

NO. 90/41 | AUGUST 2010 | www.motorex.com

MAGAZINE



TOPIC ► 6

Gathering knowledge

MOTOREX's involvement in motorcycle sports yields precious insights that can subsequently be incorporated in commercial products.

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For hot countries

SAE 15W/50 four-stroke motorcycle motor oils.

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Niemann + Frey

Importer wins acclaim from German dealerships.

INDUSTRY ► 18

Success breeds success

TRESOR PMC[®] coolant-lubricant in use.

IF THERE'S ONE WORD HE NEVER USES, IT'S "IMPOSSIBLE".

MATTEO & GREENER



Frank M. Rinderknecht, visionary car designer and CEO Rinspeed

WHY DO YOU THINK HE SWEARS BY US?

For over 30 years, Frank M. Rinderknecht's one and only thought has been "Why not?" Why not make a car that can make itself smaller when it has only one passenger but can expand to accommodate several? Or why not make a car that has 60 hp when it's in town and 160 on the motorway – all at the touch of a button? Rolling back boundaries, making the impossible happen: that's something MOTOREX also stands for. And why we are precisely the right partner for Rinspeed. Find out more about how our oils are helping companies from a wide range of industries turn their visions into reality: www.motorex.com



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The world's TURNING AGAIN

Dear readers,

Yes, the world has started to turn again, and to make sure it turns smoothly, ever more customers are putting their trust in MOTOREX.

There can be no doubt that the last few months have been extremely testing for many of our business partners around the world – especially those in the industrial sector. Through no fault of their own, many companies found that daily business became a fight for survival as the effects of the crisis hit home.

Nevertheless, even the worst of times can prove beneficial. As one customer put it, it's a good opportunity to find out where weaknesses lie and to improve. When faced with an economic crisis, people always make a special virtue of acting sustainably. Looking at how finances are used, people do not "squander" money but use it prudently and focus on quality products. These doubtlessly include the ones we produce at MOTOREX.

Huge innovative potential is also the theme of our report on the ingenious Swiss engineer Josef Köpfli and his pioneering inventions as a tractor builder. Motorcycle enthusiasts and professionals are sure to be interested in the articles on our collaborative development ventures in motor racing and the advantages of SAE 15W/50 motor oil in hot regions. And finally, MOTOREX TRESOR PMC® is still getting positive reviews from industrial customers, this time from Distec AG in the eastern Swiss town of Disentis.

So there is plenty to keep you interested in this 90th edition of MOTOREX magazine, which is once again testimony to our ongoing efforts to provide genuine added value for you, our customers.

Cordial greetings from Langenthal

Hugo Fisch

Business Unit Director, MOTOREX AG, Langenthal

“SUPER” RATING FOR WET AND DRY LUBE

The WET and DRY LUBE chain lubricants from MOTOREX's BIKE LINE range both achieved “super” ratings in a test by the leading European mountain biking magazine “bike”. What's more, the Swiss products' outstanding price-performance ratio set them apart from the other “super”-rated bicycle chain lubricants. All in all, “bike” put no less than fifty different chain lubricants through their paces in a rigorous test procedure. A clean performance indeed!



TWO NEW “MANUFACTURER’S” MOTOR OILS

MOTOREX is adding two new manufacturer-specific motor oils to its CAR LINE. PROFILE D-XL SAE 5W/30 meets the official Opel GM Dexos-2 specifications. This modern LowSAPS motor oil meets the requirements of the latest generation of GM engines equipped with a catalyzer or a diesel particulate filter. PROFILE D-XL meets the ACEA A3/B4, C3 and API SM/CF standards and can also be used in earlier model engines. In CONCEPT X-C2 SAE 5W/30 MOTOREX presents a new formula that meets the Peugeot-Citroën (PSA) requirements for vehicles with diesel particulate filters. It is also a modern LowSAPS motor oil that helps to reduce fuel consumption and pollution emissions. The product meets the ACEA A5/B5-04, C2-08 – API SM/CF and Safety + Performance: PSA B71 2290 specifications. Both products are available in 60 and 200-liter containers.

Photo: PSA



DUCATI: DEALER TRAINING AT MOTOREX

Switzerland's Ducati dealers eagerly took part in the Multistrada training program that was recently organized by Swiss Ducati importer Motor-Import SA at MOTOREX's premises. The Multistrada 1200 is four motorcycles in one, boasts Ducati – ideal for sporty performance, comfortable touring, city traffic or off-road riding. And not just halfway, but perfectly for each kind of ride. It's all made possible by sophisticated engineering offering four riding modes, variable traction control, ride-by-wire, and optional ABS, along with a brand-new electronic suspension configuration system in the top-of-the-range S model. Depending on the riding mode chosen, the four-valve Testastretta engine puts out between 100 and 150 hp!

ZODIAC RACING TEAM IN PURSUIT OF RECORD

Good news for everyone who enjoys water sports when the weather gets warmer. The Equipo Zodiac Racing speedboat team from Catalonia, which comprises Ricardo Masabeu and David Tellez, are trying for their fourth world championship title in succession in the PR 550 class. Their ultralight and extremely maneu-

verable boats are powered by 40 hp Tohatsu racing outboard motors. MOTOREX will be on board for the races off the Spanish coast in the form of its MARINE LINE lubricants. The idea for supporting the team came from MOTOREX importer Juan Cano of Rexoli Motor S.L. in Spain, and we'll be crossing our fingers for them!



NEW-LOOK RADIATOR PROTECTION FLUIDS

As countless tourists prepare to hit the roads for their vacation, MOTOREX is launching its radiator protection fluids in premixed, ready-to-use format. MOTOREX COOLANT G30 and COOLANT G48 will be available in newly designed one-liter bottles ready to pour in whenever they're required and without the need to add other protection products. Apart from these practical benefits, the new format means there is no detriment to the product properties. These are carefully geared to the system in question because radiator protection products must always comply with the vehicle manufacturer's specifications. Please contact us if you would like further information.



A NEW NAME IN MOTOGP

MOTOREX has been a successful technical partner to well-known racing teams for many years. Since the beginning of this season, the newly formed Interwetten Honda MotoGP team has also been relying on the Swiss lubricant manufacturer's expertise. The current 250cc World Champion Hiroshi Aoyama (31) will be racing in the top Grand Prix class for the Swiss team run by Daniel Epp, who is also Tom Lüthi's manager. The team is using 800cc Honda prototypes that have been specially developed for the class. The Honda RC 212 Vs are each capable of well over

230 beautifully lubricated horsepower and also enjoy factory support from Honda Racing Corporation in Japan.

www.motogp.com



AZTEC SNOWCATS RELY ON MOTOREX

The French company Aztec has begun building proven, top-quality snowcats at Cat Logistics in Versoud, near to Grenoble. The vehicles are based on components from the successful Japanese supplier Ohara and are powered by the latest Caterpillar diesel engines. When it came to choosing a lubricant partner, Aztec wanted a safe pair of hands, relying on MOTOREX's many years of experience in this challenging application. Every Aztec cat will leave the factory carrying MOTOREX ALPINE LINE fluids (engine, transmission, hydraulic oils, etc.).

www.aztec.fr



BIKE LINE IN SCANDINAVIA

Stians Sport AS in Oslo, Norway, is one of the leading bicycle distributors in all of Scandinavia. The company was founded in 1976 and recently added Sweden to its existing territory in Norway as official importer of Merida bikes. Enthusiasts can find all their cycling needs from A to Z at Stians. Since the beginning of the year, Stians Sport has also imported and distributed the complete MOTOREX BIKE LINE, whose many rapidly biodegradable products make it an ideal product range for close-to-nature Nordic cyclists.



Stian Steen-Ohlsen with son Einar (right).



Photo: R. Lohrer

Ronald Kabella (Director Powersports, left) talks to David Banks from the UK MOTOREX importer. A lot of useful information can be picked up in racing pits.

GATHERING KNOWLEDGE THROUGH MOTOR SPORTS

MOTOREX's involvement in motorcycle sports not only drives the development of custom high-performance racing lubricants, it also yields insights that can later be incorporated into commercial products like those of the MOTO and RACING LINES.

When we see the MOTOREX logo on a racing machine, it may be conventional sponsorship that first comes to mind. Since MOTOREX began working with racing teams in the late 60s, the company's role as lubricant partner has grown steadily. Today, a systematic approach and a process for analyzing the experience gained are key success factors for the teams and MOTOREX alike.

MOTOREX INVESTS KNOW-HOW

The MOTOREX development team consists of specialists from the Engineering and Chemistry departments along with a project manager who acts as a central communications hub. The current project manager is the Director of Powersports, Ronald Kabella. The first step in a collaboration is to analyze the needs of the team and the specific technical requirements. It is not uncommon to find conflicting "performance" and "reliability" objectives. The challenge is to find the right balance between squeezing out the best possible performance (for example by

choosing the optimum viscosity or using friction-reducing additives, etc.) and absolute reliability.

CASE STUDY: CRESCENT SUZUKI

The British Crescent Suzuki Superbike team offers a good example of the value of a capable lubricant partner. In late 2006 Paul Denning, the team owner and Britain's leading Suzuki dealer, contacted MOTOREX. He was looking for a new lubricant supplier because he had not been getting customer-specific advice or the right products for his Suzuki GSX-R1000s and was struggling with the cycles' dependability in races. Although his riders were able to start once their engines were warmed up (to an oil temperature of 80 °C), they were not able to use full power during the race until a certain oil temperature had been reached. Riders who pushed their engine to full power too soon increased the chances of it failing by a huge amount. But in racing, of course, you need full power right from the very start!



All or nothing – Cal Crutchlow (UK) during his “historic” 2007 race using MOTOREX reference oil.

So MOTOREX began working with Crescent Suzuki in January 2007. The established procedure in these relationships is to begin with an evaluation to find the ideal motor oil for the application. In performing this analysis, MOTOREX draws on a database of empirical values obtained while working with a wide range of teams, engines and applications.

REFERENCE OIL AS BASIS

The process always starts with a reference oil that has performed well in the past. In Crescent’s case, MOTOREX V7223 SAE 0W/40 four-stroke motor oil (now called RACING PRO 4T SAE 0W/40 and part of the RACING LINE) was used in initial test bench trials and, once these had been analyzed, on the racetrack. Important findings and requirements were then used to formulate the custom lubricant. Development is a step-by-step process with continual testing along the way. The MOTOREX tribology specialist in charge reaches into his bag of tricks as many times as it takes to achieve the perfect balance of performance, wear and reliability for the team.

FULL SPEED AHEAD FOR CRUTCHLOW

During the fourth race in the spring of 2007 at Oulton Park, Crescent Suzuki superbike racer Cal Crutchlow (UK) took a spill during the warmup lap and had to start from the pit on a nearly cold backup bike. At the time, the evaluation process had just started and the cycles being used in the race had not yet been filled with the new racing oil. The team was still sticking to established procedure at this stage and not running its engines at full power during the first two laps of the race. The backup bike, however, was already filled with the MOTOREX reference oil, and Cal soon made his way up the field from behind, finishing the race in seventh place – after pushing the nearly-cold Suzuki hard right from the start! Contrary to the entire team’s expectations, engine



The exacting evaluation process for a racing motor oil includes regular test bench trials.

measurements taken afterwards showed no excessive wear. After this experience, the racing bikes were immediately switched to MOTOREX racing oil. From this point on, the riders were able to run their engines at full power from the start. Further positive effects included an increase in output by an average of 3 hp and longer maintenance intervals, from the previous 1,200 km up to more than 2,200 km.

EFFECTS ON THE COMMERCIAL PRODUCT

Every collaboration in the different classes (MotoGP, Superbike, Supersport and off-road) leads to new insights into the demands placed on the lubricant. This knowledge is then systematically used to enhance the formulas of certain commercially available products, such as the recently updated four-stroke oils of the MOTOREX MOTO LINE. Or it may be applied directly in the products of the new RACING LINE, which appeals to serious sport riders and track day competitors.

Thus having a MOTOREX logo on a bike can say more about the Swiss lubricant specialist’s involvement than meets the eye. The results are found not only in the winners’ podium, but also in many MOTOREX products. ●



The RACING LINE makes MOTOREX’s achievements in racing lubricants available to any team.

Photo: KTM, J. van Oers



Cyril Despres demanded top performance from his KTM during Dakar 2010 again – despite an outside temperature of up to 45 °C.

MOTOREX CAN TAKE THE HEAT

The MOTO LINE is among the most extensive ranges of four-stroke motor oils in the world. It features several SAE 15W/50 viscosity oils of different performance classes for use in high ambient temperature conditions.

Many years ago motor oil had to be changed from summer (SAE 30) to winter (SAE 10). Today, modern multigrade motor oils automatically maintain the right viscosity over a wide range of temperatures. As engines are built to ever-more precise tolerances, and fuel ef-

ficiency and low emission concerns grow in importance, a trend toward increasingly thinner viscosities such as SAE 5W/30 is becoming clear. At the same time, motorcycle manufacturers and MOTOREX partners are also demanding thicker, higher-viscosity motor oils for regions with high ambient temperatures. MOTOREX therefore supplies SAE 15W/50 viscosity products in different performance classes within the MOTO LINE four-stroke motor oil range.

PRIMARY OBJECTIVE: DEPENDABLE LUBRICATION

Reports indicate that SAE 15W/50 has become the leading viscosity class in places like South America and Australia. In general, higher-viscosity motor oil offers a larger reserve against major losses and greater protection against wear. Moreover, the lubricant film is more stable at higher temperatures and will not fail even under extreme pressures.



MOTOREX's lubrication specialists are up to speed on the latest generation of high-tech additives and base oils.



HIGH VISCOSITY 4-STROKE MOTOR OILS

PERFORMANCE LEVEL	PRODUCT	SAE VISCOSITIES
★ ★ ★ ★ ★	MOTOREX POWER SYNT 4T	10W/50 AND 10W/60
★ ★ ★ ★ ★	MOTOREX CROSS POWER 4T	10W/50 AND 10W/60
★ ★ ★ ★ ☆	MOTOREX TOP SPEED 4T	10W/40 AND 15W/50
★ ★ ★ ★ ☆	MOTOREX BOXER 4T	15W/50
★ ★ ★ ☆ ☆	MOTOREX FORMULA 4T	10W/40 AND 15W/50
★ ★ ★ ☆ ☆	MOTOREX 4-STROKE	10W/40 AND 15W/50

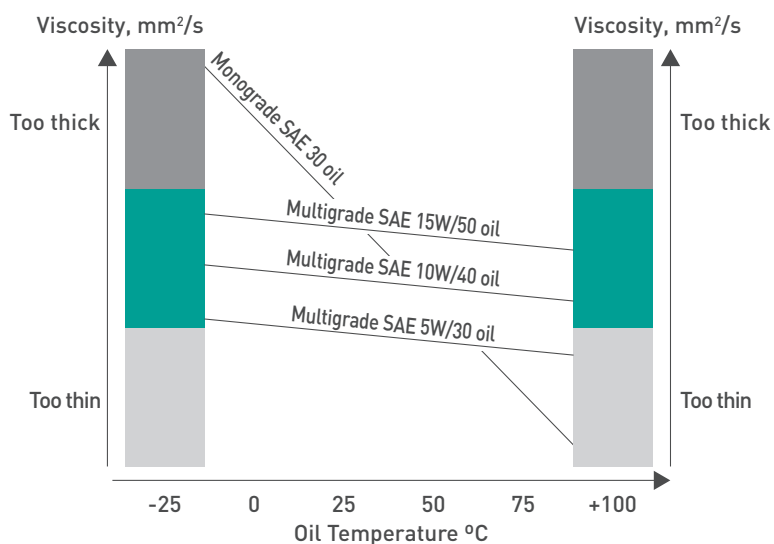
Observe manufacturer's viscosity and quality specifications when choosing which motor oil to use.

FOR EVERY PERFORMANCE CLASS

Another frequent demand from workshops in these countries is for motor oils with the broadest possible field of application. With the new MOTOREX 4-STROKE SAE 10W/40 and SAE 15W/50, for example, even a small workshop can use a single type of oil to service different makes of motorcycles with no special requirements – especially since these oils also meet JASO MA specifications, making them suitable for transmissions and wet clutch packs as well.

The Japanese Automotive Standards Organization (JASO), which sets standards for grades of oil, introduced the JASO MA (non-slipping oil) standard for oils used in engines with a wet clutch. The JASO MA T903:2006 standard further raises quality requirements and prevents clutch slippage in high-performance or rapidly accelerating motorcycles. •

VISCOSITY CHANGE AS A FUNCTION OF OIL TEMPERATURE



Engine operating temperatures rise more heavily in hot regions. The lubricant may therefore become too thin if too low a viscosity class is used.



This restored 1962 Köpfler Trumpf JK is always a hit at vintage agricultural equipment gatherings.

JOSEF KÖPFLI TRACTOR DESIGN: SWISS ENGINEERING AHEAD OF ITS TIME



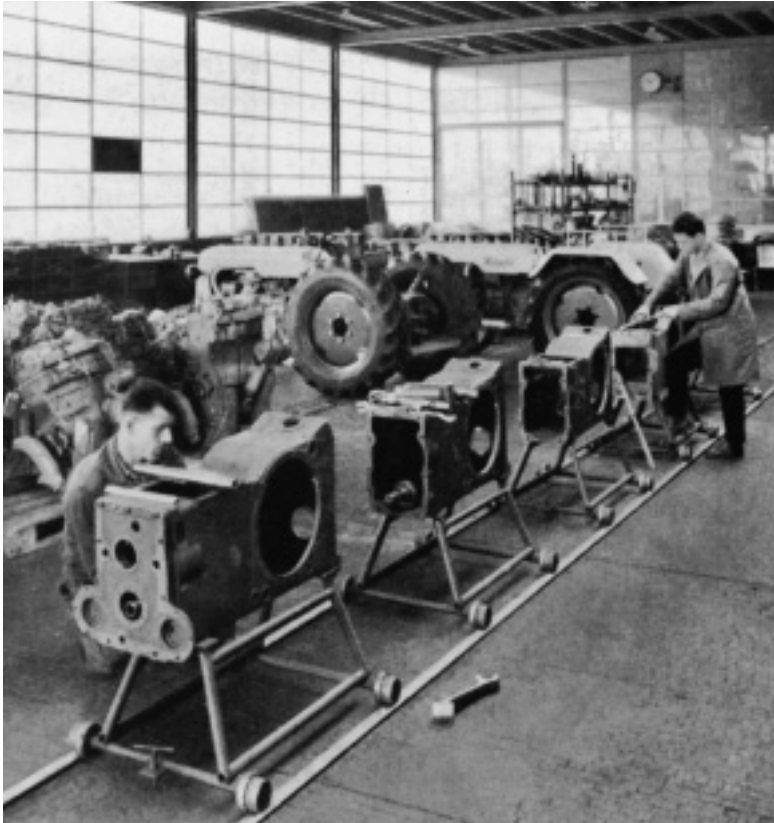
Josef Köpfler
1910–1988.

The range of tractors available in the last century was nothing if not diverse. Many small suppliers tried their luck on the market, some with audacious and often ingenious designs. Among them was Josef Köpfler, who built his first self-designed tractor in 1948. Again and again he developed highly innovative technical solutions for a wide range of applications. Among those drawn to these engineering masterpieces was Arnold Amweg of Ammerswil, who began distributing Köpfler tractors in 1950. Amweg and his son, racer Fredy Amweg, ultimately became the last makers of Köpfler-era tractors under the name Köpfler-Amweg in 1990.

For farmer's son Josef Köpfler, born on July 18, 1910 in Hohenrain near Lucerne, technology and engineering were an abiding passion. He trained as a bicycle and auto mechanic before striking out on his own.

A HOME MOTOR MOWER

His first design was a motor mower with central blade drive for his parents' farm. Mechanizing grueling manual tasks became young Köpfler's personal mission. In 1932



Production of the JK models at the Freienbach factory. The one-piece cast transmission case, which also had a load-bearing function, is clearly visible.



Josef Köpfli put his skills at the service of the Ford tractor plant in Basildon, UK. He was recognized for his efforts by Henry Ford II, son of the Ford Motor Company founder (left in photo).



Josef Köpfli always tested his designs himself. This is a tractor with hydrostatic drive.

he found a job as a mechanic at the Hürlimann tractor factory in Wil. This was where he succumbed to the tractor design bug once and for all, enthusiastically taking on roles ranging from assembly foreman in production to traveling salesman. Along the way he designed his own diesel engine and played a major part in various projects for Hürlimann. Köpfli developed his ingenious high-obliquity front axle with toothed-wheel steering gear in 1948, offering it to his employer for mass production in Hürlimann tractors. When Hürlimann declined, Köpfli went into business for himself, taking the first step in realizing his long-held dream of creating a pioneering tractor under the Köpfli brand.

KÖPFLI TRUMPF IN MASS PRODUCTION

Aside from a few special machines for work on prototypes, Josef Köpfli's engineering practice never had production facilities of its own. Köpfli's tractors and machines were always produced and assembled on a contract basis by various Swiss companies. This had advantages as well as disadvantages. For example, series production of Köpfli designs tended to be a low priority for the plants involved and was constantly behind schedule – until Josef Köpfli moved tractor production to Maschinenfabrik Freien-

bach AG in Canton Schwyz in 1953. Some 450 Köpfli tractors were manufactured there through 1964. The plant produced eight different models with both gasoline and diesel engines.

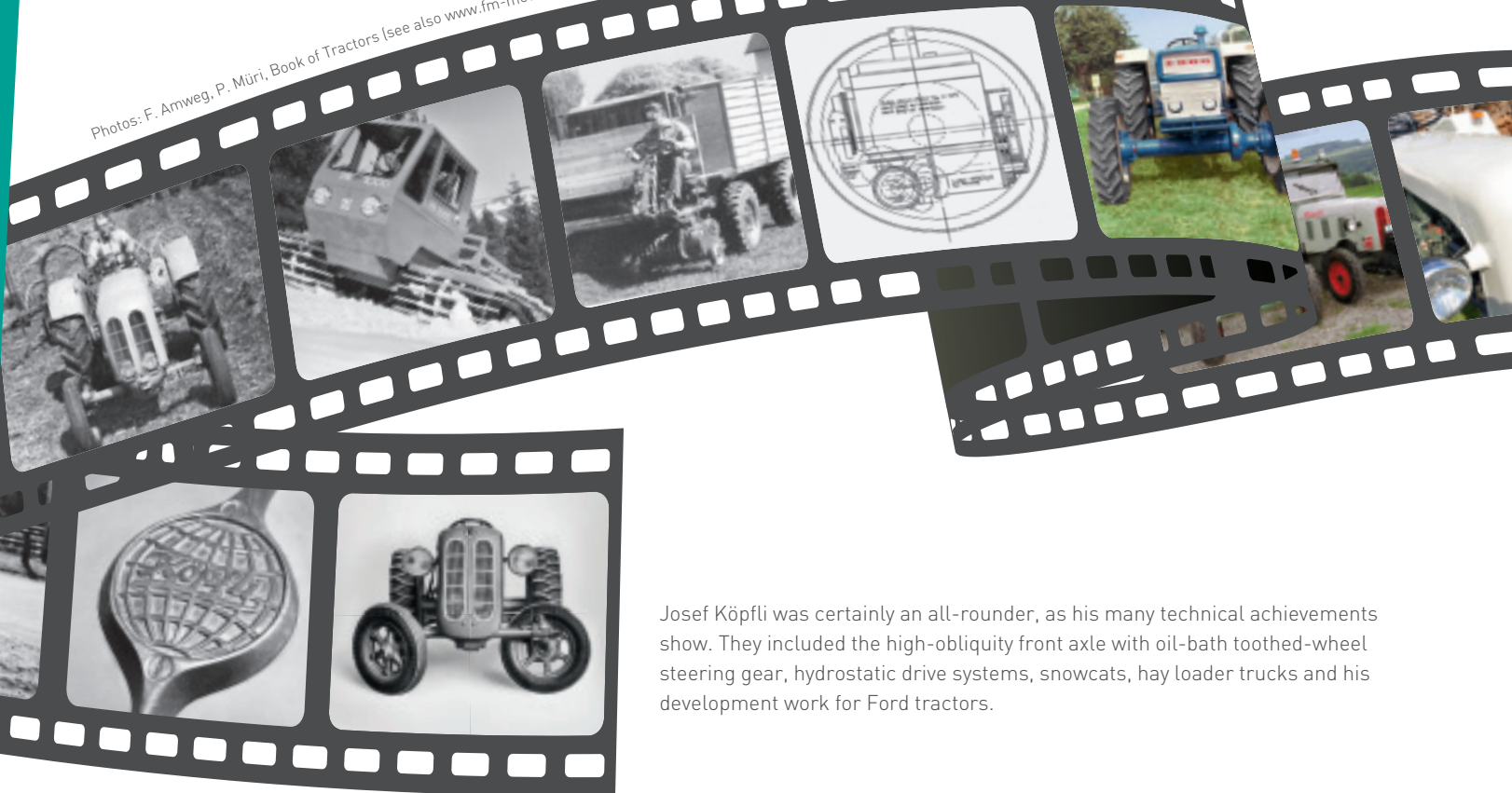
ENGINEER AND INVENTOR IN DEMAND

Josef Köpfli was always searching for better ways to do things, giving constant testimony to his extraordinary inventiveness. This quality drew the attention of world-renowned manufacturers such as Ford, who sought out his services as an engineer and developer. It was no secret that success had eluded Köpfli as an entrepreneur

“Always searching for better ways to do things”

and industrialist, and that he earned his living from development contracts and patents. In the early 1960s Köpfli turned his attention to hydrostatic drive systems, and the opportunity to do tractor development work for Ford from 1964 to 1984 was perhaps one of the highest recognitions afforded the gifted engineer. Köpfli's range of interests was wide. Major areas in which the ever-restless engineer became involved included:

Photos: F. Amweg, P. Mürli, Book of Tractors (see also www.fm-modellbau.ch)



Josef Köpfli was certainly an all-rounder, as his many technical achievements show. They included the high-obliquity front axle with oil-bath toothed-wheel steering gear, hydrostatic drive systems, snowcats, hay loader trucks and his development work for Ford tractors.

- Design of complete tractors and agricultural equipment
- The entire field of drive systems, especially hydrostatic drives
- High-obliquity front axles with toothed-wheel steering gear
- Steering drive axles for Schindler
- Spring accumulators for vehicle hydraulic systems
- Special drive and power take-off systems

Josef Köpfli's inventions were always a few steps ahead of the market. An untiring tinkerer, he often worked at his drawing board into the early hours to get his thoughts and ideas neatly on paper. CAD (computer-aided design) was as unknown in his day as the personal computer itself. Köpfli never finished his final project, a large tractor design with a transverse-mounted engine. He died of heart failure on October 14, 1988 in his home town of Wil, St. Gallen.

AMWEG FOLLOWS IN KÖPFLI'S FOOTSTEPS

Arnold Amweg (1921–2007) sold Köpfli tractors through his workshop in Ammerswil, Aargau starting in 1950 and was a great admirer of Josef Köpfli. Amweg and Köpfli spoke the same language and held a similar view of the world. Aided by his brother, Amweg built his first tractor out of auto parts at age 18, using a room on his parents' farm as workshop. When the tractor was finished, the two engineers were horrified to discover that the door was far too small to drive the tractor out. Their only option was to tear out part of the wall, which their father did not exactly find amusing.

Production of Köpfli tractors at the Freienbach factory ceased in 1964. Amweg acquired all of the remaining components, the spare parts store and production rights. From this point on Köpfli tractors were assembled in Ammerswil, where they were continually refined. Amweg's son Fredy joined his father's business after completing a mechanic's apprenticeship. From 1979 on, most of the parts for the tractors, which now bore the Köpfli-Amweg name, were fabricated in-house. The Amwegs soon began producing their own gears using a high-performance MAAG gear-cutting machine. They improved the design of the transmission, adapting

High tech, 1964-style: the Köpfli Synchronmat. A 75 hp all-wheel-drive tractor with spring-mounted oscillating front axle and front and rear PTO shafts. The radiator was located in front of the driver's feet.





Arnold Amweg on active-service leave in 1941 with the first tractor he ever built. Since there was no ignition switch, the test drive continued until the fuel ran out.



First Köpfler-Amweg Type 475 tractor, 1975, with Perkins four-cylinder diesel engine and front-opening hood of in-house design.



Köpfler tractors can also be recognized by their sound. The transmission's legendary "direct drive" allowed top speeds of up to 70 kph!

it for ever-higher engine output. Since volumes were low, the Amwegs produced a welded clutch and transmission case. The five-speed gearbox featured power downshifting and a creeper gear group. The final tractor models even included electro-hydraulic power shifting. The facility in Ammerswil built about three to four tractors a year, each one tailor-made for the individual customer. Starting in 1978 customers could even order a Schindler steering drive axle (Köpfler system), i.e. a four-wheel-drive Köpfler-Amweg! About 70 tractors in all were built this way. The last Köpfler-Amweg Type 4-90 (with a six-cylinder 100 hp Perkins diesel engine) was made in Ammerswil in 1991.

A GATHERING PLACE FOR KÖPFLER FANS

Besides building tractors, Arnold and Fredy Amweg also developed an excellent reputation for making gears and transmissions. Fredy Amweg is known for repairing even the most hopelessly damaged transmissions. Since his father Arnold's death in 2007, Fredy has been fielding a growing number of inquiries from antique tractor aficionados. Nowadays there are Köpfler tractor collectors far beyond the borders of Switzerland, and many Köpfler tractors within the country are still in daily use. "But these robust Swiss machines hardly ever break down," says Fredy Amweg.

MOTOR SPORTS AS HOBBY

Arnold Amweg once built young Fredy a motorized go-kart in his spare time, laying the foundation for his son's later successful racing career. Father and son together obtained a national racing license and formed a successful team for various mountain races – in a Formula 2 racer of their own design, naturally. Fredy Amweg ultimately racked up several Swiss mountain and Formula 2 championships. MOTOREX has been the Amwegs' lubricant supplier from the very beginning and by now is practically part of the family. ●

GEAR SYSTEMS SPECIALIST



Fredy Amweg still works with his son Thomas in his father's workshop in Ammerswil today. From passenger cars to trucks and tractors, they repair and maintain it all. Increasingly the pair have developed a reputation far beyond the borders of Switzerland as specialists in gear systems. The two-man operation deftly handles even the most unusual requests and manufactures its own custom gear system parts, often without drawings. Besides racers, their clientele increasingly includes owners of historic road and competition cars.

www.fredyamweg.ch



Switching from using printed containers to applying labels to blank spray cans right on the line has been a major boost to the flexibility of aerosol production.

AEROSOL FILLING LINE UPGRADE: CONVEYOR BELT SPRAY PRODUCTION

An extensive modernization program and further quality control improvements are enabling MOTOREX to make its spray production even more activities. A masterpiece in many respects, the explosion-proof production plant not only boasts state-of-the-art infrastructure, it also demands a great deal of knowledge and skill from the people who work there. We took a look at the production process for you.

Aerosol sprays are no exception to MOTOREX's philosophy of maintaining flexible in-house production capabilities. MOTOREX produces sprays from A to Z at its Langenthal plant, one of the few chemical-technical production facilities in Switzerland. First, ingredients are mixed and

jobs. Given the many different SKUs handled here, the logistical challenges are considerable. Once the empty containers, which are delivered to the filling plant by the pallet-load, are ready at the conveyer and each step of the clearly organized set-up checklist has been completed, it's time to switch on the production line.

"Some work still done by hand"

refined according to precise laboratory recipes. Then, directly or with a stop at the warehouse, 1,000 liter containers of product are taken to the aerosol filling plant for the filling process.

95 DIFFERENT KINDS OF SPRAY

MOTOREX produces some 95 different products in spray form. The facility can handle can sizes from 50 to 750 ml. Other companies also need MOTOREX's aerosol filling expertise, so the company frequently takes on contract

EXPLOSION-PROOF FILLING

The fully automated filling line and the product containers were recently moved to a separate room. Through small embrasure-like slits in the wall, the conveyer transports the empty cans to the filling line, where they are filled with precise measures of product and a spray valve and an intake tube is crimped to the mouth of each can. The propellant gas, a natural butane-propane mixture (CFC-free natural gas), is added from a central tank. Then the filled spray can is transported to an automatic scale where its weight is checked against specifications.



1) The empty container conveyor is loaded by hand. That way any damaged cans can be removed before filling.



2) Cans get their product, valve and propellant fully automatically and without the aid of a human operator in explosion-proof automatic filling machines.



3) Next the filled spray cans go through a weighing system that checks each container against the prescribed weight specifications.



5) Finished sprays have to be packed by hand once their lids are on.

THE RIGHT SPRAY VALVE

Next the right spray nozzle for each product is attached and the now fully functional spray can makes its way to the labeling machine. Being able to attach labels to blank metal cans represents a major logistical advance. The printed cans used previously significantly limited the system's flexibility. Now labels can be applied with the right language for the target market along with any mandatory notices. An inkjet printing station prints the correct weight, date and batch number on each can.

SOME WORK STILL DONE BY HAND

Despite the high level of automation, some tasks still have to be done by hand. For example, there are numerous checking and topping-up tasks that still require the human touch. Loading can lids with extension tubes into the inserter machine is one such task. The actual pressing of lids onto the spray can is done by the machine. Now these practical helpers in a can are ready for final packing in specially coded cartons. This too is done by hand. The cartons are loaded onto euro pallets according to a prescribed packing layout and wrapped in plastic film for protection.

SOPHISTICATED INTERPLAY

The coordination of the aerosol filling plant staff is reminiscent of a synchronized gymnastics team – always in the right place at the right moment to keep the production process humming along without interruption. A deft hand movement here, a phone call to the forklift operator for empties there. "That's when production is fun, when things are really chugging along," says one worker forthrightly. ●



4) The still-blank cans get a colorful and informative wrapper in the robotic labeling system.



Niemann + Frey recently began operating from their newly opened logistics center in Krefeld. The newly built infrastructure reflects the company's philosophy perfectly.

NIEMANN + FREY

A HIT WITH DEALERSHIPS

As a professional supplier of motorcycle and scooter accessories in Germany, Niemann + Frey has learned its business from the bottom up. Since its founding before World War II, the company has had just one aim: maximum customer satisfaction. Nor has this commitment lessened under Gerd Frey, sole owner since 1988. The new logistics center that the firm has recently moved into in Krefeld is a further milestone in the systematic implementation of the strategy of the MOTOREX MOTO LINE importer for Germany.

The company, which employs about 60 people, owes its success to its conviction that there is no greater value than absolute customer satisfaction. Niemann + Frey's professionals always listen carefully to their customers and, wherever possible, make their wishes come true. One good example is INA, Niemann + Frey's Internet-based parts search system. INA makes it easy to find parts and accessories for a given motorcycle online. Over 600,000 items for more than 10,000 models of motor bikes and scooters are available at the click of a mouse. Nine out of ten customers currently use this e-commerce system, which was implemented 14 years ago.

REPUTABLE BRANDS IN THE PORTFOLIO

The company's main business is distributing high-quality accessories and spare parts for motorcycles and scooters. With a product portfolio from all over the world and many years of experience, the wholesaler is one of the most important suppliers in Germany for dealers of all makes. Besides MOTOREX, Niemann + Frey imports and distributes Piaggio, Nolan, Sito/LeoVince, Malossi, Lucas, RK, Tsubaki, Pirelli, Continental, Laser, Shad, SW-Motech, Yuasa, NGK and many other well-known brands, always with an eye on top product quality and a competitive price-performance ratio.



The friendly and knowledgeable sales staff help dealerships provide flawless service to ever more demanding end-users.



Over 60,000 articles from every manufacturer are always ready to pick for the dealerships. There is hustle and bustle aplenty at the 16 conveyors and six packing stations.

QUICK AND EASY DELIVERY

When it comes to persuading dealerships to choose them as a supplier, Niemann + Frey has some compelling selling propositions. The company has never hesitated to invest in areas like employee training, communications, customer service or logistics. Indeed logistics has always been a focus of the company's distribution strategy. Orders are generally delivered within 24 hours. In most cases, dealerships need deliveries of spare parts, lubricants or accessories immediately so they can satisfy their own customers in turn.

STATE-OF-THE-ART LOGISTICS CENTER

In February 2010 Niemann + Frey moved into its new logistics center at Adolf-Dembach-Strasse 24 in Krefeld. Niemann + Frey's shipping staff now have 7,500 m² of modern warehouse space to help them provide a perfect delivery service to dealerships. Over eight kilometers of rack space provide room for even more products awaiting overnight delivery.

Over 60,000 articles of all makes are ready to pick non-stop. "Everything customers need exactly when they need it" is Gerd Frey's confirmed motto. It's one that dealerships respond to with enthusiasm.

NIEMANN + FREY'S MULTIPLE SUCCESS FACTORS

- High product quality
- Competitive price-performance ratio
- Seamless sales presence throughout Germany
- Qualified sales staff on-site
- State-of-the-art logistics
- Comprehensive customer service



A strong team (l. to r.): Uwe ten Eicken (Head of Marketing & Distribution), Gerd Frey (General Manager), and Frank Degen (Head of Sales/MOTOREX Product Manager).

SELF-RELIANCE IS KEY

To meet customer needs, the company has even been known to produce its own accessories if no supplier can be found. The latest example is the Eyecase, a luggage case for motorcycles and scooters designed in-house and produced in Germany, distinctive in its high quality and practical, convenient design.

The team in Krefeld have good things to say about their relationship with MOTOREX, whose Swiss lubricants and care products are a perfect match for the importer's basic philosophy. Several times now Niemann + Frey has succeeded in solving lubrication challenges by working closely with MOTOREX and its technical customer service department. This collaboration has also led to a number of partnerships with renowned racing teams.

"Our customers' demands are growing – we're growing with them." Niemann + Frey is always quick with an answer. That's a good quality to have in a working partnership. • www.niemann-frey.de



Disentis-based Distec AG provides quality outsourcing solutions for a wide range of industries. The company constantly invests in new working fluids and technologies.

DISTEC AG DISENTIS:

“TRESOR PMC® WAS PRACTICALLY MADE FOR US!”

Disentis in the mountains of eastern Switzerland: a vacation spot for some, this is where Distec AG produces precision parts, molds, complex assemblies and prototypes for a wide range of applications. It was this versatility that prompted the innovative contract manufacturer to try the pioneering TRESOR PMC® cooling lubricant. “We were persuaded by the very positive results in our tests,” says turning shop manager Guido Bass, and he doesn’t stop there.

Speaking with Bass, you quickly learn that his turning shop handles 100% of the rotational machining spectrum. On a wide range of Schaublin, Tornos, Star, Okuma and Index CNC machining centers, the shop works materials that include steel, chrome-nickel steel, tita-

nium, brass, copper and aluminum of different bar diameters (2–60 mm) and feed dimensions of up to 200 mm. As a contract manufacturer, Distec AG produces an impressive range of parts and requires a true universal, water-miscible, high-performance cooling lubricant.

Turning shop manager Guido Bass shows off a milled aluminum part produced with sharply improved tool service life and enhanced surface quality thanks to TRESOR PMC®.



CUSTOMER REQUIREMENTS

In brief, the perfect water-miscible cooling lubricant for Distec AG’s turning shop must be

- suitable for all applications
- low-maintenance
- high-performance
- suited to all metals
- easy on people and the environment

HOW TRESOR PMC® WORKS

MOTOREX TRESOR PMC® is an exclusive world first and a most welcome revolution in the field of metalworking fluids. When the cooling circuit of a machine tool is filled with MOTOREX TRESOR PMC®, a precious metal catalyst – the patented BacCrack from MOTOREX – hunts down and eradicates bacteria. Tiny particulates of precious metal that are invisible to the naked eye float suspended in the cooling lubricant flow. Bacteria that these particulates encounter along the way are promptly transformed by catalytic action.

The formula for MOTOREX TRESOR PMC® contains no substances that are hazardous to humans or the environment. The product is not only free of boron, bactericides, fungicides, amines and chlorine, it is also classified in the lowest water contamination hazard category, WGK 1.

PROMISING RESULTS

As of our publication date, Guido Bass informs us that using MOTOREX TRESOR PMC® has yielded the following improvements:

- no fungal or bacterial growth
- sharply reduced maintenance requirement and machine cleaning
- very low concentration adjustment rate, < 1.5% of lubricant
- much improved lubricant effect
- up to 30% longer tool service life
- no additional biocides needed
- no spotting on workpieces
- no noxious odors

Bass is particularly pleased that brass and aluminum parts can now be produced overnight with absolutely no spotting. Previously these parts always had to be rinsed by hand immediately after production, which was obviously not an option during unmanned shifts. MOTOREX TRESOR PMC® has outstanding flow characteristics, as illustrated by the negligible lubricant residues left on the workpiece. This also helps reduce loss of fluid flushed out with the swarf.

A WELCOME COMPETITIVE ADVANTAGE

Distec AG has about 85 employees, including 15 apprentices. Once a “remote” Landis & Gyr facility, the company was spun off in 1989. Distec AG is an outsourcing specialist offering comprehensive manufacturing, logistics and administrative solutions for component assemblies, series-production and one-off parts. The company has customers in the laboratory, medical, mechanical engineering and automotive industries.



MOTOREX TRESOR PMC®'s outstanding long-term biostability enables highly efficient and precise work over a long period. Ideal characteristics for successful day-to-day production.

Using MOTOREX TRESOR PMC® has reduced the maintenance effort for the machine tools that use cooling lubricant while simultaneously raising productivity and workplace quality. ●

www.distec.ch



USEFUL TIPS FOR HANDLING COOLING LUBRICANTS

1. Always use a reliable mixer to prepare the emulsion. Be sure water pressure at the tap is sufficient. (Always open the valve all the way. Pressure should be at least 2–4 bar.)
2. Use a refractometer to measure concentration regularly and log the results on a lubricant monitoring sheet.
3. Set average target concentration for working method, 4–9%.
4. Concentration adjustment rate \leftarrow 1% of lubricant – generally, the higher the working temperature, the more often concentration should be checked and adjusted if necessary.
5. Never add pure water or undiluted concentrate!
6. On request, your MOTOREX partner will check and log water hardness and emulsion pH in all your machines.
7. Hygiene: Keep the emulsion absolutely free of all contaminants (remove spilled oil, etc.).

Your MOTOREX partner or Technical Customer Service will be glad to provide more information.



The four different metal samples are put through the test procedure in this special sample holder.

BIO HYDRAULIC OIL OEKOSYNT HEES UNDERGOES “LINDE TEST”

Components of rapidly biodegradable hydraulic oils can have problematic effects on non-ferrous metals. A representative method for assessing non-ferrous metal corrosion by biofluids has been created in the VDMA 24750-compliant “Linde test”.

The “Linde test” was developed by Linde Material Handling GmbH, a KION Group company, and complies with the VDMA 24750 corrosion test procedure of the German Engineering Federation. It focuses on fluids’ behavior in terms of non-ferrous metal corrosion.

THE ROLE OF NON-FERROUS METALS

Nowadays manufacturing tolerances of well below 5 µm and pressures of over 500 bar are the order of the day for hydraulic components. These systems must be scrupulously protected against contamination and particles. Typically, copper alloys are used in high-pressure hydraulic systems for surfaces subject to sliding friction. These include slide shoes and running surfaces in cylin-

der blocks or cylinder bushings. Systematic analysis by hydraulics specialists has shown that copper alloys can be attacked by components in unsuitable biofluids.

THE DYNAMIC “LINDE TEST”

The test process involves continuous surface activation without applying an abrasive load to the base material. A sample holder carrying four samples of different materials (sintered bronze, cast bronze, brass and ball-bearing steel) is agitated in a special test apparatus filled with hydraulic fluid and glass beads. Only one of the samples’ broad surfaces is exposed to the test fluid and glass beads. The metal samples are tested at 200 rpm for 96 hours at 120 °C fluid temperature. Afterwards wear is determined by measuring weight loss. The hydraulic fluid used in the



Whether in vehicles with hydrostatic drive or in hydraulic equipment, OEKOSYNT HEES's top-quality characteristics stand out.

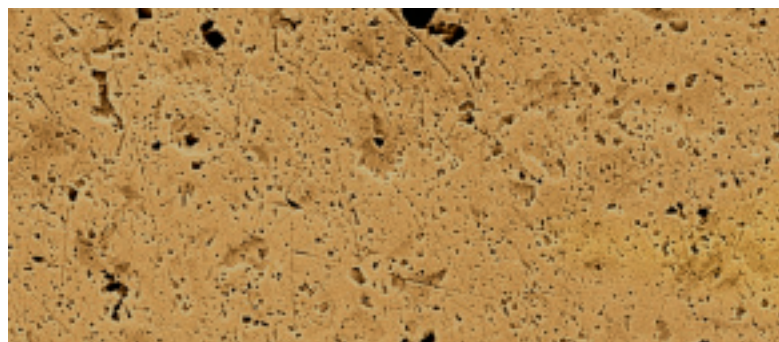
test is also analyzed by a neutral laboratory to determine its condition and content of the various metallic elements.

EXTRAPOLATED TO HOURS OF OPERATION

The sample weight loss is proportional to the sample area in g/m^2 . In tests by Linde on various HEES hydraulic fluids, weight losses from 5 to 35 g/m^2 and more were found. A weight loss of 10 g/m^2 corresponds approximately to a loss of thickness of 1 μm after 100 hours. Since wear is linear over time, a loss of thickness of approximately 0.1 mm may be expected over 10,000 operating hours.

TOP RESULTS CONFIRMED

The non-ferrous metal compatibility test places OEKOSYNT HEES in the lowest corrosion category, corroborating the success of the biofluid in real-world use. For several years, OEKOSYNT HEES has been used in agriculture and forestry, in snowcats, in stationary hydraulic systems, etc. with consistent results everywhere: the outstanding lab results are constantly being borne out in heavy-duty real-world use.

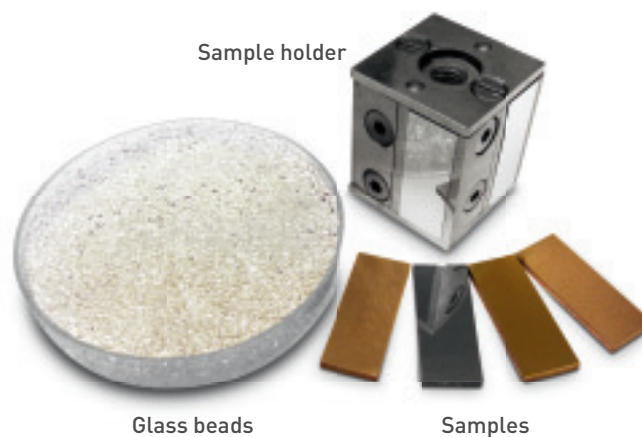


Scanning electron microscope images [secondary electron image, SE] of tested, corroded sample surfaces, in this case sintered bronze.



The samples are weighed before and after testing on an extremely precisely tared scale.

OEKOSYNT HEES performs brilliantly in various tests (Vickers pump test, FZG gear wear test, Bosch-Rexroth, etc.), evidence of its enormous versatility. This broad range of applications, along with its cost-effectiveness, is the key benefit of OEKOSYNT HEES. A product that combines maximum performance and cost-efficiency with effective environmental protection is one that perfectly reflects the MOTOREX philosophy. ●



Sample holder

Glass beads

Samples

Customer service is writ large at MOTO LINE importer MXBR Moto Parts SA – literally. The company, which is based in Veracruz on Mexico's eastern coast, uses five semi-trailers to distribute motorcycle components and accessories made by reputable manufacturers. The trucks

MULTIPURPOSE “REP CAR” IN MEXICO

multitask as warehouses, sales offices and living accommodation for the proud field reps. A scooter is also carried on board for the task of small-scale local distribution. That way parts can even be delivered to retailers and workshops way off the beaten track. The living accommodation is fully air-conditioned, of course, and doubles up as a kind



From left: Otavio Cecetto and Gustavo Caitano from MXBR.

of security center. Notices on the rear of the semi-trailers warn would-be intruders that the trailers are “occupied” and highly secure. •

PUSHED TO BREAKING POINT AT THE ERZBERGRODEO 2010

The 16th Erzbergrodeo, the world's biggest off-road event for motorbikes, was a resounding success once again this year. Many of the world's top Enduro, Motocross, Trial and Rally riders were there, as were the event's partners Red Bull and KTM. With the mountainous terrain of the Erzberg pushing men and machines to their limits, lubrication technology becomes a hot topic. Although it is KTM's lubrication technology partner, MOTOREX's part was not restricted to lubricating KTM bikes. The company's Swiss-made products have proven to be ideal for a large number of other brands and applications. The Erzbergrodeo is Austria's biggest motor sport event now that there is no longer any Formula 1 racing



KTM, J. Edmunds

Taddy Blazusiak/Poland on a works KTM heading for his 4th winning title of the Erzbergrodeo.

in the country. It is held every year in the Styrian town of Erzberg and was where the hugely talented Polish rider Taddy Blazusiak was discovered. •

www.erzbergrodeo.at

OTTOREX



THE NEW MOTOREX SPORT COLLECTION



Men's T-shirt

100% cotton. Attractive print on front and back. Sizes S-XXL.

Article No:

S: 450600 M: 450601
L: 450602 XL: 450603
XXL: 450604



Men's polo shirt

100% cotton pique. Attractive print on front and back. Sizes S-XXL.

Article No:

S: 450605 M: 450606
L: 450607 XL: 450608
XXL: 450609



Women's polo shirt

100% cotton pique. Attractive print on front and back. Sizes S-XL.

Article No:

S: 450580 M: 450581
L: 450582 XL: 450583



Children's T-shirt

100% cotton. Attractive print on front and back. Sizes 92-140.

Article No:

92: 450584 104: 450585
116: 450586 128: 450587
140: 450588



Adult's baseball cap

100% cotton twill, with yellow trim and attractive print.

Article No:

450591



Children's baseball cap

100% cotton twill, with yellow trim and attractive print. Adjustable size.

Article No:

450589

IN MOTOR SPORT, YOU CAN'T AFFORD
TO MAKE COMPROMISES, HE SAYS.
UNLESS YOU DON'T WANT TO WIN.

MATTER & GREITNER

Winfried Kerschhaggl, Motor Sport Director KTM/WP

WHY DO YOU THINK
HE SWEARS BY US?

Being successful in motorcycle racing is like winning a marathon of 100-meter sprints. Because only if everyone on the team is performing at peak level can the rider do his best. That's why Winfried Kerschhaggl, Motor Sport Director KTM/WP, is so uncompromising when it comes to quality. "Promises aren't enough. I need to know that I can rely on someone absolutely." Making the most exacting demands: that's something MOTOREX also stands for. And why we are precisely the right partner for KTM. Find out more about how our oils are helping companies from a wide range of industries to reap success: www.motorex.com

