



REDUCING NOISE IN ELECTRIC POWER STEERING SYSTEM

INDUSTRY:
Automotive

APPLICATION:
Electric Power Steering

COMPONENT:
Input Shaft

LOCATION:
Europe



BACKGROUND

Noisy automotive components can have a negative impact on how consumers perceive the quality of a brand. As vehicles incorporate increasingly sophisticated electric designs, more lubrication points are required to ensure safe, noiseless, and smooth operation. A world leader in the manufacture and design of steering systems noticed that their new Electric Power Steering design had significant noise issues. The Tier 1 Supplier approached one of Nye's affiliates in search of a new lubricant for their EPS input shaft after a competitor's grease was unable to sufficiently dampen noise. The Supplier needed a viscous grease that would eliminate noise and vibration to ensure drivers get the best possible steering experience.

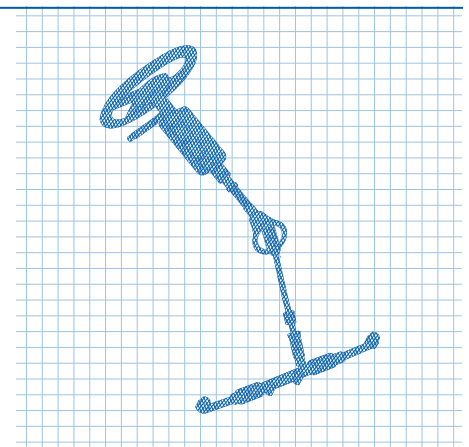
CHALLENGES

- Can the lubricant eliminate noise coming from upper shaft teeth contact area?
- Can the lubricant provide smooth operation within the required temperature range?

SOLUTION NYOGEL[®] 767A

A silica thickened, heavy viscosity, synthetic hydrocarbon grease.

- Reduces free motion and noise of loosely-fitting components
- Reduces vibration and harshness for a quality feel
- Compatible with most plastics and elastomers



RESULTS

After passing ambient cold temperature tests and other in-house testing, the automotive tier supplier found that NyoGel[®] 767A successfully eliminated noise in the contact area between the pinion and upper shaft teeth. The Supplier and the OEM were so pleased that NyoGel[®] 767A that they decided to use this solution on other steering projects that require motion control.

Typical Properties

Base Oil Properties	Conditions	NyoGel® 767A	Test Method
Chemistry	–	PAO/Silica	–
Temperature Range	–	0 to 125 °C	–
Kinematic Viscosity	40 °C	28185 cSt	ASTM D445
	100 °C	851.5 cSt	ASTM D445
Viscosity Index	–	121	ASTM D2270
Grease Properties			
Penetration (1/10 mm)	Unworked	285	ASTM D217
	Worked (60X)	273	ASTM D217
	Worked (10K)	283	ASTM D217
NLGI Grade	–	2	-
Oil Separation	24 h, 100 °C	0.1%	FTM 791, Method 321.2
Evaporation	24 h, 100 °C	0.2%	CTM*

*CTM: Nye Company Test Method

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Nye Lubricants is a leader in the innovation, formulation and provision of synthetic lubricants, enabling and improving breakthrough products and critical new technologies. We bring proven experience, deep technical knowledge and customer focus to solve our customers' toughest challenges, adding tangible value to products in a wide range of industries and applications.

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