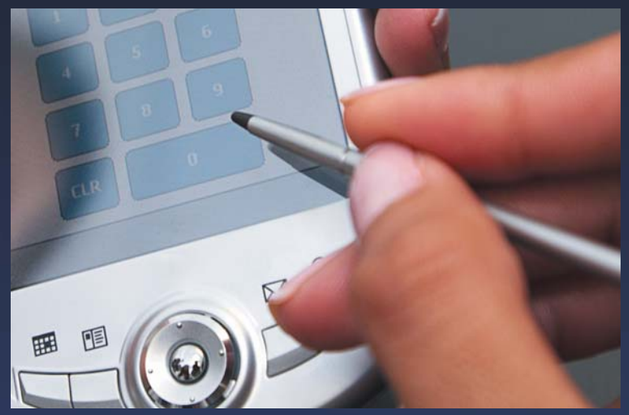
FUCHS LUBRICANTS (UK) PLC

Innovative Lubricants from a Leading Specialist!

Consultation with one of our experienced application engineers should precede every lubricant change over in order to ensure that the optimal product is selected for the appropriate application. FUCHS does not believe in offering alternative,"me too" recommendations to customers and advocates the use of a consultation meeting with one of our trained technical specialists, to assess key performance indicators, production concerns and potential cost savings initiatives, before recommending products. Always read the Material Safety Data Sheet before handling a product. If you are in any doubt, please contact Fuchs Lubricants (UK) plc.



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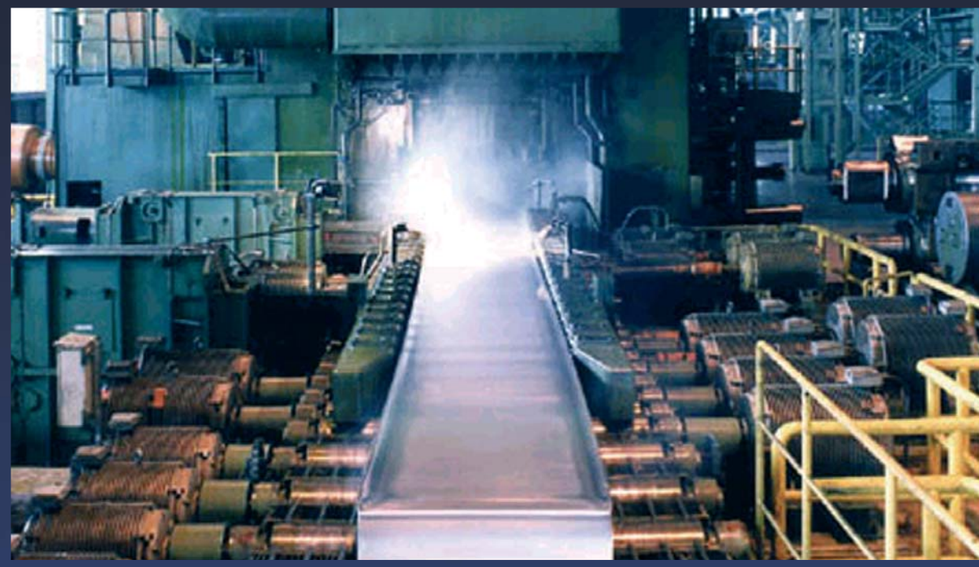
FUCHS LUBRICANTS (UK) PLC

RENOLIN

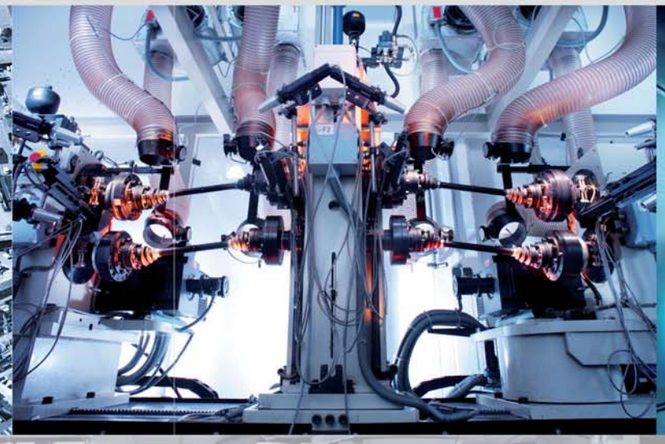
A Product for Every Application



Specialities for the Hydraulic Fluid Sector

FUCHS LUBRICANTS (UK) PLC

YOUR STRONG GLOBAL PARTNER FOR INNOVATIVE LUBRICANTS



HOW WE EXCEL

FUCHS was founded in 1931 as a family firm in Mannheim, Germany and is now a global corporation. With over 4,000 employees, 65 operating companies and 50 production plants, FUCHS is the world's largest independent lubricant manufacturer.

We are able to supply a complete lubricant package, both on a local and global level; utilising the benefits created by the worldwide interaction of the Group's individual companies and deploying international resources in a way that directly benefits our customers. Our state-of-the-art UK production facility manufactures a significant proportion of the country's lubricant requirement.

FUCHS is a true lubricant specialist, concentrating only on developing optimum 'application specific' products and unique tailor made customer solutions. Our reputation and accomplishments have been built on a continuing programme of innovation, specialisation and first class service. Our customers' success is our success; because partnership to us means passing on benefits and offering comprehensive support.

WHAT INCREASES THE VALUE OF OUR PRODUCTS

Our extensive product portfolio consists of almost 2,000 lubricants and derived specialities, including synthetic and biodegradable lubricant technology. We have products designed to suit all industrial processes and automotive applications and our unrivalled expertise and unparalleled experience in research and development enables us to offer our customers superior performance and value for money.

We also provide a variety of tailored support packages to all branches of industry and our dedicated team of technical specialists give the essential support that can ensure your machines and maintenance practices operate efficiently.

With the right products, expert advice and complete customer support, FUCHS can successfully fulfil all of your lubrication requirements and help to keep your operation running smoothly. Challenge us and see!

BSI REGISTERED

ISO 9001:2000
ISO 9100:2003
ISO 16949:2002
ISO 14001:2004

FUCHS

FUCHS LUBRICANTS (UK) PLC

RENOLIN UNISYN OL SERIES

Synthetic High Performance Hydraulic Fluids and Air Compressor Oils

The RENOLIN UNISYN OL SERIES is a range of fully synthetic hydraulic fluids, based on polyalphaolefins (PAO) and selected additives, which can also be used as compressor oils. RENOLIN UNISYN OL SERIES products have a naturally high and shear stable Viscosity Index (VI >140) and thus display outstanding multi-grade characteristics and offering excellent cold flowing properties and excellent wear protection.

The RENOLIN UNISYN OL SERIES provides outstanding oxidative and thermal stability compared to conventional mineral oil based fluids, allowing oil change intervals to be extended and the formation of age related by products to be minimised. In addition, the oils display extremely low evaporation, rapid air release and low foaming tendencies.

Recommended Applications	Technical Properties	Advantages and Benefits
Universal, fully synthetic, low temperature hydraulic (VDL) and compressor oils. For use in all stationary and mobile hydraulic systems.	Very high oxidative and thermal stability	Minimal coking, minimal age related by products, long service life, significantly extended oil change intervals
	Excellent low temperature behaviour	Low viscosity at low temperatures, maintains high operating viscosity
	Excellent wear and corrosion protection	Extends the service life of machinery, protects against wear
	Good demulsification	Water is rapidly and reliably separated to prolong service life
	Compatible with elastomers	Seals and gaskets are protected
	Excellent air release	Air is released rapidly, cavitation is avoided and the service life of pumps and valves is prolonged

Selected technical data

Product name	Viscosity Index (VI)	Shearing losses in the tapered roller bearing test, VKA apparatus – 20hr	Pourpoint (°C)	Air release (min.)	Scuffing wear test FZG A/8.3/90 (damage load stage)	Roller bearing wear test FE8, 7.5/80/80 (mg total wear)
RENOLIN UNISYN OL 32	142	no shearing losses	<-60	1	>12 (high protection)	<10 – no wear
RENOLIN UNISYN OL 46	146	no shearing losses	<-60	2	>12 (high protection)	<10 – no wear
RENOLIN UNISYN OL 68	144	no shearing losses	<-60	5	>12 (high protection)	<10 – no wear

RENOLIN UNISYN OL 100 and 150 also available.

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RENOLIN MRX SERIES

Multi-Functional Hydraulic Oils with Increased Corrosion Protection

The RENOLIN MRX SERIES of multi-functional hydraulic and universal lubricating oils have a high percentage of additives and offer excellent corrosion protection. High additive reserves allow oil change and service intervals to be extended and enables machine availability and manufacturing capacity to be increased.

RENOLIN MRX products provide excellent corrosion protection for a variety of materials including steel, iron and nonferrous metals, even in the harshest of conditions. Detergent additives combat sludge formation and assist the performance of the lubricating film by improving wetting.

Recommended Applications	Technical Properties	Advantages and Benefits
General lubricating oils for hydraulic systems that require increased corrosion protection.	Special corrosion protection additives	Reliably protects steel, iron and nonferrous metals against corrosion
	High additive reserves	Extends oil change and service intervals
	Powerful detergent properties	Combats the formation of sludge, ensuring no malfunctions
	Very good wetting properties	Stable lubricating film protects against wear under severe conditions

Selected technical data

Product name	Detergency & dispersancy properties	Corrosion protection – copper	Corrosion protection – steel	Corrosion protection – steel humidity cabinet	Corrosion protection – steel condensation climate	Sea water submersion test
RENOLIN MRX 32	high	high 1-100 A 48	0 – A	>168hrs without corrosion	>12 cycles without corrosion	0 on 6 without corrosion
RENOLIN MRX 46			0 – B			
RENOLIN MRX 86			no corrosion			

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FUCHS LUBRICANTS (UK) PLC

RENOLIN LIFT SERIES

Friction Reducing Hydraulic Oils for “Stick Slip” Free Operation

RENOLIN LIFT products are special friction reducing hydraulic oils for use in elevators and transport mechanisms in stationary and mobile hydraulics.

Exact positioning is of vital importance in elevator and transport technology. However, very low sliding speeds and high loads in hydraulic systems and cylinders can cause stick slip. This interferes with the precise movement in hydraulic systems. It is these conditions that can cause the load bearing lubricating film to tear and cause stick slip. Stick slip leads to increased wear in machinery, on pistons and in seals.

The pressure stable lubricating film formed by RENOLIN LIFT combats stick slip and protects against wear. In addition, the products offer good ageing stability, reliable corrosion protection and outstanding detergent and dispersant properties.

Recommended Applications	Technical Properties	Advantages and Benefits
For use in elevators, hydraulic transport mechanisms, stationary and mobile hydraulics systems.	Excellent wetting, avoids frictional vibration	Formation of a pressure stable lubricating film and avoidance of stick slip and wear
	Forms a stable lubricating film	Extremely low coefficient of friction
	Good wear protection (high additive reserves)	Maintains machine availability (less down time) and avoids wear
	Good ageing stability	Long oil life, combats sludge formation
	Outstanding detergent and dispersant properties	Fights the formation of contaminants and ageing by products

Selected technical data

Product name	Stick slip frictional vibration	Coefficient of friction SKC test (steel plastic)	Scuffing wear test FZG A/8.3/90 (damage load stage)	Corrosion protection – steel
RENOLIN LIFT 22	none	0.13 (minimal)	12 – high protection	0 – A
RENOLIN LIFT 32	none	0.13 (minimal)	12 – high protection	0 – B
RENOLIN LIFT 46	none	0.13 (minimal)	12 – high protection	no corrosion

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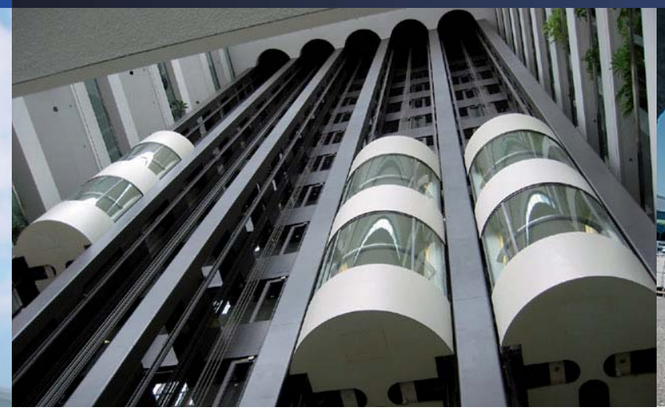
RENOLIN

RENOLIN ANTI STICK SLIP

Universal Anti Stick Slip Additive for Hydraulic Fluids



RENOLIN ANTI STICK SLIP is a specially developed hydraulic fluid with an additive package that reduces stick slip in hydraulic elevators and cylinders, as well as stationary and mobile hydraulic systems. Low sliding speeds and high loads in hydraulic systems can cause stick slip. This interferes with the precise movement in hydraulic systems and can cause the lubricating film to tear and generate excessive wear.

The addition of just 2% RENOLIN ANTI STICK SLIP to a hydraulic oil significantly reduces the dangers of stick slip. This universally applicable anti stick slip additive is readily miscible and is compatible with mineral oil based hydraulic oils (containing zinc or zinc and ash free), as well as synthetic fluids formulated with polyalphaolefins (PAO). RENOLIN ANTI STICK SLIP is also extremely simple to use.

Recommended Applications	Technical Properties	Advantages and Benefits
A universal additive system for use in all types of hydraulic system. Can be used with hydraulic oils based on mineral oil, hydrated base oils or synthetic base oils (PAO).	Universally applicable	Suitable for all hydraulic systems, good compatibility with hydraulic oils
	Excellent wetting properties	Stick slip is avoided, seals and elastomers are protected
	Forms a stable lubricating film	Extremely low coefficient of friction, reduces wear
	Simple to use	No time consuming oil changes necessary - simply add 2% additive concentrate to the hydraulic oil

Selected technical data

Product name	Viscosity at +40°C (mm^2/s)	Recommended concentration in mineral oil and PAO based hydraulic oil	Miscibility and compatibility with Zn and/or Zn free based hydraulic fluids (mineral oil based)	Compatibility with hydraulic components, sealing material, paint
RENOLIN ANTI STICK SLIP	68	approx. 2%	very good	very good

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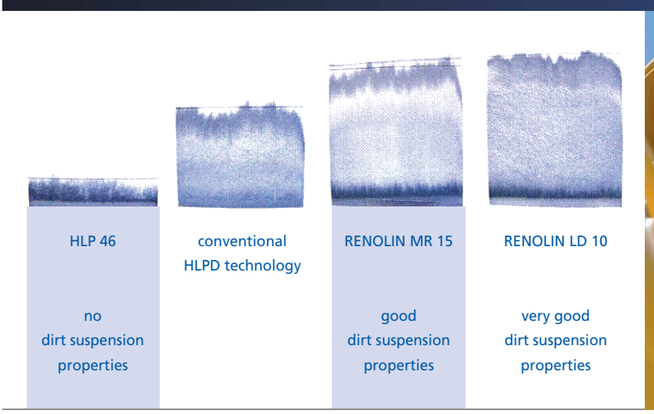
FUCHS LUBRICANTS (UK) PLC

RENOLIN LD 10

Functional Fluid with Outstanding Cleaning Performance



This fluid contains specially refined base oils and selected additives and can be used in general lubricating and hydraulic circuits as a functional fluid. RENOLIN LD 10 has special cleaning and flushing properties and is the perfect product to dislodge and suspend impurities on control elements and valves, while the hydraulic system is in operation and thus helps to avoid malfunctions.

RENOLIN LD 10 offers powerful cleaning and excellent ageing stability and have outstanding sludge and dirt transportation properties. Furthermore, it offers long term protection against corrosion and wear. It also forms a stable lubricating film that allows machines to be operated as usual during flushing.

Recommended Applications	Technical Properties	Advantages and Benefits
For cleaning and flushing procedures in lubrication and hydraulic systems, cleaning while the system is in operation.	Outstanding cleaning performance	Combats and avoids the gumming of control mechanisms
	Excellent sludge and dirt suspension properties	Deposit of ageing by products is avoided, combats valve malfunctions
	Very good wetting	Forms a stable lubricating film; low wear
	Good corrosion and wear protection properties	Longer machine life
	Can be used as a hydraulic oil during flushing and functional testing	Machine downtime is eliminated
	High additive reserves	Protects machinery against corrosion and wear during cleaning

Selected technical data

Product name	Viscosity at +40°C (mm^2/s)	Brugger wear protection (N/mm^2)	Compatibility with mineral oil based hydraulic oils	Detergent & dispersant properties
RENOLIN LD 10	46	> 35 = high protection	very good	very high

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RENOLIN

RENOLIN HLP 46 ALU

EP/AW Non Staining Hydraulic Fluid to Avoid Stains and Residues on Aluminium Surfaces

RENOLIN HLP 46 ALU is a special hydraulic oil formulated with high quality base oil and selected additives. It was developed specifically for use in hydraulic systems used in aluminium rolling mills.

During the aluminium manufacturing process, some cross contamination of hydraulic and aluminium rolling oils can occur. This can lead to undesirable staining of the hot aluminium surfaces.

However, RENOLIN HLP 46 ALU displays excellent aluminium compatibility and its carefully selected base oils and special EP/AW additives combat such staining. In addition, RENOLIN HLP 46 ALU offers excellent protection against wear and can be used as a fully functional hydraulic oil.

Recommended Applications	Technical Properties	Advantages and Benefits
For use in hydraulic systems used in aluminium rolling mills. Universal lubricating and hydraulic fluid for the aluminium industry.	Specially selected synthetic base oils and additives	Non staining on aluminium surfaces when evaporated
	Good wear protection, FZG 10	Extended machinery and plant life
	Excellent ageing stability	Long oil service life
	Very low foaming	No detrimental effect on the formation of the lubricating film
	Good compatibility with aluminium rolling oils	No detrimental effect on the rolling oil or aluminium surfaces

Selected technical data

Product name	Scuffing wear test FZG A/8.3/90 (damage load stage)	Residue formation on hot aluminium surfaces	Fulfils and surpasses HLP requirements: DIN 51524-2
RENOLIN HLP 46 ALU	10 – high protection	no residues	yes

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FUCHS LUBRICANTS (UK) PLC

RENOLIN DO 22 HV

Special Hydraulic Oil Containing Selected Base Oils with an Extremely High Viscosity Index

Hydraulic applications, that are subject to very low temperatures or highly fluctuating temperatures, require oils with a high Viscosity Index to achieve good viscosity temperature behaviour (little temperature related changes to viscosity).

To perform reliably in such conditions, RENOLIN DO 22 HV was developed using high quality synthetic base oils in combination with special additives and polymers (VI improvers). These polymers display excellent shear stability and offer very good cold flowing properties.

RENOLIN DO 22 HV is a friction reducing, multi-grade hydraulic oil that is suitable for use in a very wide range of temperatures.

Recommended Applications	Technical Properties	Advantages and Benefits
For use in mobile and stationary systems, such as cold stores, applicable in artic door closing mechanisms, and all kinds of low temperature applications.	Very high Viscosity Index (VI = 359)	Extremely good viscosity temperature behaviour, pronounced multi-grade characteristics
	Excellent low temperature behaviour	Extremely low viscosity at low temperatures, while maintaining high operating viscosity
	High percentage of synthetic base oils	High ageing stability, very good low temperature flowability, long life
	High percentage of detergents and friction reducing additives	Combats sludging, a low coefficient of friction protects hydraulic components against wear

Selected technical data

Product name	Viscosity at -40°C [mm²/s]	Pourpoint (°C)	Viscosity Index (VI)	Brugger wear protection (N/mm²)	Scuffing wear test FZG A/8.3/90 (damage load stage)
RENOLIN DO 22 HV	1252 (very good low temperature flowability)	-48 (very good low temperature behaviour)	359 (very high) multi-grade hydraulic fluid	> 35 = high protection	12 = high

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RENOLIN Xtreme Temp SERIES

AW General and Hydraulic Oils with a High Viscosity Index, High Shear Stability and Extremely Good Air Release

RENOLIN Xtreme Temp grades are an innovative, shear stable, multi-grade hydraulic oils for use in all mobile applications. They can also be used in stationary hydraulic applications that are subject to fluctuating ambient temperatures.

RENOLIN Xtreme Temp products contain semi-synthetic base oils and display excellent low temperature characteristics. They all have a low start up viscosity which avoids inlet side pressure losses and prevents cavitation. The optimum formulation of this series offers excellent air release to reduce oil borne air.

RENOLIN Xtreme Temp products display excellent shear stability and a high Viscosity Index. They also offer long life. The use of RENOLIN Xtreme Temp products increase mechanical efficiency and reduce energy consumption. Compared to conventional hydraulic oils, energy savings of 5-8% are possible.

Recommended Applications	Technical Properties	Advantages and Benefits
Universally applicable, multi-grade hydraulic oils, containing semi synthetic base oils. HVLP hydraulic oils for stationary and mobile hydraulic systems.	Excellent shear stability and high Viscosity Index	Minimal temperature related fluctuations in viscosity, good low temperature behaviour while maintaining high operating viscosity
	Excellent low temperature characteristics	Good cold flowing properties, low viscosity, combats cavitation
	Excellent air release	Minimal air absorption, rapid release of 'dragged' in air
	Semi synthetic base oils, high additive reserves	Good ageing stability, excellent performance, long life
	Good protection against wear and corrosion	Universally applicable hydraulic oils with high wear protection reserves

Selected technical data

Product name	Viscosity Index (VI)	Shearing stability: VKA apparatus – 20hr tapered roller bearing shear test	Viscosity at -20°C (mm²/s)	Pourpoint (°C)
RENOLIN Xtreme Temp 32	>180 (high) multi-grade hydraulic oil	shear stable: <10% DIN 51350-6	1186 (very good low temperature flowability)	-36 (very good low temperature behaviour)
RENOLIN Xtreme Temp 46			2384 (very good low temperature flowability)	-34 (very good low temperature behaviour)

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