

Koyo[®]

RHR Type SPHERICAL ROLLER BEARINGS



KOYO SEIKO CO., LTD.

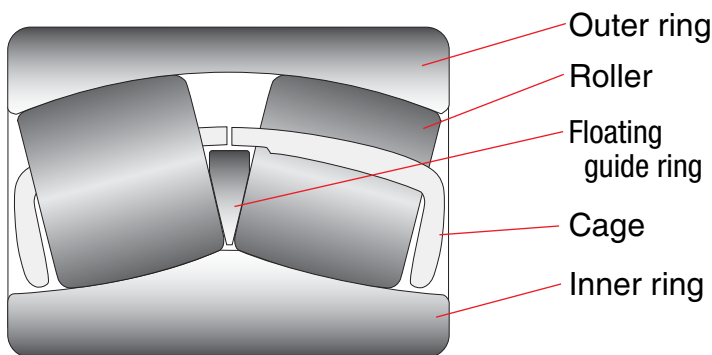
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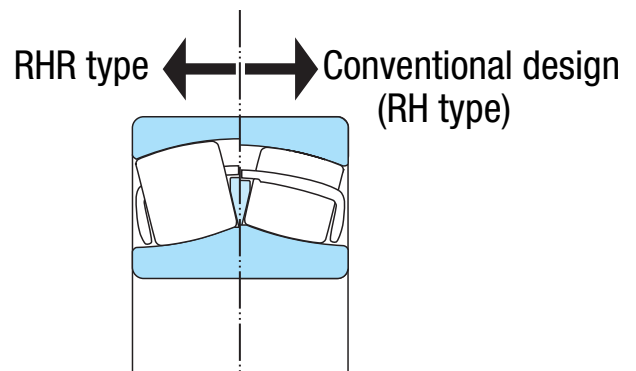
**Supply the new series of spherical roller bearings.
Significant contribution to equipment size reduction based
on the increase in load rating of the bearing.
RHR Type Spherical Roller Bearings**

Structures

■ Cross section of new series



■ Comparison with conventionals



Features

● Long Life

By significant increase in the basic dynamic load rating based on the optimized designs of outer ring, inner ring and rollers. Rating life increase of RHR type may provide max. 2 times longer life than the conventional bearing.

● Improve heat resistant

As RHR type spherical Roller Bearings are implemented dimension stabilizing treatment and steel plate cages are assembled, they can be used up to 200°C.

● Withstands Greater Loads

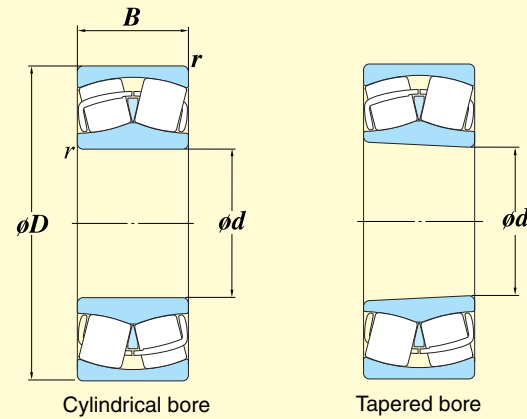
Optimized shapes of outer/inner rings and rollers ensure ideal bearing stress distribution. Due to this design, these bearings offer substantially increased resistance to impact loads.

● Rotates Stably at High Speeds

The floating guide ring guides rollers precisely. It controls roller skew even under high speed rotation, thereby ensuring stable and reliable operation.

RHR Type Spherical Roller Bearings 22200RHR 22300RHR

Boundary dimensions



Equivalent radial load

Dynamic equivalent radial load $\left[\text{when } \frac{F_a}{F_r} \leq e \right] P_r = F_r + Y_1 F_a$
 $\left[\text{when } \frac{F_a}{F_r} > e \right] P_r = 0.67 F_r + Y_2 F_a$

Static equivalent radial load $P_{or} = F_r + Y_0 F_a$

[Note] Refer to the dimension table for the values of axial load factors Y_1 , Y_2 and Y_0 and of constant e .

Boundary Dimensions (mm)				Basic Load Ratings (kN)		Limiting Speeds (rpm)		Bearing No.		Mounting Dimensions (mm)			Constant	Axial Load Factors			Mass (kg)		(Ref.) Adapter Sleeve
d	D	B	r (min.)	C	C_0	Grease lubrication	Oil lubrication	Cylindrical bore	Tapered bore	d_a (min.)	D_a (max.)	r_a (max.)	e	Y_1	Y_2	Y_0	Cylindrical bore	Tapered bore	
25	52	18	1	45.4	48.1	7000	9300	22205RHR	22205RHRK	31	46	1	0.35	1.91	2.85	1.87	0.22	0.215	H305X
30	62	20	1	61.2	65.9	5900	7900	22206RHR	22206RHRK	36	56	1	0.33	2.04	3.04	2.00	0.36	0.35	H306X
35	72	23	1.1	80.3	88.7	5000	6700	22207RHR	22207RHRK	42	65	1	0.32	2.09	3.11	2.04	0.55	0.54	H307X
40	80	23	1.1	90.9	102	4500	6000	22208RHR	22208RHRK	47	73	1	0.28	2.37	3.53	2.32	0.66	0.65	H308X
	90	33	1.5	136	152	4100	5500	22308RHR	22308RHRK	48.5	81.5	1.5	0.37	1.83	2.72	1.79	1.25	1.23	H2308X
45	85	23	1.1	95.6	110	4200	5600	22209RHR	22209RHRK	52	78	1	0.26	2.55	3.80	2.50	0.72	0.71	H309X
	100	36	1.5	166	183	3700	4900	22309RHR	22309RHRK	53.5	91.5	1.5	0.37	1.83	2.72	1.79	1.62	1.59	H2309X
50	90	23	1.1	103	122	3900	5200	22210RHR	22210RHRK	57	83	1	0.24	2.79	4.15	2.73	0.78	0.77	H310X
	110	40	2	204	237	3300	4500	22310RHR	22310RHRK	60	100	2	0.36	1.85	2.76	1.81	2.21	2.18	H2310X
55	100	25	1.5	124	144	3400	4600	22211RHR	22211RHRK	63.5	91.5	1.5	0.24	2.84	4.23	2.78	1.05	1.04	H311X
	120	43	2	236	264	3000	4000	22311RHR	22311RHRK	65	110	2	0.36	1.85	2.76	1.81	2.72	2.67	H2311X
60	110	28	1.5	153	181	3100	4200	22212RHR	22212RHRK	68.5	101.5	1.5	0.25	2.74	4.08	2.68	1.45	1.43	H312X
	130	46	2.1	283	334	2800	3700	22312RHR	22312RHRK	72	118	2	0.36	1.86	2.77	1.82	3.43	3.37	H2312X
65	120	31	1.5	178	211	2900	3800	22213RHR	22213RHRK	73.5	111.5	1.5	0.25	2.69	4.00	2.63	1.84	1.81	H313X
	140	48	2.1	305	360	2600	3400	22313RHR	22313RHRK	77	128	2	0.34	1.98	2.94	1.93	4.15	4.07	H2313X
70	125	31	1.5	187	222	2700	3600	22214RHR	22214RHRK	78.5	116.5	1.5	0.24	2.87	4.27	2.80	1.94	1.91	H314X
	150	51	2.1	348	413	2400	3200	22314RHR	22314RHRK	82	138	2	0.34	1.98	2.94	1.93	5.01	4.92	H2314X
75	130	31	1.5	193	236	2600	3400	22215RHR	22215RHRK	83.5	121.5	1.5	0.22	3.07	4.57	3.00	2.05	2.01	H315X
	160	55	2.1	393	473	2200	3000	22315RHR	22315RHRK	87	148	2	0.35	1.95	2.90	1.91	6.13	6.02	H2315X
80	140	33	2	217	271	2400	3200	22216RHR	22216RHRK	90	130	2	0.22	3.07	4.57	3.00	2.61	2.57	H316X
	170	58	2.1	431	521	2100	2800	22316RHR	22316RHRK	92	158	2	0.35	1.95	2.90	1.91	7.18	7.04	H2316X
85	150	36	2	258	324	2200	3000	22217RHR	22217RHRK	95	140	2	0.22	3.01	4.48	2.94	3.23	3.16	H317X
	180	60	3	481	586	2000	2600	22317RHR	22317RHRK	99	166	2.5	0.33	2.02	3.00	1.97	8.41	8.26	H2317X
90	160	40	2	298	381	2100	2800	22218RHR	22218RHRK	100	150	2	0.24	2.79	4.15	2.73	4.01	3.94	H318X
	190	64	3	538	662	1900	2500	22318RHR	22318RHRK	104	176	2.5	0.34	2.00	2.98	1.96	9.87	9.68	H2318X
95	170	43	2.1	334	422	2000	2600	22219RHR	22219RHRK	107	158	2	0.24	2.76	4.11	2.70	4.90	4.80	H319X
	200	67	3	586	726	1800	2300	22319RHR	22319RHRK	109	186	2.5	0.33	2.02	3.00	1.97	11.6	11.3	H2319X
100	180	46	2.1	377	481	1900	2500	22220RHR	22220RHRK	112	168	2	0.25	2.74	4.08	2.68	5.82	5.72	H320X
	215	73	3	700	877	1600	2200	22320RHR	22320RHRK	114	201	2.5	0.35	1.95	2.90	1.91	14.7	14.4	H2320X
110	200	53	2.1	491	642	1700	2200	22222RHR	22222RHRK	122	188	2	0.26	2.64	3.93	2.58	8.37	8.22	H322X
	240	80	3	828	1040	1400	1900	22322RHR	22322RHRK	124	226	2.5	0.33	2.03	3.02	1.98	20.2	19.8	H2321X
120	215	58	2.1	565	764	1500	2000	22224RHR	22224RHRK	132	203	2	0.26	2.60	3.87	2.54	10.6	10.4	H3124
	260	86	3	896	1130	1300	1800	22324RHR	22324RHRK	134	246	2.5	0.33	2.03	3.02	1.98	24.1	23.6	H2324
130	230	64	3	658	914	1400	1900	22226RHR	22226RHRK	144	216	2.5	0.26	2.55	3.80	2.50	13.3	13.0	H3126
	280	93	4	1040	1340	1200	1600	22326RHR	22326RHRK	148	262	3	0.33	2.03	3.02	1.98	30.3	29.7	H2326
140	250	68	3	759	1030	1300	1700	22228RHR	22228RHRK	154	236	2.5	0.26	2.60	3.87	2.54	16.4	16.1	H3128
150	270	73	3	865	1200	1200	1600	22230RHR	22230RHRK	164	256	2.5	0.25	2.69	4.00	2.63	20.6	20.2	H3130

Recommended shaft fits

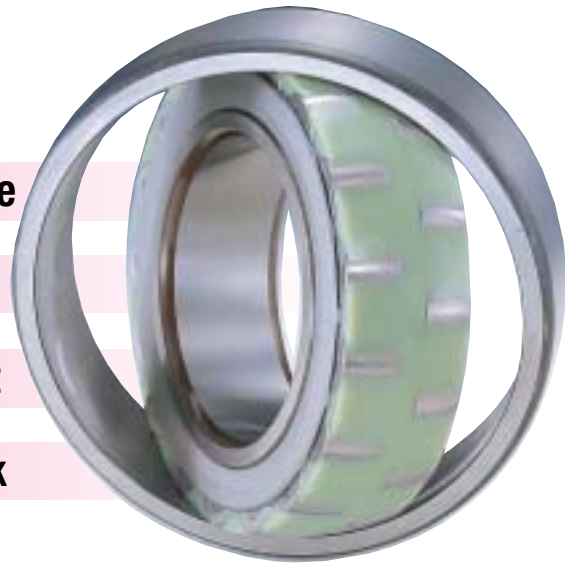
Normal Load ($0.02C_0 < Pr \leq 0.12C$)			Heavy Load ($0.12C < Pr$)			All Loads	
Cylindrical bore, mm		Fit	Cylindrical bore, mm		Fit	Tapered bore	Fit
Over	Up to		Over	Up to			
—	40	k 5	50	100	n 6	All shafts	h 9 / I T 5 (For transmission shafts) h 10 / I T 7
40	65	m 5	100	140	p 6		
65	100	m 6	140	150	r 6		
100	140	n 6					
140	150	p 6					

SOLPACK BEARINGS®

Koyo SOLPACK Bearings are new bearings in which the internal space is filled with solid polymeric lubricant. High performance is expected under most severe conditions such as water splash.

Features

- Longer life and maintenance-free
- Low torque
- Prevent emulsifying of lubricant
- Keep clean the work shop from oil leak



Performance

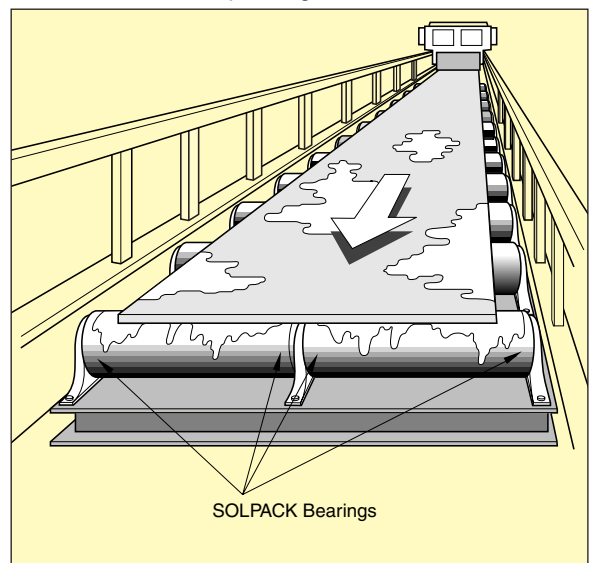
- Manufacturing range: Bearing outside dia. - up to 250 mm
- Operating temperature: -15 to 80°C
(60°C or less on outer ring)
- Limiting speed: 50000 (value of dmn)
 $dmn = (d + D)/2$ (mm) \times rotational speed (min^{-1})

Applications

Washing facilities, plating lines, canning lines, food processing lines and out door equipment etc.

SOLPACK Bearings include spherical roller bearings, deep groove ball bearings and cylindrical roller bearings.

Carrier rollers for pickling line



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