

RICO



MEMBER OF RICO GROUP

SILICONE EXCELLENCE INSIDE

rico.at

EXPERT.
VISIONARY.
PARTNER.
IN MOLD PRODUCTION.



It takes a special company
to produce the best
injection molds



Welcome to RICO Elastomere Projecting GmbH

Established in 1994, RICO is a reliable partner and a specialist in injection mold manufacturing, as well as automation and production of 1K and multi-component injection-molded elastomer parts. We employ 300 people at our headquarters in Thalheim bei Wels, Austria, and are a leader in mold production and silicone injection molding for customers in the healthcare, food, industrial, consumer and appliance, sanitary and mobility sectors.

As a full-service partner, we support you right from the start of the development phase. With over 25 years' experience in mold manufacturing, we can help you to implement production-focused improvements in parts design and supply customized silicon and multi-component molds. As experts in these areas, we have a strong track record when it comes to sophisticated applications which meet exacting requirements and achieve very low tolerances.



We operate
in these
sectors:

Healthcare

Mobility

Food

Industrial

**Consumer and
appliance**

Sanitary

The experts in development and test molds

3D printing

We select the best thermoplastic printing process according to the customer's specifications and requirements. RICO also provides LSR 3D printing using silicone materials (although this will not be the same as the final material).

Express molds

With this process, the parts are manufactured using a manual cartridge casting process in a 3D-printed thermoplastic express mold or a milled aluminum mold.

Test molds

Here the parts are manufactured using injection molding. The untreated cavity parts (i.e. before hardening etc.) meet standards that come close to volume-production quality. The pre-production samples, which are produced using cavities that meet the full specifications, are close to the volume-production quality. The prototyping process is semi-automated and can be fully automated if required.

Pre-production

We can offer the full range of material combinations at the pre-production stage: for 1K projects the number of cavities ranges from one to four, depending on the part size, while for 2K projects a 1+1 or 4+4 design is used, again depending on the part size. Thanks to a modular system for various injection systems and mold design concepts, RICO can produce a comprehensive range of prototypes and pre-production samples, all using fully-automated processes.

No matter what your requirements, RICO has the right design concept for your prototypes or pre-production parts

3D printing



Application

Demo parts

1K/2K

1K

Part quality

3D printing, depends on process

Concept

3D printing

Material

Not in final material

Quantity

Max. 10 units

Lead time

1-2 weeks

Development levels

		Basic	Special	Advanced	Superior
1	Product preparation for injection molding				
2	Filling simulation				
3	Distortion simulation				
4	Cycle-time optimization simulation				
5	Product development support				
6	Alternative design ideation				
7	Industrialization of assemblies				

Express mold



Test mold



Pre-production



Demo parts

Test parts

Pre-production

1K/2K

1K/2K

1K/2K

Not within tolerance

Close to volume-production quality

Corresponds to volume-production quality

Manual cartridge casting process

Semi-automated

Pre-production design concept corresponds to the volume concept

Final material used where possible

Final material

Final material

Max. 10 units

Max. 1,000 units

Max. 100,000 units

2 weeks

5-8 weeks

15-20 weeks

A solid technological platform: single-component molds

Lots of cavities, consistent quantities and high availability

Proven technology for consistently high quality: When RICO was set up back in 1994, 1K injection mold technology for silicone component production was already firmly established on the market. And it remains the springboard for constant technological advances to this day.

RICO prides itself on making molds for the manufacture of parts with minimal flash and zero waste, without the need for additional finishing. The use of specially designed cold runner technology means that the number of cavities is rarely a consideration nowadays. With minimum spacing of about 15mm, valve gate nozzles can also be used for molds with a very high number of cavities.



“Whatever the size of the injection mold, RICO’s technology has proven itself time and again in volume production thanks to outstanding process reliability and availability – including for very high quantities.”



1K molds from RICO: stand-out features

- Higher productivity thanks to continuous increases in the number of cavities.
- Use of direct injection systems whenever possible helps to avoid waste and reduce material costs.
- RICO molds run on clamping force even when cold, without damaging components and preventing expensive shutdowns and downtime costs.
- We design both the mold and the automation ourselves, which avoids unnecessary complexity and enhances process reliability.

When it comes to selecting the right steel, RICO has the perfect partner in its sister company HTR.

Over 25 years of empirical data on shrinkage allows us to define initial tolerances as accurately and precisely as possible. Shrinkage depends on a range of factors, such as part size, Shore hardness and membrane thickness. 3D scan data can now be fed back into the design to gain even clearer insights into shrinkage. These ideal conditions and capabilities in terms of materials and expertise – which are all interrelated – enable us to determine the optimum process window.

“Better safe than sorry” is the guiding principle at RICO’s in-house technical center, where we fine-tune the molds right up to the process freeze. This ensures that valuable machines for volume production are not taken out of action and avoids the need for process tweaks. Volume manufacturing can then start on the production machinery immediately after the mold has been installed.

The complete package: mold, machine, process control and management

2K technology is the ideal solution for producing functional components made from combinations of hard and soft plastics. Using a genuine 2K mold in one machine ensures reliable process control with two-component parts.

RICO is a global market leader and has unrivaled experience in 2K mold production for silicone parts. With RICO's 2K technology, perfect thermal separation enables independent process control for each of the components in the mold. This paves the way for fully automated manufacturing of multi-component parts. It also allows for insert overmolding. Silicone is one of RICO's core competences.

As well as comprehensive expertise in manufacturing top-grade silicone parts using one-component technology, we also have a wealth of experience in the production of multi-component molds. One of the components we use is always silicone, which we combine with other materials by means of chemical or mechanical bonding.

A wide range of different combinations are possible:

- Silicone + silicone
- Thermoplastic + silicone
- Metal + silicone
- Glass + silicone
- Silicone + other materials

**Contact us today
to talk about your specific
requirements**

Benefits of RICO's 2K mold handling systems

- Reliable process control in a single machine.
- Independent optimization of components thanks to thermal separation in the mold.
- Improved floor space utilization as only one machine is required, not two.
- Controlled parts handling enables a high degree of automation.

Smart injection systems with open or valve gate nozzle technology

RICO has the right injection system whatever your needs

- From thick-walled parts to ultra-thin membranes
- Open system ensures outstanding cost-effectiveness
- Valve gate nozzle system for high degree of design flexibility

Advantages and disadvantages of our open system

- + Lower investment costs
- + Self-balancing
- + Up to 256 cavities in a compact size (max. 570mm tie-bar spacing) thanks to the dual nozzle design
- + Side-on injection possible
- Visible injection point (pin technology)
- Limitations on thickness (> 0,2mm)

Advantages and disadvantages of our valve gate systems

We can supply all our valve gate nozzle systems in either fixed, manually adjustable or electronically adjustable designs

Micro and mini systems:

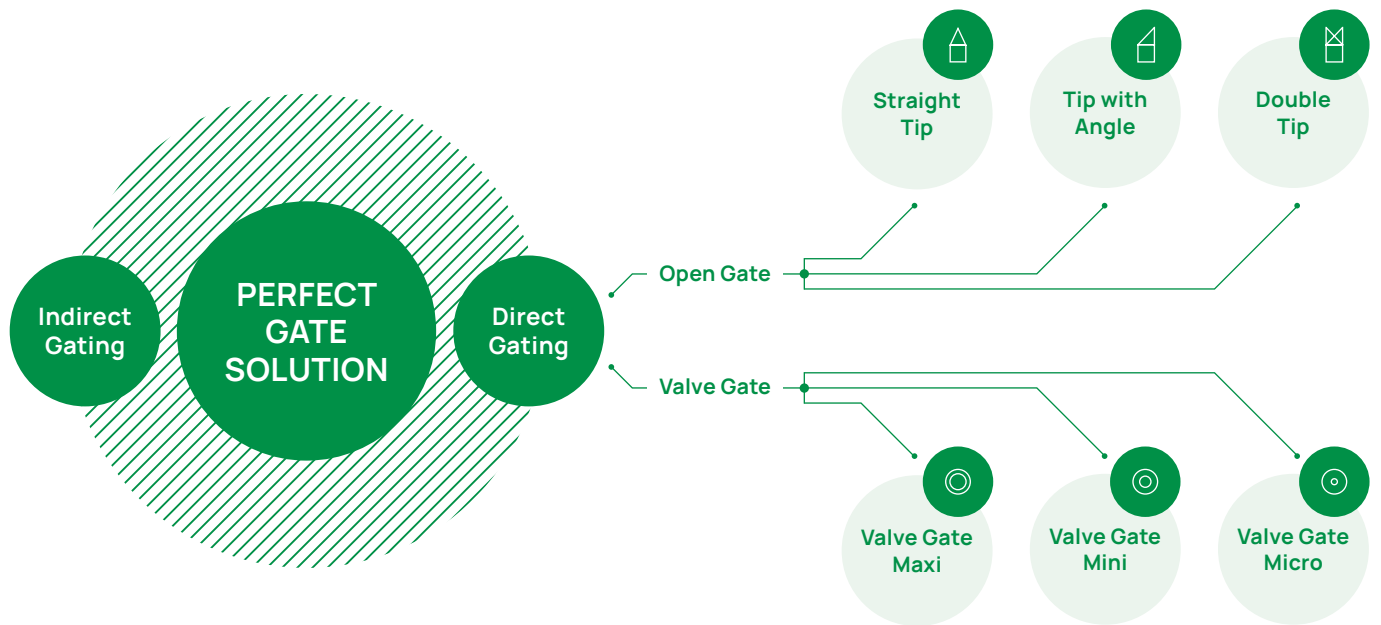
- + Up to 160 cavities (15mm minimum spacing)
- + Suitable for extremely thin components
- + Direct injection even with minimal shot weight (micro valve gate system)
- + Balanced cold runner
- + Minimal installation height thanks to innovative plunger system
- + Compact design due to low nest spacing (15mm)

Maxi system:

- + Up to 16 cavities
- + High injection volume
- + High viscosity (incl. HTV)
- + Balanced cold runner

- Large number of moving parts in the cold runner
- High maintenance costs

- Large number of moving parts in the cold runner
- High maintenance costs



Three systems, a whole host of benefits: eCO-Ject, eCO-Rotor, and eCO-Grip

Straightforward handling for fully automated operation

RICO handling systems are positioned directly on the mold and precisely adjusted to the specific part geometry. As the handling system is an integral part of the mold, it can be moved between machines just like the mold. All three of our handling systems enable fully automated molding operations.

Function
Vertical axis speed
Cycle time
Interface
Depositing location
Operation

**eCO-Ject**

Parts ejected from cavities
ejector pins

**eCO-Rotor**

Parts rotated from cavities
using aluminum brushes

Pneumatic: max. 1m/s,
servo-electric: max. 1.7m/s

**eCO-Grip**

Parts demolded from cavities
using grippers

Drive unit fully integrated into handling system and no external accessories required

Servo-electric drive enables reduction in cycle time of approx. 1 second compared to pneumatic drive

Brush unit

Parts fall into machine bed after demolding

Via wired handheld control unit,
alternatively via W-Lan by mobile phone or tablet

One-stop shop: turnkey injection molding systems

At RICO, turnkey systems are our specialty. They encompass the entire production process and can be customized to meet your specific requirements.

All-in-one turnkey service from RICO

- Plant specification, definition of interfaces with suppliers and partners, project management and coordination between the project partners
- Support with specification of the production cell at the beginning of the project
- Full system configuration at RICO
- In-house acceptance of production cell at RICO
- Configuration and commissioning, worldwide support as well as knowledge transfer and on-site training



Our service pledge

We guarantee that we can service and re-sample any mold that we have ever built.

Thanks to our extensive range of machines and the expertise of our experienced service technicians, we are able to resample every mold at our plant after it has been serviced. RICO molds typically have a very long service life. With regular servicing, our customers can count on even higher machine availability and produce perfect injection-molded parts every time.

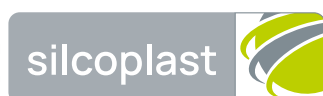
And if an issue does arise, you can arrange a service for any RICO mold quickly and easily. We also provide you with additional support:

- Mold maintenance and replacement parts directly from the mold maker
- Repair and reconditioning of mold components
- Resampling of your injection-molded parts after every service





RICO Elastomere Projecting GmbH
is part of the **international RICO GROUP**.



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