

Metal Injection Molding Technical Newsletter

World Finest MIM Technology of Japan, "μ-MIM®"

Volume 1

Published by TAISEI KOGYO CO., LTD.



The next step into the future our high-performance metal

1. Multi color injection molding With micro MIM composite metal parts are available.

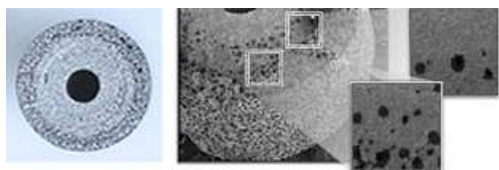
The process of multi color injection molding is commonly utilized for plastic materials. Different materials are injected into different locations on the same mold. In multi color injection molding, at least two shots are injected into the mold. Because basic process of metal injection molding is similar to that of plastic injection molding, TAISEI KOGYO has conducted R&D of two color injection molding for metal injection molding.

In case of metal injection molding, one part may be composed of dissimilar metals, and then new functional property may be added to the part.

Optimization of allocation of composite metals by multi color metal injection molding to improve functional properties

Strength, toughness, hardness, resistance to corrosion, magnetic property, light weight, complex geometry, electric resistance, electric conductivity, self lubrication etc.

The photo below shows the example of two color injection mold of our micro MIM. The inside is a normal MIM part and the outside is made of porous metal. The both components are composed by two color injection molding. Different types of functional parts are efficiently combined by the technology.



▲ Example of two color injection molding of solid inner and porous outer

Since the solid inside and the porous outside are combined by diffusion bonding, the bonding strength is same as conventional MIM parts. When you are planning bimetal parts or high performance metal parts, please contact TAISEI KOGYO.

2. How to realize "μ-MIM®"

Verification through test production with micro injection molding machine

For R&D of micro MIM, TAISEI KOGYO utilizes a prestigious injection molding machine dedicated to forming micro size parts. For extremely precise metal injection molding, tool selection is very important. With conventional machines, available conditions are limited. We are eager to find the most appropriate machines and instruments for our study in the world.

Please ask us for the detail of micro MIM.



▲ Micro injection machine "Babyplast" (made in Italy)



▲ Micro injection machine "Microsystem" (made in Austria)

3. Collaborative research work

TAISEI KOGYO conducts various collaborative research work with domestic and oversea institutions. Recently we have developed a new fuel cell unit as small as U3 dry battery with Osaka prefectural college of technology. The detail of the study will be presented at international congress. Please ask us for high performance metal material.



▲ Presentation of new development

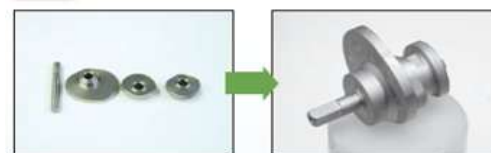


▲ Small size fuel cell unit

4. MIM technical seminar

We are going to organize a technical seminar for machine designer in Osaka. Topics of the seminar include cost saving by converting from machining to metal injection molding and the examples, and trouble shooting in designing MIM parts. The seminar is free of charge.

Example of cost saving



By metal injection molding, four parts has been combined, and the cost reduced to one tenth of machining.

Schedule Of conference and exhibition

Salon EPHJ-EPMT-SMT in Geneva

on 14-17 June 2016

at Palexpo in Geneva.

Stand No: L101

Say hello from Taisei



How do you do? My name is Yusuke Watanabe. I am the expert of evaluating MIM parts with 3 dimensional analysis, X-ray CT, and the other testing instruments. In other words, I am responsible for the final step of micro MIM process. My hobby is riding bicycle and playing saxophone. Every day I ride 30km from home to the office. On weekends I play sax occasionally. Upon your request I would like to play music with my colleagues after business talk.