



driven by technology

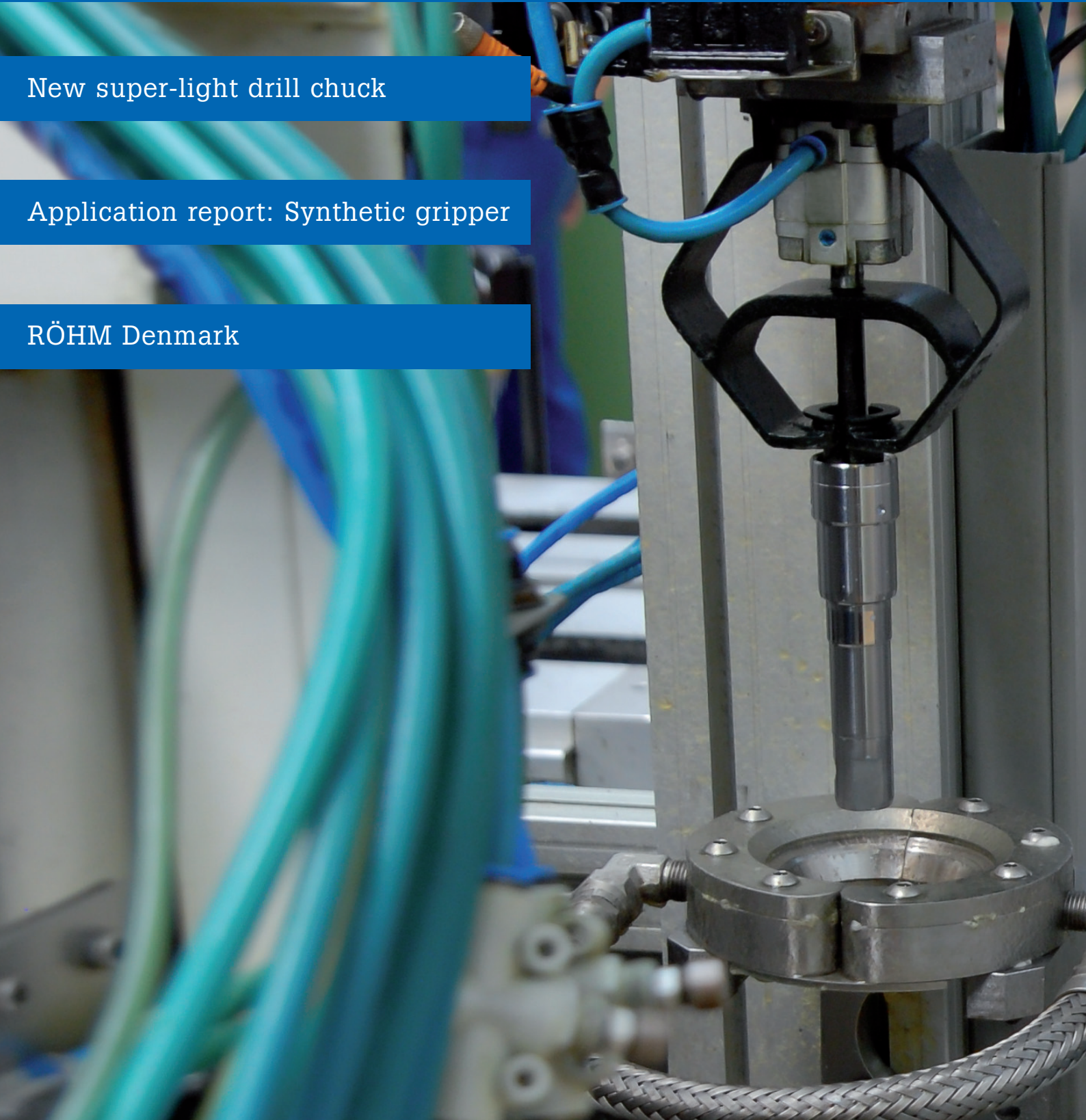
News

Issue 2 / 2013

New super-light drill chuck

Application report: Synthetic gripper

RÖHM Denmark



The Customer Magazine of the RÖHM Group



Dear Readers,

Anyone who stops improving has lost any claim to be good. Following this maxim, we are consistent in analysing our customers' requirements when it comes to premium quality clamping and gripping technology. Where it proves necessary, we adapt our assortment to changing customer needs. This has been the case with our new Orange Line, for example. As a result of standardisation and the omission of special functions, we have succeeded in launching on the market standard articles with an outstanding cost-benefit ratio, without compromising RÖHM's high standards of quality.

The top priority for us at all times is maximum quality, with close attention to detail. A quotation from Henry Royce sums up our philosophy admirably: 'Small things make perfection, but perfection is no small thing.'

It is not just in relation to product portfolios, however, that the times are changing. Incoming orders in the mechanical engineering sector are subject to increasingly severe cyclical fluctuations. The important thing in response to this is to use our excellent production planning and control systems to keep throughput times low and so shorten delivery times as far as possible.

Let me just say something at this point about the general state of the economy. The revival of German industry is making

progress. In the third quarter the country's overall industrial output rose by another 0.3 percent. While growth impulses came from internal demand, the comparatively weak foreign trade component checked the growth of the GNP. All in all, the revival of the economy has taken firm root and widened its scope. Advance indicators point to slightly accelerated growth in production for the months to come.

So we are looking to the coming year in a mood of restrained optimism, as well as looking forward to continuing our excellent partnership with you.

In the name of the entire RÖHM group of companies, I would like to thank you for the work we have done together in the year 2013.

In conclusion, I wish you and your families a happy and blessed Christmas, and all good things in 2014!

Yours sincerely,



Michael Fried, Dr.-Ing.
CEO

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New head of the Marketing & Sales business unit

Since 1 December 2013 RÖHM's Marketing & Sales division has had a new manager. Mr Sven Haag, 43 years of age, will be responsible for this business unit from now on. With the support of his team, he aims to continue building on the company's market position.



Sven Haag has become the new manager of the Marketing & Sales division

Warm congratulations, Mr Haag, on your new appointment! What departments have you been responsible for in the past?

Many thanks. Before taking up this appointment as Marketing & Sales manager at RÖHM, I had already been lucky enough to exercise a number of exciting functions in sales, marketing and strategic business planning. Though these tasks

and functions were quite varied, the combination of machine tools and customers with high expectations against the backdrop of a volatile market was common to all.

What motivated you to switch to the RÖHM Group?

Personally I have been acquainted with the RÖHM company for something like a quarter of a century. It has been a presence and an inspiration to me as a source of new ideas in connection with various tasks. Outstanding product quality at a price compatible with the market, coupled with excellent delivery services – these are already typical of RÖHM today, and will continue in future to set us off from our Asian competitors and other companies in Europe.

What challenges are there in our industry, and how are you dealing with them?

The ever shorter product lifecycles, and the need of manufacturing flexibility that results, are making lasting changes to the industrial scene. The establishment of product platforms will be a key factor, with a view to keeping development and final product costs under strict control.

What future trends do you see for the machine tool industry? What is likely to be their effect on RÖHM?

The matter of interfacing and networking between the machine tool and the workpiece will remain a long-term concern for the industry. As this is what RÖHM's key competence amounts to – from drill chucks and intelligent gripping technology right through to the electrical clamping tools of our e-EQUIPMENT series, to mention just a few highlights – we are already looking forward to making an active contribution to the direction of this trend.

You have only just taken up your position – so this is the perfect time for introducing new approaches. What new ideas do you have to contribute?

I hope you will understand, but I would rather see my ideas as a final product of RÖHM than as the product of a competitor. What I can tell you at the present time is that our customers and their requirements will always be central focus of our attention.

Would you let us into any secrets about Sven Haag's private life?

Of course I could say something about optimised work-life balance (*smiles*). I am a family person, and I give myself time to live it out and enjoy it. Whether on a bike or a hike or over a good meal doesn't matter, it's the quality of the time you spend that counts.

Represented worldwide: RÖHM at international trade fairs

In the year 2013 RÖHM was represented at all the important international trade fairs, from India to Brazil. In particular, the EMO in Hannover was once again a complete success. With some novelties and a brand new product line, RÖHM had quite a bit to offer the professional public.

CEO Dr.-Ing. Michael Fried comments: 'Innovations specially aimed at our customers' needs, a wide range of clamping and gripping equipment and a new product line, notable for its supreme quality combined with an unbeatable cost-benefit ratio – these were our high-

lights at the trade fairs. Our international presence was again quite marked this year, and next year we have even more to look forward to. In 2014 RÖHM will be attending as many as 23 international trade fairs. This will undoubtedly be a challenge, but it is also a unique opportunity for reaching out to customers all over the world.'

Allow yourself to be impressed by visiting us at a trade fair in 2014!



RÖHM's stand at the EMO trade fair in Hannover was particularly popular.



At the CIMT in Beijing RÖHM presented the very best in clamping technology.

Trade fairs in 2014

In 2014 RÖHM will again be present at numerous trade fairs. Just pay us a visit!

INDUSTRIE, Paris – 31.03. to 04.04.2014
HANNOVER MESSE, Hannover – 07.04. to 11.04.2014
MACH, Birmingham – 07.04. to 11.04.2014
SIMTOS, Seoul – 09.04. to 13.04.2014
SIAMS, Moutier – 06.05. to 09.05.2014
MECANICA, Sao Paulo – 20.05. to 24.05.2014
BIEHM, Bilbao – 02.06. to 07.06.2014
MEDTEC, Stuttgart – 03.06. to 05.06.2014
ITM, Poznan – 03.06. to 06.06.2014
AUTOMATICA, Munich – 03.06. to 06.06.2014
METALLOBRABOTKA, Moscow – 16.06. to 20.06.2014
EPMT, Geneva – 17.06. to 20.06.2014
CIMES, Beijing – 18.06. to 22.06.2014
IMTS, Chicago – 08.09. to 13.09.2014
MAKTEK, Istanbul – 14.09. to 19.09.2014
AMB, Stuttgart – 16.09. to 20.09.2014
MSV, Brno – 29.09. to 03.10.2014
BIMU, Mliian – 30.09. to 04.10.2014
MOTEK, Stuttgart – 06.10. to 09.10.2014
METALMADRID, Madrid – 29.10. to 30.10.2014
JIMTOF, Tokyo – 30.10. to 04.11.2014
PRODEX, Basel – 18.11. to 21.11.2014
EMAF, Oporto – 19.11. to 22.11.2014
... and numerous other in-house exhibitions

Internal gripper for electronic steering systems

Synthetic gripper from RÖHM come to the rescue of workpiece transport

To avoid any risk to its ambitious production target for the production of steering shafts, the Felss Rotaform company needed a reliable system for carrying workpieces between the processing stations. The drying process at the end of the proceedings was particularly challenging. The workpieces had previously been handled with external grippers, but the results were unsatisfactory, and the first version of an internal gripper kept losing parts. This was where RÖHM's gripping technology experts stepped in, with a new design of the standard synthetic gripper. As a result, the finished steering shaft can now be passed on to quality assurance reliably and with repeatable results. The spe-

hicups.' Mr Bongard is a development engineer at Felss Rotaform. The solution supplied by RÖHM has now made it possible for the Swiss company to see the case as closed, and they are confidently looking forward to meeting their annual production target.

Round processing specialists

The drastic rise in the demand for steering shafts is connected with the increasingly widespread use of electronic steering systems. This 'dual pinion' steering technology is being built into more and more cars in the form of active or direct steering, and the steering shaft is an important safety component

– though its precise function is something the developers like to shroud in mystery. As the Swiss production site of the Felss Group and a specialist in reshaping and round processing, Felss Rotaform AG manufactures the products reliably and delivers them on schedule to the customer, who is an internationally active producer of steering systems.

In the course of manufacturing the workpiece is brought into its final form, following a succession of steps – which include rotary swaging, turning, milling and hardening. After being given a final wash, the part is hung in an eyelet to be blown dry – and this is where the gripper functionality presents a challenge.



Discussions with the customer resulted in the solution – using a piston which provides additional clamping strength to the mandrel.

cial solution did not come with a high price tag, either, thanks to an unusual and surprising design feature.

'We had begun to doubt whether there could even be a solution for the simple-seeming problem at the end of the steering shaft production line,' Dietmar Bongard recalls. 'But RÖHM's synthetic gripper has been doing its job reliably for more than half a year now, without any

Gripper solution for internal system sought

The workpiece is plunged into the airstream of the eyelet and then withdrawn again. This should dry the surface sufficiently. But with the external gripper used previously, the place where the workpiece was held always showed some residual moisture. 'Besides which the metal grippers were not entirely reliable,' Mr Bongard recalls. Half way through 2012, Rotaform switched over to an internal gripper. This



consisted in a mandrel with a rubber gaiter positioned on the top third of it. The rubber could be inflated, so making a tight fit with the workpiece. This worked in theory and in a test situation, but when it came to the raw production environment there were difficulties. The rubber gaiter was not capable of doing the job properly, and regularly came apart after just a few weeks. Consequently the gripper kept losing the workpieces. 'Regularly replacing the gripper would have resulted in unacceptable costs,' Bongard says. So another solution had to be found.

When the deputy managing director of RÖHM's Swiss branch, Damiano Casafina, visited the company, the problem was discussed. As a reliable supplier of clamping solutions with a long track record behind it, RÖHM had always proved supremely competent in this area. And the company was already familiar with RÖHM's gripper department. But as in this case there was no standard solution off the peg, the designers had to adapt the individually customisable RRMP synthetic gripper to the special requirements of the situation. When the first gripper was installed in November 2012, it immediately became apparent how simple and effective the solution was. Working reliably and rapidly, a synthetic mandrel grips a workpiece on the inside every eleven seconds, passing it securely through the eyelet in 21 weekly shifts before transferring it, now completely dry, to another workpiece holder.

A solution to which all contributed

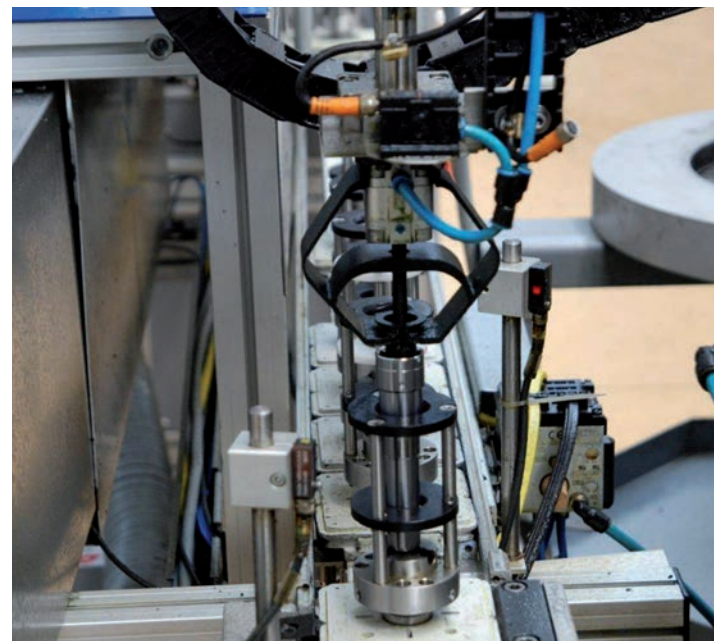
'Of course it wasn't quite as easy as that sounds,' Mr Casafina emphasises. And in fact it was essential to come up with some smart ideas on the level of detail. The gripper is made of a special synthetic which is resistant to lubricant, for instance. The synthetic grippers are made by a process of laser sintering. The basic model of the RRMP was expanded by the experts, with the addition of a divided mandrel. This spreads open and so is ideal for internal clamping: given the right stimulus, it spreads apart and fits itself to the workpiece. But because Casafina had already heard a graphic account of Rotaform's experiences with the product of another supplier, he didn't want to leave it at that.

The solution now being used emerged from joint discussions, and involves a simple but effective pneumatic cylinder. Being subject to the laws governing fixed body joints, the two halves of the mandrel spread out from the cylinder and then, when the cylinder is opened, return to the starting position as a result of their intrinsic elasticity. This yields a very much wider and more stable contact surface between the mandrel and the inside of the workpiece, which in turn

gives rise to a secure internal mechanism. The bottom line is that the part is now held in place with sufficient force, making it practically impossible to lose a workpiece, and so, suspended from above, can be passed through the air stream of the eyelet. 'That is how this first gripper has been working since November, reliably and without a hitch,' says Bongard with satisfaction.

Successful prototype stimulates further ideas

To arrive at this unusual smart solution, all those involved contributed the best of their ideas and skills. 'When it came to the point of implementation, though, there were still a few hurdles to be got over,' Casafina remembers – 'the success of the new development was by no means automatic.' Having been designed as a prototype in the first instance, the successful use of the system at once led to the development of further design ideas. The more refined version of the synthetic internal gripper retains the spreading functionality of the two synthetic halves and the extra piston, and it also has an O-ring groove as a third fail-safe precaution against loss of the workpiece. This means that even parts involving more complex geometry can be securely gripped from the inside. So Felss Rotaform can now look forward to facing future challenges with confidence.



Based on the standard RRMP synthetic gripper, RÖHM developed a light, speedy and economical internal gripper with a divided mandrel.

Effective testing of tool clamping technology

As a manufacturer of premium clamping equipment for top-quality products, RÖHM sees it as exceptionally important that functionality and performance should be impeccable in every case. This can already be safely assumed in connection with recently developed products, where every prototype at RÖHM is subjected to a very wide range of tests and measurements. RÖHM's testing division at the Sontheim plant has numerous pieces of equipment for tests and readings. Particularly worthy of note is a test bench which RÖHM developed in partnership with the Machine Tool Laboratory of RWTH Aachen University, and has expanded in recent years.

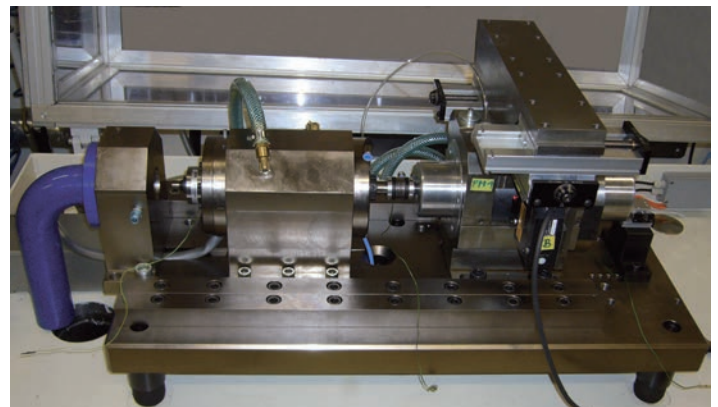
With the help of the Machine Tool Laboratory tests were carried out on coolant rotary joints and the SUPER-LOCK locking unit. The aim of the tests on the rotary joints was to be able to detect wear and tear and critical operating conditions by measuring the oscillation, temperature, leakage and torque. With the SUPER-LOCK locking unit, the object was to ensure effectiveness of lock at limiting rotary speeds of over 40,000 rpm by monitoring the axial displacement and radial widening of the system.

In connection with the Sensomikrosys collaborative project, the test bench was extended in terms of hardware, software and measurement technology for the development of a new sensor-integrated locking unit, and since then has been located at RÖHM's research division in Sontheim. Today it incorporates a water-cooled engine which drives a spindle shaft by way of a coupling. With the help of temperature sensors and laser triangulators, mounted on adjustable cross slides, and eddy current sensors, various different readings can be carried out.

The test bench has been providing reliable service for many years in connection with acceleration tests, multiple stage tests and endurance tests involving rotary speeds of up to 40,000 rpm. This type of test bench makes it possible to check all new developments before they go into production and are finally delivered to the customer.



The test bench for tool clamping systems during testing at RÖHM Sontheim.



A joint project between RÖHM and RWTH Aachen University for the testing of tool clamping technology

Super-light and reliable: the new EXTRA RV10-F

Especially in the OEM sector, constant adjustment of drill chucks to the changing requirements of drill manufacturers is essential. With every new drill and every new battery-powered screwdriver, the requirements for chucks change as well. Above all in this highly competitive industry, the constant state of flux faces drill chuck manufacturers with new challenges all the time.

With its new EXTRA RV10-F, RÖHM has succeeded in creating a chuck which is notable for its exceptionally light weight. The front part of the chuck is significantly lighter, and so, in comparison with other versions of the EXTRA RV, is less 'top-heavy'. The resulting reduction of the weight on the drill lowers the inertia of the application.

With a weight of 95 g and a length of 50 mm, the new chuck is unbeatable in the weight reduction stakes. This has been achieved with the help of the tried and tested synthetic casing and a patented internal mechanism, also entirely made of synthetic. With a clamping range up to 10 mm, the drill chuck has a locking mechanism and is also

suitable (with a maximum torque of 40 Nm) for hammer drilling. Thus it is in no way inferior to a traditional drill chuck with a metal body.



The inner body of the super-light Extra RV10-F consists entirely of synthetic, the jaws are made of metal.

All innovations at a glance

RÖHM presented its wide range of products, along with numerous innovations, at the most important trade fairs in 2013.

All RÖHM's innovations may be found at our corporate website.



RÖHM Denmark: great plans for the future

RÖHM is to be found all over the world, with numerous branches and representative agencies. In Europe, above all, it has a marketing network that extends right across the board. The most northerly RÖHM sales office is RÖHM Værktøj A/S in Rødovre, Denmark. This was founded by Ole Ryttergaard in 1971 and now supplies the entire Danish market with RÖHM products.



The RÖHM team in Denmark (right to left): Lise Molberg, Peter Willumsen, Torben Nielsen (Head of RÖHM Værktøj A/S), Ole Ryttergaard.

With a team of five members of staff in all, RÖHM Værktøj looks after around 300 end customers and 50 dealers all over Denmark. The daily challenge for the team consists in offering these customers products with the help of which they can continue to optimise their production operations. This is an area in which the RÖHM brand enjoys an international reputation. Products of the new Orange Line, in particular, and the RKE and RZM vices, should make an increasing impact on the Danish market in the coming weeks. These have all that customers could ask for in connection with a modern production system. The new Orange Line product line offers tried and tested RÖHM quality together with complete standardisation, and so comes with an unbeatable cost-benefit ratio. Top quality products at an attractive price – an approach that is likely to meet with an enthusiastic reception in Denmark.

RÖHM's Danish subsidiary also has future plans to expand the power operated range and so cover the gripping technology market. 'We

want to be there when our customers call for new robots and need grippers to go with them,' explains Ole Ryttergaard, founder and proprietor of RÖHM Værktøj A/S. 'Our objective is to establish RÖHM as an original equipment manufacturer.' Acquiring customers just at the point where a need comes to be felt is crucial for the success of the project. Denmark still has market potential, in the automation technology sector. In coming months and years, RÖHM Denmark will be hoping to exploit these openings progressively.

Closeness to the customer is a top priority for RÖHM Denmark. The focus should not be just on the product alone – you also need to be aware of the requirements of individual customers, which means that particular importance attaches to the service sector. 'The future will be built on knowledge and on service – which is what RÖHM stands for with its claim to be "driven by technology",' says Ryttergaard, explaining his company's future plans.



RÖHM Værktøj A/S – RÖHM's Danish subsidiary was founded by Ole Ryttergaard in the year 1971.

RÖHM supports children in need

Shortly before the end of the year, RÖHM CEO Dr.-Ing. Michael Fried handed over a total of 9000 euros to three children's charities in the region. These donations were made under the auspices of RÖHM's 2013 Charity Campaign.

As in past years, the recipients were the St. Nikolaus Children's Hospice in Bad Grönenbach, the Radio 7 Drachenkinder campaign and the St. Clara Children's Home in Gundelfingen an der Donau.

Dr.-Ing. Michael Fried emphasised that it is a matter close to his heart to give these charitable organisations long-term support on a partnership basis. At a small meeting, representatives of the institutions explained what problems they have to cope with on a daily basis and outlined the purposes for which the funds will be used. The Gundelfingen Children's Home Foundation is currently planning to set up a new home, for example.

The ladies representing the institutions expressed themselves delighted at the commitment shown by the clamping and gripping technology company to the young people of the region. 'As a big local employer, we are conscious of our social responsibility. In future we will be in-

volving our employees in the annual charity campaign as well, with a view to raising even more for charitable causes,' said Dr Michael Fried.



Handing over the donations (from left to right): Patrick Eitel (RÖHM Marketing, standing in for Radio 7's Drachenkinder), Kirsten Pallacks (St. Nikolaus Children's Hospice), Sister Maria Elisabeth (St. Clara Children's Home) and RÖHM CEO Dr.-Ing. Michael Fried.

We wish you and your families
a blessed and peaceful Christmas season,
and good fortune and success in the New Year!

Responsible for the content: Mario Baur

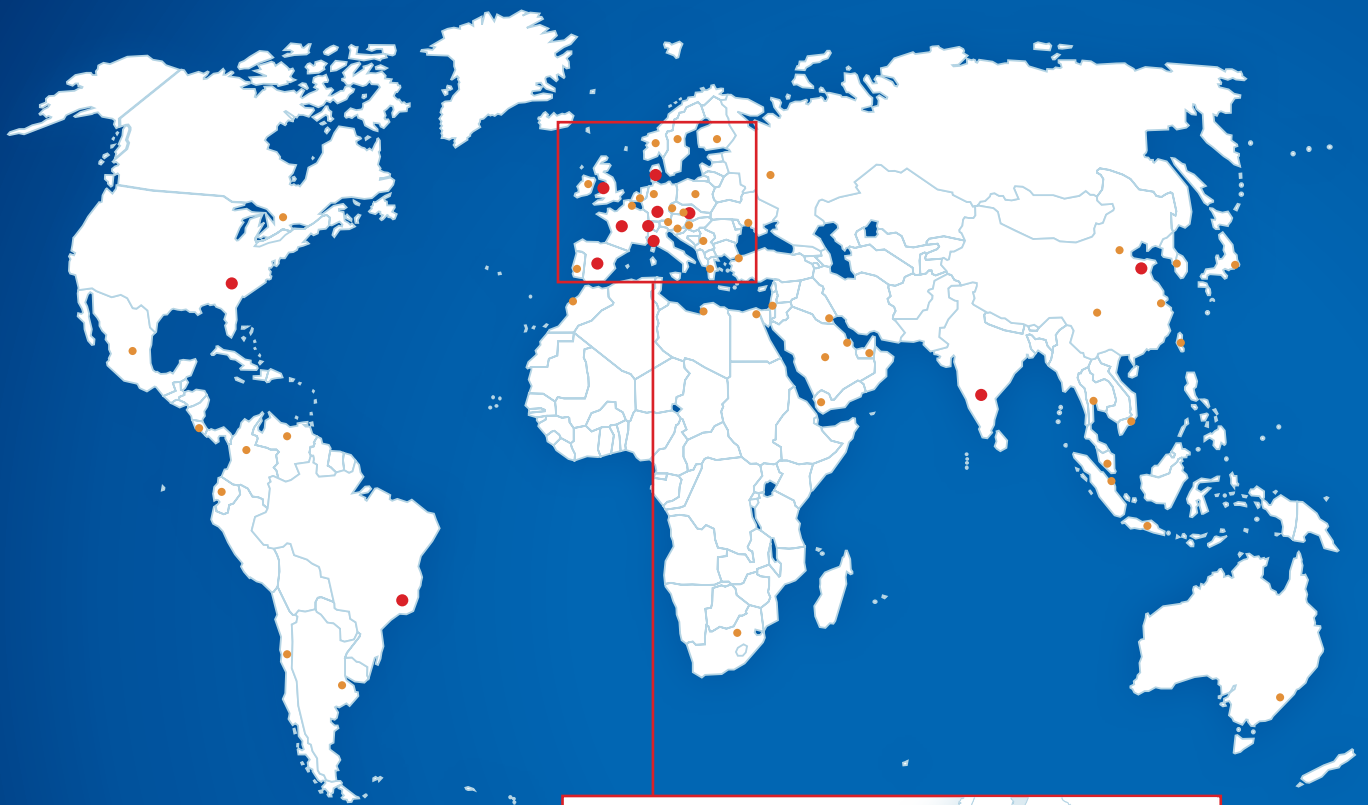
Editorial office: Frank Heiler, Patrick Eitel,
Magdalena Meiritz, Gert Lindenmayer

Design: Frank Heiler

Publisher:

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