



YOUR GLOBAL PARTNER FOR TOTAL
SOLUTIONS WITH

**AUTOMATED
METERING- AND MIXING SYSTEMS**

LIKE HOME – IN MANY MARKETS



We are your global partner for metering and mixing technology on all industrial market segments.

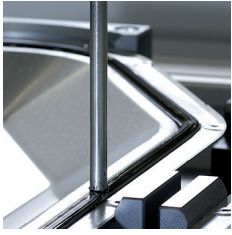
Innovative products and the development of customized systems for the processing of liquid to highly viscous single- or multicomponent materials are our core competencies.

The individual segments differ at first sight indeed, but the demands of manufacturers are comparable – new design possibilities, new materials and the development of new joining processes are required.

Choosing the right adhesive and sealant plays a decisive role, but equally important are the precise and economical processing and application of these materials.

Learn more about manufacturing applications and get convinced about our products and system solutions - Made in Germany.

SOLUTIONS FOR ANY REQUIREMENT



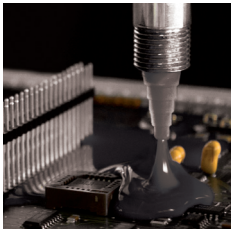
Bonding and Sealing

Joined materials – metals, glass, plastics and composites – can be found everywhere in our world, countless products are made out of them. Bonding technologies have more and more replaced traditional joining processes

during recent years, and Reinhardt-Technik is known as a pioneer of this trends.

Depending on the combination of materials, product design and the specific process parameters, we choose the right solution for the customer. For best results in terms of efficiency and productivity, we specify the right system for material processing and thus achieve the required precision and quality for the application.

We offer a wide range of products and systems for the processing of liquid thermosetting materials. Thus, we can serve various applications in accordance with local requirements and production environments. From simple manual applications to fully automated complete solution with robot cells including pretreatment and process monitoring.



Casting and Encapsulation

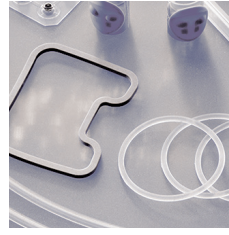
Potting or casting of components is the ideal method to protect sensitive electronic components – like PCBs, sensors, LEDs and more – from moisture, dust or shocks.

Another application is the sealing of filter elements, while the product and application are completely different, the process is basically the same.

As for bonding and sealing applications also encapsulation materials are formulated by the specific requirement of the final product. Casting resins such as silicones, polyurethanes or epoxy resins are precisely metered to either fill the complete housing or coat only partial elements of the surface with the right amount of material.

Quality and process reliability is key for each casting process. The material must be metered in the right quantity, be applied in the correct position and at the right time – with reproducible accuracy.

Therefore, we are a preferred supplier of metering and mixing systems for many industries and offer a wide range of products and systems for the processing of casting resins. From simple manual applications to fully automated complete solution with robot cells including pretreatment and process monitoring.



LSR-Processing

Liquid silicone rubber (LSR) is the right material, if high-quality products are required, especially in terms of flexibility, heat resistance, low compression set, stability of properties as well as biocompatibility with the

human body.

Reinhardt-Technik's LSR product lines for metering and processing of liquid silicones are ideal to optimize the production of LSR processors in terms of reliability, reproducibility and productivity.

Our experience, engineering know-how and service has made us a reliable partner for many injection molding companies as well as injection molding machine manufacturers, as we understand requirements and challenges. Thereby we are able to offer solutions with the greatest benefits.



Surface Technology

In many cases, quality products require special surface treatments, either as a coating, for corrosion protection or as a pretreatment prior to the final coating.

While Wagner is a leading company for wet paint and powder coating systems,

its subsidiary Reinhardt-Technik specializes in the in-mold coating technology.

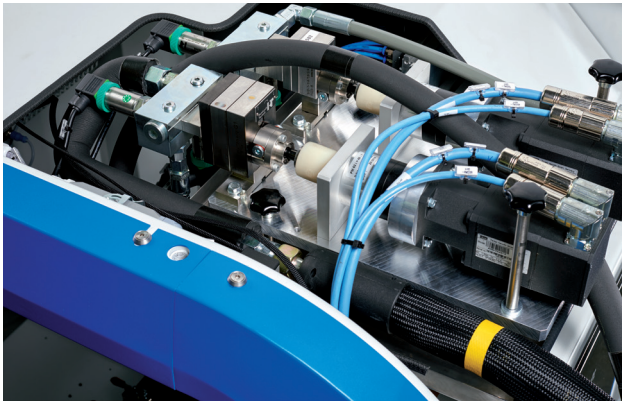
With the in-mold coating process a premixed and low viscosity material is injected directly after curing of the matrix resin into the closed mold. A pre-mixed liquid coating is injected into the closed mold directly after the curing process of the matrix resin. Since the matrix resin is not completely cured, the injected coating builds a diffused layer.

Reinhardt-Technik is a leading manufacturer of processing and injection systems for the IMC process. Leading vehicle manufacturers, automotive manufacturers and Tier-1 suppliers rely on IMC-technology by Reinhardt-Technik, put your trust in our experience.

METERING MAKES THE DIFFERENCE

As a provider of all common metering technologies we know which one is the right choice for your application to achieve optimal results.

Generally all metering systems of Reinhardt-Technik feature separate drive units for both components. Thus, a component flushing of the static mixer is possible prior to planned downtime and hence a possible undesired curing of the potting material is avoided and set-up costs are saved.



Furthermore, all units are driven by servo motors and thus have the following advantages against frequency-controlled AC motors:

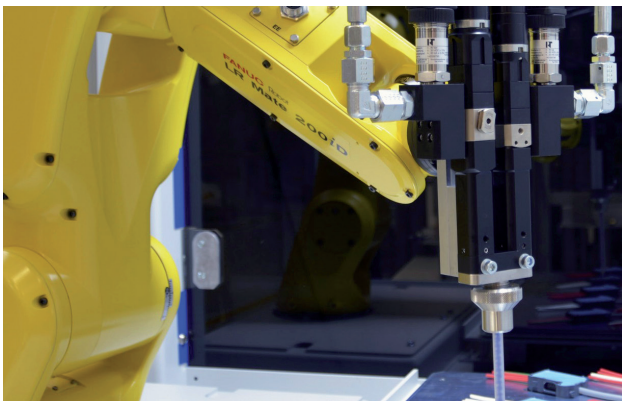
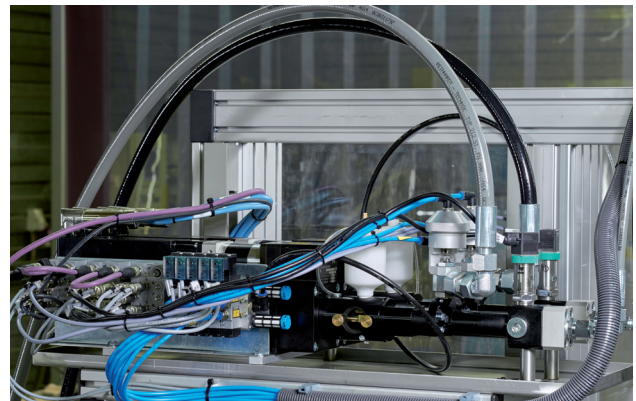
- Improved dynamics - thereby significantly faster ramp-up/down
- Full torque even at low output rates and hence low speeds
- No external motor fan at lower speeds needed

Gear Metering Systems

The mixing ratio in this system is determined by the sizes of metering pumps and their speeds. Reinhardt-Technik uses material specific components which matches best the performance and material properties. Therefore, an exact metering precision, long service life and process reliability is provided. The use of flow measuring cells can provide additional process optimization. The Conti Flow Metering unit is optimized for intermittent shot applications as well as for continuous flow processes.

Servo Shot Meter Systems

Especially abrasive fillers can restrict the operation of a gear pump, in this cases the usage of a electrical driven shot meter systems like the Vecdos eTwin is recommended. The metering unit is fed by material feeding and conditioning systems and subsequently the metering process is performed with total control of all relevant parameters. Our system permanently controls the position, the linear movement and the pressure. Therefore we can ensure maximum process reliability without any additional measures.



Progressive Cavity Pump

In the field of micro-dispensing progressive cavity pumps offers the best possible result. With the ContiPro product range Reinhardt-Technik offers material specific solutions also in this area by choosing the right stator and rotor pairing. A continuous flow application is possible like with gear metering systems, but as there is no system specific slippage, there are not compensation measures required. That's why progressive cavity pumps provide optimal results especially with low viscous materials in minimal dispensing volumes.

PARTNERSHIP WORKING ON HIGH LEVELS

The optimal solution is the desire of our customers. This refers to the process, the plant associated metering and mixing equipment and also to the increasing importance of holistic customer care throughout the life cycle of the installed system.

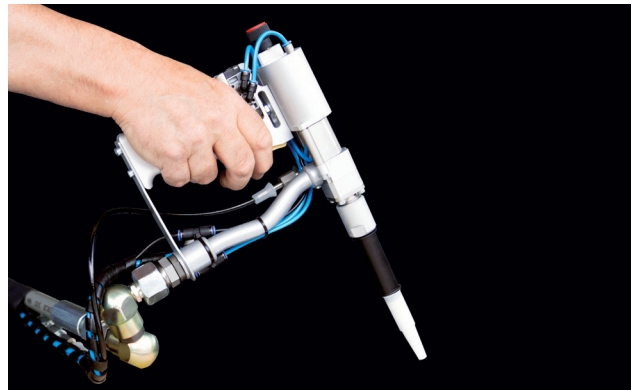
A partnership between the customer, the respective material manufacturer and us, the system suppliers, and our global distribution and service partners is extremely important in order to meet the requirements



Our technical center offers customers the opportunity in cooperation with our experienced application technicians to find new solutions, to optimize already existing processes or to train its plant operators, if necessary.

We facilitate our technical center for both progressive product and application developments as well as for presentations and demonstration of our products and systems.

- Development of new applications with partners and customers
- Optimization of processes
- Prototyping
- Technical trainings (application, operation and maintenance)
- Presentation and demonstration of products and systems



POSSIBLE SOLUTIONS

1

Material supply

- 1K- and 2K-material
- Alternatively pressure tanks

2

Tool changing systems

3

Transport technologies

- Circulation system
- Belt conveyor
- Chain conveyor

4

Quality control systems

- Metering monitoring
- Vision control
- Adhesive monitoring
- Component monitoring

5

Pretreatment systems

- Plasma, Corona
- Flame
- Primer, Pyrosil
- Brushing

6

Robotic systems

- Kuka, ABB, Fanuc etc.
- Fixed rotating nozzle
- Gripper changing system
- Collision avoidance system
- Safety Robot

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Dosing systems

- Differential piston pumps
- Plunger and evacuating ram
- Gear pumps
- Progressive Cavity Pump
- Static, dynamic and semi dynamic mixers

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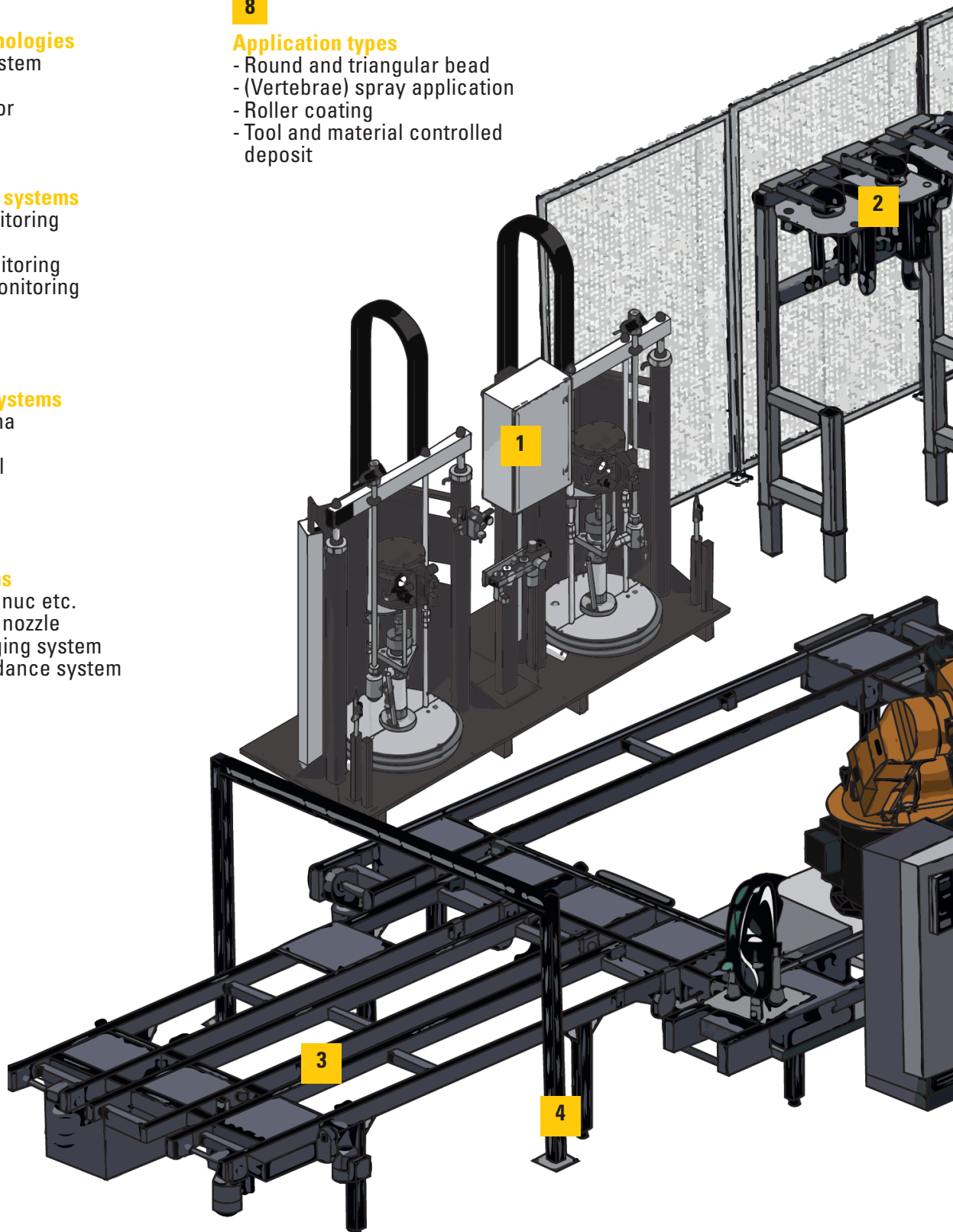
Application types

- Round and triangular bead
- (Vertebrae) spray application
- Roller coating
- Tool and material controlled deposit

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Joining systems

- Press
- Hot stamping
- Clinching
- Screws
- Assembly machines



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Cure systems

- Automatic Magazine
- Infrared, Ultraviolet
- Medium frequency technology
- Continuous furnace
- Automatic clamping systems

11

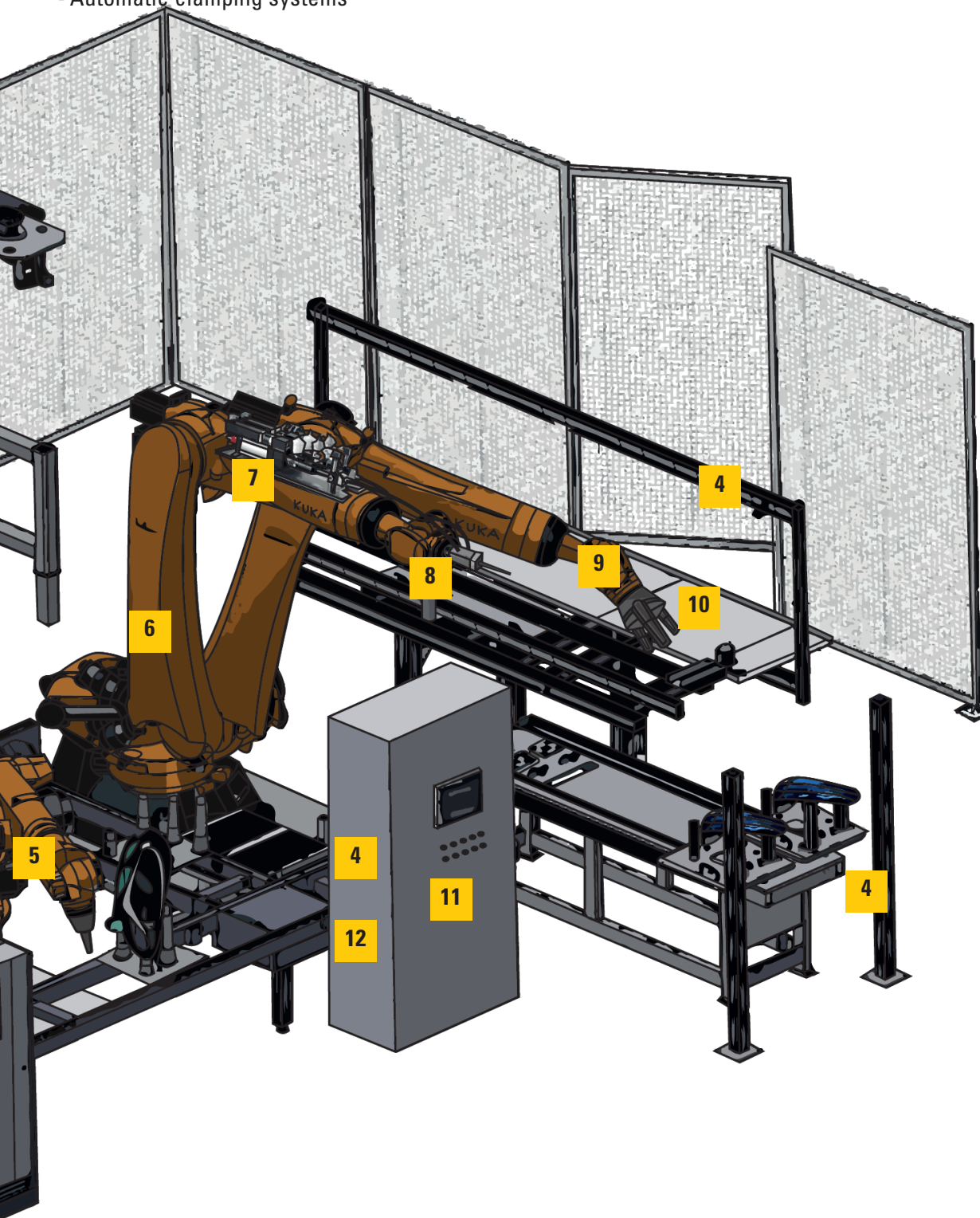
Process data archiving and visualization

- Various media
- Directly into network
- SCADA-system

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Remote maintenance systems

- Modem Analog and ISDN
- VPN-connections
- Teamviewer



ALL FROM ONE HAND

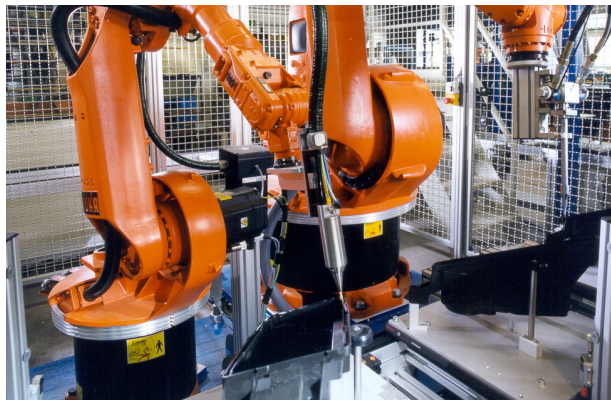
The challenges given by our customers are the driving force behind our pursuit of innovation and improvement of our technologies. Therefore, our product range not only includes standard equipment: Next to our standard metering and mixing systems we offer complete, automated production cells, including robots, combined with pretreatment, workpiece transport systems, application systems, post-treatment (curing) and quality assurance systems.

Our custom systems can be designed as an independent stand-alone solution or be fully integrated into a superordinate system, such as a production line.

V-Zug – Component variety and precision

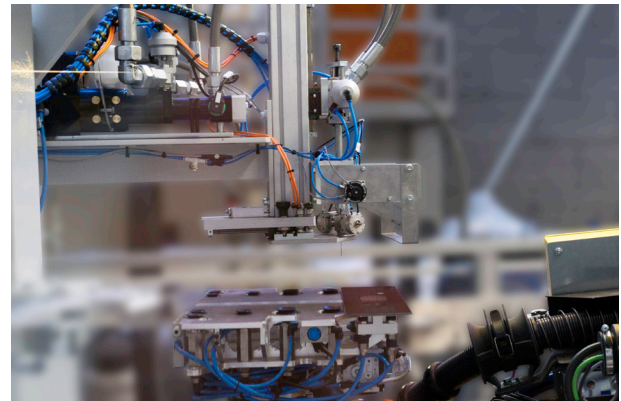
For V-Zug in Switzerland Reinhardt-Technik designed a system for bonding various components of ovens. Multiple workpiece variants and low tolerance limits were the decisive factors.

Reinhardt-Technik offered a fully automatic centering of variable workpieces and a pad application for fixing the workpieces during the curing of the adhesive. The processing of wide variety of workpieces is possible through a specially designed suction plate with an integrated force sensor, while the workpieces are precisely fixed and handled with the utmost precision and joined precisely with the cover screen.



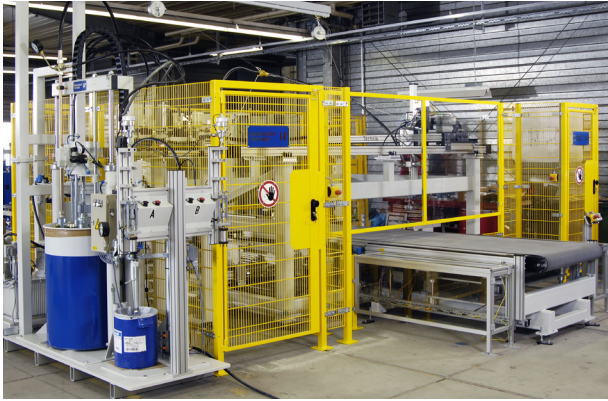
As a strong partner for your project, we offer among others:

- Pretreatment systems
- Metering and mixing of mono- to multicomponent materials
- Robot systems
- Process control
- Process visualization and documentation
- Quality assurance
- Curing systems and other post treatments
- Remote maintenance systems



Varroc – The complete process

The bonding of headlights requires a special pretreatment. After inserting the headlamps housing in special carrier to ensure adequate fixation, the station of the pretreatment is approached by the carrier system. Here, the headlamps are subject to a plasma treatment application to ensure optimum adhesion of the material. Subsequently the adhesive is precisely applied into the groove at the next position. Finally the lens is assembled and the complete headlight is placed in a buffer.



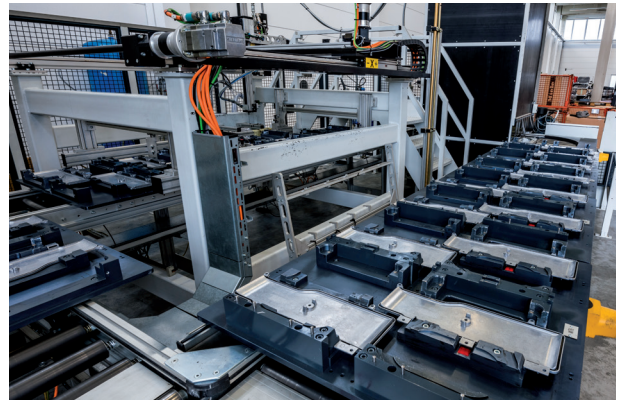
Viessmann – High level assembly

The last step to complete a solar thermal collector is the bonding of the glass to the support frame, coming from the assembly station and inserted into the sealing machine.

The adhesive is applied into the frame groove fully automatically and it is thus ensured that the glass and the collector are optimally sealed against weather influences. Powerful hydraulic 2K shot meter systems provide lowest application times for very high viscous materials. The mixing and dispensing unit is controlled by a 3-axis robot system for the required precision. Powerful tandem ram-feeders provide a safe and uninterrupted material supply.

Miele – Speed combined with precision

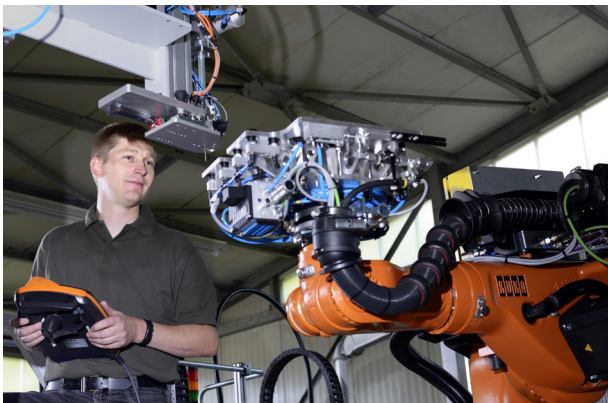
A quick application to a wide variety of components was the request from Miele, for this purpose a universal product carrier was created which can precisely adjust four different components. Beside the product carrier a visual inspection has been installed prior to the application to reach the needed process and safety requirements. Thus, it can be guaranteed that the corresponding components are placed exactly in position. Afterwards the precise application of the sealing bead is made to the component. The manual removal and re-assembly can then be performed by an assistant.



SERVICE IS GOOD. MORE SERVICE IS BETTER.

Our total solution approach is completed by comprehensive after sales services:

- All from one hand, centrally managed and globally available – consulting service for new applications and systems, planned maintenance, repair services up to excellent service part availability.
- As per your requirement and level of involvement we plan and perform retrofit and modernization projects in cooperation with your inhouse engineering departments.
- Our technical experts are available for practical and straightforward support. Monday to Friday 8am-17pm, emergency hotline until 8pm, and Saturday 8am-12pm
- On request we provide also remote maintenance service, which enables us to check the status of your system on the spot-globally.



Our service at a glance:

- Quick dispatch of service parts
- 7 field service technicians
- 3 service technician in back office
- Service and maintenance at plant site
- Installation and start-up of new systems
- Competent and individual training for your in-house maintenance team
- Repair service at Reinhardt-Technik workshop
- Repair and exchange program for core components
- Support and training of distributors
- Online portal for checking availability and pricing of spare parts as well as online order placement
- Individual maintenance contracts
- Modernization and retrofits of complete systems including start-up
- Support with material changes or process optimization

IMC – IN-MOLD-COATING

Sheet molded compounds (SMC) are fibre reinforced plastics materials which are widely used for exterior trim in the automotive and general vehicle manufacturing industry due to its specific benefits:

- Reduced weight
- Complex design geometries
- Corrosion resistance
- Sensors and antennas can be mounted invisibly underneath the SMC (no shark antenna on roof)



SMC as exterior trim parts need a perfect surface condition for being coated or painted. This is often done as a manual pre-treatment of the mold with a carrier-coating, which is time consuming and sometimes quality is suffering, alternatively an automated spray coating system is required, which boosts the investment of the production process.

In-mold-coating (IMC) by IMCoatec is a reliable and reproducible automatic process to provide an excellent ready-to-coat surface (class A) on SMC parts at minimum cost of ownership. IMCoatec is a single component mold injection system which provides a chemical joint between the SMC and IMC, offering following advantages:

- Automated single step injection eliminates
- Costly and time consuming mold pre-coating
- Reliable and reproducible Class A surfaces
- Easy operation and handling
- Prepared to process top-coat material
- Easy integration to SMC lines
- Incl. one or two controlled injector valves



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