500	475	912	3	6	2	129960	216600	1465
GEH750HTL	750	1060	530	500	972	3	6	2	145800	243000	1750
GEH800HTL	800	1120	565	530	1022	3	6	2	162490	270830	2029
GEH850HTL	850	1220	600	565	1112	3	7.5	2	188480	314140	2704
GEH900HTL	900	1250	635	600	1142	3	7.5	2	205560	342600	2806
GEH950HTL	950	1360	670	635	1242	4	7.5	2	236600	394330	3752
GEH1000HTL	1000	1450	710	670	1312	4	7.5	2	263710	439520	4612

本系列取代原有的GEH. . . HT 系列，GEH...HTL 的性能详见P14页。

This series replaces the original series GEH. . . HT，capability of GEH. . . HTL see page 14.

滑动摩擦副：钢 / 铜合金

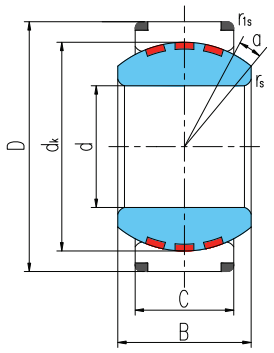
Sliding contact surfaces：Steel / Copper alloy



轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH440HF/Q	440	630	315	300	574	1.5	4	2	17220	34440	370
GEH460HF/Q	460	650	325	308	593	1.5	4	2	18260	36520	395
GEH480HF/Q	480	680	340	320	623	2	5	2	19930	39860	453
GEH500HF/Q	500	710	355	335	643	2	5	2	21540	43080	519
GEH530HF/Q	530	750	375	355	673	2	5	2	23890	47780	609
GEH560HF/Q	560	800	400	380	723	2	5	2	27470	54940	754
GEH600HF/Q	600	850	425	400	773	2	6	2	30920	61840	885
GEH630HF/Q	630	900	450	425	813	3	6	2	34550	69100	1072
GEH670HF/Q	670	950	475	450	862	3	6	2	38790	77580	1248
GEH710HF/Q	710	1000	500	475	912	3	6	2	43320	86640	1440
GEH750HF/Q	750	1060	530	500	972	3	6	2	48600	97200	1722
GEH800HF/Q	800	1120	565	530	1022	3	6	2	54160	108320	1998
GEH850HF/Q	850	1220	600	565	1112	3	7.5	2	62820	125640	2660
GEH900HF/Q	900	1250	635	600	1142	3	7.5	2	68520	137040	2761
GEH950HF/Q	950	1360	670	635	1242	4	7.5	2	78860	157720	3692
GEH1000HF/Q	1000	1450	710	670	1312	4	7.5	2	87900	175800	4538

滑动摩擦副：钢 / 铜合金

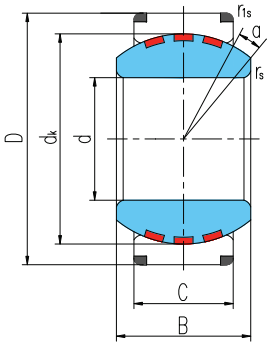
Sliding contact surfaces：Steel / Copper alloy



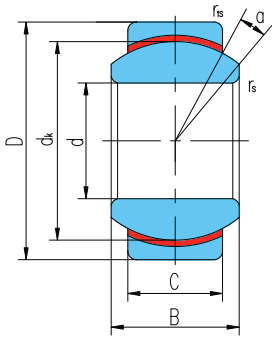
轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE100XF/Q	100	150	70	55	130	1	1	7	710	1420	4.24
GE110XF/Q	110	160	70	55	140	1	1	6	770	1540	4.55
GE120XF/Q	120	180	85	70	160	1	1	6	1120	2240	7.77
GE140XF/Q	140	210	90	70	180	1	1	7	1260	2520	10.7
GE160XF/Q	160	230	105	80	200	1	1	8	1600	3200	13.5
GE180XF/Q	180	260	105	80	225	1.1	1.1	6	1800	3600	17.9
GE200XF/Q	200	290	130	100	250	1.1	1.1	7	2500	5000	27.3
GE220XF/Q	220	320	135	100	275	1.1	1.1	8	2750	5500	34.5
GE240XF/Q	240	340	140	100	300	1.1	1.1	8	3000	6000	38.3
GE260XF/Q	260	370	150	110	325	1.1	1.1	7	3570	7140	49.7
GE280XF/Q	280	400	155	120	350	1.1	1.1	6	4200	8400	63
GE300XF/Q	300	430	165	120	375	1.1	1.1	7	4500	9000	75.3
GEC320XF/Q	320	440	160	135	380	1.1	3	4	5130	10260	75.8
GEC340XF/Q	340	460	160	135	400	1.1	3	3	5400	10800	80.8
GEC360XF/Q	360	480	160	135	420	1.1	3	3	5670	11340	84.5
GEC380XF/Q	380	520	190	160	450	1.5	4	4	7200	14400	125
GEC400XF/Q	400	540	190	160	470	1.5	4	3	7520	15040	131
GEC420XF/Q	420	560	190	160	490	1.5	4	3	7840	15680	137
GEC440XF/Q	440	600	218	185	520	1.5	4	3	9620	19240	191
GEC460XF/Q	460	620	218	185	540	1.5	4	3	9990	19980	199
GEC480XF/Q	480	650	230	195	565	2	5	3	11000	22000	233
GEC500XF/Q	500	670	230	195	585	2	5	3	11400	22800	242
GEC530XF/Q	530	710	243	205	620	2	5	3	12710	25420	287
GEC560XF/Q	560	750	258	215	655	2	5	4	14080	28160	336
GEC600XF/Q	600	800	272	230	700	2	5	3	16100	32200	403
GEC630XF/Q	630	850	300	260	740	3	6	3	19240	38480	525

滑动摩擦副：钢 / 铜合金

Sliding contact surfaces：Steel / Copper alloy



轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GEH100XF/Q	100	150	71	67	135	1	1	2	900	1800	4.85
GEH110XF/Q	110	160	78	74	145	1	1	2	1070	2140	5.9
GEH120XF/Q	120	180	85	80	160	1	1	2	1280	2560	8.49
GEH140XF/Q	140	210	100	95	185	1	1	2	1750	3500	14.1
GEH160XF/Q	160	230	115	109	210	1	1	2	2280	4560	17.9
GEH180XF/Q	180	260	128	122	240	1.1	1.1	2	2920	5840	25.9
GEH200XF/Q	200	290	140	134	260	1.1	1.1	2	3480	6960	35.9
GEH220XF/Q	220	320	155	148	290	1.1	1.1	2	4290	8580	48
GEH240XF/Q	240	340	170	162	310	1.1	1.1	2	5020	10040	56
GEH260XF/Q	260	370	185	175	340	1.1	1.1	2	5950	11900	72.8
GEH280XF/Q	280	400	200	190	370	1.1	1.1	2	7030	14060	93.3
GEH300XF/Q	300	430	212	200	390	1.1	1.1	2	7800	15600	114
GEH320XF/Q	320	460	230	218	414	1.1	3	2	9020	18040	144
GEH340XF/Q	340	480	243	230	434	1.1	3	2	9980	19960	158
GEH360XF/Q	360	520	258	243	474	1.1	4	2	11510	23020	207
GEH380XF/Q	380	540	272	258	494	1.5	4	2	12740	25480	230
GEH400XF/Q	400	580	280	265	514	1.5	4	2	13620	27240	283
GEH420XF/Q	420	600	300	280	534	1.5	4	2	14950	29900	312
GEH440XF/Q	440	630	315	300	574	1.5	4	2	17220	34440	370
GEH460XF/Q	460	650	325	308	593	1.5	4	2	18260	36520	395
GEH480XF/Q	480	680	340	320	623	2	5	2	19930	39860	453
GEH500XF/Q	500	710	355	335	643	2	5	2	21540	43080	519
GEH530XF/Q	530	750	375	355	673	2	5	2	23890	47780	609
GEH560XF/Q	560	800	400	380	723	2	5	2	27470	54940	754
GEH600XF/Q	600	850	425	400	773	2	6	2	30920	61840	885



滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Stainless steel / PTFE plastic

轴承型号 Bearing number	外形尺寸 Dimensions mm								额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	d_k	r_s min	r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GE10N	10	19	9	6	16	0.3	0.3	12	5.7	8.6	0.011
GE12N	12	22	10	7	18	0.3	0.3	10	7.5	11	0.017
GE15N	15	26	12	9	22	0.3	0.3	8	11	17	0.026
GE17N	17	30	14	10	25	0.3	0.3	10	15	22	0.040
GE20N	20	35	16	12	29	0.3	0.3	9	20	31	0.064
GE25N	25	42	20	16	35.5	0.6	0.6	7	34	51	0.115
GE30N	30	47	22	18	40.7	0.6	0.6	6	43	65	0.149
GE35N	35	55	25	20	47	0.6	1	6	56	84	0.228
GE40N	40	62	28	22	53	0.6	1	7	69	104	0.318
GE45N	45	68	32	25	60	0.6	1	7	90	135	0.421
GE50N	50	75	35	28	66	0.6	1	6	110	166	0.562
GE60N	60	90	44	36	80	1	1	6	172	259	1.03
GEG8N	8	19	11	6	16	0.3	0.3	21	5.7	8.6	0.014
GEG10N	10	22	12	7	18	0.3	0.3	18	7.5	11	0.021
GEG12N	12	26	15	9	22	0.3	0.3	18	11	17	0.033
GEG15N	15	30	16	10	25	0.3	0.3	16	15	22	0.049
GEG17N	17	35	20	12	29	0.3	0.3	19	20	31	0.083
GEG20N	20	42	25	16	35.5	0.3	0.6	17	34	51	0.153
GEG25N	25	47	28	18	40.7	0.6	0.6	17	43	65	0.203
GEG30N	30	55	32	20	47	0.6	1	17	56	84	0.304
GEG35N	35	62	35	22	53	0.6	1	16	69	104	0.408
GEG40N	40	68	40	25	60	0.6	1	17	90	135	0.542
GEG45N	45	75	43	28	66	0.6	1	15	110	166	0.713
GEG50N	50	90	56	36	80	0.6	1	17	172	259	1.14

角接触关节轴承

Angular contact spherical plain bearings

角接触关节轴承的球面倾斜于轴承内径中心线，适合于承受径向和轴向的联合载荷，单套安装的角接触关节轴承只能承受单一方向的轴向载荷。当角接触关节轴承承受径向载荷时，会产生轴向分载荷。角接触关节轴承通常成对安装以形成一套可调游隙的向心关节轴承，这样就可以承受两个方向的轴向载荷。LS角接触关节轴承的滑动摩擦副可由不同材料组成，主要有两种：钢对钢角接触关节轴承和自润滑角接触关节轴承。

LS钢对钢角接触关节轴承经过淬火，磷化和涂敷二硫化钼，具有耐磨损、抗腐蚀的特点。在正常情况下，必须进行周期性润滑。为了确保有效的润滑，外圈有润滑油槽油孔。由于滑动表面具有很高的强度，这种轴承特别适合于承受交变重载、冲击载荷和静态重载。

LS自润滑角接触关节轴承滑动摩擦副是钢对PTFE编织物和钢对PTFE塑料，这类轴承具有较低的摩擦系数，工作中不需维护，一般情况下润滑都会降低轴承的使用寿命。它们应用于需要较长使用寿命或工作中无法润滑的机械机构中，适合于承受恒定方向重载。

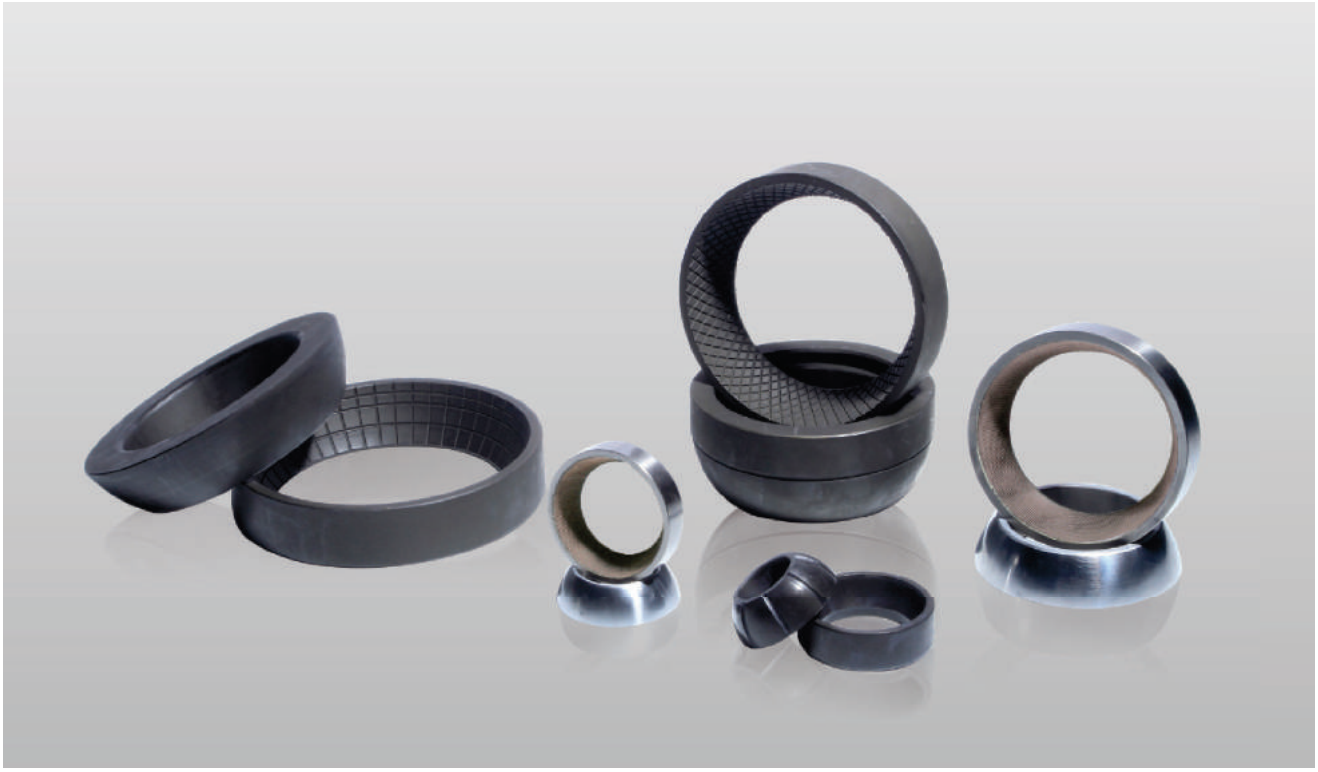
现在LS的织物型自润滑角接触关节轴承采用的是高性能PTFE织物衬垫，其产品型号是GAC…TL。

Angular contact sphericalplain bearings,whose sliding contact surfaces are inclined at an angle to the bearing axis. They are therefore particularly suitable for carrying combined (radial and axial) loads. A single angular contact spherical plain bearing can only accept axial loads acting in one direction. Under radial loads, a force acting in the axial direction is produced in the bearing which must always be opposed by an equal force acting in the opposite direction. Therefore, the bearings are usually adjusted against a second bearing. When two angular contact spherical plain bearings are arranged so that their sphere centres coincide, a clearance-free radial spherical plain bearing is obtained which can accommodate heavy radial loads as well as heavy axial loads in both directions. LS angular contact spherical plain bearings are available with different sliding contact surface combinations, i.e. the sliding surfaces of inner and outer rings are made from different materials. There are two main groups：steel-on-steel angular contact spherical plain bearings and maintenance-free angular contact spherical plain bearings.

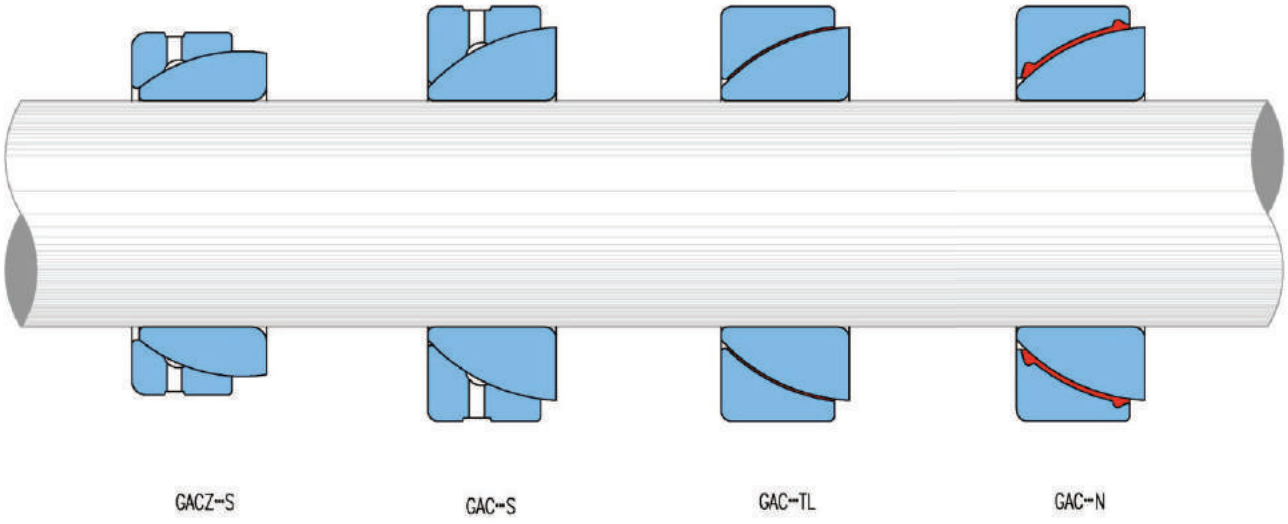
LS steel-on-steel angular contact spherical plain bearings are made of carbon chromium steel and are hardened and phosphated, it has characteristics of wear-resistance and wear-corrosion. The inner and outer rings sliding contact surface are treated with molybdenum disulphide. Bearings with this sliding contact surface combination require regular relubrication. To facilitate efficient lubrication, outer ring has an annular groove and two lubrication holes. The high strength of the sliding surfaces makes these bearings especially suitable for bearing arrangements where heavy loads of alternating direction, shock loads or heavy static loads have to be accommodated.

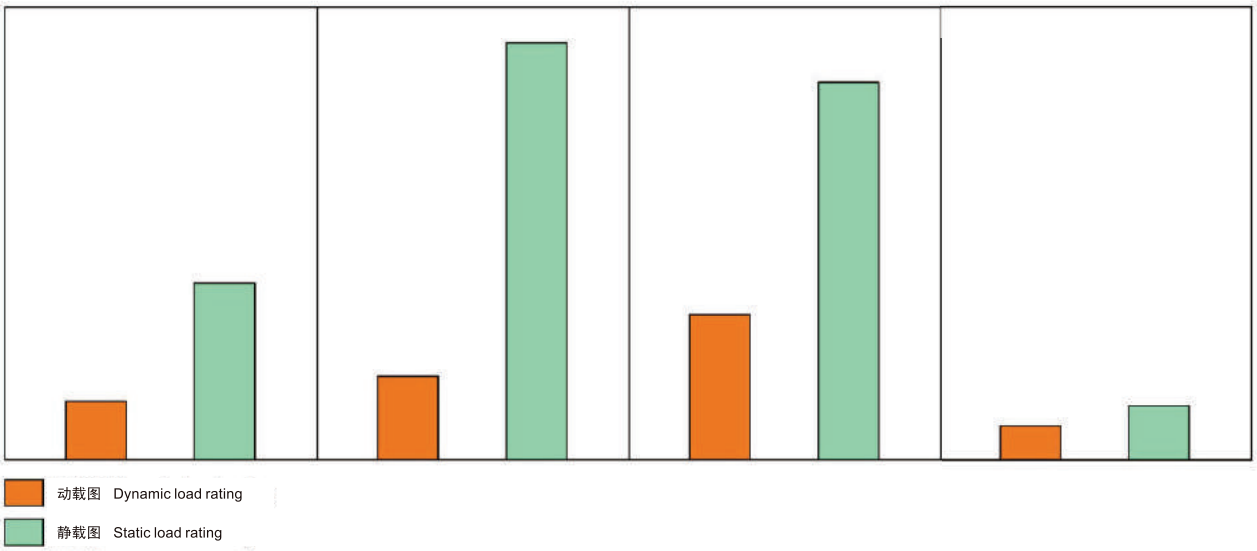
LS maintenance-free angular contact spherical plain bearings have sliding contact surface combinations steel-on-PTFE fabric and steel-on-PTFE plastic, they have very low friction and can be operated without maintenance, any lubrication of the sliding contact surfaces will shorten bearing life. They are used for applications where long bearing lives are required without maintenance, or where operating conditions, such as inadequate lubrication or the absence of lubrication make the use of steel-on-steel bearing inadvisable. The maintenance-free bearings are primarily intended for applications where loads are heavy and have a constant direction.

Now the PTFE fabric lubricated angular contact spherical plain bearings have used the high performance PTFE fabric liner. The type designation is GAC…TL.



角接触关节轴承
Angular contact spherica plain bearings





内圈和轴承宽度 Inner ring and width of bearing

μm

d mm		Δ dmp		Vdp	Vdmp	Δ Bs		Δ Ts	
超过 over	到 incl.	max	min	max	max	max	min	max	min
—	50	0	-12	12	9	0	-240	+250	-400
50	80	0	-15	15	11	0	-300	+250	-500
80	120	0	-20	20	15	0	-400	+250	-600
120	180	0	-25	25	19	0	-500	+350	-700
180	200	0	-30	30	23	0	-600	+350	-800

外圈 Outer ring

μm

D mm		Δ Dmp		VDp	VDmp	Δ Cs	
超过 over	到 incl.	max	min	max	max	max	min
—	50	0	-14	14	11	0	-240
50	80	0	-16	16	12	0	-300
80	120	0	-18	18	14	0	-400
120	150	0	-20	20	15	0	-500
150	180	0	-25	25	19	0	-500
180	250	0	-30	30	23	0	-600
250	315	0	-35	35	26	0	-700

尺寸和公差符号说明详见 P13 Details of dimension and tolerance symbols see page 13

轴配合 Shaft fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination	
	润滑型 requiring maintenance	自润滑型 maintenance-free
各种载荷 过盈配合 Loads of all kinds，interference fit	m6	m6

支承座配合 Housing fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination	
	润滑型 requiring maintenance	自润滑型 maintenance-free
各种载荷 过盈配合 Loads of all kinds，interference fit	M7	M7
各种载荷 可轴向移动 Loads of all kinds，can generally be displaced axially	J7	J7

轴径公差 Shaft diameter tolerances

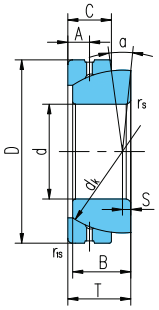
轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances μm	
		m6	
超过 over	到 incl.	high	low
—	30	+21	+8
30	50	+25	+9
50	80	+30	+11
80	120	+35	+13
120	180	+40	+15
180	250	+46	+17

支承座孔公差 Housing bore tolerances

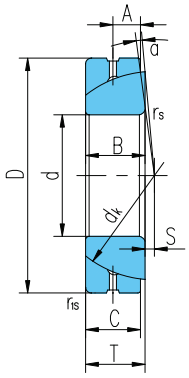
支承座孔径 Housing bore diameter mm		支承座孔公差 Housing bore tolerances μm			
		J7		M7	
超过 over	到 incl.	low	high	low	high
—	50	-11	+14	-25	0
50	80	-12	+18	-30	0
80	120	-13	+22	-35	0
120	150	-14	+26	-40	0
150	180	-14	+26	-40	0
180	250	-16	+30	-46	0
250	315	-16	+36	-52	0

滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel



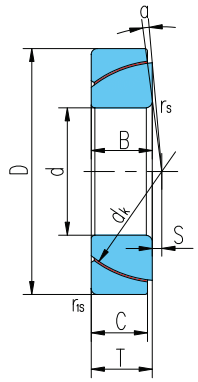
轴承型号 Bearing number	外形尺寸 Dimensions mm/inch										额定载荷 Load ratings kN		重量 Weight
	d	D	B	C	T	d_k	S	A	r_s,r_{1s} max	α° ≈	动载荷 Dynamic	静载荷 Static	≈kg
GACZ12S	12.7	22.225	6.86	4.83	7.62	18.26	1.3	2.39	0.51	7	6	18	0.013
	0.5	0.875	0.27	0.19	0.3	0.719	0.051	0.094	0.02				
GACZ15S	15.875	26.988	8.64	6.35	9.40	22.83	1.48	2.77	0.76	6	10	31	0.025
	0.625	1.0625	0.34	0.25	0.37	0.899	0.058	0.109	0.03				
GACZ19S	19.05	31.75	10.41	7.87	11.18	27.43	1.79	3.18	1	6	16	47	0.038
	0.75	1.25	0.41	0.31	0.44	1.08	0.07	0.125	0.04				
GACZ22S	22.225	36.512	12.19	9.65	13.21	31.95	2.02	4.37	2	5.5	22	66	0.049
	0.875	1.4375	0.48	0.38	0.52	1.258	0.08	0.172	0.08				
GACZ25S	25.4	41.275	13.97	11.18	15.24	36.50	2.54	5.16	2	6	29	87	0.085
	1	1.625	0.55	0.44	0.6	1.437	0.1	0.203	0.08				
GACZ31S	31.75	50.8	17.78	13.97	18.80	45.59	3.36	5.94	2	6	47	142	0.159
	1.25	2	0.7	0.55	0.74	1.795	0.132	0.234	0.08				
GACZ34S	34.925	55.562	19.56	15.24	21.34	49.20	3.69	7.14	2.54	4	53	159	0.213
	1.375	2.1875	0.77	0.6	0.84	1.937	0.145	0.281	0.1				
GACZ38S	38.1	61.912	21.34	16.76	23.11	54.74	3.93	7.92	2.54	5.5	66	197	0.301
	1.5	2.4375	0.84	0.66	0.91	2.155	0.155	0.312	0.1				
GACZ44S	44.45	71.438	24.89	20.07	27.18	63.88	4.72	8.33	2.54	6	91	273	0.458
	1.75	2.8125	0.98	0.79	1.07	2.515	0.186	0.328	0.1				
GACZ50S	50.8	80.962	28.70	23.37	31.24	73.02	5.51	9.52	3.56	5.5	122	365	0.671
	2	3.1875	1.13	0.92	1.23	2.875	0.217	0.375	0.14				
GACZ57S	57.15	90.488	32.26	26.67	35.31	82.17	6.18	11.51	3.56	5.5	155	466	0.948
	2.25	3.5625	1.27	1.05	1.39	3.235	0.243	0.453	0.14				
GACZ63S	63.5	100.013	36.07	29.97	39.12	91.19	6.79	12.7	3.56	5	196	589	1.13
	2.5	3.9375	1.42	1.18	1.54	3.59	0.267	0.5	0.14				
GACZ69S	69.85	111.125	39.62	32.38	43.18	100.33	7.46	13.08	4.6	5	231	694	1.75
	2.75	4.375	1.56	1.275	1.7	3.95	0.294	0.515	0.18				
GACZ76S	76.2	120.65	43.43	35.69	47.24	109.52	8.17	14.68	4.6	5	279	838	2.28
	3	4.75	1.71	1.405	1.86	4.312	0.322	0.578	0.18				
GACZ82S	82.55	130.175	47.24	39.24	51.56	118.74	9.04	16.66	4.6	5	332	995	2.89
	3.25	5.125	1.86	1.545	2.03	4.675	0.356	0.656	0.18				
GACZ88S	88.9	139.7	50.80	42.54	55.37	128.02	9.51	17.86	4.6	5	389	1167	3.57
	3.5	5.5	2	1.675	2.18	5.04	0.374	0.703	0.18				
GACZ95S	95.25	149.225	54.61	45.85	59.44	136.91	10.1	19.43	4.6	4.5	449	1348	4.35
	3.75	5.875	2.15	1.805	2.34	5.39	0.398	0.765	0.18				
GACZ101S	101.6	158.75	58.42	49.15	63.50	146.05	10.4	19.84	4.6	4.5	515	1545	5.26
	4	6.25	2.3	1.935	2.5	5.75	0.409	0.781	0.18				
GACZ114S	114.3	177.8	65.79	55.75	71.12	164.46	12.4	22.22	4.6	4.5	663	1990	7.76
	4.5	7	2.59	2.195	2.8	6.475	0.488	0.875	0.18				
GACZ127S	127	196.85	73.15	62.36	79.50	182.63	13.9	25.4	4.6	4.5	818	2455	11.07
	5	7.75	2.88	2.455	3.13	7.19	0.547	1	0.18				
GACZ152S	152.4	222.25	78.74	66.42	85.72	207.16	16.1	34.8	4.6	4.5	985	2955	17.37
	6	8.75	3.1	2.615	3.375	8.156	0.634	1.37	0.18				



滑动摩擦副：钢／钢

Sliding contact surfaces：Steel／Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm										额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	T	d_k	S	A	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GAC25S	25	47	15	14	15	42	0.6	7.5	1	2.5	50	250	0.148
GAC28S	28	52	15	15	16	47	1	8	1	2	60	300	0.186
GAC30S	30	55	17	15	17	49.5	1.3	8.5	1	4.5	63	315	0.208
GAC32S	32	58	17	16	17	52	2	8.5	1	2	71	354	0.241
GAC35S	35	62	18	16	18	55.5	2.1	9	1	4	78	390	0.268
GAC40S	40	68	19	17	19	62	2.8	9.5	1	3.5	92	463	0.327
GAC45S	45	75	20	18	20	68.5	3.5	10	1	3	108	540	0.416
GAC50S	50	80	20	19	20	74	4.3	10	1	1.5	123	618	0.455
GAC55S	55	90	23	20	23	82	5	11.5	1.1	4	144	721	0.645
GAC60S	60	95	23	21	23	88.5	5.7	11.5	1.1	2.5	163	817	0.714
GAC65S	65	100	23	22	23	93.5	6.5	11.5	1.1	1	180	905	0.759
GAC70S	70	110	25	23	25	102	7.2	12.5	1.1	2	206	1030	1.04
GAC75S	75	115	25	24	25	107	7.9	12.5	1.1	1	220	1129	1.12
GAC80S	80	125	29	25.5	29	115	8.6	14.5	1.1	3.5	258	1290	1.54
GAC85S	85	130	29	26.5	29	122	9.4	14.5	1.1	2	284	1422	1.61
GAC90S	90	140	32	28	32	128.5	10.1	16	1.5	3.5	316	1580	2.09
GAC95S	95	145	32	29.5	32	135	10.8	16	1.5	2	350	1750	2.22
GAC100S	100	150	32	31	32	141	11.6	16	1.5	0.5	384	1923	2.34
GAC105S	105	160	35	32.5	35	148	12.3	17.5	2	2	423	2116	2.93
GAC110S	110	170	38	34	38	155	13	19	2	3	463	2318	3.68
GAC120S	120	180	38	37	38	168	14.5	19	2	0.5	547	2735	3.97
GAC130S	130	200	45	43	45	188	18	19	2.5	1	710	3550	5.92
GAC140S	140	210	45	43	45	198	19	19	2.5	1	740	3740	6.33
GAC150S	150	225	48	46	48	211	20	20.5	3	1	850	4270	8.01
GAC160S	160	240	51	49	51	225	20	22	3	1	970	4850	9.79
GAC170S	170	260	57	55	57	246	21	27	3	1	1190	5950	12.3
GAC180S	180	280	64	61	64	260	21	28	3	1	1395	6970	17.4
GAC190S	190	290	64	62	64	275	26	30	3	0.5	1500	7500	18.2
GAC200S	200	310	70	66	70	290	26	30	3	1.5	1680	8420	23.8



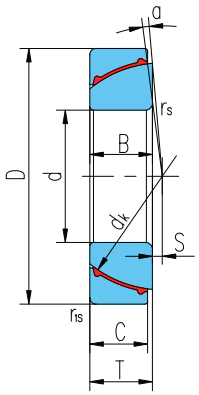
滑动摩擦副：钢 / PTFE编织物

Sliding contact surfaces：Steel / PTFE fabric

轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	T	d_k	S	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GAC25TL	25	47	15	14	15	42	0.6	1	2.5	135	225	0.148
GAC28TL	28	52	15	15	16	47	1	1	2	170	280	0.186
GAC30TL	30	55	17	15	17	49.5	1.3	1	4.5	175	290	0.208
GAC32TL	32	58	17	16	17	52	2	1	2	190	315	0.241
GAC35TL	35	62	18	16	18	55.5	2.1	1	4	205	340	0.268
GAC40TL	40	68	19	17	19	62	2.8	1	3.5	250	415	0.327
GAC45TL	45	75	20	18	20	68.5	3.5	1	3	290	485	0.416
GAC50TL	50	80	20	19	20	74	4.3	1	1.5	335	560	0.455
GAC55TL	55	90	23	20	23	82	5	1.1	4	405	675	0.645
GAC60TL	60	95	23	21	23	88.5	5.7	1.1	2.5	465	775	0.714
GAC65TL	65	100	23	22	23	93.5	6.5	1.1	1	495	825	0.759
GAC70TL	70	110	25	23	25	102	7.2	1.1	2	575	960	1.04
GAC75TL	75	115	25	24	25	107	7.9	1.1	1	660	1100	1.12
GAC80TL	80	125	29	25.5	29	115	8.6	1.1	3.5	705	1175	1.54
GAC85TL	85	130	29	26.5	29	122	9.4	1.1	2	820	1365	1.61
GAC90TL	90	140	32	28	32	128.5	10.1	1.5	3.5	925	1540	2.09
GAC95TL	95	145	32	29.5	32	135	10.8	1.5	2	985	1640	2.22
GAC100TL	100	150	32	31	32	141	11.6	1.5	0.5	1100	1835	2.34
GAC105TL	105	160	35	32.5	35	148	12.3	2	2	1165	1940	2.93
GAC110TL	110	170	38	34	38	155	13	2	3	1175	1960	3.68
GAC120TL	120	180	38	37	38	168	14.5	2	0.5	1540	2565	3.97
GAC130TL	130	200	45	43	45	188	18	2.5	1	1750	2915	5.92
GAC140TL	140	210	45	43	45	198	19	2.5	1	1960	3265	6.33
GAC150TL	150	225	48	46	48	211	20	3	1	2275	3790	8.01
GAC160TL	160	240	51	49	51	225	20	3	1	2700	4500	9.79
GAC170TL	170	260	57	55	57	246	21	3	1	3500	5835	12.3
GAC180TL	180	280	64	61	64	260	21	3	1	3895	6490	17.4
GAC190TL	190	290	64	62	64	275	26	3	0.5	4125	6875	18.2
GAC200TL	200	310	70	66	70	290	26	3	1.5	4610	7685	23.8

本系列取代原有的GAC...T 系列，GAC...TL 的性能详见P14页。

This series replaces the original series GAC...T，capability of GAC...TL see page 14.



滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Steel / PTFE plastic

轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	T	d_k	S	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GAC25N	25	47	15	14	15	42	0.6	1	2.5	20	32	0.148
GAC30N	30	55	17	15	17	49.5	1.3	1	4.5	26	41	0.208
GAC35N	35	62	18	16	18	55.5	2.1	1	4	31	49	0.268
GAC40N	40	68	19	17	19	62	2.8	1	3.5	36	59	0.327
GAC45N	45	75	20	18	20	68.5	3.5	1	3	43	69	0.416
GAC50N	50	80	20	19	20	74	4.3	1	1.5	49	78	0.455
GAC60N	60	95	23	21	23	88.5	5.7	1.1	2.5	65	104	0.714
GAC70N	70	110	25	23	25	102	7.2	1.1	2	82	131	1.04
GAC80N	80	125	29	25.5	29	115	8.6	1.1	3.5	102	164	1.54
GAC90N	90	140	32	28	32	128.5	10.1	1.5	3.5	125	201	2.09
GAC100N	100	150	32	31	32	141	11.6	1.5	0.5	152	244	2.34
GAC110N	110	170	38	34	38	155	13	2	3	184	295	3.68
GAC120N	120	180	38	37	38	168	14.5	2	0.5	217	348	3.97

推力关节轴承
Trust spherical plain bearings

推力关节轴承的滑动面倾斜于轴承内径中心线，主要用于承受单一方向轴向载荷，也可以承受一定大小的联合载荷。LS 推力关节轴承的滑动摩擦副可由不同材料组成，主要有两种：钢对钢推力关节轴承和自润滑推力关节轴承。

LS 钢对钢推力关节轴承轴圈和座圈经过淬火，磷化和涂敷二硫化钼，具有耐磨损、抗腐蚀的特点。在正常情况下，周期性润滑是必须的。为了确保有效的润滑，座圈有润滑油槽油孔。由于滑动表面具有很高的强度，这种轴承特别适合于承受交变重载、冲击载荷和静态重载。

LS 自润滑推力关节轴承滑动摩擦副是钢对 PTFE 编织物和钢对 PTFE 塑料，这类轴承具有较低的摩擦系数，工作中不需维护，一般情况下润滑都会降低轴承的使用寿命。它们应用于需要较长使用寿命或工作中无法润滑的机械机构中，适合于承受恒定重载。

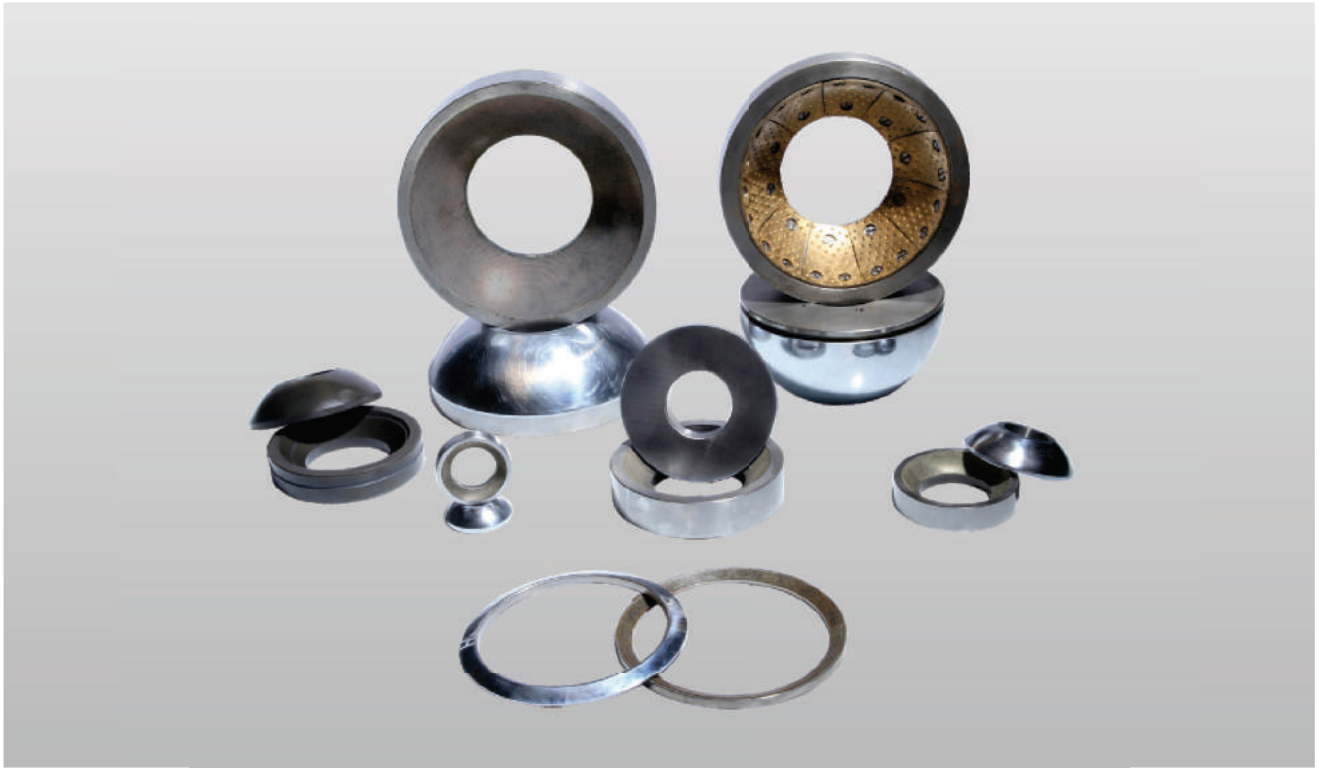
现在 LS 的织物型自润滑推力关节轴承采用的是高性能 PTFE织物衬垫，其产品型号是 GX…TL。

Spherical plain thrust bearings have sliding contact surfaces in the shaft and housing washers which are arranged at an angle to the bearing axis. They are primarily intended for axial loads although they can accommodate combined loads to a certain extent. LS spherical plain thrust bearings are available with different sliding contact surface combinations，i.e. the sliding surfaces of shaft and housing washers are made from different materials. There are two main group：steel-on-steel spherical plain thrust bearings and maintenance-free spherical plain thrust bearings.

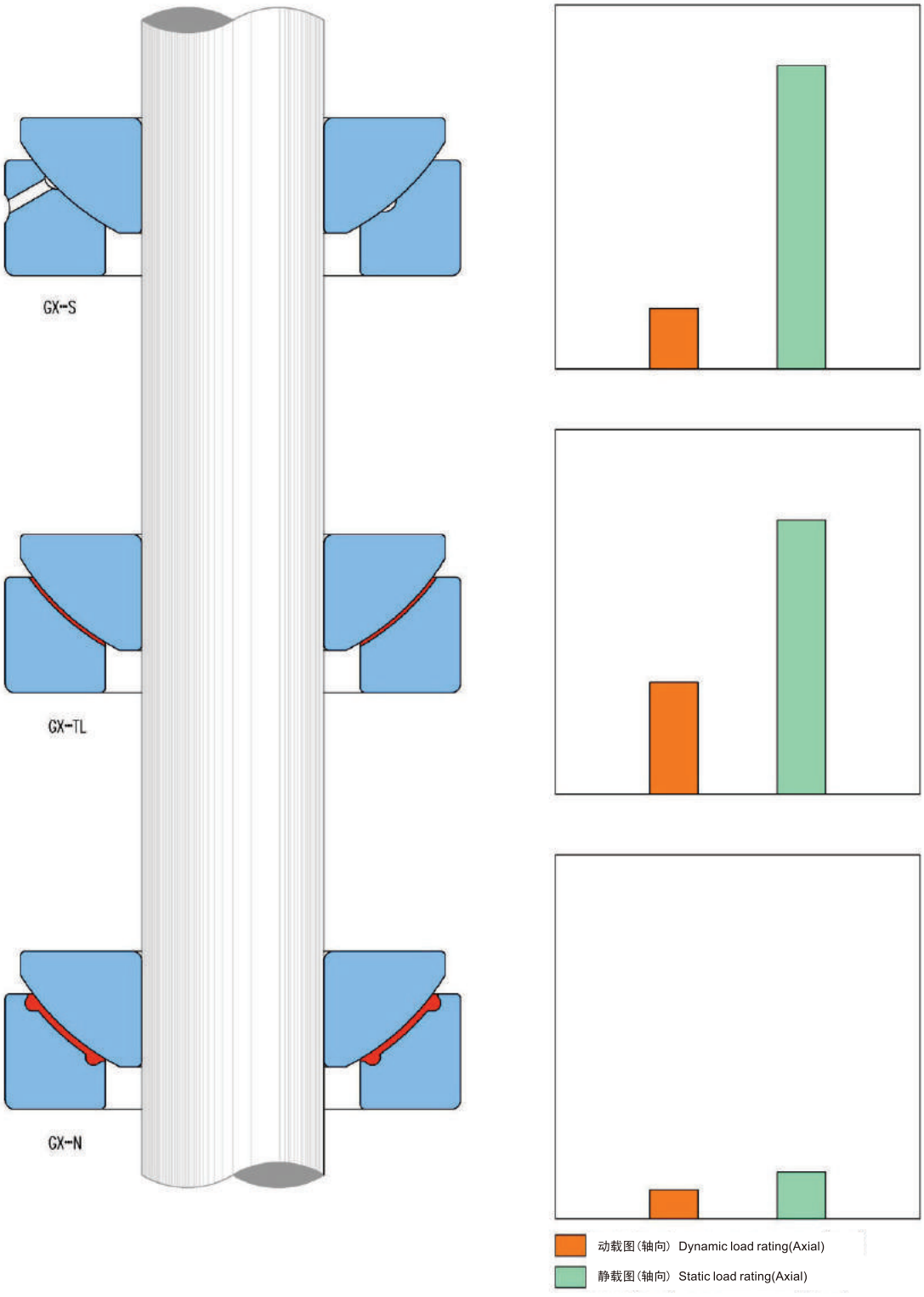
LS steel-on-steel spherical plain thrust bearings are made of carbon chromium steel and are hardened and phosphated，the shaft and housing washers sliding contact surface are treated with molybdenum disulphide，it has characteristics of wear-resistance and wear-corrosion. Bearings with this sliding contact surface combination require regular relubrication. To facilitate efficient lubrication，housing washer have an annular groove and a lubrication hole. The high wear resistance of the sliding surfaces makes these bearings especially suitable for bearing arrangements where heavy loads of alternating direction, shock loads or heavy static loads have to be accommodated.

LS maintenance-free spherical plain thrust bearings have sliding contact surface combinations steel-on-PTFE fabric and steel-on-PTFE plastic，they have very low friction and can be operated without maintenance，any lubrication of the sliding contact surfaces will shorten bearing life. They are used for applications where long bearing lives are required without maintenance, or where operating conditions，such as inadequate lubrication or the absence of lubrication make the use of steel-on-steel bearing inadvisable. The maintenance-free bearings are primarily intended for applications where loads are heavy and have a constant direction.

Now the PTFE fabric lubricated spherical plain thrust bearings have used the high performance PTFE fabric liner. The type designation is GX…TL.



推力关节轴承
Spherical plain thrust bearings



轴圈和轴承高度 Shaft washer and height of bearing μm

d mm		Δdmp		Vdp	Vdmp	ΔBs		ΔHs	
超过 over	到 incl.	max	min	max	max	max	min	max	min
—	18	0	-8	8	6	0	-240	+250	-400
18	30	0	-10	10	8	0	-240	+250	-400
30	50	0	-12	12	9	0	-240	+250	-400
50	80	0	-15	15	11	0	-300	+250	-500
80	120	0	-20	20	15	0	-400	+250	-600
120	180	0	-25	25	19	0	-500	+350	-700
180	200	0	-30	30	23	0	-600	+350	-800
200	250	0	-35	35	26	0	-700	+350	-800
250	315	0	-35	35	26	0	-700	+350	-800
315	400	0	-40	40	30	0	-800	+350	-800

座圈 Housing washer μm

D mm		ΔDmp		VDp	VDmp	ΔCs	
超过 over	到 incl.	max	min	max	max	max	min
—	30	0	-9	12	7	0	-240
30	50	0	-11	15	8	0	-240
50	80	0	-13	17	10	0	-300
80	120	0	-15	20	11	0	-400
120	150	0	-18	24	14	0	-500
150	180	0	-25	33	19	0	-500
180	250	0	-30	40	23	0	-600
250	315	0	-35	47	26	0	-700
315	340	0	-40	53	30	0	-800
340	400	0	-40	53	30	0	-800
400	500	0	-45	60	34	0	-800
500	630	0	-50	67	38	0	-800

尺寸和公差符号说明详见 P13 Details of dimension and tolerance symbols see page13

轴配合 Shaft fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination	
	润滑型 requiring maintenance	自润滑型 maintenance-free
各种载荷 过盈配合 Loads of all kinds，interference fit	m6	m6

支承座配合 Housing fits

工作条件 Operating conditions	滑动摩擦副 Sliding contact surface combination	
	润滑型 requiring maintenance	自润滑型 maintenance-free
纯轴向载荷 Purely axial loads	H11	H11
联合载荷 Combined loads	J7	J7

轴径公差 Shaft diameter tolerances

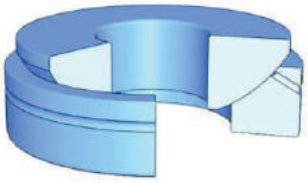
μm

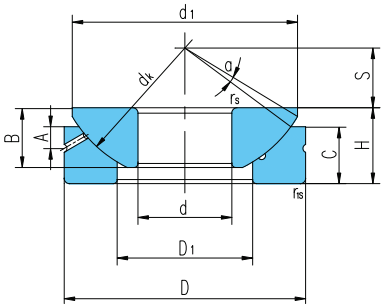
轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances	
		m6	
超过 over	到 incl.	high	low
6	10	+15	+6
10	18	+18	+7
18	30	+21	+8
30	50	+25	+9
50	80	+30	+11
80	120	+35	+13
120	180	+40	+15
180	250	+46	+17
250	315	+52	+20
315	400	+57	+21

支承座孔公差 Housing bore tolerances

μm

支承座孔径 Housing bore diameter mm		支承座孔公差 Housing bore tolerances			
		H11		J7	
超过 over	到 incl.	low	high	low	high
18	30	0	+130	-9	+12
30	50	0	+160	-11	+14
50	80	0	+190	-12	+18
80	120	0	+220	-13	+22
120	150	0	+250	-14	+26
150	180	0	+250	-14	+26
180	250	0	+290	-16	+30
250	315	0	+320	-16	+36
315	400	0	+360	-18	+39
400	500	0	+400	-20	+43
500	630	0	+440	-	-

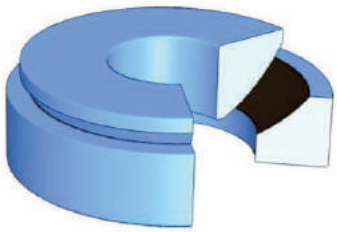


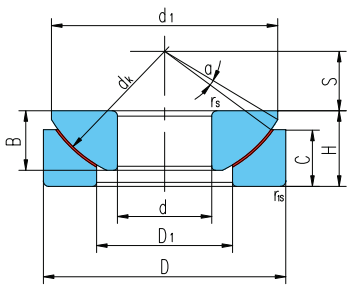


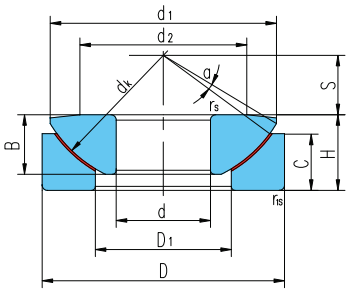
滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	H	d_k	S	d_1 max	D_1 min	A	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GX10S	10	30	7.5	7	9.5	32	7	27.5	15.5	3	0.6	5	27	136	0.036
GX12S	12	35	9.5	9.3	13	38	8	32	18	4	0.6	5	37	188	0.072
GX15S	15	42	11	10.8	15	46	10	39	22.5	5	0.6	6	53	267	0.108
GX17S	17	47	11.8	11.2	16	52	11	43.5	27	5	0.6	4	61	311	0.137
GX20S	20	55	14.5	13.8	20	60	12.5	50	31	6	1	5	84	425	0.246
GX25S	25	62	16.5	16.7	22.5	68	14	58.5	34.5	6	1	5	134	672	0.415
GX30S	30	75	19	19	26	82	17.5	70	42	8	1	5	182	909	0.614
GX35S	35	90	22	20.7	28	98	22	84	50.5	8	1	5	266	1330	0.973
GX40S	40	105	27	21.5	32	114	24.5	97	59	9	1	6	357	1810	1.59
GX45S	45	120	31	25.5	36.5	128	27.5	110	67	11	1	6	486	2470	2.24
GX50S	50	130	33	30.5	42.5	139	30	120	70	10	1	6	554	2810	3.14
GX60S	60	150	37	34	45	160	35	140	84	12.5	1	6	748	3820	4.63
GX70S	70	160	42	36.5	50	176	35	153	94.5	13.5	1	3	902	4610	5.37
GX80S	80	180	43.5	38	50	197	42.5	172	107.5	14.5	1	4	1110	5700	6.91
GX100S	100	210	51	46	59	222	45	198	127	15	1.1	4	1300	6470	11
GX120S	120	230	53.5	50	64	250	52.5	220	145	16.5	1.1	3	1530	7580	14
GX140S	140	260	61	54	72	274	52.5	243	177	23	1.5	3	1820	9040	19.1
GX160S	160	290	66	58	77	313	65	271	200	23	1.5	2	2100	10440	25
GX180S	180	320	74	62	86	340	67.5	299	225	26	1.5	4	2430	12070	32.8
GX200S	200	340	80	66	87	365	70	320	247	27	1.5	1	3070	15280	35.4







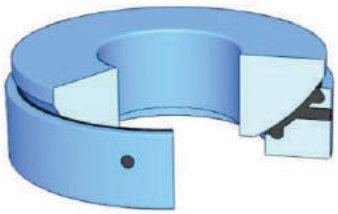
滑动摩擦副：钢 / PTFE 编织物

Sliding contact surfaces：Steel / PTFE fabric　　d≤ϕ200　　d＞ϕ220

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	H	d_k	S	d_1 max	d_2	D_1 min	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GX10TL	10	30	7.5	7	9.5	32	7	27.5		15.5	0.6	5	99	165	0.036
GX12TL	12	35	9.5	9.3	13	38	8	32		18	0.6	5	134	220	0.072
GX15TL	15	42	11	10.8	15	46	10	39		22.5	0.6	6	189	315	0.108
GX17TL	17	47	11.8	11.2	16	52	11	43.5		27	0.6	4	230	380	0.137
GX20TL	20	55	14.5	13.8	20	60	12.5	50		31	1	5	290	480	0.246
GX25TL	25	62	16.5	16.7	22.5	68	14	58.5		34.5	1	5	439	730	0.415
GX30TL	30	75	19	19	26	82	17.5	70		42	1	5	600	1000	0.614
GX35TL	35	90	22	20.7	28	98	22	84		50.5	1	5	850	1415	0.973
GX40TL	40	105	27	21.5	32	114	24.5	97		59	1	6	1085	1805	1.59
GX45TL	45	120	31	25.5	36.5	128	27.5	110		67	1	6	1405	2340	2.24
GX50TL	50	130	33	30.5	42.5	139	30	120		70	1	6	1730	2880	3.14
GX60TL	60	150	37	34	45	160	35	140		84	1	6	2370	3950	4.63
GX70TL	70	160	42	36.5	50	176	35	153		94.5	1	3	2975	4960	5.37
GX80TL	80	180	43.5	38	50	197	42.5	172		107.5	1	4	3620	6030	6.91
GX100TL	100	210	51	46	59	222	45	198		127	1.1	4	4635	7725	11
GX120TL	120	230	53.5	50	64	250	52.5	220		145	1.1	3	5600	9330	14
GX140TL	140	260	61	54	72	274	52.5	243		177	1.5	3	5620	9365	19.1
GX160TL	160	290	66	58	77	313	65	271		200	1.5	2	7000	11660	25
GX180TL	180	320	74	62	86	340	67.5	299		225	1.5	4	7410	12350	32.8
GX200TL	200	340	80	66	87	365	70	320		247	1.5	1	7970	13280	35.4
GX220TL	220	370	82	67	97	388	75	350	289	265	1.5	7	8525	14200	44.7
GX240TL	240	400	87	73	103	420	77.5	382	314	294	1.5	6	10300	17165	56.9
GX260TL	260	430	95	80	115	449	82.5	409	336	317	1.5	7	10800	18000	71.3
GX280TL	280	460	100	85	110	480	80	445	366	337	3	4	17120	28530	84.7
GX300TL	300	480	100	90	110	490	80	460	388	356	3	3.5	17270	28780	88.9
GX320TL	320	520	105	91	116	540	95	500	405	380	4	4	21100	35160	111
GX340TL	340	540	105	91	116	550	95	510	432	380	4	4	23660	39430	117
GX360TL	360	560	115	95	125	575	95	535	452	400	4	4	25460	42430	132

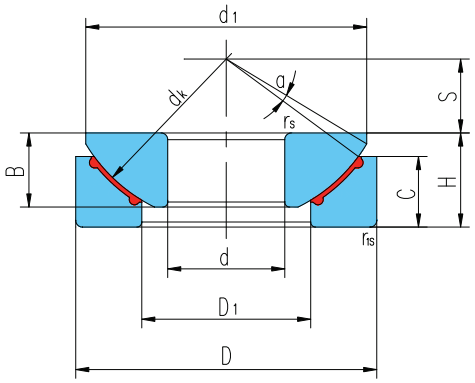
本系列取代原有的GX...T 系列，GX...TL 的性能详见P14页。

This series replaces the original series GX...T，capability of GX...TL see page 14.



滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Steel / PTFE plastic



轴承型号 Bearing number	外形尺寸 Dimensions mm											额定载荷 Load ratings kN		重量 Weight ≈kg
	d	D	B	C	H	d_k	S	d_1 max	D_1 min	r_s,r_{1s} min	α° ≈	动载荷 Dynamic	静载荷 Static	
GX17N	17	47	11.8	11.2	16	52	11	43.5	27	0.6	4	32	52	0.137
GX20N	20	55	14.5	13.8	20	60	12.5	50	31	1	5	44	71	0.246
GX25N	25	62	16.5	16.7	22.5	68	14	58.5	34.5	1	5	65	104	0.415
GX30N	30	75	19	19	26	82	17.5	70	42	1	5	88	141	0.614
GX35N	35	90	22	20.7	28	98	22	84	50.5	1	5	129	207	0.973
GX40N	40	105	27	21.5	32	114	24.5	97	59	1	6	169	270	1.59
GX45N	45	120	31	25.5	36.5	128	27.5	110	67	1	6	230	368	2.24
GX50N	50	130	33	30.5	42.5	139	30	120	70	1	6	262	420	3.14
GX60N	60	150	37	34	45	160	35	140	84	1	6	374	599	4.63
GX70N	70	160	42	36.5	50	176	35	153	94.5	1	3	451	722	5.37
GX80N	80	180	43.5	38	50	197	42.5	172	107.5	1	4	558	893	6.91
GX100N	100	210	51	46	59	222	45	198	127	1.1	4	717	1140	11
GX120N	120	230	53.5	50	64	250	52.5	220	145	1.1	3	839	1340	14

杆端关节轴承
Rod ends

杆端关节轴承分别可由带有座孔的杆端体和向心关节轴承、杆端体和内圈或杆端体和内圈、滑动层组成，通常可分为左、右旋和内、外螺纹。LS 杆端关节轴承滑动摩擦副可由不同材料组成，主要有钢对钢、钢对青铜、钢对 PTFE复合材料、钢对 PTFE编织物和钢对 PTFE塑料五种。

LS 钢对钢杆端关节轴承和 LS 钢对青铜杆端关节轴承具有较好的耐磨损能力，在少润滑情况下也能正常工作，但在正常情况下，周期性润滑是必须的。这种轴承特别适合于承受交变重载。

LS 自润滑杆端关节轴承滑动摩擦副有三种：钢对 PTFE 复合物、钢对 PTFE 编织物和钢对 PTFE 塑料，这种轴承具有较低的摩擦系数，工作中不需维护。它们应用于需要较长使用寿命或由于工作中无法润滑使钢对钢轴承不适合的场合中，适合于承受恒定重载。

现在 LS 的织物型自润滑杆端关节轴承采用的是高性能 PTFE 织物衬垫，其产品型号是 SI…ETL 或者 SA…ETL。

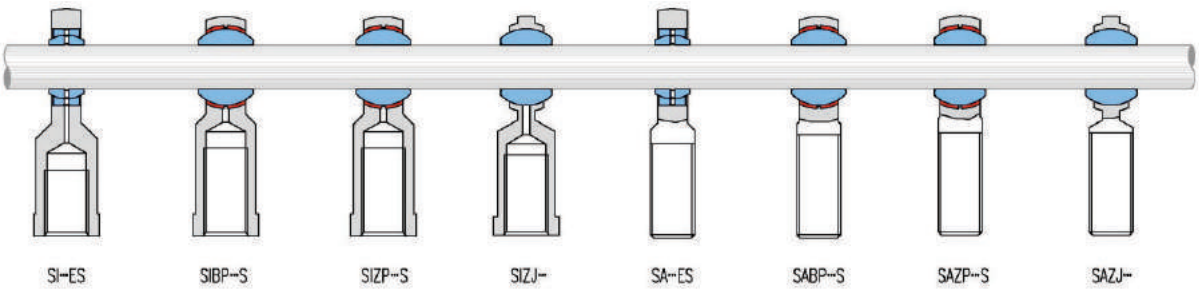
Rod ends consist of an eye-shaped head with integral shank forming a housing and a standard spherical plain bearing，or a spherical plain bearing inner ring ，or a spherical plain bearing inner ring and a sliding layer between the bore of the head and the inner ring. As a rule, rod ends are available with left or right-hand female or male threads. LS rod ends have the sliding contact surface combinations steel-on-steel 、 steel-on-bronze 、 steel-on-PTFE composite material 、steel-on-PTFE fabric and steel-on-PTFE plastic.

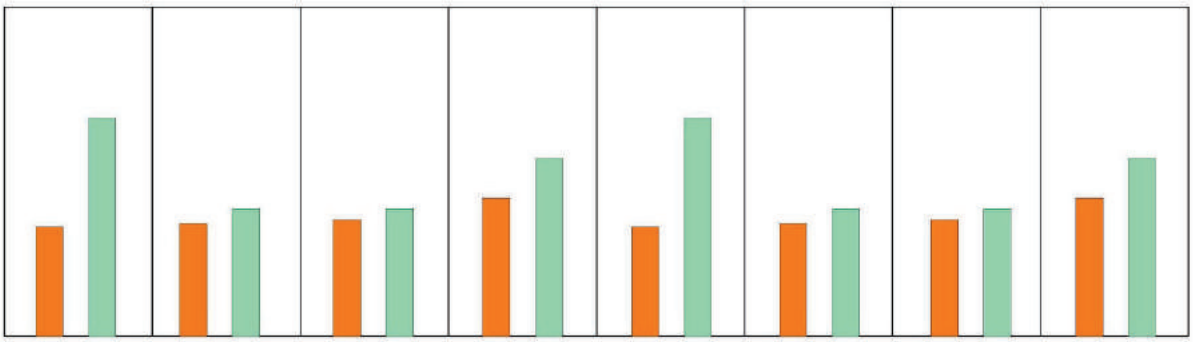
LS steel-on-steel and steel-on-bronze rod ends have very wear-resistant sliding surfaces and perform well under conditions of lubricant starvation. Rod ends with this sliding contact surface combination require regular relubrication. They are particularly suited for bearing arrangements where heavy alternating loads have to be accommodated.

LS maintenance-free rod ends sliding contact surfaces have three groups: steel-on-PTFE composite material ,steel-on-PTFE fabric and steel-on-PTFE plastic. They have very low friction and can be operated without maintenance. They are used for applications where long bearing lives are required without maintenance, or where operating conditions，such as inadequate lubrication or the absence of lubrication make the use of steel-on-steel bearing inadvisable. The maintenance-free bearings are primarily intended for applications where loads are heavy and have a constant direction.

Now the PTFE fabric lubricated rod ends have used the high performance PTFE fabric liner. The type designation is SI…ETL or SA…ETL.

润滑型杆端关节轴承
Rod ends requing maintenance

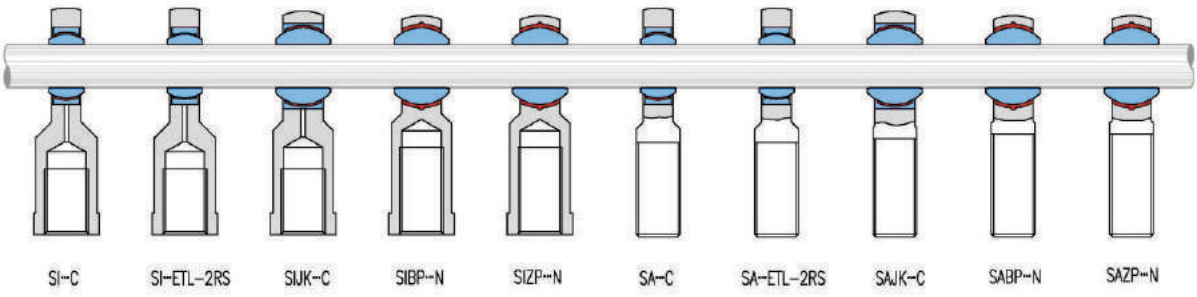


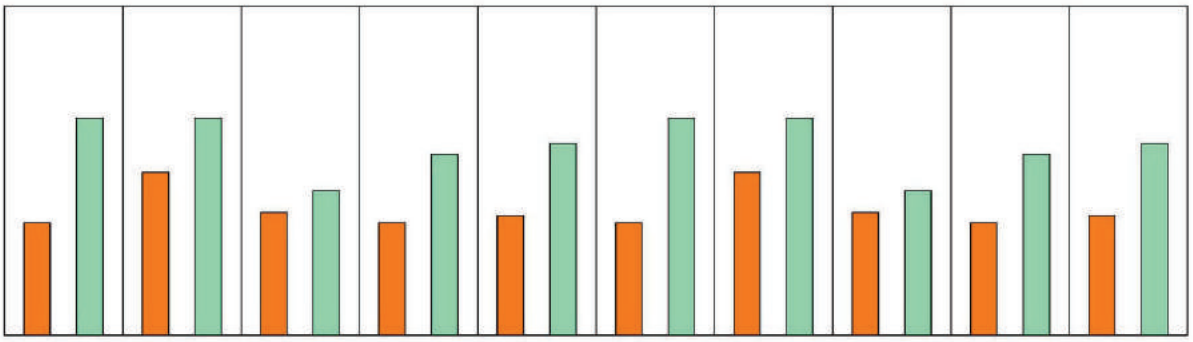


动载图 Dynamic load rating

静载图 Static load rating

自润型杆端关节轴承
Maintenance-free rod ends





动载图 Dynamic load rating

静载图 Static load rating

杆端关节轴承公差

Tolerances for Rod ends

内圈 Inner ring

SI…E,SI…ES,SA…E,SA…ES, SI…C,SA…C,SI…ETL-2RS,SA…ETL-2RS 的 Δdmp, ΔBs 同向心关节轴承 GE…E, GE…ES, GE…C, GE…ETL-2RS。

The Δdmp and ΔBs of SI…E, SI…ES, SA…E, SA…ES, SI…C, SA…C, SI…ETL-2RS, SA…ETL-2RS are the same as radial spherical plain bearings GE…E, GE…ES, GE…C and GE…ETL-2RS.

SIBP…S,SABP…S, SIZP…S,SAZP…S, SIZJ…,SAZJ… 的 Δdmp, ΔBs 同向心关节轴承 GEBK…S。

The Δdmp and ΔBs of SIBP…S,SABP…S,SIZP…S,SAZP…S,SIZJ… and SAZJ… are the same as radial spherical plain bearings GEBK…S.

SIJK…C，SAJK…C，SIK…C，SAK…C 系列 Series SIJK…C，SAJK…C，SIK…C，SAK…C

d mm		Δdmp μm		ΔBs μm	
超过 over	到 incl.	max	min	max	min
—	6	+12	0	0	-150
6	10	+15	0	0	-150
10	12	+18	0	0	-150
12	18	+18	0	0	-200
18	30	+21	0	0	-200

中心高偏差 Center height deviation

d mm		Δhs mm		Δh_{1s} mm	
超过 over	到 incl.	max	min	max	min
—	6	+0.80	-1.20	+0.65	-1.05
6	20	+0.80	-1.20	+0.80	-1.20
20	30	+1.00	-1.70	+1.00	-1.70
30	45	+1.40	-2.10	+1.40	-2.10
45	60	+1.80	-2.70	+1.80	-2.70
60	80	+2.25	-3.40	+2.25	-3.40
80	125	+2.70	-3.40	+2.70	-3.40
125	200	+3.20	-4.20	+3.20	-4.20

尺寸和公差符号说明详见 P13 Details of dimension and tolerance symbols see page 13

杆端关节轴承径向游隙

Radial internal clearance of rod ends

SI…E,SI…ES,SA…E,SA…ES 系列

Series SI…E,SI…ES,SA…E,SA…ES

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	12	23	68
12	20	30	82
20	35	37	100
35	60	43	120
60	90	55	142
90	125	65	165
125	200	65	192

SI…C，SA…C，SI…ETL-2RS，SA…ETL-2RS，SIBP…N，SABP…N，SIZP…N，SAZP…N 系列

Series SI…C，SA…C，SI…ETL-2RS，SA…ETL-2RS，SIBP…N，SABP…N，SIZP…N，SAZP…N

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	12	0	32
12	20	0	40
20	35	0	50
35	60	0	60
60	80	0	72

SIZJ…，SAZJ…系列　Series SIZJ…，SAZJ…

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	8	10	40
8	22	15	60

SIJK…C，SAJK…C，SIK…C，SAK…C 系列　Series SIJK…C，SAJK…C，SIK…C，SAK…C

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	12	0	32
12	20	0	40
20	30	0	50

SIBP…S，SABP…S，SIZP…S，SAZP…S 系列　Series SIBP…S，SABP…S，SIZP…S，SAZP…S

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	30	0	35

杆端关节轴承配合

Fits of rod ends

轴配合 Shaft fits

工作条件 Operating conditions	公差 Tolerance
方向不定载荷 With indeterminate loads	n6，p6
一般条件 Normal conditions	h6，h7

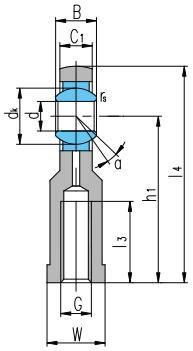
螺纹 Thread

外螺纹 Male thread	内螺纹 Female thread
6g	6H
UNF-2A	UNF-2B

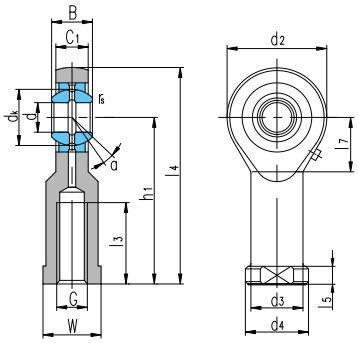
轴径公差 Shaft diameter tolerances

轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances μm							
		h6		h7		n6		p6	
超过 over	到 incl.	high	low	high	low	high	low	high	low
3	6	0	-8	0	-12	+16	+8	+20	+12
6	10	0	-9	0	-15	+19	+10	+24	+15
10	18	0	-11	0	-18	+23	+12	+29	+18
18	30	0	-13	0	-21	+28	+15	+35	+22
30	50	0	-16	0	-25	+33	+17	+42	+26
50	80	0	-19	0	-30	+39	+20	+51	+32
80	120	0	-22	0	-35	+45	+23	+59	+37
120	180	0	-25	0	-40	+52	+27	+68	+43
180	200	0	-29	0	-46	+60	+31	+79	+50

滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel



SI…E



SI…ES、SIS…ES

轴承型号 Bearing number	外形尺寸 Dimensions mm																额定载荷 Load Ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SI5E[1)]	5	6	10	4.5	21	M5	30	11	40.5	5	11.5	10	10	13	0.3	13	3.4	8.1	0.023
SI6E[1)]	6	6	10	4.5	21	M6	30	11	40.5	5	11.5	11	11	13	0.3	13	3.4	8.1	0.023
SI8E[1)]	8	8	13	6.5	24	M8	36	15	48	5	13	13	13	16	0.3	15	5.5	12.9	0.040
SI10E[1)]	10	9	16	7.5	29	M10	43	20	57.5	6.5	15	16	16	19	0.3	12	8.1	17.6	0.065
SI12E[1)]	12	10	18	8.5	34	M12	50	23	67	7	18	18	19	22	0.3	10	10	24.5	0.108
SI15ES[2)]	15	12	22	10.5	40	M14	61	30	81	8	21	21	21	26	0.3	8	16	36	0.169
SI17ES[2)]	17	14	25	11.5	46	M16	67	34	90	10	24	27	25	29	0.3	10	21	45	0.235
SI20ES[2)]	20	16	29	13.5	53	M20X1.5	77	40	103.5	10	25.5	30	28	34	0.3	9	30	60	0.335
SI25ES	25	20	35.5	18	64	M24X2	94	48	126	12	33	36	35	42	0.6	7	48	83	0.665
SI30ES	30	22	40.7	20	73	M30X2	110	56	146.5	15	37.5	46	42	50	0.6	6	62	110	1.05
SI35ES	35	25	47	22	82	M36X3	125	60	166	15	40	55	48	58	0.6	6	79	146	1.50
SI40ES	40	28	53	24	92	M39X3	142	65	188	18	47	60	52	65	0.6	7	99	180	2.05
SIS40ES	40	28	53	24	92	M42X3	142	65	188	18	47	55	52	65	0.6	7	99	180	1.94
SI45ES	45	32	60	28	102	M42X3	145	65	196	20	52	65	58	70	0.6	7	127	240	2.72
SIS45ES	45	32	60	27	102	M45X3	145	65	196	20	52	60	58	70	0.6	7	127	240	2.61
SI50ES	50	35	66	31	112	M45X3	160	68	216	20	57	70	62	75	0.6	6	156	290	3.48
SIS50ES	50	35	66	31	112	M52X3	160	69	216	20	57	65	62	75	0.6	6	156	260	3.24
SI60ES	60	44	80	39	135	M52X3	175	70	242.5	20	68.5	80	70	88	1	6	245	450	5.55
SIS60ES	60	44	80	39	135	M60X4	175	73	242.5	20	68.5	75	70	88	1	6	245	300	4.99
SI70ES	70	49	92	43	160	M56X4	200	80	280	20	81	85	80	98	1	6	313	610	8.72
SIS70ES	70	49	92	42	160	M72X4	200	80	280	20	81	80	85	98	1	6	313	470	8.33
SI80ES	80	55	105	48	180	M64X4	230	85	320	25	91	95	95	110	1	6	400	750	12.9
SIS80ES	80	55	105	47	180	M80X4	230	85	320	25	91	100	95	110	1	6	400	600	11.7

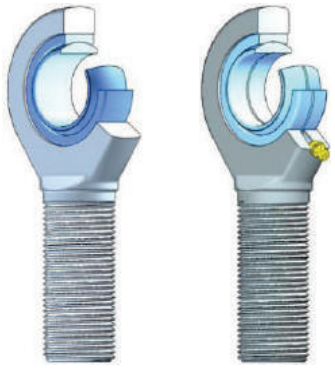
[1)]不能润滑。Can not be relubricated.

[2)]只能通过杆端眼孔润滑。Can only be relubricated through the rod end housing.

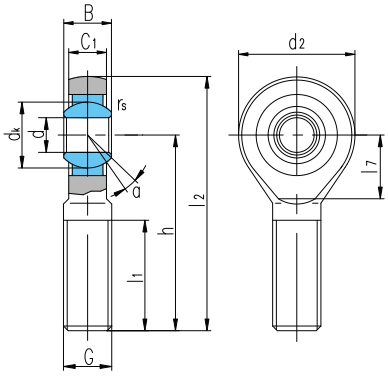
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SIL20ES　M20X1.5 左-6H。

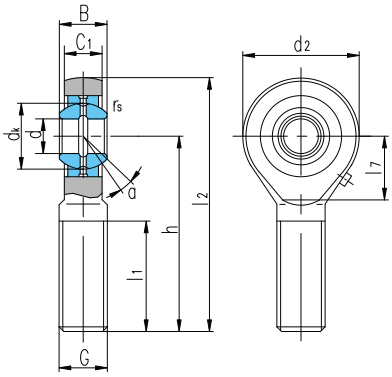
For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SIL20ES　M20X1.5L-6H.



滑动摩擦副：钢／钢
Sliding contact surfaces：Steel／Steel



SA…E



SA…ES、SAS…ES

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SA5E[1)]	5	6	10	4.5	21	M5	36	16	46.5	11.5	0.3	13	3.4	3.9	0.015
SA6E[1)]	6	6	10	4.5	21	M6	36	16	46.5	11.5	0.3	13	3.4	5.5	0.016
SA8E[1)]	8	8	13	6.5	24	M8	42	21	54	13	0.3	15	5.5	10	0.026
SA10E[1)]	10	9	16	7.5	29	M10	48	26	62.5	15.5	0.3	12	8.1	16	0.050
SA12E[1)]	12	10	18	8.5	34	M12	54	28	71	18	0.3	10	10	23	0.068
SA15ES[2)]	15	12	22	10.5	40	M14	63	34	83	21	0.3	8	16	32	0.120
SA17ES[2)]	17	14	25	11.5	46	M16	69	36	92	24	0.3	10	21	44	0.190
SA20ES[2)]	20	16	29	13.5	53	M20X1.5	78	43	104.5	25.5	0.3	9	30	60	0.300
SA25ES	25	20	35.5	18	64	M24X2	94	53	126	31	0.6	7	48	83	0.555
SA30ES	30	22	40.7	20	73	M30X2	110	65	146.5	35.5	0.6	6	62	110	0.875
SA35ES	35	25	47	22	82	M36X3	140	82	181	41	0.6	6	79	146	1.42
SA40ES	40	28	53	24	92	M39X3	150	86	196	47	0.6	7	99	180	1.85
SAS40ES	40	28	53	23	92	M42X3	145	86	191	47	0.6	7	99	180	2.04
SA45ES	45	32	60	28	102	M42X3	163	92	214	52	0.6	7	127	240	2.49
SAS45ES	45	32	60	27	102	M45X3	165	95	216	52	0.6	7	127	240	2.74
SA50ES	50	35	66	31	112	M45X3	185	104	241	60	0.6	6	156	290	3.58
SAS50ES	50	35	66	30	112	M52X3	195	110	251	60	0.6	6	156	290	4.07
SA60ES	60	44	80	39	135	M52X3	210	115	277.5	75.5	1.0	6	245	450	5.89
SAS60ES	60	44	80	38	135	M60X4	225	120	292.5	75.5	1.0	6	245	450	6.79
SA70ES	70	49	92	43	160	M56X4	235	125	315	95	1.0	6	313	610	8.51
SAS70ES	70	59	92	42	160	M72X4	265	132	345	95	1.0	6	313	610	11.2
SA80ES	80	55	105	48	180	M64X4	270	140	360	105.5	1.0	6	400	750	12.3
SAS80ES	80	55	105	47	180	M80X4	295	147	385	105.5	1.0	6	400	750	15.3

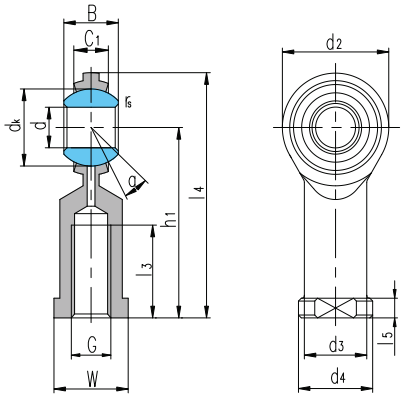
[1)]不能润滑。Can not be relubricated.

[2)]只能通过杆端眼孔润滑。Can only be relubricated through the rod end housing.

可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SAL20ES　M20X1.5 左-6g。

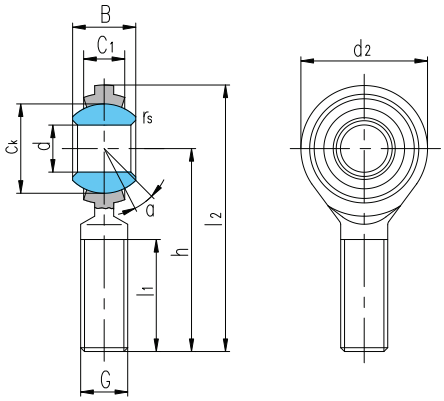
For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SAL20ES　M20X1.5L-6g.



滑动摩擦副：钢 / 钢
Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G UNF-2B	h_1	l_3 min	l_4	l_5	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIZJ4	4.83	7.92	11.1	5.94	15.88	10-32	26.97	12.70	34.93	4.75	7.92	7.54	10.31	0.3	10	3.6	6.8	0.018
	0.19	0.312	0.437	0.234	0.625		1.062	0.5	1.375	0.187	0.312	0.297	0.406	0.012				
SIZJ6	6.35	9.53	12.7	6.35	19.05	1/4-28	33.32	15.88	42.85	4.75	9.53	9.15	11.91	0.3	13.5	5.4	9.6	0.023
	0.25	0.375	0.5	0.25	0.75		1.312	0.625	1.687	0.187	0.375	0.36	0.469	0.012				
SIZJ7	7.94	11.10	15.88	7.92	22.23	5/16-24	34.93	15.88	46.02	4.75	11.1	10.72	12.70	0.3	11	8.5	12	0.036
	0.3125	0.437	0.625	0.312	0.875		1.375	0.625	1.812	0.187	0.437	0.422	0.5	0.012				
SIZJ9	9.53	12.70	18.26	9.12	25.40	3/8-24	41.28	19.05	53.98	6.35	14.27	13.89	17.45	0.6	11	11	16	0.059
	0.375	0.5	0.719	0.359	1		1.625	0.75	2.125	0.25	0.562	0.547	0.687	0.024				
SIZJ11	11.11	14.27	20.62	10.31	28.58	7/16-20	46.02	22.23	60.33	6.35	15.88	15.49	19.05	0.6	10.5	14	21	0.082
	0.4375	0.562	0.812	0.406	1.125		1.812	0.875	2.375	0.25	0.625	0.61	0.75	0.024				
SIZJ12	12.7	15.88	23.81	11.50	33.32	1/2-20	53.98	25.40	70.64	6.35	19.05	18.67	22.23	0.6	10	18	28	0.132
	0.5	0.625	0.937	0.453	1.312		2.125	1	2.781	0.25	0.75	0.735	0.875	0.024				
SIZJ15	15.88	19.05	28.58	12.29	38.10	5/8-18	63.50	31.75	82.55	7.92	22.23	21.84	25.40	0.6	13	23	29	0.195
	0.625	0.75	1.125	0.484	1.5		2.5	1.25	3.25	0.312	0.875	0.86	1	0.024				
SIZJ19	19.05	22.23	33.32	15.06	44.45	3/4-16	73.03	34.93	95.25	7.92	25.4	25.02	28.58	0.6	12	34	44	0.295
	0.75	0.875	1.312	0.593	1.75		2.875	1.375	3.75	0.312	1	0.985	1.125	0.024				

可提供不同螺纹精度要求的杆端关节轴承。Can supply other rod ends with different accuracy of thread.
可提供滑动摩擦副为钢/ PTFE 复合材料或钢/ PTFE 编织物的杆端关节轴承。Can supply other rod ends with Sliding contact surfaces Steel / PTFE composite material or Steel / PTFE fabric.
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SILZJ12　1/2-20UNF-2BLH。
For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，e.g. SILZJ12　1/2-20UNF-2BLH.
以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SIZJ…/X。
The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SIZJ…/X.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch											额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G UNF-2A	h	l_1 min	l_2	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SAZJ4	4.83	7.92	11.1	5.94	15.88	10-32	31.75	19.05	39.70	0.3	10	3.6	3.8	0.014
	0.19	0.312	0.437	0.234	0.625		1.25	0.75	1.563	0.012				
SAZJ6	6.35	9.53	12.7	6.35	19.05	1/4-28	39.67	25.40	49.20	0.3	13.5	5.4	6.6	0.018
	0.25	0.375	0.5	0.25	0.75		1.562	1	1.937	0.012				
SAZJ7	7.94	11.10	15.88	7.92	22.23	5/16-24	47.63	31.75	58.72	0.3	11	8.5	12	0.032
	0.3125	0.437	0.625	0.312	0.875		1.875	1.25	2.312	0.012				
SAZJ9	9.53	12.70	18.26	9.12	25.40	3/8-24	49.23	31.75	61.93	0.6	11	11	16	0.050
	0.375	0.5	0.719	0.359	1		1.938	1.25	2.438	0.024				
SAZJ11	11.11	14.27	20.62	10.31	28.58	7/16-20	53.98	34.93	68.28	0.6	10.5	14	21	0.068
	0.4375	0.562	0.812	0.406	1.125		2.125	1.375	2.688	0.024				
SAZJ12	12.7	15.88	23.81	11.50	33.32	1/2-20	61.93	38.10	78.59	0.6	10	18	28	0.11
	0.5	0.625	0.937	0.453	1.312		2.438	1.5	3.094	0.024				
SAZJ15	15.88	19.05	28.58	12.29	38.10	5/8-18	66.68	41.28	85.73	0.6	13	23	29	0.16
	0.625	0.75	1.125	0.484	1.5		2.625	1.625	3.375	0.024				
SAZJ19	19.05	22.23	33.32	15.06	44.45	3/4-16	73.03	44.45	95.25	0.6	12	34	44	0.26
	0.75	0.875	1.312	0.593	1.75		2.875	1.75	3.75	0.024				

可提供不同螺纹精度要求的杆端关节轴承。Can supply other rod ends with different accuracy of thread.

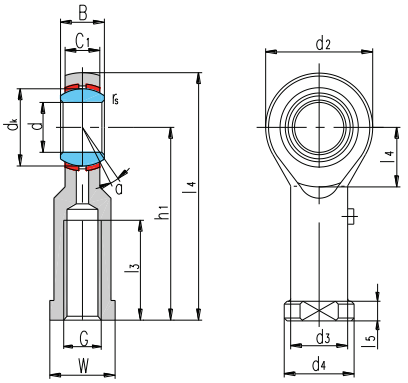
可提供滑动摩擦副为钢/ PTFE 复合材料或钢/ PTFE 编织物的杆端关节轴承。Can supply other rod ends with Sliding contact surfaces Steel / PTFE composite material or Steel / PTFE fabric.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SALZJ12　1/2-20UNF-2ALH。

For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，e.g. SALZJ12　1/2-20UNF-2ALH.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SAZJ…/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SAZJ…/X.



滑动摩擦副：钢 / 青铜

Sliding contact surfaces：Steel / Bronze

轴承型号 Bearing number	外形尺寸 Dimensions mm																额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIBP5S[1)]	5	8	11.112	6	16	M5	27	14	35	4	8	9	9	11	0.3	13	3.3	4.1	0.016
SIBP6S[1)]	6	9	12.7	6.75	18	M6	30	14	39	5	9	11	10	13	0.3	13	4.3	5.3	0.026
SIBP8S	8	12	15.88	9	22	M8	36	17	47	5	11	14	12.5	16	0.3	14	6.8	8.5	0.044
SIBP10S SIBP10S/B1	10	14	19.05	10.5	26	M10 M10X1.25	43	21	56	6.5	13	17	15	19	0.3	14	10	11	0.072
SIBP12S SIBP12S/B2	12	16	22.23	12	30	M12 M12X1. 25	50	24	65	6.5	15	19	17.5	22	0.3	13	13	14	0.108
SIBP14S SIBP14S/B1	14	19	25.4	13.5	34	M14 M14X1.5	57	27	74	8	16	22	20	25	0.3	16	17	20	0.161
SIBP16S SIBP16S/B1	16	21	28.58	15	38	M16 M16X1.5	64	33	83	8	17.5	22	22	27	0.3	15	21	25	0.225
SIBP18S	18	23	31.75	16.5	42	M18X1.5	71	36	92	10	19.5	27	25	31	0.6	15	26	30	0.295
SIBP20S	20	25	34.93	18	46	M20X1.5	77	40	100	10	21.5	30	27.5	34	0.6	15	31	35	0.382
SIBP22S	22	28	38.1	20	50	M22X1.5	84	43	109	12	23	32	30	37	0.6	15	38	43	0.488
SIBP25S	25	31	42.86	22	60	M24X2	94	48	124	12	29.5	36	33.5	42	0.6	15	47	65	0.749
SIBP28S	28	35	47.63	25	66	M27X2	103	53	136	12	32.5	41	37	46	0.6	15	59	77	0.949
SIBP30S	30	37	50.8	25	70	M30X2	110	56	145	15	34	41	40	50	0.6	17	63	86	1.13

[1)]不能润滑。Can not be relubricated.

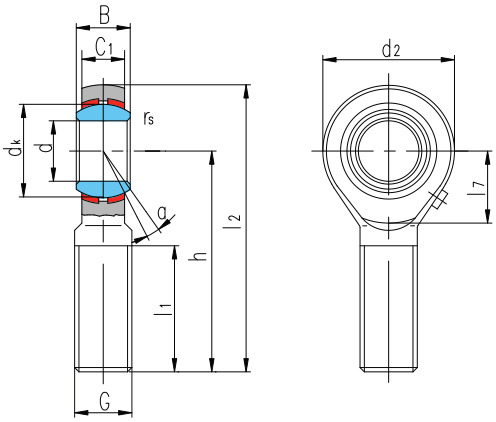
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILBP20S　M20X1.5 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILBP20S　M20X1.5L-6H.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SIBP…S/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SIBP…S/X.



滑动摩擦副：钢 / 青铜

Sliding contact surfaces：Steel / Bronze

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SABP5S[1)]	5	8	11.112	6	16	M5	33	20	41	—	0.3	13	3.3	3.9	0.016
SABP6S[1)]	6	9	12.7	6.75	18	M6	36	22	45	—	0.3	13	4.3	5.3	0.026
SABP8S	8	12	15.88	9	22	M8	42	25	53	—	0.3	14	6.8	8.5	0.044
SABP10S	10	14	19.05	10.5	26	M10	48	29	61	—	0.3	14	10	11	0.072
SABP12S	12	16	22.23	12	30	M12	54	33	69	—	0.3	13	13	14	0.108
SABP14S	14	19	25.4	13.5	34	M14	60	36	77	—	0.3	16	17	20	0.161
SABP16S	16	21	28.58	15	38	M16	66	40	85	—	0.3	15	21	25	0.225
SABP18S	18	23	31.75	16.5	42	M18X1.5	72	44	93	23	0.6	15	26	30	0.295
SABP20S	20	25	34.93	18	46	M20X1.5	78	47	101	25	0.6	15	31	35	0.382
SABP22S	22	28	38.1	20	50	M22X1.5	84	51	109	27	0.6	15	38	43	0.488
SABP25S	25	31	42.86	22	60	M24X2	94	57	124	29	0.6	15	47	65	0.749
SABP28S	28	35	47.63	25	66	M27X2	103	62	136	33	0.6	15	59	77	0.949
SABP30S	30	37	50.8	25	70	M30X2	110	66	145	39	0.6	17	63	86	1.13

[1)]不能润滑。Can not be relubricated.

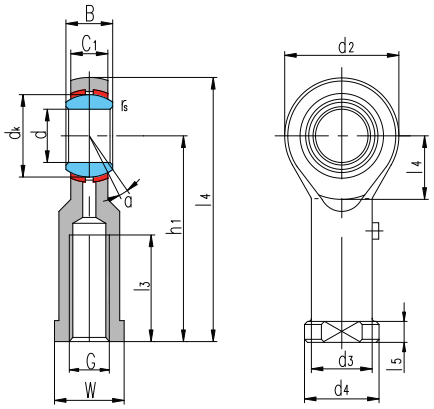
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SALBP20S　M20X1.5 左-6g。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SALBP20S　M20X1.5L-6g.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SABP…S/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SABP…S/X.



滑动摩擦副：钢 / 青铜

Sliding contact surfaces：Steel / Bronze

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch																额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G UNF-2B	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIZP4S[1)]	4.83	7.92	11.1	6.35	15.88	10-32	26.97	14.27	34.93	4.75	9	7.92	7.54	10.31	0.3	10	3.4	4.6	0.015
	0.19	0.312	0.437	0.25	0.625		1.062	0.562	1.375	0.187	0.354	0.312	0.297	0.406	0.012				
SIZP6S[1)]	6.35	9.53	12.7	7.14	19.05	1/4-28	33.32	19.05	42.85	4.75	10.5	9.53	9.15	11.91	0.3	13	4.5	7.7	0.025
	0.25	0.375	0.5	0.281	0.75		1.312	0.75	1.687	0.187	0.413	0.375	0.36	0.469	0.012				
SIZP7S	7.94	11.10	15.88	8.74	22.23	5/16-24	34.93	19.05	46.02	4.75	11.7	11.1	10.72	12.70	0.3	10	6.9	8.4	0.036
	0.3125	0.437	0.625	0.344	0.875		1.375	0.75	1.812	0.187	0.461	0.437	0.422	0.5	0.012				
SIZP9S	9.53	12.70	18.26	10.31	25.40	3/8-24	41.28	23.80	53.98	6.35	12.3	14.27	13.89	17.45	0.6	9	9.4	10	0.061
	0.375	0.5	0.719	0.406	1		1.625	0.937	2.125	0.25	0.484	0.562	0.547	0.687	0.024				
SIZP11S	11.11	14.27	20.62	11.1	28.58	7/16-20	46.02	26.97	60.33	6.35	14	15.88	15.49	19.05	0.6	11	11	13	0.081
	0.4375	0.562	0.812	0.437	1.125		1.812	1.062	2.375	0.25	0.551	0.625	0.61	0.75	0.024				
SIZP12S	12.7	15.88	23.81	12.7	33.32	1/2-20	53.98	30.15	70.64	6.35	16.2	19.05	18.67	22.23	0.6	9	15	19	0.133
	0.5	0.625	0.937	0.5	1.312		2.125	1.187	2.781	0.25	0.638	0.75	0.735	0.875	0.024				
SIZP15S	15.88	19.05	28.58	14.27	38.10	5/8-18	63.50	38.10	82.55	7.92	18.2	22.23	21.84	25.40	0.6	11	20	21	0.190
	0.625	0.75	1.125	0.562	1.5		2.5	1.5	3.25	0.312	0.717	0.875	0.86	1	0.024				
SIZP19S	19.05	22.23	33.32	17.45	44.45	3/4-16	73.03	44.45	95.25	7.92	20.9	25.4	25.02	28.58	0.6	10	29	29	0.285
	0.75	0.875	1.312	0.687	1.75		2.875	1.75	3.75	0.312	0.823	1	0.985	1.125	0.024				
SIZP25S	25.40	34.93	47.63	25.40	69.85	5/4-12	104.78	53.98	139.70	11.10	33.1	38.1	37.72	44.45	0.6	14	60	101	1.00
	1	1.375	1.875	1	2.75		4.125	2.125	5.5	0.437	1.303	1.5	1.485	1.75	0.024				

[1)]不能润滑。Can not be relubricated.

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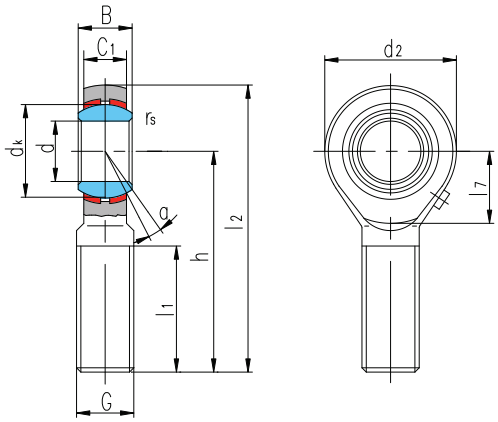
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SILZP12S 1/2-20UNF-2BLH。

For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，e.g. SILZP12S 1/2-20UNF-2BLH.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SIZP…S/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SIZP…S/X.

滑动摩擦副：钢 / 青铜
Sliding contact surfaces：Steel / Bronze



轴承型号 Bearing number	外形尺寸 Dimensions mm/inch												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G UNF-2A	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SAZP4S[1)]	4.83	7.92	11.1	6.35	15.88	10-32	31.75	19.05	39.70	—	0.3	10	3.4	3.8	0.013
	0.19	0.312	0.437	0.25	0.625		1.25	0.75	1.563		0.012				
SAZP6S[1)]	6.35	9.53	12.7	7.14	19.05	1/4-28	39.67	25.40	49.20	—	0.3	13	4.5	6.6	0.022
	0.25	0.375	0.5	0.281	0.75		1.562	1	1.937		0.012				
SAZP7S	7.94	11.10	15.88	8.74	22.23	5/16-24	47.63	31.75	58.72	—	0.3	10	6.9	8.4	0.037
	0.3125	0.437	0.625	0.344	0.875		1.875	1.25	2.312		0.012				
SAZP9S	9.53	12.70	18.26	10.31	25.40	3/8-24	49.23	31.75	61.93	—	0.6	9	9.4	10	0.055
	0.375	0.5	0.719	0.406	1		1.938	1.25	2.438		0.024				
SAZP11S	11.11	14.27	20.62	11.1	28.58	7/16-20	53.98	34.93	68.28	—	0.6	11	11	13	0.078
	0.4375	0.562	0.812	0.437	1.125		2.125	1.375	2.688		0.024				
SAZP12S	12.7	15.88	23.81	12.7	33.32	1/2-20	61.93	38.10	78.59	—	0.6	9	15	19	0.12
	0.5	0.625	0.937	0.5	1.312		2.438	1.5	3.094		0.024				
SAZP15S	15.88	19.05	28.58	14.27	38.10	5/8-18	66.68	41.28	85.73	18.2	0.6	11	20	21	0.18
	0.625	0.75	1.125	0.562	1.5		2.625	1.625	3.375	0.717	0.024				
SAZP19S	19.05	22.23	33.32	17.45	44.45	3/4-16	73.03	44.45	95.25	20.9	0.6	10	29	29	0.29
	0.75	0.875	1.312	0.687	1.75		2.875	1.75	3.75	0.823	0.024				
SAZP25S	25.40	34.93	47.63	25.40	69.85	5/4-12	104.78	53.98	139.70	33.9	0.6	14	60	101	1.1
	1	1.375	1.875	1	2.75		4.125	2.125	5.5	1.335	0.024				

[1)]不能润滑。Can not be relubricated.

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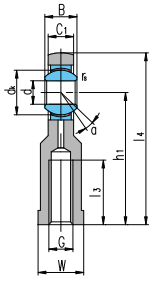
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SALZP12S 1/2-20UNF-2ALH。

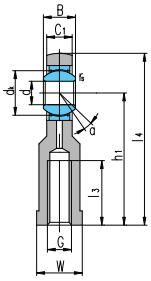
For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，e.g. SALZP12S 1/2-20UNF-2ALH.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SAZP…S/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SAZP…S/X.



SI...C



SI...ETL-2RS

SIS...ETL-2RS

滑动摩擦副：钢 / PTFE 复合材料(d≤30)
钢 / PTFE 编织物 (d≥15)

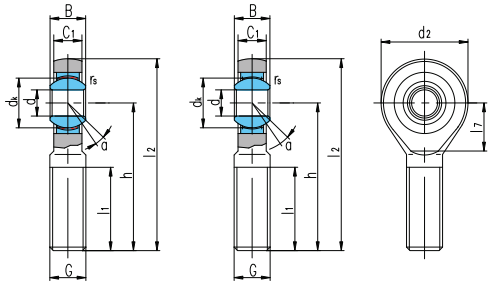
Sliding contact surfaces：Steel / PTFE composite material(d≤ 30)
Steel / PTFE fabric(d≥15)

轴承型号 Bearing number	外形尺寸 Dimensions mm																额定载荷 Load Ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SI5C	5	6	10	4.5	21	M5	30	11	40.5	5	11.5	10	10	13	0.3	13	3.6	8.1	0.023
SI6C	6	6	10	4.5	21	M6	30	11	40.5	5	11.5	11	11	13	0.3	13	3.6	8.1	0.023
SI8C	8	8	13	6.5	24	M8	36	15	48	5	13	13	13	16	0.3	15	5.8	12.9	0.040
SI10C	10	9	16	7.5	29	M10	43	20	57.5	6.5	15	16	16	19	0.3	12	8.6	17.6	0.065
SI12C	12	10	18	8.5	34	M12	50	23	67	7	18	18	19	22	0.3	10	11	24.5	0.108
SI15C	15	12	22	10.5	40	M14	61	30	81	8	21	21	21	26	0.3	8	18	36	0.169
SI15ETL-2RS																	25		
SI17C	17	14	25	11.5	46	M16	67	34	90	10	24	27	25	29	0.3	10	22	45	0.235
SI17ETL-2RS																	32		
SI20C	20	16	29	13.5	53	M20X1.5	77	40	103.5	10	25.5	30	28	34	0.3	9	31	60	0.335
SI20ETL-2RS																	45		
SI25C	25	20	35.5	18	64	M24X2	94	48	126	12	33	36	35	42	0.6	7	51	85	0.665
SI25ETL-2RS																	85		
SI30C	30	22	40.7	20	73	M30X2	110	56	146.5	15	37.5	46	42	50	0.6	6	65	110	1.05
SI30ETL-2RS																	110		
SI35ETL-2RS	35	25	47	22	82	M36X3	125	60	166	15	40	55	48	58	0.6	6	140	146	1.50
SI40ETL-2RS	40	28	53	24	92	M39X3	142	65	188	18	47	60	52	65	0.6	7	175	180	2.05
SIS40ETL-2RS	40	28	53	24	92	M42X3	142	65	188	18	47	55	52	65	0.6	7	99	180	1.94
SI45ETL-2RS	45	32	60	28	102	M42X3	145	65	196	20	52	65	58	70	0.6	7	225	240	2.72
SIS45ETL-2RS	45	32	60	27	102	M45X3	145	65	196	20	52	60	58	70	0.6	7	127	240	2.61
SI50ETL-2RS	50	35	66	31	112	M45X3	160	68	216	20	57	70	62	75	0.6	6	275	290	3.48
SIS50ETL-2RS	50	35	66	31	112	M52X3	160	69	216	20	57	65	62	75	0.6	6	156	260	3.24
SI60ETL-2RS	60	44	80	39	135	M52X3	175	70	242.5	20	68.5	80	70	88	1	6	430	450	5.55
SIS60ETL-2RS	60	44	80	39	135	M60X4	175	73	242.5	20	68.5	75	70	88	1	6	245	300	4.99
SI70ETL-2RS	70	49	92	43	160	M56X4	200	80	280	20	81	85	80	98	1	6	550	610	8.72
SIS70ETL-2RS	70	49	92	42	160	M72X4	200	80	280	20	81	80	85	98	1	6	313	470	8.33
SI80ETL-2RS	80	55	105	48	180	M64X4	230	85	320	25	91	95	95	110	1	6	705	750	12.9
SIS80ETL-2RS	80	55	105	47	180	M80X4	230	85	320	25	91	100	95	110	1	6	400	600	11.7

可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SIL20C M20X1.5 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SIL20C M20X1.5L-6H.



滑动摩擦副：钢 / PTFE 复合材料(d≤30)
钢 / PTFE 编织物 (d≥15)

Sliding contact surfaces：Steel / PTFE composite material(d≤30)
Steel / PTFE fabric(d≥15)

SA…C　　SA…ETL-2RS
SAS…ETL-2RS

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SA5C	5	6	10	4.5	21	M5	36	16	46.5	11.5	0.3	13	3.6	3.9	0.015
SA6C	6	6	10	4.5	21	M6	36	16	46.5	11.5	0.3	13	3.6	5.5	0.016
SA8C	8	8	13	6.5	24	M8	42	21	54	13	0.3	15	5.8	10	0.026
SA10C	10	9	16	7.5	29	M10	48	26	62.5	15.5	0.3	12	8.6	16	0.050
SA12C	12	10	18	8.5	34	M12	54	28	71	18	0.3	10	11	23	0.068
SA15C	15	12	22	10.5	40	M14	63	34	83	21	0.3	8	18	32	0.120
SA15ETL-2RS													25		
SA17C	17	14	25	11.5	46	M16	69	36	92	24	0.3	10	22	44	0.190
SA17ETL-2RS													32		
SA20C	20	16	29	13.5	53	M20X1.5	78	43	104.5	25.5	0.3	9	31	60	0.300
SA20ETL-2RS													45		
SA25C	25	20	35.5	18	64	M24X2	94	53	126	31	0.6	7	51	85	0.555
SA25ETL-2RS													85		
SA30C	30	22	40.7	20	73	M30X2	110	65	146.5	35.5	0.6	6	65	110	0.875
SA30ETL-2RS													110		
SA35ETL-2RS	35	25	47	22	82	M36X3	140	82	181	41	0.6	6	140	146	1.42
SA40ETL-2RS	40	28	53	24	92	M39X3	150	86	196	47	0.6	7	175	180	1.85
SAS40ETL-2RS	40	28	53	23	92	M42X3	145	86	191	47	0.6	7	99	180	2.04
SA45ETL-2RS	45	32	60	28	102	M42X3	163	92	214	52	0.6	7	225	240	2.49
SAS45ETL-2RS	45	32	60	27	102	M45X3	165	95	216	52	0.6	7	127	240	2.74
SA50ETL-2RS	50	35	66	31	112	M45X3	185	104	241	60	0.6	6	275	290	3.58
SAS50ETL-2RS	50	35	66	30	112	M52X3	195	110	251	60	0.6	6	156	290	4.07
SA60ETL-2RS	60	44	80	39	135	M52X3	210	115	277.5	75.5	1.0	6	430	450	5.89
SAS60ETL-2RS	60	44	80	38	135	M60X4	225	120	292.5	75.5	1.0	6	245	450	6.79
SA70ETL-2RS	70	49	92	43	160	M56X4	235	125	315	95	1.0	6	550	610	8.51
SAS70ETL-2RS	70	59	92	42	160	M72X4	265	132	345	95	1.0	6	313	610	11.2
SA80ETL-2RS	80	55	105	48	180	M64X4	270	140	360	105.5	1.0	6	705	750	12.3
SAS80ETL-2RS	80	55	105	47	180	M80X4	295	147	385	105.5	1.0	6	400	750	15.3

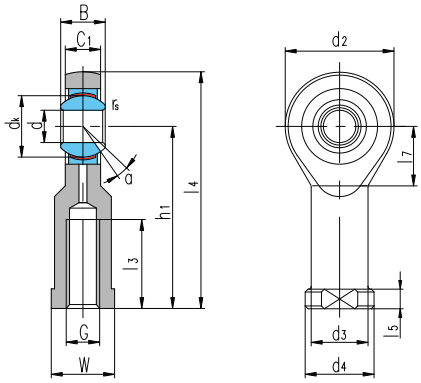
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SAL20C　M20X1.5 左-6g。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SAL20C　M20X1.5L-6g.

滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material



轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α ° ≈	动载荷 Dynamic	静载荷 Static	
SIJK5C	5	8	11.112	7.5	18	M5	27	8	36	4	10	10	9	12	0.3	4	3.6	4.6	0.012
SIJK6C	6	9	12.7	7.5	20	M6	30	9	40	5	11	10	10	13	0.3	9	4.7	5.2	0.015
SIJK8C	8	12	15.88	9.5	24	M8	36	12	48	5	13	13	12.5	16	0.3	12	7.6	8.2	0.057
SIJK10C	10	14	19.05	11.5	30	M10	43	15	58	6.5	16	16	15	19	0.3	10	12	15	0.104
SIJK10C /B1						M10×1.25													
SIJK12C	12	16	22.23	12.5	34	M12	50	18	67	6.5	18	18	17.5	22	0.3	12	14	19	0.155
SIJK12C /B2						M12×1.25													
SIJK14C	14	19	25.4	14.5	38	M14	57	21	76	8	20	21	20	25	0.3	14	19	24	0.224
SIJK14C /B1						M14×1.5													
SIJK16C	16	21	28.58	15.5	42	M16	64	24	85	8	21	24	22	27	0.3	14	23	29	0.289
SIJK16C /B1						M16×1.5													
SIJK18C	18	23	31.75	17.5	46	M18×1.5	71	27	94	10	22.5	27	25	31	0.6	13	29	34	0.404
SIJK20C	20	25	34.93	18.5	50	M20×1.5	77	30	102	10	25	30	27.5	34	0.6	14	34	40	0.512
SIJK22C	22	28	38.1	21	56	M22×1.5	84	33	112	12	27.5	34	30	37	0.6	14	42	50	0.697
SIJK25C	25	31	42.86	23	60	M24×2	94	36	124	12	28.5	36	33.5	42	0.6	14	52	57	0.972
SIJK28C	28	35	47.63	26	66	M27×2	103	41	136	14	31.5	41	37	46	0.6	14	66	69	1.234
SIJK30C	30	37	50.8	27	70	M30×2	110	45	145	15	33	46	40	50	0.6	15	73	77	1.479

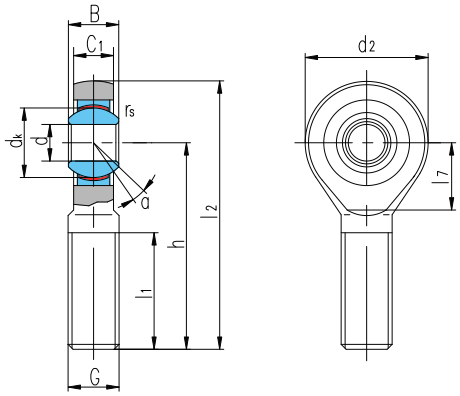
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILJK20C　M20X1.5 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILJK20C　M20X1.5L-6H.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SIJK...C/X。

The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X” .That is SIJK…C/X.



滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material

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轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SAJK5C	5	8	11.112	7.5	18	M5	33	19	42	—	0.3	4	3.6	3.9	0.009
SAJK6C	6	9	12.7	7.5	20	M6	36	21	46	—	0.3	9	4.7	5.2	0.010
SAJK8C	8	12	15.88	9.5	24	M8	42	25	54	—	0.3	12	7.6	8.2	0.042
SAJK10C	10	14	19.05	11.5	30	M10	48	28	63	—	0.3	10	12	15	0.079
SAJK12C	12	16	22.23	12.5	34	M12	54	32	71	—	0.3	12	14	19	0.118
SAJK14C	14	19	25.4	14.5	38	M14	60	36	79	—	0.3	14	19	24	0.169
SAJK16C	16	21	28.58	15.5	42	M16	66	37	87	—	0.3	14	23	29	0.224
SAJK18C	18	23	31.75	17.5	46	M18×1.5	72	41	95	—	0.6	13	29	34	0.291
SAJK20C	20	25	34.93	18.5	50	M20×1.5	78	45	103	27.5	0.6	14	34	40	0.385
SAJK22C	22	28	38.1	21	56	M22×1.5	84	48	112	30.5	0.6	14	42	50	0.529
SAJK25C	25	31	42.86	23	60	M24×2	94	55	124	33	0.6	14	52	57	0.673
SAJK28C	28	35	47.63	26	66	M27×2	103	62	136	33	0.6	14	66	69	0.915
SAJK30C	30	37	50.8	27	70	M30×2	110	66	145	36	0.6	15	73	77	1.119

可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SALJK20C　M20X1.5 左-6g。

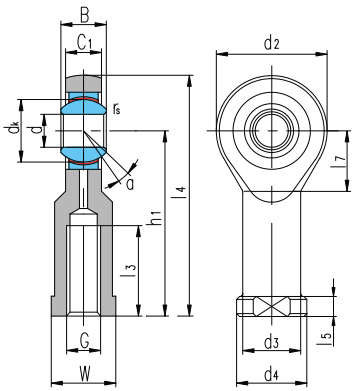
For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SALJK20C　M20X1.5L-6g.

以上产品的杆端体和内圈可用不锈钢制造，轴承型号后面加“X”标识，即 SAJK···C/X。

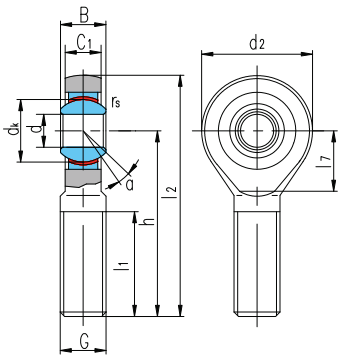
The rod and inner ring of the bearings is of stainless steel and the mark of the items has a letter “X”.That is SAJK···C/X.

滑动摩擦副：钢 / PTFE 复合材料

Sliding contact surfaces：Steel / PTFE composite material



SIK…C



SAK…C

轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIK5C	5	8	11.112	6	19.5	M5	30	12	39.8	5	9.5	10	10	13	0.3	4	3.6	4.6	0.024
SIK6C	6	9	12.7	7.5	21.2	M6	30	9	40.7	5	11	10	10	13	0.3	9	4.7	5.2	0.028
SIK8C	8	12	15.88	9.5	25.5	M8	36	12	48.8	5	13	13	12.5	16	0.3	12	7.6	8.2	0.053
SIK10C	10	14	19.05	11.5	31	M10	43	19	58.6	6.5	16	16	15	19	0.3	10	12	15	0.11
SIK12C	12	16	22.23	12.5	34	M12	50	23	67	6.5	18	18	17.5	22	0.3	12	14	19	0.14
SIK14C	14	19	25.4	14.5	38	M14	57	23	76	8	20	21	20	25	0.3	14	19	24	0.20
SIK16C	16	21	28.58	15.5	42	M16	64	24	85	8	21	24	22	27	0.3	14	23	29	0.25
SIK18C	18	23	31.75	17.5	46	M18X1.5	71	27	94	10	22.5	27	25	31	0.6	13	29	34	0.35
SIK20C	20	25	34.93	18.5	50	M20X1.5	77	30	102	10	25	30	27.5	34	0.6	14	34	40	0.43

轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SAK5C	5	8	11.112	6	19.5	M5	33	19	42.8	—	0.3	4	3.6	3.9	0.017
SAK6C	6	9	12.7	7.5	21.2	M6	36	21	46.7	—	0.3	9	4.7	5.2	0.023
SAK8C	8	12	15.88	9.5	25.5	M8	42	25	54.8	—	0.3	12	7.6	8.2	0.047
SAK10C	10	14	19.05	11.5	31	M10	48	28	63.6	—	0.3	10	12	15	0.085
SAK12C	12	16	22.23	12.5	34	M12	54	32	71	—	0.3	12	14	19	0.12
SAK14C	14	19	25.4	14.5	38	M14	60	36	79	—	0.3	14	19	24	0.17
SAK16C	16	21	28.58	15.5	42	M16	66	37	87	—	0.3	14	23	29	0.23
SAK18C	18	23	31.75	17.5	46	M18X15	72	41	95	—	0.6	13	29	34	0.31
SAK20C	20	25	34.93	18.5	50	M20X15	78	45	103	27.5	0.6	14	34	40	0.40

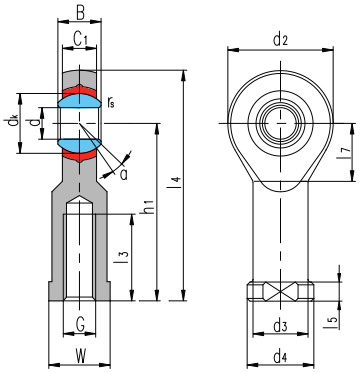
可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILK20C　M20X1.5 左-6H，　SALK20C　M20X1.5 左-6g。

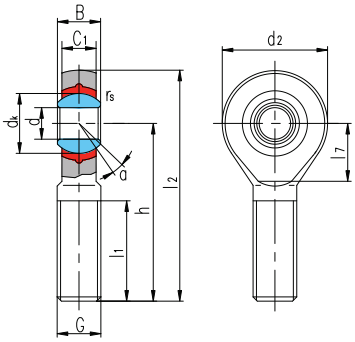
For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILK20C　M20X1.5L-6H，SALK20C　M20X1.5 左-6g

滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Steel / PTFE plastic



SIBP…N



SABP…N

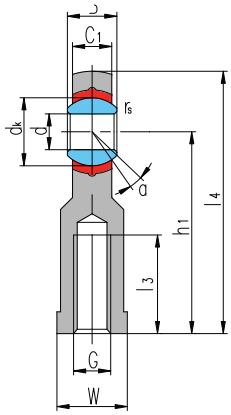
轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G 6H	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIBP5N	5	8	11.112	6	16	M5	27	14	35	4	8	9	9	11	0.3	13	3.25	5.3	0.016
SIBP6N	6	9	12.7	6.75	18	M6	30	14	39	5	9	11	10	13	0.3	13	4.25	6.8	0.026
SIBP8N	8	12	15.88	9	22	M8	36	17	47	5	11	14	12.5	16	0.3	14	7.1	11.4	0.044
SIBP10N	10	14	19.05	10.5	26	M10	43	21	56	6.5	13	17	15	19	0.3	14	9.8	14.3	0.072
SIBP12N	12	16	22.23	12	30	M12	50	24	65	6.5	15	19	17.5	22	0.3	13	13.2	17	0.108
SIBP14N	14	19	25.4	13.5	34	M14	57	27	74	8	16	22	20	25	0.3	16	17	27.5	0.161
SIBP16N	16	21	28.58	15	38	M16	64	33	83	8	17.5	22	22	27	0.3	15	21.4	34.5	0.225
SIBP18N	18	23	31.75	16.5	42	M18X1.5	71	36	92	10	19.5	27	25	31	0.6	15	26	41.5	0.295
SIBP20N	20	25	34.93	18	46	M20X1.5	77	40	100	10	21.5	30	27.5	34	0.6	15	31	50	0.382

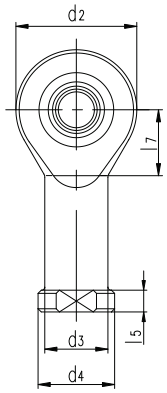
轴承型号 Bearing number	外形尺寸 Dimensions mm												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G 6g	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SABP5N	5	8	11.112	6	16	M5	33	20	41	—	0.3	13	3.25	5.3	0.016
SABP6N	6	9	12.7	6.75	18	M6	36	22	45	—	0.3	13	4.25	6.8	0.026
SABP8N	8	12	15.88	9	22	M8	42	25	53	—	0.3	14	7.1	10	0.044
SABP10N	10	14	19.05	10.5	26	M10	48	29	61	—	0.3	14	9.8	12.5	0.072
SABP12N	12	16	22.23	12	30	M12	54	33	69	—	0.3	13	13.2	15	0.108
SABP14N	14	19	25.4	13.5	34	M14	60	36	77	—	0.3	16	17	25.5	0.161
SABP16N	16	21	28.58	15	38	M16	66	40	85	—	0.3	15	21.4	34.5	0.225
SABP18N	18	23	31.75	16.5	42	M18X1.5	72	44	93	23	0.6	15	26	41.5	0.295
SABP20N	20	25	34.93	18	46	M20X1.5	78	47	101	25	0.6	15	31	50	0.382

可提供不同螺距或螺纹精度有特殊要求的杆端关节轴承。Can supply other rod ends with different pitch or accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILBP20N　M20X1.5 左-6H，　SALBP20N　M20X1.5 左-6g。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILBP20N　M20X1.5L-6H，SALBP20N　M20X1.5L-6g.



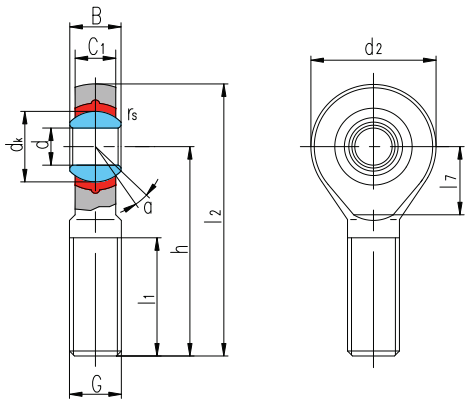


滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Steel / PTFE plastic

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch																额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G UNF-2B	h_1	l_3 min	l_4	l_5	l_7	W	d_3	d_4	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SIZP4N	4.83	7.92	11.1	6.35	15.88	10-32	26.97	14.27	34.93	4.75	9	7.92	7.54	10.31	0.3	10	3.3	5.38	0.015
	0.19	0.312	0.437	0.25	0.625		1.062	0.562	1.375	0.187	0.354	0.312	0.297	0.406	0.012				
SIZP6N	6.35	9.53	12.7	7.14	19.05	1/4-28	33.32	19.05	42.85	4.75	10.5	9.53	9.15	11.91	0.3	13	6.8	10.9	0.025
	0.25	0.375	0.5	0.281	0.75		1.312	0.75	1.687	0.187	0.413	0.375	0.36	0.469	0.012				
SIZP7N	7.94	11.10	15.88	8.74	22.23	5/16-24	34.93	19.05	46.02	4.75	11.7	11.1	10.72	12.70	0.3	10	7.6	12.2	0.036
	0.3125	0.437	0.625	0.344	0.875		1.375	0.75	1.812	0.187	0.461	0.437	0.422	0.5	0.012				
SIZP9N	9.53	12.70	18.26	10.31	25.40	3/8-24	41.28	23.80	53.98	6.35	12.3	14.27	13.89	17.45	0.6	9	11.9	18.2	0.061
	0.375	0.5	0.719	0.406	1		1.625	0.937	2.125	0.25	0.484	0.562	0.547	0.687	0.024				
SIZP11N	11.11	14.27	20.62	11.1	28.58	7/16-20	46.02	26.97	60.33	6.35	14	15.88	15.49	19.05	0.6	11	17.4	23.8	0.081
	0.4375	0.562	0.812	0.437	1.125		1.812	1.062	2.375	0.25	0.551	0.625	0.61	0.75	0.024				
SIZP12N	12.7	15.88	23.81	12.7	33.32	1/2-20	53.98	30.15	70.64	6.35	16.2	19.05	18.67	22.23	0.6	9	19.9	28.6	0.133
	0.5	0.625	0.937	0.5	1.312		2.125	1.187	2.781	0.25	0.638	0.75	0.735	0.875	0.024				
SIZP15N	15.88	19.05	28.58	14.27	38.10	5/8-18	63.50	38.10	82.55	7.92	18.2	22.23	21.84	25.40	0.6	11	22.9	36.9	0.190
	0.625	0.75	1.125	0.562	1.5		2.5	1.5	3.25	0.312	0.717	0.875	0.86	1	0.024				
SIZP19N	19.05	22.23	33.32	17.45	44.45	3/4-16	73.03	44.45	95.25	7.92	20.9	25.4	25.02	28.58	0.6	10	30.2	48.5	0.285
	0.75	0.875	1.312	0.687	1.75		2.875	1.75	3.75	0.312	0.823	1	0.985	1.125	0.024				

可提供不同螺纹精度要求的杆端关节轴承。Can supply other rod ends with different accuracy of thread.
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SILZP12N　1/2-20UNF-2BLH。
For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，
e.g. SILZP12N　1/2-20UNF-2BLH.



滑动摩擦副：钢 / PTFE 塑料

Sliding contact surfaces：Steel / PTFE plastic

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch												额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G UNF-2A	h	l_1 min	l_2	l_7	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SAZP4N	4.83	7.92	11.1	6.35	15.88	10-32	31.75	19.05	39.70	—	0.3	10	3.3	5.38	0.013
	0.19	0.312	0.437	0.25	0.625		1.25	0.75	1.563		0.012				
SAZP6N	6.35	9.53	12.7	7.14	19.05	1/4-28	39.67	25.40	49.20	—	0.3	13	6.8	10.9	0.022
	0.25	0.375	0.5	0.281	0.75		1.562	1	1.937		0.012				
SAZP7N	7.94	11.10	15.88	8.74	22.23	5/16-24	47.63	31.75	58.72	—	0.3	10	7.6	12.2	0.037
	0.3125	0.437	0.625	0.344	0.875		1.875	1.25	2.312		0.012				
SAZP9N	9.53	12.70	18.26	10.31	25.40	3/8-24	49.23	31.75	61.93	—	0.6	9	11.9	18.7	0.055
	0.375	0.5	0.719	0.406	1		1.938	1.25	2.438		0.024				
SAZP11N	11.11	14.27	20.62	11.1	28.58	7/16-20	53.98	34.93	68.28	—	0.6	11	17.4	23.8	0.078
	0.4375	0.562	0.812	0.437	1.125		2.125	1.375	2.688		0.024				
SAZP12N	12.7	15.88	23.81	12.7	33.32	1/2-20	61.93	38.10	78.59	—	0.6	9	19.9	28.6	0.12
	0.5	0.625	0.937	0.5	1.312		2.438	1.5	3.094		0.024				
SAZP15N	15.88	19.05	28.58	14.27	38.10	5/8-18	66.68	41.28	85.73	18.2	0.6	11	22.9	36.9	0.18
	0.625	0.75	1.125	0.562	1.5		2.625	1.625	3.375	0.717	0.024				
SAZP19N	19.05	22.23	33.32	17.45	44.45	3/4-16	73.03	44.45	95.25	20.9	0.6	10	30.2	48.5	0.29
	0.75	0.875	1.312	0.687	1.75		2.875	1.75	3.75	0.823	0.024				

可提供不同螺纹精度要求的杆端关节轴承。Can supply other rod ends with different accuracy of thread.
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SALZP12N　1/2-20UNF-2ALH。
For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，
e.g. SALZP12N　1/2-20UNF-2ALH.

带座带锁口杆端关节轴承

Rod ends for hydraulic components

带座带锁口杆端关节轴承是由杆端体和向心关节轴承组装而成，轴承由挡圈固定。杆端体有焊接型和锁口型，焊接型杆端体材料是易焊接钢，杆端柄部有方形底和圆柱形底二种，圆柱形底杆端体底部装有弹性销，便于焊接时定位；锁口型杆端体材料为碳钢或球墨铸铁，杆端体带有内螺纹，配有螺钉紧固；带座带锁口杆端体关节轴承可通过油杯或杆端眼孔润滑。

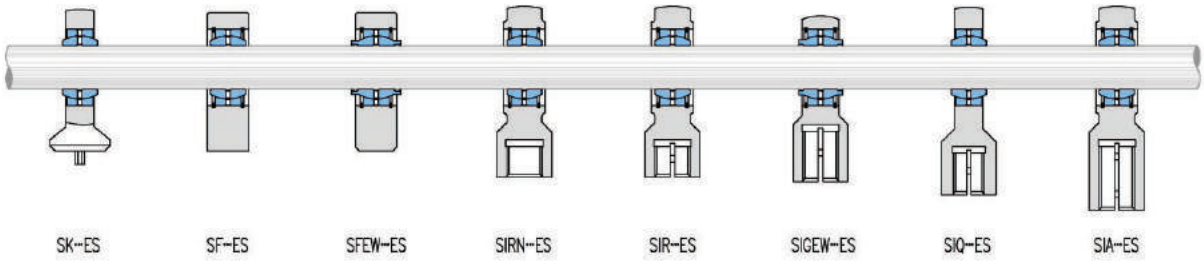
LS钢对钢带座带锁口杆端关节轴承具有较好的耐磨损能力，在正常情况下，周期性润滑是必须的。这种轴承特别适合于承受交变重载。

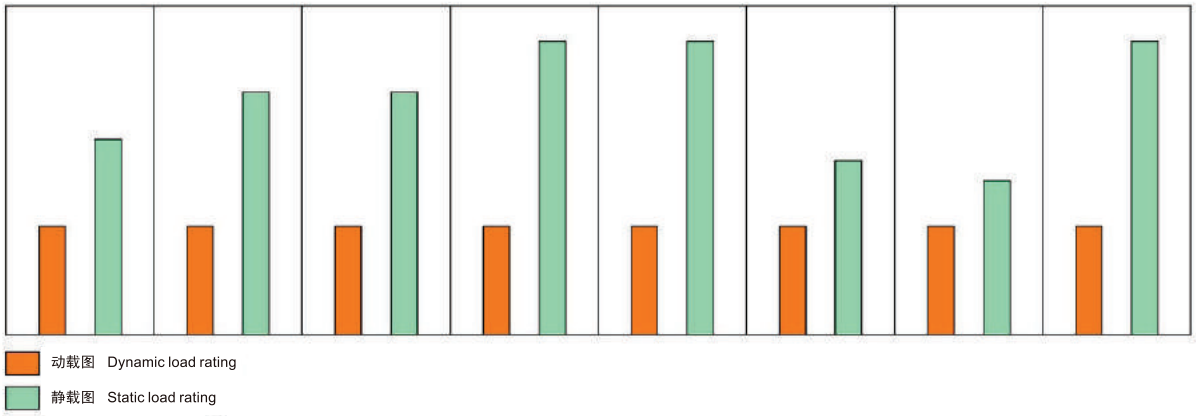
Rod ends for hydraulic components is made up of a rod end and a radial spherical plain bearing, the bearing is fixed in housing by snap rings. There are two kinds of rod end: rod end with welding shank and rod end with locking slot. The material of rod end with welding shank is weldable steel. The rod end shank has two kinds of shape, one is prismatic and another is cylindrical. At the bottom of the cylindrical shank, there is elastic pin which is easy for location.

Normally, the material of rod end with locking slot is carbon steel or spheroidal graphite cast iron. The thread of the rod end body is female and equipped with screw for fastening. The hydraulic rod ends can be re-lubricated by the oil cup or through the hole of the rod end body.

Rod ends for hydraulic components (steel to steel) have good wear resistance. Normally, hydraulic rod ends need periodic re-lubrication. The high strength of the sliding surfaces makes these bearings especially suitable for bearing arrangements where heavy loads of alternating direction, or heavy static loads have to be accommodated.

带座、带锁口杆端关节轴承
Hydraulic rod ends





带座带锁口杆端关节轴承公差

Tolerances for Rod ends for hydraulic components

内圈 Inner ring

SIR…ES,SIRN…ES,SIA…ES,SIQ…ES,SK…ES,SF…ES 的Δdmp，ΔBs 同向心关节轴承 GE…E, GE…ES, GE…C, GE…ETL-2RS。

The Δdmp and ΔBs of SIR…ES, SIRN…ES, SIA…ES, SIQ…ES, SK…ES, SF…ES are the same as radial spherical plain bearings GE…E, GE…ES, GE…C and GE…ETL-2RS.

SIGEW…ES,SFEW…ES 的Δdmp，ΔBs 同向心关节轴承 GEEW…ES。

The Δdmp and ΔBs of SIGEW…ES ,SFEW…ES are the same as radial spherical plain bearings GEEW…ES.

带座带锁口杆端关节轴承径向游隙

Radial internal clearance of rod ends for hydraulic components

SK…ES,SF…ES,SFEW…ES, SIRN…ES, SIR…ES, SIGEW…ES,SIQ…ES, SIA…ES 系列

Series SK…ES,SF…ES,SFEW…ES, SIRN…ES, SIR…ES, SIGEW…ES,SIQ…ES, SIA…ES

d mm		基本组 Group normal μm	
超过 over	到 incl.	min	max
—	12	23	68
12	20	30	82
20	35	37	100
35	60	43	120
60	90	55	142
90	125	65	165
125	200	65	192

带座带锁口杆端关节轴承配合

Fits of rod ends for hydraulic components

轴配合 Shaft fits

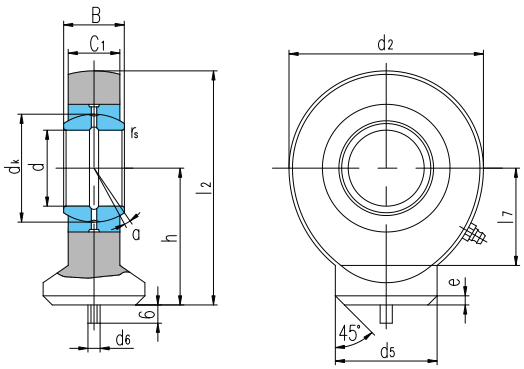
工作条件 Operating conditions	公差 Tolerance
方向不定载荷 With indeterminate loads	n6，p6
一般条件 Normal conditions	h6，h7

螺纹 Thread

外螺纹 Male thread	内螺纹 Female thread
6g	6H

轴径公差 Shaft diameter tolerances

轴径 Shaft diameter mm		轴径公差 Shaft diameter tolerances μm							
		h6		h7		n6		p6	
超过 over	到 incl.	high	low	high	low	high	low	high	low
3	6	0	-8	0	-12	+16	+8	+20	+12
6	10	0	-9	0	-15	+19	+10	+24	+15
10	18	0	-11	0	-18	+23	+12	+29	+18
18	30	0	-13	0	-21	+28	+15	+35	+22
30	50	0	-16	0	-25	+33	+17	+42	+26
50	80	0	-19	0	-30	+39	+20	+51	+32
80	120	0	-22	0	-35	+45	+23	+59	+37
120	180	0	-25	0	-40	+52	+27	+68	+43
180	200	0	-29	0	-46	+60	+31	+79	+50



滑动摩擦副：钢 / 钢

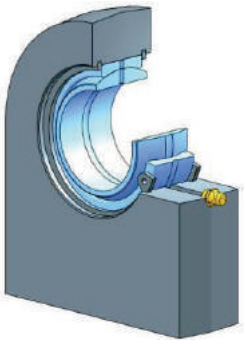
Sliding contact surfaces：Steel / Steel

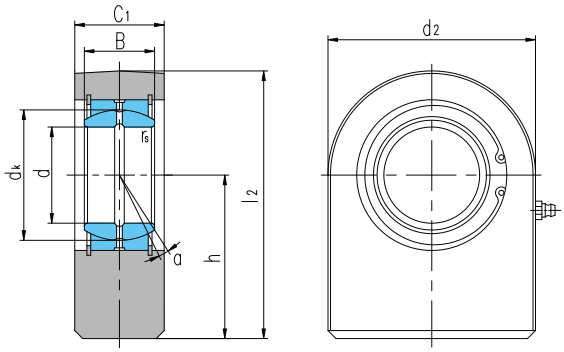
轴承型号 Bearing number	外形尺寸 Dimensions mm													额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1	d_2	h	l_2	l_7	d_5	d_6	e	r_s	α° ≈	动载荷 Dynamic	静载荷 Static	
SK10E[1]	10	9	16	7	29	24	38.5	15	15	3	2	0.3	12	8.1	15	0.041
SK12E[1]	12	10	18	8	34	27	44	17.5	17.5	3	2	0.3	10	10	21	0.066
SK15ES[2]	15	12	22	10	40	31	51	20	21	4	2.5	0.3	8	16	32	0.12
SK16ES[2]	16	14	25	11	46	35	58	23	24	4	3	0.3	10	21	40	0.19
SK17ES[2]	17	14	25	11	46	35	58	23	24	4	3	0.3	10	21	40	0.18
SK20ES	20	16	29	13	53	38	64.5	27.5	27.5	4	3	0.3	9	30	54	0.26
SK25ES	25	20	35.5	17	64	45	77	33	33.5	4	4	0.6	7	48	72	0.45
SK30ES	30	22	40.7	19	73	51	87.5	37.5	40	4	4	0.6	6	62	95	0.67
SK35ES	35	25	47	21	82	61	102	43	47	4	4	0.6	6	79	125	1.02
SK40ES	40	28	53	23	92	69	115	48	52	4	5	0.6	7	99	156	1.40
SK45ES	45	32	60	27	102	77	128	52	58	6	5	0.6	7	127	208	1.93
SK50ES	50	35	66	30	112	88	144	59	62	6	6	0.6	6	156	250	2.69
SK60ES	60	44	80	38	135	100	167.5	72.5	70	6	8	1	6	245	390	4.60
SK70ES	70	49	92	42	160	115	195	85.5	80	6	10	1	6	313	510	7.00
SK80ES	80	55	105	47	180	141	231	98	95	6	10	1	6	400	620	11.0

[1]无润滑通道。No relubrication facility.

[2]只能通过杆端眼孔润滑。Can only be relubricated through the rod end housing.

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.



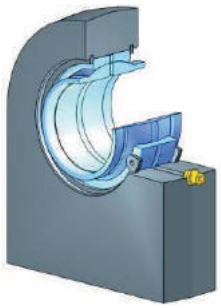


滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

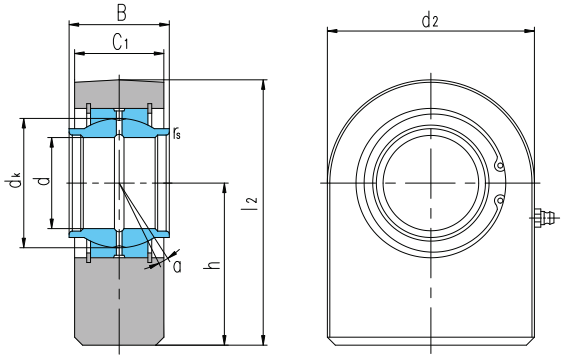
轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1	d_2	h	l_2	r_s	α° ≈	动载荷 Dynamic	静载荷 Static	
SF15ES	15	12	22	16	45	31	53.5	0.3	8	16	53	0.22
SF16ES	16	14	25	17.5	48	35	59	0.3	10	21	59	0.29
SF17ES	17	14	25	17.5	48	35	59	0.3	10	21	59	0.28
SF20ES	20	16	29	19	50	38	63	0.3	9	30	67	0.36
SF25ES	25	20	35.5	23	55	45	72.5	0.6	7	48	69	0.53
SF30ES	30	22	40.7	28	65	51	83.5	0.6	6	62	118	0.85
SF35ES	35	25	47	30	83	61	102.5	0.6	6	79	196	1.50
SF40ES	40	28	53	35	100	69	119	0.6	7	99	305	2.42
SF45ES	45	32	60	40	110	77	132	0.6	7	127	386	3.39
SF50ES	50	35	66	40	123	88	149.5	0.6	6	156	441	4.24
SF60ES	60	44	80	50	140	100	170	1	6	245	570	7.10
SF70ES	70	49	92	55	164	115	197	1	6	313	724	10.7
SF80ES	80	55	105	60	180	141	231	1	6	400	804	15.1
SF90ES	90	60	115	65	226	150	263	1	5	488	1340	23.4
SF100ES	100	70	130	70	250	170	295	1	7	607	1516	33.1
SF110ES	110	70	140	80	295	185	332.5	1	6	654	2340	48.5
SF120ES	120	85	160	90	360	210	390	1	6	950	3210	79.5

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.



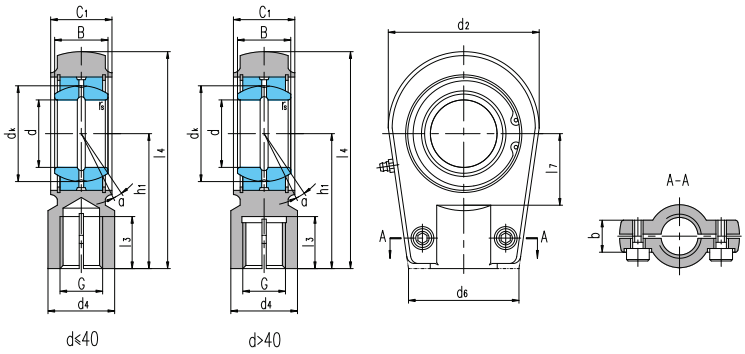
滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel



轴承型号 Bearing number	外形尺寸 Dimensions mm									额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1	d_2	h	l_2	r_s	α° ≈	动载荷 Dynamic	静载荷 Static	
SFEW20ES	20	20	29	19	50	38	63	0.3	4	30	67	0.37
SFEW25ES	25	25	35.5	23	55	45	72.5	0.6	4	48	69	0.54
SFEW32ES	32	32	43	27	70	65	100	0.6	4	65	168	1.16
SFEW40ES	40	40	53	35	100	69	119	0.6	4	99	305	2.57
SFEW50ES	50	50	66	40	123	88	149.5	0.6	4	156	441	4.50
SFEW63ES	63	63	83	50	145	107	179.5	1	4	253	591	7.14
SFEW70ES	70	70	92	55	164	115	197	1	4	313	724	10.86
SFEW80ES	80	80	105	60	180	141	231	1	4	400	804	15.33
SFEW90ES	90	90	115	65	226	150	263	1	4	488	1340	24.00
SFEW100ES	100	100	130	70	250	170	295	1	4	607	1516	33.44
SFEW110ES	110	110	140	80	295	185	332.5	1	4	654	2340	49.46

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

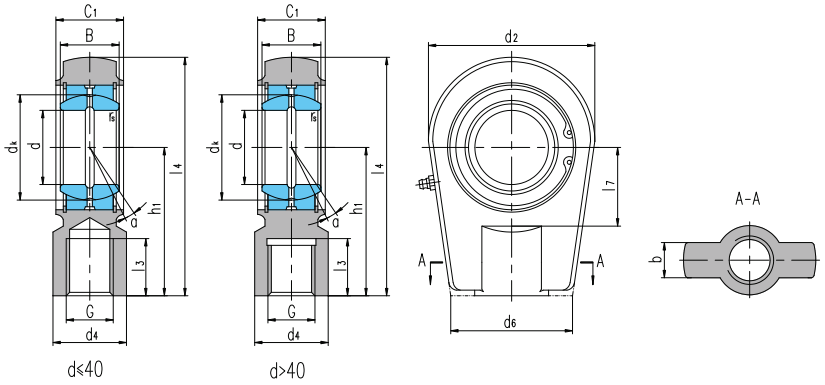
轴承型号 Bearing number	外形尺寸 Dimensons mm															额定载荷 Load ratings kN		锁紧螺钉 Screw	重量 Weight ≈kg
	d	B	d_K	C_1	d_2	G 6H	h_1	l_3	l_4	l_7	d_4	d_6	b	r_s	α° ≈	动载荷 Dynamic	静载荷 Static		
SIR20ES	20	16	29	19	56	M16X1.5	50	17	80	25	25	46	20	0.3	9	30	81	M8X20	0.44
SIR25ES	25	20	35.5	23	56	M16X1.5	50	17	80	25	25	46	21	0.6	7	48	72	M8X20	0.47
SIR30ES	30	22	40.7	28	64	M22X1.5	60	23	94	30	32	50	26	0.6	6	62	106	M8X25	0.77
SIR35ES	35	25	47	30	78	M28X1.5	70	29	112	38	40	66	28	0.6	6	79	153	M10X30	1.24
SIR40ES	40	28	53	35	94	M35X1.5	85	36	135	45	49	76	33	0.6	7	99	250	M10X35	2.12
SIR50ES	50	35	66	40	116	M45X1.5	105	45	168	55	61	90	37	0.6	6	156	365	M12X40	3.74
SIR60ES SIR60ES-D[1)]	60	44	80	50	130	M58X1.5	130	59	200	65	75	120	46	1	6	245	400	M16X45	6.49
SIR70ES SIR70ES-D[1)]	70	49	92	55	154	M65X1.5	150	66	232	75	86	130	51	1	6	313	540	M16X50	9.88
SIR80ES SIR80ES-D[1)]	80	55	105	60	176	M80X2	170	81	265	80	105	160	55	1	6	400	670	M20X55	14.2
SIR90ES SIR90ES-D[1)]	90	60	115	65	206	M100X2	210	101	323	90	124	180	60	1	5	488	980	M20X60	23.5
SIR100ES	100	70	130	70	231	M110X2	235	111	360	105	138	200	65	1	7	607	1120	M24X65	32.14
SIR110ES	110	70	140	80	266	M120X3	265	125	407	115	152	220	74	1	6	654	1700	M24X80	47.6
SIR120ES	120	85	160	90	340	M130X3	310	135	490	140	172	257	84	1	6	950	2900	M24X80	72

[1)]杆端体采用碳钢锻造。Rod end is made of carbon steel.

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILR40ES　M35X1.5 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILR40ES　M35X1.5L-6H.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

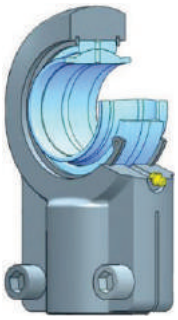
轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1	d_2	G 6H	h_1	l_3	l_4	l_7	d_4	d_6	b	r_s	α° ≈	动载荷 Dynamic	静载荷 Static	
SIRN20ES	20	16	29	19	56	M16X1.5	50	17	80	25	25	46	20	0.3	9	30	81	0.44
SIRN25ES	25	20	35.5	23	56	M16X1.5	50	17	80	25	25	46	21	0.6	7	48	72	0.47
SIRN30ES	30	22	40.7	28	64	M22X1.5	60	23	94	30	32	50	26	0.6	6	62	106	0.77
SIRN35ES	35	25	47	30	78	M28X1.5	70	29	112	38	40	66	28	0.6	6	79	153	1.24
SIRN40ES	40	28	53	35	94	M35X1.5	85	36	135	45	49	76	33	0.6	7	99	250	2.12
SIRN50ES	50	35	66	40	116	M45X1.5	105	45	168	55	61	90	37	0.6	6	156	365	3.74
SIRN60ES SIRN60ES-D[1]	60	44	80	50	130	M58X1.5	130	59	200	65	75	120	46	1	6	245	400	6.49
SIRN70ES SIRN70ES-D[1]	70	49	92	55	154	M65X1.5	150	66	232	75	86	130	51	1	6	313	540	9.88
SIRN80ES SIRN80ES-D[1]	80	55	105	60	176	M80X2	170	81	265	80	105	160	55	1	6	400	670	14.2
SIRN90ES SIRN90ES-D[1]	90	60	115	65	206	M100X2	210	101	323	90	124	180	60	1	5	488	980	23.5
SIRN100ES	100	70	130	70	231	M110X2	235	111	360	105	138	200	65	1	7	607	1120	32.14
SIRN110ES	110	70	140	80	266	M120X3	265	125	407	115	152	220	74	1	6	654	1700	47.6
SIRN120ES	120	85	160	90	340	M130X3	310	135	490	140	172	257	84	1	6	950	2900	72

[1)]杆端体采用碳钢锻造。Rod end is made of carbon steel.

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.

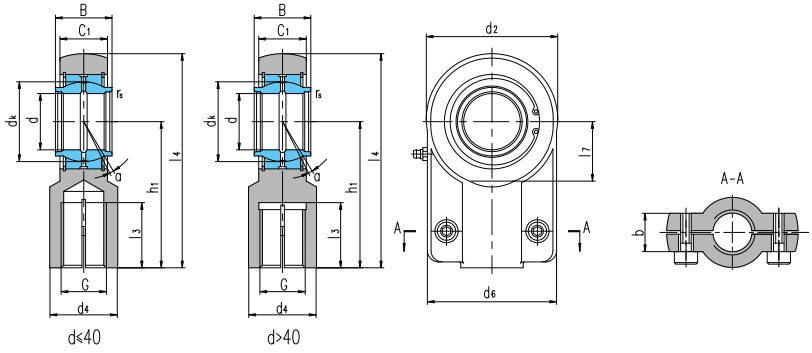
若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILRN40ES　M35X1.5 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILRN40ES　M35X1.5L-6H.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel



轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load Ratings kN		锁紧螺钉 Screw	重量 Weight ≈kg
	d	B	d_K	C_1	d_2	G 6H	h_1	l_3	l_4	l_7	d_4	d_6	b	r_s	α° ≈	动载荷 Dynamic	静载荷 Static		
SIGEW12ES [1]	12	12	18	11	32	M12X1.25	38	17	54	14	16	32	15	0.3	4	10	24.5	M5X16	0.11
SIGEW16ES	16	16	23	14	40	M14X1.5	44	19	64	18	21	40	15	0.3	4	17	36.5	M6X16	0.20
SIGEW20ES	20	20	29	17	47	M16X1.5	52	23	77	22	25	47	19	0.3	4	30	48	M8X20	0.35
SIGEW25ES	25	25	35.5	22	58	M20X1.5	65	29	96	27	30	54	19	0.6	4	48	78	M8X20	0.62
SIGEW32ES	32	32	43	28	71	M27X2	80	42	118.5	32	38	66	22	0.6	4	65	114	M10X25	1.15
SIGEW40ES	40	40	53	33	90	M33X2	97	52.5	146	41	47	80	26	0.6	4	99	204	M10X25	2.18
SIGEW50ES	50	50	66	40	109	M42X2	120	63.5	179.5	50	58	96	32	0.6	4	156	310	M12X35	3.96
SIGEW63ES SIGEW63ES-D [2]	63	63	83	53	136	M48X2	140	72	211	62	70	114	38	1	4	253	430	M16X40	7.23
SIGEW70ES SIGEW70ES-D [2]	70	70	92	57	155	M56X2	160	84	245	70	80	135	42	1	4	313	540	M16X40	11.1
SIGEW80ES SIGEW80ES-D [2]	80	80	105	67	170	M64X3	180	92.5	270	78	90	148	48	1	4	400	695	M20X50	15.01
SIGEW90ES	90	90	115	72	185	M72X3	195	103	296	85	100	160	52	1	4	488	750	M20X55	19.1
SIGEW100ES	100	100	130	85	211	M80X3	210	108	322.5	98	110	178	62	1	4	607	1060	M24X60	25.5
SIGEW110ES	110	110	140	88	235	M90X3	235	118	364	105	125	190	62	1	4	654	1200	M24X60	36.6
SIGEW125ES	125	125	160	103	265	M100X3	260	125	405	120	135	200	72	1	4	950	1430	M24X70	52.6
SIGEW160ES	160	160	200	130	326	M125X4	310	138	488	150	165	250	82	1	4	1360	2200	M24X80	79
SIGEW200ES	200	200	250	162	418	M160X4	390	173	620	195	215	320	102	1.1	4	2120	3650	M30X100	164
SIGEW250ES	250	250	350	192	580	M200X4	530	217	847	265	300	420	142	1.1	4	3750	6400	M36X140	430
SIGEW320ES	320	320	450	260	700	M250X6	640	272	1015	325	360	520	170	1.1	4	6200	10800	M36X160	771

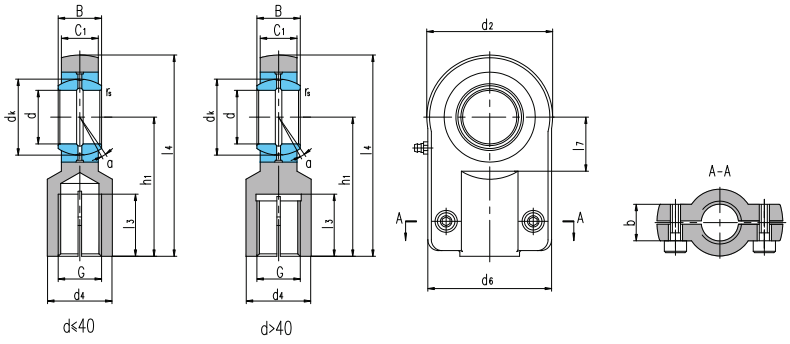
[1]只能通过杆端眼孔润滑。Can only be relubricated through the rod end housing.

[2]杆端体采用碳钢锻造。Rod end is made of carbon steel.

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILGEW40ES M33X2 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILGEW40ES M33X2L-6H.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load Ratings kN		锁紧螺钉 Screw	重量 Weight ≈kg
	d	B	d_K	C_1	d_2	G 6H	h_1	l_3	l_4	l_7	d_4	d_6	b	r_s	α° ≈	动载荷 Dynamic	静载荷 Static		
SIQ12E [1]	12	10	18	8	35	M10X1.25	42	15	59.5	16	17	35	13	0.3	10	10	17	M6X12	0.12
SIQ16ES [2]	16	14	25	11	45	M12X1.25	48	17	70.5	20	21	45	13	0.3	10	21	28.5	M6X12	0.22
SIQ20ES [2]	20	16	29	13	55	M14X1.5	58	19	85.5	25	25	55	17	0.3	9	30	42.5	M8X16	0.43
SIQ25ES	25	20	35.5	17	65	M16X1.5	68	23	100.5	30	30	62	17	0.6	7	48	67	M8X16	0.67
SIQ30ES	30	22	40.7	19	80	M20X1.5	85	29	125	35	36	77	19	0.6	6	62	108	M10X20	1.25
SIQ40ES	40	28	53	23	100	M27X2	105	37	155	45	45	90	23	0.6	7	99	156	M10X25	2.16
SIQ50ES	50	35	66	30	120	M33X2	130	54	190	58	55	105	30	0.6	6	156	245	M12X30	3.90
SIQ60ES	60	44	80	38	160	M42X2	150	65	230	68	68	134	36	1	6	245	380	M16X35	8.2
SIQ80ES	80	55	105	47	205	M48X2	185	75	287.5	92	90	156	45	1	6	400	585	M20X45	16.2
SIQ100ES	100	70	130	57	240	M64X3	240	102	360	116	110	190	55	1	7	607	865	M24X55	28.4

[1] 无润滑通道。No relubrication facility.

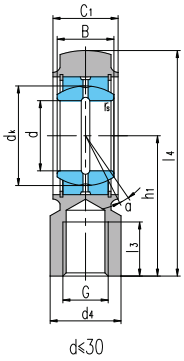
[2] 只能通过杆端眼孔润滑。Can only be relubricated through the rod end housing.

杆端体采用碳钢锻造。Rod end is made of carbon steel.

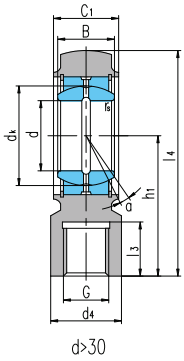
可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILQ40ES M27x2 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILQ40ES M27x2L-6H.



d≤30



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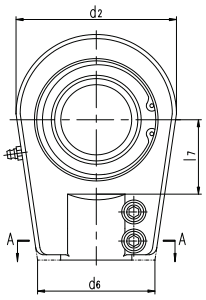
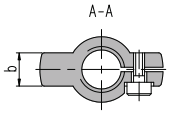




滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm															额定载荷 Load ratings kN		锁紧螺钉 Screw	重量 Weight ≈kg
	d	B	d_K	C_1	d_2	G 6H	h_1	l_3	l_4	l_7	d_4	d_6	b	r_s	α° ≈	动载荷 Dynamic	静载荷 Static		
SIA25ES	25	20	35.5	23	56	M18X2	65	30	95	29	28	48	21	0.6	7	48	72	M8X20	0.62
SIA30ES	30	22	40.7	28	64	M24X2	75	35	109	34	34	56	26	0.6	6	62	106	M8X25	0.88
SIA35ES	35	25	47	30	78	M30X2	90	46	132	40	45	65	28	0.6	6	79	153	M10X30	1.52
SIA40ES	40	28	53	35	94	M39X3	105	56	155	44	56.5	77	33	0.6	7	99	250	M12X35	2.43
SIA50ES	50	35	66	40	116	M50X3	135	76	198	55	70	88	36	0.6	6	156	365	M12X35	4.75
SIA60ES	60	44	80	50	130	M64X3	170	96	240	65	87	118	46	1	6	245	400	M16X45	8.55
SIA70ES	70	49	92	55	154	M80X3	195	112	277	75	110	128	51	1	6	313	540	M16X50	12.24
SIA80ES	80	55	105	60	176	M90X3	210	122	305	80	128	156	55	1	6	400	670	M20X55	18.35
SIA90ES	90	60	115	65	210	M100X3	250	142	365	90	152	167	60	1	5	488	980	M20X60	31.56
SIA100ES	100	70	130	70	230	M110X4	275	150	400	105	170	171	65	1	7	607	1120	M20X60	34
SIA110ES	110	70	140	80	264	M120X4	300	160	442	115	180	187	75	1	6	654	1700	M24X75	44
SIA120ES	120	85	160	90	340	M150X4	360	192	540	140	210	240	85	1	6	950	2900	M24X85	75
SIA140ES	140	90	180	110	380	M160X4	420	210	620	185	230	244	105	1	7	1070	3350	M30X100	160
SIA160ES	160	105	200	110	480	M180X4	460	220	710	200	260	268	105	1	8	1360	4302	M30X100	185

可装自润滑向心关节轴承。Can supply rod ends with maintenance-free spherical plain bearing.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“左”，例如：SILA40ES　M39X3 左-6H。

For left-hand thread，suffix “L” is added to bearings number and thread sign，e.g. SILA40ES　M39X3L-6H.

球头杆端关节轴承
Ball joint rod ends

球头杆端关节轴承由带有内球面的球头座和带有外球面的球头杆构成一对滑动摩擦副，通常球头座螺纹有左右旋之分。LS球头杆端关节轴承滑动摩擦副有两种：钢对钢和钢对锌基合金。球头座由特殊的锌基合金铸成或碳钢加工而成，球头杆由钢球和杆精密焊接而成，具有自调心、耐磨、安装简便的特点。

Ball joint rod ends have a ball joint housing with a sphered convex inside surface and a ball joint shank with a correspondingly sphered but concave outside surface. Ball joint housing is with left or right-hand thread. There are two kinds of sliding contact surfaces: steel to steel and steel to zinc base alloy. Ball joint housing is made of zinc base alloy or carbon steel, ball joint shank is made of a steel ball and a stud which is joined by precision welding, it has characteristics of self-aligning, wear-resistance and easy mounting.

球头杆端关节轴承公差

Tolerances for ball joint rod ends

球头杆座 housing of ball joint

μm

d mm		Δ L_{1s}		Δ h_s		Δ h_{1s}	
超过 over	到 incl.	max	min	max	min	max	min
—	6	+800	-1200	+800	-1200	+650	-1050
6	10	+800	-1200	+800	-1200	+800	-1200
10	18	+800	-1200	+800	-1200	+800	-1200
18	30	+800	-1200	+800	-1200	+800	-1200

尺寸和公差符号说明详见 P13 Details of dimension and tolerance symbols see page13

球头杆端关节轴承径向游隙

Radial internal clearance of ball joint rod ends

μm

类型 Type	基 本 组 Group normal	
	min	max
SQZ···-RS	0	30
SQ···-RS、SQY···-RS	20	60
SQG···	0	80

SQIZJ…，SQAZJ…系列 Series SQIZJ…，SQAZJ…

μm

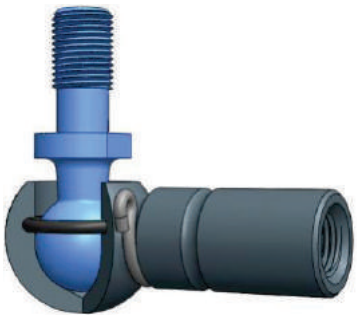
d mm		基本组 Group normal	
超过 over	到 incl.	min	max
—	8	10	40
8	22	15	60

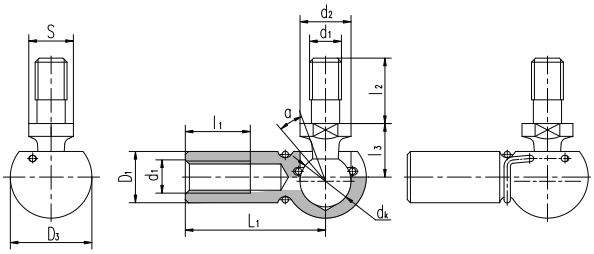
球头杆端关节轴承配合

Fits of ball joint rod ends

螺纹 Thread

外螺纹 Male thread	内螺纹 Female thread
6g	6H





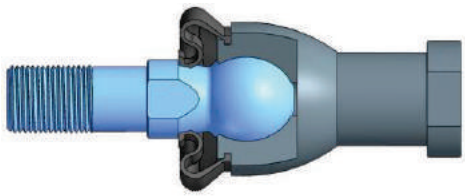
滑动摩擦副：钢 / 钢

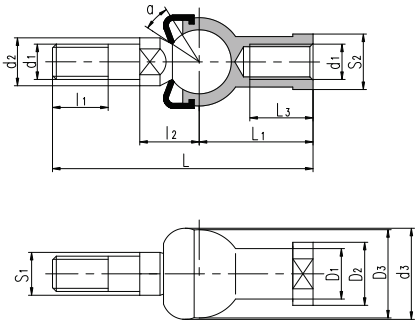
Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm											额定静载荷 Static load ratings kN	重量 Weight ≈kg
	d_1	d_2	d_k	l_1	l_2	l_3	S	L_1	D_1	D_3	α° ≈		
SQG5	M5	8	8	10.2	10.2	9	7	22	8	12.8	10	2.2	0.015
SQG6	M6	10	10	11.5	12.5	11	8	25	10	14.8	15	3.5	0.025
SQG8	M8	13	13	14	16.5	13	11	30	13	19.3	15	6.6	0.053
SQG10	M10	16	16	15.5	20	16	13	35	16	24	15	10	0.104
SQG12	M12	16	16	15.5	20	16	13	35	16	24	15	16	0.104
SQG14	M14X1.5	19	19	21.5	28	20	16	45	22	30	15	19	0.221
SQG14/B5	M14X2	19	19	21.5	28	20	16	45	22	30	15	26	0.221

球头座杆螺纹也可为左旋，若是左旋，轴承型号和螺纹标记需加“L”和“左”，例如：SQGL5　M5 左-6H。

The shank of ball joint housing may be left-hand thread，for left-hand thread，suffix “L” is added to bearing number and thread sign，e.g. SQGL5　M5L-6H.





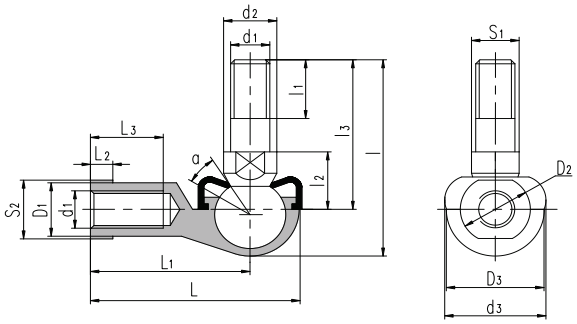
滑动摩擦副：钢 / 锌基合金

Sliding contact surfaces：Steel / Zinc base alloy

轴承型号 Bearing number	外形尺寸 Dimensions mm															额定静载荷 Static load ratings kN	重量 Weight ≈kg
	d_1	d_2	d_3	l_1	l_2	S_1	L	L_1	L_2	L_3	D_1	D_2	D_3	S_2	α° ≈		
SQZ5-RS	M5	9	19	8	11	7	46	24	4	12	9	11	17	9	15	2.8	0.025
SQZ6-RS	M6	10	20	11	12.2	8	55.2	28	5	15	10	13	20	11	15	3.7	0.041
SQZ8-RS	M8	12	24	12	16	10	65	32	5	16	12.5	16	24	14	15	5.8	0.075
SQZ10-RS	M10X1.25	14	30	15	19.5	11	74.5	35	6.5	18	15	19	28	17	15	8.4	0.12
SQZ12-RS	M12X1.25	17	32	17	21	15	84	40	6.5	20	17.5	22	32	19	15	11	0.18
SQZ14-RS	M14X1.5	19	38	22	23.5	17	103	45	8	25	20	25	36	22	11	15	0.27
SQZ16-RS	M16X1.5	22	44	23	25.5	19	112	50	8	27	22	27	40	22	11	15	0.36
SQZ18-RS	M18X1.5	23	45	25	31	20	130.5	58	10	32	25	31	45	27	11	19	0.54
SQZ20-RS	M20X1.5	23	50	25	29	20	133	63	10	38	27.5	34	45	30	7.5	19	0.57
SQZ22-RS	M22X1.5	27	52	26	33	24	145	70	12	43	30	37	50	32	7.5	23	0.76

球头座杆螺纹也可为左旋，若是左旋，轴承型号和螺纹标记需加“L”和“左”，例如：SQZL5-RS　M5 左-6H。

The shank of ball joint housing may be left-hand thread，for left-hand thread，suffix “L” is added to bearing number and thread sign，e.g. SQZL5-RS　M5L-6H.



滑动摩擦副：钢 / 锌基合金

Sliding contact surfaces：Steel / Zinc base alloy

轴承型号 Bearing number	外形尺寸 Dimensions mm																	额定静载荷 Static load ratings kN	重量 Weight ≈kg
	d_1	d_2	d_3	l	l_1	l_2	l_3	S_1	L	L_1	L_2	L_3	D_1	D_2	D_3	S_2	α° ≈		
SQ5-RS	M5	9	19	29	8	10	21	7	35	27	4	14	9	11	16	9	25	2.2	0.026
SQ6-RS	M6	10	20	35.5	11	11	26	8	40	30.5	5	14	10	13	19	11	25	3.5	0.039
SQ8-RS	M8	12	24	42.5	12	14	31	10	48	36.5	5	17	12.5	16	23	14	25	6.6	0.068
SQ10-RS	M10X1.2 5	14	30	50.5	15	17	37	11	57	43.5	6.5	21	15	19	27	17	25	10	0.112
SQ12-RS	M12X1.25	17	32	57.5	17	19	42	15	66	50.5	6.5	25	17.5	22	31	19	25	16	0.164
SQ14-RS	M14X1.5	19	38	73.5	22	21.5	56	17	75	57.5	8	26	20	25	35	22	25	19	0.254
SQ16-RS	M16X1.5	22	44	79.5	23	23.5	60	19	84	64.5	8	32	22	27	39	22	20	26	0.336
SQ18-RS	M18X1.5	23	45	90	25	26.5	68	20	93	71	10	34	25	31	44	27	20	33	0.464
SQ20-RS	M20X1.5	23	50	90	25	27	68	20	99	77	10	35	27.5	34	44	30	20	45	0.538
SQ22-RS	M22X1.5	27	52	95	26	28	70	24	109	84	12	41	30	37	50	32	16	48	0.713

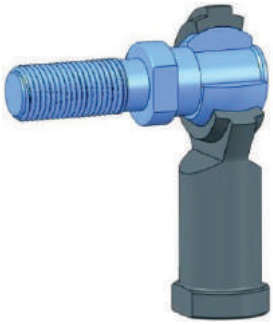
球头座杆螺纹也可为左旋，若是左旋，轴承型号和螺纹标记需加“L”和“左”，例如：SQL5-RS　M5 左-6H。

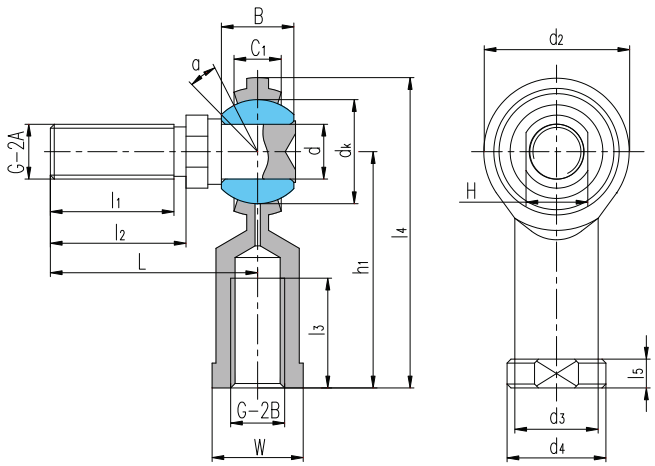
The shank of ball joint housing may be left-hand thread，for left-hand thread，suffix “L” is added to bearing number and thread sign，e.g. SQL5-RS　M5L-6H.

轴承型号 Bearing number	外形尺寸 Dimensions mm																	额定静载荷 Static load ratings kN	重量 Weight ≈kg
	d_1	d_2	d_3	l	l_1	l_2	l_3	S_1	L	L_1	L_2	L_3	D_1	D_2	D_3	S_2	α° ≈		
SQY4-RS	10-32	9	19	29	8	10	21	7	35	27	4	14	9	11	16	9	25	2.2	0.026
SQY6-RS	1/4-28	10	20	35.5	11	11	26	8	40	30.5	5	14	10	13	19	11	25	3.5	0.039
SQY7-RS	5/16-24	12	24	42.5	12	14	31	10	48	36.5	5	17	12.5	16	23	14	25	6.6	0.068
SQY9-RS	3/8-24	14	30	50.5	15	17	37	11	57	43.5	6.5	21	15	19	27	17	25	10	0.112
SQY11-RS	7/16-20	17	32	57.5	17	19	42	15	66	50.5	6.5	25	17.5	22	31	19	25	16	0.164
SQY12-RS	1/2-20	19	38	73.5	22	21.5	56	17	75	57.5	8	26	20	25	35	22	25	19	0.254
SQY15-RS	5/8-18	22	44	79.5	23	23.5	60	19	84	64.5	8	32	22	27	39	22	20	26	0.336
SQY19-RS	3/4-16	23	45	90	25	26.5	68	20	93	71	10	34	25	31	44	27	20	33	0.464

球头座杆螺纹也可为左旋，若是左旋，轴承型号和螺纹标记需加“L”和“LH”，例如：　SQYL4-RS　10-32UNF-2BLH。

The shank of ball joint housing may be left-hand thread，for left-hand thread，suffix “L” is added to bearing number and thread sign，e.g. SQYL4-RS　10-32UNF-2BLH.





滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

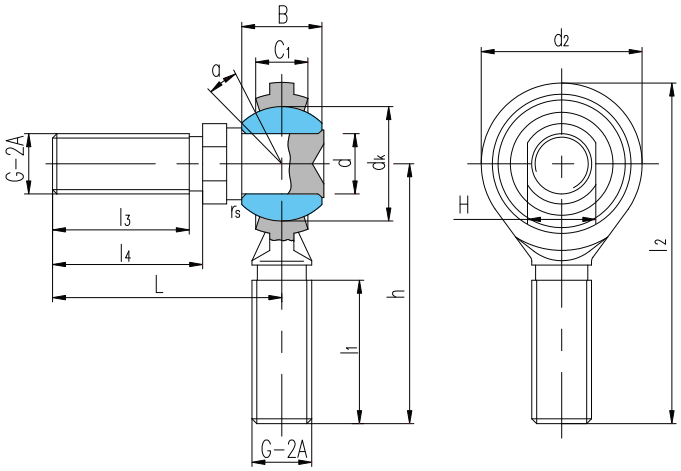
轴承型号 Bearing number	外形尺寸 Dimensions mm/inch																		额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_K	C_1 max	d_2	G UNF	h_1	l_3 min	l_4	l_5	l_1 min	l_2	L	W	d_3	d_4	H	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SQIZJ4	4.83	7.92	11.1	5.94	15.88	10-32	26.97	12.70	34.93	4.75	8.89	12.70	25.81	7.92	7.54	10.31	7.92	0.3	10	3.6	6.8	0.018
	0.19	0.312	0.437	0.234	0.625		1.062	0.5	1.375	0.187	0.35	0.5	1.016	0.312	0.297	0.406	0.312	0.012				
SQIZJ6	6.35	9.53	12.7	6.35	19.05	1/4-28	33.32	15.88	42.85	4.75	10.46	14.27	26.59	9.53	9.15	11.91	9.53	0.3	13.5	5.4	9.6	0.023
	0.25	0.375	0.5	0.25	0.75		1.312	0.625	1.687	0.187	0.412	0.562	1.047	0.375	0.36	0.469	0.375	0.012				
SQIZJ7	7.94	11.10	15.88	7.92	22.23	5/16-24	34.93	15.88	46.02	4.75	12.93	17.45	31.34	11.1	10.72	12.70	11.13	0.3	11	8.5	12	0.036
	0.3125	0.437	0.625	0.312	0.875		1.375	0.625	1.812	0.187	0.509	0.687	1.234	0.437	0.422	0.5	0.438	0.012				
SQIZJ9	9.53	12.70	18.26	9.12	25.40	3/8-24	41.28	19.05	53.98	6.35	18.49	23.01	39.88	14.27	13.89	17.45	12.70	0.6	11	11	16	0.059
	0.375	0.5	0.719	0.359	1		1.625	0.75	2.125	0.25	0.728	0.906	1.57	0.562	0.547	0.687	0.5	0.024				
SQIZJ11	11.11	14.27	20.62	10.31	28.58	7/16-20	46.02	22.23	60.33	6.35	23.27	28.58	49.99	15.88	15.49	19.05	15.88	0.6	10.5	14	21	0.082
	0.4375	0.562	0.812	0.406	1.125		1.812	0.875	2.375	0.25	0.916	1.125	1.968	0.625	0.61	0.75	0.625	0.024				
SQIZJ12	12.7	15.88	23.81	11.50	33.32	1/2-20	53.98	25.40	70.64	6.35	23.27	28.58	50.80	19.05	18.67	22.23	15.88	0.6	10	18	28	0.132
	0.5	0.625	0.937	0.453	1.312		2.125	1	2.781	0.25	0.916	1.125	2	0.75	0.735	0.875	0.625	0.024				
SQIZJ15	15.88	19.05	28.58	12.29	38.10	5/8-18	63.50	31.75	82.55	7.92	31.75	38.10	63.50	22.23	21.84	25.40	19.05	0.6	13	23	29	0.195
	0.625	0.75	1.125	0.484	1.5		2.5	1.25	3.25	0.312	1.25	1.5	2.5	0.875	0.86	1	0.75	0.024				
SQIZJ19	19.05	22.23	33.32	15.06	44.45	3/4-16	73.03	34.93	95.25	7.92	41.28	46.02	76.20	25.4	25.02	28.58	25.40	0.6	12	34	44	0.295
	0.75	0.875	1.312	0.593	1.75		2.875	1.375	3.75	0.312	1.625	1.812	3	1	0.985	1.125	1	0.024				

可提供不同螺纹精度要求的球头杆端关节轴承。Can supply other ball joint rod ends with different accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SQILZJ12　1/2-20UNF-2BLH。

For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，

e.g. SQILZJ12　1/2-20UNF-2BLH.



滑动摩擦副：钢 / 钢

Sliding contact surfaces：Steel / Steel

轴承型号 Bearing number	外形尺寸 Dimensions mm/inch															额定载荷 Load ratings kN		重量 Weight ≈kg
	d	B	d_k	C_1 max	d_2	G UNF	h	l_1 min	l_2	l_3 min	l_4	L	H	r_s min	α° ≈	动载荷 Dynamic	静载荷 Static	
SQAZJ4	4.83	7.92	11.1	5.94	15.88	10-32	31.75	19.05	39.70	8.89	12.70	25.81	7.92	0.3	10	3.6	3.8	0.014
	0.19	0.312	0.437	0.234	0.625		1.25	0.75	1.563	0.35	0.5	1.016	0.312	0.012				
SQAZJ6	6.35	9.53	12.7	6.35	19.05	1/4-28	39.67	25.40	49.20	10.46	14.27	26.59	9.53	0.3	13.5	5.4	6.6	0.018
	0.25	0.375	0.5	0.25	0.75		1.562	1	1.937	0.412	0.562	1.047	0.375	0.012				
SQAZJ7	7.94	11.10	15.88	7.92	22.23	5/16-24	47.63	31.75	58.72	12.93	17.45	31.34	11.13	0.3	11	8.5	12	0.032
	0.3125	0.437	0.625	0.312	0.875		1.875	1.25	2.312	0.509	0.687	1.234	0.438	0.012				
SQAZJ9	9.53	12.70	18.26	9.12	25.40	3/8-24	49.23	31.75	61.93	18.49	23.01	39.88	12.70	0.6	11	11	16	0.050
	0.375	0.5	0.719	0.359	1		1.938	1.25	2.438	0.728	0.906	1.57	0.5	0.024				
SQAZJ11	11.11	14.27	20.62	10.31	28.58	7/16-20	53.98	34.93	68.28	23.27	28.58	49.99	15.88	0.6	10.5	14	21	0.068
	0.4375	0.562	0.812	0.406	1.125		2.125	1.375	2.688	0.916	1.125	1.968	0.625	0.024				
SQAZJ12	12.7	15.88	23.81	11.50	33.32	1/2-20	61.93	38.10	78.59	23.27	28.58	50.80	15.88	0.6	10	18	28	0.11
	0.5	0.625	0.937	0.453	1.312		2.438	1.5	3.094	0.916	1.125	2	0.625	0.024				
SQAZJ15	15.88	19.05	28.58	12.29	38.10	5/8-18	66.68	41.28	85.73	31.75	38.10	63.50	19.05	0.6	13	23	29	0.16
	0.625	0.75	1.125	0.484	1.5		2.625	1.625	3.375	1.25	1.5	2.5	0.75	0.024				
SQAZJ19	19.05	22.23	33.32	15.06	44.45	3/4-16	73.03	44.45	95.25	41.28	46.02	76.20	25.40	0.6	12	34	44	0.26
	0.75	0.875	1.312	0.593	1.75		2.875	1.75	3.75	1.625	1.812	3	1	0.024				

可提供不同螺纹精度要求的杆端关节轴承。Can supply other rod ends with different accuracy of thread.

若是左旋螺纹，轴承型号和螺纹标记需加“L”和“LH”，例如：SQALZJ12　1/2-20UNF-2ALH。

For left-hand thread，suffix “L” is added to bearings number and suffix “LH” is added to thread sign，e.g. SQALZJ12　1/2-20UNF-2ALH.

特殊产品
Special products

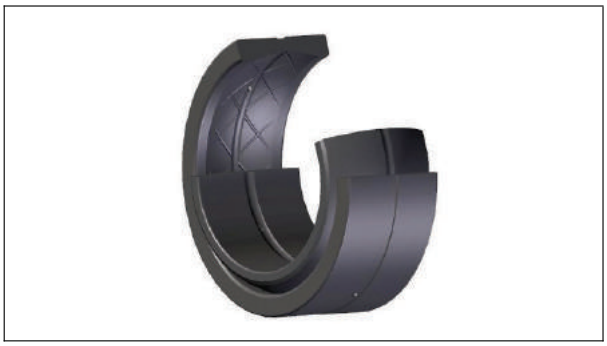


图 1：外圈带交叉槽关节轴承

Figure1: Spherical plain bearing with cross grooves in the sliding surface of outer ring

图 2：内圈带交叉槽关节轴承

Figure2: Spherical plain bearing with cross grooves in the sliding surface of inner ring

图 3：内孔带轴向槽关节轴承

Figure3: Spherical plain bearing with keyway in the hole of inner ring

图 4：双半外圈自润滑向心关节轴承

Figure4: Angular contact bearing double acting

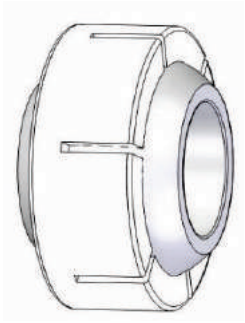


图 5：高性能工程塑料外圈关节轴承

Figure5: Outer ring spherical bearings made of hight performance plastics

图 6：带端槽挤压型自润滑关节轴承

Figure6: Swaged self lubricating bearing with grooves

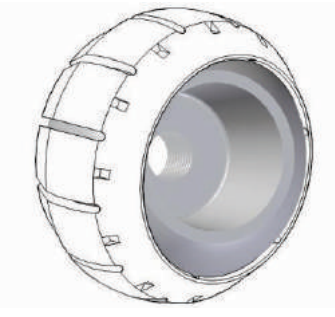


图 7：高性能工程塑料外圈关节轴承

Figure7: Outer ring spherical bearings made of hight performance plastics

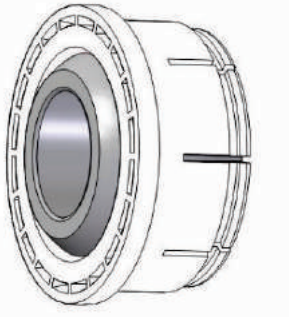


图 8：高性能工程塑料外圈关节轴承

Figure8: Outer ring spherical bearings made of hight performance plastics

特殊产品
Special products

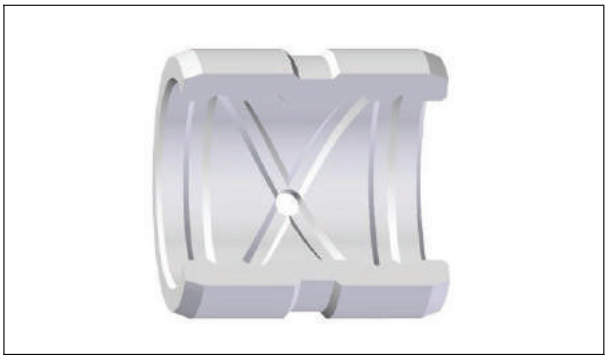


图 9：内孔带交叉槽轴套
Figure9: Sleeve bearing with cross grooves

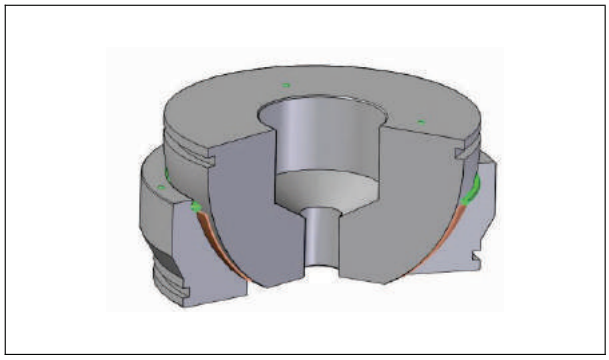


图 10：特殊推力关节轴承
Figure10: Special spherical plain thrust bearing

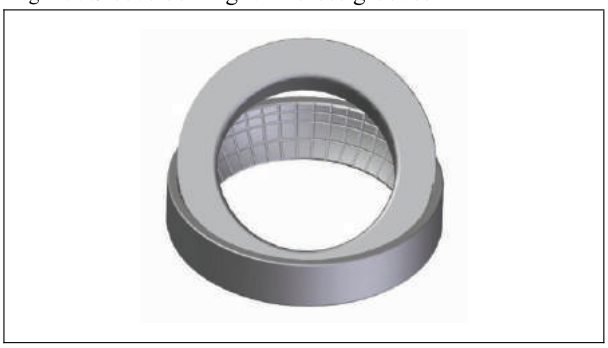


图 11：特殊角接触关节轴承
Figure11: Special angular contact spherical plain bearing

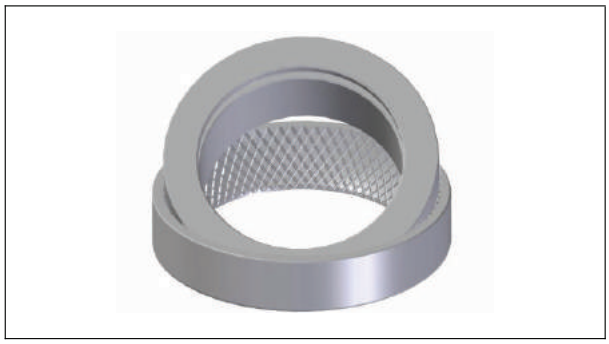


图 12：特殊角接触关节轴承
Figure12: Special angular contact spherical plain bearing

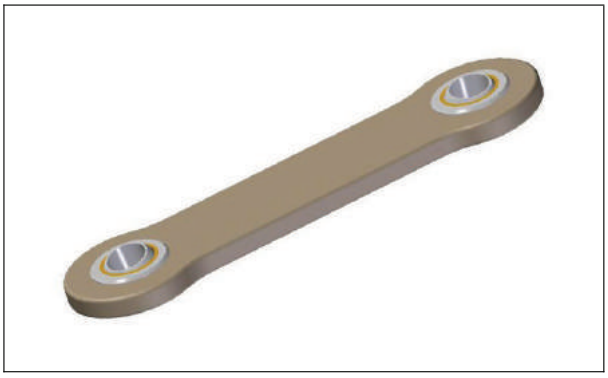


图 13：连杆型杆端关节轴承
Figure13: Joint connecting rod

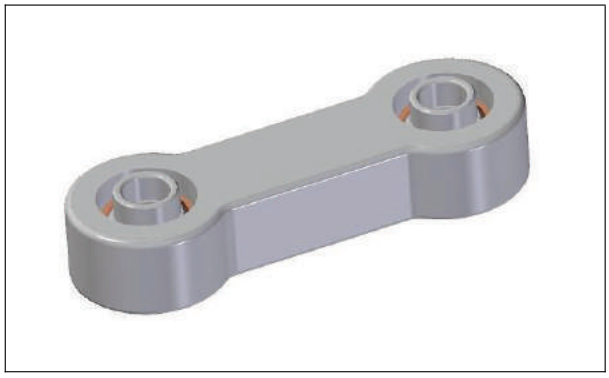


图 14：连杆型杆端关节轴承
Figure14: Joint connecting rod

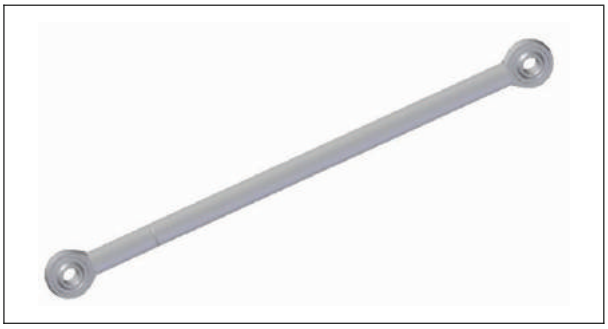


图 15：连杆型杆端关节轴承
Figure15: Joint connecting rod

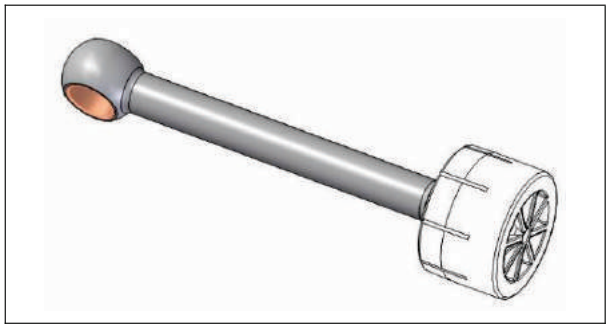


图 16：特殊杆端关节轴承
Figure16: Special rod end

特殊产品
Special products

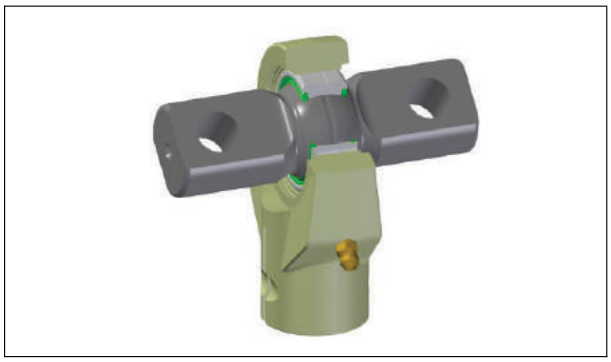


图 17：特殊杆端关节轴承
Figure17: Special rod end

图 18：特殊球头杆端关节轴承
Figure18: Special ball joint rod end

图 19：特殊杆端关节轴承
Figure19: Special rod end

图 20：特殊球头杆端关节轴承
Figure20: Special ball joint rod end

图 21：特殊球头杆端关节轴承
Figure21: Special ball joint rod end

图 22：特殊球头杆端关节轴承
Figure22: Special ball joint rod end

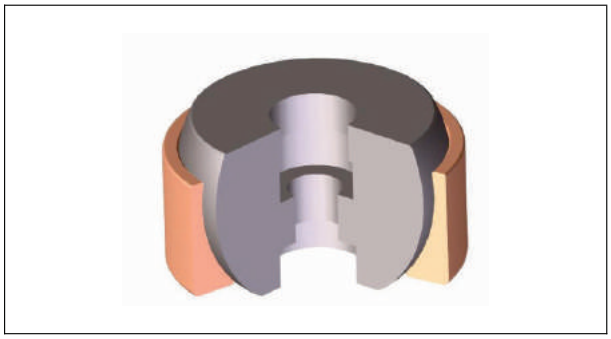


图 23：特殊向心关节轴承
Figure23: Special radial spherical plain bearing

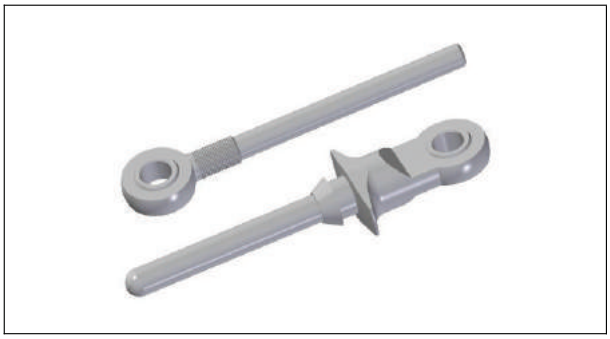


图 24：铝合金杆端关节轴承
Figure24: Aluminium diecast rod ends

特殊产品
Special products

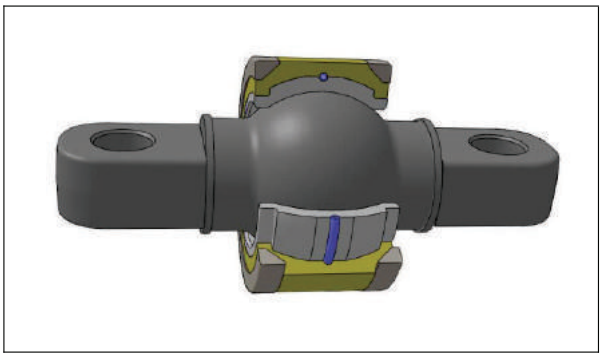


图 25：特殊关节轴承
Figure25: Special spherical plain bearing

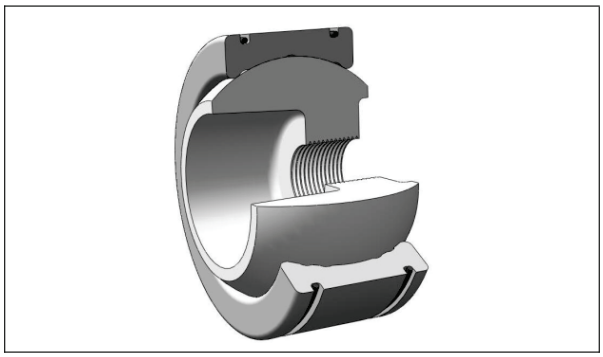


图 26：特殊关节轴承
Figure26: Special spherical plain bearing

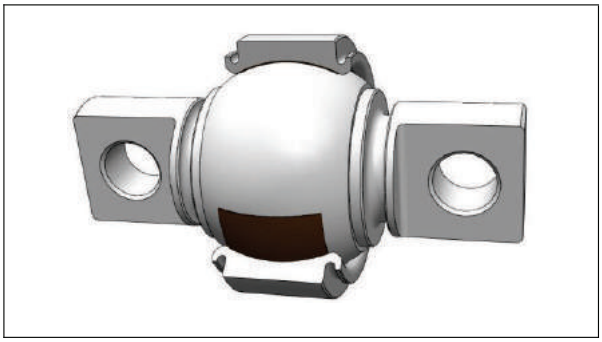


图 27：特殊关节轴承
Figure27: Special spherical plain bearing

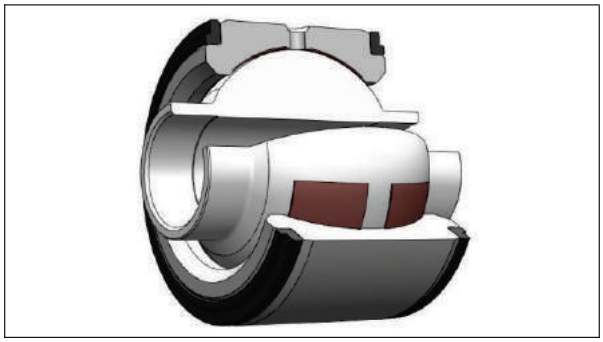


图 28：特殊关节轴承
Figure28: Special spherical plain bearing

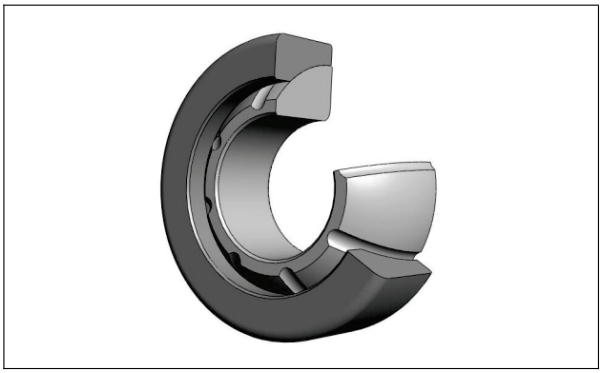


图 29：特殊角接触关节轴承
Figure29: Special angular contact spherical plain bearing

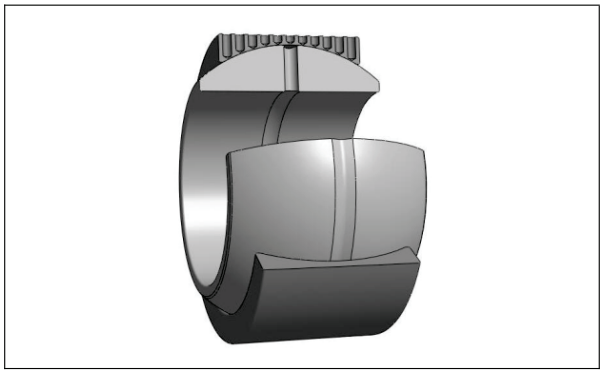


图 30：特殊关节轴承
Figure30: Special spherical plain bearing

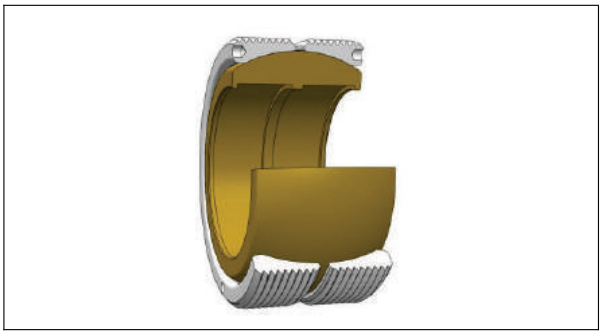


图 31：特殊关节轴承
Figure31: Special spherical plain bearing

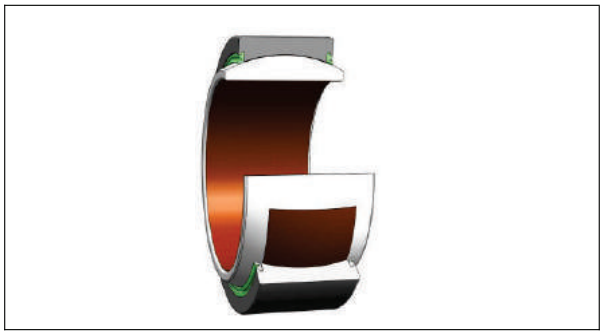


图 32：特殊关节轴承
Figure32: Special spherical plain bearing

特殊产品
Special products

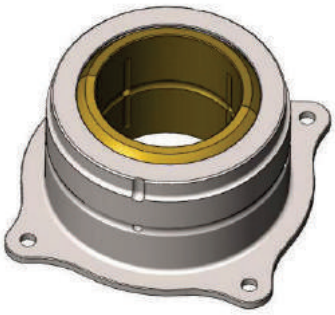


图 33：特殊关节轴承

Figure33: Special spherical plain bearing

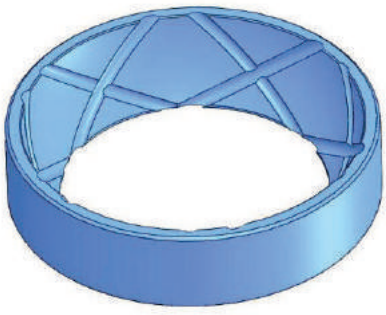


图 34：特殊关节轴承

Figure34: Special spherical plain bearing

图 35：特殊关节轴承

Figure35: Special spherical plain bearing

图 36：特殊关节轴承

Figure36: Special spherical plain bearing

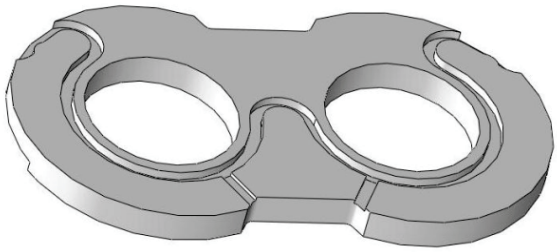


图 37：铝合金侧板

Figure37:Aluminum plate

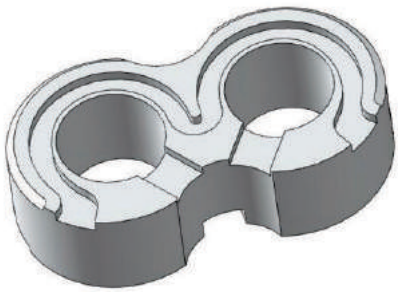


图 38：铝合金侧板

Figure38:Aluminum plate

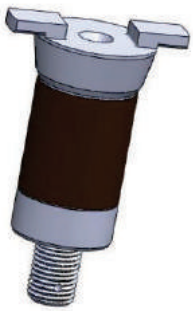


图 39：锥形销

Figure39:Pin

图 40：免维护万向节

Figure40:Maintenance-free universal bearing

关节轴承系列代号对照表

Spherical plain bearings series interchange list

产品类型 Bearing type	LS 系列代号 LS series	内径尺寸范围 Bore diameter range	部分世界知名轴承公司产品系列代号 Other manufacturer series			
			SKF	INA	IKO	RBC
向心关节轴承 Radial spherical plain bearing	GE•••E GE•••ES GE•••ES-2RS	4-12 15-300 15-300	GE•••E GE•••ES GE•••ES-2RS	GE•••DO GE•••DO-2RS	GE•••E GE•••ES GE•••ES-2RS	MB••• MB•••SS
	GEG•••E GEG•••ES GEG•••ES-2RS	4-12 15-280 15-280	GEH•••E GEH•••ES GEH•••ES-2RS	GE•••FO GE•••FO-2RS	GE•••G GE•••GS GE•••GS-2RS	MBH MBH•••-SS
	GEEW•••ES	12-320	GEG•••ES	GE•••LO		MB•••-E
	GEEW•••ES-2RS	20-80	GEM•••ES-2RS	GE•••HO-2RS		MB•••-ESS
	GEZ•••ES GEZ•••ES-2RS	12.7-152.4 19.05-152.4	GEZ•••ES GEZ•••ES-2RS	GE•••ZO GE•••ZO-2RS	SBB SBB•••-2RS	B•••L B•••LSS
	GEGZ•••ES GEGZ•••ES-2RS	31.75-139.7 31.75-139.7	GEZH•••ES GEZH•••ES-2RS			BH•••L BH•••LSS
	GEWZ•••ES GEWZ•••ES-2RS	12.7-152.4 19.05-152.4	GEZM•••ES GEZM•••ES-2RS			B•••EL B•••ELSS
	GEBK•••S	5-30			PB•••	
	GEBJ•••S	5-30				
	GEFZ•••S	4.83-25.4				COM•••
	GEC•••XS GEC•••XS-2RS	320-460		GE•••DO GE•••DO-2RS		
	GEF•••ES	12-150			SB•••A	
	GE•••XS/K	12-150			SB•••	
	GEK•••XS-2RS	25-60			SA3•••A	
自润滑型向心关节轴承 Maintenance-free radial spherical plain bearings	GE•••C	4-30	GE•••C	GE•••UK		
	GEG•••C	4-30	GEH•••C	GE•••FW		
	GEFZ•••C	4.83-25.4				COM•••AT
	GEBJ•••C	5-30				
	GE•••ETL-2RS	15-120	GE•••TXE-2RS	GE•••UK-2RS		MB•••FSS
	GE•••ETL/X	15-60	GE•••TXGR			
	GE•••ETL-2RS/X	15-60	GE•••TXG3E-2RS			
	GE•••XTL-2RS	140-300	GE•••TXA-2RS	GE•••UK-2RS		MB•••LFSS
	GE•••XTL/X	70-200				
	GE•••XTL-2RS/X	70-200	GE•••TXG3A-2RS			
	GEG•••ETL-2RS	15-110		GE•••FW-2RS		
	GEG•••XTL-2RS	110-280				
	GEZ•••ETL-2RS	19.05-152.4				B•••LFSS
	GEC•••HTL	320-460		GE•••DW		
	GEH•••HC	100-630	GEP•••FS			
	GEC•••XTL GEC•••XTL-2RS	320-460				
	GEH•••XTL GEH•••XTL-2RS	100-420				
	GEH•••HTL	100-630				
	GE•••XF/Q	100-300	GEC•••PSA			
	GEC•••XF/Q	320-460	GEC•••PSA			
	GEH•••XF/Q	100-420				
	GEH•••HF/Q	440-630	GEP•••P4S			
角接触关节轴承 Angular contact spherical plain bearing	GAC•••S	25-200		GE•••SX		MB•••SA
	GACZ•••S	12.7-152.4	GAZ•••SA			B•••SA
	GAC•••TL	25-200		GE•••SW		

产品类型 Bearing type	LS 系列代号 LS series	内径尺寸范围 Bore diameter range	部分世界知名轴承公司产品系列代号 Other manufacturer series			
			SKF	INA	THK	AURORA
推力关节轴承 Spherical plain thrust bearing	GX ••• S	10-200		GE ••• AX		
	GX ••• TL	10-200		GE ••• AW		
杆端关节轴承 Rod ends	SA •••E、SA •••ES SAL •••E、 SAL •••ES	5-80	SA •••E、SA •••ES SAL •••E、SAL •••ES	GAR •••DO GAL •••DO		
	SI •••E、SI •••ES SIL •••E、SIL •••ES	5-80	SI •••E、SI •••ES SIL •••E、SIL •••ES	GIR •••DO GIL •••DO		
	SABP •••S SALBP •••S	5-30	SAKAC •••M SALKAC •••M	GAKFR •••PB GAKFL •••PB	POS••• POS•••L	
	SIBP •••S SILBP •••S	5-30		GIKFR •••PB GIKFL •••PB	PHS••• PHS•••L	
	SAZP •••S SALZP •••S	4.83-25.4			POSB••• POSB•••L	MM •••T MB •••T
	SIZP •••S SILZP •••S	4.83-25.4			PHSB••• PHSB•••L	MW •••T MG •••T
	SAZJ ••• SALZJ •••	4.83-19.05				CM ••• CB •••
	SIZJ ••• SILZJ •••	4.83-19.05				CW ••• CG •••
带座、带锁口杆端关节轴承 Hydraulic rod ends	SK •••ES	10-80	SC •••ES	GK •••DO		
	SF •••ES	15-120	SCF •••ES	GF •••DO		
	SIR •••ES SILR •••ES	20-120	SIR •••ES SILR •••ES	GIHR-K •••DO		
	SIGEW •••ES SILGEW •••ES	12-320	SIQG •••ES SILQG •••ES	GIHN-K •••LO		
	SIQ •••E SIQ•••E SILQ •••E SILQ •••ES	12-100		GIHO-K •••DO		
自润滑杆端关节轴承 Maintenance –free rod ends	SA •••C SAL •••C	5-30	SA •••C SAL •••C	GAR •••UK GAL •••UK		
	SI •••C SIL •••C	5-30	SI •••C SIL •••C	GIR •••UK GIL •••UK		
	SA •••ETL-2RS SAL •••ETL-2RS	15-80	SAA •••TXE-2RS SALA ••• TXE-2RS	GAR •••UK-2RS GAL •••UK-2RS		
	SI •••ETL-2RS SIL •••ETL-2RS	15-80	SIA •••TXE-2RS SILA ••• TXE-2RS	GIR •••UK-2RS GIL •••UK-2RS		
	SAJK •••C SALJK •••C	5-30		GAKFR •••PW GAKFL •••PW	POS••• EC POSL•••EC	
	SIJK •••C SILJK •••C	5-30		GIKFR •••PW GIKFL •••PW	PHS••• EC PHSL•••EC	
	SA(L)K•••C SI(L)K •••C	5-20	SIKB •••F SILKB •••F			
球头杆端关节轴承 Ball joint rod ends	SQD •••	5-16			ABS •••	
	SQZ •••-RS	5-22			RBI •••D	
	SQ •••-RS	5-22			RBL •••D	

常用单位转换表
Common Units conversion

度量 Quantity	单位 Units	公制转英制 Metric & Imperial	英制转公制 Imperial & Metric
长度 Length	英寸 Inch	1 mm = 0.03937 in	1 in = 25.40 mm
	英尺 foot	1 m = 3.281 ft	1 ft = 0.3048 m
	码 yard	1 m = 1.094 yd	1 yd = 0.9144 m
	英里 mile	1 km = 0.6214 mile	1 mile = 1.609 km
面积 Area	平方英寸 square inch	1 mm^2 = 0.00155 sq.in	1 sq.in = 645.16 mm^2
	平方英尺 square foot	1 m^2 = 10.76 sq.ft	1 sq.ft = 0.0929 m^2
体积 Volume	立方英寸 cubic inch	1 cm^3 = 0.061 cub.in	1 cub.in = 16.387 cm^3
	立方英尺 cubic foot	1m^3 = 35.315 cub.ft	1 cub.ft = 0.02832 m^3
	英国加仑 imperial gallon	1 L = 0.22 gallon	1 gallon = 4.5461 L
	美国加仑 U.S.gallon	1 L = 0.264 U.S.gallon	1 U.S.gallon = 3.7854 L
速度 Velocity / speed	英尺/秒 foot per second	1m/s = 3.28 ft/s	1 ft/s = 0.30480 m/s
	英里/小时 mile per hour	1km/h=0.6214 mile/h(mph)	1 mile/h(mph) = 1.609km/h
质量 Mass	盎司 ounce	1 g = 0.03527 oz	1 oz = 28.350g
	英镑 pound	1kg = 2.205 lb	1 lb = 0.45359kg
	美吨 short ton	1 tonne = 1.1023 short ton	1 short ton = 0.90718 tonne
	英吨 long ton	1 tonne = 0.9842 long ton	1 long ton = 1.0161 tonne
密度 Density	磅/立方英寸 pound per cubic inch	1 g/cm^3 = 0.0361 lb/cub.in	1 lb/cub.in = 27.680 g/cm^3
力 Force	磅力 pound-force	1 N = 0.2248 lbf	1 lbf = 4.4482 N
压力 Pressure / stress	磅/平方英寸 pound per square inch	1MPa = 145 psi	1 psi = 6.8948x10^3 Pa
力矩 Moment	磅 • 英寸 inch pound-force	1Nm = 8.85 in.lbf	1 in.lbf = 0.113 Nm
功率 Power	英尺磅/秒 foot-pound per second	1 W =0.7376 ft lbf/s	1 ft lbf/s = 1.3558W
	马力 horsepower	1 kW = 1.36 HP	1 HP = 0.736W
温度 Temperature	度 degree	℃ $t_c = 0.555(t_F - 32)$	℉ $t_F = 1.8\ t_c + 32$

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