Window Encapsulation
Window encapsulation from development to series production

In cooperation with

KraussMaffei
A tour round the plant
Window encapsulation

Intuitive operating software
Programming the mold carrier and mold functions without the need for prior knowledge of programming

Mold technology
Preliminary acceptance with programming, can be transferred directly to any KraussMaffei mold carrier with an import function

Mold changing trolley
For quick, flexible mold changes
WinCap mold carrier
Parallel movements optimize the cycle time

RimStar Compact metering machine
Temperature concept tailored to customer requirements

Material handling
Individual programming of mixing times
Expertise throughout the entire process chain
Window encapsulation with polyurethane from the product idea to series production

KraussMaffei offers a holistic, product-oriented process and plant concept for window encapsulation (WinCap) in the automotive and solar sectors.

As market leaders, we will assist and advise you in the design of turnkey production plants, development activities and the predevelopment of functional prototypes in conjunction with mold specialists Jaeckel Modell- und Formenbau GmbH.

KraussMaffei WinCap technology is a reliable solution for fitting glass windows in passenger utility vehicles safely and tightly. During this process, the window is inserted in a mold and overmolded with a compact PU system.

In this case, the PU foam takes over the sealing function. PU also fills tolerance gaps and protects the glass from excessive spot loads.

Our process-optimized production concept for window encapsulation with PU in series production includes material processing and filling, a metering machine with mixing head, different mold carriers, mold technology and post-mold processing of the window. We also provide advice from the product idea phase to the start of series production.

1. Material handling
An optimized material mixing process and automatic filling of material into the day tank from barrels or IBC containers.

Features
Individual programming of mixing times
Recirculation of the material
Special stirrers
Dry-run protection
Ventilation to prevent bubble formation

2. RimStar Compact metering machine
Innovative dosing system with premium quality components and accurate temperature control as well as a unique mixing head design.

Features
Many years of experience developing the mixing head design with minimal tolerances to avoid microbubbles in the component
Temperature concept tailored to customer requirements
Well-designed self-explanatory operating software with online remote service
Modular concept for easy plant expansion without interrupting production

3. WinCap mold carrier
Different modular electric mold carrier sizes for windscreens, roof modules and rear windows for full-scale series production in the automotive industry.

Features
Intuitive software for free programming of movements and mold functions
Parallel movements optimize the cycle time
Quick-change mold system incorporating magnetic clamping technology
Stepless adjustment of ergonomics in line with the height of the operator
Quick couplings and parking positions
Import and export of mold programs
Stirring station and container station for polyol and ISO IBC containers

RimStar Compact 40/16 metering machine for supplying a maximum of 8 mixing heads

WinCap 16.11 mold carrier with a plate size of 1600 x 1100mm and a clamping force of 40t

Mold change trolley for quick tool changes

MK 8/12 ULKP-2KV mixing head with a max. output of 550 g/sec

Intuitive operating software for programming mold carrier movements and mold functions without the need for prior knowledge of programming

4. Mold technology
From component analysis to the production of perfectly finished components.

Features
Preliminary acceptance with programming, can be transferred directly to any KraussMaffei mold carrier with an import function
Profibus interface, quick change system for mold functions and mixing head
Provision of complete 3D data for molds

5. Technological support
Consultation, layout recommendations, process optimization and training as well as production support and customer-orientated service.

Features
Capacity for developing new ideas
Prototype manufacture
Good network of accessory and material suppliers
Many years of experience in window encapsulation
Quick interface clarification
Detection and resolution of problems via the Teleservice interface

Application areas:
– Automotive
– Solar

Your benefits:
– Machine, mold and process innovations from a single source
– Highly efficient, high-quality turnkey WinCap systems
– Fully automated processes
– Process optimization, consultation and training
Technological leadership through cooperation

KraussMaffei works closely with mold specialists to develop innovative ideas and provide turnkey series production plants.

Together with our cooperation partner Jaeckel Modell- und Formenbau GmbH, we pool our expertise to optimize the production chain for the WinCap process.

We have set ourselves the mutual objective of marketing turnkey systems for the encapsulation of windows, glazing and solar panels with the aim of advising and convincing both new and experienced customers with pooled knowledge from our expert team.

Your benefits:
– Pooled expertise throughout the entire production chain
– Development, prototype manufacture and testing of new components
– Optimized interface between mold and mold carrier
– Process-oriented component design, development and production

Component analysis
- Feasibility study
- Flow simulation
- Cycle time analysis
- Determine tolerances

Mold prototype
- Swell concept
- Mold design
- Prototype manufacture
- Measurements and optimization
Jaeckel Modelle develops molds that are functional and easy to use. We meticulously develop tailored solutions that meet all your production requirements.

Production markets develop constantly and new visions are created almost on a daily basis. In order to profit from these visions, we must develop the right concept for you and provide you with a unique precision mold that satisfies your specific needs. We transform inspiration into products that impress.

Our cooperation partner Jaeckel Modelle manufactures products to the highest standards according to the EN ISO 9001 quality management system and offers holistic support throughout the entire production chain, from the planning stage and the development of the first prototypes to the manufacture of series production parts. Perfectly adapted manufacturing equipment with standardized interfaces that help the customer to reach Industry 4.0.

**Series production**
- Material processing and filling
- Positioning window and insert in the mold
- Window encapsulation in closed mold
- Hardening of reactor and component removal

**Production consultation**
- Optimization of the workflow and the workplace
- Primer station, cutting station, measuring station, packaging
- Maintenance plan, spare parts package
- Online support
System, process and mold technology all under one roof: together with partner Jaeckel Modelle, KraussMaffei is able to implement the entire process chain from the design of components to the finished encapsulated window, providing turnkey solutions with a high degree of system expertise from many years of process experience.

Partner Jaeckel Modelle owns a production-ready plant comprised of a metering machine and mold carrier that simplifies the development and testing of new components. Mold sequences can also be programmed in advance and then imported into the customer’s mold carrier.

Pooled competences allow the holistic further development of plants and process technology together with the customer. This cooperative approach will consolidate and further extend our position as technology and market leaders in the long term.