

## TOPICS



### Introducing cutting-edge equipment for large-scale metal stamping

In fiscal 2014, Kobayashiseikou made a capital investment of 170 million yen in order to advance from the prototype development stage to the mass production stage for pressed metal components for the energy and automotive markets. By introducing the latest technology, double-link cold forging press machine (200 t), double-link servo press machine (300 t) and a large-scale auto-wash machine, the company is now capable of manufacturing large-scale, precision pressed metal components (progressive stamping size: 300 mm x 500 mm x 1.5–4 mm). Centering on large-scale precision press manufacturing as its core business, Kobayashiseikou also focuses on metal components for the insert/outsert molding composite processing. These processing operations are designed for progressive punching dies, with all dies manufactured in-house. Leveraging its capability to develop new die manufacturing methods and using the latest technologically advanced equipment, Kobayashiseikou engages in manufacturing with constant attention to differentiating itself from competitors in terms of quality, speed, cost, production methods and technical expertise.



### New building completed and ready to expand into new businesses

The new facilities were completed in March 2016 and all corporate operations have been consolidated there. An integrated in-house production line for the company's comprehensive manufacturing has been established. The line includes stamping, surface treatment (buffing and hairline processing) as well as printing, etc. for 3D draw forming of components that constitute the face of a product, a new business endeavor the company is working on. This has helped to increase production capacity and to enhance its system for maintaining a high level of quality. With these new facilities as the springboard, Kobayashiseikou will accelerate its business expansion by developing new technologies and proposing technically advanced solutions to customers based on the company's unique production capabilities.

## FACT SHEET

### Creating perfect products by developing advanced production methods for external components

#### Development and proposal to customers of component processing technology that is only possible in Japan



3D automated robotic buffing and hairline processing line

#### Technology overview

Formed and painted resin parts are often used as external components in a wide variety of products. Kobayashiseikou has worked hard to develop component processing technology where these formed and painted resin products can be replaced with pressed metallic parts for a premium effect. Below are the three main objectives and the results achieved:

1. To ensure a clear edge on the ridgeline where surfaces interface using a 3D draw-forming technique. Use of a progressive press working method to maintain high quality and suppress costs.
2. Use of robotics for 3D surface finishing such as a mirror buff finish and hairline processing. Use of automatic processing machine manufacturing and programming technologies to finish products to give them a premium appearance that cannot be achieved with manually produced geometries.
3. Establishment of a printing operating technology management standard for printing manufacturer logos onto the product, thereby achieving printing on mirror surfaces and hairlines of metal and stainless-steel materials that are difficult to print on.

All of these processes are performed in-house, from robotic equipment development through to dies, fixtures and parts processing, and have been developed as technologies to differentiate Kobayashiseikou from other suppliers.

#### Feature 1

3D draw forming of thin stainless sheets to create as clear an edge as possible along the external ridgelines where surface shape changes, for clear product contours and a clean and sharp product appearance.

#### Feature 2

Use of hairline finishing processing to give consistent line depth and width and uniform direction for 3D draw-formed components. A combination of automated mirror buffing and hairline finishing gives a premium look and feel that can only be achieved with metallic materials.

#### Development background

The last few years has seen a dramatic reduction in the number of metallic components used in light electrical products. In order to increase orders for processed metallic components, management asked for in-house proposals to be made on how to encourage customers to replace resin-formed components with processed metallic ones. A list of potential components was created, with the strengths and weaknesses of each analyzed, and proposals were then made to customer designers regarding those components that it was thought would be of the greatest benefit to the customer. The company received positive customer feedback as a basis for considering a new generation of products and took the next step forward.

#### Uniqueness

The company created prototype samples having a geometry similar to the proposed components using its own R&D budget, including surface processing. The samples and relevant production information were then presented to potential customers. Components with simple geometry that any manufacturer could produce using metallic materials were then removed from the list. The company focused and worked on components that would take full advantage of its cutting-edge equipment and management capability in die manufacturing, process development, press processing and surface treatment.

#### The outlook for the future

Two new product areas that the company has been working on for the last five years are 3D metallic draw-formed components including their external design finishing, and large-size, precision insert molding-processed metallic components for electronic control modules used in energy-efficient automotive systems and other applications. Leveraging its proprietary process development technology, the company carries out integrated production from die manufacturing, pressing, and resin forming, through to surface finishing and assembly, with the most up-to-date equipment. Kobayashiseikou will continue to challenge itself to improve its already outstanding manufacturing capabilities and satisfy the requirements of tomorrow.

### Company history

1955	Kobayashi Die Manufacturing Co., Ltd. established; begins die manufacturing operations	2006	Completion of capacity expansion and upgrading to the most technologically advanced equipment that started in 2001 under a 5-year plan (9 x die manufacturing machines, 15 x presses, etc.)
1960	Kobayashiseikou Co., Ltd. established (capital 10 million JPY) Begins business with Matsushita Electric Works (currently Panasonic) and manufacture of precision presses	2009	Enters the energy-related business Commences prototyping of pressed metal components
1965	Commences operations at Shiga Plant. Commences secondary press operations and product assembly Commences watch and timer final assembly	2010	Begins metal working of automotive components Commences full-scale mass production of energy-related products (rubber and metallic composite pressed components) Commences prototype development of 3D draw-formed stainless steel and titanium external components
1971	Commences electric shaver final assembly Begins business with Minolta Camera (currently Konica Minolta)	2012	Commences mass production of titanium and stainless steel external pressed parts Introduces robot processing machines for related finishing processes
1977	Computer facilities for die design and office operations established	2014	Capital increased to 90 million yen Introduces 200 t and 300 t large-scale metal press equipment Introduction of auto-wash equipment for washing large-scale metal pressed products
1988	Shiga Plant spun off and re-established as Shiga Kobayashiseikou Co., Ltd. (capital: 90 million JPY) Expansion operations begin to become the main manufacturing plant of National Electronics Tools	2015	Commences manufacture of metallic pressed components for automotive industry
1989	Commences manufacture of forming dies and plastic components	2016	New facilities completed at 8-7 Shinden Sakaimachi, Daito, Osaka
1995	Enters the telecommunications business Commences manufacture of mobile phone components, small liquid crystal components, and formed components		

#### Company Profile – Key information (as of August 2016)

Location	8-7 Shinden Sakaimachi, Daito, Osaka, 574-0051
URL	<a href="http://kobayashiseikou.web.fc2.com/">http://kobayashiseikou.web.fc2.com/</a>
TEL	072-871-4551
FAX	072-871-4555
No. of employees	50 (group total of 200)
Capital	90 million JPY
Established	1960 (started operations in 1955)
Representative	President and Representative Director, Kazuo Kobayashi

#### Business areas

Sheet metal stamping, metal forging press for a range of metallic materials, and manufacture and sale of dies and products of resin/metallic composite-formed components (sheet thickness: 0.05–4.0 mm). Additionally, manufacture and sale of 3D metallic draw-formed external components (surface processed).