

## THK Original Grease

## AFJ Grease

- Base oil: refined mineral oil
- Consistency enhancer: urea-based



AFJ grease uses refined mineral oil as its base and a urea-based grease as its consistency enhancer, while also featuring other special additives. This gives it excellent lubrication properties at a wide range of speeds—from low to high.

**[Features]**

## (1) Wide range of speeds

It provides consistent and even lubrication at a wide range of speeds, from low to high.

## (2) Wear resistance

Even at low speeds, it has excellent oil film formation to reduce wear.

## (3) Vibration resistance

It reduces wear caused by machine vibration during high-speed operation.

**[Representative Physical Properties]**

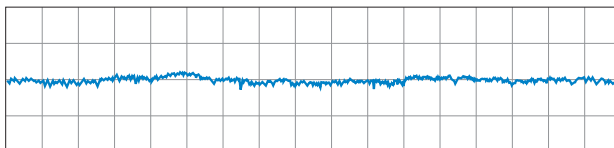
| Item                                                    | Representative value | Test method   |
|---------------------------------------------------------|----------------------|---------------|
| Consistency enhancer                                    | Urea-based           |               |
| Base oil                                                | Refined mineral oil  |               |
| Base oil kinematic viscosity: mm <sup>2</sup> /s (40°C) | 20                   | JIS K 2220 23 |
| Worked penetration (25°C, 60 W)                         | 325                  | JIS K 2220 7  |
| Mixing stability (100,000 W)                            | 360                  | JIS K 2220 15 |
| Dropping point: °C                                      | 185                  | JIS K 2220 8  |
| Evaporation amount: mass% (99°C, 22 h)                  | 0.6                  | JIS K 2220 10 |
| Oil separation rate: mass% (100°C, 24 h)                | 7.0                  | 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                           | −20 to 120           |               |
| Color                                                   | Yellowish brown      |               |

# [Wear Resistance Test Data (LM Guide Block)]

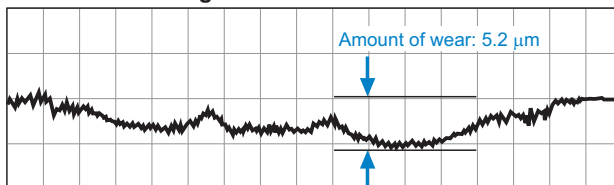
Test conditions

| Item            | Description                                   |
|-----------------|-----------------------------------------------|
| Tested model    | NRS55B2SS+780LP                               |
| Applied load    | 5.9 kN                                        |
| Feeding speed   | 0.1 m/min                                     |
| Stroke          | 200 mm                                        |
| Grease quantity | 12 cm <sup>3</sup> (initial lubrication only) |
| Test duration   | 480 h                                         |

## AFJ Grease



## Other urea-based grease



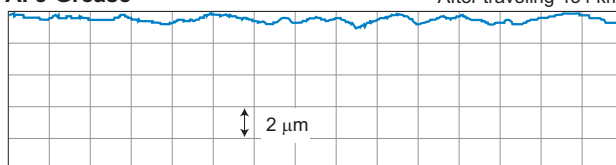
## [Vibration Resistance Test Data (LM Guide Rail)]

Test conditions

| Item                          | Description                                  |
|-------------------------------|----------------------------------------------|
| Tested model                  | SHS25R1UU+580LP                              |
| Applied load                  | 11.05 kN (0.35C)                             |
| Feeding speed                 | 60 m/min                                     |
| Acceleration/<br>deceleration | 9.8 m/s <sup>2</sup>                         |
| Stroke                        | 350 mm                                       |
| Grease quantity               | 2 cm <sup>3</sup> (initial lubrication only) |

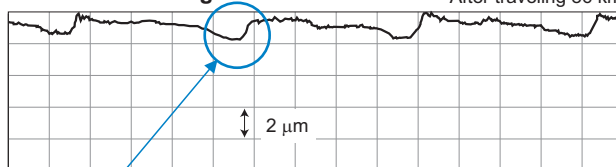
AFJ Grease

After traveling 434 km



Other urea-based grease

After traveling 86 km



**“Wear  
mechanism”**

High-speed  
movement and  
rapid acceleration/  
deceleration

Mechanical  
vibrations  
occur

Raceways  
wear down

# [LM Guide Rolling Resistance Measurement Data]

Test conditions

| Item              | Description                                  |
|-------------------|----------------------------------------------|
| Tested model      | SHS25R1UU+3000L                              |
| Applied load      | No load                                      |
| Acceleration      | 29.4 m/s <sup>2</sup> (3G)                   |
| Stroke            | 2300 mm                                      |
| Test temperature  | 21°C                                         |
| Grease quantity   | 2 cm <sup>3</sup> (initial lubrication only) |
| Measurement speed | 0.5, 1, 2, 3, 4, 5, 6 m/s                    |

LM Guide speed and rolling resistance

