

HIWIN G01 Grease for heavy load conditions

Features

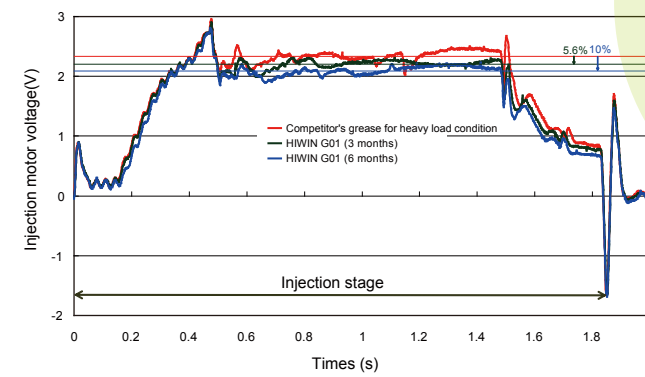
1. Excellent wear resistance and extreme pressure resistance under heavy load conditions
2. Low friction in low temperatures
3. Water resistant
4. Can be applied by a central lubrication system
5. Suitable for all-electric injection molding machines, die-stamping machines, semi-conductor manufacturing equipment, heavy load actuators, industrial machines and forging machines

Basic properties

		HIWIN G01
Color		Light yellow
Base Oil		Mineral oil
Consistency Enhancer		Polyurea
Additive		Solid lubricant
Service Temperature Range(°C)		-15~115
NLGI-grade (0.1mm)		310-340
Viscosity (cSt)	40°C	500
	100°C	30
Drop Point (°C)		>170
4-ball test	Load on boundary lubrication at 900rpm (N)	>1700
	Load on boundary lubrication at 1770rpm (N)	>1300

	HIWIN G01	Other	Notes	
Property of anti-extreme pressure	●	▲	4-ball test 900rpm 1770rpm	42%more 30%more
Anti-wear	●	▲	4-ball test 80kgf 30rpm	23%more
Low friction	●	▲	Injection motor votage	10%more
Water resistance	●	●		
Rust proof	●	●	Corrosion on copper test	
Service temperature range	-15~115	-20~130		

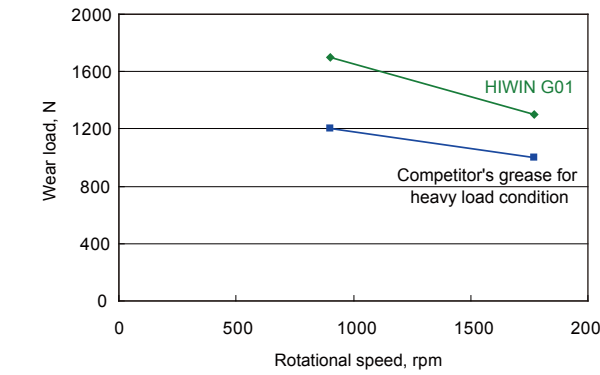
All-electric injection molding machine(80ton) – the voltage of motor which drives the ballscrew on injection unit.



Resistance to extreme pressure test

Test Condition and Measurement

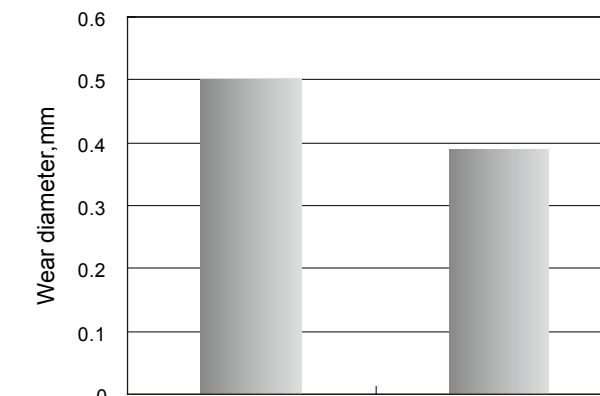
Ball diameter	1/2 in
Temperature	27°C
Test time	10 sec
Rotational speed	900 · 1770 rpm
Measurement	Load when ball wear diameter becomes 500µm



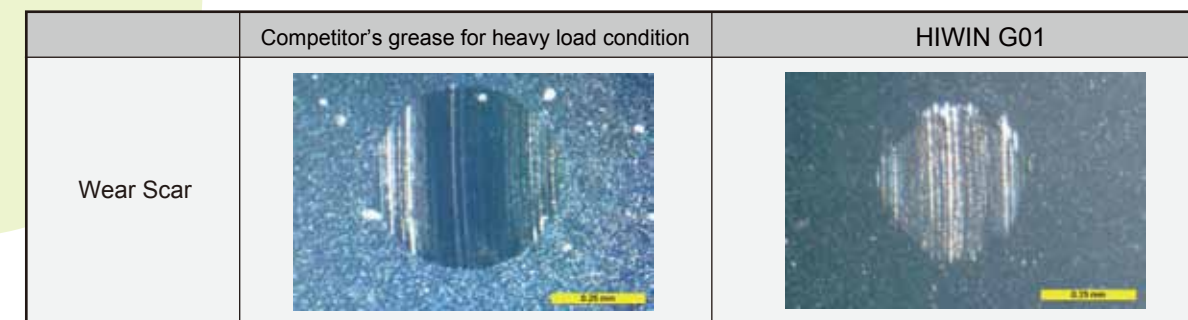
Anti-wear test

Test condition and measurement

Ball diameter	1/2 in
Temperature	75°C
Test time	60 min
Rotational speed	30 rpm
Load	80 kgf
Measurement	Wear diameter of ball contact point



Comparison of wear diameter



Comparison of wear scar

HIWIN Grease Capacity



HIWIN
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Motion Control and System Technology

GREASE

NEW

Hiwin G01- Grease for heavy load conditions

Hiwin G02- Grease with low dust generation

Hiwin G03- Grease with low dust generation for high speed conditions

Hiwin G04- Grease for high speed conditions

Hiwin G05- Grease for general purpose



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HIWIN G02 Grease with low dust generation

Features

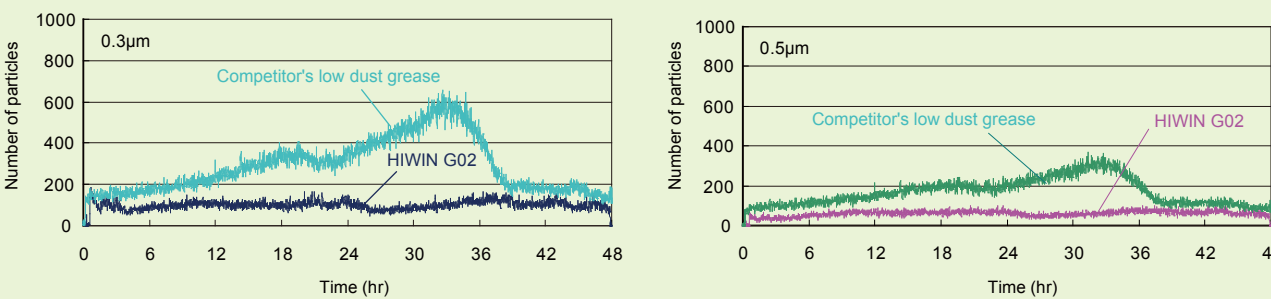
- 1.Low dust generation, suitable for clean room environments
- 2.Wear resistant
- 3.Long term grease, suitable for wide temperature ranges
- 4.Consists of synthetic hydrocarbon oil and special calcium soap. Resistant to oxidation and ageing
- 5.Can be used in plastic/steel and plastic/plastic components, compatible with elastomers and plastic materials

Basic properties

		HIWIN G02
Color		Beige
Base Oil		Synthetic hydrocarbon oil
Viscosity Enhancer		Special calcium soap
Service Temperature Range (°C)		-30~140
NLGI grade (0.1mm)		265-295
Viscosity (cSt)	40°C	100
	100°C	15
Drop point (°C)		>180
4-ball test (ASTM D2266)		474µm

	HIWIN G02	Other	Notes
Anti-wear	●	▲	4-ball test (ASTM D2266) 46%more
Dust generation	●	▲	Dust generation of KK in clean room
Anti-corrosion	●	●	
Service temperature range	-30~140	-30~120	

Dust generation



4-ball test(ASTM D2266)

	Competitor's grease-1	Competitor's grease-2	HIWIN G02
Wear Scar			
Diameter (µm)	879	669	474

Wear diameter, µm	Competitor's low dust grease 1	Competitor's low dust grease 2	HIWIN G02
	~800	~650	~450

HIWIN G03 Grease with low dust generation for high speed conditions

Features

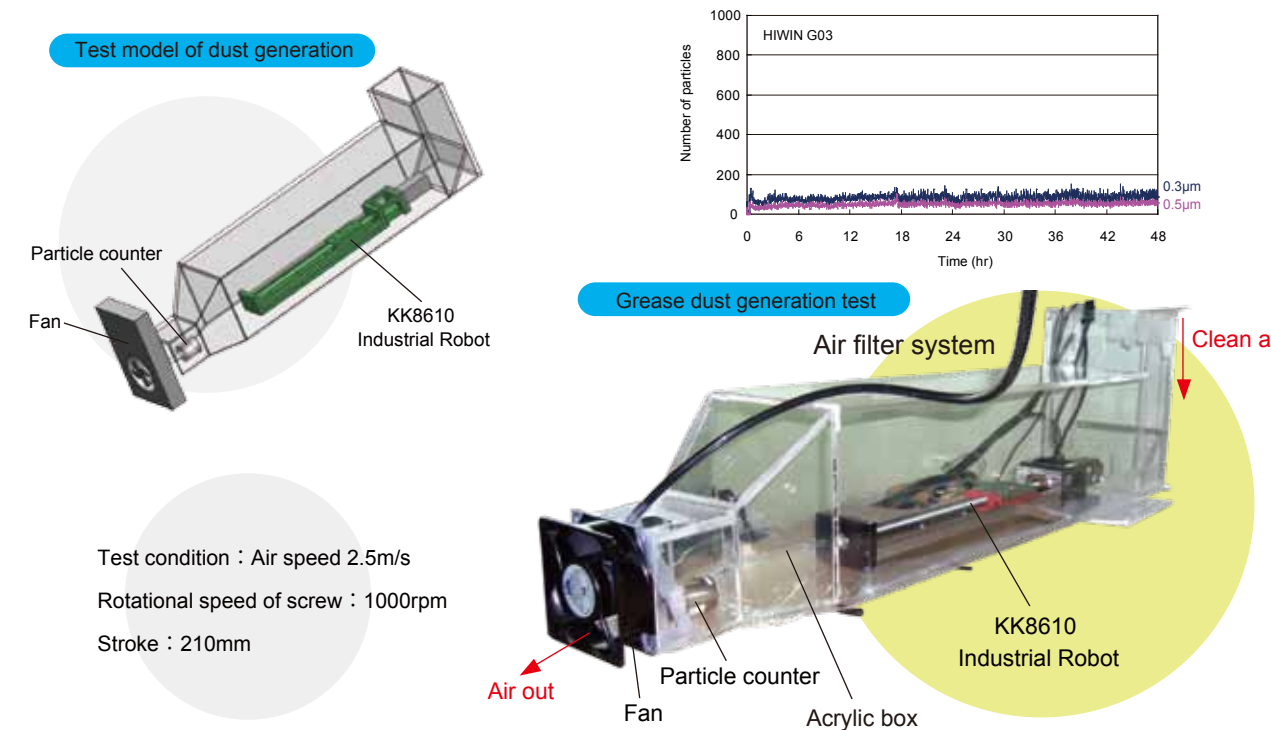
- 1.Low dust generation, suitable for clean room environments
- 2.Wear resistant under high speed conditions
- 3.Low starting and running torques particularly at low temperatures to ensure high efficiency and conserve energy
- 4.Compatible with plastic components

Basic properties

		HIWIN G03
Color		Beige
Base Oil		Synthetic hydrocarbon oil
Consistency Enhancer		Special calcium soap
Service Temperature Range (°C)		-45~125
NLGI grade (0.1mm)		265-295
Viscosity(cSt)	40°C	30
	100°C	5.9
Drop point(°C)		>210
4-ball test (ASTM D2266)		366µm

	HIWIN G03	Other	Notes
Anti-wear	●	●	4-ball test (ASTM D2266) 15%more
Dust generation	●	●	Dust generation of KK in clean room
Friction torque at low speed	●	▲	7~15 % lower less than 500rpm
Friction resistance at high speed	●	▲	Motor voltage 1.2~2.6% lower
Service temperature range	-45~125	-10~80	

Dust generation

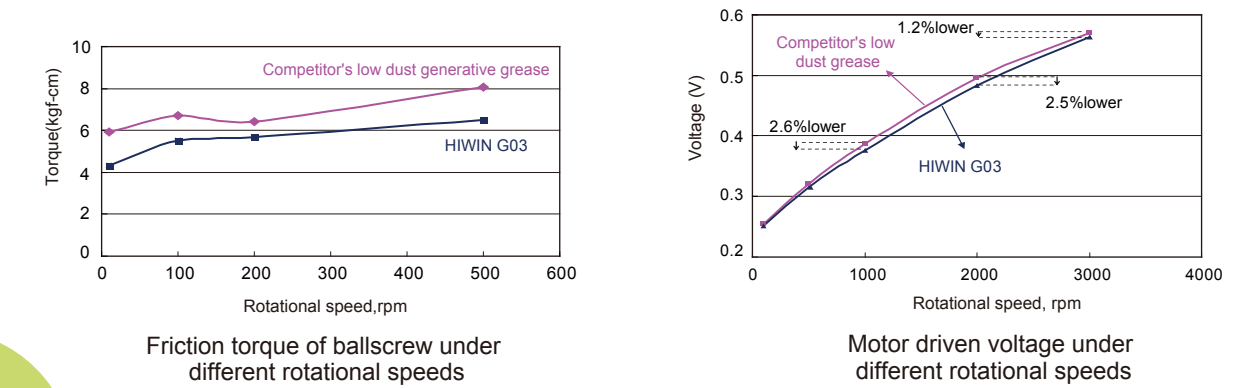


4-ball test (ASTM D2266)

	Competitor's grease	HIWIN G03
Wear Scar		
Diameter (µm)	432	366

Wear diameter, µm	Competitor's low dust grease	HIWIN G03
	~400	~350

Wear resistance



HIWIN G04 Grease for high speed conditions

Features

- 1.Wear resistant under high speed conditions
- 2.Low friction force under high speed conditions
- 3.Water resistant

Basic properties

		HIWIN G04
Color		Beige
Base Oil		Ester/PAO
Consistency Enhancer		Lithium soap
Service Temperature Range (°C)		-35 to 120
NLGI grade (0.1mm)		260 – 280
Viscosity (cSt)	40°C	25
	100°C	6
Drop Point (°C)		>225
4-ball test (ASTM D-2266)		418µm

	HIWIN G04	Other	Notes
Anti-wear	●	▲	4-ball test (ASTM D2266) 46 %more
Low friction	●	▲	motor voltage 4.6% lower at 3000rpm
Service temperature range	-35 to 120	-50 to 150	

4-ball test(ASTM D2266)

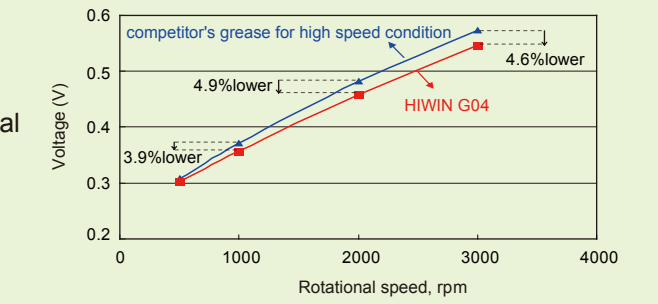
	Competitor's grease	HIWIN G04
Wear Scar		
Diameter (µm)	781	418

Wear diameter, µm	Competitor's grease for high speed conditions	HIWIN G04
	~750	~400

Wear resistance

Screw type : 40-10

Test condition : motor driven voltage by different greases and rotational speeds



HIWIN G05 Grease for general purpose

Features

- 1.Wear resistance under general conditions
- 2.Low friction resistance under general conditions
- 3.Long-life
- 4.Stable to oxidation
- 5.Water resistant
- 6.Protects against corrosion

Basic properties

		HIWIN G05
Color		Brown
Base Oil		Mineral
Consistency Enhancer		Lithium soap
Service Temperature Range (°C)		-15 to 120
NLGI grade		2
Viscosity (cst)	40°C	200
	100°C	6
Drop Point (°C)		190
4-ball test	Wear scar diameter(µm) (ASTM D-2266)	291
	Welding load (N) (DIN 51350-4)	2600/2800

	HIWIN G05	Other	Notes
Anti-wear	●	▲	4-ball test (ASTM D2266) 38%~49%
Low friction resistance	●	▲	increases 16%~19%
Service temperature range	●	●	

4-ball test(ASTM D2266)

	Competitor's grease-1	Competitor's grease-2	HIWIN G05
Wear Scar			
Diameter (µm)	468	567	291

Wear diameter, µm	Competitor's grease-1	Competitor's grease-2	HIWIN G05
	~450	~550	~300

Friction resistance

Screw diameter : 40mm
Lead : 10mm

