



Extreme Series

Shaker screen bearings
Sealed spherical roller bearings



QCB Bearings - built tough

QCB's core values...



Warranty

QCB bearings are guaranteed for 12 months after delivery to be free from material defect and manufacturing or assembly error. Any perceived faults should be documented and reported to QCB.

Limitation of Liability

The information in this manual is distilled from best practices, national standards and our own extensive experience.

QCB assumes no liability for damages arising from

- Improper selection of product by the customer
- Failure to follow the instructions and information in this manual
- Improper use of the product
- The use of untrained personnel
- Any modifications to the product as delivered

Cat SR 2025-1 Revision 1

In the interests of continuous product improvement, QCB reserves the right to modify any product or specification. All weights and measures are approximate and for guidance only.

Detailed & up to date information is available from the QCB Technical Department

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QCB Shaker screen bearings



Dynamic equivalent load

$$P = X F_r + Y F_a$$

Fa / Fr ≤ e		Fa / Fr > e	
X	Y	X	Y
1	Y ₃	0.67	Y ₂

Static equivalent load

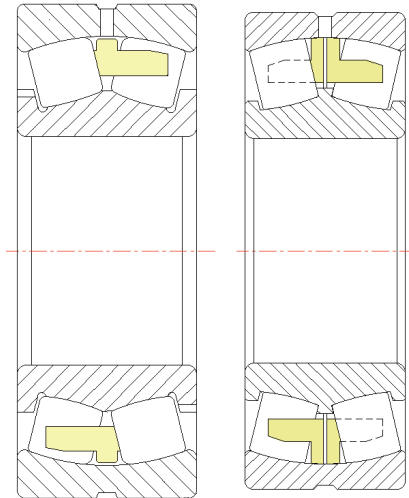
$$P_0 = F_r + Y_0 F_a$$

Designation				Dimensions				Load ratings		Limiting speed		Geometry factors				Mass kg
Size	Q30	Q405	Q41	d mm	D mm	B mm	r _{min} mm	Cr KN	Cor KN	Grease rpm	Oil rpm	e	Y ₂	Y ₃	Y ₀	
22232	*			160	290	80	3	843	1218	1900	2650	0.26	2.64	3.93	2.58	22.36
22308	*			40	90	33	1.5	121	135	6000	8000	0.37	1.8	2.7	1.8	1.05
22310	*			50	110	40	2	193	226	4700	6300	0.37	1.8	2.7	1.8	1.91
22311	*			55	120	43	2	226	268	4500	5800	0.36	1.89	2.81	1.84	2.34
22312	*			60	130	46	2.1	262	313	4200	5400	0.35	1.91	2.85	1.87	2.94
22313	*			65	140	48	2.1	285	343	3800	5000	0.34	2	2.98	1.96	3.67
22314	*			70	150	51	2.1	321	394	3700	4800	0.34	2	2.98	1.96	4.39
22315	*			75	160	55	2.1	374	474	3500	4500	0.34	1.99	2.96	1.94	5.35
22316	*			80	170	58	2.1	476	532	3400	4250	0.34	1.99	2.96	1.94	6.40
22317		*		85	180	60	3	530	570	2800	3800	0.33	2	3	2	7.54
22318	*			90	190	64	3	518	677		3600	0.33	2	3	2	8.56
		*						531	695	2600	3600	0.33	2	3	2	8.92
22319	*			95	200	67	3	568	744	2800	3700	0.33	2.03	3.02	1.98	10.31
		*						593	787	2600	3400	0.33	2	3	2	10.50
22320	*			100	215	73	3	659	875	2380	3300	0.33	2.03	3.02	1.98	13.21
		*						721	941	2400	3000	0.33	2	3	2	13.37
22322	*			110	240	80	3	892	1128	2130	3000	0.33	2.07	3.09	2.03	18.01
		*						722	955	2000	2800	0.33	2	3	2	18.17
22324		*		120	260	86	3	844	1125	2000	2600	0.35	1.9	2.9	1.8	22.7
22326	*			130	280	93	4	1150	1370	1820	2650	0.33	2.06	3.06	2.01	27.2
		*						980	1331	1800	2400	0.35	1.9	2.9	1.8	28.8
22328	*			140	300	102	4	1211	1701	1660	2420	0.34	2	2.98	1.96	35.45
		*						1081	1560	1700	2200	0.35	1.9	2.9	1.8	35.25
22330	*			150	320	108	4	1440	1850	1520	2290	0.33	2.02	3	1.97	41.33
		*						1241	1709	1600	2000	0.35	1.9	2.9	1.8	41.79
22332	*			160	340	114	4	1356	1892	1420	2250	0.35	1.94	2.88	1.89	52.5

This range is likely to change as demand increases

Q80 Design

- Brass cage
- Single piece (VS) or two piece brass cage (MA)
- Outer ring guided
- Assymetrical rollers
- Flanged inner ring
- Reduced bore and outer diameter tolerances
- Q80K tapered bore bearings have a +ve bore tolerance
- Top 2/3 C4 radial internal clearance
- W33 groove and 3 holes in outer ring
- Heat stabilised to 200 C



VS

MA

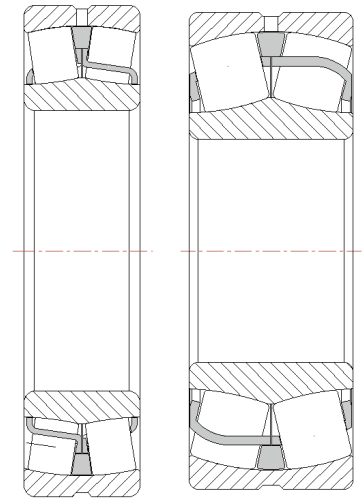


Q80 dimension tolerances								Q80 radial internal clearance														
Bore Ø	Bore Ø tolerance				OD Ø	Outer Ø tolerance		Bore Ø	Modified C4 clearance													
	Parallel bore		Taper bore						Parallel bore		Taper bore											
Incl.	min µm	max µm	min µm	max µm	Incl.	min µm	max µm	Incl.	min µm	max µm	min µm	max µm										
40	0	-7	0	+26	90	-5	-13	40	85	100	85	100										
45					100			45														
50					110			50														
55					120			55														
60					130			60					100	120	105	120						
65		-9		+30	140			65	120	145	130	150										
70					150			70														
75					160			75														
80					170			80														
85					180			85														
90		-12		+35	190			-10	-23	90	150	180	155	180								
95					200					95												
100					215					100												
110					240					110					180	210	190	220				
120					260					120												
130					280					130					205	240	220	260				
140					-15					+40					300	-13	-28	140	240	280	255	300
150															320			150				
160															340			160				
170	360		170			260	310								285			340				
180	380	180																				
190	400	190	285	340		315	370															
	-18	+46																				

Q405 Design



- Steel cage EJA design for sizes up to 22322
- Steel cage CCJA design for sizes above 22322
- Symmetrical rollers
- Flangeless inner ring
- Split surface hardened window-type steel cages
- Outer ring guided
- Centered by a floating outer guide ring.
- P5 bore and P6 outer diameter tolerance
- C4 radial internal clearance
- W33 groove and 3 holes in outer ring
- Heat stabilised to 200 C



EJA

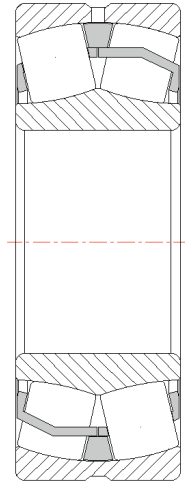
CCJA



Q405 dimension tolerances								Q405 radial internal clearance								
Bore Ø	Bore Ø tolerance				OD Ø	Outer Ø tolerance		Bore Ø	C4 clearance							
	Parallel bore		Taper bore						Parallel bore		Taper bore					
Incl.	min µm	max µm	min µm	max µm	Incl.	min µm	max µm	Incl.	min µm	max µm	min µm	max µm				
40	0	-8	0	+16	90	0	-13	40	60	80	65	85				
45					100			45	75	100	80	100				
50					110			50	100	120	95	120				
55					120			-9	+19	130	-15	60	90	120	95	120
60					130					65		90	120	95	120	
65		140		70	110		145			120		150				
70		150		-18	+22		160			-20		75	110	145	120	150
75		160					80					110	145	120	150	
80		170					-25	+25	180		-28	85	110	145	120	150
85		180							90			135	180	140	180	
90		190							-10			+29	200	-20	95	135
95		200		100	135					180			140		180	
100		215		-13	+25					215			-25		110	160
110		240					120	160		210	170				220	
120		260					-15	+25		260	-28				130	190
130		280							140	190		240		200	260	
140		300							-18	+25		300		-28	150	220
150		320		160	220							280	230		300	
160		340		-20	+25							340	-28		170	240
170	360	180	240			310	260	340								
180	380	-25	+25			380	-28	190			260	340			290	370
190	400					190		260	340	290	370					

Q41 Design

- Steel cage
- C4 radial internal clearance
- Restricted outer diameter tolerances
- W33 groove and 3 holes in outer ring
- Heat stabilised to 200 C



E1



Q41 dimension tolerances								Q41 radial internal clearance							
Bore Ø	Bore Ø tolerance				OD Ø	Outer Ø tolerance		Bore Ø	C4 clearance						
	Parallel bore		Taper bore						Parallel bore		Taper bore				
Incl.	min µm	max µm	min µm	max µm	Incl.	min µm	max µm	Incl.	min µm	max µm	min µm	max µm			
40	0	-7	00	+25	90	-5	-13	40	60	80	65	85			
45					100			45	75	100	80	100			
50					110			50	100	80	100				
55					120			55	120	95	120				
60					130			60	130	95	120				
65		140		65	140			120	150						
70		150		70	150			120	150						
75		160		75	160			145	150						
80		170		80	170			145	150						
85		180		85	180			145	150						
90		190		-12	+35	190	-10	-23	90	135	180	140	180		
95		200				95			135	180	140	180			
100		215				100			160	210	170	220			
110		240				110			160	210	170	220			
120		260				120			190	240	200	260			
130		280		-15	+40	280			-13	-28	130	190	240	200	260
140		300				140					220	280	230	300	
150		320				150					220	280	230	300	
160		340				160					240	310	260	340	
170	360	170	240			310					260	340			
180	380	-18	+46	180	-13	-28	180	240			310	260	340		
190	400			190			260	340			290	370			

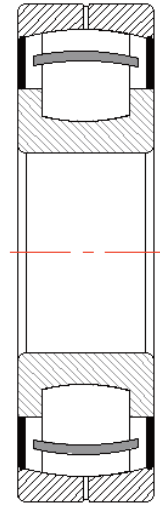
SKF	QCB Extreme	TIMKEN / NSK	QCB Extreme	FAG	QCB Extreme
22312 E/VA405	22312 Q405	22312 YMW33W800C4 22312 CAME4 C4U15-VS	22312 Q80	22312 E T41A	22312 Q41
22313 E/VA405	22313 Q405	22313 YMW33W800C4 22313 CAME4 C4U15-VS	22313 Q80	22313 E T41A	22313 Q41
22314 E/VA405	22314 Q405	22314 YMW33W800C4 22314 CAME4 C4U15-VS	22314 Q80	22314 E T41A	22314 Q41
22315 E/VA405	22315 Q405	22315 YMW33W800C4 22315 CAME4 C4U15-VS	22315 Q80	22315 E T41A	22315 Q41
22316 E/VA405	22316 Q405	22316 YMW33W800C4 22316 CAME4 C4U15-VS	22316 Q80	22316 E T41A	22316 Q41
22317 E/VA405	22317 Q405	22317 YMW33W800C4 22317 CAME4 C4U15-VS	22317 Q80	22317 E T41A	22317 Q41
22318 E/VA405	22318 Q405	22318 YMW33W800C4 22318 CAME4 C4U15-VS	22318 Q80	22318 E T41A	22318 Q41
22319 E/VA405	22319 Q405	22319 YMW33W800C4 22319 CAME4 C4U15-VS	22319 Q80	22319 E T41A	22319 Q41
22320 E/VA405	22320 Q405	22320 YMW33W800C4 22320 CAME4 C4U15-VS	22320 Q80	22320 E T41A	22320 Q41
22322 E/VA405	22322 Q405	22322 YMW33W800C4 22322 CAME4 C4U15-VS	22322 Q80	22322 E T41A	22322 Q41
22324 CCJA W33/VA405	22324 Q405	22324 YMW33W800C4 22324 CAME4 C4U15-VS	22324 Q80	22324 E T41A	22324 Q41
22326 CCJAW33/VA405	22326 Q405	22326 YMW33W800C4 22326 CAME4 C4U15-VS	22326 Q80	22326 E T41A	22326 Q41
22328 CCJAW33/VA405	22328 Q405	22328 YMW33W800C4 22328 CAME4 C4U15-VS	22328 Q80	22328 E T41A	22328 Q41
22330 CCJAW33/VA405	22330 Q405	22330 YMW33W800C4 22330 CAME4 C4U15-VS	22330 Q80	22330 E T41A	22330 Q41
22332 CCJAW33/VA405	22332 Q405	22332 YMW33W800C4	22332 Q80	22332 E T41A	22332 Q41

SB sealed sphericals



Features

- Single row roller
- Interchangeable with other brands
- Annular groove and 2 lubrication holes standard (W33)
- Polyurea NLGI 2 grease
- Taper bore versions available (K)
- Standard or C3 internal clearance



SB



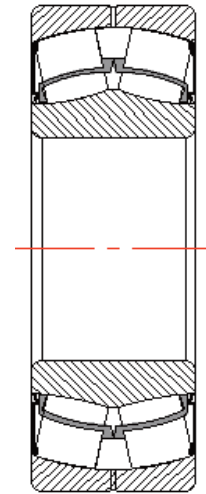
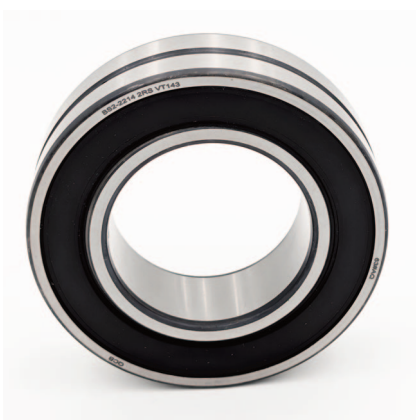
Designation				Dimensions				Load ratings		Limiting speed	Mass
Size				d	D	B	r _{min}	Cr	Cor		
				mm	mm	mm	mm	KN	KN		
				55	100	25	1.5	77.5	78.5	4650	0.86
				60	110	28	1.5	85	100	4200	1.18
				65	120	31	1.5	95	116	3800	1.54
				70	125	31	1.5	102	127	3650	1.63
				75	130	31	1.5	112	143	3500	1.77
				80	140	33	2	125	163	3250	2.09
				85	150	36	2	158	200	3000	2.68
				90	160	40	2	173	220	2800	3.40
				95	170	43	2	208	265	2650	4.17
				100	180	46	2	224	290	2500	5.03
				110	200	53	2.1	285	375	2200	7.21
				120	215	58	2.1	325	465	2050	8.98
				130	230	64	3	380	500	1900	11.25
				140	250	68	3	460	558	1750	14.20
				150	270	73	3	485	620	1600	17.91

BS2 sealed sphericals



Features

- Double row roller design
- Interchangeable with other brands
- Sheet steel reinforced HNBR seal standard (Equivalent to SKF 2RS5 seal)
- CA style brass cage design standard
- Annular groove and 3 lubrication holes standard (W33)
- LGEP 2 grease (VT143)
- Taper bore versions available (K)



BS2

Designation	Dimensions				Load ratings		Limiting speed		Mass
	d	D	B	r _{min}	Cr	Cor			
Size	mm	mm	mm	mm	KN	KN	rpm		kg
BS2 2205 2RS VT143	25	52	23	1	46.2	45	5200		0.22
BS2 2206 2RS VT143	30	62	25	1	58.8	56.8	4200		0.34
BS2 2207 2RS VT143	35	72	28	1.1	83.5	83.1	3600		0.52
BS2 2208 2RS VT143	40	80	28	1.1	92.3	91.0	3300		0.57
BS2 2209 2RS VT143	45	85	28	1.1	99.2	97.6	3200		0.66
BS2 2210 2RS VT143	50	90	28	1.1	100.7	125.4	2800		0.74
BS2 2211 2RS VT143	55	100	31	1.5	123.0	126.0	2600		1.00
BS2 2212 2RS VT143	60	110	34	1.5	130.3	169.0	2300		1.35
BS2 2213 2RS VT143	65	120	38	1.5	172.4	229.7	2100		1.82
BS2 2214 2RS VT143	70	125	38	1.5	182.8	240.6	2000		1.86
BS2 2215 2RS VT143	75	130	38	1.5	190.5	259.6	1900		1.96
BS2 2216 2RS VT143	80	140	40	1.5	205.3	282.1	1800		2.38
BS2 2217 2RS VT143	85	150	44	2	244.0	341.0	1600		3.03
BS2 2218 2RS VT143	90	160	48	2	289.9	411.5	1600		3.94
BS2 2219 2RS VT143	95	170	51	2.1	324.4	452.1	1400		4.62
BS2 2220 2RS VT143	100	180	55	2.1	371.4	521.8	1300		5.59
BS2 2222 2RS VT143	110	200	63	2.1	476.8	716.1	1200		8.38
BS2 2224 2RS VT143	120	215	69	2.1	600.4	814.0	1100		10.29
BS2 2226 2RS VT143	130	230	75	3	679.8	985.6	700		12.78

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