



CATALOGUE



CERTIFICATION

Quality Management System

Certificate of Approval

This is to certify that the QMS of

M/S IKL BEARINGS INDIA PRIVATE LIMITED

HNO. 286, GORUND FLOOR, NTI LAYOUT, 12TH MAIN, VIDYARANYA PURA
BANGALORE, 560097., India

Has been assessed and found to meet the requirements of

ISO 9001:2008

This certificate is valid for the following scope of operations:

**Manufacturing, Procurement & Distribution of all
Types of Bearings**

Authorised by:

**RN Cooke
Chief Executive**

Date of Certificate Issue: 12 March 2016

Certificate Valid Until: 11 March 2017

Recertification audit before 15 February 2019. Certified since 12 March 2016.

This certificate is the property of QEC Certification and remains valid
subject to satisfactory annual Surveillance audits.

SN Registrars (Holdings) Limited

Registration House, 22b Church Street,
Rushden, Northamptonshire,
NN10 9YT, UK
Tel: +44 (0) 1933 383261
Email: info@qec.co.uk
Web: www.qec.co.uk
Company number: 07659067

Certificate Number: QEC 22387509/17/Q



IKL je osnovan 10.7.1948. od vlade Jugoslavije kao «Industrija kugličnih i valjkastih ležaja». To je bilo prvo državno preduzeće za proizvodnju ležaja u zemlji. Preduzeće je osnovano u veoma teškoj ekonomskoj situaciji, nekoliko godina posle kraja 2. svetskog rata, u vreme ratom opustošene privrede i ekonomske blokade sa istoka i zapada.

Prve mašine su dobijene iz reparacije. Za prvih 6 meseci obučeno je 69 radnika za proizvodnju ležaja, koja je počela 1949. Prvi proizvedeni ležaji su bili 6204, 6306 and 6307.

Prva faza razvoja je trajala do 1955. kada se beleži veliki rast proizvodnje.

Od 1958 do 1962. se nabavljaju nove mašine i izgrađuje nova proizvodna hala koja omogućava dalji rast fabrike.

1968. menja ime u «Industrija kotrljajućih ležaja»

IKL je prema svojim proizvodnim kapacitetima prilagodio proizvodni program svim korisnicima kotrljajućih ležaja. IKL proizvodi, pored standardnih ležaja, i specijalne ležaje za automobile, poljoprivredne mašine, elektromotore, itd.

IKL sve tipove ležaja proizvodi u svim konstruktivnim izvođenjima i povišenim kvalitetima.

IKL, osim što proizvodi i prodaje ležaje, nudi tehničku pomoć i savete za ugradnju kao i predloge ili rešenja za konkretne probleme izbora ležaja.

IKL is founded on 10.7.1948. by government of Yugoslavia as «Industry of ball and roller bearings». It was the first state-owned company for production of bearings in the country. The company was founded in a very difficult economic situation, a few years after the end of the 2nd World War II, during the war-torn economy and the economic blockade of the east and west.

The first machines were obtained from reparations. For the first 6 months 69 workers are trained for bearings production, which began in 1949. First manufactured bearings were 6204, 6306 and 6307.

The first phase of development took up in 1955 when it recorded a growth of production.

From 1958 to 1962 IKL purchased new equipment and built new production hall that allows further growth of the plant.

In 1968 changing its name to «Industry of rolling bearings».

IKL has adjusted production program according to their production capacity to all users of rolling bearings. IKL produces, in addition to standard bearings, and special bearings for automobile, agricultural machinery, electric motors, etc..

IKL produces all types of bearing in all constructive performance and high qualities.

IKL, except that manufactures and sells bearings, provides technical assistance and advice for the installation as well as suggestions or solutions to specific problems of choice of bearings.

IKL je 1949. proizveo 1.6 t ležaja što je tada pokrivalo samo 1% tadašnjih potreba, dok je 1979. proizvedeno 5500 t što je činilo 50% potreba (oko 1 kamion dnevno).

U izvoz je išlo 15 % proizvodnje. IKL se specijalizovao u proizvodnji jednorednih kugličnih ležaja serija 60, 62 i 63 u svim modifikacijama i izvođenjima što se tiče funkcionalnosti, ugradnje i kvaliteta, jednorednih i dvorednih kugličnih specijalnih ležaja za automobile i poljoprivredne mašine.

1970. počinja saradnja sa SKF, a 1975. godine posle rekonstrukcije i proširivanja kapaciteta (fabrika ima 5000 kvadratnih metara), osvajanja konstrukcije i tehnologije SKF-a i proizvodnja novih tipova ležaja sa novim mašinama iz SKF-a. Novi tipovi ležaja su za elektroindustriju i eksploataciju, ležaji dobijaju Q6 nivo kvaliteta, proizvode se ležaji povišene tačnosti P4, P5 i P6, visokoturažni ležaji, itd.

Ovo je omogućilo da IKL snabdeva sve fabrike u Jugoslaviji i da izvozi (Italija, SAD, Poljska, SSSR, Španija, Grčka, Portugal, Egipat). IKL je bez problema prodavao sve što proizvede.

U junu 1978. IKL je sa 25 organizacija potpisao

U junu 1978. IKL je sa 25 organizacija potpisao Sporazum o saradnji što je omogućilo potpuno sagledavanje potreba domaćeg tržišta, a već 1979. godine IKL ostvaruje 37 % veću proizvodnju kao rezultat sprovođenja Sporazuma.

Zbog većeg zadovoljenja potreba tržišta, IKL donosi odluku o izgradnji nove Fabrike ležaja u Barajevu, pored Beograda (22000 kvadratnih metara, počela da radi 1983.), koja je projektovana za proizvodnju 20.5 miliona ležaja manjih gabarita, Fabrike kuglica i kaveza u Bajinoj Bašti, i manje fabrike u Prijepolju.

U tome periodu je izvršena zamena stranih zaptivača za domaće, a cevi, šipke i žice su nabavljane od domaćih željezara. Time je praktično IKL koristio sve kvalitetne sirovine domaćeg porekla i iz Ukrajine.

IKL zapošljava 2500 radnika, od toga je oko 350 radnika zaposleno u Barajevu.

Od 1980. promet IKL nastavlja sa raste po stopi od 2-3 % godišnje i dostiže cifru od 100 miliona dolara.

Kao posledica raspada bivše Jugoslavije, proces restrukturiranja ozbiljno počinje 2008.god. Većina zainteresovanih radnika je odlučila da zadrži IKL brend što je dovelo do usvajanja nove strategije razvoja.

Sada je IKL grupa visoko kvalifikovanih profesionalaca koji su fokusirani na širenje na svetskom tržištu. Od 2010. nekoliko filijala je osnovano pod IKL-ovim imenom: IKL Global FZE (UAE) – čvorište za snabdevanje ležaja brenda IKL za azijske zemlje (Vijetnam, Indija, Bangladeš, Irak), IKL Innovations (Belorusija) – centar za istraživanje i razvoj ležaja, posebno izolovanih ležaja i ležaja za visoke vibracije, IKL Bearings India Pvt Ltd – promocija IKL ležaja u Indiji i buduće proizvodno čvorište za ležaje za visoke vibracije u Indiji, IKL International (SAD) – koordinacija globalnog širenja IKL proizvoda, Bearing Trade House (BTH/IKL) (Bugarska) – nezavisni centar za testiranje odobren od Evropske Unije za različite testove ležaja, VTL (IKL) (Srbija) – tehnička podrška i promocija, briga o klijentima.

Srećni smo što možemo da podelimo iskustvo i znanje sa našim kupcima o našim kvalitetnim proizvodima.

IKL – «Industija kotrljajućih ležaja» – ležaji sa poštenom kombinacijom kvalitet-usluga-cena: nova filozofija u industriji ležaja. IKL znači Inovacija-ka-lojalnosti.

IKL produced in 1949. 1.6 t of bearings which then covered only 1 % needs, while in 1979. produced 5500 t, which covered for 50% of the demand (about one truck per day).

The export went 15% of production. IKL has specialized in the production of single row ball bearings series 60, 62 and 63 in all modifications and types as far as functionality, installation and quality, one-row and two-row ball bearings for special vehicles and agricultural machinery.

In 1970 begins cooperation with SKF, and in year 1975 after the reconstruction and expansion of capacity (factory has 5,000 square meters), the conquest of SKF design and technology and production of new types of bearings with new machines from SKF. New types of bearings are for electrical industry and exploitation, bearings receive Q6 level of quality, there are bearings of high accuracy P4, P5 and P6, high-rev bearings, etc.

This allowed the IKL is supplying all factories in

Yugoslavia and to export (Italy, USA, Poland, USSR, Spain, Greece, Portugal, Egypt). IKL has no problem to sell all it can produce.

In June 1978 IKL, with 25 organizations, signed a cooperation agreement which allowed a complete understanding of the needs of the domestic market, and already in 1979. IKL achieves 37 % higher production as a result of the implementation of the Agreement .

Due to higher meet the needs of the market, IKL makes a decision on the construction of the new plant bearings in Barajevo near Belgrade (22000 square meters, started working in 1983.), which is designed to produce 20.5 million bearings smaller footprint, Factory for balls and cages in Bajina Basta, and small Factory in Prijepolje

In this period, the replacement of foreign seals for domestic is done, and tubes, rods and wires are procured from domestic steel mills. Practically, IKL used all the quality raw materials of domestic origin and Ukraine .

IKL employs 2500 workers, out of which about 350 workers employed in Barajevo.

From 1980 IKL turnover continues to grow at a rate of 2-3 % per year reaching the figure of 100 million dollars. Since 2008 the restructuring process has started because of breaking down former Yugoslavia. But key personal was interested to keep the IKL brand alive therefore new strategy of development of IKL was adopted.

At present IKL is a team of high skilled professionals focusing on expanding globally. Since 2010 the following subsidiaries were established under IKL name: IKL Global FZE (UAE) – as hub for supply of IKL Brand bearings to Asian Countries (Vietnam, India, Bangladesh, Iraq), IKL Innovations (Belarus) – as research and development center for bearings and particular insulated bearings and vibrating screen bearings, IKL Bearings India Pvt Ltd – for marketing of IKL bearings In India and further manufacturing hub for vibrating screen bearings in India, IKL International (USA) – for co-ordination of global expanding of IKL products, Bearing Trade House (BTH/IKL) (Bulgaria)– independent testing center approved by European Union for different tests of bearings, VTL (IKL) (Serbia) – technical support and promotion, customer's care.

We are happy to share our experience and knowledge about our quality products with our customers.

IKL - «Industrija kotrljajućih ležaja» – bearings with fair combination of quality – service – price: new philosophy in bearing industry. IKL means Innovation - knowledge - loyalty.

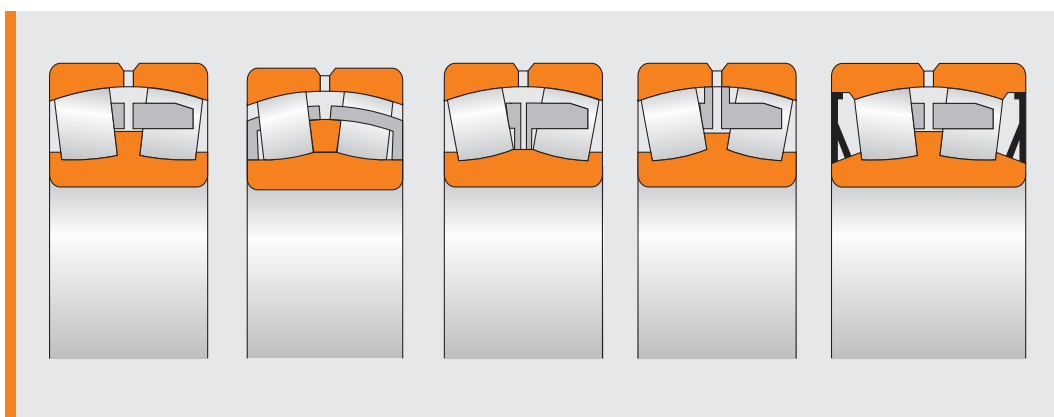
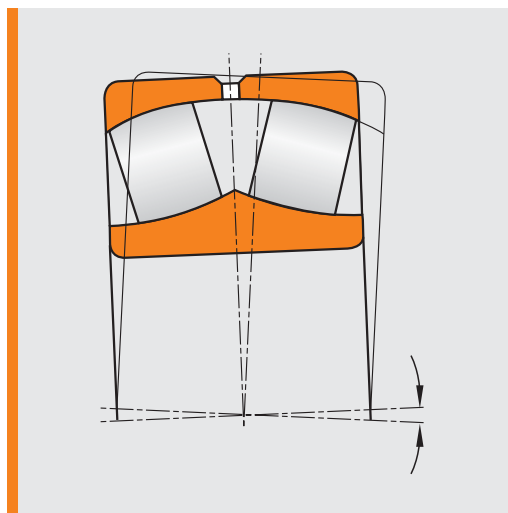
Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings

Double row spherical roller bearings have two rows of spherical rollers with common spherical raceway in outer ring. This internal bearing design enables mutual tilting of rings. Under load the spherical roller in some designs rest by their facial surface on fixed or floating center rib, guiding the rollers. Double row spherical roller bearings are not easily separable and are being mounted as a complete unit. They can accommodate great radial and simultaneously also axial loads in both directions. Double row spherical roller bearings have either cylindrical or tapered bore and are produced with machined brass cage (M) or with steel sheet cage (J).





Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings

Tapered bore

Spherical roller bearings of most series are also available with a tapered bore (taper 1:12). Bearings with a tapered bore are usually fastened on the shaft by means of adapter sleeves or withdrawal sleeves.

Bearings with a tapered bore can be mounted directly onto a tapered shaft seat. When mounting these bearings a defined radial clearance can be set.

Bearing materials

The performance of a rolling bearing is highly influenced by the material which is used. The material of rings and rolling elements for rolling bearings is normally a low-alloy, through hardening chromium steel.

Lubricating groove, lubricating holes

Spherical roller bearings have a lubricating groove and three lubricating holes in the outer ring to simplify lubrication. The bearings have the suffix W33.

Pressed cages

Pressed cages are usually made of sheet. When compared with machined cages of metal they are advantageous in that they are lighter in weight.

Bearings with a pressed cage have no cage suffix.

Solid cages

Machined cages of metal are used when requirements in cage strength are strict and temperatures are high.

Solid cages are also used when lip guidance is required.



Gage design

Main functions of the cage:

- Separation of rolling elements to keep friction and heat development at a minimum.
- Keeping rolling elements at equal distances for uniform load distribution.
- Retaining rolling elements in separable bearings in bearings which are swiveled out.
- Guiding rolling elements in the unloaded zone of the bearing.

Rolling bearing cages are subdivided into pressed cages and solid cages.

Another distinguishing feature of the cages is the type of guidance. Most cages are guided by the rolling elements and have no suffix for the type of guidance. Those guided by the inner ring have the suffix B.

When operating conditions are normal usually the cage design is taken which serves as the standard cage.



Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings

Groove and Lubricating Holes on Outer Ring

When double row spherical roller bearings are provided with a groove on perimeter and with three lubricating holes (W33), eventually three lubricating holes only (W20), the lubricant can be fed straight into the bearing between two spherical roller rows. This enables to achieve better lubrication and higher operating reliability.

Tolerance

Double row spherical roller bearings are commonly manufactured in normal tolerance class PO. This symbol is not shown in bearing designation. Manufacture of bearings of higher tolerance class should be negotiated with the manufacturer. Limiting deviation values of dimensions and run tolerances are shown in ISO 492.

Radial Clearance

Currently manufactured double row spherical roller bearings are of normal radial clearance, which is not shown in bearing designation. On client's request for special purpose arrangements these bearings may be manufactured with radial clearance C2 (lesser than normal) or with radial clearance C3, C4 or C5 (greater than normal). Clearances values are shown in the next tables.



Spherical Roller Bearings with Cylindrical Bore

Bore diameter d		Radial internal clearance									
		C2		Normal		C3		C4		C5	
		over	incl.	min	max	min	max	min	max	min	max
18	24	10	20	20	35	35	45	45	60	60	75
24	30	15	25	25	40	40	55	55	75	75	95
30	40	15	30	30	45	45	60	60	80	80	100
40	50	20	35	35	55	55	75	75	100	100	125
50	65	20	40	40	65	65	90	90	120	120	150
65	80	30	50	50	80	80	110	110	145	145	185
80	100	35	60	60	100	100	135	135	180	180	225
100	120	40	75	75	120	120	160	160	210	210	260
120	140	50	95	95	145	145	190	190	240	240	300
140	160	60	110	110	170	170	220	220	280	280	350
160	180	65	120	120	180	180	240	240	310	310	390
180	200	70	130	130	200	200	260	260	340	340	430
200	225	80	140	140	220	220	290	290	380	380	470
225	250	90	150	150	240	240	320	320	420	420	520
250	280	100	170	170	260	260	350	350	460	460	570
280	315	110	190	190	280	280	370	370	500	500	630
315	355	120	200	200	310	310	410	410	550	550	690
355	400	130	220	220	340	340	450	450	600	600	750
400	450	140	240	240	370	370	500	500	660	660	820
450	500	140	260	260	410	410	550	550	720	720	900
500	560	150	280	280	440	440	600	600	780	780	1 000
560	630	170	310	310	480	480	650	650	850	850	1 100
630	710	190	350	350	530	530	700	700	920	920	1 190
710	800	210	390	390	580	580	770	770	1 010	1 010	1 300
800	900	230	430	430	650	650	860	860	1 120	1 120	1 440
900	1 000	260	480	480	710	710	930	930	1 220	1 220	1 570

Spherical Roller Bearings with Taper Bore

Bore diameter d		Radial internal clearance									
		C2		Normal		C3		C4		C5	
		over	incl.	min	max	min	max	min	max	min	max
24	30	20	30	30	40	40	55	55	75	-	-
30	40	25	35	35	50	50	65	65	85	85	105
40	50	30	45	45	60	60	80	80	100	100	130
50	65	40	55	55	75	75	95	95	120	120	160
65	80	50	70	70	95	95	120	120	150	150	200
80	100	55	80	80	110	110	140	140	180	180	230
100	120	65	100	100	135	135	170	170	220	220	280
120	140	80	120	120	160	160	200	200	260	260	330
140	160	90	130	130	180	180	230	230	300	300	380
160	180	100	140	140	200	200	260	260	340	340	430
180	200	110	160	160	220	220	290	290	370	370	470
200	225	120	180	180	250	250	320	320	410	410	520
225	250	140	200	200	270	270	350	350	450	450	570
250	280	150	220	220	300	300	390	390	490	490	620
280	315	170	240	240	330	330	430	430	540	540	680
315	355	190	270	270	360	360	470	470	590	590	740
355	400	210	300	300	400	400	520	520	650	650	820
400	450	230	330	330	440	440	570	570	720	720	910
450	500	260	370	370	490	490	630	630	790	790	1 000
500	560	290	410	410	540	540	680	680	870	870	1 100
560	630	320	460	460	600	600	760	760	980	980	1 230
630	710	350	510	510	670	670	850	850	1 090	1 090	1 360
710	800	390	570	570	750	750	960	960	1 220	1 220	1 500
800	900	440	640	640	840	840	1 070	1 070	1 370	1 370	1 690
900	1 000	490	710	710	930	930	1 190	1 190	1 520	1 520	1 860

Sferno-valjkasti ležaji - dvoredni

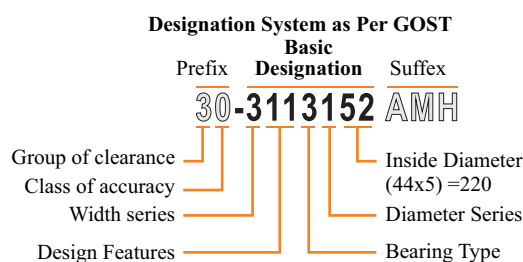
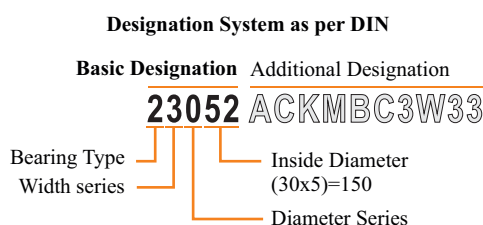
Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings

Designation System

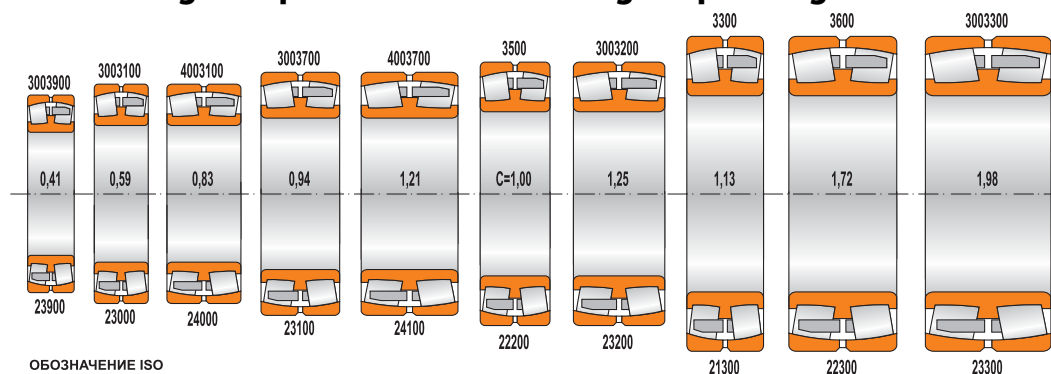
All bearings supplied for export under IKL brand must have international designation. International designation may have prefix, basic designation and suffix. The description of prefix, basic designation and suffix are given below. Also IKL bearings may have designation as per GOST.



Additional designations (suffix)

- M - machined brass cage (two pieces cage)
- MA - cage centered on outer ring (vibrating screen bearing)
- K - taper bore (1:12)
- K30 - taper bore (1:30)
- C1, C2, C3 - groups of radial clearance
- S1, S2, S3 - special stabilization for high temperature application
- W33 - special lubrication grooves on outer ring

Load Ratings of Spherical Roller Bearings depending of Width Series



Preparation for mounting and dismounting

Cleaning contaminated

Petroleum ether, petroleum, ethyl alcohol, dewatering fluids, aqueous neutral and alkaline cleaning agents can be used to clean rolling bearings. It should be remembered that petroleum, petroleum ether, ethyl alcohol and dewatering fluids are inflammable and alkaline agents are caustic.

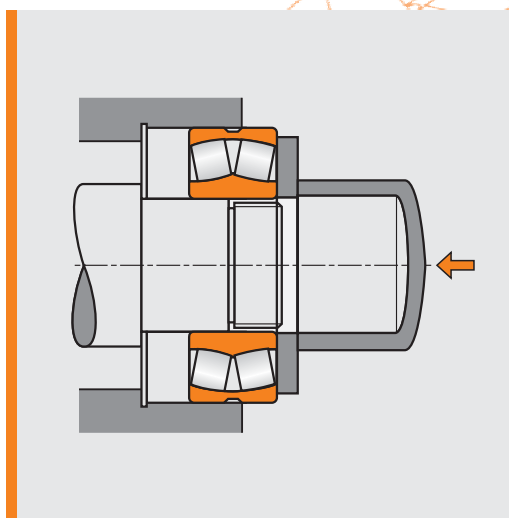
Paint brushes, brushes or lint-free cloths should be used for cleaning. Immediately after cleaning and the evaporation of the solvent, which should be as fresh as possible, the bearings must be preserved in order to avoid corrosion.

Rolling bearings are heavy-duty machine elements with high precision. In order to fully utilize their capacity, mounting and dismounting should be taken into consideration when selecting the bearing type and design and when designing the surrounding structure. For the rolling bearings to reach a long service life, the use of suitable mounting aids as well as utmost cleanliness and care at the assembly site are essential requirements.

Mounting bearings with cylindrical bore

Blows with the hammer applied directly to the bearing rings must be avoided completely. In the case of non-separable bearings the mounting forces are applied to the ring which is to have a tight fit and which is first mounted. The rings of separable bearings however, can be mounted individually.

Bearings with a maximum bore of approximately 80 mm can be mounted cold. The use of a mechanical or hydraulic press is recommended.



Groove and Lubricating Holes on Outer Ring Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings

Should no press be available, the bearing can be driven on with hammer and mounting sleeve.

For self-aligning bearings, misalignment of the outer ring can be avoided by means of a disk which abuts both bearing rings.

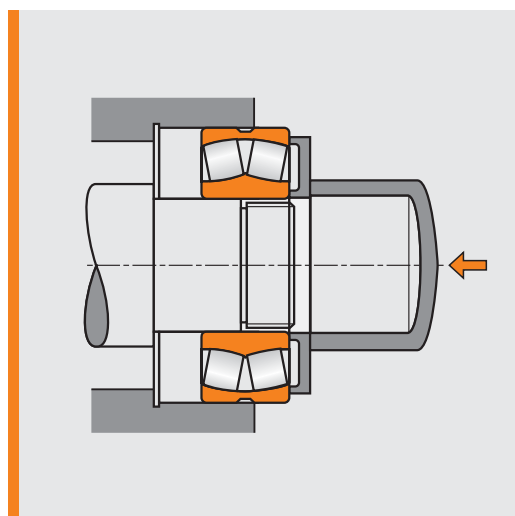
Bearings with a cylindrical bore for which tight fits on a shaft are specified and which cannot be pressed mechanically onto the shaft without great effort, are heated before mounting.

Bearings of all sizes and types can be heated in an oil bath.

The bearings are placed on a grate or hung up for them to heat uniformly.

Individual bearings can be heated provisionally on an electric heating plate. The bearing is covered with a metal sheet and turned several times.

A safe and clean method of heating rolling bearings is to use a thermostatically controlled hot air or heating cabinet. It is used mainly for small and medium-sized bearings. The heat-up times are relatively long. Induction heating devices are particularly suitable for fast, safe and clean heating.

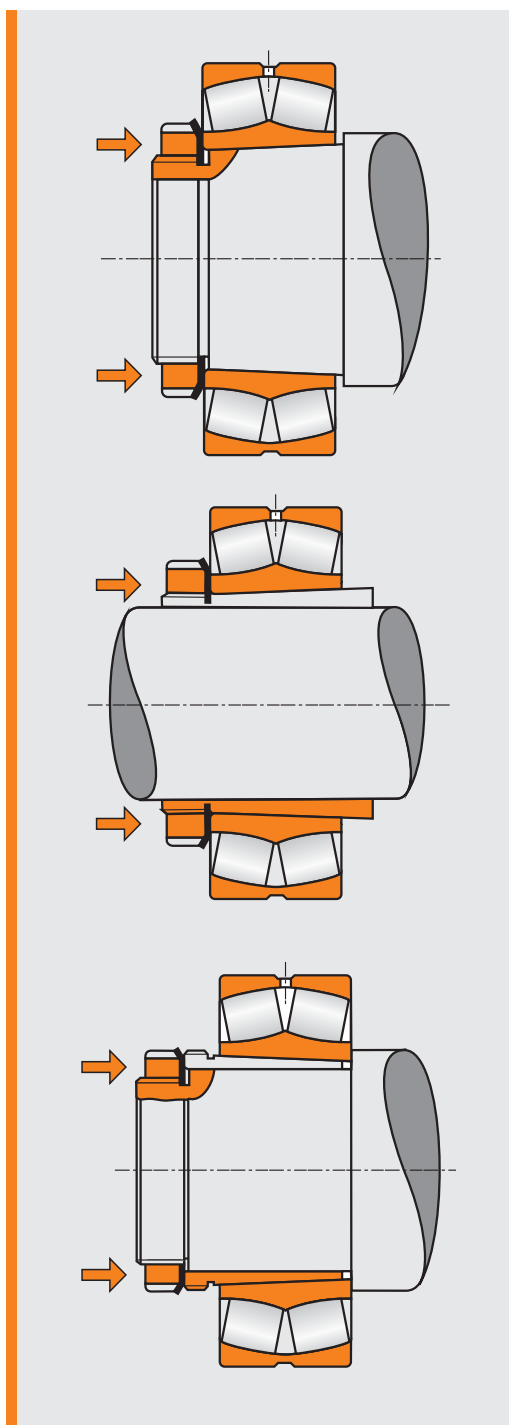
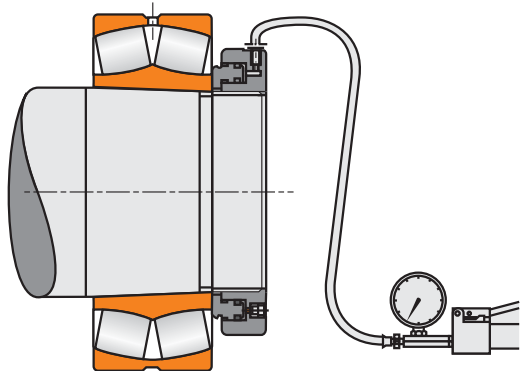


Mounting tapered bore bearings

Rolling bearings with a tapered bore are either fitted directly onto the tapered shaft seat or onto a cylindrical shaft with an adapter sleeve or a withdrawal sleeve. The resulting tight fit of the inner ring is measured by checking the radial clearance reduction due to the expansion of the inner ring or by measuring the axial drive-up distance.

Small bearings (up to approx. 80 mm bore) can be pressed with a lockout onto the tapered seat of the shaft or the adapter sleeve. A hook spanner is used to tighten the nut.

It is advisable to use a hydraulic press for driving-up larger bearings or pressing them onto the sleeve.



Sferno-valjkasti ležaji - dvoredni

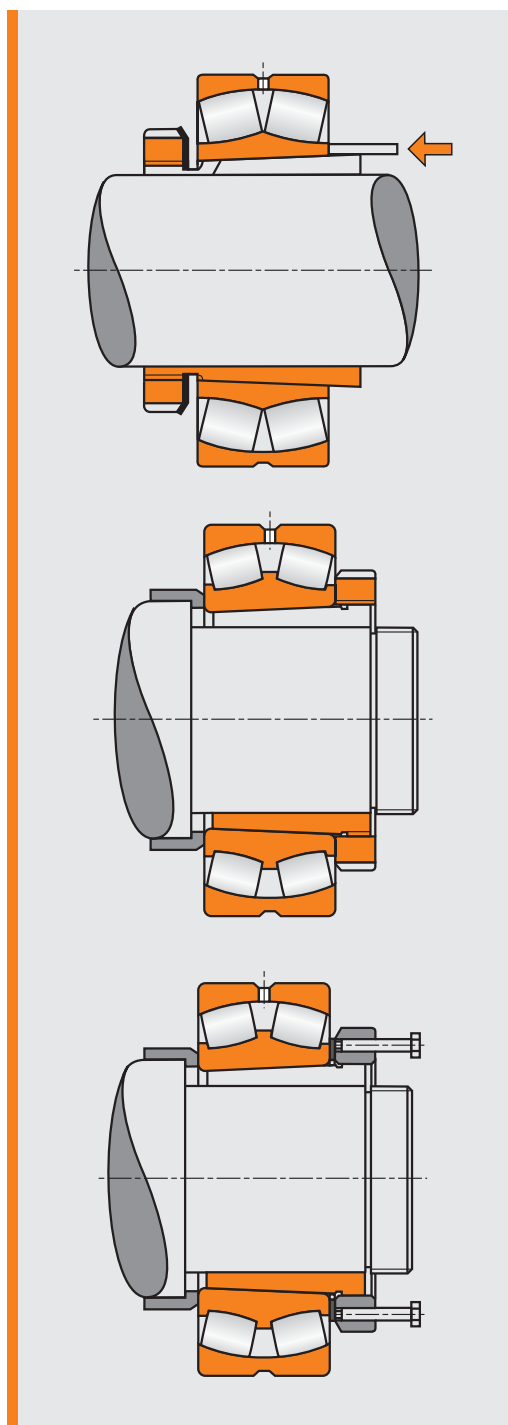
Dismounting bearings with cylindrical bore

If the bearings are to be used again the extraction tool should be applied to the tightly fitted bearing ring. With non-separable bearings one should proceed as follows: if the outer ring is tightly fitted, the bearing and the housing are removed from the shaft and then the bearing is extracted from the housing by pressing off the outer ring. If the inner ring is tightly fitted, the shaft with the bearing is removed from the housing and then the inner ring is pressed off.

Mechanic extractors or hydraulic presses are suitable for extracting small bearings. Dismounting is facilitated when there are extraction slots on the shaft and housing. The extraction tool can then be applied directly to the tightly-fitted ring.

Induction heating devices are chiefly used for extracting the shrunk-on inner rings of cylindrical roller bearings. Heating occurs rapidly and the rings easily loosen without much heat reaching the shaft.

The bearings can also be pressed off cylindrical seats with the aid of the hydraulic method.



Dismounting bearings with tapered bore

When the bearings are directly on the tapered seat or an adapter sleeve, the locking device of the shaft or sleeve nut is loosened first. The nut is then turned back by the amount corresponding to the drive-up distance. The inner ring is then driven off the sleeve or the shaft by means of a hammer and piece of tubing. When a press is used the adapter sleeve is supported and the bearing pressed off.

Withdrawal sleeve mounted bearings are removed by means of the extraction nut. High forces are required for large-size bearings.

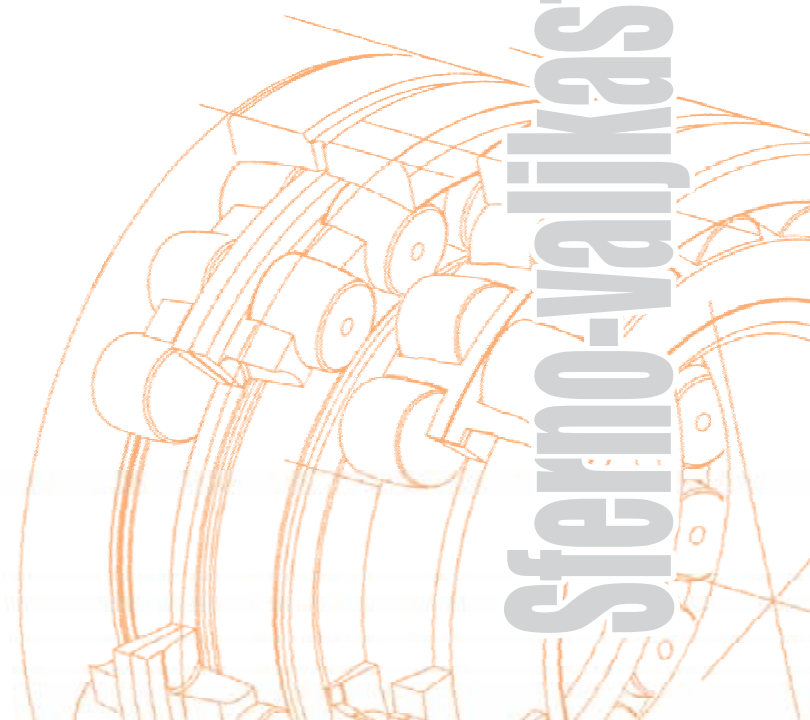
The dismounting of withdrawal sleeves is much easier and more cost-effective with hydraulic nuts.

The hydraulic method is applied to facilitate the dismounting of large-size bearings.

Dismounting of large-size bearings is facilitated when the hydraulic device is applied.

Oil is injected between the mating surfaces and enables the mating parts to be moved separately without risking surface damage. Large adapter and withdrawal sleeves already have the necessary grooves and bores. The required oil pressure has to be generated with a pump. For tapered bore bearings, oil has just to be pressed between the mating surfaces. Since the press fit is released abruptly, a stop such as a nut should be provided to control the movement of the bearing.

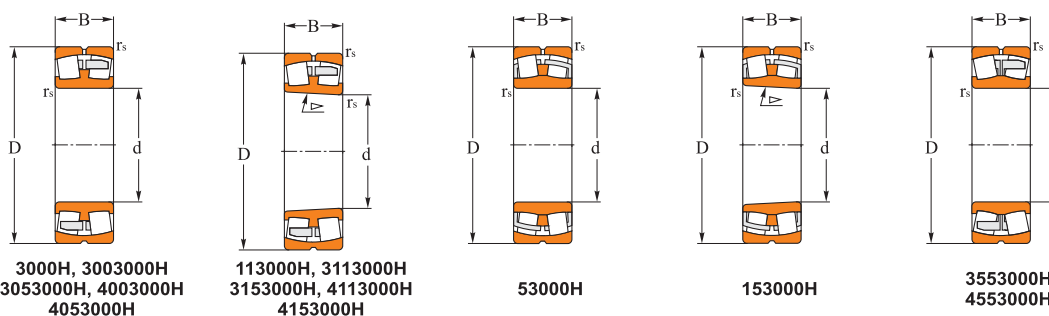
Sferno-valjkasti ležaji - dvoredni



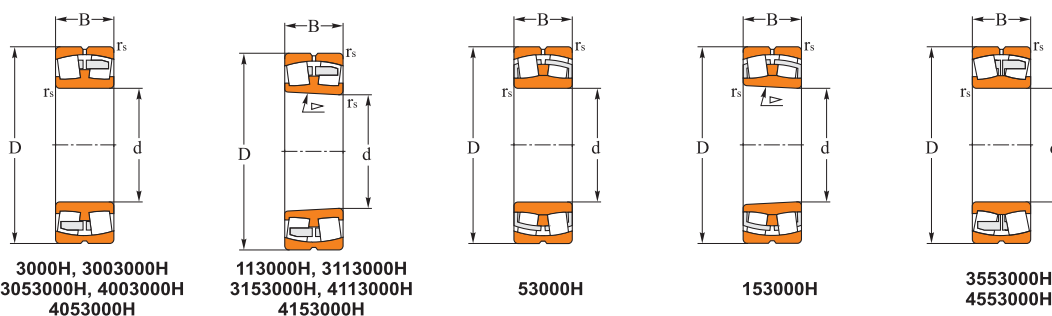
Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings



Dimensions, mm Glavne dimenzije			Calculating factor Koefficienti				Load ratings, kN		Limiting speed, min ⁻¹ (lubricant)		Mass, kg	GOST designation (National Standard)	Designation by IKL
d	D	B	e	Y	Y ₀	Y ₁	C	C ₀	Grease	Oil	Masa	Oznaka GOST	Oznaka IKL
70	150	51	0,37	1,82	2,71	1,78	400	430	2400	3200	4,35	3614AH	22314MW33
	150	51	0,37	1,82	2,71	1,78	400	460	2400	3200	4,27	113614AH	22314KMW33
75	160	55	0,36	1,85	2,76	1,81	440	475	2200	3000	5,30	3615AH	22315MW33
	160	55	0,36	1,85	2,76	1,81	440	475	2200	3000	5,14	113615AH	22315KMW33
80	170	58	0,36	1,88	2,81	1,84	490	540	2000	2800	6,24	3616AH	22316MW33
	170	58	0,36	1,88	2,81	1,84	490	540	2000	2800	6,09	113616AH	22316KMW33
85	150	36	0,26	2,65	3,94	2,59	285	325	2800	3600	2,70	3517AH	22217MW33
	150	36	0,26	2,65	3,94	2,59	285	325	2800	3600	2,60	113517AH	22217KMW33
	180	60	0,37	1,84	2,74	1,8	550	620	1900	2600	7,65	3617AH	22317MW33
	180	60	0,37	1,84	2,74	1,8	550	620	1900	2600	7,60	113617AH	22317KMW33
90	160	40	0,25	2,73	4,06	2,67	325	375	2600	3400	3,44	3518AH	22218MW33
	160	40	0,25	2,73	4,06	2,67	325	375	2600	3400	3,37	113518AH	22218KMW33
	190	64	0,37	1,83	2,72	1,78	610	695	1900	2600	8,87	3618AH	22318MW33
	190	64	0,37	1,83	2,72	1,78	610	695	1900	2600	8,67	113618AH	22318KMW33
95	170	43	0,25	2,69	4,01	2,63	380	450	2400	3200	3,91	3519AH	22219MW33
	170	43	0,25	2,69	4,01	2,63	380	450	2400	3200	3,71	113519AH	22219KMW33
	200	67	0,35	1,94	2,89	1,9	670	765	1700	2200	9,79	3619AH	22319MW33
	200	67	0,35	1,94	2,89	1,9	670	765	1700	2200	9,31	113619AH	22319KMW33
100	180	46	0,25	2,67	3,97	2,61	425	490	2200	3000	4,60	3520AH	22220MW33
	180	46	0,25	2,67	3,97	2,61	425	490	2200	3000	4,50	113520AH	22220KMW33
	180	60,3	0,35	1,92	2,86	1,88	475	600	1900	2600	6,93	3003220AH	23220MW33
	180	60,3	0,35	1,92	2,86	1,88	475	600	1900	2600	6,75	3113220AH	23220KMW33
	215	73	0,37	1,81	2,7	1,77	815	950	1700	2200	12,80	3620AH	22320MW33
	215	73	0,37	1,81	2,7	1,77	815	950	1700	2200	12,70	113620AH	22320KMW33
110	200	53	0,28	2,43	3,62	2,38	560	640	2000	2800	7,10	3522AH	22222MW33
	200	53,8	0,28	2,43	3,62	2,38	560	640	2000	2800	6,95	113522AH	22222KMW33
	200	69,8	0,36	1,89	2,82	1,85	600	765	1600	2000	9,90	3003222AH	23222MW33
	200	69,8	0,36	1,89	2,82	1,85	600	765	1600	2000	9,75	3113222AH	23222KMW33
	240	80	0,37	1,83	2,72	1,79	950	1120	1500	1900	17,76	3622AH	22322MW33
	240	80	0,37	1,83	2,72	1,79	950	1120	1500	1900	17,25	113622AH	22322KMW33



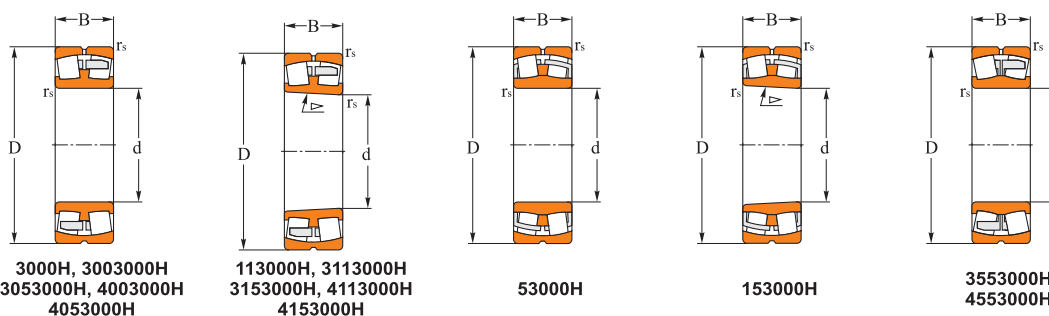
Dimensions, mm Glavne dimenzije			Calculating factor Koeficijenti			Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka IKL
d	D	B	e	Y	Y ₀	C	C ₀					
120	180	46	0,26	2,61	3,89	355	510	2000	2800	4,41	3003124AH	23024MW33
180	46	0,26	2,61	3,89	2,55	355	510	2000	2800	4,28	3113124AH	23024KMW33
215	58	0,29	2,36	3,51	2,31	630	765	1900	2600	9,12	3524AH	22224MW33
215	58	0,29	2,36	3,51	2,31	630	765	1900	2600	8,50	113524AH	22224KMW33
215	76	0,35	1,91	2,85	1,87	695	930	1500	1900	11,56	3003224AH	23224MW33
215	76	0,35	1,91	2,85	1,87	695	930	1500	1900	11,35	3113224AH	23224KMW33
260	86	0,37	1,82	2,71	1,78	965	1120	1400	1800	23,50	3624AH	22324MW33
260	86	0,37	1,82	2,71	1,78	965	1120	1400	1800	22,90	113624AH	22324KMW33
130	200	52	0,25	2,73	4,08	430	610	1900	2600	6,30	3003126AH	23026MW33
200	52	0,25	2,73	4,08	2,76	430	610	1900	2600	6,25	3113126AH	23026KMW33
230	80	0,33	2,1	3,1	2	780	1060	1500	1900	14,20	3003226AH	23226MW33
230	80	0,33	2,1	3,1	2	780	1060	1500	1900	14,10	3113226AH	23226KMW33
230	64	0,29	2,31	3,44	2,26	735	930	1800	2400	11,80	3526AH	22226MW33
230	64	0,29	2,31	3,44	2,26	735	930	1800	2400	11,70	113526AH	22226KMW33
280	93	0,37	1,84	2,74	1,8	1120	1320	1300	1700	28,58	3626AH	22326MW33
280	93	0,37	1,84	2,74	1,8	1120	1320	1300	1700	28,00	113626AH	22326KMW33
140	210	53	0,25	2,7	4,03	465	680	1800	2400	6,76	3003128AH	23028MW33
210	53	0,25	2,7	4,03	2,65	465	680	1800	2400	6,50	3113128AH	23028KMW33
210	69	0,3	2,3	3,4	2,2	560	865	1650	2200	8,75	4003128AH	24028MW33
210	69	0,3	2,3	3,4	2,2	560	865	1650	2200	8,73	4113128AH	24028K30MW33
225	68	0,27	2,5	3,7	2,4	630	900	1600	2000	11,38	3003728AH	23128MW33
225	68	0,27	2,5	3,7	2,4	630	900	1600	2000	11,28	3113728AH	23128KMW33
250	68	0,29	2,35	3,5	2,3	710	900	1600	2000	14,10	3528AH	22228MW33
250	68	0,29	2,35	3,5	2,3	710	900	1600	2000	13,70	113528AH	22228KMW33
250	88	0,36	1,9	2,89	1,83	915	1250	1200	1600	18,70	3003228AH	23228MW33
250	88	0,36	1,9	2,89	1,83	915	1250	1200	1600	18,00	3113228AH	23228KMW33
300	102	0,38	1,76	2,62	1,72	1290	1560	1200	1600	35,10	3628AH	22328MW33
300	102	0,38	1,76	2,62	1,72	1290	1560	1200	1600	34,54	113628AH	22328KMW33

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings



3000H, 3003000H
3053000H, 4003000H
4053000H

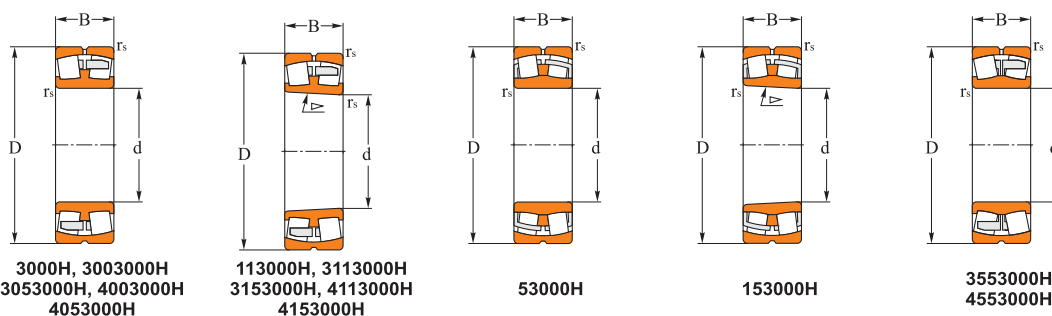
113000H, 3113000H
3153000H, 4113000H
4153000H

53000H

153000H

3553000H
4553000H

Dimensions, mm Glavne dimenzije			Calculating factor Koeffijenti				Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka IKL	
d	D	B	e	Y	Y	Y ₀	C	C ₀						
150	225	56	0,22	2,7	4	2,65	510	750	1700	2200	8,40	3003130AH	23030MW33	
	225	56	0,22	2,7	4	2,65	510	750	1700	2200	8,20	3113130AH	23030KMW33	
	225	75	0,3	2,3	3,4	2,2	655	1040	1500	1900	10,90	4003130AH	24030MW33	
	225	75	0,3	2,3	3,4	2,2	655	1040	1500	1900	10,90	4113130AH	24030KMW33	
	250	80	0,32	2,14	3,18	2,08	830	1200	1400	1800	16,30	3003730AH	23130MW33	
	250	80	0,32	2,14	3,18	2,08	830	1200	1400	1800	15,81	3113730AH	23130KMW33	
	270	73	0,29	2,35	3,5	2,3	850	1080	1500	1900	17,80	3530AH	22230MW33	
	270	73	0,29	2,35	3,5	2,3	850	1080	1500	1900	17,50	113530AH	22230KMW33	
	270	96	0,36	1,87	2,81	1,84	1080	1460	1100	1500	23,60	3003230AH	23230MW33	
	270	96	0,36	1,87	2,81	1,84	1080	1460	1100	1500	23,10	3113230AH	23230KMBW33	
	320	108	0,38	1,78	2,64	1,74	1460	1760	1100	1500	42,60	3630AH	22330MW33	
	320	108	0,38	1,78	2,64	1,74	1460	1760	1100	1500	42,17	113630AH	22330KMBW33	
	160	240	60	0,25	2,71	4,04	2,65	585	880	1600	2000	10,25	3003132AH	23032MW33
		240	60	0,25	2,71	4,04	2,65	585	880	1600	2000	9,95	3113132AH	23032KMW33
240		80	0,3	2,3	3,4	2,2	600	950	1400	1800	9,85	4003132AH	24032MW33	
240		80	0,3	2,3	3,4	2,2	600	950	1400	1800	9,85	4113132AH	24032KMW33	
270		86	0,33	2,06	3,07	2,02	980	1370	1300	1700	20,00	3003732AH	23132MW33	
270		86	0,33	2,06	3,07	2,02	980	1370	1300	1700	20,00	3113732AH	23132KMW33	
290		80	0,29	2,29	3,4	2,24	1000	1290	1400	1800	22,60	3532AH	22232MW33	
290		80	0,29	2,29	3,4	2,24	1000	1290	1400	1800	22,30	113532AH	22232KMW33	
290		104	0,35	1,92	2,93	1,86	1100	1350	1300	1700	31,60	3003232AH	23232MW33	
290		104	0,35	1,92	2,93	1,86	1100	1350	1300	1700	31,60	3113232AH	23232KMW33	
340		114	0,38	1,8	2,69	1,76	1600	1960	950	1300	50,90	3632AH	22332MW33	
340		114	0,38	1,8	2,69	1,76	1600	1960	950	1300	49,90	113632AH	22332KMW33	
170	260	67	0,23	3	4,4	2,9	710	1060	1500	1900	12,55	3053134AH	23034MW33	
	260	67	0,23	3	4,4	2,9	710	1060	1500	1900	12,33	3153134AH	23034KMW33	
	260	90	0,33	2	3	2	860	1380	1400	1700	17,87	4003134AH	24034MW33	
	260	90	0,33	2	3	2	860	1380	1400	1700	17,87	4113134AH	24034KMW33	
	310	86	0,3	2,27	3,37	2,21	1120	1460	1300	1700	26,70	3534AH	22234MW33	
	310	86	0,3	2,27	3,37	2,21	1120	1460	1300	1700	26,50	113534AH	22234KMW33	
	310	110	0,36	1,88	2,79	1,83	1400	1930	950	1300	37,10	3003234AH	23234MW33	
	310	110	0,36	1,88	2,79	1,83	1400	1930	950	1300	37,10	3113234AH	23234KMW33	
	360	120	0,37	1,81	2,69	1,77	1760	2160	950	1300	58,90	3634AH	22334MW33	
	360	120	0,37	1,81	2,69	1,77	1760	2160	950	1300	57,70	113634AH	22334KMW33	



3000H, 3003000H
3053000H, 4003000H
4053000H

113000H, 3113000H
3153000H, 4113000H
4153000H

53000H

153000H

3553000H
4553000H

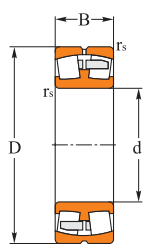
Dimensions, mm Glavne dimenzije			Calculating factor Koeffcijenti				Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka IKL
d	D	B	e	Y	Y	Y ₀	C	C ₀					
180	280	100	0,37	1,8	2,7	1,8	1080	1730	1500	2200	23,30	4003136AH	24036MW33
	280	100	0,37	1,8	2,7	1,8	1080	1730	1500	2200	23,30	4113136AH	24036KMW33
	320	86	0,26	2,6	3,9	2,5	1180	1560	1800	2600	29,85	3536AH	22236MW33
	320	86	0,26	2,6	3,9	2,5	1180	1560	1800	2600	29,85	113536AH	22236KMW33
	320	112	0,35	1,9	2,9	1,8	1500	2120	1300	1900	40,25	3003236AH	23236MW33
	320	112	0,35	1,9	2,9	1,8	1500	2120	1300	1900	39,17	3113236AH	23236KMW33
	280	74	0,26	2,56	3,81	2,5	830	1250	1400	1800	15,79	3003136AH	23036MW33
	280	74	0,26	2,56	3,81	2,5	830	1250	1400	1800	15,49	3113136AH	23036KMW33
	380	126	0,37	1,83	2,71	1,78	2000	2450	900	1200	70,98	3636AH	22336MW33
	380	126	0,37	1,83	2,71	1,78	2000	2450	900	1200	67,12	113636AH	22336KMW33
190	340	92	0,29	2,33	3,46	2,27	1270	1700	1200	1600	36,30	3538AH	22238MW33
	340	92	0,29	2,33	3,46	2,27	1270	1700	1200	1600	36,05	113538AH	22238KMW33
	340	120	0,35	1,9	2,9	1,8	1660	2400	1100	1500	48,70	3003238AH	23238MW33
	340	120	0,35	1,9	2,9	1,8	1660	2400	1100	1500	48,70	3113238AH	23238KMW33
	400	132	0,36	1,85	2,75	1,81	2120	2650	850	1100	80,73	3638AH	22338MW33
	400	132	0,36	1,85	2,75	1,81	2120	2650	850	1100	78,98	113638AH	22338KMW33
200	310	82	0,27	2,53	3,76	2,46	1000	1530	1200	1800	22,50	3003140AH	23040MW33
	310	82	0,27	2,53	3,76	2,46	1000	1530	1200	1800	21,80	3113140H	23040KMW33
	340	112	0,31	2,2	3,3	2,2	1600	2360	1100	1700	43,60	3003740AH	23140MW33
	340	112	0,31	2,2	3,3	2,2	1600	2360	1100	1700	43,60	3113740AH	23140KMW33
	360	98	0,29	2,31	3,44	2,26	1460	1930	1100	1400	44,00	3540AH	22240MW33
	360	98	0,29	2,31	3,44	2,26	1460	1930	1100	1400	43,00	113540AH	22240KMBW33
	360	128	0,35	1,9	2,9	1,8	1860	2700	1000	1300	58,60	3003240AH	23240MW33
	360	128	0,35	1,9	2,9	1,8	1860	2700	1000	1300	58,60	3113240AH	23240KMW33
	420	138	0,36	1,87	2,78	1,83	2320	2900	850	1100	93,20	3640AH	22340MW33
	420	138	0,36	1,87	2,78	1,83	2320	2900	850	1100	89,40	113640AH	22340KMW33
220	340	90	0,26	2,6	3,87	2,54	1220	1860	900	1300	30,95	3003144AH	23044MW33
	340	90	0,26	2,6	3,87	2,54	1220	1860	900	1300	28,20	3113144AH	23044KMW33
	370	120	0,34	1,8	2,69	1,77	1800	2750	800	1000	54,70	3003744AH	23144MW33
	370	120	0,34	1,8	2,69	1,77	1800	2750	800	1000	52,00	3113744AH	23144KMW33
	400	108	0,28	2,42	3,6	2,37	1760	2360	950	1300	60,20	3544AH	22244MW33
	400	108	0,28	2,42	3,6	2,37	1760	2360	950	1300	60,00	113544AH	22244KMW33
	400	144	0,39	1,72	2,59	1,68	2360	3450	750	950	83,20	3003244H	23244MW33
	400	144	0,39	1,72	2,59	1,68	2360	3450	750	950	82,70	3113244H	23244KMW33
	460	145	0,35	1,95	2,9	1,91	2700	2450	750	950	128,40	3644AH	22344MW33
	460	145	0,35	1,95	2,9	1,91	2700	2450	750	950	127,90	113644AH	22344KMW33

Sferno-valjkasti ležaji - dvoredni

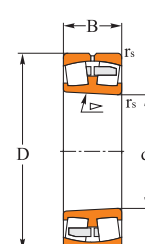
Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

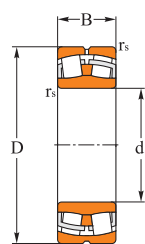
Spherical Roller Bearings



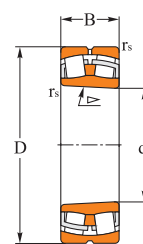
3000H, 3003000H
3053000H, 4003000H
4053000H



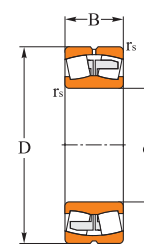
113000H, 3113000H
3153000H, 4113000H
4153000H



53000H

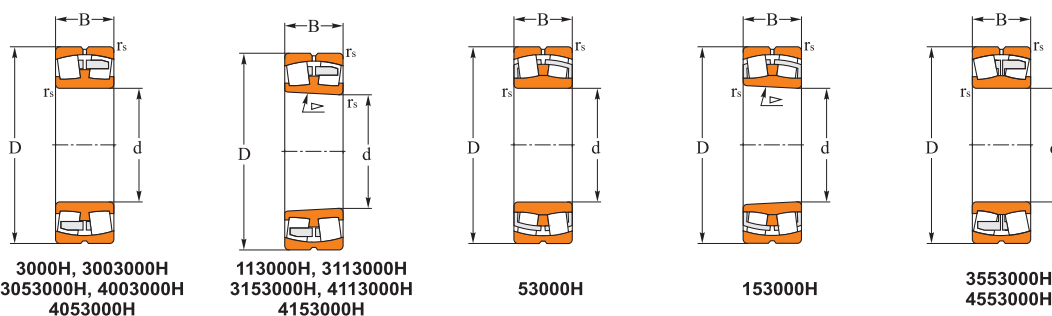


153000H



3553000H
4553000H

Dimensions, mm Glavne dimenzije			Calculating factor Koefficienti				Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka IKL
d	D	B	e	Y	Y	Y ₀	C	C ₀					
240	360	92	0,25	2,75	4,1	2,69	1290	2080	800	1000	35,20	3003148AH	23048MW33
	360	92	0,25	2,75	4,1	2,69	1290	2080	800	1000	35,00	3113148AH	23048KMW33
	400	128	0,37	1,8	2,69	1,77	2080	3200	670	850	65,10	3003748AH	23148MW33
	400	128	0,37	1,8	2,69	1,77	2080	3200	670	850	65,10	3113748AH	23148KMW33
250	440	120	0,27	2,5	3,7	2,5	2200	3000	800	1100	82,40	3548AH	22248MW33
	440	120	0,27	2,5	3,7	2,5	2200	3000	800	1100	80,60	113548AH	22248KMW33
	440	160	0,35	1,9	2,9	1,8	2900	4300	700	1000	110,20	3003248AH	23248MW33
	440	160	0,35	1,9	2,9	1,8	2900	4300	700	1000	110,20	3113248AH	23248KMW33
260	400	104	0,26	2,61	3,89	2,55	1600	2550	750	950	49,60	3003152AH	23052MW33
	400	104	0,26	2,61	3,89	2,55	1600	2550	750	950	49,00	3113152AH	23052KMW33
	440	144	0,33	2,02	3,04	1,77	2550	3900	670	850	93,90	3003752AH	23152MW33
	440	144	0,33	2,02	3,04	1,77	2550	3900	670	850	88,10	3113752AH	23152KMW33
	480	130	0,3	2,28	3,4	2,23	2650	3550	750	1000	101,20	3552AH	22252MW33
	480	130	0,3	2,28	3,4	2,23	2650	3550	750	1000	100,50	113552AH	22252KMW33
	480	174	0,35	1,9	2,9	1,8	3250	4750	650	900	142,00	3003252AH	23252MW33
	480	174	0,35	1,9	2,9	1,8	3250	4750	650	900	142,00	3113252AH	23252KMW33
	540	165	0,33	2,01	3	1,97	3550	4550	630	800	189,80	3652AH	22352MW33
	540	165	0,33	2,01	3	1,97	3550	4550	630	800	189,60	113652AH	22352KMW33
280	420	106	0,25	2,7	4,02	2,64	1900	3000	600	800	55,00	3003156A1Y	23056MR180.250
	420	106	0,25	2,7	4,02	2,64	1900	3000	600	800	54,50	3113156A1Y	23056KMR180.250
	420	106	0,25	2,7	4,02	2,64	1730	2850	700	900	53,80	3003156AH	23056MW33
	420	106	0,25	2,7	4,02	2,64	1730	2850	700	900	52,90	3113156AH	23056KMW33
	460	146	0,33	2,04	3,04	2,06	2650	4250	630	800	101,50	3003756AH	23156MW33
	460	146	0,33	2,04	3,04	2,06	2650	4250	630	800	92,40	3113756AH	23156KMW33
	500	130	0,28	2,39	3,56	2,34	2700	3750	700	950	121,80	3556AH	22256MW33
	500	130	0,28	2,39	3,56	2,34	2700	3750	700	950	120,50	113556AH	22256KMW33
	500	176	0,35	1,9	2,9	1,8	3250	4900	600	800	155,00	3003256AH	23256MW33
	500	176	0,35	1,9	2,9	1,8	3250	4900	600	800	155,00	3113256AH	23256KMW33
	580	175	0,33	2,03	3,02	2,02	4000	5200	530	700	232,00	3656AH	22356MW33
	580	175	0,33	2,03	3,02	2,02	4000	5200	530	700	232,00	113656AH	22356KMW33



3000H, 3003000H
3053000H, 4003000H
4053000H

113000H, 3113000H
3153000H, 4113000H
4153000H

53000H

153000H

3553000H
4553000H

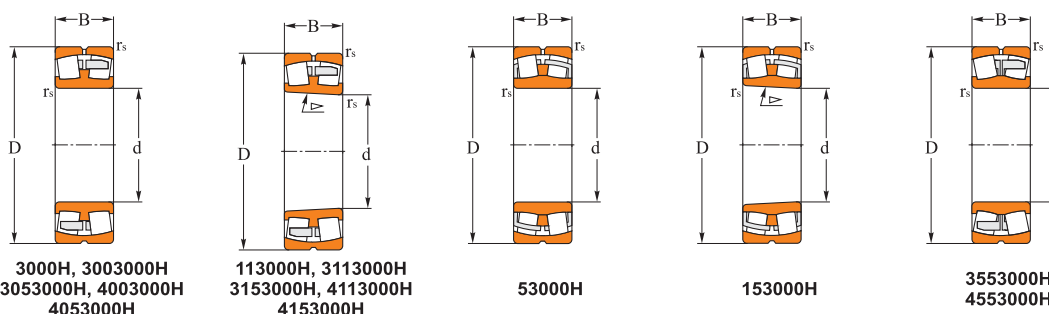
Dimensions, mm Glavne dimenzije			Calculating factor Koeffcijenti				Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka IKL
d	D	B	e	Y	Y ₂	Y ₀	C	C ₀					
300	460	118	0,25	2,64	3,93	2,58	2500	3700	500	650	73,90	3003160A1Y	23060MR180.250
	460	118	0,25	2,64	3,93	2,58	2500	3700	500	650	73,60	3113160A1Y	23060KMR180.250
	460	118	0,25	2,64	3,93	2,58	2120	3450	630	800	73,90	3003160AH	23060MW33
	460	118	0,25	2,64	3,93	2,58	2120	3450	630	800	73,60	3113160AH	23060KMW33
	500	160	0,36	1,9	2,83	1,86	3200	5100	670	850	127,20	3003760AH	23160MW33
	500	160	0,36	1,9	2,83	1,86	3200	5100	670	850	127,20	3113760AH	23160KMW33
	500	200	0,4	1,7	2,5	1,6	3750	6300	620	770	165,00	4003760AH	24160MW33
	500	200	0,4	1,7	2,5	1,6	3750	6300	620	770	165,00	4113760AH	24160KMW33
	540	192	0,35	1,9	2,9	1,8	3900	5850	700	800	198,00	3003260AH	23260MW33
	540	192	0,35	1,9	2,9	1,8	3900	5850	700	800	198,00	3113260AH	23260KMW33
320	480	121	0,26	2,55	3,08	2,5	2240	3800	600	750	80,40	3003164AH	23064MW33
	480	121	0,26	2,55	3,08	2,5	2240	3800	600	750	76,40	3113164AH	23064KMW33
	480	121	0,26	2,55	3,08	2,5	2700	4200	400	600	80,40	3003164A1Y	23064MR180.250
	480	121	0,26	2,55	3,08	2,5	2700	4200	400	600	76,40	3113164A1Y	23064KMR180.250
	540	176	0,33	2,05	3,04	2	3750	6000	630	800	170,00	3003764AH	23164MW33
	540	176	0,33	2,05	3,04	2	3750	6000	630	800	170,00	3113764AH	23164KMW33
	580	150	0,27	2,55	3,8	2,55	3600	4900	500	750	180,10	3564AH	22264MW33
	580	150	0,27	2,55	3,8	2,55	3600	4900	500	750	180,10	113564AH	22264KMW33
	580	208	0,37	1,81	2,69	1,8	4400	6700	500	630	255,20	3003264AH	23264MW33
	580	208	0,37	1,81	2,69	1,8	4400	6700	500	630	255,20	3113264AH	23264KMW33
340	520	133	0,26	2,55	3,08	2,5	3000	5000	350	500	107,60	3003168A1Y	23068MR180.250
	520	133	0,26	2,55	3,08	2,5	3000	5000	350	500	104,60	3113168A1Y	23068KMR180.250
	520	133	0,26	2,55	3,08	2,5	2700	4550	500	700	107,60	3003168AH	23068MW33
	520	133	0,26	2,55	3,08	2,5	2700	4550	500	700	104,60	3113168AH	23068KMW33
	620	224	0,35	1,9	2,9	1,8	4800	7500	400	600	305,00	3003268AH	23268MW33
	620	224	0,35	1,9	2,9	1,8	4800	7500	400	600	305,00	3113268AH	23268KMW33
360	540	134	0,26	2,6	3,87	2,54	2750	4800	530	670	112,90	3003172AH	23072MW33
	540	134	0,26	2,6	3,87	2,54	2750	4800	530	670	109,90	3113172AH	23072KMW33
	650	170	0,29	2,37	3,52	2,31	4300	6200	500	600	266,00	3572AH	22272MW33
	650	170	0,29	2,37	3,52	2,31	4300	6200	500	600	266,00	113572AH	22272KMW33
380	620	194	0,33	2,1	2,9	1,88	4400	7100	400	500	240,00	3003776AH	23176MW33
	620	194	0,33	2,1	2,9	1,88	4400	7100	400	500	233,00	3113776AH	23176KMW33

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings Double Row

Sferno-valjkasti ležaji - dvoredni

Spherical Roller Bearings



Dimensions, mm Glavne dimenzije			Calculating factor Koefficienti				Load ratings, kN		Limiting speed, min ⁻¹ , (lubricant)		Mass, kg	GOST designation (National Standard)	Designation by IKL
d	D	B	e	Y	Y ₀	Y ₁	C	C ₀	Grease	Oil	Masa	Oznaka GOST	Oznaka IKL
400	600	148	0,25	2,69	4	2,68	3250	5700	450	550	148,90	3003180AH	23080MW33
	600	148	0,25	2,69	4	2,68	3250	5700	450	550	148,90	3113180AH	23080KMW33
	650	200	0,31	2,17	3,24	2,12	4650	7650	450	650	263,30	3003780H	23180MW33
	650	200	0,31	2,17	3,24	2,12	4650	7650	450	650	261,00	3113780H	23180KMW33
	820	243	0,32	2,12	3,15	2,11	7500	10400	350	470	635,00	3680XHY	22380MW33
440	650	157	0,24	2,85	4,24	2,78	3650	6550	430	530	187,00	3003188AH	23088MW33
	650	157	0,24	2,85	4,24	2,78	3650	6550	430	530	181,00	3113188AH	23088KMW33
460	620	118	0,16	4,2	6,3	4	2500	5000	600	1000	105,00	3003992AH	23992MW33
	620	118	0,16	4,2	6,3	4	2500	5000	600	1000	105,00	3113992AH	23992KMW33
	680	163	0,23	2,92	4,35	2,86	3900	6950	400	500	215,80	3003192AH	23092MW33
	680	163	0,23	2,92	4,35	2,86	3900	6950	400	500	210,00	3113192AH	23092KMW33
	760	240	0,33	2,1	3,13	2,06	6400	10800	320	400	470,00	3003792H	23192MW33
	760	240	0,33	2,1	3,13	2,06	6400	10800	320	400	456,00	3113792H	23192KMW33
500	830	264	0,32	2,1	2,06	2,06	7650	12900	280	360	606,00	30037/500AH	231/500MW33
	830	264	0,32	2,1	2,06	2,06	7650	12900	280	360	606,00	31137/500AH	231/500KMW33
	830	325	0,37	1,8	2,7	1,8	9800	17000	320	600	750,00	40037/500AH	241/500MW33
	830	325	0,37	1,8	2,7	1,8	9800	17000	320	600	750,00	41137/500AH	241/500K30MW33
530	710	136	0,17	4	5,9	4	3250	6750	450	800	157,00	30039/530AH	239/530MW33
	710	136	0,17	4	5,9	4	3250	6750	450	800	157,00	31139/530AH	239/530KMW33
	780	185	0,23	2,9	4,31	2,83	5100	9300	315	430	315,00	30031/530AH	230/530MW33
	780	185	0,23	2,9	4,31	2,83	5100	9300	315	430	315,00	31131/530AH	230/530KMW33
560	820	195	0,24	2,83	4,21	2,76	5600	10200	320	400	365,00	30031/560AH	230/560MW33
	820	195	0,24	2,83	4,21	2,76	5600	10200	320	400	365,00	31131/560AH	230/560KMW33
600	870	200	0,23	2,94	4,37	2,87	6000	11400	300	380	432,00	30031/600AH	230/600MW33
	870	200	0,23	2,94	4,37	2,87	6000	11400	300	380	397,00	31131/600AH	230/600KMW33
	980	300	0,32	2,1	3,13	2,05	10200	18000	200	280	950,00	30037/600AH	231/600MW33
	980	300	0,32	2,1	3,13	2,05	10200	18000	200	280	954,00	31137/600AH	231/600KMW33



Sferno-valjkasti ležaji - dvoredni

Vibrating Screen Bearings

Sferno-valjkasti ležaji - dvoredni

Vibrating Screen Bearings

Vibrating screens, also known as shaker screens, subject bearings to extreme operating conditions. High «g» forces due to constant acceleration and impact from material on the bed require bearings with extra capacity and robust cages. The high loads cause deflection of the shafts and housings so the bearings must accommodate misalignment in operation. Lastly, the application subjects the bearings to high speeds and highly contaminated environments so the bearings must operate smoothly and have minimal friction.

These bearings can be used in mining, construction, aggregate, asphalt recycling, steel manufacturing, and general industrial equipment where heavy loads, vibration, and impact loads are common. Typical examples include vibrating screens and crushers.



Features

Asymmetrical roller design

- Reduced sliding friction
- Less tendency for roller to skew during operation
- Fewer internal forces in bearing

Forged inner and outer rings

- Uniform steel grain structure
- Improved fatigue life

Open end cage design

- Ease of assembly
- Facilitates lubrication

Two-piece machined bronze retainer

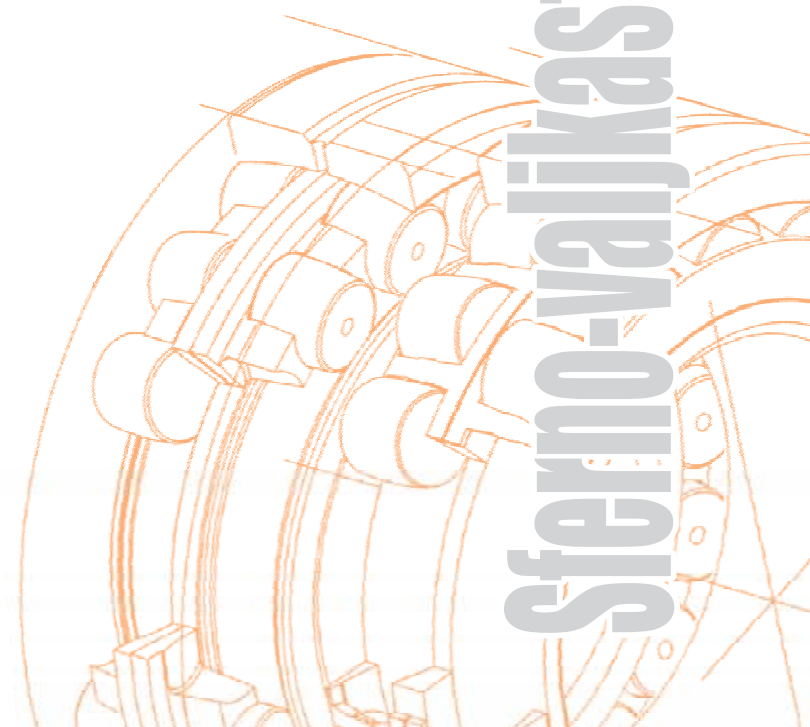
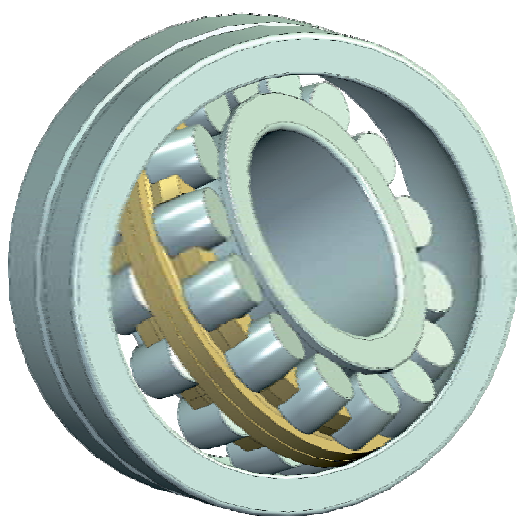
- Allows differential speed between roller sets reducing retainer stresses

Inner and outer ring special heat treatment

- Improved fatigue life

Outer ring guided

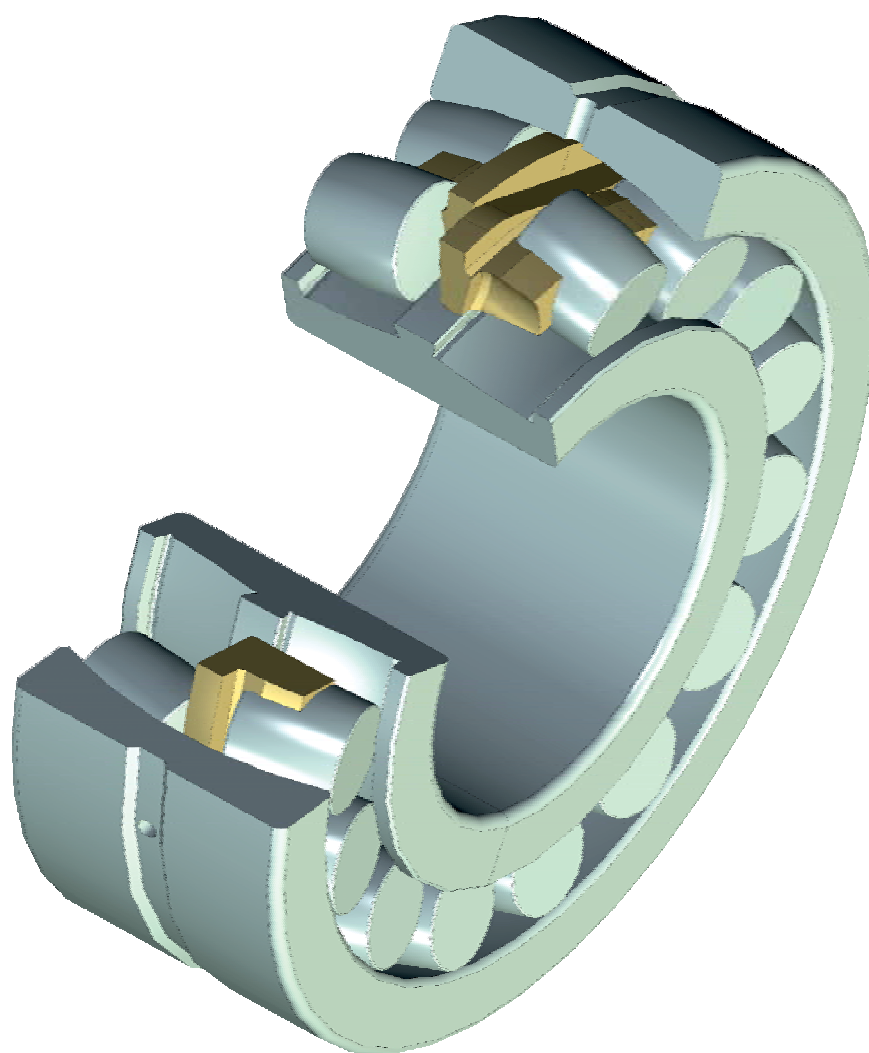
- Higher operating speeds
- Improved lubrication of guiding surface

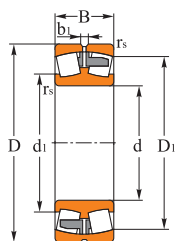


Sferno-valjkasti ležaji - dvoredni

Vibrating Screen Bearings Sferno-valjkasti ležaji - dvoredni

Vibrating Screen Bearings





Dimensions, mm Glavne dimenzije				Calculating factor Koefficienti				Load ratings, kN		Limiting speed, min ⁻¹ , (lubricant)		Mass, kg	GOST designation (National Standard)	Designation used by IKL			
d	D	B	r _{sm}	b ₁	d ₁	D ₁	e	Y	Y ₀	C	C ₀	Grease	Oil	Masa	Oznaka GOST	Oznaka DIN	
90	190	64	3	11	119	159,1	0,37	1,83	2,72	1,78	535	695	2400	2880	9,08	3618AHK	22318MAW33
100	215	73	3	11	135	181,5	0,37	1,81	2,7	1,77	652	830	1360	1760	13,41	3620AHK	22320MAW33
110	240	80	3	14	149	201,2	0,37	1,83	2,72	1,79	751	943	1200	1520	19,62	3622AHK	22322MAW33
120	260	86	3	14	158	218,5	0,37	1,82	2,71	1,78	864	1094	1120	1440	24,13	3624AHK	22324MAW33
130	280	93	4	14	184	235,5	0,37	1,84	2,74	1,8	1120	1320	1040	1360	28,58	3626AHK	22326MAW33
140	300	102	4	16	181	247,2	0,38	1,76	2,62	1,72	1100	1444	1040	1360	36,1	3628AHK	22328MAW33
150	320	108	4	16	217	262,9	0,38	1,78	2,64	1,74	1208	1670	880	1200	44,64	3630AHK	22330MAW33
160	340	114	4	16	213	280	0,38	1,8	2,69	1,76	1370	1916	760	1040	52,6	3632AHK	22332MAW33
170	360	120	4	16	224	296,1	0,37	1,81	2,69	1,77	1527	2000	760	1040	61,5	3634AHK	22334MAW33
180	380	126	4	22	238	312,1	0,37	1,83	2,71	1,78	1671	2368	720	960	44,64	3636AHK	22336MAW33
190	400	132	5	22	255	328,5	0,36	1,85	2,75	1,81	1816	2675	680	880	86,6	3638AHK	22338MAW33
200	200	420	5	23,5	277	354,9	0,35	1,86	2,81	1,84	2196	2655	880	1200	44,64	3640AHK	22340MAW33

Sferno-valjkasti ležaji - dvoredni

Insulated bearings Izolovani ležajevi

Insulated Bearings

Electrical pitting often occurs in bearings used in electrical equipment, such as motors and power generators, as a result of current leakage. An electrical current present near a bearing can flow to the inside of the bearing, causing sparks that damage the rolling contact surface, ultimately leading to bearing failure. This electrical pitting can be prevented with coated bearings.

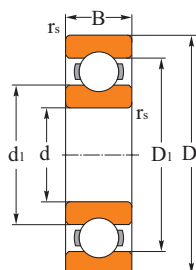
Insulated bearings have been specifically designed to counteract electrical pitting. Coating the outer ring of the bearing provides a barrier (capable of resisting at least 100 M at 500 VDC) against any stray currents that would pass through the bearing.

The Coating Process

The plasma spraying process involves generating an arc between two electrodes to ionize a noble gas that is issued from the plasma torch. The resulting plasma jet is used to carry the injected aluminum oxide powder. This powder is melted by the heat and sprayed at high speed onto the outer ring. When applied in this manner, the oxide layer adheres extremely well to the base material. It is then sealed and ground to size. This unique technology has the following benefits:

- Plasma spraying is the most versatile thermal coating process – it produces high-performance coatings that deliver durability and reliability.
- The process applies coatings by injecting aluminum oxide powder into a high temperature gas stream. The plasma gas heats the powdered coating material to a molten state and sprays it onto substrates at high speeds.
- Plasma spraying is extremely flexible and is ideal for producing a wide variety of functional coatings.





Dimensions, mm Glavne dimenzije			Load ratings, kN Opterećenje				Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation used by IKL Oznaka DIN	
d	D	B	r _{smin}	d ₁	D ₁	C	C ₀					
60	110	22	1,5	76,1	95,6	30	46	5440	11200	0,98	76-212ЛЭ	6212 M AL O C3
65	140	33	2,1	88,6	117,5	50	80	5120	8800	2,55	76-313ЛЭ	6313 M AL O C3
70	125	24	1,5	86,8	110,7	39	57	4880	9600	1,11	76-214ЛЭ	6214 M AL O C3
75	130	25	1,5	92,5	112,8	44	60	4720	8800	1,42	76-215ЛЭ	6215 M AL O C3
75	160	37	2,1	101,8	133,2	70	107	4640	7600	3,74	76-315ЛЭ	6315 M AL O C3
80	140	26	2	98,8	121,3	50	68	4400	8800	1,46	76-216ЛЭ	6216 M AL O C3
80	170	39	2,1	108,6	141,8	80	110	4400	7200	3,75	76-316ЛЭ	6316 M AL O C3
85	180	41	3	114,4	151,6	85	120	4240	6400	5,05	76-317ЛЭ	6317 M AL O C3
90	160	30	2	112,3	139,4	65	90	4080	7200	2,21	76-218ЛЭ	6218 M AL O C3
90	190	43	3	123,8	157,1	95	120	4080	6400	6,14	76-318ЛЭ	6318 M AL O C3
95	200	45	3	129,1	166,9	105	120	3960	6000	7,05	76-319ЛЭ	6319 M AL O C3
100	180	34	2,1	124,7	154,8	80	110	3840	6400	3,9	76-220ЛЭ	6220 M AL O C3
100	215	47	3	138,6	179	120	140	3720	5600	8,64	76-320ЛЭ	6320-M AL O C3
110	240	50	3	153,4	197,4	140	170	3320	5040	11,7	76-322ЛЭ	6322-M AL O C3
120	260	55	3	165,1	214,9	160	190	3080	4800	15	76-324ЛЭ	6324-M AL O C3

Izolovani ležajevi

Spherical Roller Thrust Bearings

Sferno-valjkasti aksijalni ležajevi

Spherical Roller Thrust Bearings

Spherical roller thrust bearings comprise a consistent, entire manufacturing program both in dimensional and design series 292, 293 and 294, being in compliance with the international standards ISO by their design and manufacturing process. Quality management system of the whole manufacturing process of spherical roller thrust bearings is certified according to international standards series 9000.

Contrary to other thrust bearings the spherical roller thrust bearings loads are transferred from one raceway to the other under certain angle; this enables to accommodate also radial load in addition to axial load. Spherical roller thrust bearings are separable, therefore the shaft ring with cage and spherical rollers and housing(outer) ring can be installed individually. Another important feature of these bearings is their ability to tilt, which allows the possibility of alignment of shaft deflection and of verticality deviation to the housing.

Spherical roller thrust bearings are produced, in dependence to size and type, in two designs – in standard and E design. Outstanding feature of bearings of E design are their higher utility parameters, they represent a new generation of spherical roller thrust bearings. Being of identical main dimensions, they have upper utility properties. Both designs can be produced with machined brass cage M or with steel sheet cage J.

Should a bearing with machined brass cage, in which acting axial forces were accommodated also by sentence incomplete.

The inner space of spherical roller thrust bearings can be efficiently utilized. Therefore they are suitable for accommodation of great load at relatively high speed frequency. The bearings are capable to accommodate in addition to axial load also certain radial forces, anyhow these must be of smaller value than 55 percent of simultaneously acting axial force. Housing ring spherical raceway enables to align verticality deviations between the shaft and housing.

For their high utility values the spherical roller thrust bearings find wide application in many fields and industrial sectors.

They are mainly used in the following installations:

- medium and heavy-duty forming machines
- ship drive shafts
- drilling rigs of all types and sizes
- medium and heavy-duty cranes including crane hooks
- pumps of medium and large sizes and capacities
- mining tunnelling machines and mining engineering
- heavy load swivelling turntables of installations in open pit mines and stone quarries
- power plant engineering (turbines, generating sets, electric motors).

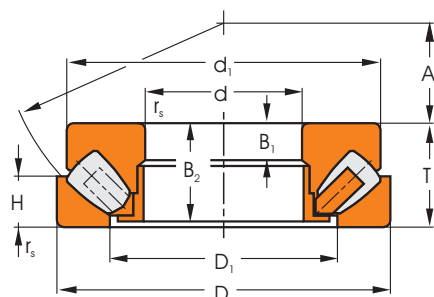


Sferno-valjkasti aksijalni ležajevi

Spherical Roller Thrust Bearings

Sferno-valjkasti aksijalni ležajevi

Spherical Roller Thrust Bearings



Dimensions, mm Glavne dimenzije							Load ratings, kN Opterećenje		Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka DIN
d	D	H	r _{smin}	B ₁	d ₁	D ₁	C	C ₀					
140	280	85	4	75,6	245,4	194,5	1630	4300	1300	2400	23	9039428A	29428MB
150	300	90	4	80,8	262,9	207,5	1860	5100	1200	2200	28	9039430A	29430MB
160	320	95	5	84,3	279,3	223,5	2080	5600	1100	2000	33,5	9039432A	29432MB
180	360	109	5	96,4	315,9	250	2600	7350	1000	1800	52,5	9039436A	29436MB
190	380	115	5	101	332,9	264,5	2850	8000	950	1700	60,5	9039438A	29438MB
260	480	132	6	119	427,9	346	4050	12900	750	1300	105	9039452A	29452MB
280	520	145	6	129,9	464,3	372	4900	15300	670	1200	135	9039456A	29456MB
320	580	155	7,5	139,4	520,3	422	4950	19000	560	1100	175	9039464A	29464MB
360	640	170	7,5	164	580	474	5350	21200	500	950	230	9039472A	29472MB
380	670	175	7,5	168	610	494	5870	24000	480	900	260	9039476A	29476MB
440	240	206	9,5	199	710	577	7820	32000	380	750	410	9039488A	29488MB
500	870	224	9,5	216	795	648	9370	40000	340	670	560	90394/500A	294/500MB
530	920	236	9,5	228	840	686	10500	44000	320	630	650	90394/530A	294/530MB
560	980	250	12	241	890	727	12000	51000	300	560	810	90394/560A	294/560MB
600	1030	258	12	249	940	769	13100	56000	280	530	845	90394/600A	294/600MB
630	1090	280	12	270	995	815	14400	62000	260	500	1040	90394/630A	294/630MB
670	1150	290	15	280	1045	864	15400	68000	240	450	1210	90394/670A	294/670MB
710	1220	308	15	298	1110	917	17600	76500	220	430	1500	90394/710A	294/710MB

Sferno-valjkasti aksijalni ležajevi

Dimensions, mm Glavne dimenzije				Load ratings, kN Opterećenje				Limiting speed, min ⁻¹ , (lubricant) Maksimalan broj obrtaja u minuti Grease Oil		Mass, kg Masa	GOST designation (National Standard) Oznaka GOST	Designation by IKL Oznaka DIN	
d	D	H	r _{smin}	B ₁	d ₁	D ₁	C	C ₀					
750	1280	315	15	305	1170	964	18700	85000	200	400	1650	90394/750A	294/750MB
800	1360	335	15	324	1250	1034	20200	93000	190	360	2025	90394/800A	294/800EF
850	1440	354	15	342	1315	1077	23900	108000	170	340	2390	90394/850A	294/850EF
900	1520	372	15	360	1394	1137	26700	122000	160	300	2650	90394/900A	294/900EF
950	1600	390	15	377	1470	1209	28200	132000	140	280	3065	90394/950A	294/950EF
1000	1670	402	15	389	1531	1270	31100	14000	130	260	3380	90394/1000A	294/1000EF

