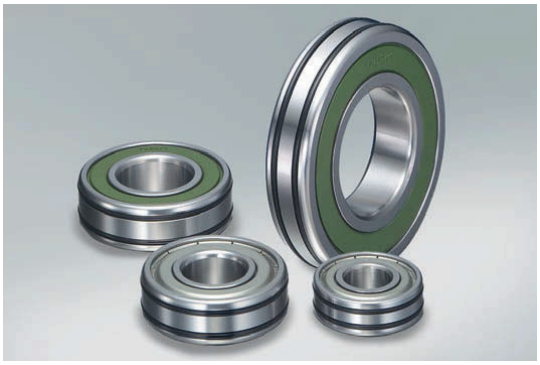
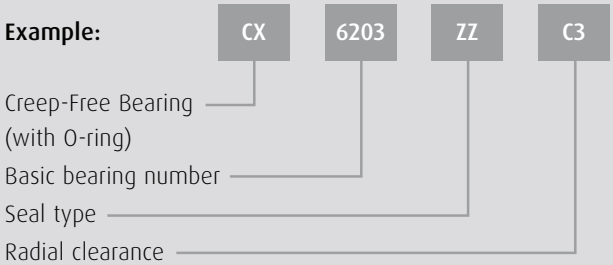
Special Deep Groove Ball Bearings for Pumps

Creep-Free Bearings

NSK introduces a new bearing series that is indispensable in the pump free-end bearing position, and for any applications with creep problems. O-ring compression provides dramatically enhanced creep resistance. As the boundary dimensions are identical, the housing does not need to be reworked when replacing standard bearings. This results in reduced cost of the conversion.



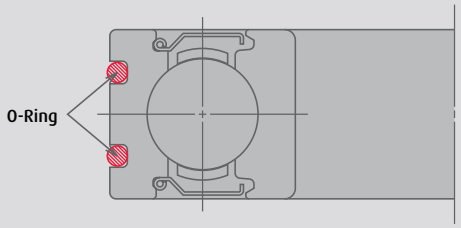
Bearing Nomenclature



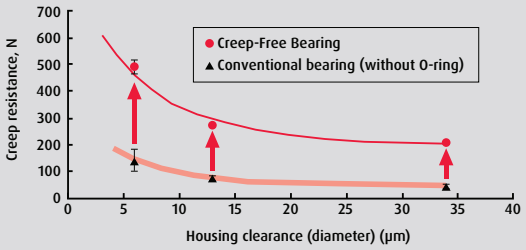
Bearing bore diameter	Bearing outer diameter	Bearing width	Bearing load ratings		Recommended Housing Fits*	Bearing number			
d mm	D mm	B mm	C_r (N)	C_{0r} (N)		Open type	Shield type	Contact seal type**	Non-contact type
10	26	8	4 550	1 970	G6 or H7	CX-6000			
	30	9	5 100	2 390		CX-6200	ZZ	DDU	VV
	35	11	8 100	3 450		CX-6300			
12	28	8	5 100	2 370		CX-6001			
	32	10	6 800	3 050		CX-6201	ZZ	DDU	VV
	37	12	9 700	4 200		CX-6301			
15	32	9	5 600	2 830		CX-6002			
	35	11	7 650	3 750		CX-6202	ZZ	DDU	VV
	42	13	11 400	5 450		CX-6302			
17	35	10	6 000	3 250		CX-6003			
	40	12	9 550	4 800		CX-6203	ZZ	DDU	VV
	47	14	13 600	6 650		CX-6303			
20	42	12	9 400	5 000		CX-6004			
	47	14	12 800	6 600		CX-6204	ZZ	DDU	VV
	52	15	15 900	7 900		CX-6304			
25	47	12	10 100	5 850		CX-6005			
	52	15	14 000	7 850		CX-6205	ZZ	DDU	VV
	62	17	20 600	11 200		CX-6305			
30	55	13	13 200	8 300		CX-6006			
	62	16	19 500	11 300		CX-6206	ZZ	DDU	VV
	72	19	26 700	15 000		CX-6306			
35	62	14	16 000	10 300		CX-6007			
	72	17	25 700	15 300		CX-6207	ZZ	DDU	VV
	80	21	33 500	19 200		CX-6307			
40	68	15	16 800	11 500		CX-6008			
	80	18	29 100	17 900		CX-6208	ZZ	DDU	VV
	90	23	40 500	24 000		CX-6308			
45	75	16	20 900	15 200		CX-6009			
	85	19	31 500	20 400		CX-6209	ZZ	DDU	VV
	100	25	53 000	32 000		CX-6309			

* Although the recommended fits are G6 or H7, G6 is specified when conditions prioritize location under light pre-load.
** Low-contact seal available for seal type bearings. Contact NSK for details.

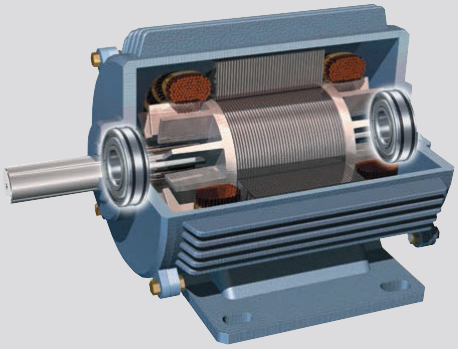
Structure of the Creep-Free Bearing



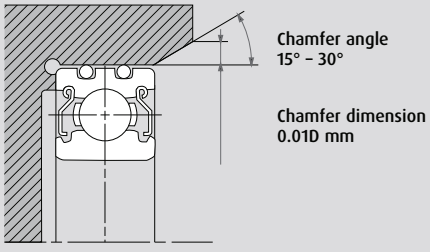
Creep limit load test (example: 6204)



Application example Pump Motor Bearings



Housing shape and dimension



1. Structure and performance of Creep-Free Bearings

Compression of the O-rings, which are mounted in two grooves on the outer ring, improve creep prevention. No special machining is required; bearings can be used with the same housing as standard bearings. In creep limit load tests, the more housing clearance is reduced, the greater the improvement in creep prevention. This is due to the compression of the O-ring mounted in the outer ring.

2. Features and applications of Creep-Free Bearings

- **Prevents creeping**
  O-ring compression prevents creep.
- **No special machining of the housing is required**
  Bearings can be replaced since boundary dimensions are identical to standard bearings.
- **Easy to assemble**
  Assembly is easy since bearings can be fitted with a loose tolerance.
- **Reusable housing**
  Very little abrasion occurs on the bore surface of the housing, making reuse possible.

3. Note on mounting Creep-Free Bearings

Housing shape and dimension: the housing shape must be in accordance with sketch. We recommend a groove and a chamfer, chamfer angle being between 15° and 30°, and its minimum dimension being 0.01 x Bearing Outer Diameter. For more information, please see NSK brochure “Creep Free Bearings”.