



ISO SPHERICAL ROLLER BEARING WITH SHIELDS

**[KIZEI]<sup>®</sup> ARMOURED  
TO FACE THE DIRT**

**NTN<sup>®</sup>** **SNR<sup>®</sup>**

[www.ntn-snr.com](http://www.ntn-snr.com)



With You

# [KIZEI]<sup>®</sup>

## A UNIQUE INNOVATION ON THE MARKET

The ISO spherical roller bearing with metallic shields by NTN-SNR.

NTN-SNR R&D department developed an **unprecedented solution** for the market to extend spherical roller bearing service lifetime.

This **exclusive product** improves your equipment output.

### ON THE MARKET TODAY:

#### FIELD SITUATION ANALYSIS WITH AN OPEN SPHERICAL ROLLER BEARING

Based on NTN-SNR lab internal analysis

# 21%

of failures  
due to solid pollution

# 13%

of failures  
due to lubrication issues

### With KIZEI<sup>®</sup>, change the game!

- **Protection** against external solid contamination
- Improvement of **grease retention** inside the bearing
- **ISO dimensions** to replace open spherical roller bearing easily

[KIZEI]



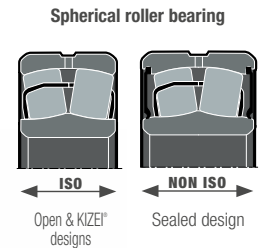
# [KIZEI] Technical features

## ULTAGE LOAD RATINGS AND SPEEDS

- Designed and manufactured in accordance with **NTN premium class specifications**
- **100% European production**
- Satisfies **the most stringent quality** requirements

## ISO DIMENSIONS

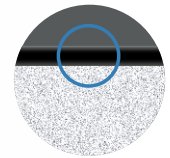
- **Same width** as open spherical roller bearing
- **100% interchangeable** with open spherical roller bearing
- Operational even in tight housings



Open spherical roller bearing

## HIGH QUALITY NITRIDED STEEL CAGE AND SHIELDS

- **Maximized shock resistance**
- Optimised corrosion resistance



## WIDE WORKING TEMPERATURE RANGE

- **Same temperature range** as open spherical roller bearing (from -40°C up to +200°C)
- **Dimensional stability** up to +200°C



## EASY LUBRICATION

- Delivered without grease
- Initial **lubrication process similar** to open spherical roller bearing
- Lubrication in service possible thanks to dedicated holes and groove on outer ring



## OPTIMAL MISALIGNMENT

- **Similar** to open spherical roller bearing
- **Possible internal inspection** to facilitate maintenance



## SIMPLE MOUNTING

- **No special tool required:** standard sleeves, nuts and washers can be used
- Possibility to **check clearance after mounting**



# [KIZEI]<sup>®</sup> CUSTOMER BENEFITS:

- Optimised production output due to longer service life
- Reduced maintenance costs
- Easy to use



## Optimised production output

### ▶ INCREASE YOUR MACHINE RELIABILITY

EXPERIENCE DRIVEN IN A QUARRY

Application: Quarry conveyor



## Reduced maintenance costs

### ▶ MAXIMIZE YOUR PROFITS

EXPERIENCE DRIVEN IN A CEMENT PLANT

Application: Bucket elevator

	Open spherical roller bearing	[KIZEI]
Life time	1 month	3 months
Production stops	12 times/year	4 times/year
Maintenance costs	100	30

Maintenance costs can be divided by 3

## Easy to use

### ► ISO DIMENSIONS

### ► HOW TO MOUNT KIZEI®:

Mounting and dismounting conditions are, in every aspect, **similar** to an open spherical roller bearing.

- Standard accessories
- Possible measurement of clearance for K bores



### ► HOW TO GREASE KIZEI®:




KIZEI® is sold ungreased.

- For initial greasing, 30% of the free volume has to be filled with adapted grease. (More information p 6-7).
- **Regreasing frequency is divided by 3** compared to an open spherical roller bearing. (More details in "Spherical roller bearings Ultage" catalog).



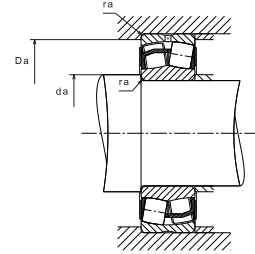
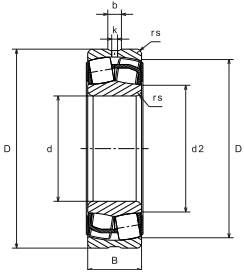
## NTN-SNR SPHERICAL ROLLER BEARING RANGE: the largest offer on the market

KIZEI®, the **viable alternative** for dirty environments.

	OPEN 	[KIZEI] 	SEALED 
Dimensions	ISO	ISO	Special
Protection	0	+*	++
Grease retention	0	+	++
Temperature range	-40°C to +200°C	-40°C to +200°C	-10°C to +120°C
Speed limit	++	++	+
Load rating	Ultage	Ultage	Ultage
Clearance check	Yes	Yes	No
Internal check	Yes	Yes	No
Sleeve & Nut	Standard	Standard	Special
Delivered with grease	No	No	Yes

\* Suitable for solid dust proofing – no liquids.

# [KIZEI]® RANGE



REFERENCE	ULTAGE	Weight (kg)	Dimensions (mm)									Abutment dimensions (mm)		
			d	D	B	rs	D1	d2	b	k	da min	Da max	ra max	
22208EAKW33ZZ	*	0,52	40	80	23	1,1	70,8	50,2	5,40	2,5	47	73	1,0	
22208EAKW33ZC3	*	0,52	40	80	23	1,1	70,8	50,2	5,40	2,5	47	73	1,0	
22208EAW33ZZ	*	0,54	40	80	23	1,1	70,8	50,2	5,40	2,5	47	73	1,0	
22208EAW33ZC3	*	0,54	40	80	23	1,1	70,8	50,2	5,40	2,5	47	73	1,0	
22209EAKW33ZZ	*	0,58	45	85	23	1,1	75,6	54,9	5,80	2,5	52	78	1,0	
22209EAKW33ZC3	*	0,58	45	85	23	1,1	75,6	54,9	5,80	2,5	52	78	1,0	
22209EAW33ZZ	*	0,59	45	85	23	1,1	75,6	54,9	5,80	2,5	52	78	1,0	
22209EAW33ZC3	*	0,59	45	85	23	1,1	75,6	54,9	5,80	2,5	52	78	1,0	
22210EAKW33ZZ	*	0,62	50	90	23	1,1	80,7	59,5	5,80	2,5	57	83	1,0	
22210EAKW33ZC3	*	0,62	50	90	23	1,1	80,7	59,5	5,80	2,5	57	83	1,0	
22210EAW33ZZ	*	0,63	50	90	23	1,1	80,7	59,5	5,80	2,5	57	83	1,0	
22210EAW33ZC3	*	0,63	50	90	23	1,1	80,7	59,5	5,80	2,5	57	83	1,0	
22211EAKW33ZZ	*	0,83	55	100	25	1,5	89,7	66,0	6,40	3,0	64	91	1,5	
22211EAKW33ZC3	*	0,83	55	100	25	1,5	89,7	66,0	6,40	3,0	64	91	1,5	
22211EAW33ZZ	*	0,85	55	100	25	1,5	89,7	66,0	6,40	3,0	64	91	1,5	
22211EAW33ZC3	*	0,85	55	100	25	1,5	89,7	66,0	6,40	3,0	64	91	1,5	
22212EAKW33ZZ	*	1,17	60	110	28	1,5	98,5	71,9	6,90	3,0	69	101	1,5	
22212EAKW33ZC3	*	1,17	60	110	28	1,5	98,5	71,9	6,90	3,0	69	101	1,5	
22212EAW33ZZ	*	1,18	60	110	28	1,5	98,5	71,9	6,90	3,0	69	101	1,5	
22212EAW33ZC3	*	1,18	60	110	28	1,5	98,5	71,9	6,90	3,0	69	101	1,5	
22213EAKW33ZZ	*	1,54	65	120	31	1,5	107,0	78,2	7,80	3,5	74	111	1,5	
22213EAKW33ZC3	*	1,54	65	120	31	1,5	107,0	78,2	7,80	3,5	74	111	1,5	
22213EAW33ZZ	*	1,57	65	120	31	1,5	107,0	78,2	7,80	3,5	74	111	1,5	
22213EAW33ZC3	*	1,57	65	120	31	1,5	107,0	78,2	7,80	3,5	74	111	1,5	
22215EAKW33ZZ	*	1,68	75	130	31	1,5	117,8	88,4	7,40	3,5	84	121	1,5	
22215EAKW33ZC3	*	1,68	75	130	31	1,5	117,8	88,4	7,40	3,5	84	121	1,5	
22215EAW33ZZ	*	1,72	75	130	31	1,5	117,8	88,4	7,40	3,5	84	121	1,5	
22215EAW33ZC3	*	1,72	75	130	31	1,5	117,8	88,4	7,40	3,5	84	121	1,5	
22216EAKW33ZZ	*	2,10	80	140	33	2,0	126,7	94,9	7,87	3,5	91	129	2,0	
22216EAKW33ZC3	*	2,10	80	140	33	2,0	126,7	94,9	7,87	3,5	91	129	2,0	
22216EAW33ZZ	*	2,15	80	140	33	2,0	127,0	94,0	7,87	3,5	91	129	2,0	
22216EAW33ZC3	*	2,15	80	140	33	2,0	127,0	94,0	7,87	3,5	91	129	2,0	
22217EAKW33ZZ	*	2,63	85	150	36	2,0	136,5	100,7	7,90	3,5	96	139	2,0	
22217EAKW33ZC3	*	2,63	85	150	36	2,0	136,5	100,7	7,90	3,5	96	139	2,0	
22217EAW33ZZ	*	2,64	85	150	36	2,0	136,5	100,7	7,90	3,5	96	139	2,0	
22217EAW33ZC3	*	2,64	85	150	36	2,0	136,5	100,7	7,90	3,5	96	139	2,0	
22218EAKW33ZZ	*	3,32	90	160	40	2,0	143,2	105,3	10,20	4,5	101	149	2,0	
22218EAKW33ZC3	*	3,32	90	160	40	2,0	143,2	105,3	10,20	4,5	101	149	2,0	
22218EAW33ZZ	*	3,39	90	160	40	2,0	143,2	105,3	10,20	4,5	101	149	2,0	
22218EAW33ZC3	*	3,39	90	160	40	2,0	143,2	105,3	10,20	4,5	101	149	2,0	
22220EAKW33ZZ	*	4,93	100	180	46	2,1	160,8	118,2	11,20	5,0	112	168	2,0	
22220EAKW33ZC3	*	4,93	100	180	46	2,1	160,8	118,2	11,20	5,0	112	168	2,0	
22220EAW33ZZ	*	4,99	100	180	46	2,1	160,8	118,2	11,20	5,0	112	168	2,0	
22220EAW33ZC3	*	4,99	100	180	46	2,1	160,8	118,2	11,20	5,0	112	168	2,0	



Load ratings			Calculation factors				Speed		Adapter sleeve	Nut	Washer	Internal clearance (µm)		Initial grease addition mm <sup>3</sup>
Dyn. Cr (kN)	Stat. Cor (kN)	Fatigue Cu (kN)	e	Y1	Y2	Y0	Reference (rpm)	Limit (rpm)				min.	max.	
116	105	11,0	0,27	2,47	3,68	2,41	8200	11000	H308	KM8	MB8	35	50	5 486
116	105	11,0	0,27	2,47	3,68	2,41	8200	11000	H308	KM8	MB8	50	65	5 486
116	105	11,0	0,27	2,47	3,68	2,41	8200	11000	-	-	-	30	45	5 486
116	105	11,0	0,27	2,47	3,68	2,41	8200	11000	-	-	-	45	60	5 486
121	113	12,6	0,26	2,64	3,94	2,58	7400	9800	H309	KM9	MB9	45	60	6 194
121	113	12,6	0,26	2,64	3,94	2,58	7400	9800	H309	KM9	MB9	60	80	6 194
121	113	12,6	0,26	2,64	3,94	2,58	7400	9800	-	-	-	35	55	6 194
121	113	12,6	0,26	2,64	3,94	2,58	7400	9800	-	-	-	55	75	6 194
130	124	14,5	0,24	2,84	4,23	2,78	6700	9100	H310	KM10	MB10	45	60	6 699
130	124	14,5	0,24	2,84	4,23	2,78	6700	9100	H310	KM10	MB10	60	80	6 699
130	124	14,5	0,24	2,84	4,23	2,78	6700	9100	-	-	-	35	55	6 699
130	124	14,5	0,24	2,84	4,23	2,78	6700	9100	-	-	-	55	75	6 699
155	148	17,9	0,23	2,95	4,39	2,89	6100	8200	H311	KM11	MB11	55	75	8 511
155	148	17,9	0,23	2,95	4,39	2,89	6100	8200	H311	KM11	MB11	75	95	8 511
155	148	17,9	0,23	2,95	4,39	2,89	6100	8200	-	-	-	40	65	8 511
155	148	17,9	0,23	2,95	4,39	2,89	6100	8200	-	-	-	65	90	8 511
187	181	22,0	0,24	2,84	4,23	2,78	5600	7500	H312	KM12	MB12	55	75	12 026
187	181	22,0	0,24	2,84	4,23	2,78	5600	7500	H312	KM12	MB12	75	95	12 026
187	181	22,0	0,24	2,84	4,23	2,78	5600	7500	-	-	-	40	65	12 026
187	181	22,0	0,24	2,84	4,23	2,78	5600	7500	-	-	-	65	90	12 026
226	224	26,0	0,24	2,79	4,15	2,73	5300	6900	H313	KM13	MB13	55	75	15 317
226	224	26,0	0,24	2,79	4,15	2,73	5300	6900	H313	KM13	MB13	75	95	15 317
226	224	26,0	0,24	2,79	4,15	2,73	5300	6900	-	-	-	40	65	15 317
226	224	26,0	0,24	2,79	4,15	2,73	5300	6900	-	-	-	65	90	15 317
244	249	30,2	0,22	3,13	4,67	3,06	4600	6200	H315	KM15	MB15	70	95	17 458
244	249	30,2	0,22	3,13	4,67	3,06	4600	6200	H315	KM15	MB15	95	120	17 458
244	249	30,2	0,22	3,13	4,67	3,06	4600	6200	-	-	-	50	80	17 458
244	249	30,2	0,22	3,13	4,67	3,06	4600	6200	-	-	-	80	110	17 458
278	287	33,4	0,22	3,14	4,67	3,07	4300	5800	H316	KM16	MB16	70	95	21 410
278	287	33,4	0,22	3,14	4,67	3,07	4300	5800	H316	KM16	MB16	95	120	21 410
278	287	33,4	0,22	3,14	4,67	3,07	4300	5800	-	-	-	50	80	21 410
278	287	33,4	0,22	3,14	4,67	3,07	4300	5800	-	-	-	80	110	21 410
324	330	38,7	0,22	3,07	4,58	3,01	4100	5400	H317	KM17	MB17	80	110	28 934
324	330	38,7	0,22	3,07	4,58	3,01	4100	5400	H317	KM17	MB17	110	140	28 934
324	330	38,7	0,22	3,07	4,58	3,01	4100	5400	-	-	-	60	100	28 934
324	330	38,7	0,22	3,07	4,58	3,01	4100	5400	-	-	-	100	135	28 934
384	398	43,1	0,23	2,90	4,31	2,83	3900	5100	H318	KM18	MB18	80	110	34 677
384	398	43,1	0,23	2,90	4,31	2,83	3900	5100	H318	KM18	MB18	110	140	34 677
384	398	43,1	0,23	2,90	4,31	2,83	3900	5100	-	-	-	60	100	34 677
384	398	43,1	0,23	2,90	4,31	2,83	3900	5100	-	-	-	100	135	34 677
472	495	52,6	0,24	2,84	4,23	2,78	3600	4600	H320	KM20	MB20	80	110	53 150
472	495	52,6	0,24	2,84	4,23	2,78	3600	4600	H320	KM20	MB20	110	140	53 150
472	495	52,6	0,24	2,84	4,23	2,78	3600	4600	-	-	-	60	100	53 150
472	495	52,6	0,24	2,84	4,23	2,78	3600	4600	-	-	-	100	135	53 150



# [KIZEI] ARMoured TO FACE THE DIRT

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