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สำนักงานพัฒนาผลิต (มินสก์ จังหวัดฯ)

120 หมู่ที่ ๔ ถนนพิษณุโลก ตำบลท่าริม ๔๔

แขวงดาวเรือง กรุงเทพมหานคร ๑๐๖๐

โทร: ๐ ๒๘๗๖ ๒๗๒๗, ๐ ๒๘๗๖ ๒๘๒๘

แฟกซ์: ๐ ๒๔๗๖ ๑๗๑๑

สำนักงานผลิต (มินสก์ จังหวัดฯ)

378 ต.วังน้ำเขียว (แขวงน้ำตกของเมืองน้ำตก)

แขวงบ้านบึง จังหวัดนนทบุรี กรุงเทพฯ

โทร: ๐ ๒๖๒๑ ๒๗๙๐-๓ แฟกซ์: ๐ ๒๒๒๑ ๔๓๙๐

สำนักงานขาย (มินสก์ จังหวัดฯ)

36/1,2 (ตึกสถาบันการพัฒนาอาชญากรรม)

ชั้นที่ ๗ ถนนรามคำแหง แขวงบอนบอง

กรุงเทพมหานคร ๑๐๑๑๐

โทร: ๐ ๔๒๐ ๓๔๙๔-๕, ๐ ๒๐๒๓ ๔๖๙๗-๘

แฟกซ์: ๐ ๔๒๐ ๓๔๙๓, ๐ ๒๐๒๓ ๔๖๙๙

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สำนักงานขาย (มินสก์ จังหวัดฯ)
15/11 หมู่ที่ ๑ ถนนเมืองน้ำตก ตำบลท่าริม ๔๔
แขวงบ้านบึง จังหวัดนนทบุรี ๑๐๖๐

โทร: ๐ ๓๘๑๔ ๘๐๓๗-๙ แฟกซ์: ๐ ๓๘๑๔ ๘๐๓๖

SPHERICAL ROLLER BEARINGS MINSK BEARING PLANT



เวอร์ทัส
VIRTUS

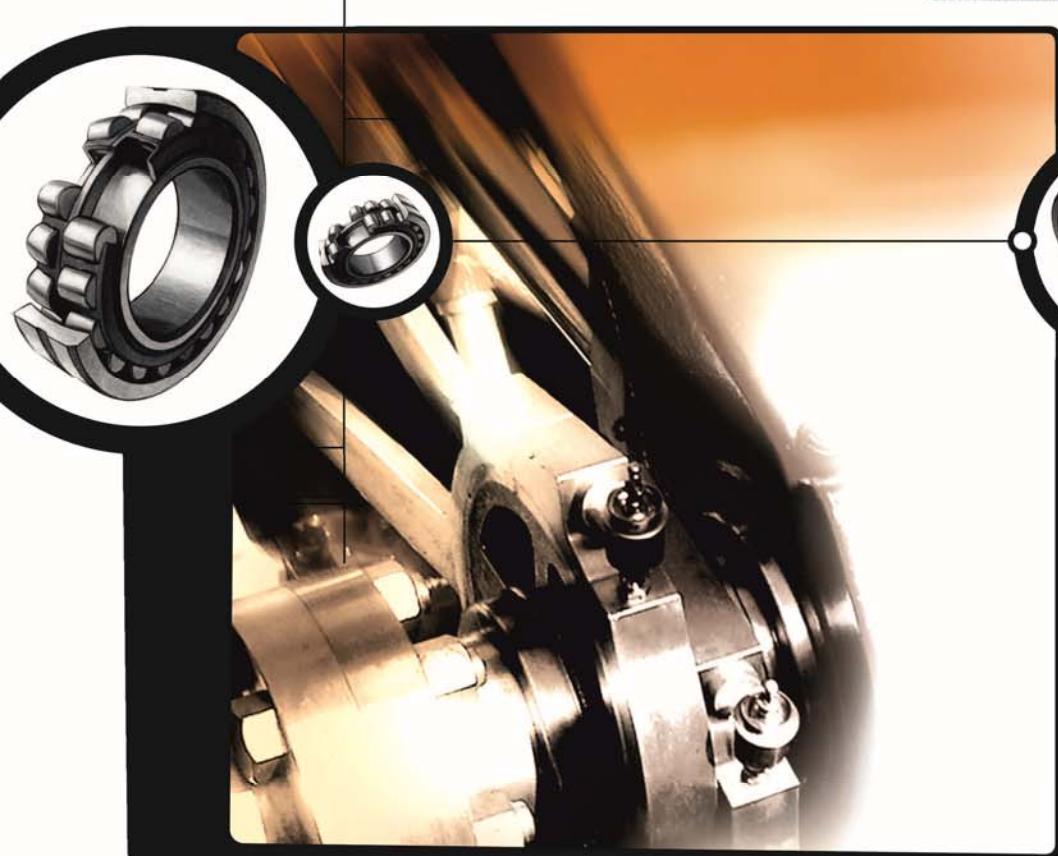


MINSK BEARING PLANT

MPZ



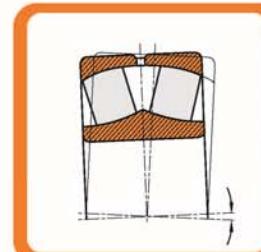
Spherical Roller Bearings



Spherical roller bearings are made for heavy-duty applications. They feature two rows of symmetrical barrel rollers which can align freely in the spherical outer ring raceway, thus compensating for shaft deflections and misalignment of the bearing seats. The close contact between the rollers and raceways yields a uniform stress distribution and a high load carrying capacity. Spherical roller bearings with an integral centre lip on the inner ring have machined brass cages. The flange-less inner ring and a guide ring, positioned towards the outer ring and centered on the cages, one pressed steel cage being used for each row of rollers.

Alignment

Self-aligning bearings such as self-aligning ball bearings, barrel roller bearings, radial and axial spherical roller bearings, compensate for misalignment and tilting. The bearings have a hollow spherical outer ring raceway in which the inner ring together with the rolling element set can swivel out. The angle of alignment of these bearings depends on their type and size as well as load. Spherical roller bearings can compensate for misalignments of up to 0.5° out of the centre. If the loads are low, angular misalignments of up to 2° are admissible at a corresponding surrounding structure. Misalignment can occur when machining the bearing seats of a shaft or a housing particularly when the seats are not machined in one setting. Misalignment can also be expected when using single housings, such as flanged or plummer block housings. Tilting of the bearing rings due to shaft deflection as a result of the operating load also leads to misalignment.

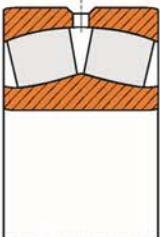




Tapered bore

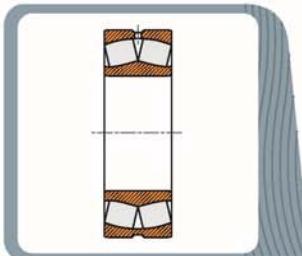
Spherical roller bearings of most series are also available with a tapered bore (taper 1:12). Bearings with a tapered bore are usually fastened on the shaft by means of adapter sleeves or withdrawal sleeves.

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.



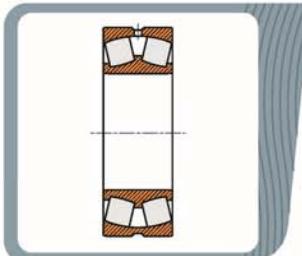
Lubricating groove, lubricating holes

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



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.



Cage 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.

Massive cages

Non-stainless steel massive cages are made for bearings operating in aggressive conditions.

Brass massive cages are made for bearings operating in normal conditions and for bearings operating in joints with high vibration.



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.



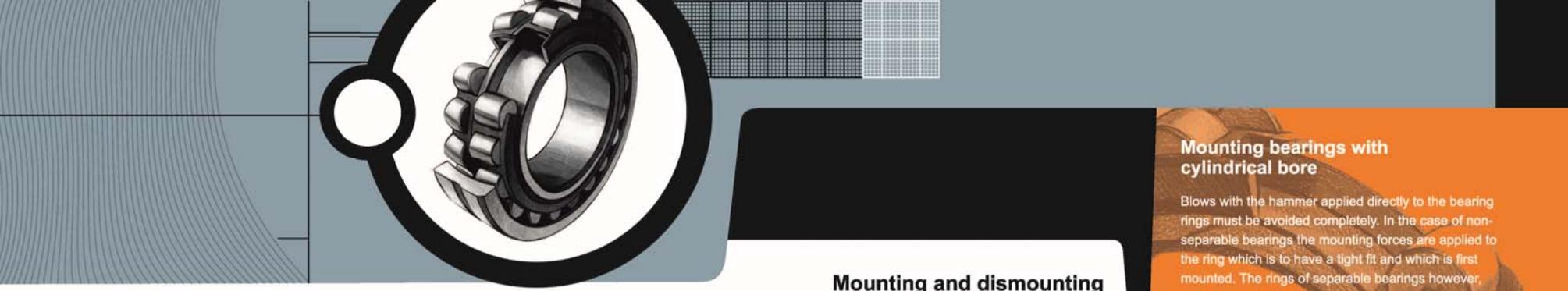
Suffixes

K	Tapered bore, taper 1:12
K30	Tapered bore, taper 1:30
MB	Machined brass cage, inner ring guided
JB	Pressed steel cage, inner ring guided
MA	Machined brass cage, outer ring guided
W33	Lubrication groove and three holes in outer ring
C2, C3, C4	Radial clearance
AC, C	Modernized internal design
F6	Stiffening parameter of accuracy of bearing parts
F61	One groove on the end face of the inner ring
F62	Two grooves on the end face of the inner ring
Ш1	Normalized vibration level
ACMB	Bearings with increased load capacity, which have modified contact of raceway with rollers, brass cage centering on inner ring
ACMA	Bearings with increased load capacity, which have modified contact of raceway with rollers, brass cage centering on outer ring
P6W1	Spherical Roller Bearings of the 6th class of precision level with normalized vibration level
ACM	Bearings with increased load capacity, which have modified contact of raceway with rollers, reinforced brass cage centering on inner ring
ACKM	Bearings with increased load capacity, which have modified contact of raceway with rollers, reinforced brass cage centering on inner ring with tapered mounting bore of inner ring

Rings of bearing operating at high temperature shall be heat treated to stabilize their dimensions with the following parameters:

S0	- up to 150°C
S1	- up to 200°C
S2	- up to 250°C
S3	- up to 300°C
S4	- up to 350°C
S5	- up to 400°C





Lubrication and Maintenance

Lubricating film formation

The primary task of the lubrication of rolling bearings is the avoidance of wear and premature fatigue, thus ensuring sufficiently long service life. Lubrication is also intended to promote favourable running properties such as low noise operation and slight friction. The lubricating film created between the load-transmitting parts is supposed to prevent metal-to-metal contact.

Oil lubrication

Oil lubrication is practical when adjacent machine elements are already being supplied with oil or when heat should be dissipated by the lubricant. Heat dissipation may be required for high loads and/or high speeds or if the bearing is exposed to extraneous heat.

For oil lubrication with small quantities (throwaway lubrication), designed as drop feed lubrication, oil mist lubrication or oil-air lubrication, the churning friction and, therefore, the bearing friction is kept low.

When using air as a carrier, a direct supply and an air current which supports the sealing are possible. Direct supply to all contact areas of very fast rotating bearings and good cooling are possible by injecting larger quantities of oil.

Rolling bearing storage

During storage the bearings must not be exposed to the effects of aggressive media such as gasses, mists or aerosols of acids, alkaline solutions or salts. Direct sunlight should also be avoided because it can cause large temperature variations. The formation of condensation water is avoided under the following conditions:

- temperatures +6 to + 25 °C,
- temperature difference day/night < 8 K,
- relative air humidity < 65 %.

Mounting and dismounting

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.

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.

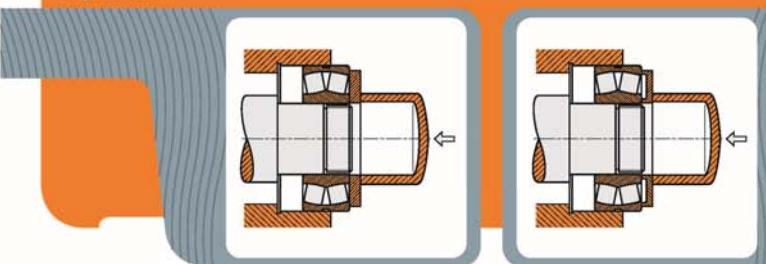
Bearings of all sizes and types can be heated in an oil bath.

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 and dismounting

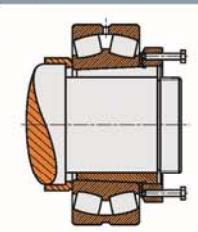
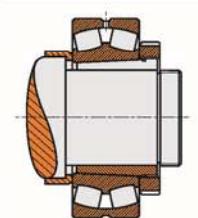
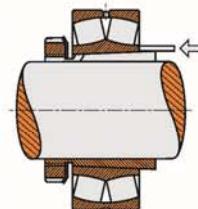
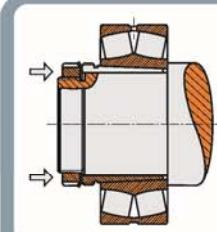
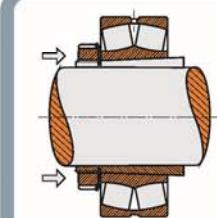
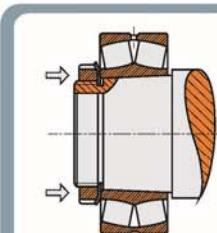
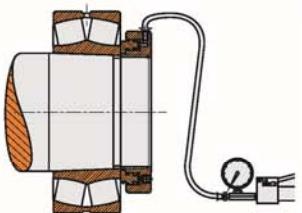
Mounting tapered bore bearings

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.

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.

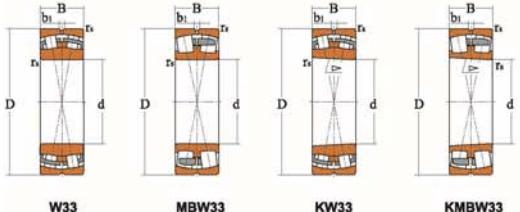
Withdrawal sleeve mounted bearings are removed by means of the extraction nut. High forces are required for large-size bearings.

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.

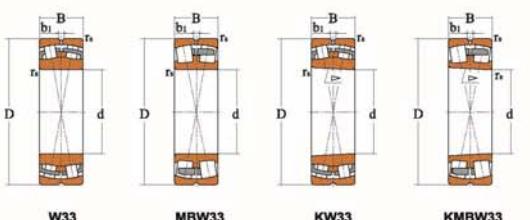
Dismounting of large-size bearings is facilitated when the hydraulic device is applied.

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.



Spherical Roller Radial Bearings, Double-row with Cylindrical and Tapered Bore

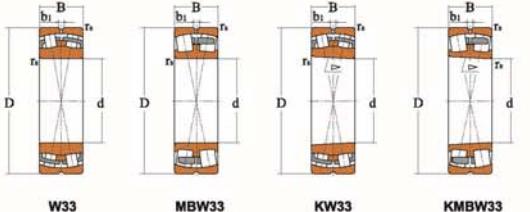
Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass		Dimensions		Design factors			Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass		Dimensions		Design factors		
d mm	D	B	dyn. C	stat. C ₀ kN			GOST	MPZ	kg	b ₁	r _{app}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	dyn. C	stat. C ₀ kN			GOST	MPZ	kg	b ₁	r _{app}	e	Y ₁	Y ₂	Y ₃
40	90	33	150	140	5800	7800	53608H	22308 W33	0.97	6,3	1,5	0,40	1,67	2,49	1,64	85	150	36	285	320	4000	5600	3517H	22217 MBW33	2,70	6,3	2,0	0,26	2,65	3,94	2,59
45	100	36	180	180	5200	6900	53609H	22309 W33	1,40	6,3	1,5	0,39	1,74	2,59	1,70	150	36	285	320	4000	5600	113517H	22217 KMBW33	2,60	6,3	2,0	0,26	2,65	3,94	2,59	
50	110	40	220	220	4600	6300	53610H	22310 W33	1,85	6,3	2,0	0,39	1,72	2,56	1,68	180	60	550	620	2800	3800	3617H	22317 MBW33	7,65	8	3,0	0,37	1,84	2,74	1,80	
110	40	220	220	4600	6300	153610H	22310 KW33	1,80	6,3	2,0	0,39	1,72	2,56	1,68	180	60	550	620	2800	3800	113617H	22317 KMBW33	7,60	8	3,0	0,37	1,84	2,74	1,80		
110	40	220	220	4600	6300	6-53610Ш1	22310 P6Ш1	1,85	6,3	2,0	0,39	1,72	2,56	1,68	180	60	550	620	2800	3800	3617HK1	22317 JBW33	7,24	8	3,0	0,37	1,84	2,74	1,80		
55	120	43	270	280	4200	5500	53611H	22311 W33	2,33	6,3	2,0	0,38	1,76	2,62	1,72	160	40	320	370	3700	5300	53518H	22218 W33	3,44	6,3	2,0	0,25	2,73	4,06	2,67	
120	43	270	280	4200	5500	153611H	22311 KW33	2,27	6,3	2,0	0,38	1,76	2,62	1,72	160	40	290	350	3600	5200	3518H	22218 MBW33	3,48	6,3	2,0	0,27	2,53	3,77	2,48		
120	43	270	280	4200	5500	3611H	22311 MBW33	2,31	6,3	2,0	0,38	1,76	2,62	1,72	190	64	610	695	2600	3600	53618H	22318 W33	8,80	11	3,0	0,36	1,90	2,83	1,86		
120	43	270	280	4200	5500	113611H	22311 KMBW33	2,28	6,3	2,0	0,38	1,76	2,62	1,72	190	64	610	695	2600	3600	3618AMH	22318 ACMBW33	8,87	11	3,0	0,37	1,83	2,72	1,78		
60	110	28	150	160	5600	7400	3512AH	22212 MBW33	1,19	6,3	1,5	0,24	2,80	4,20	2,80	190	64	610	695	2600	3600	113618AMH	22318 ACKMBW33	8,58	11	3,0	0,37	1,83	2,72	1,78	
110	28	150	160	5600	7400	113512AH	22212 KMBW33	1,43	6,3	1,5	0,24	2,80	4,20	2,80	190	73	620	753	2400	3400	3553318НП	23318 MBW33	9,80	11	3,0	0,39	1,71	2,55	1,67		
130	46	310	330	4000	5300	53612H	22312 W33	3,09	6,3	2,1	0,38	1,78	2,65	1,74	170	43	380	450	2400	3200	53519H	22219 W33	4,17	8	2,1	0,25	2,69	4,01	2,63		
130	46	310	330	4000	5300	153612H	22312 KW33	2,94	6,3	2,1	0,38	1,78	2,65	1,74	170	43	380	450	2400	3200	53519H	22219 KW33	3,97	8	2,1	0,25	2,69	4,01	2,63		
65	120	31	190	210	4200	6800	3513AMH	22213 ACMBW33	1,58	6,3	1,5	0,26	2,59	3,86	2,53	200	67	670	765	1700	2200	53619H	22319 W33	9,79	11	4,0	0,35	1,94	2,89	1,90	
120	31	190	210	4200	6800	113513AMH	22213 ACKMBW33	1,55	6,3	1,5	0,26	2,59	3,86	2,53	200	67	670	765	1700	2200	153619H	22319 KW33	9,31	11	4,0	0,35	1,94	2,89	1,90		
140	48	330	360	3700	5000	3613AMH	22313 ACMBW33	3,63	8,0	2,1	0,37	1,80	2,69	1,76	100	165	52	365	480	3400	4500	3053720НП	23120 MBW33	4,25	6,3	2,0	0,23	2,8	4,2	2,8	
140	48	330	360	3700	5000	113613AMH	22313 ACKMBW33	3,47	8,0	2,1	0,37	1,80	2,69	1,76	165	52	365	480	3400	4500	3153720НП	23120 KMBW33	4,11	6,3	2,0	0,23	2,8	4,2	2,8		
70	125	31	200	230	4900	6600	3514MH	22214 CMBW33	1,72	6,3	1,5	0,27	2,51	3,74	2,46	180	46	420	490	3300	4500	53520H	22220 W33	4,60	8	2,1	0,25	2,67	3,97	2,61	
125	31	200	230	4900	6600	113514MH	22214 CKMBW33	1,68	6,3	1,5	0,27	2,51	3,74	2,46	180	46	420	490	3300	4500	153520H	22220 KW33	4,50	8	2,1	0,25	2,67	3,97	2,61		
150	51	400	430	3400	4500	53614H	22314 W33	4,35	8,0	2,1	0,37	1,82	2,71	1,78	180	46	420	490	3300	4500	3520H	22220 MBW33	5,00	8	2,1	0,27	2,47	3,67	2,41		
150	51	400	430	3400	4500	153614H	22314 KW33	4,27	8,0	2,1	0,37	1,82	2,71	1,78	180	60,3	480	600	2400	3400	113520H	22220 KMBW33	4,95	8	2,1	0,27	2,47	3,67	2,41		
150	51	400	430	3400	4500	3614H	22314 MBW33	4,29	8,0	3,5	0,37	1,82	2,71	1,78	180	60,3	480	600	2400	3400	3003220H	23220 MBW33	6,93	8	2,1	0,35	1,92	2,86	1,88		
150	51	400	430	3400	4500	113614H	22314 KMBW33	4,22	8,0	2,1	0,37	1,82	2,71	1,78	215	73	815	950	2400	3000	53620H	22320 W33	13,20	11	3,0	0,35	1,91	2,85	1,87		
75	130	31	210	240	4800	6300	3515AMH	22215 ACMBW33	1,81	6,3	1,5	0,22	3,10	4,60	3,00	215	73	815	950	2400	3000	153620H	22320 W33	12,57	11	3,0	0,35	1,91	2,85	1,87	
130	31	210	240	4800	6300	113515AMH	22215 ACKMBW33	1,76	6,3	1,5	0,22	3,10	4,60	3,00	215	73	815	950	2400	3000	3620AMH	22320 ACMBW33	12,80	11	3,0	0,37	1,81	2,70	1,77		
160	55	430	470	3200	4300	53615H	22315 W33	5,41	8,0	2,1	0,36	1,85	2,76	1,81	215	73	815	950	2400	3000	113620AMH	22320 ACKMBW33	12,70	11	3,0	0,37	1,81	2,70	1,77		
160	55	430	470	3200	4300	153615H	22315 KW33	5,31	8,0	2,1	0,36	1,85	2,76	1,81	180	56	430	580	2800	3600	3053722НП	23122 MBW33	3,78	8	2,0	0,25	2,69	4,01	2,63		
160	55	430	470	3200	4300	3615H	22315 MBW33	5,27	8,0	2,1	0,38	1,78	2,65	1,74	170	45	300	430	3300	4200	311312H	23022 MBW33	3,66	8	2,0	0,25	2,69	4,01	2,63		
80	140	33	236	270	3200	4000	53516HK	22216 W33	2,10	6,3	2,0	0,23	2,91	4,33	2,84	180	56	430	580	2800	3600	3053722НП	23122 KMBW33	5,52	8	2,0	0,3	2,3	3,4	2,20	
140	33	236	270	3200	4000	153516HK	22216 KW33	2,06	6,3	2,0	0,23	2,91	4,33	2,84	200	53	560	640	3000	4000	3522H	22222 KW33	6,95	8	2,1	0,28	2,43	3,62	2,38		
140	33	236	270	3200	4000	3516H	22216 MBW33	2,17	6,3	2,0	0,25	2,68	4,00	2,62	200	53	550	630	3000	4000	3522H	22222 MBW33	7,50	8	2,1	0,28	2,39	3,55	2,38		
140	33	236	270	3200	4000	113516H	22216 KMBW33	1,90	6,3	2,0	0,25	2,68	4,00	2,62	200	53	550	630	3000	4000	113522H	22222 KMBW33	7,35	8	2,1	0,28	2,39	3,55	2,38		
170	58	490	540	2000	2800	53616H	22316 W33	6,49	8,0	2,1	0,36	1,88	2,81	1,84	200	53	550	630	3000	4000	3003222H	23222 MBW33	9,90	8	2,1	0,36	1,91	2,82	1,85		
170	58	490	540	2000	2800	153616H	22316 KW33	6,31	8,0	2,1	0,36	1,88	2,81	1,84	200	69,8	600	760	2200	3000	3113222H	23222 KMBW33	9,60	8	2,1	0,36	1,89	2,82	1,85		
170	58	490	540	2000	2800	3616KH	22316 MBW33	6,20	8,0	2,1	0,36	1,88	2,80	1,84	200	69,8	600	760	2200	3000	3622AMHK	22322 ACMW33	19,02	14	3,0	0,37	1,83	2,72	1,79		



Spherical Roller Radial Bearings, Double-row with Cylindrical and Tapered Bore



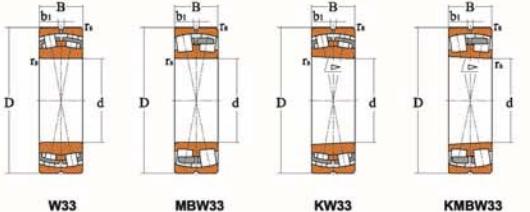
Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass		Dimensions		Design factors			Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass		Dimensions		Design factors			
d mm	D	B	dyn. C	stat. C ₀ kN	-	-	GOST	MPZ	kg	b ₁	r _{ext}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	dyn. C	stat. C ₀ kN	-	-	GOST	MPZ	kg	b ₁	r _{ext}	e	Y ₁	Y ₂	Y ₃	
110	240	80	940	1110	1900	2700	113622AMHK	22322 ACKMW33	18,66	14	3,0	0,37	1,83	2,72	1,79	140	300	102	1290	1560	1700	2200	113628AMHK	22328 ACKMW33	35,04	16	4,0	0,38	1,76	2,62	1,72	
	240	940	1110	1900	2700	3053322H	23222 W33	18,36	14	3,0	0,37	1,83	2,72	1,79																		
	240	92,1	870	1180	1600	2000			20,90	14	3,0	0,39	1,73	2,58	1,70	150	225	56	510	750	2400	3200	3003130HK	23030 MW33	8,22	11	2,1	0,22	2,70	4,00	2,65	
120	180	46	350	510	3200	4000	3003124H	23024 MBW33	4,41	8	2,0	0,26	2,61	3,89	2,55	225	56	510	750	2400	3200	3003730AH	23130 MBW33	7,97	11	2,1	0,22	2,70	4,00	2,65		
	180	46	350	510	3200	4000	3113124H	23024 KMBW33	4,27	8	2,0	0,26	2,61	3,89	2,55	250	80	830	1200	2000	2600	3113730AH	23130 KMBW33	16,30	11	2,1	0,32	2,14	3,18	2,08		
	180	60	430	670	2000	3400	4003124H	24024 MW33	5,45	6,3	2,0	0,29	2,3	3,4	2,8	225	75	650	1040	1300	1700	4003130AMH	24030 ACMBW33	10,58	8	2,1	0,31	2,20	3,20	2,10		
	215	58	630	760	2800	3700	53524H	22224 W33	8,70	11	2,1	0,27	2,51	3,74	2,45	225	75	650	1040	1300	1700	4113130AMH	24030 ACK30MBW33	10,14	8	2,1	0,31	2,20	3,20	2,10		
	215	58	630	760	2800	3700	153524H	22224 W33	8,60	11	2,1	0,27	2,51	3,74	2,45	250	100	1000	1500	1400	2100	4053730HJ	24130 MBW33	19,40	8	2,1	0,40	1,70	2,50	1,60		
	215	58	630	760	2800	3700	3524H	22224 MBW33	9,12	11	2,1	0,29	2,36	3,51	2,31	270	73	850	1010	2200	3000	153530H	22230 W33	18,25	14	3,0	0,27	2,53	3,76	2,47		
	215	58	630	760	2800	3700	113524H	22224 KMBW33	8,50	11	2,1	0,29	2,36	3,51	2,31	270	73	850	1010	2200	3000	3530AAMH	22330 ACMW33	17,80	14	3,0	0,29	2,35	3,50	2,30		
	215	76	690	940	2000	2800	3003224H	23224 MBW33	11,65	11	2,1	0,35	1,91	2,85	1,87	270	73	850	1010	2200	3000	113530AAMH	22330 ACKMW33	17,50	14	3,0	0,29	2,35	3,50	2,30		
	215	76	690	940	2000	2800	3113224H	23224 KMBW33	11,35	11	2,1	0,35	1,91	2,85	1,87	270	73	850	1010	2200	3000	3113230H	23230 MBW33	23,10	14	3,0	0,36	1,87	2,81	1,84		
	260	86	960	1120	2000	2600	3624AMH	22324 ACMBW33	23,00	14	3,0	0,37	1,82	2,71	1,78	270	96	1080	1460	1500	2100	3003230H	23230 KMBW33	43,10	16	4,0	0,38	1,78	2,64	1,74		
	260	86	960	1120	2000	2600	113624AMH	22324 ACKMBW33	22,35	14	3,0	0,37	1,82	2,71	1,78	270	96	1080	1460	1500	2100	3630AMH	22330 ACMW33	42,67	16	4,0	0,38	1,78	2,64	1,74		
130	200	52	430	630	2800	3600	3003126H	23026 MBW33	6,30	8	2,0	0,25	2,73	4,08	2,67	320	108	1450	1750	1600	2000	3003123AMH	23032 ACMBW33	9,96	11	2,1	0,25	2,71	4,04	2,65		
	200	52	430	630	2800	3600	313126H	23026 KMBW33	6,25	8	2,0	0,25	2,73	4,08	2,67	160	240	60	590	880	2400	3000	3113123AMH	23132 ACKMBW33	9,68	11	2,1	0,25	2,71	4,04	2,65	
	200	69	540	815	1700	2600	4053126HJ	24026 MBW33	7,72	6,3	2,0	0,34	2,00	2,90	1,90	240	60	590	880	2400	3000	3003732AMH	23132 ACMBW33	20,30	14	2,1	0,32	2,13	3,17	2,08		
	210	64	560	780	2400	3200	3053726H	23126 W33	8,79	8	2,8	0,28	2,40	3,60	2,50	270	86	980	1350	1700	2300	3131732AMH	23132 ACKMBW33	19,85	14	2,1	0,32	2,13	3,17	2,08		
	210	64	560	780	2400	3200	3153726H	23126 KW33	8,52	8	2,8	0,28	2,40	3,60	2,50	270	88	980	1350	1700	2300	4003123AMH	24032 ACMBW33	12,68	8	2,1	0,3	2,2	3,3	2,20		
	230	80	780	1140	1900	2500	3053226HJ	23226 MBW33	14,20	11	3,0	0,33	2,10	3,10	2,00	240	80	750	1200	1700	2400	4113123AMH	24032 ACK30MBW33	12,47	8	2,1	0,3	2,2	3,3	2,20		
	230	80	780	1140	1900	2500	3153226HJ	23226 KMBW33	14,10	11	3,0	0,33	2,10	3,10	2,00	240	80	750	1200	1700	2400	3532AMH	22232 ACMW33	23,62	14	3,0	0,29	2,29	3,40	2,24		
	230	64	735	930	1800	2400	53526H	22226 W33	10,80	11	3,0	0,28	2,45	3,65	2,35	290	80	1000	1300	2000	2800	315323AMH	22323 MBW33*	30,20	14	3,0	0,37	1,84	2,74	1,80		
	230	64	735	930	1800	2400	153526H	22226 KW33	10,50	11	3,0	0,28	2,45	3,65	2,35	290	80	1000	1300	2000	2800	315323AMH	22323 KMBW33	23,18	14	3,0	0,29	2,29	3,40	2,24		
	230	64	735	930	2500	3500	3526H	22226 MBW33	11,10	11	3,0	0,29	2,31	3,44	2,26	290	104	1220	1660	1400	2100	305323HJ	23232 MBW33*	23,62	14	3,0	0,37	1,84	2,74	1,80		
	230	64	735	930	2500	3500	113526H	22226 KMBW33	10,78	11	3,0	0,29	2,31	3,44	2,26	290	104	1220	1660	1400	2100	315323HJ	23232 KMBW33	29,30	14	3,0	0,37	1,84	2,74	1,80		
	280	93	1120	1320	1700	2400	3626KH	22326 MBW33	28,58	14	4,0	0,37	1,84	2,74	1,80	290	80	1000	1300	2000	2800	5352H	22232 W33	23,50	14	3,0	0,27	2,52	3,76	2,52		
	280	93	1120	1320	1700	2400	113626KH	22326 KMBW33	28,24	14	4,0	0,37	1,84	2,74	1,80	290	80	1000	1300	2000	2800	15352H	22232 KW33	22,90	14	3,0	0,27	2,52	3,76	2,52		
	280	93	1120	1320	1700	2400	3626MB	22326 MB	29,09	14	4,0	0,37	1,84	2,74	1,80	340	114	1600	1960	1500	1900	113632AMH	22332 ACKMW33	51,24	16	4,0	0,38	1,80	2,69	1,76		
140	210	53	460	680	2700	3300	3003128H	23028 MBW33	6,76	8	2,0	0,25	2,70	4,03	2,65	340	114	1600	1960	1500	1900	3003134H	23034 MBW33	12,55	11	2,1	0,23	3,00	4,40	2,90		
	210	53	460	680	2700	3300	3113128H	23028 KMBW33	6,50	8	2,0	0,25	2,70	4,03	2,65	170	260	67	710	1050	2500	2800	3113134H	23034 KMBW33	12,15	11	2,1	0,23	3,00	4,40	2,90	
	210	69	570	900	1800	2800	4003128H	24028 MBW33	8,36	6,3	2,0	0,29	2,30	3,50	2,30	260	67	710	1050	2500	2800	4053134HJ	24034 MBW33	17,20	8	2,0	0,33	2,00	3,00	2,00		
	225	68	630	920	1600	2000	3003728AMH	23128 ACMBW33	11,26	11	2,1	0,27	2,50	3,70	2,40	260	90	930	1480	1400	2300	4053134HJ	24034 K30MBW33	16,48	8	2,0	0,33	2,00	3,00	2,00		
	225	68	630	920	1600	2000	3113728AMH	23128 ACKMBW33	10,93	11	2,1	0,27	2,50	3,70	2,40	260	90	930	1480	1400	2300	4153134HJ	24034 K30MBW33	16,48	8	2,0	0,33	2,00	3,00	2,00		
	225	85	695	1100	1400	2200	4053728HJ	24128 MBW33	12,32	6,3	2,1	0,34	1,90	2,90	1,80	280	88	1040	1540	1800	2400	3053734HJ	23134 KMBW33	21,20	16	2,1	0,31	2,16	3,22	2,11		
	225	85	695	1100	1400	2200	3528AMH	22228 ACMW33	14,18	11	3,0	0,29	2,35	3,50	2,30	280	88	1040	1540	1800	2400	3153734HJ	23134 KMBW33	21,02	16	2,1	0,31	2,16	3,22	2,11		
	250	68	710	930	2400	3100	113528AMH	22228 ACKMW33	13,88	11	3,0	0,29	2,35	3,50	2,30	280	109	1200	1840	1200	1900	4053734HJ	24134 MBW33	27,22	8	2,1	0,38	1,74	2,50	1,70		
	250	68	915	1220	1600	2300	3053228HJ	23228 KMBW33	18,70	11	3,0	0,36	1,90	2,89	1,83	310	86	1120	1450	1900	2500	113534AMH	22334 ACKMBW33	27,91	16	4,0	0,30	2,27	3,37	2,21		
	250	68	915	1220	1600	23																										



Spherical Roller Radial Bearings, Double-row with Cylindrical and Tapered Bore

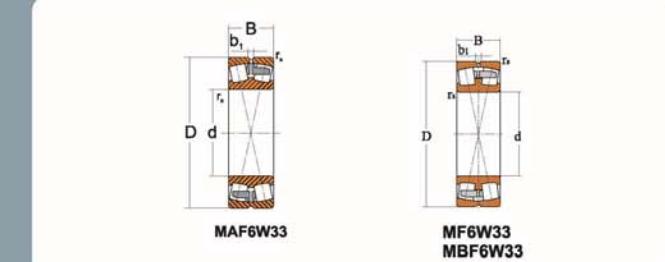


Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid		Designation		Mass			Dimensions			Design factors			Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid		Designation		Mass			Dimensions			Design factors													
d mm	D	B	dyn C	stat. C ₀	kN	kg	GOST	MPZ	b ₁	r _{min}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	dyn C	stat. C ₀	kN	kg	GOST	MPZ	b ₁	r _{min}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	dyn C	stat. C ₀	kN	kg	GOST	MPZ	b ₁	r _{min}	e	Y ₁	Y ₂	Y ₃		
170	360	120	1760	2160	1400	1800	3634AMHK	22334ACMW33	59,80	16	4,0	0,37	1,81	2,69	1,77	220	370	150	2100	3380	900	1300	4053744HK	24144MBW33	67,70	11	4,0	0,41	1,69	3,70	2,51	290	120	1760	2160	1400	1800	31134AMHK	22244ACMBW33	60,20	16	4,0	0,28	2,42	3,60	2,37
					113634AMHK		58,60	16	4,0	0,37	1,81	2,69	1,77		400	108	1760	2400	1700	1900	113544AMHK	22244ACKMBW33	60,00	16	4,0	0,28	2,42	3,60	2,37																	
180	280	74	830	1240	1900	2700	3003136H	23036MBW33	15,79	14	2,1	0,26	2,56	3,81	2,50	400	144	2300	3500	1100	1400	3053244HJL	23244MBW33	80,70	16	5,0	0,39	1,72	2,59	1,68	280	74	830	1240	1900	2700	3113136H	23036KMBW33	15,49	14	2,1	0,26	2,56	3,81	2,50	
					4553136HJL		23036KMBW33	23,30	8	2,1	0,37	1,80	2,70	1,80		400	144	2300	3500	1100	1400	3153244HJL	23244KMBW33	78,30	16	5,0	0,39	1,72	2,59	1,68																
					20436MBW33		39,50	14	4,0	0,35	1,90	2,90	1,80		460	145	2700	3450	1000	1400	3644AMHK	22344ACMW33	124,70	22	5,0	0,35	1,95	2,90	1,91																	
					3053236H		38,30	14	4,0	0,35	1,90	2,90	1,80		460	145	2700	3450	1000	1400	113644AMHK	22344ACKMW33	124,20	22	5,0	0,35	1,95	2,90	1,91																	
300	96	1090	1800	1500	2100	3053736HJL	23136MBW33	27,90	16	3,0	0,32	2,12	3,25	2,00	230	380	120	1535	2655	700	900	3746	3746	57,20	-	4,0	0,25	2,69	4,02	2,65																
300	96	1090	1800	1500	2100	3153736HJL	23136KMBW33	27,00	16	3,0	0,32	2,12	3,25	2,00	240	360	92	1290	2160	1500	1900	3003148AMH	23048ACMW33	34,10	16	3,0	0,25	2,75	4,10	2,69																
320	86	1180	1570	1800	2700	3536AMHK	22236ACMW33	30,47	16	4,0	0,28	2,37	3,56	2,32	360	92	1290	2160	1500	1900	3113148AMH	23048ACKMBW33	33,20	16	3,0	0,25	2,75	4,10	2,69																	
320	86	1180	1570	1800	2700	113536AMHK	22236ACKMW33	29,79	16	4,0	0,28	2,37	3,56	2,32	360	118	1600	2700	1100	1600	4003148AMH	24048ACMW33	43,22	11	3,0	0,30	2,30	3,40	2,20																	
380	126	2000	2450	1300	1600	3636AMHK	22336ACMW33	71,04	22	4,0	0,37	1,83	2,71	1,78	400	128	2000	3200	1100	1600	3003748AMH	23148ACMW33	65,70	22	4,0	0,32	2,10	3,13	2,06																	
380	126	2000	2450	1300	1600	113636AMHK	22336ACKMW33	69,54	22	4,0	0,37	1,83	2,71	1,78	400	128	2000	3200	1100	1600	3113748AMH	23148ACKMW33	63,65	22	4,0	0,32	2,10	3,13	2,06																	
190	280	67	610	1165	950	1300	3738	3738	15,00	14	2,1	0,25	2,74	4,09	2,69	320	60	60	620	1250	1700	2000	3003948	23948M	13,82	-	4,0	0,19	4,00	5,95	3,91															
290	75	870	1350	1900	2400	3053138HJL	23038MBW33	18,00	14	2,1	0,25	2,69	4,00	2,68	440	160	2900	4300	950	1300	3053248HJL	23248MBW33	108,00	16	4,0	0,37	1,80	2,69	1,76																	
290	75	870	1350	1900	2400	3153138HJL	23038KMBW33	17,40	14	2,1	0,25	2,69	4,00	2,68	440	160	2900	4300	950	1300	3153248HJL	23248KMBW33	104,80	16	4,0	0,37	1,80	2,69	1,76																	
340	120	1600	2400	1300	1800	3053238HJL	23238MBW33	46,60	16	4,0	0,36	1,89	2,81	1,85	440	120	2000	3000	1300	1700	3548AMHK	22248ACMW33	83,26	22	4,0	0,27	2,50	3,70	2,50																	
340	120	1600	2400	1300	1800	3153238HJL	23238KMBW33	45,20	16	4,0	0,36	1,89	2,81	1,85	440	120	2000	3000	1300	1700	113548AMHK	22248ACKMW33	81,56	22	4,0	0,27	2,50	3,70	2,50																	
320	104	1370	2080	1500	1900	3153738H	23138MBW33	33,12	16	3,0	0,33	2,07	3,09	2,03	400	128	2000	3200	1100	1600	3113748AMH	23148ACKMW33	63,65	22	4,0	0,32	2,10	3,13	2,06																	
340	92	1270	1700	1700	2300	3538H	22238MW33	36,40	16	4,0	0,29	2,33	3,46	2,27	400	104	1600	2540	1500	1900	3003152AMH	23052ACMW33	49,60	16	4,0	0,26	2,61	3,89	2,55																	
340	92	1270	1700	1700	2300	113538H	22238KMW33	36,10	16	4,0	0,29	2,33	3,46	2,27	400	104	1600	2540	1500	1900	3113152AMH	23052ACKMBW33	48,37	16	4,0	0,26	2,61	3,89	2,55																	
340	92	1270	1700	1700	2300	3538*	3538*	36,83	4,0	2,9	0,29	2,33	3,46	2,27	480	174	3200	4900	850	1100	3053252H	23252MBW33	141,00	16	5,0	0,37	1,80	2,69	1,76																	
400	132	2120	2660	1200	1800	3638*	3638*	82,90	5,0	0,36	1,85	2,75	1,81		480	174	3200	4900	850	1100	3153252H	23252KMBW33	137,00	16	5,0	0,37	1,80	2,69	1,76																	
400	132	2120	2660	1200	1800	3638HK	22338MW33	82,70	22	5,0	0,36	1,85	2,75	1,81	440	144	2530	3900	1100	1400	3003752AMH	23152ACMW33	93,56	22	4,0	0,33	2,02	3,04	1,77																	
400	132	2120	2660	1200	1800	113638HK	22338KMW33	80,90	22	5,0	0,36	1,85	2,75	1,81	440	144	2530	3900	1100	1400	3113752AMH	23152ACKMW33	87,78	22	4,0	0,33	2,02	3,04	1,77																	
200	310	82	1000	1520	1800	2100	3003140H	23040MBW33	22,50	14	2,1	0,27	2,53	3,76	2,46	480	130	2640	3560	1100	1600	3552H	22252MBW33	101,20	22	5,0	0,30	2,28	3,40	2,23																
310	82	1000	1520	1800	2100	3113140H	23040KMBW33	21,80	14	2,1	0,27	2,53	3,76	2,46	540	165	3550	4590	850	1000	3652AMHK	22352ACMW33	102,42	22	6,0	0,33	2,01	3,00	1,97																	
310	82	1600	2350	1800	2100	3003740H	23140MBW33	44,54	16	3,0	0,34	2,14	3,18	2,09	540	165	3550	4590	850	1000	113652AMHK	22352ACKMW33	192,20	22	6,0	0,33	2,01	3,00	1,97																	
310	109	1200	2100	1300	1900	4003140AMH	24040ACMW33	30,00	11	2,1	0,24	2,80	4,20	2,80	280	380	75	965	2040	1000	1400	3003956*	3003956*	25,60	-	2,1	0,18	5,80	5,60	3,70																
340	112	1600	2350	1400	1800	3113740HJL	23140KMBW33	43,24	16	3,0	0,32	2,14	3,18	2,09	410	98	1250	2450	700	900	3756	3756	46,80	-	4,0	0,25	2,65	3,96	2,60																	
360	128	1800	2700	850	1100	3053240H	23240MBW33	56,30	16,7	4,0	0,37	1,80	2,69	1,76	420	106	1730	2890	1200	1500	3003156AMH	23056ACMW33	54,18	16	4,0	0,25	2,70	4,02	2,64																	
360	128	1800	2700	850	1100	3153240H	23240KMBW33	54,60	16,7	4,0	0,37	1,80	2,69	1,76	420	106	1730	2890	1200	1500	3113156AMH	23056ACKMBW33	52,88	16	4,0	0,25	2,70	4,02	2,64																	
360	98	1460	2000	1600	2100	3540AMH	22240ACMW33	44,40	16	4,0	0,28	2,31	3,44	2,26	420	106	1730	2890	1200	1500	3003756AMH	23156ACMW33	99,55	22	5,0	0,33	2,04	3,04	2,06																	
360	98	1460	2000	1600	2100	113540AMH	22240ACKMW33	43,50	16	4,0	0,29	2,31	3,44	2,26	460	146	2650	4250	1000	1200	3113756AMH	23156ACKMBW33	96,45	22	5,0	0,33	2,04	3,04	2,06																	
420	138	2320	2900	1200	1500	3640AMHK	22340ACMW33	93,80	22	5,0	0,36	1,87	2,78	1,83	500	130	2680	3740	1100	1300	3556AH	22256MBW33	120,70	22	5,0	0,28	2,39	3,56	2,34																	
420	138	2320	2900	1200	1500	113640AMHK	22340ACKMW33	90,00	22	5,0	0,36	1,87	2,78	1,83	500	130	2680	3740	1100	1300	113556AH	22256KMBW33	120,50	22	5,0	0,28	2,39	3,56	2,34																	
220	300	60	546	1000	1800	2100	3053944HJL	23944MBW33	13,0	11	2,1	0,16	4,20	6,30	4,00	580	175	4000																												



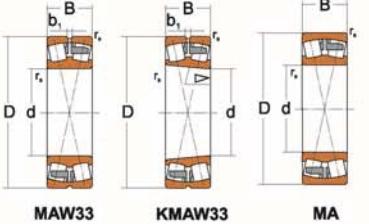
**Spherical Roller Radial Bearings, Double-row
with Cylindrical and Tapered Bore**

Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid		Designation		Mass		Dimensions		Design factors		
d mm	D mm	B	dyn C	stat. C ₀ kN	non-fluid liquid rpm	GOST	MPZ	kg	b ₁	r _{we}	e	Y ₁	Y ₂	Y ₃	
300	460	118	2100	3480	1100 1500	3113160AMH	23060 ACKMBW33	71,56	22	4,0	0,25	2,64	3,93	2,58	
500	160	3200	5150	940	1100	3003760HK	23160 MW33	127,60	22	5,0	0,36	1,90	2,83	1,86	
500	160	3200	5150	940	1100	3113760HK	23160 KMW33	123,60	22	5,0	0,36	1,90	2,83	1,86	
320	480	121	2250	3750	1000 1300	3003164AMHK	23064 ACMW33	80,51	16	4,0	0,26	2,55	3,08	2,50	
480	121	2250	3750	1000	1300	3113164AMHK	23064 ACKMW33	78,26	16	4,0	0,26	2,55	3,08	2,50	
580	150	3600	5000	940	1250	3564AMH	22264 ACMBW33	180,10	22	5,0	0,27	2,55	3,80	2,55	
580	150	3600	5000	940	1250	113564AMH	22264 ACKMBW33	175,70	22	5,0	0,27	2,55	3,80	2,55	
580	208	4400	6900	700	980	3003264AMHK	23264 ACMW33	249,10	22	5,0	0,37	1,81	2,69	1,80	
580	208	4400	6900	700	980	3113264AMHK	23264 ACKMW33	241,80	22	5,0	0,37	1,81	2,69	1,80	
340	520	133	2650	4580	950 1150	3003168AMHK	23068 ACMW33	108,30	22	5,0	0,26	2,55	3,08	2,50	
520	133	2650	4580	950	1150	3113168AMHK	23068 ACKMW33	105,22	22	5,0	0,26	2,55	3,08	2,50	
360	540	134	2750	4850	930 1170	3003172H	23072 MBW33	112,90	22	5,0	0,26	2,60	3,87	2,54	
540	134	2750	4850	930	1170	3113172H	23072 KMBW33	109,90	22	5,0	0,26	2,60	3,87	2,54	
380	620	194	4400	7100	500 1000	3053776H	23176 MBW33	239,0	22	5,0	0,3	2,20	3,40	2,20	
620	194	4400	7100	500	1000	3153776H	23176 KMBW33	236,5	22	5,0	0,3	2,20	3,40	2,20	
400	600	148	3250	5700	850 1100	3003180AMH	23080 ACMBW33	153,14	22	5,0	0,25	2,69	4,00	2,68	
650	200	4650	7800	520	950	3003780AMHK	23180 ACMW33	267,32	22	6,0	0,31	2,17	3,24	2,12	
820	243	7500	10400	420	620	3680AMHX	22380 ACMBHA1W33	635,00	22	7,5	0,32	2,12	3,15	2,11	
460	680	163	3900	7200	540 930	3003192AMH	23092 ACMBW33	208,20	22	6,0	0,23	2,95	4,39	2,89	
530	780	185	5100	9700	430 750	30031/530	230/530 MB	312,31	-	6,0	0,22	3,03	4,51	2,98	
600	980	300	9550	19300	300 400	30037/600	231/600 MB	880,85	-	7,5	0,30	2,26	3,37	2,21	



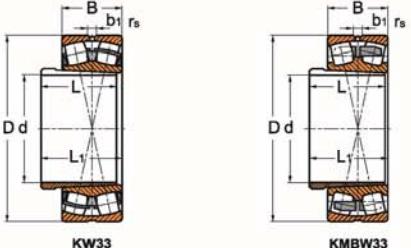
**Super Precision Spherical Roller Radial Bearings Double-row
with Cylindrical and Tapered Bore**

Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid		Designation		Mass		Dimensions		Design factors		
d mm	D mm	B	dyn C	stat. C ₀ kN	non-fluid liquid rpm	GOST	MPZ	kg	b ₁	r _{we}	e	Y ₁	Y ₂	Y ₃	
75	160	55	430	470	3500 4700	113615YH	22315 KMBF6W33	5,21	8	2,1	0,38	1,78	2,65	1,74	
100	180	46	420	490	3600 4900	3520YHK5	22220 MAF6W33	5,21	8	2,1	0,27	2,47	3,67	2,41	
215	73	670	870	2400 3000	3620HKY	3620 HKY	13,00	11	3,0	0,37	1,81	2,70	1,77		
110	240	80	940	1110	2000 2900	3622AMHYK5	22322 ACMF6W33	19,62	14	3,0	0,37	1,83	2,72	1,79	
240	80	940	1110	2000 2900	3622AMHY	3622 ACMF6W33	19,02	14	3,0	0,37	1,83	2,72	1,79		
120	215	58	630	760	3000 4000	3524YHK5	22224 MAF6W33	9,23	11	2,1	0,29	2,36	3,51	2,31	
260	86	960	1120	2200 2800	3624AMHY	3624 ACMF6W33	23,00	14	3,0	0,37	1,82	2,71	1,78		
260	86	960	1120	2200 2800	3624AHY2	3624 ACMF62W33	23,00	14	3,0	0,37	1,82	2,71	1,78		
140	300	102	1290	1560	1700 2200	3628AMHYK	22328 ACMF6W33	35,58	16	4,0	0,38	1,76	2,62	1,72	
150	270	73	850	1010	2400 3300	3530AMHYUK	22230 ACMF6W33	17,80	14	3,0	0,29	2,35	3,50	2,30	
320	108	1450	1750	1700 2200	3630AMHYUK	3630 ACMF6W33	43,10	16	4,0	0,38	1,78	2,64	1,74		
320	108	1450	1750	1700 2200	3630AMHYUK5	3630 ACMF6W33	44,64	16	4,0	0,38	1,78	2,64	1,74		
160	340	114	1600	1960	1600 2000	3632AMHYUK	22332 ACMF6W33	51,24	6	4,0	0,38	1,80	2,69	1,76	
180	320	86	1180	1570	1900 2900	3536AMHYUK	22236 ACMF6W33	30,47	16	4,0	0,28	2,37	3,56	2,32	
380	126	2000	2450	1400 1700	3636AMHYUK	3636 ACMF6W33	71,04	22	4,0	0,37	1,83	2,71	1,78		
380	126	2000	2450	1400 1700	3636AMHYUK5	3636 ACMF6W33	73,86	22	4,0	0,37	1,83	2,71	1,78		
200	420	138	2320	2900	1300 1600	3640AMHY2K	22340 ACMF62W33	93,80	22	5,0	0,36	1,87	2,78	1,83	
220	400	108	1760	2400	1800 2000	3544AMHY	22244 ACMBF6W33	60,20	16	4,0	0,28	2,42	3,60	2,37	
260	540	165	3550	4590	900 1100	3652AMHY2K	22352 ACMF62W33	192,42	22	6,0	0,33	2,01	3,00	1,97	
280	500	130	2680	3740	1200 1400	3556AHY	22256 MBF6W33	120,70	22	5,0	0,28	2,39	3,56	2,34	
320	580	150	3600	5000	1000 1350	3564AMHY	22264 ACMBF6W33	180,10	22	5,0	0,27	2,55	3,80	2,55	
400	650	200	4650	7800	570 1000	3003780AMHY2	23180 ACMF62W33	267,32	22	6,0	0,31	2,17	3,24	2,12	
820	243	7500	10400	460	680	3680AMXHY1	22380 ACMBHA1F61W33	634,85	22	7,5	0,32	2,12	3,15	2,11	
820	243	7500	10400	460	680	3680AMXHY2	22380 ACMBHA1F62W33	634,70	22	7,5	0,32	2,12	3,15	2,11	



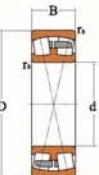
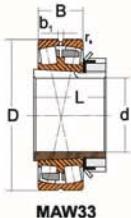
Spherical Roller Radial Bearings for vibratory applications with Cylindrical and Tapered Bore

Basic dimensions			Load capacity		Maximum rotation speed (lubrication non-fluid liquid rpm)		Designation		Mass		Dimensions		Design factors			Basic dimensions			Load capacity		Maximum rotation speed (lubrication non-fluid liquid rpm)		Designation		Mass		Dimensions		Design factors		
d mm	D	B	dyn. C	stat. C, kN			GOST	MPZ	kg	b, r _{ext}	r _{int}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	dyn. C	stat. C, kN			GOST	MPZ	kg	b, r _{ext}	r _{int}	e	Y ₁	Y ₂	Y ₃
25	52	20,6	43	41	8500	11000	3553205	23205 MA	0,20	1,0	0,41	1,64	2,44	1,60	140	300	102	1290	1560	1700	2200	3628AMHK5	22328 ACMAW33	36,10	16	4,0	0,38	1,76	2,62	1,72	
35	72	23	86	85	9000	12000	553507	22207 MA	0,45	1,1	0,33	2,03	3,03	1,99	300	102	1290	1560	1700	2200	113628AMHK5	22328 ACKMAW33	35,73	16	4,0	0,38	1,76	2,62	1,72		
40	80	23	89	90	5300	6800	553508	22208 MA	0,57	1,1	0,29	2,20	3,41	2,24	150	270	73	850	1110	2200	3000	3530AMHK5	22230 ACMAW33	18,24	14	3,0	0,29	2,35	3,50	2,30	
80	23	95	90		5300	6800	553508A	22208 AMA	0,57	1,1	0,28	2,30	3,50	2,30	320	108	1450	1760	1600	2000	3630AMHK5	22330 ACMAW33	44,64	16	4,0	0,38	1,78	2,64	1,74		
45	85	23	102	98	7500	10000	553509	22209 MA	0,64	1,1	0,25	2,60	3,90	2,50	160	340	114	1600	1960	1500	1900	3632AMHK5	22332 ACMAW33	52,60	16	4,0	0,38	1,80	2,69	1,76	
100	25	125	127		6300	8500	553309	22309 MA	1,05	1,5	0,23	2,98	4,45	2,92	170	260	67	735	1200	2500	2800	3003134HK5	23034 MAW33	13,20	11	2,1	0,23	3,00	4,40	2,90	
50	90	23	104	106	7000	9500	553510	22210 MA	0,68	6,3	1,1	0,25	2,60	3,97	2,60	360	120	1760	2160	1400	1800	3634AMHK5	22334 ACMAW33	61,50	16	4,0	0,37	1,81	2,69	1,77	
110	40	178	209		4800	6300	553610H	22310 MAW33	1,84	2,0	0,37	1,80	2,70	1,80	360	120	1760	2160	1400	1800	113634AMHK5	22334 ACKMAW33	59,00	16	4,0	0,37	1,81	2,69	1,77		
55	100	25	110	125	6300	8500	553511	22211 MA	0,91	6,3	1,5	0,23	2,98	4,45	2,92	180	380	126	2000	2450	1300	1600	3636AMHK5	22336 ACMAW33	71,04	22	4,0	0,37	1,83	2,71	1,78
120	43	270	280		4200	5500	3611HK5	22311 MAW33	2,38	2,0	0,38	1,76	2,62	1,72	190	400	132	2120	2660	1200	1800	3638HK5	22338 MAW33	86,60	22	5,0	0,36	1,85	2,75	1,81	
60	110	28	150	180	5600	7400	3512HK5	22212 MAW33	1,21	6,3	1,5	0,24	2,80	4,20	2,80	400	132	2120	2675	1200	1800	113638HK5	22338 KMAW33	84,80	22	5,0	0,36	1,85	2,75	1,81	
110	28	156	180		5600	7400	553512	22212 MA	1,21	-	1,5	0,26	2,61	3,89	2,55	200	420	138	2320	2900	1200	1500	3640AMHK5	22340 ACMAW33	94,50	22	5,0	0,36	1,87	2,78	1,83
130	46	310	330		4800	6300	553612H	22312 MAW33	3,05	6,3	2,1	0,38	1,78	2,65	1,74	220	460	145	2700	3450	1000	1400	3644AMHK5	22344 ACMAW33	125,76	22	5,0	0,35	1,95	2,90	1,91
65	140	48	330	360	3700	5000	3613AMHK5	22313 ACMAW33	3,71	8	2,1	0,37	1,80	2,69	1,76	260	540	165	3550	4590	850	1000	3652AMHK5	22352 ACMAW33	199,40	22	6,0	0,33	2,01	3,00	1,97
70	150	51	311	380	2400	3200	3614HK5	22314 MAW33	4,53	8	2,1	0,37	1,82	2,71	1,78	540	165	3550	4590	850	1000	113652AMHK5	22352 ACKMAW33	199,00	22	6,0	0,33	2,01	3,00	1,97	
75	160	55	430	470	3200	4300	3615HK5	22315 MAW33	5,57	8	2,1	0,38	1,78	2,65	1,74	280	500	130	2680	3740	1100	1300	3556AHK5	22256 MAW33	112,40	22	5,0	0,28	2,38	3,56	2,34
80	140	33	230	270	3200	4000	3516HK5	22216 MAW33	2,32	6,3	2,0	0,25	2,68	4,00	2,62	580	175	4000	5280	750	1000	3656AMHK5	22356 ACMAW33	240,95	22	6,0	0,33	2,03	3,02	2,02	
170	58	480	540		2000	2800	3616HK5	22316 MAW33	6,66	8	2,1	0,36	1,88	2,80	1,84	580	175	4000	5280	750	1000	113656AMHK5	22356 ACKMAW33	236,00	22	6,0	0,33	2,03	3,02	2,02	
90	190	64	610	695	2600	3600	3618AMHK5	22318 ACMAW33	9,08	11	3,0	0,37	1,83	2,72	1,78	380	620	194	4400	7100	500	1000	305377HK5	23176 MAW33	242,90	22	5,0	0,30	2,20	3,40	2,20
100	180	46	420	490	3300	4500	3520HK5	22220 MAW33	5,21	8	2,1	0,27	2,47	3,67	2,41	3620AMHK5	22320 ACMAW33	13,41	11	3,0	0,37	1,81	2,70	1,77							
110	240	80	940	1110	1900	2700	3622AMHK5	22322 ACMAW33	19,62	14	3,0	0,37	1,83	2,72	1,79	113622AMHK5	22322 ACKMAW33	19,26	14	3,0	0,37	1,83	2,72	1,79							
120	215	58	630	760	2800	3700	3524HK5	22224 MAW33	9,23	14	3,0	0,37	1,82	2,71	1,78	3624AMHK5	22324 ACMAW33	24,13	14	3,0	0,37	1,82	2,71	1,78							
120	260	86	960	1120	2000	2600	3624AMHK5	22324 ACMAW33	24,13	14	3,0	0,37	1,82	2,71	1,78	113624AMHK5	22324 ACKMAW33	23,78	14	3,0	0,37	1,82	2,71	1,78							
130	230	64	735	930	2500	3500	3526HK5	22226 MAW33	11,54	11	3,0	0,29	2,31	3,44	2,26	113526HK5	22226 KMAW33	11,30	11	3,0	0,29	2,31	3,44	2,26							
130	230	64	735	930	2500	3500	3626HK5	22326 MAW33	29,60	14	4,0	0,37	1,84	2,74	1,80	113626HK5	22326 ACMAW33	29,60	14	4,0	0,37	1,84	2,74	1,80							



Spherical roller bearings double row on withdrawal sleeve

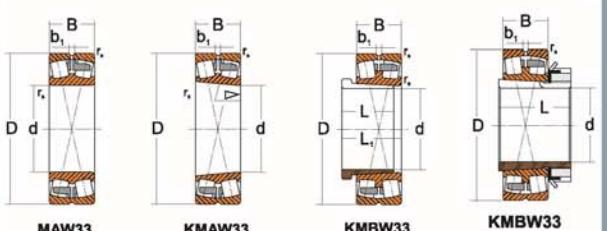
Basic dimensions				Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass				Dimensions				Design factors				Basic dimensions				Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass				Dimensions				Design factors			
d mm	D	B	C	dyn.	stat.	C ₀	kN	GOST	MPZ	Sleeve	kg	b ₁	L	L ₁	r _{ee}	e	Y ₁	Y ₂	Y ₃	d mm	D	B	C	dyn.	stat.	C ₀	kN	GOST	MPZ	Sleeve	kg	b ₁	L	L ₁	r _{ee}	e	Y ₁	Y ₂	Y ₃				
50	120	43	270	280	4200	5500	753610H	22311 KW33	AH2311X	2,53	6,3	54	57	2,0	0,38	1,76	2,62	1,72	50	120	43	270	280	4200	5500	353610H	22311 KW33	H2311	3,50	6,3	59	2,0	0,38	1,76	2,62	1,72							
65	150	51	400	430	3400	4500	753613H	22314 KW33	AH2314X	4,88	8	64	68	2,1	0,37	1,82	2,71	1,78	60	120	31	190	230	4200	6800	13512AMH	22213 ACKMBW33	H313	2,23	6,3	50	1,5	0,26	2,59	3,86	2,53							
160	55	430	470	3200	4300	953613H	22315 KW33	AH2315X	5,98	8	68	72	2,1	0,36	1,85	2,76	1,81	65	160	55	430	470	3200	4300	353613H	22315 KW33	H2315	6,15	8	73	2,1	0,36	1,85	2,76	1,81								
160	55	430	470	3200	4300	73613	22315 KW33	AH2315X	6,12	-	68	71,5	2,1	0,38	1,78	2,65	1,74	65	160	55	430	470	3200	4300	13613	22315 KW33	H2315	6,16	8	73	2,1	0,38	1,78	2,65	1,74								
70	160	55	430	470	3200	4300	73614	22315 KMB	AH2315X	5,76	-	68	72	2,1	0,38	1,78	2,65	1,74	70	140	33	236	270	3200	4000	13514H	22216 KMBW33	H316	3,20	6,3	59	2,0	0,25	2,68	4,00	2,62							
160	55	430	470	3200	4300	73614H	22315 KW33	AH2315X	5,67	8	68	72	2,1	0,36	1,85	2,76	1,81	70	140	33	236	270	3200	4000	353514H	22216 KW33	H316	3,08	6,3	59	2,0	0,23	2,91	4,33	2,84								
75	170	58	490	540	2000	2800	73615	22316 KMB	AH2316X	7,15	-	71	75	2,1	0,36	1,88	2,80	1,84	70	170	58	490	540	2000	2800	13614H	22316 KW33	H2316	7,38	8	78	2,1	0,36	1,88	2,80	1,84							
85	190	64	610	695	2600	3600	73617AMH	22318 ACKMBW33	AH2318X	9,36	11	79	83	3,0	0,37	1,83	2,72	1,78	80	160	40	320	370	3700	5300	13516H	22218 KMBW33	H318	4,77	6,3	65	2,0	0,27	2,53	3,77	2,48							
190	64	610	695	2600	3600	73617H	22318 KW33	AH2318X	9,33	11	79	83	3,0	0,36	1,90	2,83	1,86	80	160	40	290	350	3600	5200	353516H	22218 KW33	H318	4,73	6,3	65	2,0	0,25	2,73	4,06	2,67								
95	215	73	815	950	2400	3000	73619AMH	22320 ACKMBW33	AH2320X	13,75	11	90	94	3,0	0,37	1,81	2,70	1,77	90	180	46	420	490	3300	4500	13518H	22220 KMBW33	H320	6,61	8	71	2,1	0,27	2,47	3,67	2,41							
215	73	815	950	2400	3000	73619H	22320 KW33	AH2320X	13,47	11	90	94	3,0	0,35	1,91	2,85	1,87	90	180	46	420	490	3300	4500	353518H	22220 KW33	H320	6,19	8	71	2,1	0,25	2,67	3,97	2,61								
115	260	86	960	1120	2000	2600	73623JAMH	22324 ACKMBW33	AH2324X	24,32	14	105	109	3,0	0,37	1,82	2,71	1,78	110	215	73	815	950	2400	3000	13618AMH	22320 ACKMBW33	H2320	14,91	11	97	3,0	0,37	1,81	2,70	1,77							
120	280	93	923	1290	1300	1170	93624	93624*	93624.05	29,40	-	115	119	4,0	0,37	1,84	2,74	1,80	120	280	93	923	1290	1300	1170	73624	22320 KW33	H2320	14,70	11	97	3,0	0,35	1,91	2,85	1,87							
135	280	93	923	1290	1300	1170	73727	73727*	73727.05	29,10	-	115	119	5,0	0,37	1,84	2,74	1,80	130	200	53	560	640	3000	4000	13520H	22222 KMBW33	H322	9,53	8	77	2,1	0,28	2,39	3,55	2,38							
140	300	102	1290	1560	1700	2200	93627AMHK	22328 ACKMW33	AH2328X	37,37	16	125	130	4,0	0,38	1,76	2,62	1,72	140	200	53	550	630	3000	4000	353520H	22222 KMBW33	H322	9,15	8	77	2,1	0,28	2,43	3,62	2,38							
160	280	88	1040	1540	1800	2400	3753732HII	23134 KMBW33	AH3134	24,50	16	104	109	2,1	0,31	2,16	3,22	2,11	160	280	88	110	190	2700	3700	13522H	22224 KMBW33	H3124	11,20	11	88	2,1	0,29	2,36	3,51	2,31							
170	380	126	2000	2400	1300	1600	73634AMHK	22336 ACKMBW33	AH2336	75,37	22	154	160	4,0	0,37	0,83	2,71	1,78	170	380	126	630	760	2800	3700	353522H	22224 KMBW33	H3124	11,30	11	88	2,1	0,27	2,51	3,74	2,67							
180	340	92	1089	1669	1200	1600	73538*	73538.05	73538.05	41,10	-	112	117	4,0	0,29	2,33	3,48	2,27	180	215	58	630	760	2800	3700	13523H	22226 KMBW33	H3126	14,17	11	92	3,0	0,29	2,31	3,44	2,26							
380	126	1685	2580	800	1100	73738	73738	73738.05	73,14	-	154	162	4,0	0,34	1,99	2,98	1,95	180	215	76	690	940	2000	2800	353522H	22226 KW33	H2324	15,7	11	112	2,1	0,35	1,91	2,85	1,87								
400	132	2120	2860	1200	1800	73636*	73636*	73636.05	86,50	-	160	167	5,0	0,36	1,85	2,75	1,81	200	260	86	960	1120	2000	2600	13622AMH	22324 ACKMBW33	H2324	25,83	14	112	3,0	0,37	1,82	2,71	1,78								
190	420	138	2320	2900	1200	1500	73638AMHK	22340 ACKMW33	AH2340	96,96	22	170	177	5,0	0,36	1,87	2,78	1,83	125	210	53	460	680	2700	3300	13523H	22226 KMBW33	H3126	10,53	8	82	2,0	0,25	2,70	4,03	2,65							
220	440	120	2000	3000	1300	1700	73544AMHK	22248 ACKMW33	AH2248	92,66	22	144	150	4,0	0,27	2,50	3,70	2,50	220	250	68	710	930	2400	3100	13524AMH	22228 ACKMW33	H3128	18,22	11	97	3,0	0,27	2,35	3,50	2,30							
280	460	160	2331	4667	600	700	4073156H	24060 K30MBW33	AH3160	124,10	14	192	200	4,0	0,32	2,02	3,04	2,03	140	290	80	1000	1300	2000	2800	353528H	22232 ACKMW33	H3132	30,46	14	119	3,0	0,29	2,29	3,40	2,24							
500	200	3214	6106	360	450	4073756H	24160 K30MBW33	AH2248	163,80	16	224	232	5,0	0,41	1,72	2,48	1,59	150	280	88	1040	1540	1800	2400	3535730HII	22334 KMBW33	H3134	29,50	16	122	2,1	0,31	2,16	3,22	2,11								
										310	86	1120	1450	1900	2500	35350AMH	22334 KMBW33	H3134	34,90	16	122	4,0	0,30	2,27	3,37	2,21																	
										310	110	1400	2120	1300	2120	353523H	22334 KMBW33	H3134	46,00	16	154	4,0	0,33	2,00	3,00	2,00																	
										360	120	1760	2160	1400	1800	353525H	22334 ACKMW33	H3234	68,80	16	154	4,0	0,37	1,81	2,69	1,77																	
										160	320	86	1180	1570	1800	2700	13532AMH	22236 ACKMW33	H3136	39,30	16	131	4,0	0,28	2,37	3,56	2,32																
										160	380	126	2000	2450	1300	1600	13632AMH	22336 ACKMW33	H2336	80,89	22	161	5,0	0,37	1,83	2,71	1,78																
										170	340	92	1270	1700	1700	2300	135324H	22238 KMBW33	H3138	46,90	16	141	4,0	0,29	2,33	3,46	2,27																
										400	120	32	2120	2600	1200	1800	13634AMH	22338 KMBW33	H3138	91,98	22	169	5,0	0,36	1,85	2,75	1,81																
										180	360	98	1460	2000	1600	2100	13536AMH	22240 ACKMW33	H3140	55,60	16	150	4,0	0,28	2,31	3,44	2,26																
										420	138	2320	2900	1200	1500	1500	13638AMH	22340 ACKMW33	H3140	106,20	22	176	5,0	0,36	1,87	2,78	1,83																
										150	280	88	1040	1540	1800	2400	3535730HII	22334 KMBW33	H3140	29,50	16	122	2,1	0,31	2,16	3,22	2,11																
										310	86	1120	1450	1900	2500	35350AMH	22334 KMBW33	H3140	34,90	16	122	4,0	0,30	2,27	3,37	2,21																	
										310	110	1400	2120	1300	2120	353523H	22334 KMBW33	H3140	46,00	16	154	4,0	0,33	2,00	3,00	2,00																	
										360	120	1760	2160	1400	1800	353525H	2																										



**Spherical Roller Radial Bearings for vibratory applications
with adapter sleeve**

Stainless steel spherical roller bearings

Basic dimensions	Load capacity		Maximum rotation speed (lubrication)		Designation		Mass	Dimensions			Design factors				Basic dimensions	Load capacity		Maximum rotation speed (lubrication)		Designation		Mass	Dimensions			Design factors					
	d mm	D mm	B mm	C stat. kN	C ₀ non-fluid liquid rpm	GOST -	MPZ	Sleeve	b ₁ kg	L	r _{ext}	e	Y ₁	Y ₂	Y ₃	d mm	D mm	B mm	C stat. kN	C ₀ non-fluid liquid rpm	GOST -	MPZ	r _{ext}	e	Y ₁	Y ₂	Y ₃				
100 240 80	940	1110	1900	2700	13620AMHK5	22322ACKMAW33 H2322			22,0	14	105	3,0	0,37	1,83	2,72	1,79	40	90	33,0	121	128	4300	5300	3608IO	V22308S4	1,03	2,5	0,42	1,61	2,40	1,58
140 340 114	1600	1960	1500	1900	13628AMHK5	22332ACKMAW33 H2332			60,90	16	147	4,0	0,38	1,80	2,69	1,76	80	140	33	191	293	3200	4000	3516IOT	V22216S5	2,23	2,0	0,25	2,68	4,00	2,62
150 360 120	1760	2160	1400	1800	13630AMHK5	22334ACKMAW33 H2334			70,10	16	154	4,0	0,37	1,81	2,69	1,77	90	160	40	246	329	3600	5200	3518IOT	V22218S5	3,52	2,0	0,27	2,53	3,77	2,48
160 380 126	2000	2450	1300	1800	13632AMHK5	22336ACKMAW33 H2336			81,77	22	161	4,0	0,37	1,83	2,71	1,78	90	190	64	535	695	2600	3600	3618AMIOT	V22318ACS5	8,87	3,0	0,37	1,83	2,72	1,78
170 400 132	2120	2660	1200	1600	13634HK5	22338KMAW33 H2338			95,80	22	169	5,0	0,36	1,85	2,75	1,81	110	240	80	751	943	1900	2700	3622AMIOT	V22322ACS5	19,07	3,0	0,37	1,83	2,72	1,79
180 420 138	2320	2900	1200	1500	13636AMHK5	22340ACKMAW33 H2340			105,62	22	176	5,0	0,36	1,87	2,78	1,83	130	230	64	570	809	2500	3500	3526IOT	V22226S5	11,16	3,0	0,29	2,31	3,44	2,26
240 540 165	3550	4590	850	1000	13648AMHK5	22352ACKMAW33 H2352X			222,90	22	211	6,0	0,33	2,01	3,00	1,97	180	380	126	2000	2450	1300	1600	3636AMIOT	V22336ACS5	70,92	4,0	0,37	1,83	2,71	1,78
																200	420	138	2320	2900	1200	1500	3640AMIOT	V22340ACS5	93,40	5,0	0,36	1,87	2,78	1,83	
																260	540	165	3550	4590	850	1000	3652AMIOT	V22352ACS5	189,70	6,0	0,33	2,01	3,00	1,97	



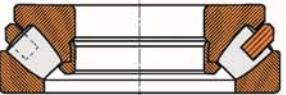
Spherical roller bearings for high temperature applications

Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass			Dimensions			Design factors				Basic dimensions			Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation				Mass			Dimensions			Design factors					
d mm	D mm	B mm	dyn. C	stat. C kN	b, mm	r, mm	GOST	MPZ	Sleeve	kg	b, mm	L mm	r, mm	e	Y ₁	Y ₂	Y ₃	d mm	D mm	B mm	dyn. C	stat. C kN	b, mm	L mm	r, mm	GOST	MPZ	Sleeve	kg	b, mm	L mm	r, mm	e	Y ₁	Y ₂	Y ₃					
50	90	23	104	106	7000	9500	30-553510 T	22210 MAC3S0		0,68			1,1	0,25	2,60	3,97	2,60	180	340	112	1600	2350	1400	1800	40-3013736 HT2	23140 KMBC4S1W33	H3140	43,24	16	150	3,0	0,32	2,14	3,18	2,09						
60	110	28	150	180	5600	7400	553512 HT2	22212 MAS1W33		1,17	6,3		1,5	0,26	2,61	3,89	2,55	360	98		1460	2000	1600	2100	13536 AMHT	22240 ACKMBS0W33	H3140	55,60	16	150	4,0	0,29	2,31	3,44	2,26						
130	140	36	310	330	4800	6300	553512 HT	22312 MAS0W33		3,05	6,3		2,1	0,38	1,78	2,65	1,74	190	340	92	1270	1700	1700	2300	50-3538 HKT4	22228 MCSS3W33	13638 AMHKT2	36,40	16	176	4,0	0,29	2,33	3,46	2,27						
130	140	36	310	330	4800	6300	30-3514 MHT2	22214 CMBC3S1W33		1,72	6,3		1,5	0,27	2,51	3,74	2,46	420	138		2320	2900	1200	1500	13638 AMHKT2	22340 ACKMS1W33	13638A.05	106,20	22	176	5,0	0,36	1,87	2,78	1,83						
70	125	31	200	230	4900	6600	30-3514 MHT2	22214 CMBC3S1W33																																	
80	140	33	230	270	3200	4000	3516 HT3	22216 MBS2W33		2,17	6,3		2,0	0,25	2,68	4,00	2,62	240	440	144	2530	3900	1100	1400	30-3013748 AMKT	23152 ACKMC3S0	H3152X	109,73	190	4,0	0,33	2,02	3,04	1,77							
80	140	33	230	270	3200	4000	40-3516 HT2	22216 MBC4S1W33		2,17	6,3		2,0	0,25	2,68	4,00	2,62	440	144	144	2530	3900	1100	1400	40-3013748 AMHKT2	23152 ACKMC4S1W33	H3152X	109,73	22	190	4,0	0,33	2,02	3,04	1,77						
90	190	64	610	695	2600	3600	30-3618 AMHK5T	22318 ACMAC3S0W33		9,08	11		3,0	0,37	1,83	2,72	1,78	440	144	144	2530	3900	1100	1400	40-3013748 AMHKT2	23052 ACKMBC4S1W33	H3052	109,73	22	190	4,0	0,33	2,02	3,04	1,77						
100	215	73	815	950	2400	3000	53620 HT	22320 S0W33		13,20	11		3,0	0,35	1,91	2,85	1,87	260	440	144	2530	3900	1100	1400	3003752 AMHKT	23152 ACMS0W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77							
110	170	45	300	430	3300	4200	30-3003122 HT2	23022 MBC3S1W33		3,78	8		2,0	0,25	2,69	4,01	2,63	440	144	144	2530	3900	1100	1400	3003752 AMHKT2	23152 ACMS1W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77							
200	69	600	760	2200	3000	3003222AHT2	23222 MBS1W33		9,90	8		2,1	0,36	1,89	2,82	1,85	440	144	144	2530	3900	1100	1400	3113752 AMHKT	23152 ACKMS0W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77								
200	69,8	600	760	2200	3000	40-3003222 AHT2	23222 MBC4S1W33		9,90	8		2,1	0,36	1,89	2,82	1,85	440	144	144	2530	3900	1100	1400	3113752 AMHKT2	23152 ACKMS1W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77								
240	80	940	1100	1900	2700	3622 AMHK5T	23222 ACMAC3S0		19,62	14		3,0	0,37	1,83	2,72	1,79	400	650	200	4650	7800	520	950	3003780 AMHKT	23180 ACMS0W33	267,32	22	6,0	0,31	2,17	3,24	2,12									
240	80	940	1100	1900	2700	3622 AMHKT3	23222 ACMAS0W33		19,62	14		3,0	0,37	1,83	2,72	1,79	400	650	200	4650	7800	520	950	3003780 AMHKT	23180 ACMS0W33	267,32	22	6,0	0,31	2,17	3,24	2,12									
260	86	960	1120	2000	2600	3622 AMHYT	23234 ACKMBF6S0W33	H2324	25,83	14	112	3,0	0,37	1,82	2,71	1,78	260	440	144	2530	3900	1100	1400	3003752 AMHKT	23152 ACM50W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77								
260	86	960	1120	2000	2600	3622 AMHYT3	23234 ACKMBF6S2W33	H2324	25,83	14	112	3,0	0,37	1,82	2,71	1,78	400	650	200	4650	7800	520	950	3003752 AMHKT	23152 ACM50W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77								
115	260	86	960	1120	2000	2600	73623 AMHYT	22324 ACKMBF6S0W33	AH2324X	24,32	14	105	3,0	0,37	1,82	2,71	1,78	400	650	200	4650	7800	520	950	3003752 AMHKT	23152 ACM50W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77							
120	180	46	350	510	3200	4000	30-3003124 HT2	23024 MBC3S1W33		44,41	8		2,0	0,26	2,61	3,89	2,55	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	93,56	22	176	4,0	0,33	2,02	3,04	1,77							
215	58	630	760	2800	3700	30-3524 T	22224 MBC3S0		9,12	11		2,1	0,29	2,36	3,51	2,31	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77								
215	58	630	760	2800	3700	3524 YT	22224 MBF6S0		9,12	11		2,1	0,29	2,36	3,51	2,31	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77								
215	58	630	760	2800	3700	50-3524 HT4	22224 MBC5S3W33		9,12	11		2,1	0,29	2,36	3,51	2,31	230	300	14	3,0	0,37	1,82	2,71	1,78	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77
280	86	960	1120	2000	2600	3624 AMHYT	23234 ACMBF6S0W33		23,00	14		3,0	0,37	1,82	2,71	1,78	230	300	14	3,0	0,37	1,82	2,71	1,78	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77
280	86	960	1120	2000	2600	3624 AMHYT3	23234 ACMBF6S2W33		23,00	14		3,0	0,37	1,82	2,71	1,78	400	650	200	4650	7800	520	950	3003752 AMHKT2	23152 ACM50W33	87,78	22	176	4,0	0,33	2,02	3,04	1,77								
130	200	69	540	815	1700	2600	4053126HTT	24026 MBS0W33		7,72	6,3		2,0	0,34	2,00	2,90	1,90	230	300	14	4,0	0,34	2,00	2,90	1,90	4053126HTT	24026 MBS0W33	7,72	6,3	2,0	0,34	2,00	2,90	1,90							
200	69	540	815	1700	2600	4053126HTT	24026 MBS1W33		7,72	6,3		2,0	0,34	2,00	2,90	1,90	230	300	14	4,0	0,34	2,00	2,90	1,90	4053126HTT	24026 MBS1W33	7,72	6,3	2,0	0,34	2,00	2,90	1,90								
230	64	735	930	2500	3500	40-3526 HT2	22226 MBC4S1		11,10	11		3,0	0,29	2,31	3,44	2,26	230	300	14	4,0	0,37	1,84	2,74	1,80	40-3526 HT2	22226 MAC4S1W33	29,60	14	4,0	0,37	1,84	2,74	1,80								
280	93	1120	1320	1700	2400	40-3626 HK5T2	22326 MAC4S1W33		29,60	14		4,0	0,37	1,84	2,74	1,80	230	300	14	4,0	0,37	1,84	2,74	1,80	40-3626 HK5T2	22326 MAC4S1W33	29,60	14	4,0	0,37	1,84	2,74	1,80								
140	210	69,0	570	900	1800	2800	4003128HT2	24028 AMBS1W33		8,36	6,3		2,0	0,29	2,30	3,50	2,30	230	300	14	4,0	0,34	1,90	2,90	1,80	4003128HT2	24028 AMBS1W33	12,32	6,3	2,1	0,34	1,90	2,90	1,80							
225	85,0	695	1100	1400	2200	4053728HTT2	24128 MBS1W33		12,32	6,3		2,1	0,34	1,90	2,90	1,80	230	300	14	4,0	0,34	1,90	2,90	1,80	4053728HTT2	24128 MBS1W33	12,32	6,3	2,1	0,34	1,90	2,90	1,80								
150	225	75,0	650	1040	1300	1700	40-4003130AMHT	24030 ACMBC4S0W33		10,58	8		2,1	0,31	2,20	3,20	2,10	230	300	14	4,0	0,34	1,90	2,90	1,80	40-4003130AMHT	24030 ACMBC4S0W33	10,58	8	2,1	0,31	2,20	3,20	2,10							
225	75,0	650	1040	1300	1700	4003130AMHT2	24030 ACMBS1W33		10,58	8		2,1	0,31	2,20	3,20	2,10	230	300	14	4,0	0,34	1,90	2,90	1,80	4003130AMHT2	24030 ACMBS1W33	10,58	8	2,1	0,31	2,20	3,20	2,10								
250	80	830	1200	2000	2600	30-3003730 HT	23130 MBS0W33		16,30	11		2,1	0,32	2,14	3,18	2,08	230	300	14	4,0	0,37	1,81	2,69	1,77	30-3003730 HT	23130 MBS0W33	16,30	11	2,1	0,32	2,14	3,18	2,08								
270	73	850	1010	2200	3000	40-53550 HT	22230 C4S0W33		18,25	14		3,0	0,27	2,53	3,76	2,47	230	300	14	4,0	0,36	1,87	2,81	1,84	40-53550 HT</td																



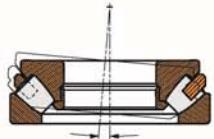
Spherical Roller Thrust Bearings

Spherical roller thrust bearings can accommodate heavy axial loads; they are suitable for relatively high speeds. The raceways which are inclined towards the bearing axis allow the bearings to accommodate radial loads as well.
Spherical roller thrust bearings have asymmetrical barrel rollers and compensate for misalignment.



Alignment

The spherical housing washer raceway makes spherical roller thrust bearings self-aligning and thus allows them to compensate for misalignments and shaft deflections.



Cages

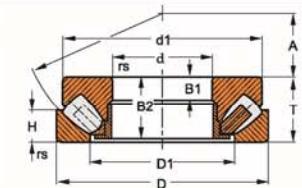
Bearings with a machined brass cage.

Minimum axial load

At high speeds bearing kinematics is impaired by the inertia forces of the rollers if the axial load does not reach a certain minimum.
 If the external load and the weight of the supported machine elements are lower than the minimum load, the bearings have to be preloaded, e.g. by means of springs.

Abutment dimensions

The bearing washers should closely fit the shaft and housing shoulder; they must not be allowed to foul the shoulder fillet radius.



Spherical Roller Angular Contact Thrust Bearings

Basic dimensions		Load capacity		Maximum rotation speed (lubrication) non-fluid liquid rpm		Designation		Mass		Dimensions					
d mm	D mm	dyn. C	stat. C, kN	GOST -	MPZ	kg	d ₁	D ₁	B ₁	B ₂	h	r _{es}	A		
60	130	42	312	814	2300	9039412K2	29412	2,47	118	80	22,0	-	20	1,8	60,272
70	150	48	411	1035	2200	9039414	29414	4,31	142	102	17,0	45,5	23	2,3	44
75	160	51	507	1290	2000	9039415	29415	5,24	152	109	18,0	48,0	24	2,0	47
80	170	54	511	1400	2000	9039416	29416	6,24	162	117	19,0	51,0	26	2,5	50
85	180	58	588	1650	1800	9039417	29417	7,45	170	125	21,0	55,0	28	2,5	54
100	210	67	784	2300	1600	9039420	29420	10,90	200	146	24,0	64,0	32	3,	
130	270	85	1390	4060	1200	9039426M	29426M	22,30	246	183	35,5	61,0	41	5,	
170	340	103	1784	6000	950	9039434	29434	45,50	324	243	37,0	99,0	50	4,	
180	360	109	2038	6700	850	9039436	29436	53,90	342	255	39,0	105,0	52	4,	

BEWARE OF FAKE !

Original bearing marking content requirements

- 1 Designation of bearing
- 2 Manufacturer
- 3 Country of Origin
- 4 Symbols of production year

Marking can be made mechanically (pressed stamp), electrochemically and laser marking.



Every original case of MPZ bearings contains the Original Passport of Quality.

Package

For medium and large size of original bearings



For small size of original bearings



เวอร์ทัส VIRTUS

www.virtus.co.th
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ชารองภาคสัมภัยและชานตีโซ่ ของแท้

ROSTA



แมวนย์เดล่า ของแท้



ก้านถัก ของแท้



เพ้อหดรอน ของแท้



ขั้นส่วนสำเร็จรูป ของแท้



หมุนซูบเนวอร์เรช ของแท้



ประบับเพลา ของแท้



สกรูสม์ก้าว ของแท้



เพ้อหดเพื่อส่วน ของแท้



ใช้และเพื่อใจ ของแท้



เกททันกันสะเทือน ของแท้



PAULSTRA Vibro ALPHA



HUTCHINSON PAULSTRA



คลบลอกปืน ของแท้

RBC BEARINGS

NKE BEARINGS

RKB BEARINGS

ISB SNR

MPZ

หมาจ้ากแรบบิตและคุณกันหมุนกลับ ของแท้



HEIM BEARINGS

uniGal NICE SPHERCO

Thin Section Ball Bearings

Pitchlign®