

## THK Original Grease

# AFA Grease

- Base oil: high-grade synthetic oil
- Consistency enhancer: urea-based



AFA Grease is a high-grade grease that possesses a long service life, excellent water resistance, and low sliding resistance through the use of high-grade synthetic oil as the base oil and a urea-based consistency enhancer.

### [Features]

#### (1) Low sliding resistance

As the kinematic viscosity of the base oil is low, it is ideal for long-stroke, high-speed LM Guide operations.

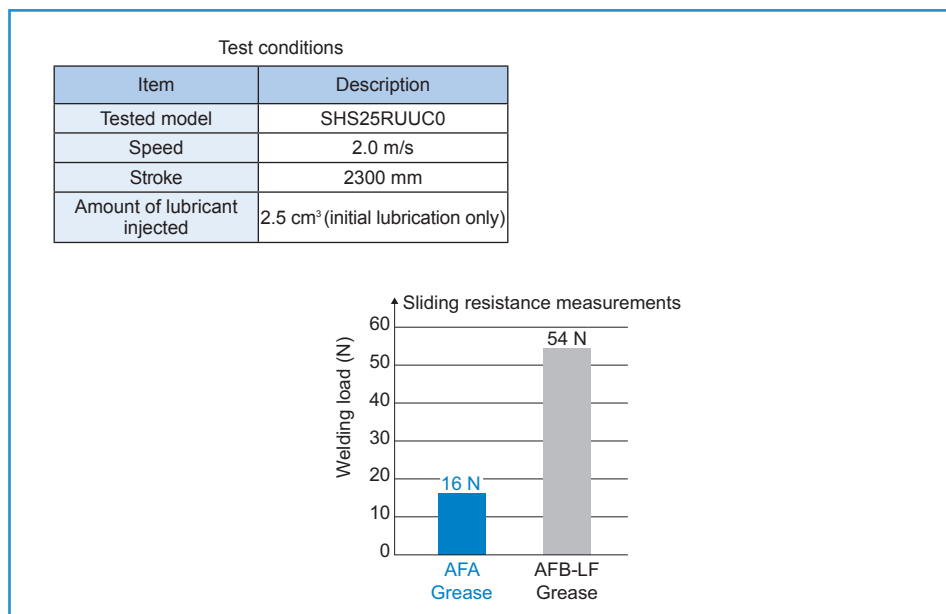
#### (2) Water resistance

It is less vulnerable to moisture penetration than other types of grease because of its high water resistance.

### [Representative Physical Properties]

Item	Representative value	Test method
Consistency enhancer	Urea-based	
Base oil	High-grade synthetic oil	
Base oil kinematic viscosity: mm <sup>2</sup> /s (40°C)	25	JIS K 2220 23
Worked penetration (25°C, 60 W)	285	JIS K 2220 7
Mixing stability (100,000 W)	329	JIS K 2220 15
Dropping point: °C	261	JIS K 2220 8
Evaporation amount: mass% (99°C, 22 h)	0.2	JIS K 2220 10
Oil separation rate: mass% (100°C, 24 h)	0.5	JIS K 2220 11
Copper plate corrosion (B method, 100°C, 24 h)	Accepted	JIS K 2220 9
Low-temperature torque: mN·m (-20°C)	Starting	JIS K 2220 18
	Rotational	
4-ball testing (welding load): N	3089	ASTM D2596
Service temperature range: °C	-45 to 160	
Color	Brown	

### [Sliding Resistance Comparison]



### [Rotational Torque Testing with Ball Screw Grease]

<Test method>

1 cm<sup>3</sup> of grease was applied to the KR4620A + 640L LM Guide and 2 cm<sup>3</sup> to the ball screw (initial injection only), and then the torque was measured at each motor rotation speed. The output values on the driver torque monitor were used for the torque measurements.

Rotational Torque Testing with Electric Actuators

Unit: N·cm

Grease used	Central value of dynamic viscosity mm <sup>2</sup> /s (cSt) (40°C)	Dynamic viscosity range mm <sup>2</sup> /s (cSt) (40°C)	Rotational speed			
			100 min <sup>-1</sup>	1000 min <sup>-1</sup>	2000 min <sup>-1</sup>	4000 min <sup>-1</sup>
AFA Grease	25	22.5 to 27.5	11.3	11.3	12.3	14.6
Lubricating oil VG32	32	28.8 to 35.2	11.2	10.8	13.4	14.7