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We speak automotive

Dear Readers,

I just want to say how proud I feel: Bosch, the world's largest independent supplier of motor vehicle parts, has named us as one of their preferred suppliers. Rhenus Lub is therefore one of the very few partner companies which Bosch commissions to supply high quality lubricants all over the world. We have worked hard to achieve this recognition. After all, our products are developed with great precision to meet the requirements of our customers in the automotive industry. Our special lubricants make it possible to create even the most sophisticated high-tech designs. Indeed, they are now an integral part of automotive applications. What's more,

our water-miscible coolants and forming oils ensure innovation and absolute reliability in the production process. We have attained recognition as a preferred supplier of Bosch because our coolants ensure the stable operation of plants and cost-effective processes. This makes us a safe choice for companies in the automotive and supplier industries. We deliberately focus on selected industries in order to hone our expertise. As such, in our long-standing partnerships we can play an active role in adding value to our customers' processes. In short:

We know our customers' industry.

All the best,
Dr Max Reiners

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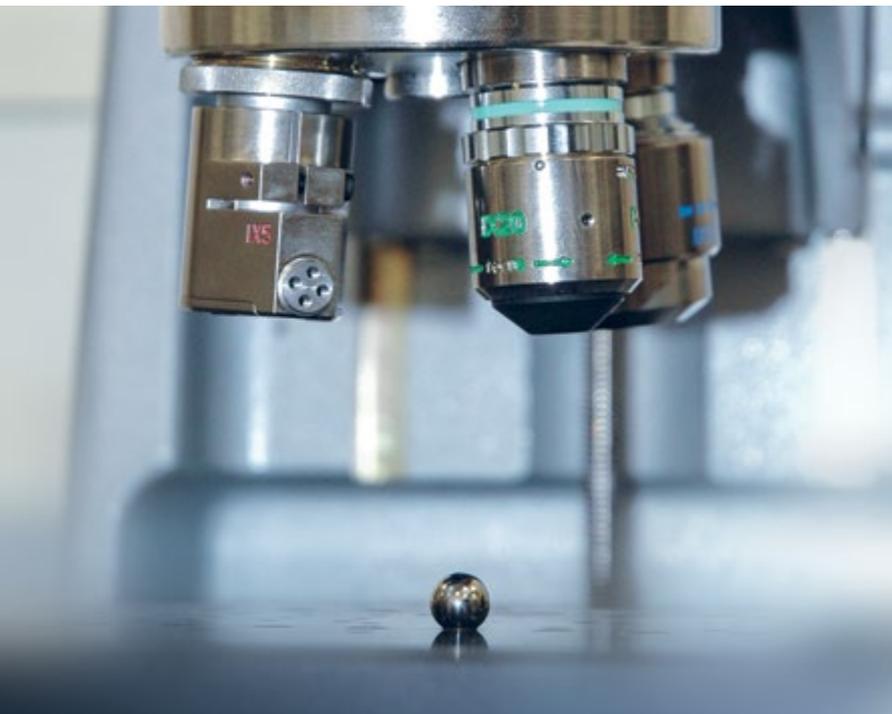
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The new white-light interferometer allows Rhenus Lub to measure surface profiles even more quickly and accurately.

Research and development

Innovative analytical device helps to cut costs

In order to minimise the friction coefficients of components such as wheel bearings even more effectively, Rhenus Lub has invested in the procurement of a white-light interferometer. This analytical device enables specialists to measure surface profiles with far greater precision than with conventional technology. At the same time, the employees in Rhenus Lub's state-of-the-art laboratories are able to measure metallic abrasion in all kinds of bearing more accurately and more quickly. Based on these results, high-performance lubricants are being developed to reduce the amount of operating energy required.

For more information:
udo.quotschalla@rhenusweb.de

Automotive

Maximising output with maximum efficiency

The automotive industry and its suppliers place high demands on the coolants they use. The coolants are intended to prolong machine lifetimes, improve surface quality and, in doing so, optimise cost-effectiveness and protect people's health and the environment.

As a partner of leading companies in the international automotive industry, Rhenus Lub has been on a mission for many years now to reconcile ecological considerations with economic objectives. To this end, the lubricant expert has developed high-performance forming oils, innovative water-miscible cool-

ants and tailor-made high-performance lubricating greases. The lubricants are used in a range of applications, including aluminium housings for ABS systems, steel gear wheels, cast-iron valve units, state-of-the-art window regulators and actuators. Rhenus Lub's experienced employees are well drilled in selecting just the right products and are commissioned by customers to ensure that even the most heavy-duty machining processes run like clockwork, while keeping top-ups to a minimum.

For more information:
kleinmann@rhenusweb.de

Rhenus Lub is certified in accordance with ISO TS 16949, ISO 9001, ISO 14001 and OHSAS 18001.



Accolade

Preferred Supplier Award

The Bosch Group – a global client of Rhenus Lub

In recognition of its outstanding achievements and high level of expertise in the field of lubricants and coolants, Rhenus Lub has recently been named a "preferred supplier" of Robert Bosch GmbH.

Product quality, pricing, reliability and continuous improvement are key categories in which suppliers must excel before they can receive this title from Bosch. Rhenus Lub is therefore one of the few preferred lubricant suppliers of the Bosch group on the global market.

Rhenus Lub has already been working in close collaboration with the international technology company for many years now. Be it Germany, Brazil, India or China – Bosch uses Rhenus Lub's water-miscible and

non-water-miscible lubricants in demanding metal-machining processes all over the world. Its portfolio ranges from the supply of environmentally friendly and easy-to-use products to specially developed, tailor-made high-performance lubricants for particularly demanding aluminium-machining operations.

For more information:
kummerow@rhenusweb.de



Bosch has distinguished Rhenus Lub as a "preferred supplier" in terms of quality, loyalty and innovation. Dr Max Reiners, owner of Rhenus Lub (right), and Jörg Kummerow, Manager of Sales for Southern Germany at Rhenus Lub (left) received the certificate from Philipp Storch, Purchasing Manager of Corporate Sector Purchasing and Logistics, Petrochemistry at Robert Bosch GmbH (centre).

rhenus lubriningering

A turbo for optimised production

The future belongs to the turbocharger – its exhaust turbine makes piston engines more efficient. That's why BorgWarner, a world leader in the manufacture of turbochargers, is celebrating record-breaking sales. In order to ensure the smooth interplay of all the turbocharger's parts, it is necessary to achieve an extremely high level of concentricity, circularity and blade geometry during the machining process. For 15 years now, BorgWarner has been trusting in Rhenus Lub's coolants and state-of-the-art fluid management systems in its processes. Meinhard Kiehl, Director of Marketing, Product Management at Rhenus Lub said: "Our process expertise and high-performance lubricants are available on request wherever they are most needed – be it in Kirchheimbolanden, Hungary or China."

The high-performance lubricant rhenus TS 44 has been specially developed for demanding machining and grinding operations. The coolant has impressed BorgWarner with its good flushing performance and reliably removes chips and grinding swarf from the workpiece. But what is really important is that long-term stability is achieved without using any formaldehyde-releasing biocides; non-volatile amines ensure a highly stable pH value when the coolant is used. Another benefit is the unsurpassed skin compatibility for the machine operators.

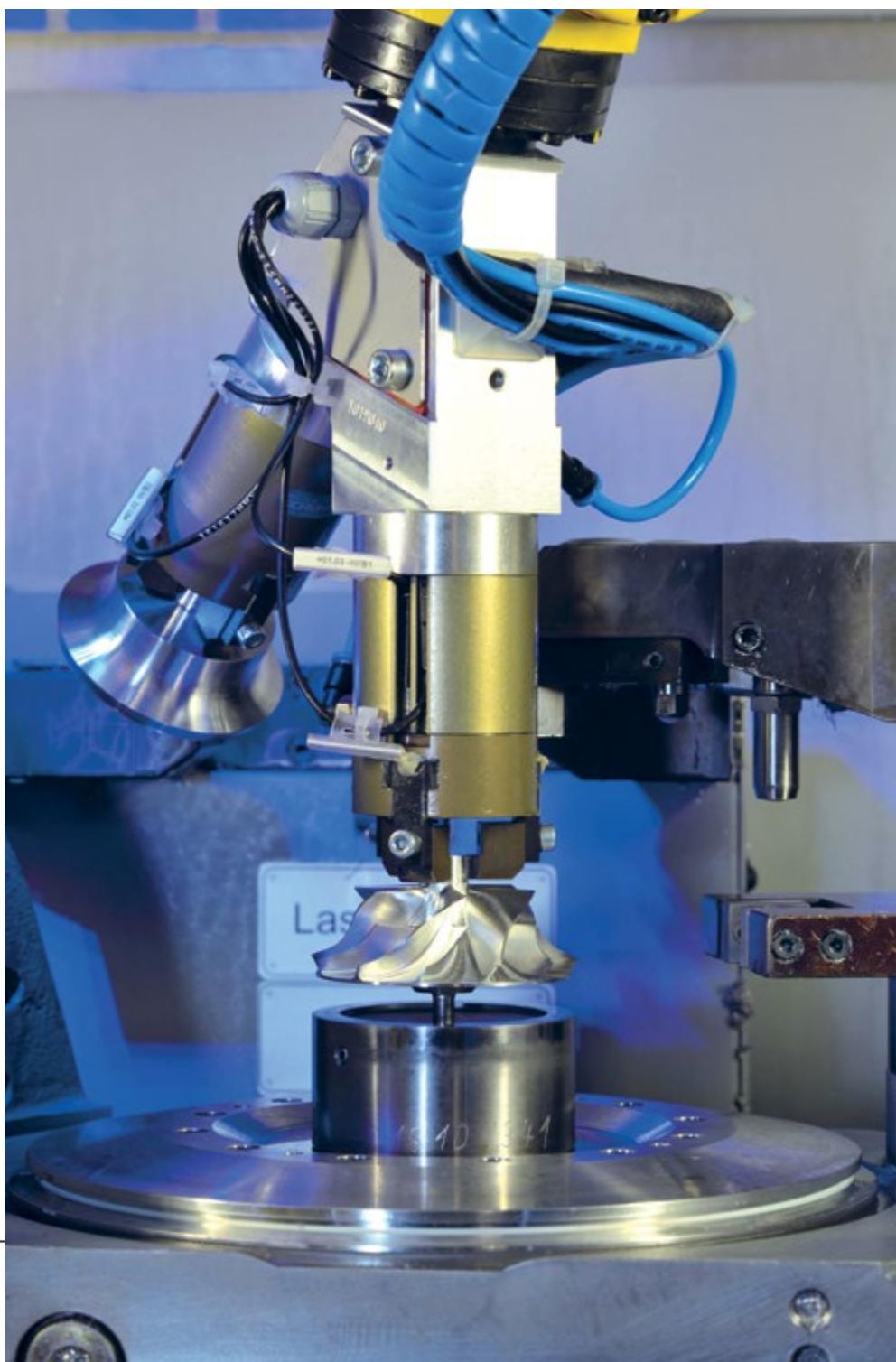
rhenus lubriningering – The turbo for processing

Only by applying the right fluid management system is it possible for state-of-the-art products such as rhenus TS 44 to exhibit their benefits to the full. rhenus lubriningering has proven its worth at BorgWarner as a turbo for continuous process optimisation.

This concept is based on a new kind of benchmark system which Rhenus Lub has specially developed for the use of fluids. From a range of up to 20 different values, such as downtime, adjustment volume, use of bactericides and tools, a number of process-specific parameters are selected with a view to reducing the cost of parts and increasing output.

"With BorgWarner we have once again demonstrated the successful combination of high-quality coolants and a sophisticated

fluid management system", reports Rüdiger Fath, the project engineer who, for ten years now, has been supervising the entire machining process together with experts from BorgWarner. Every step made in the production of turbocharger parts undergoes continuous and close monitoring with the aim of making the process as transparent, safe and cost-effective as possible.



In order to ensure the smooth operation of all the turbocharger's parts, it is necessary to achieve an extremely high level of concentricity, circularity and blade geometry during the machining process.

Team work creates transparency

During round-table meetings, all the process parameters have been carefully analysed in terms of coolant selection, procurement, warehousing, preparation of emulsions, adjustment, maintenance, extraction, leaks, part handling, recycling and chip removal. These "fluid" meetings are held every three weeks. They are attended by experts from BorgWarner, Rhenus Lub and a local service provider who monitors and adjusts the coolants. During these meetings each and every project, achievement and problem is discussed in great detail, targets are agreed and tasks are assigned. Rüdiger Fath said: "rhenus lubrining means very close collaboration between user and lubricant supplier. This benchmark system entails painstaking work and constant fine adjustment. But the true secret of rhenus lubrining is the way it views all the different factors as a whole and knows exactly how they interact".

"The true secret of rhenus lubrining is the way it views all the different factors as a whole and knows exactly how they interact."

Rüdiger Fath,
Project Engineer at Rhenus Lub

Setting the right parameters for success

In order to lower the costs of maintaining and adjusting the coolant, the fluid management team has collected and analysed over 17,000 measurements. The experts eventually found that these values deviated from the target values by just 0.2%. "This means that the number of top-up rates required to adjust the coolant is continuously falling and the process is even more stable", explains Project Engineer Rüdiger Fath.

This success is a credit to BorgWarner and Rhenus Lub: by using rhenus lubrining

they have managed to reduce coolant consumption by half despite ever-increasing production volumes. BorgWarner also considers the introduction of rhenus lubrining to be a quantum leap in terms of process optimisation. Not once in recent years has production been disrupted by a fluid-related fault that could not be rectified with the system still running. This benefit carries great weight – after all, nothing is more costly for a company than a stoppage in production.

For more information:
kummerow@rhenusweb.de

Coolants

Automotive expertise at a glance

A number of renowned companies in the automotive industry have relied on high-performance lubricants from Rhenus Lub for

many years. Backed up by a wide range of innovative products, Rhenus Lub brings stability, cost-effectiveness and health pro-

tection to the metal-processing industry in many countries of the world. Below are some of our top coolant products.

For more information:
kleinmann@rhenusweb.de

Tried and tested in practice – rhenus coolants for the automotive industry

	Type	Products	Application
water-miscible coolants	amine-free/boron-free	rhenus FS 750	universally compatible
		rhenus FU 750	versatile, for heavy-duty machining operations
		rhenus FU 70 W	for special and demanding applications
	amine-based/boron-free	rhenus TS 44	universally compatible
		rhenus TU 43	for demanding machining operations
		rhenus R-FLEX*	applications range from grinding to deep drilling
non-water-miscible coolants	low viscosity, non-volatile	rhenus CXS	full-form grinding
		rhenus EP 10 M	suitable for machining operations, including grinding

Innovations for production – from Rhenus Lub

Rhenus Lub always gives its customers a crucial edge in terms of performance, cost-effectiveness and sustainability. The company achieves this by developing innovative high-performance lubricants.

news regarding coolants

rhenus TS 420 is a new addition to Rhenus Lub's range of boron- and formaldehyde-free products. The water-miscible coolant excels both in the grinding and in the machining of cast iron, aluminium and steel thanks to its stability, reduced drag-out loss and excellent flushing properties.

rhenus XY 130 HM is the name of the new water-soluble coolant in Rhenus Lub's amino and boric acid-free series. While also being free of formaldehyde, this hard metal abrasive is odourless, very foam-inhibited and excels in its cooling and flushing properties.

News regarding special greases

rhenus LKO 2, this new special lithium complex soap grease sets new benchmarks on the market with an unprecedentedly low friction coefficient of less than 0.04. Even at room temperature, its innovative and extremely powerful additivation is highly effective at reducing friction in bearings under even the heaviest of loads. rhenus LKO 2

is therefore suitable for demanding applications such as the lubrication of car wheel bearings, helping to improve energy efficiency and reduce CO₂ emissions.

For more information about coolants:
kleinmann@rhenusweb.de;

For more information about high-performance lubricating greases:
tkaczuk@rhenusweb.de



In Rhenus Lub's state-of-the-art laboratories, highly qualified employees are constantly researching ways to develop innovative high-performance lubricants.

Point of view



Coolants

Always ask about boron!

Rhenus Lub provides the metal-processing industry with a wide range of high-performance lubricants, including its products, which are free of amino^{RL} and boric acid. There has been great uncertainty among users ever since the EU authorities made boric acids and borates subject to mandatory labelling. Many have doubts about their inclusion in the candidate list for SVHC ("Substances of Very High Concern"). The situation is being exacerbated by the different methods of providing verification: no-one can be sure whether or not

coolants contain free boric acid, even if there is no information about it in the safety data sheet. A boric acid adduct, i.e. a chemical composition that contains boric acid, may not even be subject to mandatory labelling under certain circumstances. The problem here is that boric acid adducts have been known to undergo a reversible reaction with water, leading to the production of free boric acid.

At Rhenus Lub, we take a clear view of the issue: If you, as a company or user, want complete certainty, then just ask. All manufacturers know whether their products contain boric acid in free or compound form.

Rather than asking about boric acid, ask the crucial question: does it contain boron or not?

At Rhenus Lub, we will give you clear answers. We guarantee that we will provide you with boron-free coolants that have ideal properties in terms of long-term stability, preservation and health protection. We give you the choice!

Daniele Kleinmann

Certified engineer, Head of Product Manager

For more information:
kleinmann@rhenusweb.de

Now included in the T&Cs

Guaranteed REACH compliance

REACH, the EU-wide regulation governing the registration, evaluation and authorisation of chemicals (regulation [EC] no. 1907/2006), remains an important industry topic. The good news is that Rhenus Lub customers are in good hands. All the substances contained in Rhenus Lub's high-performance lubricants and additives have already been registered in accordance with the strict rules set out by REACH. The specialist manufacturer of high-performance coolants made sure of this at an early stage, together with its suppliers and partners. What's more, all the chemical products used in the high-performance lubricating greases from Mönchengladbach are also pro-actively researched, documented and registered. Customers can therefore rest assured that the quality and availability of all of Rhenus Lub's lubricants will remain unaffected by REACH. This pledge has now



even been included in Rhenus Lub's terms and conditions (T&Cs).

For more information:
udo.quotschalla@rhenusweb.de

Dörries Scharmann

A shared philosophy and joint development

Rhenus Lub recently initiated a development partnership with the machine construction company Dörries Scharmann, which is also based in Mönchengladbach. As part of the Starrag Group, Dörries Scharmann is one of the world's most technologically advanced manufacturers of precision machine tools

for milling, turning, drilling and grinding small, medium-sized and large workpieces made of metal and composites.

The two companies share the philosophy that a holistic approach must be adopted in every machining operation to guarantee the user the best possible result. In this way the partners can achieve their objective to make each and every machining process as stable, cost-effective, efficient and sustainable as possible. This holistic approach covers each and every factor in the process and, most notably, the interactions between the machine, tool, workpiece and coolant.

Meinhard Kiehl, Director Marketing, Product Management at Rhenus Lub confirms: "It's a question of selecting the right coolants." The development partnership therefore entails extensive tests on all of Dörries Scharmann's machines. The company's customers include international companies operating in the fields of aerospace, transport, industry and energy. Dörries Scharmann promises that this partnership with Rhenus Lub will mean a significant step forwards in its productivity for customers.

For further information:
kiehl@rhenusweb.de



Experts from Dörries Scharmann visited Rhenus Lub and discussed how their joint efforts could substantially boost productivity for customers.

NILS S.p.A.

Well informed to maximise customer benefits



The sales team of Nils in Peschiera del Garda supports customers across Italy with exceptional expertise and competent service.

 Being a leading provider of coolants, NILS S.p.A. is an important partner of Rhenus Lub in Italy. The two companies have been working closely together for many years with the aim to increase the added value to customer processes. This partner in Italy was also recently visited by a team of specialists from Mönchengladbach. They brought with them extensive information on high-performance products and the innovative benchmark system developed by Rhenus Lub. Offering a complete package that includes exceptional expertise, competent local service and suitable coolants, the experts at NILS have been serving their customers across Italy for over 40 years. As part of this service, these top-class consultants always focus on ensuring long-term benefits for the customer.

For more information: [nils@nils.it](mailto:nilS@nils.it)



Sales specialists from Lubrichem learned about Rhenus Lub's latest product and process innovations.

Lubrichem

A strong partnership in China and Taiwan



In Asia too, customers can benefit from the wide

product range and extensive expertise of Rhenus Lub. The company is backed up in China and Taiwan by Lubrichem International Trading Co. Ltd., a high-performing partner that can draw on Rhenus Lub's highly professional international support. A team from Rhenus Lub recently visited Lubrichem and informed the staff there of the latest product and process innovations. A joint visit by major customers gave valuable insights into the special demands placed on local production processes. Bound by their strong partnership, Lubrichem and Rhenus Lub will thus be able to offer their customers an even more comprehensive service in future.

For further information: acmerade@ms8.hinet.net

Ecool TFM

Rhenus Lub and Ecool add value to Czech industry



First class products, a holistic approach to processes and a shared sales philosophy – a true recipe for success, drawn up by Ecool and Rhenus Lub to generate real added value for their customers in the Czech Republic. In Hungary Ecool is a market leader for high-performance lubricants and holistic process solutions. Now the lubricant specialist is working together with Rhenus Lub in the Czech Republic too, realigning its customers' processes by means of

a comprehensive fluid management system in order to optimise their use of lubricants. For the customers this represents an attractive new addition to the wide range of first-class products from Rhenus Lub. "There is particularly high demand for this on the Czech market," said Gezá Németh, Managing Director of Ecool TFM in the Czech Republic.

For further information: info@ecool-group.com

Preview

Outstanding quality from Europe's most modern grease factory

With Europe's most modern grease factory, Rhenus Lub sets new benchmarks in the product quality of high-performance lubricating greases. The secret to the company's success lies in its great expertise and also in its automated process manage-

ment. In the next edition, which will be released in August 2014, you can find out how Rhenus Lub will continue to refine its production processes in future and how you, as a customer, can benefit from this.

Legal note

Editor:

Rhenus Lub GmbH & Co KG
Erkelenzer Straße 36
41179 Mönchengladbach
E-Mail vertrieb@rhenusweb.de
www.rhenuslub.com

Contact:

Meinhard Kiehl
Telephone +49 2161 5869 - 84

Editor:

Relations & Co
Telephone +49 2161 4064 5-0
www.relations-co.de

Design:

Alldesign
www.alldesign.de