

# Metal Injection Molding Technical Newsletter

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

Volume 06



The next step into the future our high-performance metal

## 1. MIM may reduce cost to one tenth of machining

Generally, production cost increases in proportional to square of the number of sub-parts. By reducing the number of sub-parts, cost may be reduced easier and quality may be improved. Integration is one of the advantages of MIM. Several sub-parts may be formed into one integrated part by MIM. Manufacturing cost of complex parts may be reduced significantly but depending on the geometry.



machined and assembled.

The photo above shows sub-parts of a cam before integration by MIM. By forming the cam in one piece, machining and assembly cost were drastically reduced. The four sub-parts were machined and tenaciously assembled in high accuracy. We have achieved 90% cost reduction of the original cost in total. In other word, the cost was reduced to one tenth of the original.

The dimensional accuracy of MIM part comforted to the customer's request, and also satisfied quality requirements.

Please ask us for net shape production of parts with high accuracy.



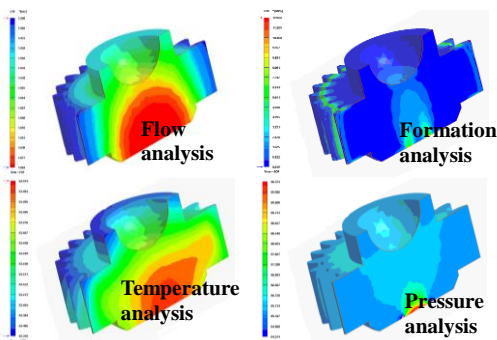
Cost reduced to 1/10

## 2. CAE analysis of MIM

### Quick start-up by molding simulation

Upon receiving drawings from customers, we start with CAE analysis. For many years we have applied several CAE programs to simulate injection molding to optimize molding conditions.

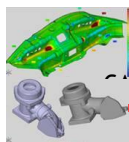
From our plenty of experience, we are able to obtain objective geometry of a part in a single trial. Please ask us for quick start-up of MIM production.



## 3. Quality control of complex geometry

### Improvement with the aid of 3D data

In order to evaluate geometrical accuracy of complex shape component, conventional 3D measuring devices with mechanical probe cannot provide sufficient data for analysis. Therefore, we have applied an advanced optical device for 3D measurement. By scanning surfaces of objects with optical probe, we obtain 3D data in high resolution. The data may be compared with CAD data, and then identify dimensional deviation. This latest analysis system is also useful for reverse engineering and we offer highly controlled quality assurance. Please ask us for further details.



Evaluation is fed back to manufacturing

## 3. Research laboratory

### R&D may boost the technology of TAISEI

We have a research laboratory in Japan. Several unique facilities are installed there, such as scanning electron microscope (SEM), X-ray CT scanner, micro injection machine and so on. Highly precise MIM process is under development. We would welcome your visit.



Every product is inspected for assurance of high quality.

## 4. Exhibition and convention schedule

COMPAMED 2016 will be held in Düsseldorf, Germany from 14th to 17th November 2016 at Messe Düsseldorf.

Our stand is *Hall 8b / M17*

We will show the latest development – internal helical gear by our μ-MIM technology.

Please come to see us at Compamed!



## Column for the TAISEI

My name is Sumiyo Morita. I am the manager of the production control department. I love Takarazuka Revue, which is Japanese professional female musical theater with more than 100 year history. The musical performers are all graduates of Takarazuka Musical School, and educated not only in terms of performance but also social etiquette. I would recommend you to enjoy the revue.



Morita of the production control dept. on the right



Takarazuka Theater