

## THK Original Grease

# AFG Grease

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



AFG Grease is a high-grade grease for Ball Screws that uses a high-grade synthetic oil as the base oil and a urea-based consistency enhancer. It excels in low heat generation and supports a wide temperature range from low to high temperature.

### [Features]

- (1) Low heat generation  
Since the viscous resistance is low, the grease generates only a minimal level of heat even during high-speed operation.
- (2) Low viscosity  
Since the viscosity is low, a stable rotational torque is achieved.
- (3) Wide temperature range  
Maintains a high level of lubricity in a wide temperature range of  $-45^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$ .
- (4) Long service life  
AFG Grease is not easily softened and excels in antioxidation stability even after a long-term operation.
- (5) Water resistance  
AFG Grease is a highly water resistant grease that is less vulnerable to moisture penetration and little decreases resistance to extreme pressure.

### [Representative Physical Properties]

Item	Representative value	Test method
Consistency enhancer	Urea-based	
Base oil	high-grade synthetic oil	
Base oil kinematic viscosity: $\text{mm}^2/\text{s}$ ( $40^{\circ}\text{C}$ )	25	JIS K 2220 23
Worked penetration ( $25^{\circ}\text{C}$ , 60W)	285	JIS K 2220 7
Mixing stability (100,000 W)	329	JIS K 2220 15
Dropping point $^{\circ}\text{C}$	261	JIS K 2220 8
Evaporation amount: mass% ( $99^{\circ}\text{C}$ , 22h)	0.2	JIS K 2220 10
Oil separation rate: mass% ( $100^{\circ}\text{C}$ , 24h)	0.5	JIS K 2220 11
Copper plate corrosion (B method, $100^{\circ}\text{C}$ , 24h)	Accepted	JIS K 2220 9
Low temperature torque: N-m ( $-20^{\circ}\text{C}$ )	Start	JIS K 2220 18
	(revolutions)	
4-ball testing (burn-in load): N	3089	ASTM D2596
Service Temperature Range $^{\circ}\text{C}$	$-45$ to $160$	
Color	Brown	

### [Test Data on Low Heat Generation Characteristics]

#### ● Test Data on AFG Grease (Comparison of Heat Generation)

The test data in the figure represent the results of comparing heat generation between AFG Grease and other greases.

<Test conditions>

Item	Description
Shaft diameter/lead	32/10mm
Feeding speed	67 to 500mm/s
Shaft rotation speed	400 to 3000 min <sup>-1</sup>
Stroke	400mm
Grease quantity	12cm <sup>3</sup>
Temperature measurement point	Nut circumference

