

# PLASTICS TECHNOLOGY

INJECTION MOLDED PARTS, COMPONENTS, ASSEMBLIES



## /31

### INDIVIDUALITY

We are not just a manufacturer of standardized solutions in plastic, but a professional partner who brings your product to completion in line with your design concepts.

#### RAPP KUNSTSTOFFTECHNIK GMBH

Part of the wide range of products and services that the POLYRACK TECH-GROUP offers is the development of plastic solutions. Starting with prototyping and tooling, we pursue a comprehensive manufacturing process for thermoplastic parts beginning with the development consulting, prototyping and tool making and fully comprehensive automated injection molding of highest quality.

#### PRODUCT RANGE & MANUFACTURING TECHNOLOGIES

- Thermoplastic parts
- Injection back-molded plastic parts / film-insert-molding (FIM)
- Foamed thermoplastic parts (injection molding with added chemical foaming agents)
- Multicomponent technology (2C, 3C)
- Parts weights ranging from 0.5 g to 6.000 g
- Insert technology: for overmolding axles, bushes and stamped parts

#### EXAMPLES OF TYPICAL MATERIALS:

- Standard thermoplastics: PP, PE, PS, ASA, ABS, PMMA
- Technical thermoplastics: PC, PA, POM, TPE, PBT
- High-performance thermoplastic: PPS

In order to achieve the desired mechanical and thermal properties in the product, we deploy the plastic granulate in combination with dyes, bulking agents (e.g. fiberglass, glass beads) and modifications (e.g. for fire protection, impact resistance, demoldability).

#### INJECTION MOLDING

Our machine park is equipped with handling robots to guarantee cavity-separated stacking and maximum cleanliness.

Process-controlled injection molding; injection molding machines:

25 t, 50 t, 100 t, 200 t, 400 t, 500 t, 650 t and 1300 t (clamping force)

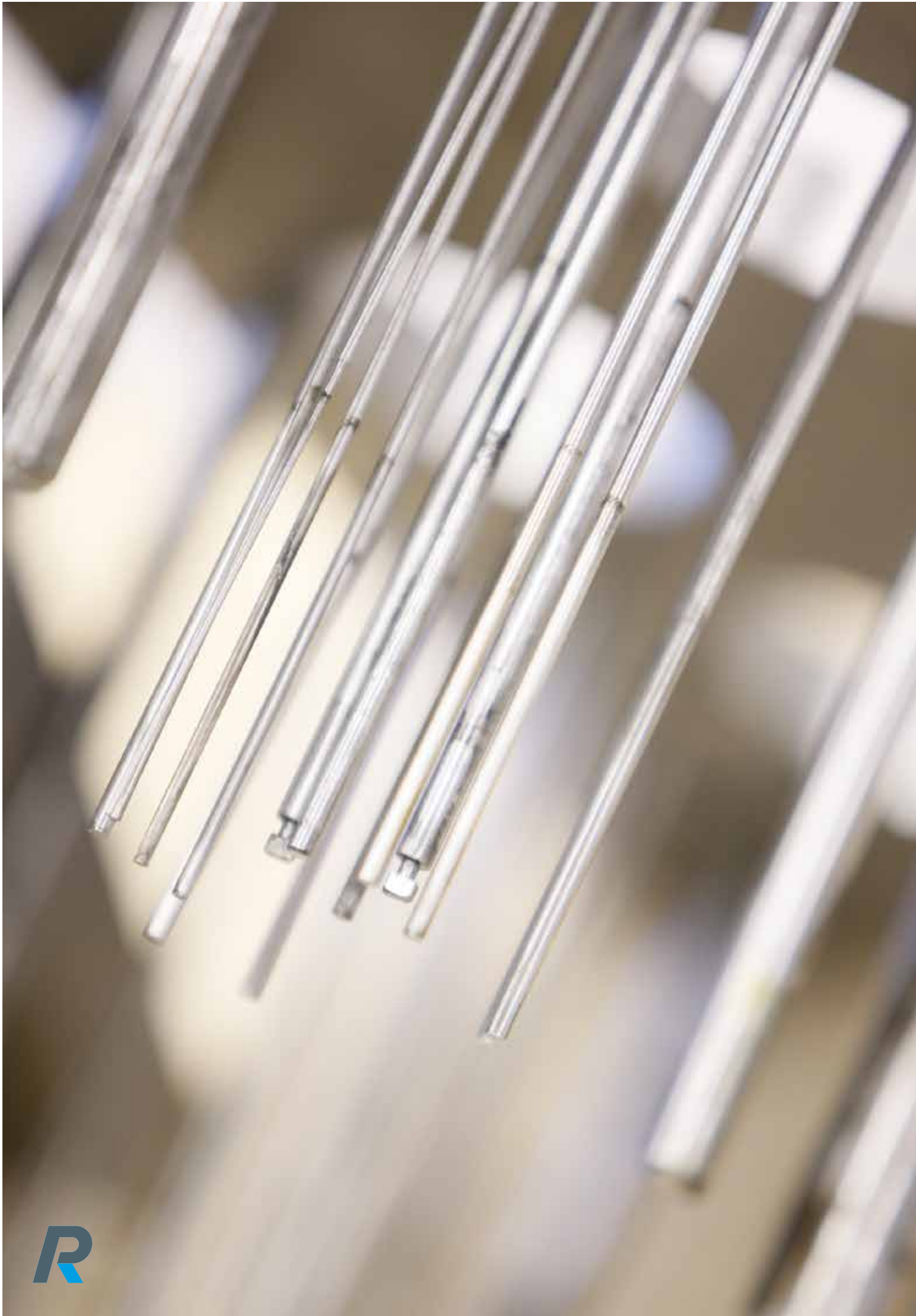
## INDIVIDUALITY



SERIAL PRODUCTION



BACK-MOLDED PLASTIC PARTS



# /33

## PRECISION

High-quality tool construction requires experience and innovative technologies. With the help of these two factors we realize your tool.

### TOOL DESIGN & CONSTRUCTION

Top-quality series tools and equipment for reliable series production:

- Molds for precision injection molding of technically challenging parts
- Molds for thermoplastic foam injection molding
- Simple and family molds
- Multi-cavity molds (e.g. 8 or 16 cavities)
- Multicomponent molds (2C, 3C)
- Molds modification and optimization
- Molds maintenance and repair
- Automation
- Tooling such as handling devices and fixtures

Frequent, proactive maintenance by our qualified personnel ensures that the high quality of the injection molds is kept up for many years. Your valuable molds are stored in our fireproof, heated tool store.

### FINISHING: ASSEMBLY & SURFACE TREATMENT

- Module assembly
- Complete assemblies with electronics, final assembly in compliance with ESD requirements
- Laser marking
- Ultrasonic welding
- Electromagnetic resistance welding (ERW)
- Printing (pad, screen and HD printing)
- Orbital riveting
- Bonding technology and gaskets
- Powder coating
- Wet painting (through partners)
- Metallization of plastic parts (through partners)

## PRECISION



TOOL DESIGN



FINISHING OF PLASTIC PARTS

PRECISION  
PRECISION



# /34

## PERFECTION

On request, we develop prototype parts to meet your design and functional requirements.

### QUALITY

It is a matter of course for our company to think and act with quality and the environment uppermost in our mind. We consider this a key prerequisite for successfully facing the challenges of the international market together with our business partners.

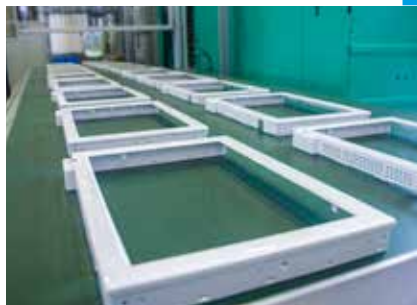
First samples as well as series measurements are performed with the most modern optical and tactile measuring systems in our air-conditioned measuring laboratory. In addition, tests accompanying series production are performed at test stations set up for this purpose in the production area.

### MEASURING EQUIPMENT FOR QUALITY ASSURANCE

Among other equipment, we have the following measuring equipment at our disposal for quality assurance:

- 3D coordinate measuring machines (optical and tactile)
- Hygrometer
- Height gage
- Coordinate measuring machine
- Microscope (x 80)
- Surface measuring device
- Tension and pressure test equipment

## PERFECTION



SERIAL PRODUCTION



MULTI-COMPONENT-PARTS (3C)



QUALITY ASSURANCE

PERFECTION  
PERFECTION  
PERFECTION







# /37

## SUCCESS

We want to support our customers with economical and future-oriented solutions in varying business sectors so that they can act fast and successfully in their markets.

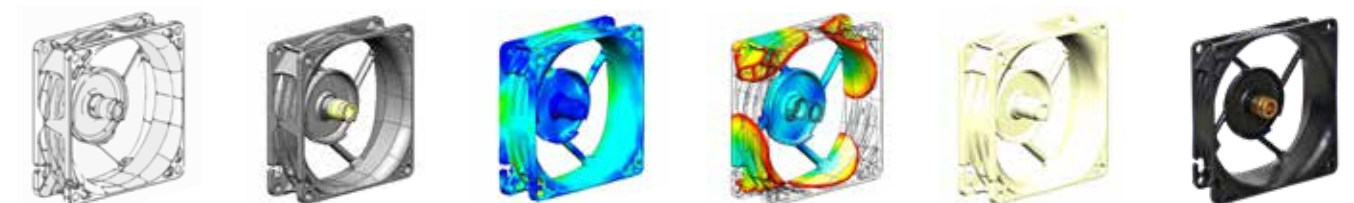
### FROM CONCEPT TO PRODUCT

When ideas take shape: We plan, develop and produce high-precision molded plastic parts and complete modules to your requirements.

The development phase of an injection molding tool already determines its later stability and process-reliable use. For this reason, POLYRACK's experienced engineers work with you on creating the ideal basis for the series production of your products.

Based on many years of experience with a wide variety of tool technologies, materials and simulation tools we enable you to achieve your final product, both efficiently and reliably. To do this, we not only design the items with the plastics and tooling in mind, but we also perform mold-filling simulations and thermal analyses.

Based on your requirements, as part of the development process, prototypes can be made before the series tool is built to provide extra certainty for series production as regards design and function.



SCRIBBLE

CAD-MODEL

FEM CALCULATION

FILLING SIMULATION

PROTOTYPE

SERIES PRODUCTION