Superior Grease Optimal for Use in a Broad Speed Range

AFJ Grease

THK AFJ Grease is a grease product that exceeds in lubricity in a broad speed range from low to high speed using a urea-based thickening agent and a special additive with refined mineral oil being the base oil.

Features

❶ Broad speed range

Stable lubricity in a broad range from low to high speed.

ⓐ Wear resistant

Reduces wear caused by oil film breakdown during low-speed operation.

ⓑ Vibration resistant

Reduces wear caused by mechanical vibrations during high-speed operation.

❷ Low rolling resistance

Achieves a low rolling resistance in a broad range from low to high speed.

❸ High pressure transmissibility

Demonstrates superb pressure transmissibility in automatic lubrication systems.

Representative Properties of AFJ Grease

Test item		Representative property	Testing method
Worked penetration (25℃, 60 W)		325	JIS K 2220.7
Dropping point: ℃		185	JIS K 2220.8
Copper plate corrosion (100℃, 24 h)		Acceptance	JIS K 2220.9
Evaporation amount: mass % (99℃, 22 h)		0.6	JIS K 2220.10
Oil separation rate: mass % (100℃, 22 h)		7.0	JIS K 2220.11
Oxidation stability: MPa (99℃・100h)		0.01	JIS K 2220.12
Mixing stability (100,000 W, 25℃)		360	JIS K 2220.15
Low temperature torque: N-m (-20℃)	Starting	3.8	JIS K 2220.18
	Rotation	1.3	
Bearing rust prevention (52℃・48h)		#1	ASTM D 1743-73
4-ball test (Weld Load): N		3089	ASTM D 2596
Service Temperature range (℃)※1		-20 to +120 (+150)	———

*1: The value in the parentheses is an instantaneous service temperature.

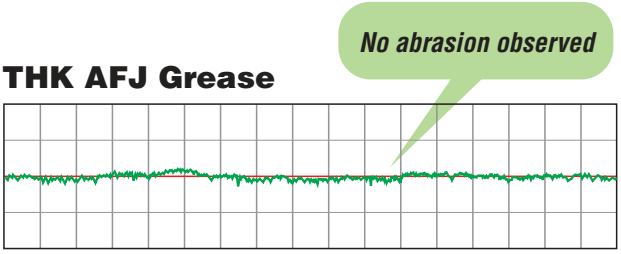
Wear Resistant

Excels in forming an oil film even in low-speed operation and reducing wear

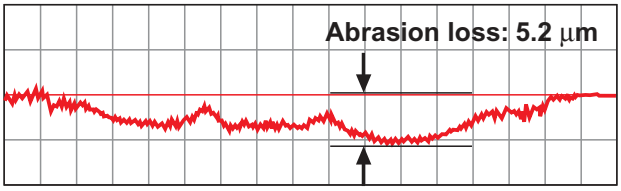
LM Guide Block Abrasion Loss Measurement

Item	Content
Model No.	NRS55B2SS+780LP
Applied load	5.9kN
Feed speed	0.1m/min
Stroke	200mm
Grease content	12cm per LM block (initial lubrication only)
Testing duration	480h

THK AFJ Grease



General urea-based grease



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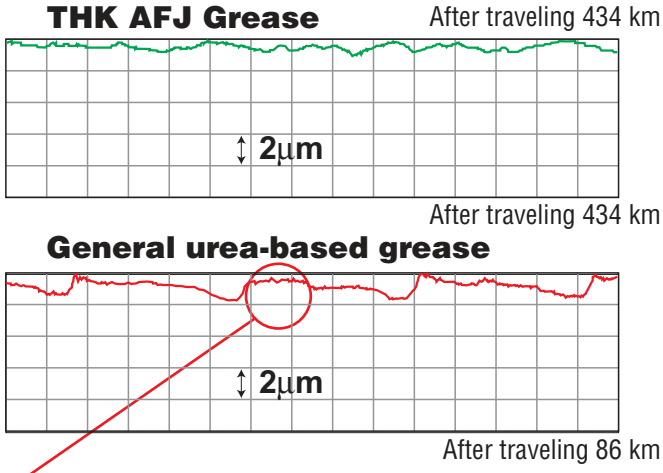
AFJ Grease

Vibration Resistant

Reduces wear caused by vibrations generated during high-speed operation.

LM Guide Rail Abrasion Loss Measurement

Item	Content
Model No.	SHS25R1UU+580LP
Applied load	11.05kN(0.35C)
Feed speed	60m/min
Acceleration/deceleration	9.8m/s^2
Stroke	350mm
Grease content	2 cm^3 per block



"Mechanism of wear occurrence"

Operation pattern at high speed and high acceleration /deceleration → *Mechanical vibrations generated* → *Wear occurs in raceway*

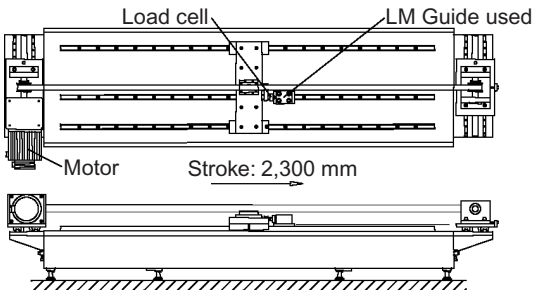
The result of the test with THK AFJ Grease indicates that abration loss is significantly reduced.

Low Rolling Resistance

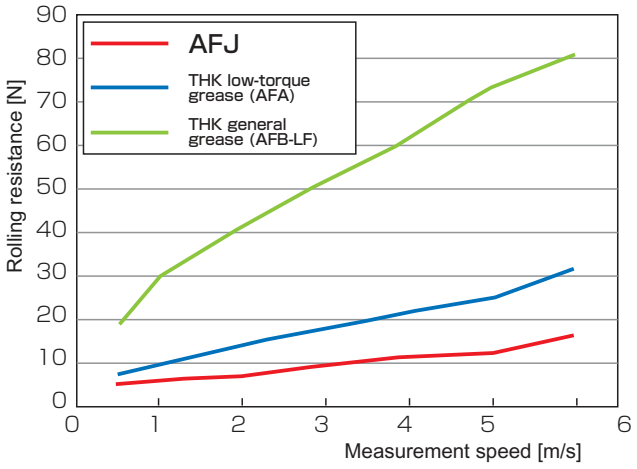
Reduces a rolling resistance of LM Guide or Ball Screw.

LM Guide Rolling Resistance Measurement

Item	Content
Model No.	SHS25R1UU+3000L
Applied load	No load
Acceleration	29.4m/s^2(3G)
Stroke	2300mm
Temperature during test	21℃
Grease content	2cm^{3}per block
Measurement speed	0.5, 1, 2, 3, 4, 5, 6m/s



Speed and Rolling Resistance of LM Guide



Rolling resistance is reduced from THK general grease to approximately 1/5 at 6 m/s.

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