THK原創潤滑脂

AFJ潤滑脂

●基礎油：精製礦物油
●增稠劑：尿素基

AFJ潤滑脂是以精製礦物油作為基礎油，藉由使用尿素基增稠劑和特殊添加劑，使其成為在低速到高速的廣泛速度範圍內，都具有優異潤滑性的潤滑脂。

【特徵】

（1）速度範圍廣

從低速到高速的廣泛速度範圍內，皆可發揮穩定的潤滑性。

（2）耐磨耗性

即使在低速時也具有優異的油膜形成能力，可以減輕磨耗。

（3）耐振動性

可以減輕因高速時發生的機械振動所引起的磨耗。

【代表性物理特徵】

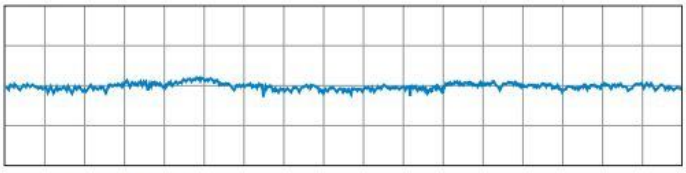
項　目		代表性物理特徵值	試驗方法
增稠劑		尿素類	
基礎油		精製礦物油	
基礎油運動黏度：mm^2/s（40℃）		20	JIS K 2220 23
針入度（25℃，60W）		325	JIS K 2220 7
混和穩定性（10萬W）		360	JIS K 2220 15
滴點：℃		185	JIS K 2220 8
蒸發量：mass%（99℃，22h）		0.6	JIS K 2220 10
離油度：mass%（100℃，24h）		7.0	JIS K 2220 11
銅板腐蝕（B法，100℃，24h）		合格	JIS K 2220 9
低溫扭矩：mN·m（−20℃）	起動	38	JIS K 2220 18
	運轉	13	
4滾珠試驗（熔接負荷）：N		3089	ASTM D2596
使用溫度範圍：℃		−20～120	
外觀顏色		黃褐色	

【耐磨耗性的試驗資料（LM導軌滑塊）】

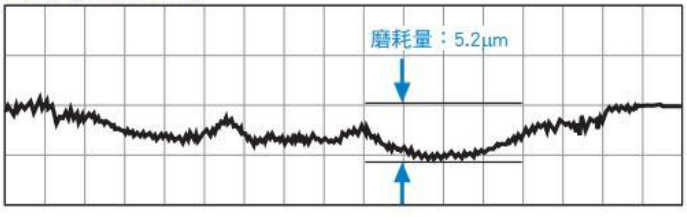
〈試驗條件〉

項　目	內　容
試驗品	NRS55B2SS+780LP
外加負荷	5.9kN
進給速度	0.1m/min
行程	200mm
潤滑脂封入量	$12cm^3$（僅初始封入）
試驗時間	480小時

AFJ潤滑脂



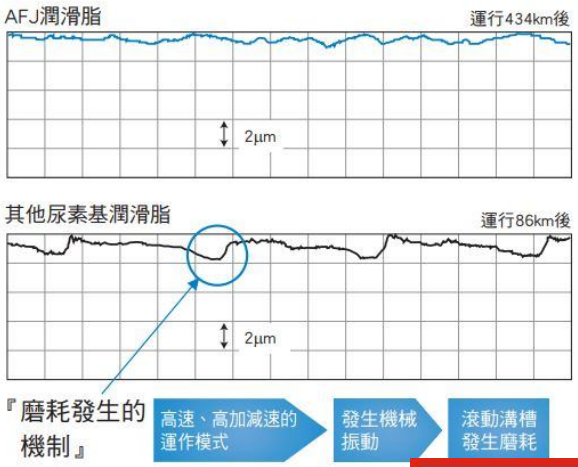
其他尿素基潤滑脂



【耐振動性的試驗資料（LM導軌軌道）】

〈試驗條件〉

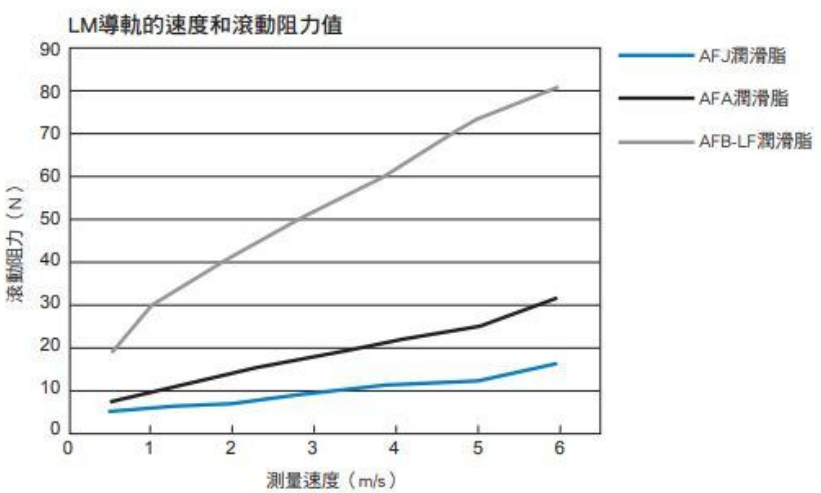
項　目	內　容
試驗品	SHS25R1UU+580LP
外加負荷	11.05kN（0.35C）
進給速度	60m/min
加減速	9.8m/s²
行程	350mm
潤滑脂封入量	2cm³（僅初始封入）

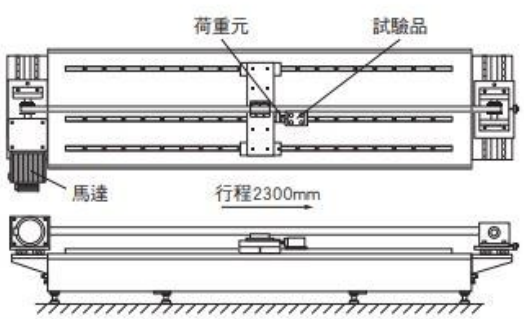


【LM導軌的滾動阻力值測量資料】

〈試驗條件〉

項　目	內　容
試驗品	SHS25R1UU+3000L
外加負荷	無負荷
加速度	29.4m/s²（3G）
行程	2300mm
試驗時溫度	21℃
潤滑脂封入量	2cm³（僅初始封入）
測量速度	0.5、1、2、3、4、5、6m/s





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.

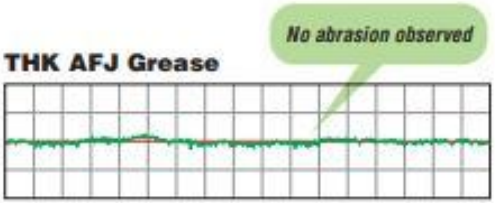
Wear Resistant

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

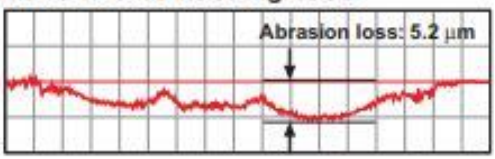
LM Guide Block Abrasion Loss Measurement

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



Superior Grease Optimal for Use in a Broad Speed Range

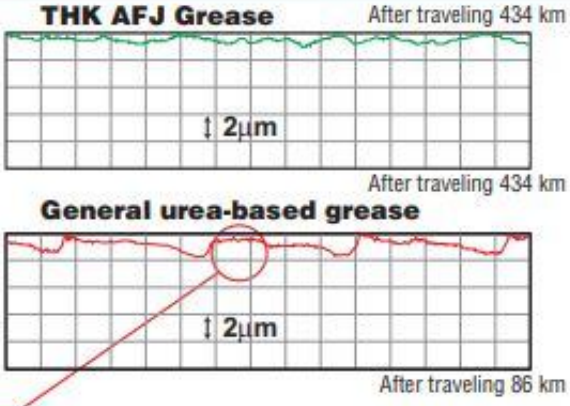
AFJ Grease

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/s²
Stroke	350mm
Grease content	2 cm³ per block



"Mechanism of wear occurrence"

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

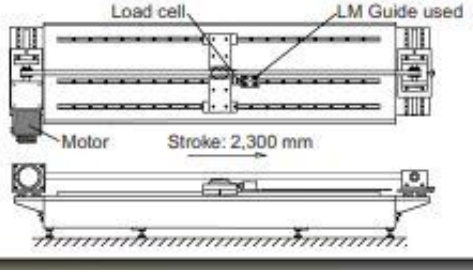
The result of the test with THK AFJ Grease indicates that abration loss is significantly reduced.

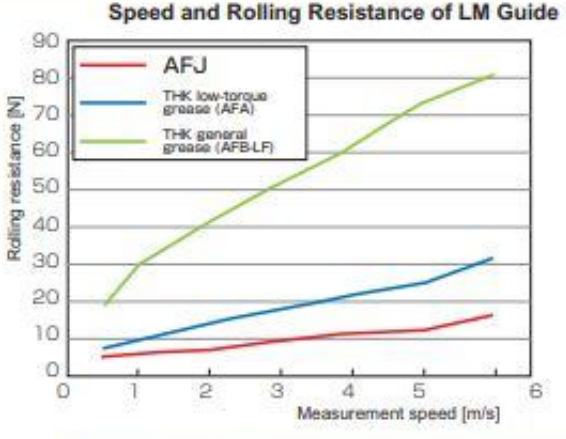
Low Rolling Resistance

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/s²(3G)
Stroke	2300mm
Temperature during test	21℃
Grease content	2cm³ per block
Measurement speed	0.5, 1, 2, 3, 4, 5, 6m/s





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