

MAGAZINE

CHALLENGE THE LIMITS

Who will beat the world
motorcycle altitude record?

SUSTAINABLE PERFORMANCE
Biodegradable hydraulic oils

MOTOREX ONLINE SHOP
New customer platform

LOOKING TO THE FUTURE
Low Friction is the
new standard



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EDITORIAL

MORE THAN JUST DIGITAL



In digital terms, the world is certainly turning somewhat faster. However, the extent to which different industries “surf” on the digitalization wave varies. Both providers and customers can take advantage of completely new possibilities that go far beyond the traditional website or a social media presence. The impact of digitalization on production, logistics and sales processes is much greater.

As a global provider of performance fluids in various industries, MOTOREX also has to adapt to changing customer needs. Digitalization plays an important role

here, but we take special care to ensure it isn't at the expense of customer proximity, advice and service.

This is entirely the thinking behind the new MOTOREX customer platform, which is intended as an additional service for our customers and not as a substitute for personal advice. At MOTOREX we

rely consistently on team performance – including in the “man and machine” constellation. Thanks to digital progress, we can now serve you faster and better than we could a few years ago. However, technical support and customized advice are still key.

Moving with the times doesn't automatically mean distancing ourselves from what is tried and tested. Healthy, sustainable development is often the result of an evolution rather than a revolution. And we have brought the same respect to bear in revamping our long-running MOTOREX Magazine. Be inspired and take part in the survey on page 30 so that we can continue to evolve in line with you – in both digital and analog terms.

Yours sincerely,

Lynn Balsiger
Business Development & Marketing
Member of the Executive Committee

SPOTLIGHTS

Text: Martin Aeschlimann

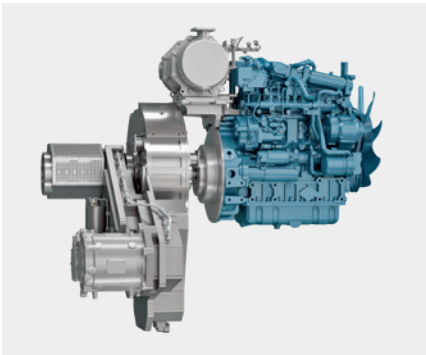


Foto: © 4qt.ch

4QT REVS UP UTILITY VEHICLES

“Zero emissions” is also expected from utility vehicles such as those used in mining. Swiss startup 4QT is a pioneer in this field. Its retrofittable, intelligently controlled dual rotor machine (4QT = 4-quadrant transmission) combines the advantages of electric drive systems with the benefits of modern combustion engines. Four operating modes are available: work mode (combustion), zero emission mode (electric), charge mode (recovery) and boost mode (combustion + electric). The result is unique efficiency and performance with roughly 30% lower emissions. MOTOREX is part of this exciting project.



GO TO MOVIE
youtu.be/tLj8lnwg3To



FRANCE SUBSIDIZES CUSTOMERS WHO USE MOTOR OIL FROM THE MOTOREX PRODUCT FAMILY

The French state frequently supports business with subsidies. And that also applies to the use of CO₂-friendly lubricants. Since April 2022, transport companies have received subsidies of up to 28 euro cents per liter if they use the eco-friendly FOCUS QTM SAE 10W/30 or NEXUS SAE 5W/30 motor oils. Only a small group of lubricant manufacturers have met the stringent requirements.



DIESEL FOR SHORT DISTANCES – NO PROBLEM

Travel over short distances is considered problematic, especially for diesel engines. If the engine never reaches operating temperature, deposits in the exhaust gas recirculation valve can cause malfunctions. With exhaust gas recirculation (EGR), a controlled volume of exhaust gases is returned to the combustion chamber, reducing nitrogen oxide emissions by up to 70%. If EGR is not functioning properly, the onboard diagnostics system sends an error alert. Regularly adding DIESEL IMPROVER fuel additive prevents formation of deposits. The built-in cetane booster also improves ignition and combustion.

GO BIG: V-SYNT 4T

Large-displacement V engines place high demands on engine oils, with special abilities needed not only in the engine, but also in the transmission, primary drive and oil bath clutch. MOTOREX has developed two specific lubricants in the new full-synthetic V-SYNT 4T SAE 15W/50 and SAE 20W/50 engine oils. These oils guarantee maximum lubrication dependability and outstanding protection against wear even at the elevated temperatures that occur in air-cooled engines. The JASO MA 2 certification of both viscosities stands for perfect clutch behavior in high-torque V engines. V-SYNT 4T meets the required specifications of Harley-Davidson™, Ducati™ and other manufacturers.



MOTOREX STRENGTHENS ITS PRESENCE IN THE U.S.

Having taken over the production and logistics facility in Brookfield, Connecticut, as well as the tradition-steeped U.S. powersports brand SPECTRO, MOTOREX has passed another milestone in its expansion strategy. America is already one of our chief markets and has lots of potential for further growth. Now that we have our own local team of experts plus a logistics center, MOTOREX can ensure close customer focus and ready availability of products in the U.S. too. The SPECTRO brand will continue to be systematically geared toward the V-twin engines market, thus ideally complementing the MOTOREX product portfolio.

www.spectro-oils.com

Photo: © fantic.it

FANTASTIC FANTIC

The Italian cult brand Fantic Motor launched a new collaboration with MOTOREX at the start of the year. The company was founded in 1968 in Barzago in what is now Lecco province. It builds sporty offroad and street motorcycles from 50 to 700 cc for the high end of the market. Fantic reinvented itself a few years ago with the Caballero sub-brand and machines in the scrambler style. MOTOREX will be the initial supplier for all stock and racing motorcycles. The MOTO LINE meets all needs of the Fantic range, from two-stroke models up to rally bikes. MOTOREX specialists will also support the R&D, Racing and Aftermarket departments. Benvenuto Fantic Motor!

TECHNOLOGY & INNOVATION

MOTOREX ONLINE SHOP CUSTOMER PLATFORM

Text: Martin Aeschlimann

Keeping close to the customer is a tradition at MOTOREX. The personal support provided by sales representatives and customer service is expanding in innovative ways. As a business associate, you have exclusive access to your personalized customer platform in a protected area of the MOTOREX website. This tool not only provides valuable extra services but is available 24/7.



EXPLANATORY VIDEO Here you can do a brief tour of the Online Shop customer platform. motorex.com/online-shop-tour



ALL-ROUND VIEW
A few clicks take you to all the relevant information around your products, contracts, delivery addresses, safety data sheets and so on. You can readily access all that at any time, along with plenty of extras, tips and hints.

24/7



DIGITAL SERVICES
Looking for just the right amount of just the right engine oil and transmission fluid for your vehicle? It's easy with the MOTOREX Oil Finder. It shows at a glance which products are suitable, what quantity is needed and other useful information. The data is drawn from a top-quality, continually updated database of all makes and models of cars, light commercial vehicles, motor-cycles, trucks and buses. A feedback function is available to report corrections and ask questions. Further digital services are planned for the future.



ONLINE SHOP
Thanks to the Online Shop, all the usual ordering processes are available to you around the clock. Helpful functions make reordering and inventory management easy. Your MOTOREX sales representative will be notified of every order and can provide helpful support as needed.



PERSONAL SUPPORT
Your personal sales representative will always be your direct contact person and will be glad to help with all the ins and outs of the new customer platform. Ready to register? Just use this QR code and/or contact your sales rep.

REGISTER
NOW



MOTOREX Online Shop
motorex.com/register
The customer platform is currently available in Switzerland the United States. In the coming months, additional countries will go online. Your MOTOREX area manager will be pleased to answer any questions.

SUSTAINABLE PERFORMANCE

HIGH-PER-FORMING, GENTLE ON THE ENVIRON-MENT

Text: Brad Graham

Environmental demands on the construction industry are rising, and yet at the same time efficiency and cost-effectiveness must be constantly optimized. With its high-performance ECOSYNT HEPR hydraulic oil, MOTOREX is making it easier to switch to an eco-friendly solution – with no compromises on performance.



**ARE YOU READY
TO MEET FUTURE
CHALLENGES?**



5 REASONS WHY ECOSYNT HEPR IS THE PERFECT BIODEGRADABLE HYDRAULIC OIL.



GO TO MOVIE
youtu.be/EYr6j2pU5ss



1. BIODEGRADABILITY

"More and more often we're required to work with biodegradable hydraulic oil," explains Andreas Egger of Stephan Thalmann AG in Ramersberg. "ECOSYNT HEPR gives us a clear advantage there." Biodegradable ECOSYNT HEPR 46 hydraulic oil conforms to Swedish standard SS 15 54 34, thus meeting the internationally recognized EAL ("Environmentally Acceptable Lubricants") criteria. In EAL terms, this means ECOSYNT HEPR 46 is "readily biodegradable (OECD 301 B), non-bioaccumulating, and minimally adverse to the aquatic environment."



▲
**Andreas Egger, General Manager,
Stephan Thalmann AG, Ramersberg (CH)**

"More and more often we're required to work with biodegradable hydraulic oil. ECOSYNT HEPR gives us a clear advantage there."



▲
**Christophe Menoud, shop foreman,
JPF Construction SA, Bulle (CH)**

"ECOSYNT HEPR's good hydrolytic stability is extremely important in the field and helps extend the life of the hydraulic oil."

2. HYDROLYTIC STABILITY

Biodegradable hydraulic oils offer decisive benefits at environmentally sensitive sites, such as in and on the water. If water gets into the hydraulic oil even when the hydraulic cylinder and components are effectively sealed, good hydrolytic stability is essential. ECOSYNT HEPR 46 has it. The reaction with water (hydrolysis) is suppressed and the acidification of the hydraulic oil is slowed significantly. "ECOSYNT HEPR's good hydrolytic stability is extremely important in the field and helps extend the life of the hydraulic oil," says Christophe Menoud, who is in charge of the construction equipment fleet for JPF Construction SA. Hydraulic systems should generally be operated in combination with a water separation system such as ECOFIL.



▲ M. Braumann (site manager) and R. Bergmair (CEO), Braumann Tiefbau GmbH, Antiesenhofen (A)

“Switching to ECOSYNT HEPR in the tunnel boring machine was easy and gives us an extra measure of safety with the EAL standard.”

3. EXTENDED SERVICE INTERVALS

When total operating expenses of construction equipment are analyzed, the service life of the hydraulic oil is often undervalued. Instead, the focus is on specification requirements and price. But this provides only a momentary snapshot. The potential for extending service intervals and the low cost of changing oil can reduce operating expenses and conserve resources. MOTOREX lab analysis of hydraulic oil samples provide a basis for extending service intervals.



GO TO INFO ECOSYNT HEPR
motorex.com/ecosynt-hepr-46



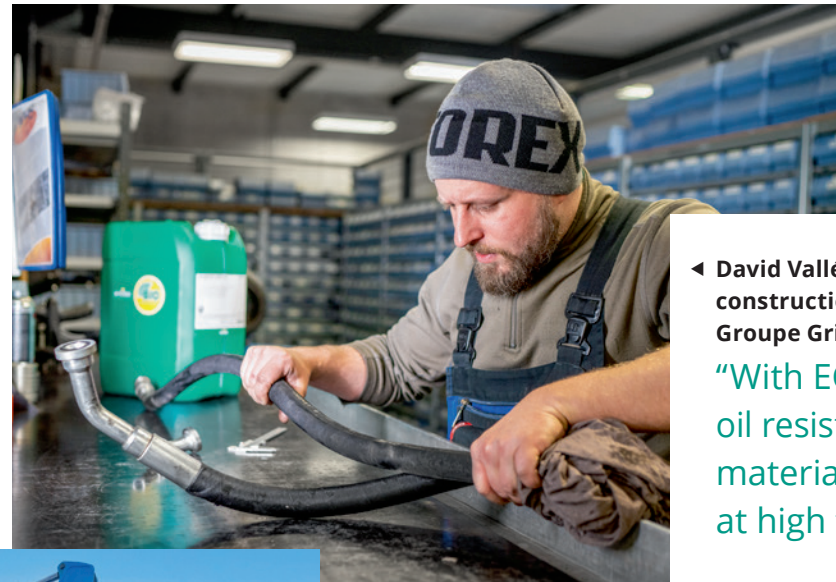
▼ Claude Wehren, Construction Equipment Shop Manager, Groupe Grisoni, Vuadens (CH)

“ECOSYNT HEPR is the first biodegradable hydraulic fluid that I find truly compelling in terms of overall performance.”

4. HIGH PERFORMANCE FLUID

ECOSYNT HEPR's unique, innovative formula ensures lasting high performance at all times. Developed with over 30 years of know-how in environmentally safe hydraulic fluids, these benefits make the difference:

- high hydrolytic stability suppresses reactions with water
- rapid air release for safe and wear-free work
- electrical conductivity protects against damage to the system and accelerated aging of the oil
- constant, temperature-independent hydraulic system responsiveness
- broad material compatibility – neutral towards metals, gaskets and hoses
- meets the highest hydraulic oil standards as well as numerous manufacturer's specifications such as Liebherr's requirement that EMT earth-moving equipment meet LH-00-HYE



◀ David Vallélian, construction equipment mechanic, Groupe Grisoni, Vuadens (CH)

“With ECOSYNT HEPR, mineral oil resistant hoses and gasket materials remain stable even at high temperatures.”

5. BROAD MATERIAL COMPATIBILITY

Switching oils is easy thanks to ECOSYNT HEPR 46's outstanding material compatibility. Its nonpolar (non-adhesive and non-penetrating) behavior provides ideal protection for sensitive materials such as non-ferrous metals, tin, zinc and lead alloys in slide bearings. “Mineral oil resistant hoses and gasket materials remain stable even at high temperatures,” enthuses construction equipment mechanic David Vallélian. Observe DIN ISO 15380/A 1 guidelines and those of the equipment manufacturer when changing oil. Among other things, this will ensure biodegradability in conformity with the applicable standard.



BIKING UP TO 6275 M: A WORLD RECORD

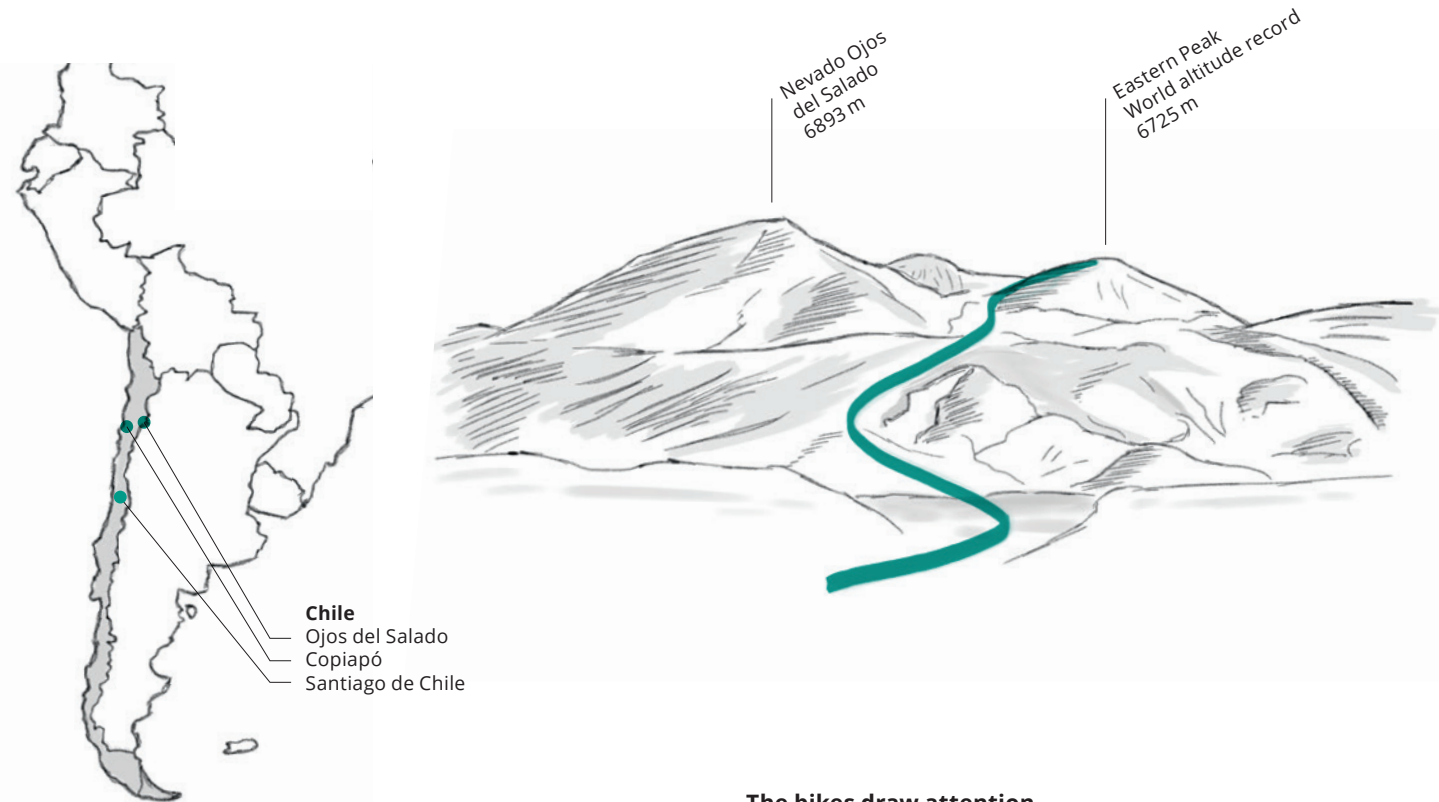
CHALLENGE THE LIMITS

UP AND AWAY: PUSHING THE LIMITS

Text: Brad Graham, photos: MCS

The aim: to beat the world altitude record for motorbikes. In the saddle: three of Switzerland's top enduro specialists. Among them is the current world record-holder for high altitudes, Jiri Zak. Who will accomplish this herculean task? A grueling challenge for man and machine on the world's tallest volcano, Chile's Ojos del Salado (6893 m).

Finally! Chile reopened its borders in November 2021, giving Jiri Zak, the reigning motorcycle altitude world champion, a chance to better his own world record of 6546 m on Ojos. When it comes to enduro, just one ride through the Atacama Desert is never enough. No wonder this Andean volcano is a favorite location for world altitude record attempts for top manufacturers in a wide range of vehicle categories. But Jiri's endeavor was cut short by heavy snow, razor-sharp penitentes and temperatures down to -36°C on the dormant stratovolcano. Reaching 6556 m, he succeeded in bettering his old record by a mere ten meters. But he's not satisfied yet!



A new team, a new opportunity

"Precipitation volumes and meteorological conditions are a key factor in record attempts on Ojos," explains Raffael Panzeri, lead rider on the MCS team. MCS stands for Moto Center Schwyz AG, the organization that planned the 2022 record attempt. The team consists of three Swiss enduro specialists: Jiri Zak (42), Thomas Schranz (42) and Raffael Panzeri (53), with support from Patrick Voser (technical and logistics) and expedition organizers High Mountain Experience (infrastructure & camp) in Chile.

Acclimation in an altitude tent

Dizziness, headaches and nausea can occur at elevations as low as 2500 m. Not the best state to be in for a world record attempt without oxygen at well over 6000 m. So for three weeks before departure, the team members acclimated by spending each night in a reduced-oxygen altitude tent. Gradual adaptation to high altitudes, which also included an anabolic fitness program, was one of the most important elements in preparing for the record attempt. In late November 2022 the team traveled from Zurich via Paris and Santiago de Chile, taking the most direct route to the remote Copiapó. From there it was a further five hours by ATV to the base camp at Laguna Verde (4239 m), a saline lake with turquoise waters high in minerals.

The bikes draw attention

Meanwhile four factory-fresh KTM 500 EXC-F motorcycles and supplies such as spare wheels, tires and lubricants were also making their way to the camp. Not without drawing attention from a few suspicious-looking types in a black pickup who tried to force the trailer off the road. The attempt was thwarted by a police patrol who noticed what was happening and provided an escort. After reaching the camp without further incident five hours later, the team turned their attention to the bikes. The high-torque one-cylinder four-stroke KTM was the perfect choice for this adventure. With no major modifications, the power enduro bikes proved absolutely reliable. For better offroad performance, the tires were equipped with "mousse" foam inserts in place of inner tubes. The mousse inserts provide tire pressure equivalent to only about 0.7 bar for maximum grip and can keep going even after a puncture.



Broken in and ready to go: Raffael Panzeri during final preparations.



"SAND,
GRAVEL –
THEN ICE."

On the way to the camp at Laguna Verde (4239 m).



Bivouacking at a "cool" -4 °C with a promising view.



Jiri (l.) and Raffael (r.) celebrate new world record holder Thomas Schranz.



The world record-beating team (l. to r.): Jiri Zak, Patrick Voser, Thomas Schranz and Raffael Panzeri.



A well-earned pit stop at over 4000 meters above sea level.



GO TO MOVIE
youtube.com/shorts/01XshcmofZI

6725 m

world-beating oil – you
can always trust
CROSS POWER 4T.



956 kg

4 KTMs & supplies,
which were airfreighted
to Chile.

Trial and error – finding the best route

The day began at 6 am. Despite, or perhaps because of the team's well-insulated garments, getting up in -4 °C temperatures always took a certain measure of willpower. The Peruvian cook, Silvio, rewarded the team with breakfast in generous but always easily digestible portions. They would need plenty of energy for the coming seven hours of off-road travel.

Raffael Panzeri on the first record attempt:

"We were deliberately careful not to climb all too quickly. The mousse would mean less stability anyway at high speeds. After a while it grew hot, nearly 25 °C. Our tongues and eyes were dry, our lips cracked from the elements. We were carrying fuel canisters and water. The team was moving through an inhospitable area, empty of people. No trees, no shrubs, no trails. Then suddenly the terrain changed from fine yellow sand to rocky gravel. Our objective was to find the ideal ascent towards the eastern peak. After crossing the glacier runoff, our uphill path grew ever steeper. Small ravines alternated with dirty snow and ice. After another two hours of balancing acts there was no longer a way forward. We had too little grip, and the cracks in the glacier were too big and dangerous! Exhausted, the team arrived back in camp at about 2:30 in the afternoon. After eating, it was time to rest or relax our muscles in a sheet-metal sauna at a 40° C hot spring not far from the camp." But this would not be the last attempt to wrestle a new world altitude record from Ojos.

The rider is the limiting factor

Harsh as it may seem, the rider is clearly the limiting factor when aiming for a new record. It is the rider's physical and mental capacity and skill with the machine that, under favorable circumstances, make the difference in climbing those decisive meters of altitude. It is no exaggeration to say that Thomas Schranz is an extremely successful Swiss enduro rider. On December 3 the moment had come: inwardly, Thomas was ready to outdo himself. Together with teammates Jiri and Raffael he set out in the direction of the eastern peak. The group remained together until reaching an elevation of roughly 6640 m. At this altitude, the KTMs needed every bit of horsepower. Not a problem with fuel injection and the fine control provided by a multi-disc clutch in an oil bath thanks to MOTOREX CROSS POWER 4T SAE 10W/60. Now each rider was searching for the ideal path. Meter by meter of elevation, the riders ratcheted their way up. Everything seemed to be

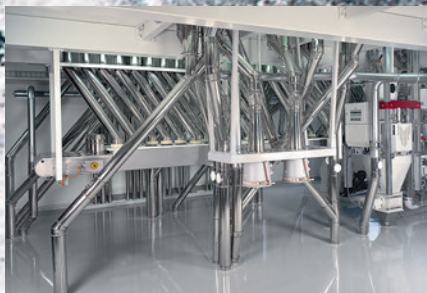
moving in slow motion. Then the team members lost visual contact with one another. This could prove dangerous given the high, steep cliffs on the far side of Ojos and the border with Argentina.

A new world altitude record at 6725 m

By virtue of his physical constitution, skilled path-finding and iron will, Thomas pulled ahead of the group and battled his way upwards meter by meter. Breathing was difficult. His pulse was hammering. Behind him was an extreme landscape of enormous fissured glaciers and little traction to speak of. At the lower temperatures now prevailing, the Michelins were hard as rock. "Keep going!" said an inner voice. As if by remote control he fought his way up to a phenomenal 6725 m – here it was, the new world altitude record in the motorcycle category. Without outside assistance or oxygen. Thomas had made it! His heart beating in his throat, a joyful high-altitude euphoria began to set in.



Grateful: the altitude world record-holder Thomas Schranz.



The equivalent of
525
croissants
(80 g each, i.e. 42 kg)
is how much bread
the Swiss eat*

1. ADVICE

Customer-specific solutions based on an analysis of requirements together with a survey of machinery used and of the contamination risks.

FOOD LINE SOLUTION CONCEPT

3. SERVICE

Services such as lubrication plans, personnel training, laboratory analyses, online documentation (SDS), process optimization, etc.

2. PRODUCTS

FOOD LINE lubricants and operating fluids to food-industry standards (H1, 3H or K1 registered and certified).



FOOD LINE

Top-quality lubricants and operating fluids for the production of foodstuffs, cosmetic and pharmaceutical products, feedstuffs, packaging and processing equipment.



GO TO INFO
motorex.com/food

SUSTAINABLE PERFORMANCE

GETTING THE BEST OUT OF THE GRAIN

Text: Klaus Larock, photos: knechtmuehle.ch

When you bite into a crispy bread roll, you probably won't think back over 6000 years. That's when the first precursor of today's flour was invented. Today, flour-based products are among our favorite food staples. But producing perfectly milled flour is a technical challenge.

That becomes clear when we take a look behind the scenes at Mühle Knecht AG in Leibstadt – one of Switzerland's most modern mills. Flour is produced there fully automatically and around the clock. Every day, innovative special-purpose machines process up to 60 tonnes of regionally produced grain in the cleaning, milling, mixing and packaging plants.

FOOD LINE solution concept

"Smoothly functioning machinery is of vital importance," says production manager Daniel Meier. And proper lubrication of the entire plant is a key factor here. At Mühle Knecht AG that means roughly 300 machines and assemblies. The tailor-made FOOD LINE solution concept ensures that lubrication doesn't turn into a marathon task.

Working efficiently 24/7

Whether for chain lubrication in a conveyor system in the grain silo (FOOD GREASE CS-MP-2), for operating a vacuum pump (FOOD FLUID CR 68) or for lubricating the bearings of the extruder (FOOD CHAIN OIL HTE SPRAY) – FOOD LINE lubricants are a crucial factor for success in the food industry. Equipment efficiency goes up while energy consumption and maintenance costs go down. Those are benefits that Mühle Knecht AG appreciates as each grain goes through the system.



2003

Juha Salminen's first World Cup title

The success factors for winning in motor sports are numerous and varied. The performance and dependability of the machine are just as important as the athlete's abilities. Juha Salminen won his first world championship 20 years ago on a KTM with MOTOREX.

#RACEPROVEN

FORMULA FOR SUCCESS

Text: Jonty Edmunds, photos: KTM

At the Enduro World Championship, the motto is "Teamwork makes the dream work." A bit of a cliché, perhaps, but there's much more to success than just the rider's skill.

World Cup title crowns new partnership

If anyone knows how to win, it's 13-time FIM Enduro World Champion Juha Salminen (born 1976 in Finland). Although he has long since retired from elite competition, the cool Finn still holds a special place in the annals of MOTOREX. It was exactly 20 years ago that he won the first Enduro World Cup title under the aegis of the newly formed partnership between motorcycle manufacturer KTM and MOTOREX.

Offroad against the clock

The sport of enduro is a sort of rally race on two wheels in which men and women traverse a rugged landscape while riding against the clock. It is definitely not a sport for those with a nervous disposition. In races lasting from three hours to six days, in rocky terrain, over tree trunks, through mud and other extreme obstacles, Juha knows well that arriving at the finish line, to say nothing of winning the race, takes more than just hard work. "As a racer you can get to the podium if everything

goes well," says Juha. "But to make it there you need a good support team and a perfectly prepared machine with products that ensure dependable performance. I was lucky enough to win many titles in my career. But it was only during my time at KTM when smaller, more powerful four-stroke bikes were coming onto the scene that I realized how important quality lubricants are. The partnership between KTM and MOTOREX was a stroke of luck, and the many titles were my way of saying thanks."

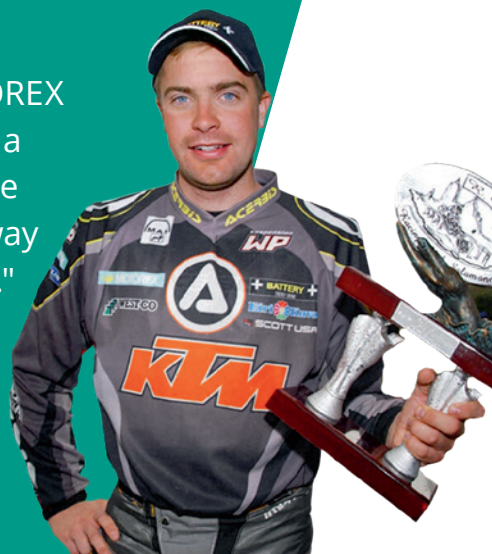


#RACEPROVEN

"The KTM-MOTOREX partnership was a stroke of luck, the many titles my way of saying thanks."

Juha Salminen - trial legend

Juha Salminen won the World Cup title in the 500cc enduro class in 2003.



MOTOREX makes all the difference

As a professional enduro rider, Juha could perceive a distinct difference after switching to MOTOREX. The responsiveness and power delivery of the engine, the smooth engagement of the clutch, the precision in shifting and the load change performance of the chain - in the saddle of his KTM, few things went unnoticed by the sensitive Finn.

The impressive 118 joint World Cup titles and the continuation of their successful collaboration are proof that the Austrian-Swiss success formula works.



2023

OEM collaboration extended

THE SUCCESS STORY CONTINUES

What started in 2003 is entering a new phase: future collaboration between MOTOREX and KTM will encompass all racing activities with the exception of MotoGP. All factory or factory-supported KTM teams in the Moto2 and Moto3 world championships, in the top Motocross and Supercross classes and in enduro/offroad competitions trust in high-performance lubricants from MOTOREX — recognized as #raceproven products. KTM and MOTOREX engineers will also continue to successfully combine their strengths. With all stock KTM machines factory-filled with MOTOREX products, the collaboration stands for top performance and maximum reliability around the globe.

"In the crucible of the motor-cycling world, KTM and MOTOREX work incredibly well together – the many years and titles speak for themselves."

Pit Beirer, KTM Motor Sports Director



INTERVIEW WITH PIT BEIRER
youtu.be/HXEaDWEONpl



KTM Motor Sports Director Pit Beirer (middle), Edi Fischer (MOTOREX CEO, l.) and Ronald Kabella (Director of Power Sports, MOTOREX, r.) seal the extension of the exciting collaboration.

TECHNOLOGY & INNOVATION

LOOKING TO THE FUTURE

Interview: Martin Aeschlimann, photos: mahle.com, ktm.com

Othmar Frey, head of Technical Customer Service, knows them backwards and forwards – the lubricant applications for practically anything powered by an engine. Whether full-electric, hybrid or internal-combustion – high-lubricity lubricants will play a vital role in future for boosting efficiency and lowering emissions by reducing friction.

355

Million motor vehicles (cars and trucks) are currently registered in the EU. The untapped savings potential of high-lubricity lubricants is enormous.

-7%

Compared to the SAE 15W/40 motor oil used previously, NEXUS SAE 5W/30 reduces generator fuel consumption by 7 %.

50 000

Depending on use, oil change intervals for cars and small commercial vehicles from 30,000 km (gasoline engines) to 50,000 km (diesel) are now possible.

E-mobility is a topic of continuing interest. In the future, will we still need lubricants at all?

Othmar Frey: Alternative, CO₂-neutral drive technologies make sense in light of a growing world population and issues surrounding emissions. In my view a mix of different technologies will carry us into the future. Lubricants will always play an important role, because wherever friction occurs, there's a need to lubricate.

What advantages do high-lubricity motor oils offer?

Othmar Frey: A low-viscosity multigrade oil displays significantly lower friction values under all operating conditions. This makes it possible to reduce fuel consumption and emissions. Modern engines are specifically engineered for them in terms of construction, tolerances, operation, etc. and built with great precision. This is why we have manufacturer's recommendations. In older engines, we have a little more leeway when it comes to choice of viscosity.

What do you mean by "leeway"?

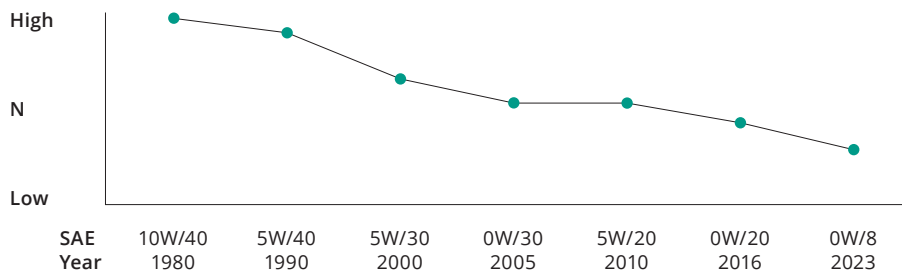
Othmar Frey: Viscosity specifications depend on the type of use and the climate zone. As we know, to reach the lubrication point as quickly as possible, multigrade oils have to remain fluid when it's cold. And even at temperatures over 120 °C, an extremely thin film of lubricant always has to be able to withstand high loads. In the past this was achieved by using thicker oils. Nowadays base oil and additive technology is highly advanced. Even very thin oils can withstand extreme loads over extended periods. So leeway means that, following serious testing, it may in many cases be possible to switch to a high-lubricity oil such as SAE 5W/30.



"LOW FRICTION IS THE NEW STANDARD."

Othmar Frey, Head of Technical Customer Service
Meeting lubrication challenges with his team since 2001, enjoys Italian food, listens to hard rock, active motorcyclist, loves movies

Frictional force, cylinder assembly*



Significantly lower friction with a high-lubricity SAE 0W/8 viscosity motor oil in a test engine.
* Simplified depiction of drag in a 3-cylinder gasoline engine

Where do you see further potential for 0W high-lubricity engine oils?

Othmar Frey: They're generally more sustainable. To begin with, the 0W cold viscosity means the oil pump faces less resistance in forcing the lubricant through the filter and oil lines to the bearings. Because of downsizing, modern engines have fewer moving parts. They are also built with great precision, and the piston assembly often has a friction-reducing coating. As a result these engines have very low oil consumption. And what doesn't get burned in turn reduces emissions and operating costs.



Monotherm® diesel engine piston from Mahle: reducing friction loss and weight while improving thermodynamics yields total fuel savings of approximately 3 % in the NEDC*.
*NEDC (New European Driving Cycle)



Revs up in a flash with record-setting fuel mileage. High-lubricity motor oils are the key to success both in racing and on the road.

What about optimizing friction in the drive train?

Othmar Frey: The EU's goal of reducing CO₂ emissions a further 30 % by 2030 presents an enormous challenge for vehicle manufacturers. Together with low-viscosity motor oils, friction-optimized transmission and axle lubricants also contribute significantly. Here again, it's not either-or but both-and.

What challenges do you see for lubricant technology in the future?

Othmar Frey: High-lubricity lubricants are becoming the new standard. That's why MOTOREX, with its CONCEPT T-XL SAE 0W/16 and other products, has established itself as a firm favorite for the low-friction engines of Asian hybrid-vehicle manufacturers. The market launch of this motor oil in SAE 0W/8 viscosity shows the direction things are headed in the future.



CONCEPT T-XL

The super-high-lubricity engine oils in the CONCEPT family are low-viscosity, high-tech formulas for automotive gasoline and diesel engines, combining benefits such as fuel efficiency, reduced emissions and extended oil change intervals (LongLife).



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What role awaits MOTOREX in the future?

Othmar Frey: “As a solutions provider, MOTOREX will continue to follow developments on the market. Synthetic fuels will present further challenges for future lubricants. We at MOTOREX will ensure that these products serve their purpose in a way that's efficient, long-lasting, and conserves resources.”

Othmar Frey, head of the MOTOREX Technical Customer Service unit

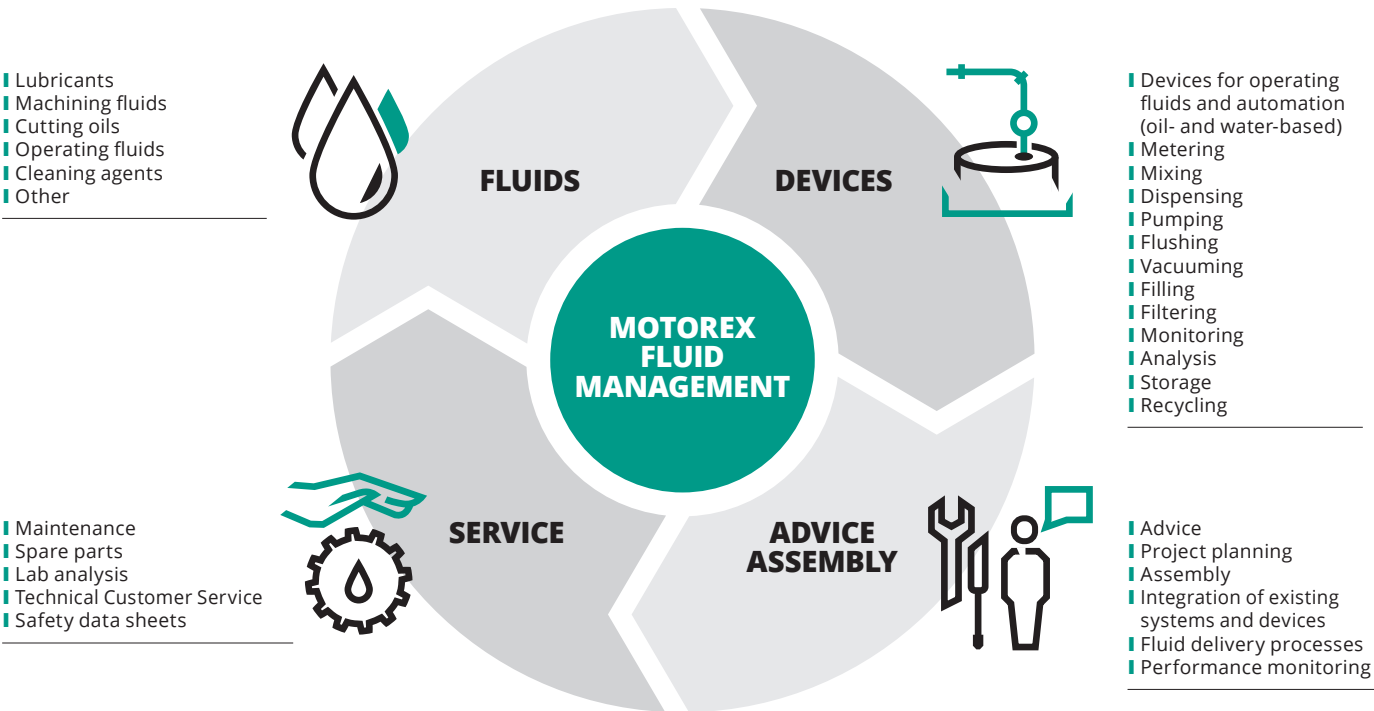
TECHNOLOGY & INNOVATION

FLUID MANAGEMENT ADDS VALUE

Text: Klaus Larock

Work processes that involve operating fluids consist of many interlocking steps. Even the smallest gaps can result in added cost and effort. With FLUID MANAGEMENT, MOTOREX combines its core competency in lubricants and operating fluids with many years of know-how in fluid supply, automation, storage and disposal. The result: customer-tailored, value-added solutions.

Working as safely and efficiently as possible is more timely than ever. In response, MOTOREX is expanding its fluid management capabilities. The logical linking-up of the four competency areas shown means that synergies can be fully exploited.



UTILIZING POTENTIAL FULLY

MOTOREX lubricants and operating fluids stand for top quality and performance. To take the fullest advantage of their benefits, MOTOREX FLUID MANAGEMENT brings together the full range of process elements. Anywhere in the metalworking industry where several hundred liters of oil-based or water-based machining fluids are used, automating fluid processes quickly pays for itself. This is where FLUIDLYNX equipment, developed and built in Switzerland, comes in. The FLUIDLYNX solution consists of fully automated mixing, metering, dispensing, filling, filtration, monitoring and analysis systems. 24/7 and even remotely via online access. Standardized fluid quality captures the fluid's full performance potential and contributes significantly to extending service life and improving process reliability. What's more, employees benefit from enhanced workplace quality.



FLUIDLYNX fully automatic metering and management system for machining fluids, with online monitoring.



INDUSTRY SOLUTIONS
motorex.com/fluidlynx

Interested in an audit of your optimization potential?
Your MOTOREX representative has cutting-edge expertise and will be glad to advise you.

INDUSTRY-SPECIFIC CONSULTING

Whenever lubricants are dispensed far from the spot where they'll be used, water-miscible machining fluids are measured out by hand, or hazardous materials are improperly stored... When the added effort and risk are calculated, the price is always too high. That's why a periodic audit of infrastructure and processes is needed. A task that MOTOREX can perform for you, deploying untapped value-generating potential to your benefit. The MOTOREX concept also supplies all fluids and equipment, as well as consulting, assembly, and service capabilities from a single source.

MORE EFFICIENCY AND SAFETY

Top performance demands a professionally equipped plant with fluid handling technology. MOTOREX FLUID MANAGEMENT includes the complete range of tools and equipment:

- **Oil, grease and fluid handling equipment**
Grease presses, hose rollers, dispensing stations, drum handling equipment, pumps, filtration devices, small-parts cleaning equipment and much more
- **Fluid delivery systems**
All sizes, with integrated tank farms, recycling solutions and automated supply processes
- **Innovative oil change and transmission flushing devices**
ÖLIX (oil change assistant) and DYNCO (flushing device)
- **Fluid and hazardous materials storage solutions**
For different hazard classes, LI batteries, and much more
- **Accessories and consumables**
Adapters, refractometers, drum handling equipment, filters and much more



ÖLIX, the smart oil-changing assistant for clean and rapid oil changes.



EQUIPMENT RANGE
motorex.com/fluid-management



SURVEY
JOIN IN AND WIN

Photo: © apple.com

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AROUND THE WORLD

**HEAVENLY SNAPSHOT
FROM CHINA**

Photo: © Dong Su, Peking



If you think this is a photomontage, you're wrong. This snapshot, or more precisely this nutcracker shot, was taken by Dong Su at the entrance to the Zhai Gong in the Temple of Heaven in Beijing. In old China the Emperor was considered the Son of Heaven. The Temple of Heaven was built between 1406 and 1420. Nearly 500 years later, the Temple was opened to the public as a park in 1918. Dong Su is a professional photographer and artist certified by the Institute for Planets. He lay in ambush with the camera for over three hours waiting for the shy squirrel to take a bite. Congratulations to Beijing!

device to reduce speed	to take on	abbr.: January	a knockout	movie	opposite of rural	auto-mobile	abbr.: Netherlands
rock star and racing enthusiast (Chris)		a farewell grossly overweight		9	article female first name		
to cause trouble		5	black gold	in-frequent			
abbr.: kilogram		rapid development		abbr.: Baron rebellion	6	chilling device	
		2	alliance; combination	a large farm			8
the state of mutual harmony	easy running	gloomy, dismal mark in the passport	4		a grand-mother		a market
	1		abbr.: north-northeast	a poison		3	
number of soccer players	abbr.: iridium	to the inside of			abbr.: Alabama		
part of the engine	10			likes being alone			11
epoch		abbr.: neutral		7	work of ...		see1310-34

1	2	3	4	5	6	7	8	9	10	11
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Send your answer to motorex.com/riddle by June 1, 2023.



**WITH A BIT OF LUCK
YOU CAN WIN ONE OF FIVE
MOTOREX SPRING KITS.**



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care products from MOTOREX BIKE LINE



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STEP 2 CARE



STEP 3 LUBE



WORKSHOP



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