



POWER TOOLS
AND OUTDOOR POWER EQUIPMENT



FREUDENBERG-NOK
SEALING TECHNOLOGIES

FREUDENBERG-NOK
INNOVATING TOGETHER



THE POWER OF INNOVATION

Whether it's a rotary hammer, a nail gun, a chain saw, a high-pressure cleaner or a lawn mower, the sealing solutions and components from Freudenberg Sealing Technologies contribute to making power tools easier, faster and safer.

Our innovative materials and design expertise help ensure maximum performance combined with long service life. We offer a range of materials that are wear-resistant, heat-resistant, PAH-compliant and cost-efficient.

Your product design requirements may include reducing size and weight, integrating multiple functions, optimizing ergonomics, maximizing speed and improving durability. We can work with you to design the right seal and select from our extensive range of materials to address the specific application conditions of the power tool.

With a global presence, Freudenberg seals and components are used worldwide in many power-driven tools from specialist equipment developed for trades, construction and industry to the tools designed for ambitious do-it-yourself enthusiasts.

CONSTRUCTION POWER TOOLS

They drill, chisel, tear down, and remove material. Rotary hammers and demolition hammers overcome the toughest resistance that is sometimes made of concrete, sometimes made of stone, with enormous penetrating power. Robust, wear-resistant and low-friction sealing solutions and innovative molded parts from Freudenberg Sealing Technologies ensure the performance and service life of these powerful tools – regardless of whether they are powered pneumatically, electrically or hydraulically.

And when it comes to hammering many nails precisely into concrete, plaster or wood in a short time, nail guns are the tool of choice – for building construction, interior work or roofing, for professionals as well as hobby craftsmen. The drive types used in these handy devices differ, however. But regardless of whether the nail guns are cordless, have an electric cord connection, are pneumatically driven with compressed air or operated by gas, sealing and damping solutions from Freudenberg Sealing Technologies ensure comfortable and safe working. They stand for reliability, durability and energy efficiency.

POWER TOOLS FOR FORESTS AND GARDENS

Whether you want to look after hedges, lawns or flower beds, cut dry branches or firewood: the list of motorized gardening tools is long. It ranges from gasoline-powered chainsaws to lawn mowers or battery-powered robotic mowers. All garden tools have one thing in common: components from Freudenberg Sealing Technologies inside them that have been tried and tested millions of times in practice to ensure

lasting functional and operational reliability. As a premium supplier to the automotive industry, Freudenberg Sealing Technologies has been at home in drive technology for many decades. Technological expertise, with Reduced Friction by Nanotechnology (RFN), for example, and sealing solutions that have proven their reliability in car and truck drives are also driving the development of modern, energy-efficient gardening equipment.

APPLICATIONS AND SPECIALTIES

Pressure Washer Cleaners

Whether for home users or professionals, high-pressure cleaners are used everywhere to remove even the most stubborn deposits. With a variety of sophisticated technological components from Freudenberg Sealing Technologies, they ensure clean surfaces – regardless of the type of motor and drive used in the equipment, and regardless of whether cold or hot water is used in cleaning.

Spray Guns

The spray gun industry covers a wide range of applications and types of technologies and includes a broad range of products and possible uses. From manual to automatic spray guns, end users expect a leakage-free spray gun. The wide range of possible applications, from paints, solvents, adhesives and other materials, pushes the industry to choose sealing solutions compatible with many different types of chemicals. Choosing the right seal ensures consistent high performance and the durability of the spray gun.



ELECTRIFICATION PRODUCTS

Battery heat management for more power, longer run time and thermal runaway protection

With a growing demand of cordless power tools, Freudenberg Sealing Technologies can offer a wide range of solutions to improve the efficiency of the batteries and mitigate the risks associated with overheating.

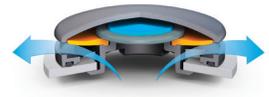
ACTIVE THERMAL SLEEVES

Our heat shields thermally isolate neighboring cells to prevent or slow thermal propagation in case of a cell thermal runaway.



DIAVENT®

The DIAvent® product portfolio offers a spectrum of solutions including breathing elements for bidirectional pressure equalization (DIAvent® light) but also emergency degassing vents for thermal runaway of a cell (DIAvent®)



2K HOUSING

Tolerance compensation during temperature fluctuations. Housings with seals integrated into the cover in a 2K design serve a greater purpose than just static sealing. A component with a permanent injection-molded seal is more suitable for automatic final assembly, therefore yielding additional efficiency potential.



GASKETS FOR BATTERIES

Preventing intrusion of dust, dirt, salt, and water into the battery housing, a large elastomeric gasket seals the entire perimeter of the housing cover and assists in containing thermal events. Smaller elastomeric gaskets seal access panels for components such as temperature control systems that optimize battery performance.



THERMALLY CONDUCTIVE PLASTIC BATTERY HOLDER

Our proprietary High Performance Plastic solution can deliver a high heat transfer coefficient to improve thermal management, allowing more power, faster charging and longer run time. Figure 1. Quantix® 88 in comparison with traditional battery housings.



Temperature fluctuation of a battery housing using Quantix®

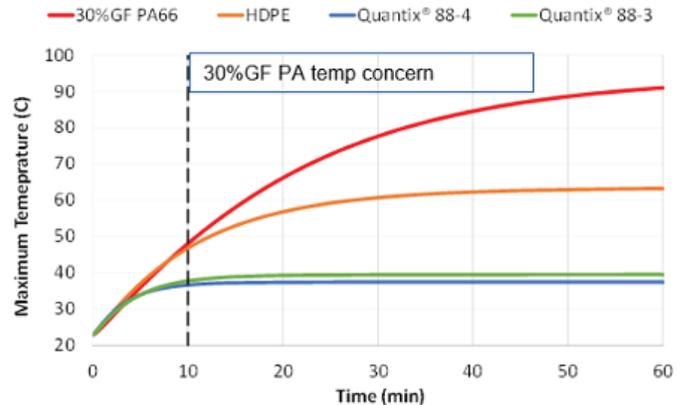
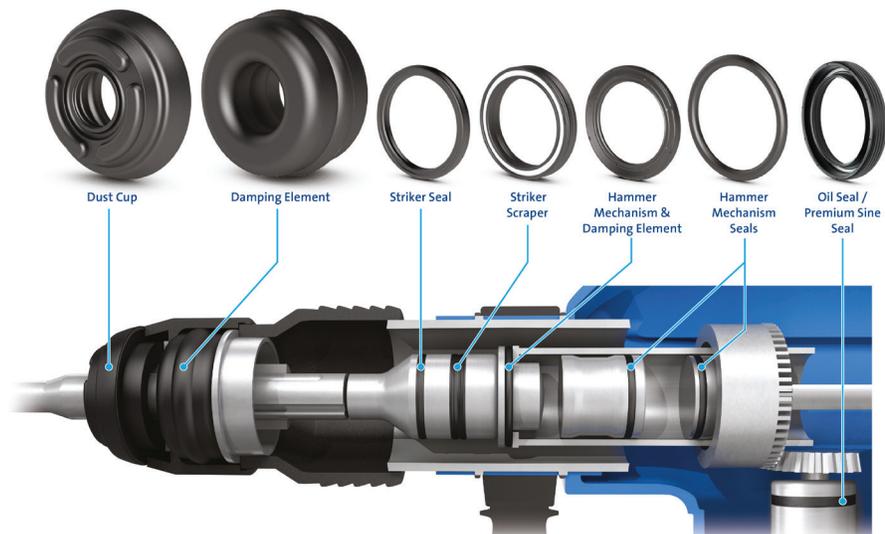


Figure 1



FRICION REDUCTION

Performance, energy efficiency and extended life

From our customizable striker seals to our Premium Sine Seal Oil Seals, Freudenberg Sealing Technologies delivers solutions with low friction and longer life span.

SOLUTIONS FOR DEMOLITION TOOLS

STRIKER SEALS

Constant contact pressure through two components seals hold in lubricants and keep extremities out for better performance and durability.



OIL SEAL PREMIUM SINE SEAL

Innovative seal lip design without spring, with sinus-shaped seal edge provides up to 40% less friction and double lifetime.



STRIKER SCRAPERS

Prevents axial movement of scraper in the groove giving extra protection against dirt.



O-RINGS

Six Sigma-quality O-rings feature a full range of materials for the most demanding operating conditions.



SOLUTIONS FOR FASTENING TOOLS

T-RINGS

Reliable nail gun piston seal with up to 80% reduction in friction compared to O-rings.



HIGH PERFORMANCE PLASTIC WEAR BANDS

Absorbs strong transverse forces of the nail gun piston while keeping frictional losses low.





VIBRATION CONTROL

From increased product life to reduced physical fatigue on the operator, vibration control is an essential component to creating efficient power tools. Rely on Freudenberg Sealing Technologies' innovative material and design solutions to assist you in improving shock absorption in your product.

DAMPING ELEMENTS FOR ROTARY HAMMERS

Our damping elements reduce machine vibrations due to our innovative materials that increase the life of your tools by suppressing vibrations that can damage critical components.



DAMPING ELEMENTS FOR NAIL GUNS

Proprietary Urethane and HNBR materials offer superior thermal resistance and lower internal friction allowing higher bumper cycles and energy absorption.



BOOTS AND BELLOWS

Freudenberg Sealing Technologies offers bellows with customer specific designs and over 450 different catalog items.



ENGINE SHOCK ABSORBERS

Our design delivers superior sealing between the ventilated motor area and the rest of the machine. It also reduces motor deflections and controls vibration during acceleration, extending the life of your product.





OUTDOOR POWER EQUIPMENT

An increasing demand for more power and less CO2 emissions require a sealing partner with a large product offering compatible with most ethanol-based fuels and a wide variety of lubricants.

OIL SEALS FOR SMALL ENGINES

Our oil seals deliver better performance and increased lifetime due to the advanced wear resistant FKM materials and designs. Freudenberg and Klueber collaborate to create the Lube&Seal technology offering a greased optimized design for lower friction.



MODULAR PLASTIC SEALING CONCEPT

Designed for applications with low thermal strain and without pressure differences preferably in combination with plastic housing. A perfect solution for robotic mower wheels.



SOLENOID VALVES FOR ELECTRIC FUEL INJECTION

Freudenberg solenoid plungers are precision molded seals used in valves for electric fuel injectors. The RFN™ Treatment for low friction helps to eliminate the “morning effect”.



DIAPHRAGMS FOR CARBURATORS

Freudenberg's patented Dispersed Fabric Technology for diaphragms allows greater freedom of design than traditional fabric reinforced elastomer solutions. The material is injectable and is comprised of chemically bonded fibers in an elastomer. Our elastomers are compatible with most fuels, including the ones with ethanol content.



Freudenberg Sealing Technologies

Marketing Communications
47690 East Anchor Court
Plymouth, MI 48170
USA

Service Contact:
Email: info@fst.com

www.fst.com