

THE RICO GROUP MAGAZINE

INSIGHTS

ISSUE 2021

LSR + LSR

Multi-component injection molding with two silicone materials at RICO

NEW MD

SIMTEC appoints new Managing Director

COMING HOME

SILCOPLAST brings hearing-aid contract back to Switzerland



INNOVATION LOADING . . .

RICO GROUP – creating fertile soil for technological progress

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In order to improve readability, the INSIGHTS magazine does not use gender-specific phrasing. Where the masculine form is used, such references relate to both men and women.

Credits and legal notices

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The RICO GROUP turns five – sharper strategic focus and bigger plans



EDITORIAL INSIGHTS 2021

“We want to develop solutions to technically complex tasks together with our customers, supporting them every step of the way from the initial concept to the finished product. We offer this service to RICO GROUP customers all over the world.”

This was the mission statement we drew up as a guiding principle for the international elastomer network when the RICO GROUP was established in 2016. Over the last five years we have been hard at work pursuing and developing our objectives. Today we have a clearer view of the way forward than ever before.

We set up the RICO GROUP to strategically and systematically position our network of companies, to grow together in terms of both technology and markets, and to help us improve continuously. The positive trend after the first five years of the RICO GROUP is clear to see, and we will continue to follow the course we have charted.

All four companies in the RICO GROUP are true experts in their specialist areas. RICO is an international technology leader in 2K injection molding and a technology provider for the whole group. RICO molds and automation solutions are now so advanced that even 14-hour unmanned production shifts have become a reality. SIMTEC and SILCOPLAST are increasingly positioning themselves as the go-to elastomer experts in the life science sector, thanks in no small part to the clean rooms at their facilities. HTR stands out for its impressive hardening technology and component refining

capabilities. The RICO GROUP fully owns all three elastomer processing companies, and has a 75% stake in HTR.

We are now closer-knit, have enhanced the strengths of the individual companies, and can see a clear way forward: retaining our positions as premium suppliers in the elastomer processing industry and providing our customers with outstanding technology. Find out where this ongoing journey will take us – with regard to innovation, for instance – in this issue of Insights. We hope you enjoy your journey into the world of RICO GROUP!

Gerhard Kornfelder, Johannes Grabner, Alfred Griesbaum
Managing Directors, RICO GROUP GmbH



CREATING FERTILE SOIL FOR TECHNOLOGICAL PROGRESS LAUNCH OF INNOVATION PROCESS

“Wow! Why didn’t that exist before?” Not a definition as such, but certainly the kind of thing you might say when talking about an innovation. As a supplier in the premium segment we have high technological standards, and creating fertile conditions worldwide for new ideas and developments is becoming increasingly important for us. This is why the RICO GROUP has introduced a new innovation process.

At the four RICO GROUP companies, we develop new products every day, improve our technologies and beaver away on inventions. But we want to go further. We aim to take the group’s innovation process to the next level, and manage it centrally to reap the benefits internationally.

Innovation happens everywhere

Every single person, whatever their job title and whatever area they work, in can be the driving force behind innovation. Innovation happens everywhere; it doesn’t care about departmental structures or responsibilities, and certainly doesn’t shy away from crossing national borders.

So within our newly established structures, from now on the RICO GROUP is going to take a different approach and develop an innovation management system coordinated at a higher level. An innovation manager will be responsible for overseeing the innovation process.



Give your ideas free rein and turn them into innovations

Separating tasks and people

The innovation manager will provide the impetus, and work will be carried out in task-based, group-wide teams of people removed from their day-to-day activities. An important principle is separating tasks from specific individuals, and identifying the right people for the job at hand. For example, if we wanted to improve a bicycle, we wouldn’t go to the engineers first – our initial port of call would be some keen cyclists. The engineers would come in at the next stage of the process.

Setting a new course

The restructuring of the RICO GROUP’s innovation process will prepare us for the road ahead, set us on course for new developments in elastomer processing and promote group-wide knowledge building.

Our challenge to our customers: spur us on to hit even higher performance standards with your projects!



SIMTEC GOES BIG FOR TINY PART REQUIREMENTS HIGH CAVITATION MINI PARTS MOLDING

Miniaturization is a growing trend in many market segments. Micro-molded LSR parts are found in medical/surgical devices, hearing devices, healthcare products, and automotive seals to name just a few. Parts are getting smaller, tolerances are tightening, and product demands are ever-increasing, and SIMTEC has risen to the challenge.

When approached by a large Tier 1 automotive customer requiring an increased capacity of LSR single wire seals (SWS), SIMTEC proposed a solution that would nearly double output and deliver close to one million parts per day from just one mold, a 256-cavity mold. This was the highest cavitation LSR mold to date for both RICO (mold) and SIMTEC (LSR parts production).



Micro-molded LSR and LSR 2-shot components as small as under 0.1 grams

While providing a solution that met the increased capacity needs of its customer, this solution presented challenges as well. Balancing cavity pressures in a mold with 256 cavities required special gating techniques and



extreme accuracy and precision especially important for small part geometries.

SIMTEC’s experienced and knowledgeable team designed a manufacturing cell that provided a stable molding process for consistent quality parts, and precise robotic handling systems to remove and separate parts efficiently and accurately.

SIMTEC’s 256-cavity solution offered its automotive customer the added capacity needed to meet increasing product demand, and the added benefit of meeting the customer’s cost-down objectives. SIMTEC has since added an additional 256-cavity mold for even more production capacity.



256-cavity mold for the production of single wire seals



efficient elastomere projects

THE STAR OF THE 2K INJECTION-MOLDING SHOW COMBINING SILICONE WITH SILICONE

Multi-component injection molding technology for combining two silicone types: it may seem to be a bit of a prima donna, but getting it to show off its best side is all about knowing how to treat it.

Combining plastics such as PBT, PA or PC with silicone is an exacting process. But combining two different types of silicone to make a single component requires a whole new level of sophistication when it comes to the parts handling. “The most important thing is providing the support for the first-shot part,” explains Roland Angerer, Technical Director at RICO.

Don't let go

“It's not the 2K mold technology per se that presents the biggest challenge for RICO. We can draw on decades of experience in that regard,” says Angerer. “It's the parts handling that proves really tricky when combining LSR with LSR.” The key is keeping a firm grip on the first-shot part – or providing it with enough support so that the second-shot part can be molded onto the first without deforming this base part. The slightest deformation at this overmolding stage would result in the end product failing to meet the required specifications.

Rotary mold for ear plugs

Working for one of its life science customers, RICO manufactured a 2K mold for the production of ear plugs made entirely of silicone, featuring a combination of transparent 30 Shore silicone molded onto a 70 Shore red material. “This is why the whole 2K process takes places in a single mold and a single

machine. The product is secured in the cavity and positioned in the other half of the mold using a rotary mold.

Birds of a feather

This method of 2K injection molding also has advantages in terms of material adhesion. “Because we minimize the distances involved and only use a single mold in a dedicated 2K machine, the first-shot part doesn't have time to cool down. We use the heat from the first-shot part to vulcanize the second,” explains Angerer. ‘Birds of a feather flock together’ as they say at RICO. The parts adhere to each other by themselves without any additional pretreatment – even when using standard silicones.

Finding the perfect match

Deciding on the right material combinations is essential. The Shore hardness of the first-shot part has to be higher than or the same as that of the second. The injection molding process is designed to ensure that the harder part forms the base part, which the second-shot part is injected onto.

RICO designs special embossing surfaces for perfect adhesion and sealing. The colors of the materials play no part, as no mixing occurs. This means that even if the Shore hardnesses are the same, different colors are possible.

For one of its life science customers, RICO manufactured a 2K mold for the production of ear plugs made entirely of silicone, featuring a combination of 70 and 30 Shore materials



About LSR + LSR injection molding at RICO

- Compact: just a single mold and a single 2K machine
- Shore hardnesses and material combinations: the Shore hardness of the first-shot part has to be higher than or the same as that of the second
- Colors not important: injection molding with no color mixing – all LSR color combinations possible
- LSRs go together well: strong adhesion guaranteed without pretreatment
- Potential cost savings on assembly, materials and human resources
- Laser marking and custom packaging possible

No need for assembly

Multi-component injection molding offers potential cost savings when compared to techniques that combine two separate parts after they have been molded. Not only is this subsequent assembly step impossible in many cases, overall the customer also saves on materials and staff costs. In most cases, processing the separate parts creates the need for a third part. And the assembly step would have to be carried out by a person or a machine. “At RICO we take care of the necessary assembly steps and even individual laser marking and custom packaging of components on request,” says Angerer.

Firm but soft

One advantage of 2K products is that they can deliver both the stability and softness required for functional components. They are a popular choice for applications where the product comes into contact with the body and a soft material is needed, as is the case with respirator and sleep apnea masks.

LSR + LSR vs. thermoplastic + LSR

Roland Angerer sums up the difference between 2K injection-molded parts made from two silicone types and 2K parts made from thermoplastic combined with silicone: “Part handling is easier with thermoplastic.” Thermoplastic is a hard material and offers the necessary stability of shape, meaning it doesn't present any problems at the different transfer steps. But gripping a silicone part without causing deformation, and bringing it into position for overmolding is much more difficult. Silicone-only 2K molds are also more complex, partly because they require a double cold runner system.

Both 2K methods always employ a direct injection process using a valve gate nozzle or open system. The number of cavities in LSR + LSR and thermoplastic + LSR molds depends almost entirely on the size and design of the parts. The required clamping forces in the machine are also a key factor.

The exception that proves the rule

“As a rule, we don't transfer the first-shot part of 2K components made of two types of silicone, but it's possible if the product requires it,” Angerer explains.

For items where the part geometries leave no other option, RICO transfers the first silicone shot within the mold. As we said, the right material combination is crucial for a successful production process – a hard or harder silicone for the first step and a soft or softer material for the second – as well as utilizing the heat from the first shot later on in the process.

“It wouldn't be RICO if we didn't go about our work with an innovative, solution-driven mindset. This means constantly coming up with new approaches because each product is unique.”



RICO's Technical Director Roland Angerer knows all the ins and outs of using silicone with 2K technology



FAREWELL TO MANAGING DIRECTOR FRANK DILLY LOOKING BACK ON DYNAMIC YEARS

With his goals for SIMTEC met, and the desire to be closer to his family, Frank Dilly returns to Austria after four dynamic years as SIMTEC's Managing Director.



MD&M West - being on site was always important to Frank

Frank Dilly conveyed that it was a difficult decision to leave SIMTEC located in Miramar, Florida, USA. However he wanted to return to Austria to be closer to his family.

Frank expressed upon leaving, "I have deep gratitude for the trust, cooperation and support I received from customers and team members over the last four exciting years and I am optimistic for SIMTEC's future. It was amazing to experience first-hand the opportunities in North America and the dynamics in the market. I am confident Roland Keller (his successor as SIMTEC Managing Director) will take SIMTEC to the next level with continued growth and on a healthy positive trajectory."

His four years at SIMTEC were exceptional, in terms of both growth and overcoming obstacles.



A milestone in Frank Dilly's history: the opening of the SIMTEC cleanroom

In July 2021, Frank Dilly left his position as Managing Director at SIMTEC Silicone Parts.



"Bring your kids to work day": Frank showed the team member's children the silicone parts produced at SIMTEC.

During his tenure SIMTEC opened a class 8 cleanroom and achieved significant growth across industry segments. There were challenges as well, from the threat of hurricanes, to maintaining an uninterrupted supply to our customers and providing a safe environment for SIMTEC team members during the Covid-19 pandemic.

We wish him all the best for his personal and professional future and sincerely thank him for the years of exceptionally good cooperation and his personal commitment to SIMTEC and the RICO GROUP.



Symbolic handover of the SIMTEC keys from Frank Dilly to Roland Keller



SIMTEC SILICONE PARTS ANNOUNCES NEW MANAGING DIRECTOR

SIMTEC Silicone Parts welcomed Mr. Roland Keller as the new Managing Director. Mr. Keller is a degreed electrical engineer with years of experience in managerial roles for manufacturing companies throughout Europe, Asia, and for the last 13 years the United States. Mr. Keller brings with him a breadth of knowledge and experience in operations and the medical market.

Prior to joining SIMTEC, Mr. Keller was the VP of Operations at a leading manufacturer of medical products (pre-analytics and diagnostics) with a sizeable injection molding operation.

Mr. Keller spent his first four weeks at RICO Elastomer Projecting in Austria deepening his ties with the Group and gaining valuable insight and familiarity with our advanced tooling and liquid silicone rubber injection molding technologies.

Mr. Keller officially became the sole Managing Director in July and plans to continue the course: "SIMTEC has been very successful and had impressive growth both with new and existing customers. Frank Dilly has done a commendable job. SIMTEC's management team is impressive and highly experienced, and our entire SIMTEC Team are dedicated and focused on quality. Over the past few months, I have enjoyed acquainting myself with our customers, suppliers and joining our great SIMTEC Team".

Manufacturing excellence

Mr. Keller has expressed his primary focus will be on manufacturing excellence, achieved through sustainable and continuous improvement of operations, optimizing efficiency, productivity and quality.

In profile

Roland Keller has lived in the US for 15 years, spending a decade in New Jersey and five years in North Carolina. When based in New Jersey he enjoyed visiting New York City, and the Blue Mountains were a favorite destination during his time in North Carolina. After moving to Florida he's now looking forward to being by the ocean as well as the great weather.

"It does not matter how slowly you go as long as you do not stop." (Confucius)

This is Roland Keller's motto. Living in China for a few years gave him the opportunity to get to know the culture there and learn about aspects such as Traditional Chinese Medicine (TCM) and Chinese philosophy, both of which were a source of inspiration.



Roland Keller, the new Managing Director



PRODUCTION IN SWITZERLAND SILICONE PARTS FOR HEARING AIDS

The question was where a silicone part should be produced in future. The answer was Silcoplast AG, which has started manufacturing nine different types of hearing aid domes for its customer Sonova, in volumes running into the millions.



Some of the nine different types of domes

Headquartered in Switzerland, Sonova is a leading provider of innovative hearing care solutions. The domes, which weigh between 0.05 and 0.21 grams, fit inside the ear canal, helping to position the speaker in the ear. Silcoplast AG produces these silicone parts at its facilities in Wolfhalden, Switzerland for the hearing aid manufacturer Sonova, making a total of nine different dome types (three models in three sizes each). They are produced using a new mold technology and then packed in a fully-automated process.

Slider mold for silicone injection molding

RICO supplied the high-precision production molds, which belong to the first generation of molds with sliders and carbide components. Slider molds have been around for a long time. But as they are very sensitive when it comes to handling, slider molds featuring carbide components with cylindrical, moving seal faces have never been used for silicone injection molding – until now. Additional remolding steps would be required for the slider, which in turn results in a high risk of burring on the silicone part.

With the RICO molds, however, Silcoplast has complete control of the 16-cavity process, and no extra finishing steps are needed. The molds are hardened at fellow RICO GROUP company HTR.

Production, monitoring and fully-automated packaging

The post curing-free domes are produced on an Arburg 370 or 470 machine with a clamping force of up to 80 tons. A special gripping head removes the small parts in separate nests, and then moves them to an intermediate station. In parallel, several steps take place that involve sensor equipment. First, there is a check to make sure all of the parts have been correctly removed from the mold cavities and whether they have all reached the intermediate station. Next comes the positing stage, still in separated nests,

Product details

- Hearing aid domes, 9 different types
- Part weights: between 0.05 and 0.21 grams
- Material: post curing-free silicone, Shore hardness 30/40
- Special production features:
 - Mold technology with slider and carbide components
 - Demolding with sensor monitoring and nest separation
 - Fully-automated packaging

followed by packaging on a fully-automated packing line.

An excellent partner

Sonova has found a reliable, long-term partner in the shape of Silcoplast. Thanks to the collaboration within the RICO GROUP, its innovative, solution-driven approaches in mold automation and the resulting advantages in terms of quality and price, Silcoplast won the contract.



AUTOMATION PROJECT

Silcoplast has been supplying the company Medela with high-precision silicone parts for many years. These include 2K membrane discs for pumping systems. And for these products, Silcoplast has now switched over to an automated process for inserting the supplied component.



The domes are automatically packaged on the Silcoplast packaging line

Medela is a global manufacturer of medical vacuum technology solutions, and is a pioneer in the development of breast pumps and breastfeeding accessories. Silcoplast supplies the silicone membrane discs that are a core component of Medela's Swing and Freestyle breast pump models. The membranes are a multi-component (2K) product.

The connecting rod was previously inserted into the mold manually and then overmolded with self-adhesive silicone. Silcoplast has now automated this process as part of a degree dissertation project. The connector is inserted into the four-cavity mold at a fully-automated feeding station and subsequently overmolded with silicone.

The only remaining manual finishing step is fitting the supplied metal brace to the membrane. The product is packaged in 28-unit reusable blister-packs. All the mold technology comes from the RICO GROUP.

Improving efficiency

"The reasoning behind any improvements is always to achieve efficiency gains in production. By automating the insert stage we've updated the process a step further, and it means we can run automated production over three shifts,"

comments SILCOPLAST's CEO Philipp Gaus.



The process for inserting a supplied component for the overmolding of a 2K membrane disc has been fully automated



SILCOPLAST's CEO Philipp Gaus is delighted with the successful automation project



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FULLY AUTOMATED PROCESSES UNMANNED NIGHT-TIME PRODUCTION

Anyone involved in plastics injection molding knows that working with silicone is far from easy. During molding and demolding the material behaves according to its own rules, and consistently poses challenges for mold makers and plastic molding specialists. This makes it even more impressive that a silicone molding company is able to carry out half of its 24-hour production using fully automated processes. Austrian firm RICO Elastomere Projecting GmbH manufactures silicone parts during the night without any workers present.

Rare in the industry

"It is extremely rare in the industry that silicone processors produce in unmanned night shifts," comments RICO's Managing Director Markus Nuspl. The company produces several billion silicone and multi-component parts every year and has an in-house mold production department at its facility in Thalheim bei Wels.

The production equipment operates day and night, seven days a week, 24 hours a day. But from 6pm to 6am the lights are turned off on the shop floor, because the staff are at home while the injection molding machines continue running.

Process optimization and automation

To ensure that parts manufacturing is possible without staff

during the night, and above all that it runs smoothly, RICO has carried out significant optimization and automation of its daytime processes. The company only uses precisely adjusted molds for volume production, and the parts are finished and/or packaged automatically immediately after molding. The whole production process is designed in such a way that the absence of personnel for 12 hours does not lead to any bottlenecks or problems on the conveyor belts or chutes. Handling systems, robots and sophisticated logistics systems ensure trouble-free production. All processes are monitored via a digital control console system, which can be checked 24-hours a day.

The same quality at night

The goal of injection-molding specialist RICO is to achieve the highest possible quality levels by producing perfect parts rather than depending on 100% inspection of finished components. And this zero-error policy applies during the night, too. "Unmanned night-time production is not possible without precise control over your processes and quality," explains Markus Nuspl.

Efficient deployment of staff

You might assume that RICO's high levels of automation involve staff reductions, but the opposite is actually the case. "Molds don't build themselves and the machines have to be set up extremely precisely," emphasizes Nuspl. Staff are deployed where they can carry out their preferred duties efficiently, in line with their specialist abilities. Night shifts are a thing of the past at RICO. This sets it apart from other silicone injection-molding companies and also makes it a very family-friendly workplace.



RICO uses unmanned production from 6pm to 6am.



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160-CAVITY VALVE GATE NOZZLE: HIGHER OUTPUT, LESS WASTE DIRECT SILICONE INJECTION

When it comes to injection molding of silicone parts, a distinction is usually made between direct and indirect injection. RICO uses the direct method to manufacture silicone parts wherever possible. The company uses molds with up to 256 cavities in open systems and up to 160 cavities with a valve gate nozzle system, producing silicone parts around the clock with zero waste.

For the last decade or so, RICO has succeeded in steadily increasing the number of cavities in its molds. At RICO, the current technical state of the art allows for production with up to 160 cavities using a valve gate nozzle system, 256 cavities with an open system, as well as 96+96 cavities (2K), again with a valve gate nozzle system. The latter offers a range of product-related and environmental advantages. With this process, there is no visible injection point on each silicone part, and separate injection and filling of each individual cavity completely eradicates waste.

Direct injection at RICO

Valve gate nozzle:

- 1K parts: up to 160 cavities
- 2K parts: up to 96+96 cavities

Open system:

- 1K parts: up to 256 cavities

Material behavior

With the 160-cavity valve gate nozzle process, 160 valves (or needles) open and close, feeding the material into the cavity. Due to the extremely short cycle time, the pressure in the cavity during injection can reach between 500 and 1000 bar, depending on the part being produced. The pressure level is a key consideration, because every additional bar of pressure would increase the product's susceptibility to flashing. In addition, silicone expands in the mold when it is exposed to pressure and higher temperatures. In the valve gate nozzle system, the cold runner can only be depressurized to a limited degree, so these considerations must be factored into the injection molding process.



The 160-cavity valve gate nozzle system can be used to manufacture various products, including single-wire and radial seals

Fine-tuning prohibited!

"It's not in our interest to adjust individual valves or make adaptations. When production is up and running, we don't make any more adjustments to the valves. Our system has to be stable with high process integrity right from the get-go," notes Martin Rapperstorfer, RICO's Head of Sales. Although adjustments to the mini and maxi valve gate nozzle are possible in principle, at RICO any fine-tuning is carried out exclusively at the in-house technical center. Once the mold has been calibrated and preconfigured, no more changes are made to the valves. Close attention also needs to be paid to the product's filling behavior. Complex part geometries often require several injection points.

Fine-tuning permitted

RICO's mold coordinators and, further down the line, the specialists from the Application Engineering department are the only staff members who actually make adjustments to molds. We might be great fans of technology, but we always need people working in the background!



SIMTEC PREPARES FOR PHASE 2 CLEANROOM

In 2018 SIMTEC opened its class 8 cleanroom at the encouragement of its customers. Already ISO 13485 certified, SIMTEC was producing precision, high volume LSR and LSR 2k components in a fully-automated, clean manufacturing environment for its customers. SIMTEC recognized the need and growth potential a class 8 cleanroom would offer and perceived it as the next logical step in meeting customers' requirements.



SIMTEC's ISO-certified class 8 cleanroom was designed for planned growth and quick expansion. SIMTEC used a hybrid design, with a unique layout - molding machines are located outside the cleanroom mitigating the risk of machine-related oils, dust, etc. entering the cleanroom and potentially contaminating the parts.

The automated demolding operations, secondary value-added stations (inline slitting, marking, pad printing, post curing, etc.) and parts conveyor systems used for transporting parts into the cleanroom are all located within an environmentally-controlled enclosure to prevent part contamination. In Q2 2021, all available LSR and LSR 2-shot injection molding spaces were occupied, completing Phase 1. In 2022, SIMTEC

will initiate Phase 2 of its cleanroom plan and add the next adjoining modular section to increase capacity and allow for added growth.



SIMTEC will add the next adjoining modular section to increase capacity and allow for added growth.



IMPROVEMENTS IN EFFICIENCY, TIME AND QUALITY INLINE VALUE-ADDED OPERATIONS

When a medical device customer approached SIMTEC with a one-way slit valve, SIMTEC presented its customer with a value-added solution that would enhance efficiency and consistency, and offer time and cost savings for the customer.

During SIMTEC's DFM process, we start by reviewing our customer's part design, explained Calvin Pendorf, Head of Engineering and one of many SIMTEC team members with over a decade of LSR LIM experience. "We evaluate our customer's part design and explore solutions that will optimize manufacturability and provide our customer with added value.



We like to work with our customers early in their project to gain a thorough understanding of the part's function and its application, and where warranted offer suggestions for part design modifications, or opportunities to streamline the process by incorporating secondary value-added operations within the manufacturing cell."

SIMTEC takes an automation approach to manufacturing – all facets of our high-volume production are automated – from the molds, injection molding and demolding processes to the post-molding processes. Examples of some of the automated, inline value-added processes include slitting, pad printing, laser marking, post curing, UV treatment, special packaging, etc.

By incorporating the secondary operation early at the onset, the demolding and handling can be designed accordingly. The entire process is fully automated. For example, when inline slitting is required, the molded parts are delivered to the slitting station by the handling system immediately following the automated demolding of the parts. The parts are securely positioned on the customized fixture for precision slitting, and then transported to the parts separation and packing station.

Inline value-added operations streamline the total process, eliminating the need for additional operations, multiple suppliers and multiple inspections. In addition to the efficiency, time and cost savings realized by streamlining the process, automating operations results in precision alignment and consistency from the first part to the last.



A 2k molding cell with multiple value-added inline operations



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SILICONE AND 2K PROTOTYPES DID YOU KNOW...?

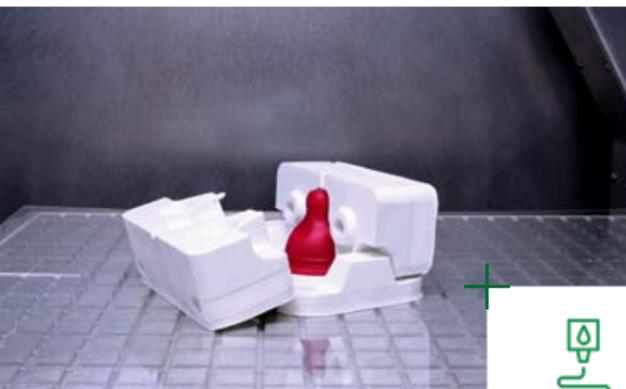
"We need it quickly." "No problem!" "But to the same quality standards as volume production if possible." "Sure, goes without saying!" We know how important initial demo and functional-testing prototypes of your silicone and 2K parts can be. They are essential for preliminary testing and should meet volume-production quality standards. At RICO, we've perfected rapid and reliable prototyping for 1K and 2K products to a tee. Prototypes are vital for turning developments into actual products.

Did you know that...

we can offer prototyping concepts to satisfy any requirements?

The form of prototyping that best satisfies your needs depends on the material required, the quantity, the complexity of your product and the specifications for real-life operating conditions.

A few examples:



Demo prototypes

- For demonstration purposes only
- Production, e.g. 3D printing, using similar materials
- Not produced within tolerance
- Final material used where possible
- Only a limited number of sample parts can be produced



Pre-production samples

- Meet volume-production quality standards
- Pre-production molds correspond to those for volume production, incl. automation
- Made in the final material
- Quantities of up to 100,000, higher volumes if required



Test prototypes

- Injection-molded prototype parts
- Close to volume-production quality
- Suitable for preliminary testing
- Produced within tolerance
- Made in the final material
- Production of up to 1,000 sample parts

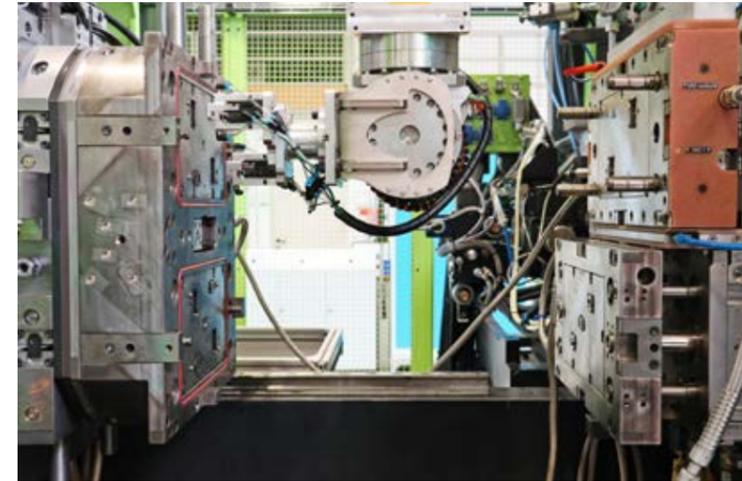
Did you know that...

RICO can produce prototypes in all 2K material combinations?

We can provide any combination of materials, whether it's 2K parts with various types of silicone or combined silicone-thermoplastic. Chemical and mechanical bonding are both possible.

our pre-production molds are fully automated?

We have fully-automated processes for both volume-production molds and pre-production molds for prototypes. We use pre-production molds to produce original components that meet volume-production quality specifications. Single cavity molds (2K: 1+1 cavity) are used at the design stage.



RICO's pre-production molds are fully automated and produce parts to the same quality standards as volume production molds

we use a modular system to produce prototypes?

Modular systems allow for testing of various injection systems and mold concepts. This means your prototype can be adapted specifically to your requirements for volume production.

Do you know why...

prototyping is so strongly recommended for 2K injection molding?

Multiple-component products are extremely time-consuming and expensive to make. Especially with 2K products, adjustments to finished volume-production molds consume huge quantities of resources.

Pre-production prototypes are an ideal way to assess in advance and on a small scale whether a product is ready for volume production. Requirements for volume production can be specified and integration of additional functions tested at any early stage.

prototyping usually makes sense?

Because making adjustments is easier and more cost-effective. Normally, the molds have not yet been hardened, so changes can still be made. Prototypes are produced in only one cavity, which is also reflected in the price. All this allows for more accurate predictions and the definition of requirements for volume production early on in the process. Avoiding surprises in volume production is our top priority.

NEW-LOOK LOGO AND HQ HTR CELEBRATES 20 YEARS

In autumn 2020, in the run-up to its 20th anniversary, HTR officially unveiled the final section of its site extension, a newly built goods reception area. And since 2021 a brand-new logo has adorned the building.



The new goods reception area, shown here with HTR's former logo

After staff had moved into the new office space, and following installation of new furnaces and the relocation of the metallography lab – as well as a delay due to the Covid-19 pandemic – the work preparation unit finally moved into its new premises in September 2020. Goods acceptance, order booking (and processing) as well as goods dispatch will all be handled there.

The new space features extensive storage and acceptance areas. When designing the new build, and with a view to driving forward HTR's growth strategy, a particular emphasis was placed on material flows – and this is a key consideration, as the company handles up to 500 incoming orders on peak days. An extended covered area and a new docking bay for trucks are now available for deliveries. The new building also includes the Order Processing department's offices,

as well as storage space for the ammonia required for all nitriding processes.

20 years and counting

The 20th anniversary of HTR's establishment in 2000 passed off almost without a peep. Large-scale events to provide a fitting backdrop for a celebration of the HTR success story were a non-starter due to the coronavirus pandemic. Since RICO Elastomere Projecting GmbH and Mr. Rosenblattl founded the company, it has become firmly established as a respected heat treatment specialist, evolving in almost unprecedented fashion from an alternative supplier to the best in class, with some of the most outstanding delivery times on the market. The reworked HTR logo is intended as a visual reflection of this transformation – modern yet still easily recognizable.

NEW SET-UP FOR INDUCTIVE HARDENING AND SALES PERSONNEL CHANGES

HTR Härtetechnik Rosenblattl GmbH has strengthened its team of experts and is focused on strategies for continued growth.

In February 2021, Reinhold Mautes took the reins at the unit responsible for HTR's latest heat treatment technology, called inductive hardening. Born in Germany, he has extensive experience of heat treatment technology, in particular inductive hardening. Mr. Mautes previously worked for a German competitor as an operations manager, and has built up in-depth knowledge of the automotive industry over the years. As a result, he has extensive and detailed expertise when it comes to lean processes, quality assurance, certification and operational organization. His main responsibilities will include raising the level of professionalization in induction hardening operations, as well as pushing forward with the expansion of this promising growth area for HTR.

A big fan of Austria, the 60-year-old has now relocated to Upper Austria with his wife; they moved into a new apartment near Wels in April. HTR is delighted to have brought such a true technology specialist on board, who is certain to make a valuable contribution to the inductive hardening unit and to HTR as a whole.



Reinhold Mautes, the new head of induction hardening, has wide-ranging experience of this particular process, and of heat treatment technology in general

The past few months have also seen some changes in HTR's sales line-up. HTR has attracted an absolute pro in hardening technology sales in the shape of Thomas Stadlober. He will work alongside Silvio Stranek, who has been appointed Head of Sales. Thomas Stadlober has held similar positions with some of our competitors.

Streamlined but also high-powered, the new-look sales team has succeeded in acquiring a number of new customers, in spite of the challenging current situation with significant restrictions on visits to clients. In future, the emphasis will be on continuing to increase market penetration, as well as sharpening the focus of sales activities in order to drive forward HTR's expansion strategy.



Sales team manager Silvio Stranek (left) and sales expert Thomas Stadlober will take HTR's expansion strategy to the next level



efficient elastomere projects

MOLD-SPECIFIC ELECTRIC ROTOR HANDLING FOR EXACTING REQUIREMENTS

Electric or servo-handling is top of the range when it comes to handling systems. It is mainly used with delicate components that require a high degree of process stability. RICO's electric handling systems are geared towards the specific mold used, meaning they are perfectly adapted to the customer's mold.

RICO has been producing molds for silicone and multiple-component injection molding for more than 25 years, and produces billions of parts at its volume-production facilities every year. The constant drive to install more efficient and precise systems paved the way for the enhancement of the handling systems.

"We've been using pneumatic handling successfully for many years. The systems work well, but air is one of the most expensive substances in our day-to-day operations. Compared with air, electricity is far cheaper, and that's why electric handling is more cost-effective in the long run," explains RICO's Technical Director Roland Angerer.

Precise and fast

RICO only uses mold-specific aluminum rotor handling. The systems are positioned and adjusted in full accordance with the respective customer's mold, making it far more precise than standard brush handling. The servo-handling system features distance measuring equipment, so it can be directed precisely to certain positions in the mold and moved directly to the cavities.

Variable speed control is another major advantage, as Angerer explains: "Very stable and rapid movement of the electric rotor handling system – when removing parts, for instance – enables shorter cycle times. What's more, we can tell the system specifically to move quickly or slowly, depending on the process concerned."

Compact, autonomous and network-enabled

RICO's all-in-one rotor handling system (the handling system and control cabinet are fitted on the mold together) is a highly compact solution. The electric handling systems operate fully autonomously, and there is no need for an

external control cabinet. RICO's handling systems are ideally suited to use with standard injection molding machines and fully compatible with brush interfaces.

As the handling equipment is mounted on the top of the mold, a user-friendly parameterization solution was also needed. Innovative, network-enabled operating concepts enable RICO's technicians to carry out configuration on a company tablet, regardless of which machine they are using.

Customer requirements

"If a customer opts for a fully-electric, end-to-end system, we can offer the perfect add-on component in the shape of our servo-handling equipment," Angerer points out. Some customers also have requirements regarding noise levels. And electric handling systems are virtually noise-free.



Electric handling systems are low-noise, precise, fast and interface-compatible, as well as space-saving



CUSTOMERS, BUSINESS PARTNERS AND PROSPECTS MEET THE RICO GROUP

The RICO GROUP puts in appearances at industry events and trade fairs all over the world. We look forward to seeing you again at in-person fairs and events in 2021 and 2022.

THE RICO GROUP APPEARED/WILL BE APPEARING
AT THE FOLLOWING EXHIBITIONS AND EVENTS:





FLASHLIGHTS NEWS FROM THE RICO GROUP



RICO: NEW OFFICES FOR THE MOLD PRODUCTION TEAM

You never seem to have enough space – and the same goes for mold production at RICO. So the company wasted no time in adding new office space, occupying a second level in the automatic production unit. Staff from the Computer Aided Manufacturing (CAM) department are now based one level higher than their mold production colleagues, where they can keep an eye on the big picture.



RICO: SUMMER FESTIVAL

Our employees were in the mood for a party. After a long hiatus, we were finally able to stage another get-together at the end of July (in compliance with the covid-19 regulations). This time, the event had a sporting flavor. 14 teams went head to head in our giant table football tournament. Which was followed by the best refreshments of all – food hot off the barbecue and cold drinks!



SIMTEC: WEBINAR SERIES

SIMTEC kicked off its first Webinar Series in Fall 2020. The response has been good, with positive feedback and ratings, and a loyal and growing audience. Each month a new LSR-related topic is explored. The webinars range in length from 20-30 minutes and the video recording accessible on SIMTEC's website for convenient 24/7, on-demand viewing. In the first of multiple series planned, the topics included: LSR Basics, Prototype Methods & Benefits, LSRs vs TPES, Clean Rooms for LSR LIM, Quality & Metrology for LSR Parts, Design Tips, and Case Studies & Special Applications.



RICO: FUNDRAISING CAMPAIGN

All for a good cause – every Christmas, the company collects donations from staff. In 2020, we donated a whopping EUR 6,200 to Wels-based charity Die Oberösterreichische (OÖ) Tafel. The organization provides hot meals every day, as well as low-price food and second-hand clothing to people who have only a few hundred euros a month to live off. The money was raised from employee donations and a flea market, as well as a campaign funded by RICO, which donated EUR 1 for every lunch consumed in the staff canteen. Organizers Sonja Kirner and Arno Pellingner handed over the donation on behalf of the company.



SIMTEC: NEW PRODUCTION MANAGER

In October 2020, SIMTEC welcomed Mr. Joao Nagamine as their new Production Manager. Mr. Nagamine has over 30 years of manufacturing experience with 20 years in injection molding. Joao is a mechanical engineer and began his career as an intern at Taurus, a gun manufacturer in Brazil. After 7 years in Brazil, he was transferred to the Taurus facility in Miami and was named Engineering Manager. In his 25 years at Taurus Miami, Joao held various leadership positions, including Engineering Manager, Injection Molding (metal) Manager, Quality & Engineering Manager and Production Manager. In addition to producing parts used in their guns, Taurus also produced injection molded metal components for the medical and aviation industries.



SILCOPLAST: FIRE EXTINGUISHER TRAINING

Safety first: under Silcoplast's workplace safety regulations, all employees receive training on how to use fire extinguishers. After a theory section, staff took part in practical exercises.



HTR: NEW WEBSITE

The HTR website was given a makeover in 2021. Lots of new content and information have been added, and the site is now in great shape. Check out the new site at www.htr-rosenblattl.at



SILCOPLAST: ENVIRONMENTAL CERTIFICATION

Silcoplast completed its first ISO 14001:2015 surveillance audit at the beginning of 2021. The key findings were:

1. The environmental management system is fully incorporated into the integrated management system and its processes. The company has been certified according to the ISO 9001 and ISO 13485 standards for several years.
2. The processes and scope of application are fully aligned with those of the integrated management system.
3. The assessment of environmental aspects, in accordance with the legal requirements for the site, is comprehensive and up to date. The environmental targets are based on and supplement the company's quality objectives.



RICO GROUP

▶▶▶ transforming business to partnership



efficient elastomere projects

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