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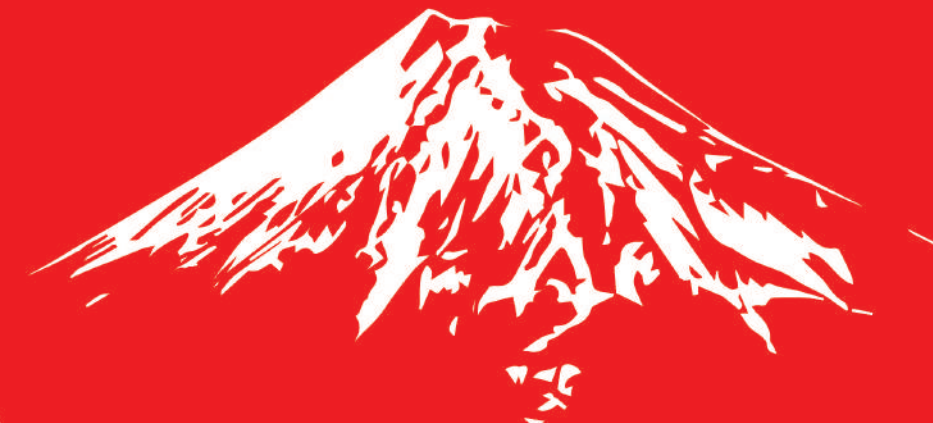
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Taisei Kogyo Co.,Ltd.
ISO 13485:2016 certification
Manufacture of metal injection moulded parts for non-active
medical device and active medical device (non-implantable)



Company web site
<https://micro-mim.eu/>



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Micro MIM Japan Holdings Inc. was established in December 2017 as a parent company and the shareholder of Taisei Kogyo Co., Ltd. Micro MIM Japan conducts sales and marketing as well as R&D, whereas Taisei Kogyo focuses on manufacturing using μ -MIM® technology.

MIM process



Metal injection moulding (MIM) is a powder metallurgy (PM) manufacturing process. Unlike the conventional PM process, MIM is applicable to small complicated designs with high-density metal components serial production.

Features

μ -MIM® is a next-generation MIM technology realises ultra-precise MIM parts production. It is realised a serial production of complicated small designed metal parts with satisfying the tight tolerance requirement.

Size and design

μ -MIM® and 3D-MIM® technologies realise small complex hollow undercut and/or thin-wall structure serial production.

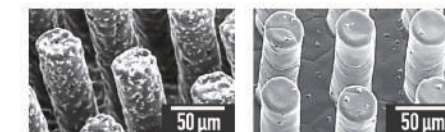


Precision

Precise net shape manufacturing that satisfies the tight tolerance requirement, which is equivalent to machining.



Material



Ra = 1.5 μ m (Powder size 10 μ m) Ra = 0.3 μ m (Powder size 2 μ m)

Powder size

The latest fine powder is deployed. The precise, low surface roughness (Ra of 0.3 μ m) at as-sintered serial production is realised.

Variety

Stainless steel and titanium are commonly used in μ -MIM® production. Beside those, we have experienced serial production with a wider range of material.

Porous

Not only the high density metal part but also porous metal part production is available.

Quality assurance



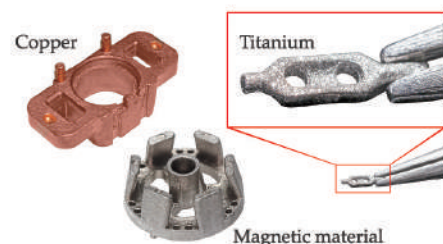
Measurement

X-ray CT, optical 3D measurement, SEM, etc. are deployed. The data is analysed to compare with the drawing data or accumulated for numerical simulation.

Mechanical property

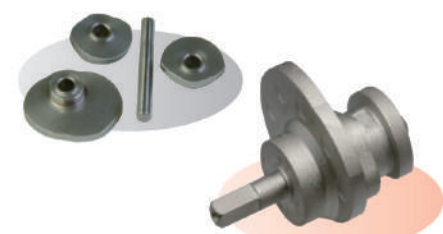
Higher relative density than compaction PM thus good mechanical properties are guaranteed.

μ -MIM® products



Various material

μ -MIM® is a net shape process thus it is beneficial in difficult-to-machine material production, such as Ti or Ti-alloy, soft magnetic material, biocompatible, copper, porous material serial production.



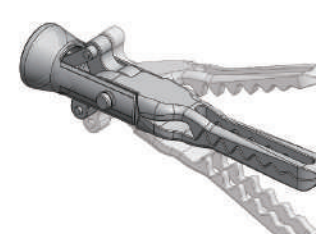
Integrated component

MIM will integrate the components to eliminate the assembly step with improving the positional accuracy. This is an example of reducing the parts from 4 to 1, just change the manufacturing method to MIM from machining.



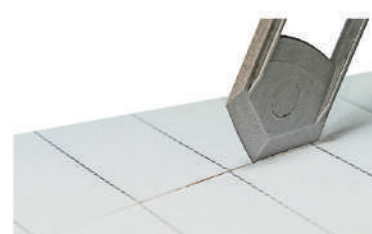
3D-MIM®

3D-MIM® technology realises a serial production of any complicated designed metal components, e.g. inner curved/bifurcate pipe, undercut, with satisfying the tight tolerance requirement. This is a curved flow part example.



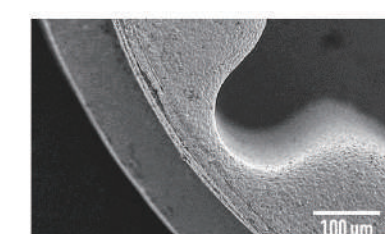
Medical forceps

Serial production of medical micro forceps is also available. We have experience in serial productions of a lot of different medical forceps and other medical device components under ISO 13485 certified quality control system.



Sharp edge part

This is a sharp edge paper-knife part, the edge thickness of 10 μ m. The latest fine powder realises sharp edge designed metal components serial production with highly quality control supported by our μ -MIM®.



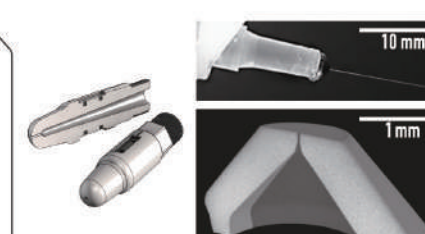
Thin wall structure

This SEM image shows a part of our thin wall serial manufactured component, the thinnest thickness is 80 μ m only. Our μ -MIM® has developed the original binder system ideal for thin wall components serial production.



Special gears

We have experienced various types of special gears, e.g. 0.025 mm module gear, bevel/internal helical gear, multi-step gear, shaft integrated gear etc. with high-quality and highly stable serial production.



Micro nozzle

This serial produced micro nozzle has a 30 μ m hole. Since the latest fine powder is deployed, the roughness Ra of as-sintered product is 0.3 μ m. Nozzles with a specially designed internal flow, side holes are feasible.