

Creep-Free Bearings™

A new bearing series that is indispensable for drive units in equipment such as motors for general use. Prevents creep when used with rotating loads, plus offers a reusable housing and easy assembling.



The O-rings significantly help to prevent the occurrence of creep when fitted with loose housing tolerances. Also, since boundary dimensions are identical to standard bearings, the housing does not need to be reworked when replacing the bearing, contributing to reduced costs.

1. Structure and performance of Creep-Free Bearings

Creep-Free Bearings, which come with two O-rings mounted in the outer ring, help to prevent the occurrence of creep by restricting the amount of clearance between the outer ring and housing.

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, due to the tension of the O-ring mounted in the outer ring.

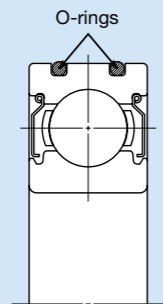


Fig. 1 Structure of Creep-Free Bearings

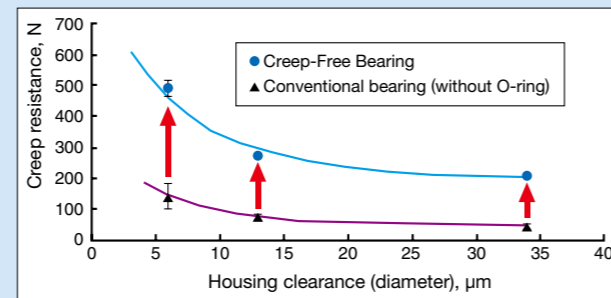


Fig. 2 Creep limit load test (example: 6204)

2. Features and applications of Creep-Free Bearings

Features

Prevents creep

O-rings help prevent creep.

Reusable housing

Very little abrasion occurs on the bore surface of the housing, making reuse possible.

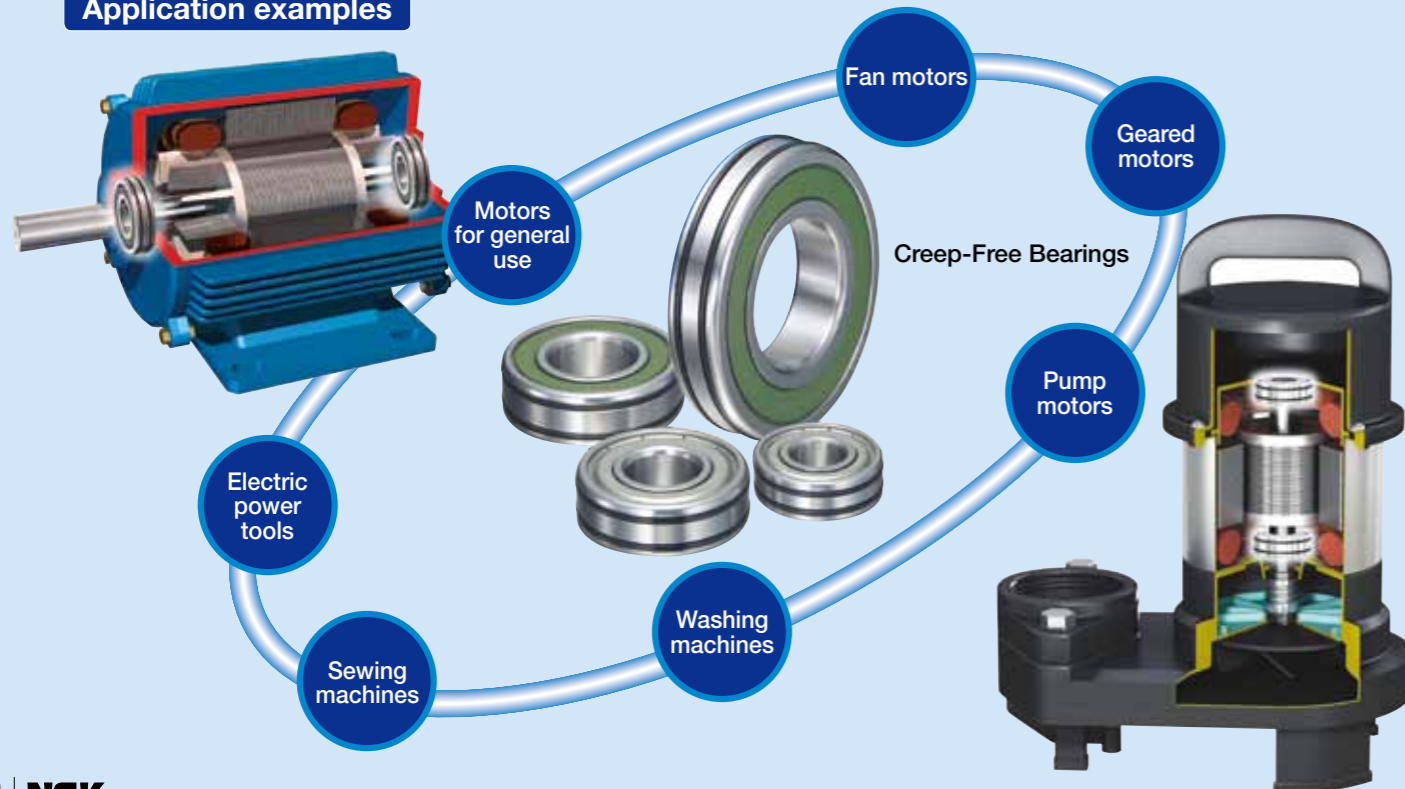
Easy to assemble

Assembly is easy since bearings can be fitted with a loose tolerance.

No special machining of the housing is required

Bearings can be replaced since boundary dimensions are identical to standard bearings. No reworking of the housing is required.

Application examples



3. Creep-Free Bearings

Table 1 Creep-Free Bearings List

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

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

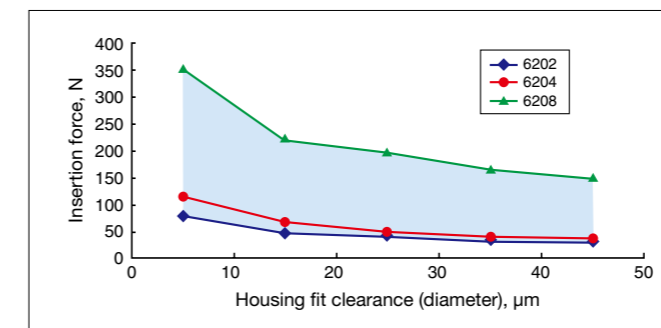


Fig. 3 Fit and insertion force

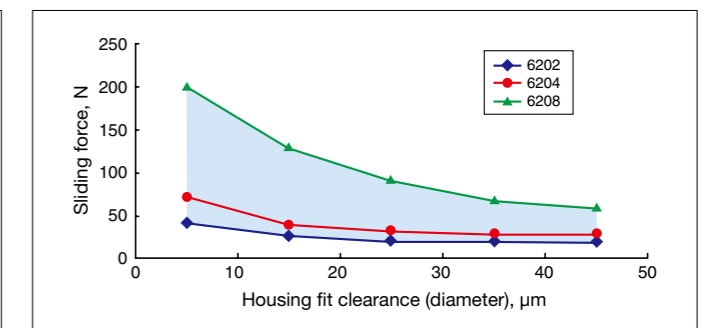


Fig. 4 Fit and sliding force



Note on mounting Creep-Free Bearings

- When oil or grease is applied to the outer diameter of the bearing, use a mineral oil or a synthetic hydrocarbon oil (NSK's EA2, etc.).
- O-ring material is nitrile rubber (operating temperature range: -30 to 120°C) as a standard specification. Please contact NSK for use under special environments such as high temperatures.

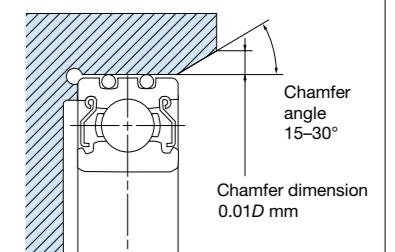


Fig. 5 Housing shape and dimension

Note on the product name "Creep-Free Bearings": The term "free" should not be construed to mean that creep is nonexistent.

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