


Interior Components



*A lubrication guide for engineers
who design automotive interiors*



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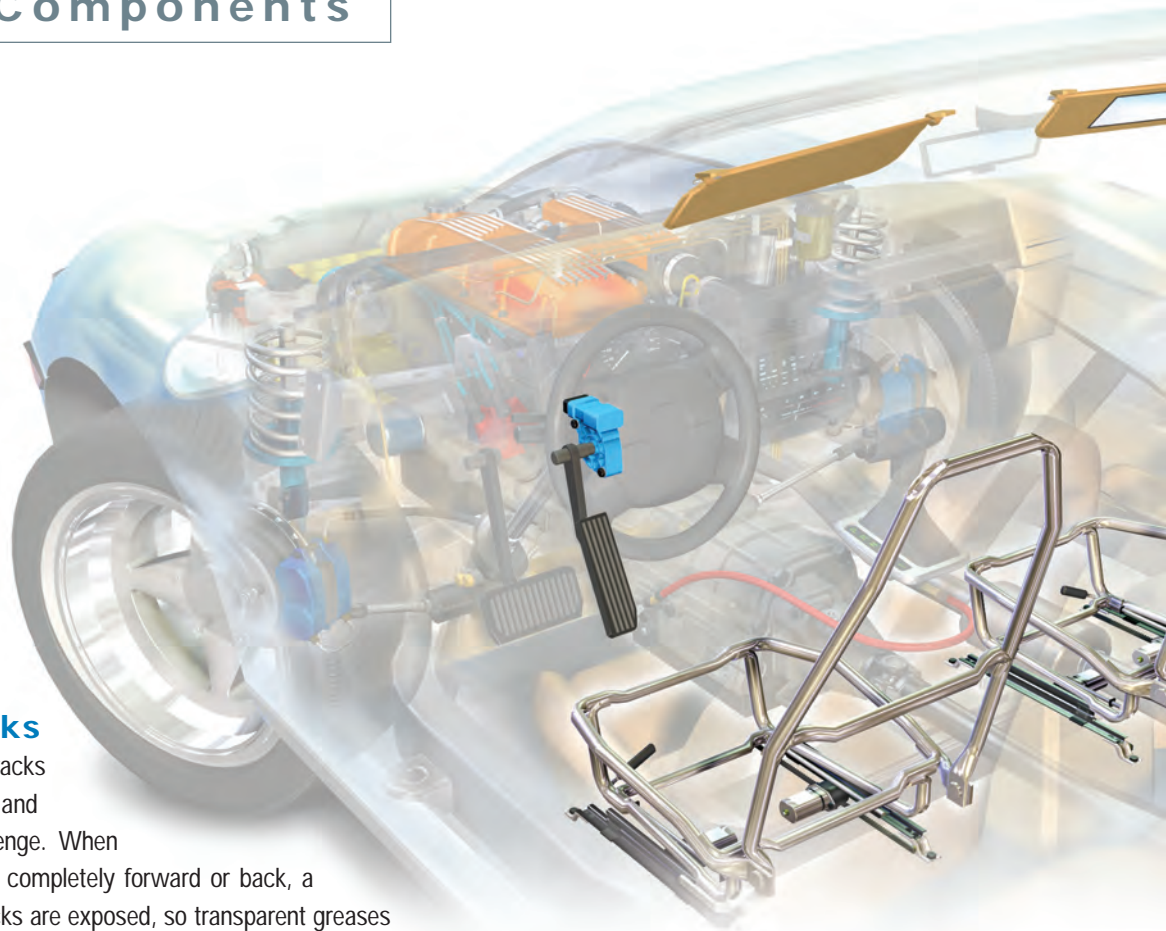
Creature comforts. Interior components run the engineering gamut from heavy, integrated systems such as seat transmissions to featherweight components such as dashboard needle gauges. Each faces unique sets of operating conditions. The right synthetic lubricants can improve the functionality, reliability and longevity of automotive interior components, enhancing customer satisfaction and loyalty.

Quality statements.

In this brochure, we highlight some of what we've learned about the lubrication of automotive interiors — knowledge that comes from working with OEMs and world-class Tier One suppliers. Use it to think about the best lubricant for your application early in the design process. Then, call Nye for specific recommendations and lubricant samples for your application.

Log on to NyeLubricants.com for datasheets, MSDS, and more information about synthetic lubricants.

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Seat Tracks

Lubricating seat tracks is an aesthetic and mechanical challenge. When seats are pushed completely forward or back, a portion of the tracks are exposed, so transparent greases are preferred. Because of the tracks' proximity to seat fabric and carpeting, the grease cannot stain or leak oil. Finally, the seat track assembly has to allow for play, but not rattle or vibrate at high speeds. A silica-thickened, transparent synthetic hydrocarbon damping grease is recommended. *Nye suggests: NyoGel® 774L*

Electric Seat Transmission

With as many as three motors underneath the seat, a transmission should exhibit efficient power-transfer capability yet never leak, drip or stain. A (PTFE-fortified) synthetic hydrocarbon grease is a proven formula for gears inside the seat transmission housing. *Nye suggests: Rheolube™ 363F*

Lubrication Tip

Adding PTFE can improve the low-temperature performance of any lubricant by 5 to 10°C.

Window Visor

The visor's two rotating parts stay at rest for long periods — difficult duty for grease, which tends to get squeezed out of the surfaces that are in contact. Additionally, due to the visor's location, lubricants cannot leak oil or emit odor. A heavy-viscosity synthetic hydrocarbon grease is recommended, enabling the visor to remain in place for extended periods yet move smoothly when activated. *Nye suggests: Rheolube™ 358*

Pedal Positioning Systems

For safety and ergonomics, pedal positioning systems are proliferating. A dripless, odorless synthetic hydrocarbon grease fortified with PTFE is recommended for the bearings, gears, and sliding surfaces in this motorized assembly. *Nye suggests: NyoGel® 774L, Rheolube™ 365F*

PRNDL

Console-mounted PRNDL assemblies require lubrication chiefly to dampen noise and create a perception of quality not often found in plastic parts. The synthetic lubricant should enable the mechanism to slide smoothly between notches while imparting a quality feel to the thumb-activated release mechanism. It should withstand the cold and offer vibration and noise reduction.

Nye suggests: NyoGel® 774VLF, Rheosil™ 500F

Dashboard Control Mechanisms

Contemporary climate control systems rely upon a series of motorized vents to re-route airflow for operator comfort. A synthetic lubricant for this application should be engineered specifically to work with plastic gears. It should also offer stability at low temperatures.

Nye suggests: Rheolube™ 362HB

Volume controls, tone controls, and even the thumb wheel used to dim dashboard intensity benefit from synthetic damping greases. They extend life and convey a feel of quality to hand-operated devices. *Nye suggests: NyoGel® 774L, Fluorocarbon Gel 868L*

Dashboard Needle Gauges

When it comes to fuel, speedometer, odometer, and other gauges, relatively inexpensive magnetic systems are being replaced by electromechanical systems, powered by small stepper motors that more accurately change needle positioning. A very soft, silicone grease has shown promise in maintaining the life and accuracy of these precision instruments.

Nye suggests: Fluorocarbon Gel 813S-1

Pop-out Cupholders, Ashtrays, Grip Handles

In most instances, the sliding surfaces of these interior components are exposed when pulled into their open positions. A transparent synthetic lubricant that stays in place and gives plastic a quality sound and feel is recommended. *Nye suggests: NyoGel® 774VL*

Sunroofs

Sunroof systems are controlled by a motor and cable. Unlike window regulators, these components are often not exposed to the elements. Recommended here (as well as in the “sliding glass doors” of the latest SUVs) is a transparent synthetic grease with low oil separation that resists water, withstands temperatures of -40°C, and offers vibration and noise reduction.

Nye suggests: NyoGel® 774L

Lubrication Tip

Test damping greases first at low temperatures, where they will be most viscous.



Door Lock Actuators

Door lock actuators are essentially plastic gearboxes with small motors. They are often expected to survive 50,000 cycles, operate at temperatures as low as -40°C and resist rain, carwash detergents and other environmental stressors. A synthetic hydrocarbon, lithium-soap grease is a cost-effective solution for this application.

Nye suggests: Rheolube™ 362HT

Some OEMs require door actuators to operate in virtual silence; others want audible feedback when the door is locked or unlocked. Synthetic damping greases offer economical sound control. *Nye suggests: Fluorocarbon Gel 868*

Key Cylinders

Key cylinders are installed after cars are painted. If there are any defects in the paint job, a Xenon light is used to cure paint touch-ups rapidly. The light also radiates sufficient heat to cause some cylinder greases to leach, discoloring the paint. Perfluoropolyether lubricants can “take the heat,” to prevent these grease-based paint blemishes. *Nye suggests: UniFlor™ 8512*

Window Regulator Assembly

The one- or two-track assembly that raises and lowers the window glass must withstand extremes in temperature as well as dust, dirt, water and carwash fluids that infiltrate the door cavity. A high-viscosity, silicone-based, PTFE-thickened grease has proven successful in these assemblies. It resists water-washout, operates at temperatures to -40°C, and easily passes the “Arizona Dust Test.” *Nye suggests: Fluorocarbon Gel 880*

Power Folding Mirror, Side Exterior Mirror

Increasingly, side mirrors are electrically controlled. Their small motors and gears must operate flawlessly at temperatures to -40°C, even when exposed to rain, saltwater, and car washes. Compounding the lubrication challenge, the plastic exterior housing acts like an acoustic amplifier that can create an annoying buzzing noise. A light viscosity, synthetic hydrocarbon damping grease withstands the cold, offers vibration and noise reduction, and resists the elements. *Nye suggests: NyoGel® 774VLF*

Window, Windshield and Sunroof Seals

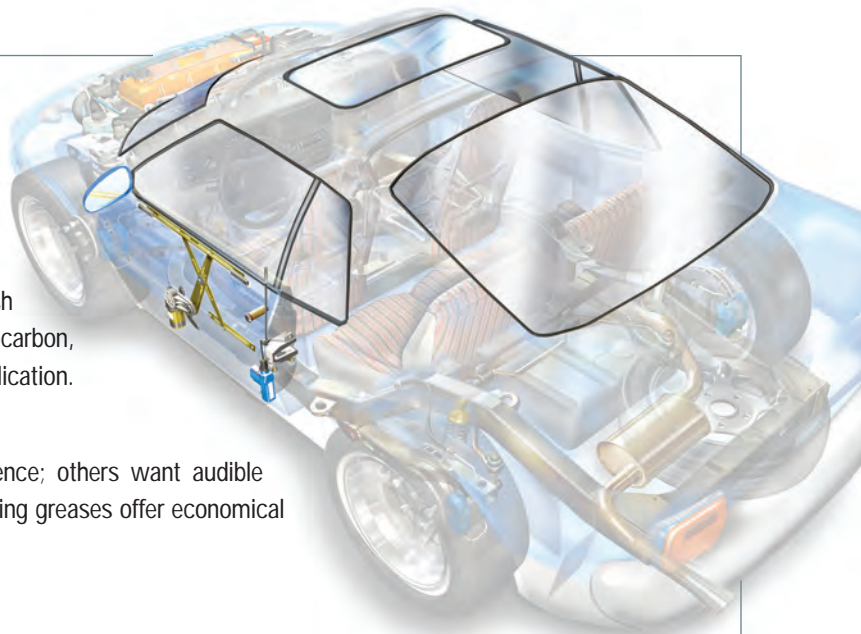
When a car hits a bump, the high frictional characteristics of rubber window seals — particularly when they come in contact with painted sheet-metal surfaces — can cause a light, squeaky, distracting noise called “itching.” Fluorinated oils, chemically compatible with elastomers, can stop the itching. *Nye suggests: UniFlor™ 8170U*

Power Sliding Doors

The motor and cable systems of power sliding doors require a medium-viscosity synthetic grease fortified with PTFE for added lubricity. *Nye suggests: Rheolube™ 365F*

The rollers on the doors are on ball bearings which must withstand water, salt and grime. A synthetic hydrocarbon grease with a clay thickener offers water resistance and low oil separation.

Nye suggests: Rheolube™ 790DM



Lubrication Tip

Many factors affect a grease's resistance to water, including the base oil viscosity, thickener, and grade.





Innovative Solutions since 1844

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