METALWORKING

TOOL & MOULD CONSTRUCTION

PLASTICS TECHNOLOGY

# YOUR SPECIALIST FOR COMPLEX FORMED PARTS

WERNER SCHMID

# WHATEVER OUR CUSTOMER NEEDS

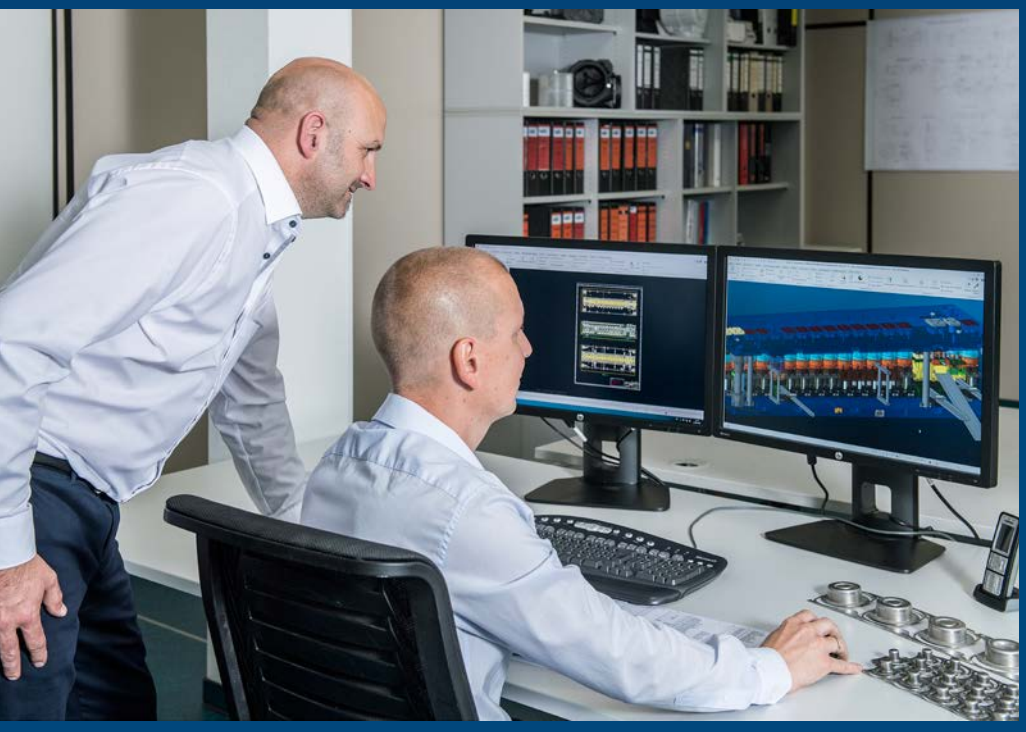
Since its founding in 1946, Werner Schmid GmbH has been a traditional family-owned company, now managed by the third generation.
Our corporate goals include sustainable growth, continuous and ongoing development and innovation as well as social and ecological responsibility for our region.

Matthias Hauß, Dipl.-Kaufm., and Joachim Hauß, M. Sc.

# PLANNING AND DEVELOPMENT FROM THE IDEA TO THE PRODUCT

Our service begins immediately during the development of your product. The experts from our design department support you during the launch of the project; the optimised part design ensures feasibility using a reliable process, compliance with the highest standards of quality and economic efficiency in production.

**You have an idea for a product; we develop an economically efficient manufacturing process.**



CAD design using CREO 3

Sampling on the company's own machines



**We look back on over 70 years of experience in metal forming technology and over 50 years in plastics technology. This experience enables us to manufacture even the most complex products in accordance with the stipulated requirements.**

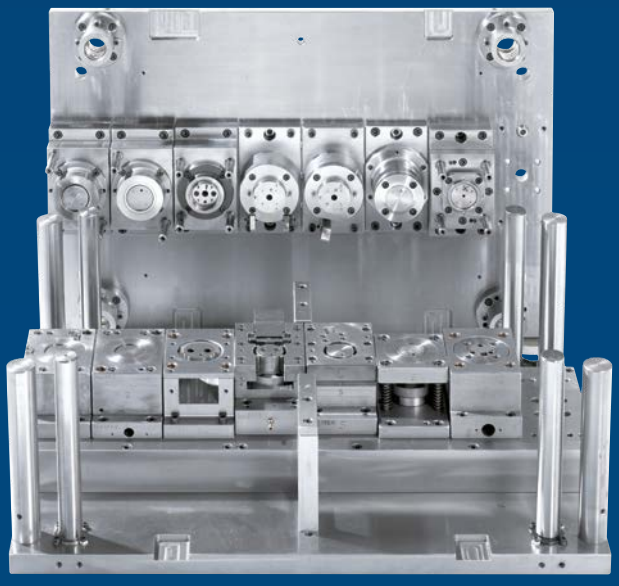
We cooperate closely with our customers to study specific issues and develop joint solutions. We offer you economically efficient answers to the most demanding technical requirements, complex part geometries, high degree of deformation or difficult shape and position tolerances. We process common, highstrength and stainless steels as well as various non-ferrous metals such as brass or aluminium alloys. The range of plastics that we work with in the injection moulding process runs from transparent parts to functional, glass fiber reinforced plastic components and sealing elements.
Thanks to our many years of experience in the fields of metalworking and plastics processing, we have extensive expertise in the manufacture of components from both materials and the manufacture of hybrid combinations, e. g. the over-moulding of metal inserts.

Handling system from our tool manufacture

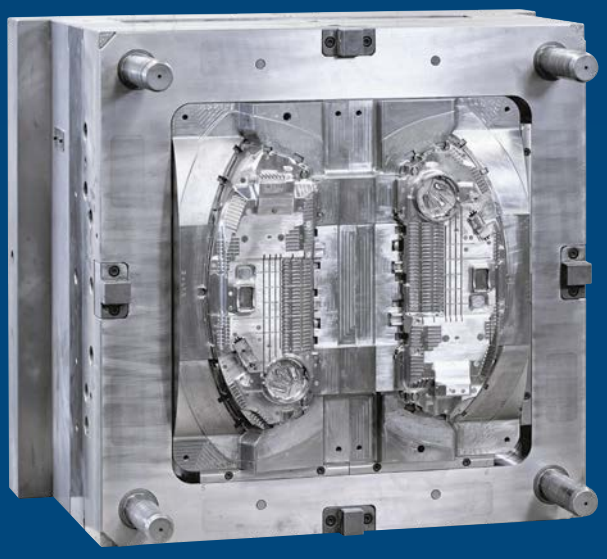
# TOOL MANUFACTURE – STAMPING AND FORMING TECHNOLOGY AND MOULD CONSTRUCTION

We use modern machining equipment to produce stamping and forming tools as well as injection moulds in our tool and mould production facilities.

When it comes to metal processing, we specialise in complex forming processes such as deep-drawing. We produce one-stage tools for small series as well as progressive and transfer tools for large series. For the plastics processing we produce moulds for single- and multi-component injection moulding.



Transfer tool with single stages



Injection mould with two cavities

**Our tool and mould production facilities have all the tool-making machinery that is required for the manufacture of your tool in our company.**

We offer the complete range of services, from the provision of expert advice, the component design and tool manufacture, to the installation and sampling on our production equipment.
Tools and moulds are not only manufactured for our own production; sales tools for use in our customers' own manufacturing facilities can also be procured from Werner Schmid. Our tool and mould manufacturing portfolio is supplemented by our experience in device construction and in the construction of all peripheral devices such as transfer or automation grippers.

*Maximum dimensions of forming tools:*

| | |
|---|---|
| Length (mm) | 3,500 |
| Width (mm) | 1,000 |
| Weight (kg) | ~ 8,000 |
| Stroke (mm) | 300 |

*Maximum dimensions of injection moulds:*

| | |
|---|---|
| Height (mm) | 1,200 |
| Work height (mm) | 950 |
| Width (mm) | 800 |
| Weight (kg) | ~ 3,800 |

# METALWORKING

## STAMPING AND FORMING TECHNOLOGY

The high dimensional accuracy of the products from our metalworking facility is based on the innovation of our design, the quality of our tool manufacture and the years of experience of our qualified production personnel. The tools and devices required for your products are developed, designed and manufactured at the highest technological level. We can secure a stable production process that enables us to deliver your products reliably with the desired quality and at the required time.

Using progressive and transfer tools as well as part-specific special designs, we offer a high degree of flexibility for the implementation of high-quality products in compliance with strict geometric and dimensional requirements.

As a provider of innovative solutions and complex precision parts and components, we also have the machinery and professional expertise for high-quality further processing of your products from our metalworking facility. This includes modern degreasing, cleaning and conservation facilities offering various possibilities for subsequent treatment of parts or a Stopp turning machine with EGS robot for fully-automatic subsequent shape cutting of formed parts with low cycle time at a consistently high level of quality.

*Mechanical presses*

| | |
|---|---|
| Press force (kN) | 350 to 1,250 |
| Installation (mm) | 1,000 × 720 × 355 |
| Stroke (mm) | 140 |

*Hydraulic presses*

| | |
|---|---|
| Press force (kN) | 600 to 2,600 |
| Installation (mm) | 1,000 × 1,000 × 1,050 |
| Stroke (mm) | 750 |

*Automatic punching machines with conveyor system and roll feed*

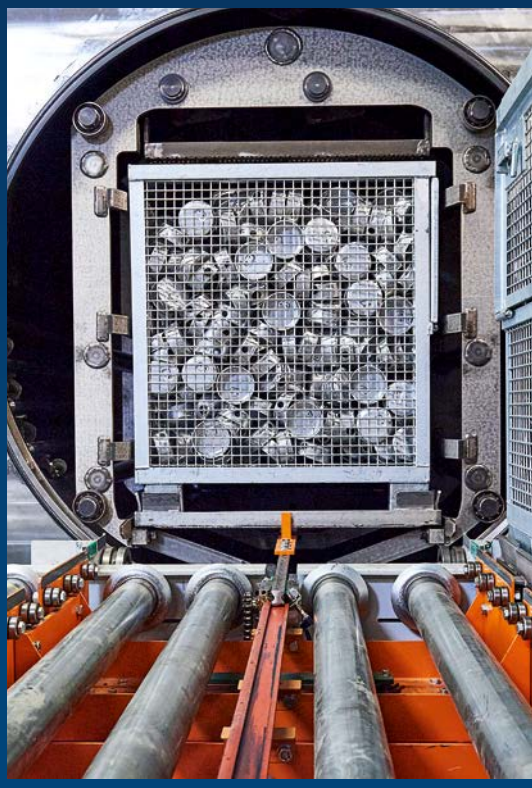
| | |
|---|---|
| Press force (kN) | 600 to 2,000 |
| Installation (mm) | 1,180 × 800 × 540 |
| Stroke (mm) | 170 |
| Band width (mm) | 500 |
| Band thickness (mm) | 5 |
| Feed rate | 150 m/min |


*Transfer presses with automatic feed and oiling*

| | |
|---|---|
| Press force (kN) | 2,000 to 5,000 |
| Installation (mm) | 3,000 × 1,400 × 700 |
| Stroke (mm) | 300 |
| Band width (mm) | 650 |
| Band thickness (mm) | up to 4 |

*Transfer servo presses with automatic feed and oiling*

| | |
|---|---|
| Press force (kN) | 3,150 to 4,000 |
| Installation (mm) | 3,500 × 1,400 × 700 |
| Stroke (mm) | 300 |
| Band width (mm) | 650 |
| Band thickness (mm) | up to 6 |



# PLASTICS TECHNOLOGY

## MANUFACTURING PROCESSES & FURTHER PROCESSING

For over 50 years, we have been processing thermoplastics and thermoplastic elastomers for technically complex moulded parts for measuring and control technology, the ventilation and automotive industries and for other sectors with demanding requirements for the geometry and quality of components. We specialise in functional, highly precise parts that we can produce efficiently thanks to a high degree of automation.

Our plastics manufacturing division competently handles a multitude of various production and further processing procedures, including above all:

- Plastic injection moulding
- Multi-component injection moulding
- Hybrid technology
- Pad printing
- Vibration welding
- Hot riveting
- Assemblies from multiple components, including functional testing

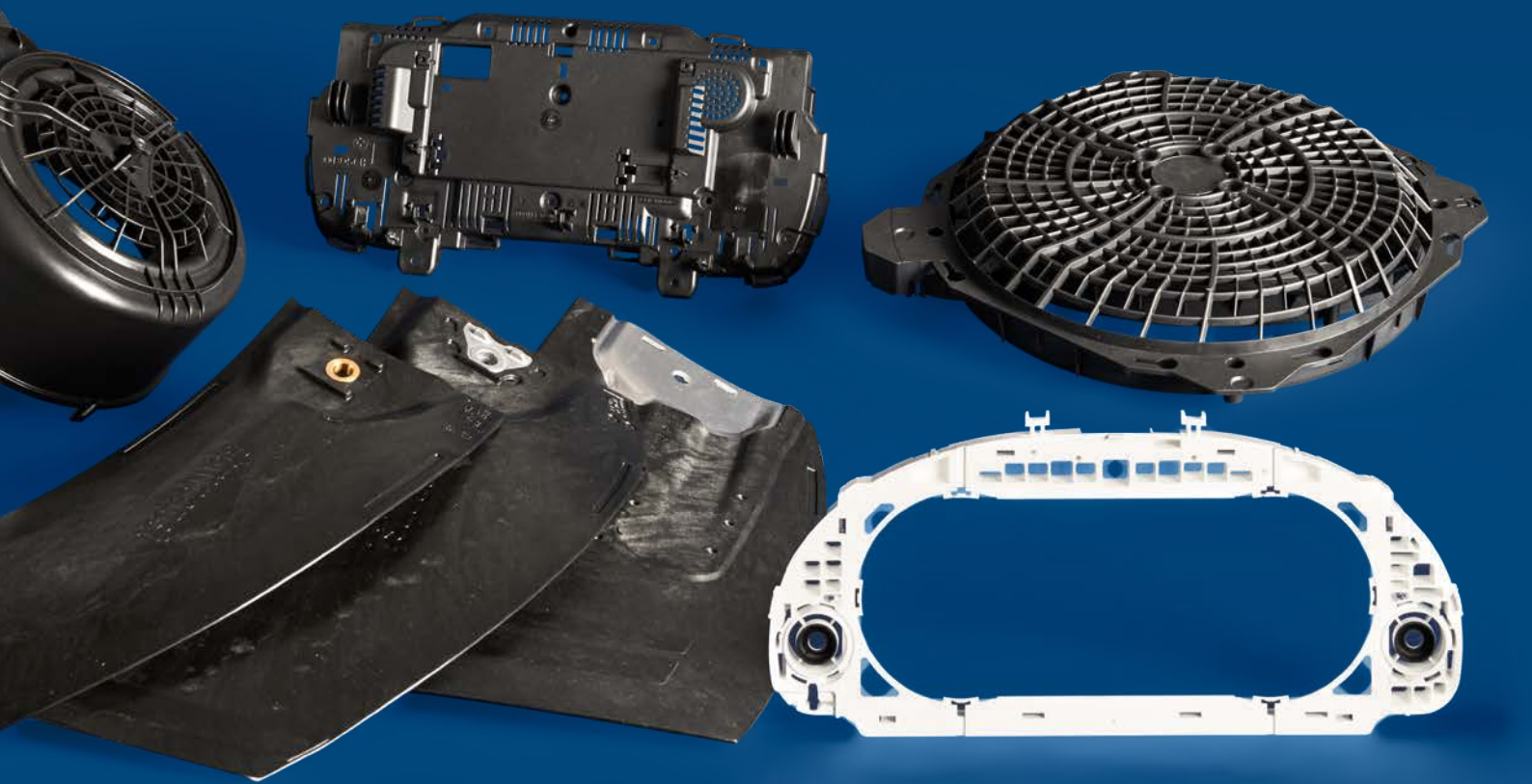
We continuously invest in the ongoing development of our machinery and our professional expertise in further processing. As a consequence, other procedures that are not listed here are available to us at any time. In principle, it is also possible for us to expand our machine stock in order to meet customer requests or project demands.

*Fully hydraulic and fully electric injection moulding machines*

| | |
|---|---|
| Clamping force (kN) | 600 to 7,000 |
| Clamping dimensions (mm) | up to 1,510 × 1,440 |
| Shot weight (g) | 3 to 2,200 |
| Plate separation (mm) | 800 to 1,800 |

*Multi-component injection moulding machines*

| | |
|---|---|
| Clamping force (kN) | 2,200 to 2,300 |
| Clamping dimensions (mm) | 970 × 830 |
| Shot weight (g) | |
| Hard component | up to 430 |
| Soft component | up to 80 |
| Plate separation (mm) | up to 1,290 |



# HYBRID PARTS AND MULTI-COMPONENT INJECTION MOULDING

Thanks to the combination of metalworking and plastics processing under one roof, we can merge our decades of experience in both of these production areas into outstanding professional expertise in the manufacture of metal-plastic hybrid combinations. Insert parts from our own metal production, procured components made of various metallic materials or plastic parts are inserted and overmoulded by fully automatic handling systems in the injection moulding machines.

The manufacture of complicated components in the multi-component injection moulding process rounds off our broad product portfolio. Thanks to our experience in the processing of thermoplastic elastomers, we can manufacture parts for many different applications with the multi-component injection moulding process, including parts with sealing function or slip resistance.

Fully automated manufacture of parts with aluminium carriers overmoulded by plastic

Handling system for a transfer tool in two-component injection moulding



High demands on the quality of our parts and the environmental compatibility of our processes have long since become the basis for our work. Our understanding of our role as a quality provider is based on the conviction that a high standard of quality is an indispensable requirement for lasting success and long-term continued existence of the company.

# QUALITY MAKES THE DIFFERENCE

In the interests of our customers, we strive to achieve high quality in all phases of the production process: from the provision of expert advice to our customer in the early stages of product development, to the design and manufacture of high-quality tools as well as the manufacture of parts that satisfy the most demanding requirements.

One of our corporate objectives is to remain a recognised provider of complex top-quality parts, even in the long term.  Continuous and ongoing development is consequently a major element of our integrated quality and environmental management system. We are certified in accordance with IATF 16949, ISO 9001 and ISO 14001.

Our measurement laboratory is equipped with modern measurement machinery that enables us to perform both tactile and multi-sensor measurements. Using these facilities, we offer high-performance production monitoring with a high degree of freedom and efficient sampling in accordance with all commonly used procedures.




Fulda is located in the center of Germany and has excellent traffic connections, including an ICE railway station:
3.5 hours to Berlin and Hamburg, 3 hours to Munich and 1 hour to Frankfurt.

WERNER SCHMID

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