

# RHP EXTRA-CAPACITY VIBRATORY BEARINGS

The EVB range of spherical roller bearings has been especially designed to improve the performance of vibrating machinery applications such as mineral crushing, screening and compacting.



## Reduces operating costs

An improved design gives increased reliability and reduces operating costs through:-

- **Reduced friction and lower wear**
- **Lower operating temperature**
- **Reduced maintenance costs and extended life**

## Reduces lubrication frequency

A precision, one piece machined brass cage means increased space in the bearing. This gives:-

- **Extra grease capacity**
- **Dampened vibration**
- **Better roller guidance**



## Higher operating temperatures

Heat stabilised rings with reduced bore and outside diameter tolerances and inner ring flanges means:-

- **Continuous operation up to 200°C**
- **Improved roller guidance**
- **Large inner ring abutment**

## Increases capacity

The improved internal design allows the inclusion of longer rollers giving:-

- **Increased capacity for existing machine design or**
- **The option to downsize new designs by using smaller bearings**



*Engineered to meet the toughest conditions....Providing extra performance where it is needed.*

Bearing Designation	Dimensions			Load ratings (kN)		Limiting speed (rpm)		e	Load factors **					Shaft and housing abutment diameters (mm)				Fillet radius (mm)
									Dynamic			Static	F <sub>a</sub> /F <sub>r</sub> ≤ e		F <sub>a</sub> /F <sub>r</sub> > e			
	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	X	Y	X		Y	Y <sub>0</sub>								
											d	D	B					
22308EVBC4	40	90	33	136	152	4100	5300	0.36	1	1.9	1	2.8	1.8	49	53	80	81	1.5
22309EVBC4	45	100	36	166	187	3700	4800	0.36	1	1.9	1	2.8	1.9	54	59	90	93	1.5
22310EVBC4	50	110	40	201	232	3400	4400	0.36	1	1.9	1	2.8	1.8	60	65	98	99	2.0
22311EVBC4	55	120	43	238	274	3100	4000	0.36	1	1.9	1	2.8	1.8	65	71	107	109	2.0
22312EVBC4	60	130	46	274	319	2900	3700	0.35	1	1.9	1	2.9	1.9	72	77	117	120	2.1
22313EVBC4	65	140	48	297	343	2700	3400	0.33	1	2.1	1	3.1	2.0	77	83	126	130	2.1
22314EVBC4	70	150	51	338	396	2500	3200	0.34	1	2.0	1	3.0	2.0	82	89	134	138	2.1
22315EVBC4	75	160	55	395	467	2300	3000	0.34	1	2.0	1	3.0	2.0	87	95	143	148	2.1
22316EVBC4	80	170	58	435	522	2200	2800	0.34	1	2.1	1	3.0	2.0	92	101	153	158	2.1
22317EVBC4	85	180	60	475	590	2000	2600	0.32	1	2.1	1	3.1	2.0	99	110	162	166	3.0
22318EVBC4	90	190	64	537	651	1900	2500	0.33	1	2.1	1	3.1	2.0	104	113	171	176	3.0
22319EVBC4	95	200	67	589	751	1800	2300	0.32	1	2.1	1	3.1	2.0	109	122	180	186	3.0
22320EVBC4	100	215	73	665	844	1700	2200	0.34	1	2.0	1	2.9	1.9	114	129	193	201	3.0
22322EVBC4	110	240	80	784	972	1600	2000	0.32	1	2.1	1	3.1	2.0	124	142	215	226	3.0
22324EVBC4	120	260	86	942	1280	1400	1800	0.32	1	2.1	1	3.1	2.0	134	157	232	246	3.0
22326EVBC4	130	280	93	1070	1400	1300	1700	0.33	1	2.1	1	3.1	2.0	147	167	251	263	4.0
22328EVBC4	140	300	102	1240	1720	1200	1600	0.33	1	2.0	1	3.0	2.0	157	182	269	283	4.0
22330EVBC4	150	320	108	1400	1890	1200	1500	0.34	1	2.0	1	3.0	2.0	167	192	288	303	4.0
22332EVBC4	160	340	114	1570	2210	1100	1400	0.33	1	2.0	1	3.0	2.0	177	207	305	323	4.0
22334EVBC4	170	360	120	1770	2630	1000	1200	0.32	1	2.1	1	3.1	2.0	187	223	324	343	4.0

\* Recommended shaft and housing abutment diameters for ease of removal.  
\*\* Dynamic equivalent load  $P_r = X F_r + Y F_a$  or  $P_r = F_r$  whichever is the greater (where  $F_r$  = applied radial load)  
Static equivalent load  $P_{0r} = F_r + Y_0 F_a$  or  $P_{0r} = F_r$  whichever is the greater  $F_a$  = applied axial load, not greater than  $0.5 F_r$ )

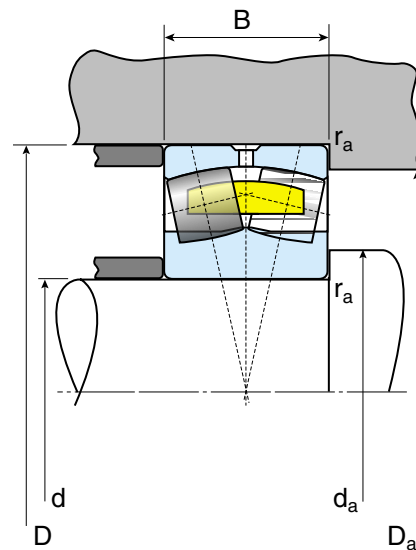
$$X = 1 \left( \frac{F_a}{F_r} \leq e \right), X_0 = 1$$

### Ring tolerances

Inner ring - Reduced bore tolerances							
Dimensions in mm							
Nom. bore	Above	30	50	80	120	180	250
	Up to	50	80	120	180	250	315
Difference from nom. diameter in microns							
Cylindrical bore	dm.d	-7	-9	-12	-15	-18	-21
		0	0	0	0	0	0
Tapered bore	d	0	0	0	0	0	0
		+25	+30	+35	+40	+46	+54
Width	B	0	0	0	0	0	0
		-120	-150	-200	-250	-300	-350

Outer ring - Reduced OD tolerances									
Dimensions in mm									
Nom. OD	Above	80	120	150	180	250	315	400	500
	Up to	120	150	180	250	315	400	500	630
Difference from nom. diameter in microns									
OD	Dm.d	-5	-5	-5	-10	-10	-13	-13	-15
		-13	-13	-18	-23	-23	-28	-30	-35

Outer ring width tolerances are the same as the inner ring



### Clearance

Reduced tolerance band of radial internal clearance in microns																					
With cylindrical bore										With taper bore (taper 1:12)											
Nom. bore	Above	30	40	50	65	80	100	120	140	160	180	30	40	50	65	80	100	120	140	160	180
	Up to	40	50	65	80	100	120	140	160	180	200	40	50	65	80	100	120	140	160	180	200
C4	min	65	85	100	120	150	180	205	240	260	285	70	85	105	130	155	185	220	255	285	315
	max	80	100	120	145	180	210	240	280	310	340	85	100	120	150	180	220	260	300	340	370
C3	min	50	60	75	90	110	135	160	190	200	220	55	65	80	100	120	145	175	195	220	245
	max	60	75	90	110	135	160	190	220	240	260	65	80	95	120	140	170	200	230	260	290
CN	min	35	40	50	60	75	90	110	130	140	155	40	50	60	80	90	110	135	145	160	180
	max	45	55	65	80	100	120	145	170	180	200	50	60	75	95	110	135	160	180	200	220

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