



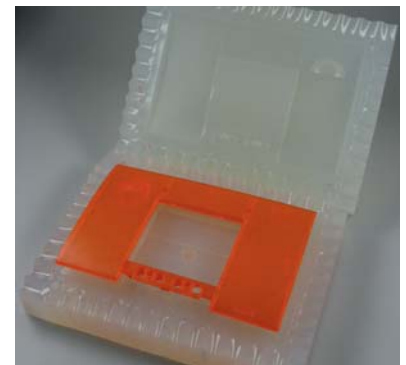
Vacuum casting (VC)

Vacuum casting is a highly efficient and fast duplication processes to produce small-scale series. On the basis of the item data, a master model is produced with a high-precision additive procedure, usually stereolithography (SLA) or MultiJet Printing (MJP); a silicone mould is used for casting. In vacuum casting systems, polyurethane resins (PU) cast parts are created with properties close to series materials. The large range of casting materials provides the maximum number of options to produce series-like component characteristics, e.g. similar to PP, ABS, etc. Appearance (surface, colour scheme, etc.) can be achieved close to series production during vacuum casting for special requirements, e.g. the recasting of inserts or 2K components (e.g. hard-soft).

Vacuum casting is always suitable if additive procedures do not meet the requirements of the component (characteristics, surface, etc.) and series tools are not yet available. It is thus perfectly suited for small-scale series. An evaluation of the limited number of pieces for larger batches depends on components and requirements and should be examined in individual cases.

Advantages

- Plastic parts with series-like characteristics and qualities
 - Isotropic material properties (no layered manufacturing)
 - Appearance (surface, colour, etc.)
- Broad range of materials
- Short cycle times (no tool making)
- Efficiency compared to prototype tool / injection moulding (low tool costs)



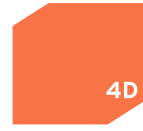
Silicone mould with part

Options



Casing - 3-parts with RAL paint

- Mould sizes up to 900 x 600 x 600 mm
- Production per shape depending on geometry and material approx. 20 casts
multiple cavities possible with larger quantities
- Range of materials
 - ABS-like, PP-like, etc.
 - From elastic to rigid, adjustable starting at Shore A 25
 - From transparent to black - approximate RAL shade
 - Materials with additional characteristics, e.g. chemical resistance, temperature resistance, UV resistance, etc.
- Delivery times including master model starting at 6-7 workdays



Sitzabdeckung Vakuumguss

Application example cover

Requirement: Mountable prototype series with series-like component characteristics and appearance.

Material: PP-like prototype series

15 set right/left

Component dimensions: approx. 700 x 600 x 150mm



D-column cover - ABS like

Application example air-conditioning duct 2K



Hard-soft combination

Requirement: Technical prototype of an air-conditioning duct with hard-soft combination

Component dimensions: Assembly approx. 900 x 300 x 150 mm

Material: Hard components - ABS like, soft components TPE like, Shore A 65

Prototype series: 20 set

Inserts and also 2K requirements can be realised with vacuum casting. Whether it is hard-soft or colour combinations, there are hardly any limits here. Even a combination of an SLS hard component with elastic recasting can be an efficient approach.

Application example trophy

Requirement: Trophy for award presentation with acrylic look

Component dimensions: Approx. 100 x 100 x 80 mm

Material: Translucent acrylic-like with colour differentiation

Small-scale series: 12 pcs.

Vacuum casting allows the realisation of visual requirements including transparency. The surface is finished once on the master model. For small-scale series with visual requirements, vacuum casting therefore provides not only technical (material properties, material homogeneity) but also cost advantages over direct, additive processes where every prototype must be finished individually.



Trophy - transparent or translucent cast parts