

SKF Energy Efficient deep groove ball bearings for medium size electric motors

Benefits*

- 30–50% lower bearing friction for increased motor efficiency
- Long-lasting, low-friction grease doubles bearing life
- Smoother running for less noise and vibration; cooler running for less heat generation in the motor
- Dimensionally interchangeable with standard bearings
- Available off-the-shelf in selected sizes

Typical applications

- Electric motors up to IEC frame size 355 (NEMA frame size 449TS)
- Light to medium load applications with shaft diameters up to 80 mm

* Compared to standard SKF deep groove ball bearings (in light to medium load applications)

Extended bearing range enables higher efficiency for motors up to 350 kW

Initially developed for electric motors up to 37 kW (50 hp), the SKF Energy Efficient (E2) deep groove ball bearing range now includes drop-in replacements for motors up to 350 kW (~500 hp). New SKF E2 deep groove ball bearings give OEMs new design options to help them develop motors that comply with efficiency classes specified in IEC 60034-30 (the basis for the different Minimum Energy Performance Standard requirements worldwide).

Featuring an improved internal design, improved surface finish and a special low-friction grease, the SKF Energy Efficient deep groove ball bearing range extension can help OEMs realize several performance benefits in medium size motors. These include the ability to boost overall motor performance and energy efficiency.

30–50% less friction

For bearings, friction loss = energy loss. Compared to standard SKF bearings, SKF E2 deep groove ball bearings cut bearing friction losses by 30–50%. Compared to bearings from other manufacturers, SKF E2 deep groove ball bearings can reduce friction losses even more. Potential energy savings are relative to unit size – the bigger the motor, the bigger the potential for savings.



A longer lifecycle and lower Total Cost of Ownership

Because lower friction means less heat generated in the bearing, SKF E2 deep groove ball bearings run cooler than conventional bearings. Pre-greased with our own specially developed low-friction grease, SKF E2 deep groove ball bearings can reduce the likelihood of future breakdowns, boosting uptime and process productivity.

All of these factors combine to enable faster motor speeds and longer bearing and motor lifecycles. Ultimately, SKF Energy Efficient deep groove ball bearings can boost motor uptime and energy efficiency, reducing maintenance, repairs and operating costs in the process.



This offer is part of the SKF BeyondZero portfolio of products, services and solutions designed to help our customers reduce environmental impact. To learn more, visit www.beyondzero.com

For more information about SKF Energy Efficient deep groove ball bearings, contact your local sales office or visit www.skf.com

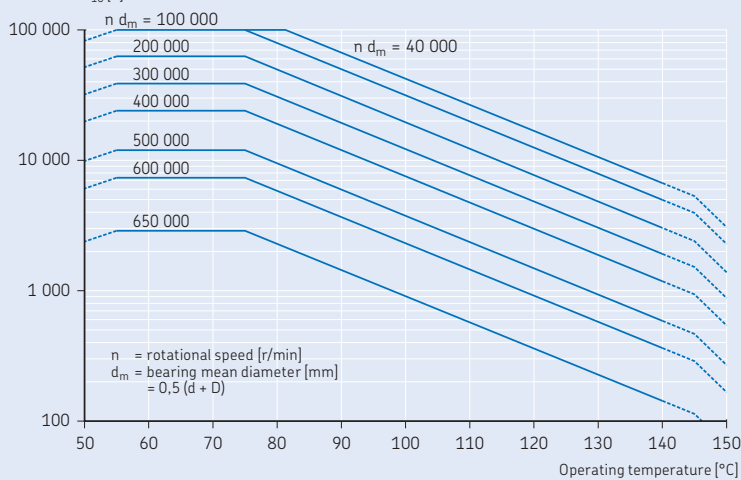


Determining the service life of the grease

Pre-greased with our own specially developed low-friction grease, SKF E2 deep groove ball bearings can actually reduce the likelihood of future breakdowns. This diagram provides grease life estimates based on operating temperatures and speed.

Grease life for SKF Energy Efficient deep groove ball bearings for load $P = 0,05 C$

Grease life for SKF Energy Efficient deep groove ball bearings where $P = 0,05 C$
Grease life L_{10} [h]



SKF E2 deep groove ball bearings – product data

Principal dimensions			Basic load ratings		Fatigue load limit	Speed ratings		Mass	Designation
d	D	B	C	C_0		Reference speed	Limiting speed		
mm			kN		kN	r/min		kg	–
25	47	12	11,1	6,1	0,26	35 000	18 000	0,08	E2.6005-2Z
	52	15	13,8	7,65	0,325	30 000	16 000	0,13	E2.6205-2Z
	62	17	22,9	11,6	0,49	27 000	15 000	0,23	E2.6305-2Z
30	55	13	12,7	7,35	0,31	31 000	16 000	0,12	E2.6006-2Z
	62	16	19,5	11,2	0,475	26 000	14 000	0,20	E2.6206-2Z
	72	19	28,6	16	0,67	22 000	13 000	0,35	E2.6306-2Z
35	62	14	15,3	9,15	0,39	26 000	13 000	0,15	E2.6007-2Z
	72	17	25,5	15,3	0,64	22 000	12 000	0,29	E2.6207-2Z
	80	21	33,8	19	0,815	21 000	11 000	0,46	E2.6307-2Z
40	68	15	15,9	9,65	0,405	24 000	12 000	0,19	E2.6008-2Z
	80	18	30,7	18,6	0,78	19 000	10 000	0,37	E2.6208-2Z
	90	23	41	24	1,02	19 000	9 900	0,63	E2.6308-2Z
45	85	19	32,5	20,4	0,865	18 000	9 900	0,41	E2.6209-2Z
	100	25	52,7	31,5	1,34	17 000	8 700	0,83	E2.6309-2Z
50	110	27	62,4	38	1,6	15 000	7 800	1,05	E2.6310-2Z
55	120	29	71,5	45	1,9	14 000	7 300	1,35	E2.6311-2Z
60	130	31	81,9	52	2,2	13 000	6 500	1,70	E2.6312-2Z
65	140	33	93,6	60	2,5	11 000	5 300	2,17	E2.6313-2Z
70	150	35	104	68	2,75	11 000	5 000	2,63	E2.6314-2Z
75	160	37	114	76,5	3,05	10 000	4 500	3,14	E2.6315-2Z
80	170	39	124	86,5	3,25	9 500	4 300	3,75	E2.6316-2Z

The bearings shown here are only part of the total assortment. Additional information is available online at www.skf.com/bearings



UK-based rebuilder puts SKF to the test

Matt Fletcher, a SKF Certified Rebuilder and managing director of UK-based rebuilders Fletcher Morland Ltd., decided to find out.

First, Fletcher measured the energy consumed by a brand new 7,5 kW motor. He then dismantled the unit and outfitted it with SKF E2 deep groove ball bearings. The result?

The motor equipped with SKF E2 bearings turned slightly faster at no load test. During the load test, the motor drew 150 fewer Watts than it did with the standard bearings. For a 7,5 kW motor, a reduction of 150 Watts is a significant saving. Applied widely to motors of bigger frame sizes and longer duty cycles in industrial facilities worldwide, this energy-saving potential is enormous.

To further emphasize the positive results of his test, Fletcher noted that “the features of the new SKF E2 bearing increase the expected service life of the motor – another benefit to our industrial users that also reinforces our good-will in the market.”

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