SKF High Performance Polyurea Bearing Grease

Taking bearing performance to new heights

Grease technology has come a long way. And our bearings are running better because of it. Due to the very difficult conditions bearings must operate in, the demands on grease performance have increased dramatically. Sealed-for-life bearings, for example, which demand both quiet running and high temperature performance are usually not filled with conventional lithium complex thickened greases.

In an effort to address bearing demands, a new thickener technology, known as polyurea technology, was developed in the 1970's and since then significant advancements have resulted in much higher performance. Polyurea greases were first introduced in the North American market during the 1970's and the Japanese have perfected the technology since then.

In recent years, modern types of polyurea greases provide bearings good performance under a number of conditions. Today, SKF has taken that technology even one step further and developed a new and improved polyurea grease that does more than any grease in its class . . . . .

LGHP 2

another SKF solution

LGHP 2, SKF's high performance bearing grease

For many years SKF has recommended its grease LGHQ 3 which uses a unique lithium complex thickener as the standard bearing grease for high operating temperatures. Using advanced polyurea thickening technology, SKF has developed a new standard high temperature, low noise bearing grease, LGHP 2.

The new LGHP 2 offers excellent lubrication not only at high temperatures but at medium and low temperatures as well. Additionally, not only does it have excellent versatility in its temperature range, it is also a very quiet running grease, resulting in higher grease cleanliness and longer life.

And because of its compatibility with common polyurea and lithium complex thickened greases combined with its suitability for a wide variety of applications, LGHP 2 will enable you to rationalise the number of different greases you currently use, reduce the risk of using incorrect grease when lubricating certain applications and prevent stock-out of the correct lubricant you need for your bearings.

SKF's new LGHP 2 high performance polyurea grease clearly takes bearing performance to new heights.

Description

LGHP 2 is a premium quality, mineral oil based bearing grease using Polyurea (di-urea) thickener. It has excellent lubrication properties for a wide temperature range, from -40 °C (-40 °F) up to 150 °C (302 °F). A specially formulated additives package also allows LGHP 2 to offer excellent corrosion protection, even when exposed to aggressive environments such as synthetic seawater.

Properties

- Extremely long life at high temperatures
- Very quiet running
- Wide temperature range
- Excellent corrosion protection
- High thermal stability
- Good low temperature start-up performance

Advantages

- Suitable for both ball and roller bearings
- Compatible with common polyurea greases
- Compatible with lithium and lithium complex thickened greases

Applications

- Electric motors
- Hot fans
- Water pumps
- Rolling bearings in textile, paper processing and drying machines
- Applications with high speed ball bearings operating at medium and high temperatures
- Any ball and roller bearing applications which require long service life at high (and low) running temperatures and/or operating under wet conditions

SKF requirements for a polyurea grease

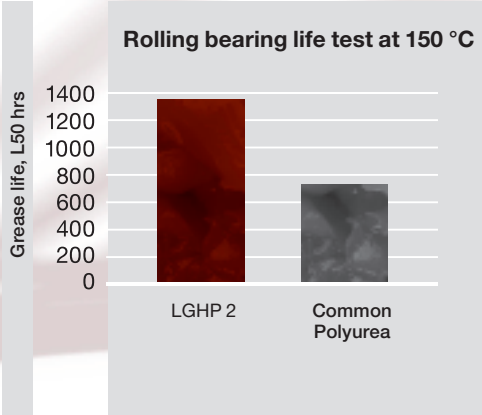
Very long service life, SKF R0F test

Purpose

To assess grease performance at high operating temperatures. The highest temperature at which the grease achieves a life of 1,000 hours is considered the maximum bearing operating temperature of that grease. Beyond this temperature grease life becomes unpredictable.

Test parameters

- 10 bearings 6204
- running at 10,000 rpm
- Operating at 150 °C (302 °F)



Low temperature performance, Low temperature torque and SKF R2F tests

Purpose

To assure proper lubrication of ball and roller bearings with larger contact areas at low temperatures.

Low temperature performance limit

	Ball bearings	Roller bearings
LGHP 2	-40 °C (-40 °F)	30 °C (86 °F)
Common Polyurea	-30 °C (-22 °F)	80 °C (176 °F)

Test principle

Low Temperature torque
Establish the minimum start up temperature for ball bearings.
The starting and the running torque are measured and should be below 1,000 mNm and 100 mNm respectively.

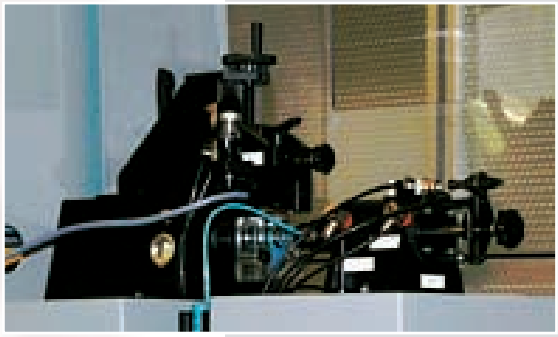
R2F test
Establish the minimum temperature at which the grease provides proper lubrication for spherical roller bearings under radial loads at medium speeds. The running temperature is monitored and after 480 hours the wear of the rollers and the cage is measured. The grease passes the test if the wear of both components is below a certain acceptance limit.

LGHP 2 provides superior lubrication for both ball and roller bearings at low temperatures, compared to most polyurea greases.

Quiet running, SKF BeQuiet+ test

Purpose

To measure the noise generated by the grease during operating conditions.



Test principle

Lubrication of standard, high accuracy bearings and measurement of vibrations levels in three different frequency bands: high, medium and low frequency bands. The number of vibration peaks above certain reference levels determines the grease noise classification.

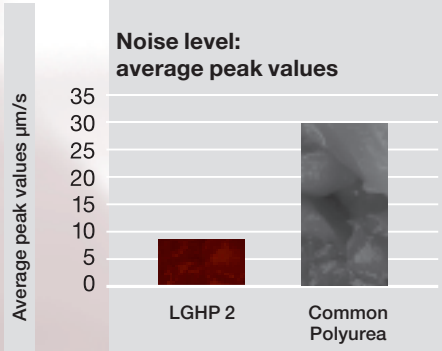
Test conditions

Bearing type	608 of QE4, quality in reference conditions
Speed	1,800 rpm
Load	30 N axial
Temperature	Ambient: 20 - 25 °C (68 - 77 °F)

Outcome

Grease Noise classification

- GN4: Extremely quiet
- GN3: Very Quiet
- GN2: Reasonably quite
- GN1: Noisy



The test results classified LGHP 2 as a GN3, very quiet, class grease.

Excellent rust and corrosion protection, SKF EMCOR test

Purpose

To assess the rust and corrosion protection abilities of a lubricating grease. A rating of rust on the test bearings after exposure is reported in duplicate. The rating system ranges from 0 to 5 where 0 stands for no rust detected on the bearing surface.

SKF EMCOR test	LGHP 2	Common Polyurea
Distilled water, ISO 11007	0 - 0	0 - 1
Distilled water washout	0 - 0	1 - 2
100% synthetic seawater (5% NaCl)	0 - 0	3 - 3

Technical details

	LGHP 2
Basic characteristics:	
DIN 51825 code	K2N-40
NLGI consistency class	2 - 3
Thickener	Polyurea (di-urea)
Base oil	Mineral
Operating temperature range	-40 to 150 °C (-40 to 302 °F)
Dropping Point, ISO 2176	240 °C (464 °F)
Density DIN 51757 at 20 °C (68 °F)	0,85 - 0,95 g/cm^3
Base oil viscosity:	
40 °C / 104 °F	96 mm^2/s
100 °C / 212 °F	10,5 mm^2/s
Penetration DIN ISO 2137:	
60 strokes	245 - 275 10^{-1} mm
100,000 strokes	<360 10^{-1} mm
Corrosion protection:	
SKF Emcor, distilled water, ISO 11007	0 - 0
SKF Emcor, distilled water washout	0 - 0
SKF Emcor, 100% synthetic seawater (5% NaCl)	0 - 0
Water resistance:	
DIN 51807/1, at 90 °C (194 °F)	0
DIN 51807/2, dynamic	1 max
Oil separation:	
DIN 51817, 7 days at 40 °C (104 °F)	1 - 5%
Grease life:	
SKF R0F, 10,000 rpm at 150 °C (302 °F), L50 life	>1,000 hrs
Cylindrical roller bearing (CRB) test:	
Modified SKF R0F, 10,000 rpm at 150 °C (302 °F), L50 life	>600 hrs
MMMMMM	
Quiet running characteristics:	
SKF BeQuiet$^+$ test	GN3 class
Lubrication ability:	
SKF R2F, running test B at 120 °C (248 °F)	Pass
SKF R2F, running test A at ambient temperature	Pass

Available pack sizes and ordering details

Designation	pack size
LGHP 2/0.4	420 ml cartridge
LGHP 2/1	1 kg can
LGHP 2/5	5 kg can
LGHP 2/18	18 kg can
LGHP 2/50	50 kg drum
LAGD 125/HP2	125 ml SYSTEM 24 filled with LGHP 2

In line with our policy of continuous development of our products we reserve the right to alter any part of the above specification without prior notice.

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