



Rapid tooling

Because we have what it takes.

With milled aluminium tool inserts, injection-moulded, series-standard plastic prototypes, and pre-production and small-run series using original materials.

METHODOLOGICAL PRINCIPLE

As part of our rapid tooling services, we prepare milled tool inserts for the injection moulding of thermoplastics.

With an end-to-end CAD/CAM solution and a high degree of standardisation in all areas, we offer a reliable process chain that allows us to meet most of our clients' preferences starting from a unit volume of one. The process can be used to prepare prototypes, pre-production series and small-run series using original materials. The delivery times and costs are much lower than for conventional series production tools, with quality that is on a par with series components. The optimised process also allows short response times for subsequent orders thanks to a modular tool/cassette system.

THE BENEFITS FOR YOU

- Fast and reliable
- High-quality
- Cost-effective

OUR FACILITIES

NC milling machines

3 and 5-axle

Injection moulding machines

with locking force of 100 - 450 t

up to 1.7 kg shot weight

up to 800 mm unit size

TYPICAL BATCH SIZES

20 - 10,000 units and more



Tool construction

With our own tool design and construction facilities comprising multiple 3 and 5-axle milling machines, we can rapidly and cost-effectively implement tool inserts (which are primarily made from aluminium) in specialised system platforms according to our clients' preferences. This is largely done without the limitations of series production considerations.

Only the output volume is reduced at first on account of the simplification of the tool design for reasons of efficiency, although it can be increased in accordance with the client's wishes. Piece-specific surfaces such as structured or high-gloss polished finishes are also possible.

Injection moulding

With our injection moulding machines we process all common thermoplastics, from a few grams to 1.7 kg, with a locking force of 100-450 t at present. The piece size ranges from 800 mm to over 1,000 mm in special cases. Pieces can also be made from multiple components, for example a combination of hard and soft components or with embedded parts. The typical guaranteed output volume of these tools is 1,000 units. Batch sizes of several thousand units have also been successfully implemented in the past with no apparent wear or sacrifices in terms of quality, depending on the injection moulding material used.

In comparison to fully automated, series production tools, one limitation of more ambitious items featuring side shifters or cores is that these areas must be removed from the machine by hand, and batch parts must be demoulded manually. This is due to the cost-effective and time-saving production of the tools, which therefore requires the slightly more costly production of the pieces. The modular tool switching system allows the shortest possible response times.

Measurement technology, test reports and documentation to support production

The dimensional and functional assessment usually required for technically ambitious pieces is carried out internally and documented accordingly using a 3D coordinate measuring machine and optical measurement. In addition to different formal documentation or also documentation in support of production, this is also the basis for the production and delivery of pieces that are used in series production at a later date – regardless of the specified unit volume. Full assemblies are assessed using CT scans.

Follow-up work and assembly

If there are no requirements to be implemented in terms of tools or materials in relation to special surfaces, this refinement or post-processing can be implemented in our model making department. The same applies to the assembly of components or the completion of more complex assemblies.