

## THK Original Grease AFA Grease

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



AFA Grease is a high-grade, long-life grease developed with a urea-based consistency enhancer using a high-grade synthetic oil as the base oil.

### [Features]

- Long service life**  
Unlike ordinary soap based grease for metal lubrication, AFA Grease excels in antioxidation stability and therefore can be used for a long period of time.
- Wide temperature range**  
The lubricating performance remains high over a wide range of temperatures from -45 °C to +160°C.  
Even at low temperatures, AFA Grease requires only a low starting torque.
- High water resistance**  
AFA Grease is less vulnerable to moisture penetration than other types of grease because of its high water resistance.
- High mechanical stability**  
AFA Grease is not easily softened and demonstrates excellent mechanical stability even when used for a long period of time.

### [Representative Physical Properties]

Test item	Representative value	Test method
Worked penetration (25°C, 60W)	285	JIS K 2220 7
Dropping point: °C	261	JIS K 2220 8
Copper plate corrosion (B method, 100°C, 24h)	Accepted	JIS K 2220 9
Evaporation amount: mass% (99°C, 22h)	0.2	JIS K 2220 10
Oil separation rate: mass% (100°C, 30h)	0.5	JIS K 2220 11
Stability of oxidation: KPa (99°C, 100h)	80	JIS K 2220 12
Mixing stability (100,000 W)	329	JIS K 2220 15
Grease removal resistance during water rinse: mass% (38°C, 1h)	0.6	JIS K 2220 16
Low temperature torque: N-m (-20°C)	Start	0.17
	(revolutions)	0.07
Anticorrosive test: (52°C, 48h)	Accepted	ASTM D1743-73
Service Temperature Limit (°C)	-45 to 160	—

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

<Test method>

Apply 1 cc of grease to the LM Guide of KR4620A+640L and 2 cc to the Ball Screw (initial lubrication only), and then measure the torque at each motor rotation speed.

In torque measurement, output values on the driver torque monitor are used.

Comparative Table of Rotation Torque of Ball Screws by Grease

Unit: N-cm

Grease	Central value of dynamic viscosity CST (mm <sup>2</sup> /S)(40°C)	Dynamic viscosity range CST (mm <sup>2</sup> /S)(40°C)	Rotational speed			
			100min <sup>-1</sup>	1000min <sup>-1</sup>	2000min <sup>-1</sup>	4000min <sup>-1</sup>
AFA Grease	25	22.5 to 27.5	11.27	11.27	12.25	14.6
Grease of manufacturer I	130	117 to 143	14.6	23.13	31.16	43.12
Grease of manufacturer K	15.3	13.8 to 16.8	12.64	12.05	13.03	14.41
Lubricant VG32	32	28.8 to 35.2	11.17	10.78	13.43	14.7

Note) The values of the competitors' greases are that of low-torque greases.