

It is best to have a quiet moment ...



LUBCON Special Lubricants care for Noise Reduction of Rolling Bearings

High requirements

Lubricants need high requirements when bearings are operating under high speeds, extreme temperatures or unfavourable ambient conditions.

The lubricant should be of high quality, reliability and at the same time of low noise.

As a specialist of lubricants, we have developed greases which fulfil uncompromisingly these requirements.

LUBCON	Requirements							
	Noise performance	Cleanliness	High speed	High temperatures	Low temperatures	Corrosion protection	Water resistance	Elastomer compatibility
SINTONO® GPE 703	1	1	1	1	2	1	1	2
THERMOPLEX® LC 302 EP	2	2	1	3	1	1	1	2
THERMOPLEX® Li 302	1	1	1	3	1	2	2	2
THERMOPLEX® 2 HPL	3	1	2	2	2	2	2	2
THERMOPLEX® 2 TML	1	1	2	2	3	2	2	2
TURMOGREASE® HS L 252	1	1	1	3	2	2	2	1
TURMOGREASE® LC 802 EP	2	2	2	2	2	1	1	2
TURMOGREASE® Li 802 EP	1	2	2	2	2	2	2	2
TURMOGREASE® N 503 B	1	1	2	2	2	2	1	1
TURMOGREASE® PHS 1002	2	2	2	2	2	2	1	1
TURMOGREASE® PU 703	1	2	1	1	2	1	1	2
TURMOGREASE® PU 1002	1	2	2	2	2	2	1	1

Requirement: 1 = very good, 2 = good, 3 = sufficient

The calmness itself

The noise performance of a rolling bearing is not only due to the purity of the applied grease. The noise development results from many parameters with mutual influences.

Influencing factors	Consequences
Surface quality	Reduced bearing noise
High precision of the bearing	Exact running properties of the bearing
Unfavourable load capacities, vibrations, rolling and sliding factors	Increased vibrations of body and airborne sound, a constant noise producing back-ground
Chemical structure of the grease and the viscosity of the base oil	Less noise production, improved noise reduction
Increased degree of purity of the lubricant	Reduction of peaks
Indirect reasons of noise production	Foreign vibrations due to other machines or plant equipment

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Hearing test passed

The noise performance of a bearing is an important quality characteristic and has to be controlled continuously.

Intensive quality controls have been effected by FAG by means of all kinds of auxiliary devices of modern measurement vibration technique. New test machines with successful results have been developed. Recently they found their application in noise tests for quality assurance.

The Anderometer method has proved as a reliable method of measuring. For this purpose, a bearing is set with the inner ring on a turning shaft and is then axially loaded on the outer ring.

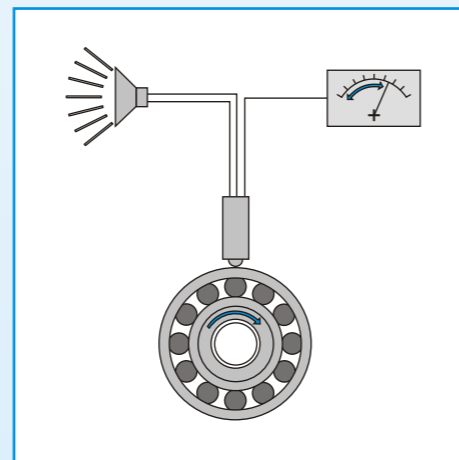
With an oscillating speed indicator the measurement of structure borne sound is taken from the outer ring in three ranges of frequencies.

The measured value has the unity Anderson and indicates the speed of vibration with reference to the revolutions.

Silence please -

wherever a quiet running is requested, the **LUBCON special lubricants** care for noise reduction, i. e. in electric motors, air conditioners, fans as well as in precision engineering of computer and video technology and domestic appliances industry.

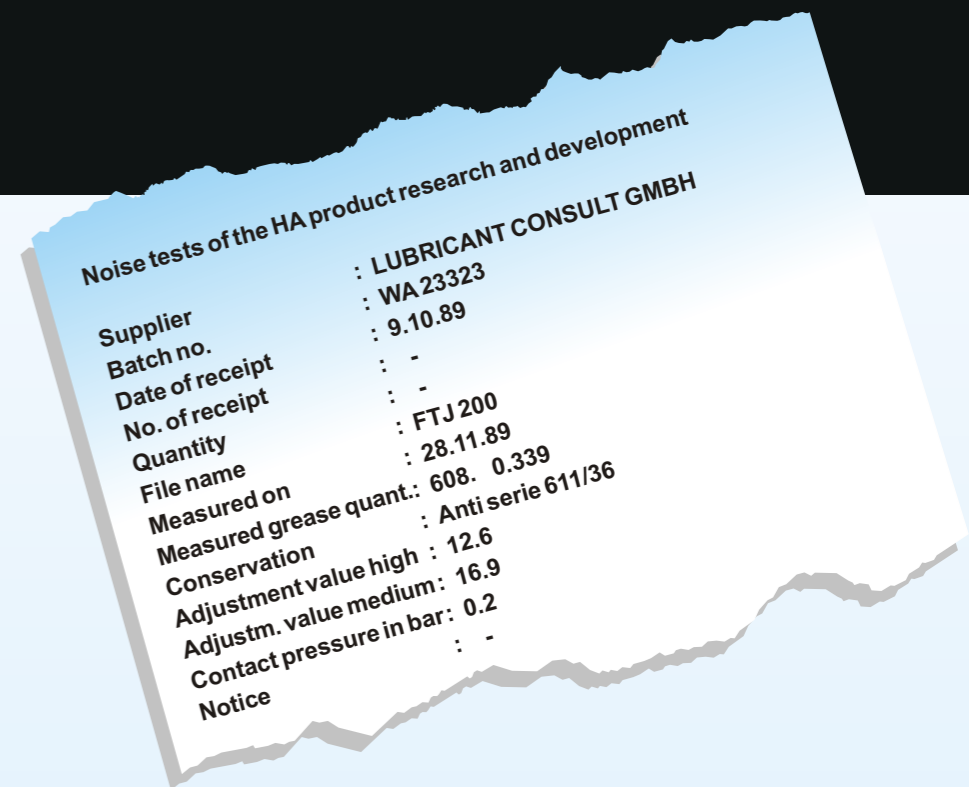
LUBCON - the strong silent type.



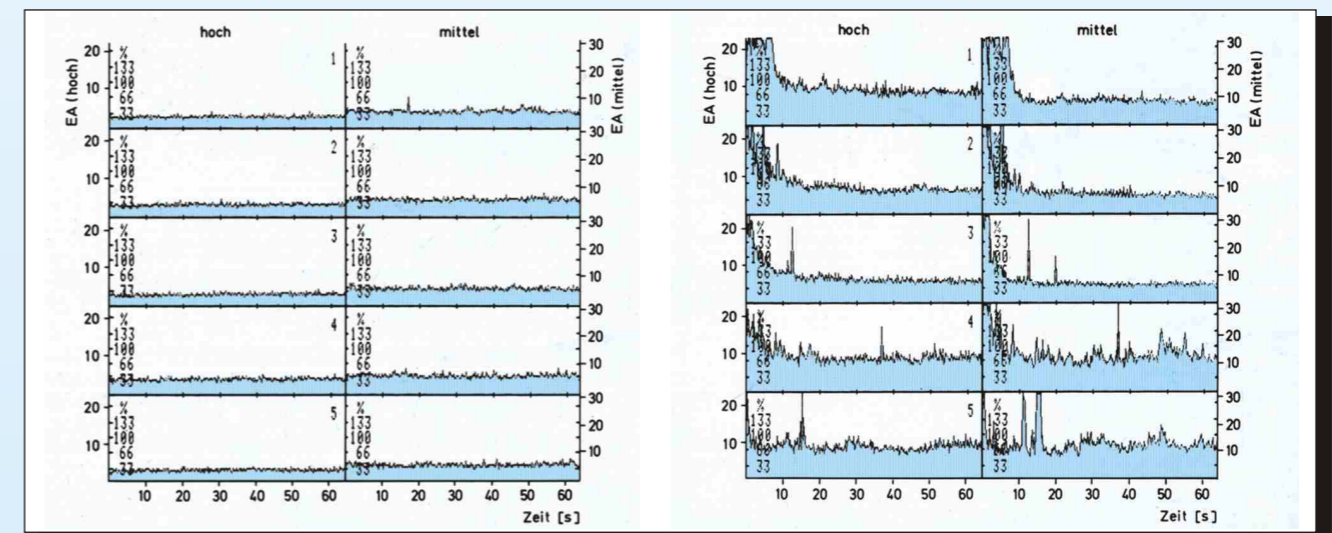
Quelle: "Wälzgerätechnik - Industrietechnik" (FAG) 28/1989

LUBCON lubricating greases as well have passed this noise test.

With a rating of "noise class I/1 up to II/1" they have reached very convincing test results.



Noise performance of lubricants in 5 different bearings upon dependence of time



Noise class I/1

Noise class III/4



Noise performance of the test greases

Noise class/ start-up	Start-up value		Noise peaks of 0 - 32s		Noise peaks of 0 - 32s		Damping factor	
	high	medium	high	medium	high	medium	high	medium
II/1	1	1	0.6	0.9	0.6	0.8	1	1
I/1	1	1	0.5	0.6	0.5	0.6	1	1
II/1	1	1	1.7	3.0	1.4	1.8	1	1
III/4	3	4	3.0	5.6	1.2	1.5	3	4
II/4	4	4	2.3	4.1	0.6	0.7	4	4

LUBCON Product Information

Product information	LUBCON											
	SINTONO® GPE 703	THERMOPLEX® LC 302 EP	THERMOPLEX® Li 302	THERMOPLEX® 2 HPL	THERMOPLEX® 2 TML	T-GREASE® HS L 252	T-GREASE® LC 802 EP	T-GREASE® Li 802 EP	T-GREASE® N 503 B	T-GREASE® PHS 1002	T-GREASE® PU 703	T-GREASE® PU 1002
Colour	yellowish	lightbeige	lightbeige	beige	yellowish/transp.	brownish/beige	beige	darkbrown	yellowish	yellowish	yellowish	green
Structure	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous	homogenous
Base oil type	Ester	Ester	Ester	Ester	Ester	PAO/Ester	SHC/min	SHC/min	PAO/Ester	min/SHC	Ester	min
Base oil viscosity at 40 °C mm ² /s DIN 51562	70	30	30	55	55	25	appr. 82	appr. 82	55	105	70	100
Thickener	PU	Li-Ca	Lithium	Lithium	Lithium	Spec.-Lithium	Li-Ca	Lithium	PU	PU	PU	PU
Drop point in °C DIN ISO 2176	>+250	>+170	>+170	>+180	>+180	>+250	>+180	>+190	>+250	>+250	>+250	>+250
Consistency class DIN 51818	3	2	2	2	2	2/3	2/3	2	3	2	3	2
Worked penetration 0,1 mm DIN ISO 2137	appr. 240	265 - 295	265 - 295	265 - 295	265 - 295	250 - 275	250 - 275	265 - 295	210 - 240	265 - 295	appr. 240	265 - 295
Speed factor mm · min ⁻¹	1.300.000	1.800.000	1.800.000	1.300.000	1.300.000	2.200.000	1.000.000	1.000.000	1.300.000	750.000	1.300.000	750.000
Corrosion protection acc. to Emcor DIN 51802, dest. water	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
Water resistance 3 h, 90 °C, DIN 51807 Pt1/Pt2	1 - 80	1 - 90	1 - 90	1 - 90	1 - 90	1 - 90	1 - 90	1 - 90	1 - 80	1 - 80	1 - 90	1 - 80
Service temperature °C	-40 up to +180	-50 up to +150	-50 up to +150	-40 up to +160	-35 up to +140	-40 up to +120	-35 up to +140	-35 up to +140	-40 up to +160	-40 up to +160	-40 up to +180	-40 up to +160
Density at 20 °C g/ml	0.967	--	0.955	0.97	0.975	0.94	0.91	0.87	0.855	0.87	1.0	0.87
Noise class MGG 11*	I/1	II/1	II/1	II/1	II/1	II/1	II/1	II/1	II/1	II/1	II/1	II/1
Oxidation resistance 100 h/99 °C DIN 51808	0.1 bar	--	--	0.3 bar	0.25 bar	0.15 bar	0.2 bar	0.2 bar	--	0.15 bar	0.1 bar	0.2 bar
FE9 test DIN 51821 A/1,5/6000-x °C/F ₁₀	>700 h/180 °C	--	--	>700 h/140 °C	400 h/140 °C	>250 h/120 °C	--	>150 h/140 °C	280 h/180 °C	>300 h/160 °C	>700 h/180 °C	>200 h/160 °C
FE8 test DIN 51819 successful tests	--	--	--	048-3000/10-130 050-3000/10-140	048-3000/10-130 050-3000/10-140	050-6000/5-90	048-3000/10-100	048-3000/10-100 050-6000/5-90	--	--	--	--
Oil separation at +40 °C DIN 51817 at +100 °C	0.57 % 5.02 %	-- --	3.0 % 11.5 %	4.0 % 13.5 %	2.8 % 8.9 %	1.05 % 3.5 %	2.0 % 5.6 %	3.5 % 6.0 %	-- --	0.5 % --	0.55 % 5.02 %	0.5 % --
Start-/running torque ASTMD 1478 at -40 °C	1353 mNm/ 263 mNm	-- --	-- --	130 mNm/ 19.5 mNm	-- --	150 mNm/ 19.5 mNm	-- --	-- --	-- --	910 mNm/ 100 mNm	1353 mNm/ 263 mNm	810 mNm/ 95 mNm

* Slight differences regarding the noise performance may occur from batch to batch.

This brochure only contains product information. For specific information please refer to our technical data and safety data sheets. The indications made represent the present state of development and knowledge of LUBRICANT CONSULT GMBH. Subject to change. The products are subject to severe controls of manufacture and comply in full with the specifications set forth by our company, but due to the multitude of different influencing factors, we cannot assume any warranty for the successful application in each individual case. Therefore, we recommend to perform field tests. We strictly refuse any liability.



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