



mimplus – Metal injection moulding & subsequent processes

OBE Ohnmacht & Baumgärtner GmbH & Co. KG



BACKGROUND and BASICS

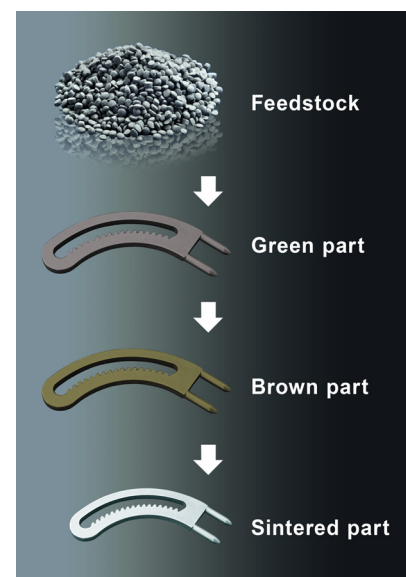
- Metal Injection Moulding is a powder metallic forming process. It enables the inexpensive production of small, complex components made from stainless steel or titanium.
- Since 1996 OBE has specialized on the realization of complex components for medical applications i.e. surgical instruments or devices.
- This technology is an alternative to established production processes such as metal cutting, press sintering or investment casting.



OBE Germany - 15.000m² production area

CONCEPT and SOLUTION

- **Performance of OBE before serial production**
 - Competent advice during the development
 - Construction of the part in a 3D CAD model
 - Manufacturing of prototypes in sample tools
 - Realisation of tools in own tooling department
- **Metal Injection moulding at OBE**
The feedstock – a metallic powder mix with waxes and polymers - is injected in a conventional mould. The result are parts that are 20% larger than the final components –the “green” parts. In a subsequent process the waxes & polymers are eliminated generating the fragile “brown part”. The final sintering process leads to the full metal parts in the calculated volume reaching a density of nearly 100 %. Technical characteristics of these metal injected parts are comparable to solid material.
- **Benefit of MIM**
The MIM process is more economical compared to conventional technologies if the complexity of the parts is relatively high.



MIM process: Production steps of a clamp for a medical device – material 316L

STATUS and OUTLOOK

- OBE is looking for new interesting applications and developments of the MIM-technology in the medical sector.
- Another target is to offer additional services on components i.e. plating up to the assembly of components using the existing production facility of OBE



MIM-Components integrated in a surgical instrument

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