

TAKARA

idea! × technology = solution

DOU YEE
ENTERPRISES

良いモノを多く加工する。

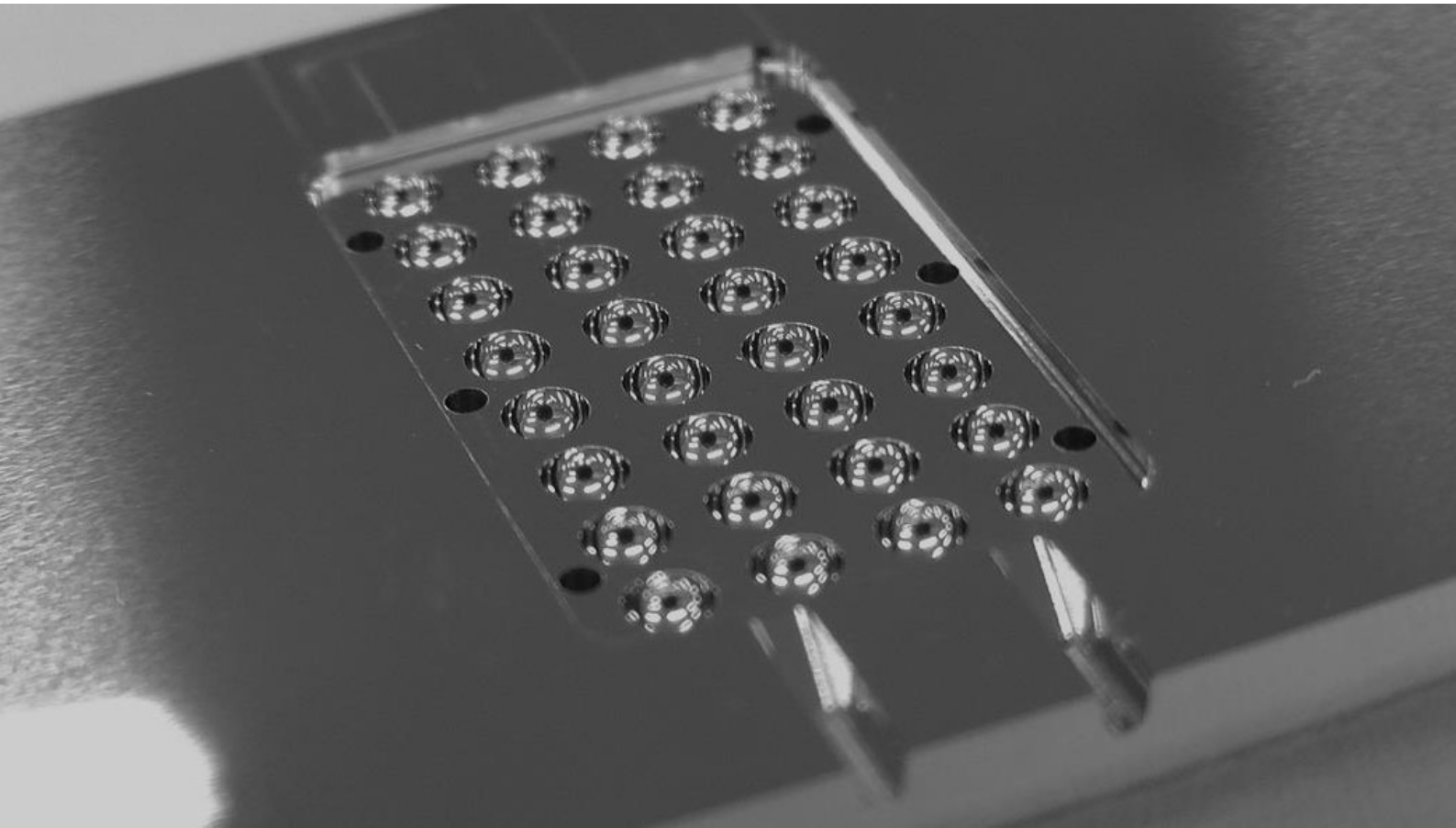
In Takara, the root of our technology is cultivated through applying the observational methods and human factors techniques.

We believe by coupling with our own skillful hand can deliver all the demanding job. Our mission and goal are to focus at creative energies and the technological know-how that nurturing over the years and applies it accordingly to customer needs without failed.

Company name	株式会社多加良製作所
Establishment	June 16, 1961
Business of contents	<p>Mold & die department</p> <ul style="list-style-type: none"> - Transfer mold die - Trim & form die - Stamping die - Injection mold die - Various parts <p>System department</p> <ul style="list-style-type: none"> - Transfer mold system - Trim & form die system <p>Production department</p> <ul style="list-style-type: none"> - Press production - Injection production - Insert production
Capital stock	132,839,600 JPY
Representative	Yukihiko Yonezu
Number of employees	420
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E-mail	info@takaras.co.jp
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Network	

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Transfer mold die

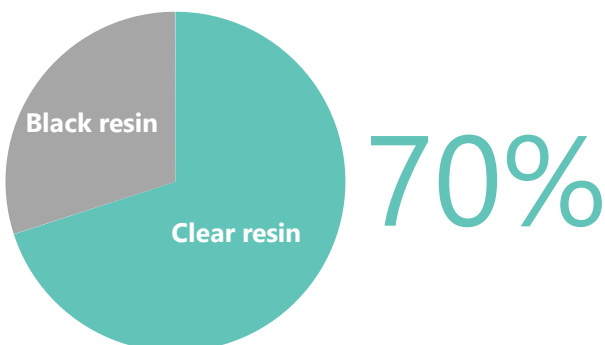
TAKARA is characterized by the development of ultra-precision processing technology. We challenge new products that are common in various fields. For examples, Sensor devices through secondary packaged, modularized power semiconductors, liquid silicone molding based on Transfer molding, etc.

Mold die for clear resin

About 70% of the molds produced by TAKARA are molds for transparent resins. For example, a smart phone other than an image sensor (Image sensor), Also equipped with a variety of sensors, such as proximity Sensor(Proximity sensor) and

Illumination Sensor (Illuminance Sensor),And the optical series Sensor is used as a transparent resin.

The difference between transparent resin and general black resin is that it has characteristic that resin leaking and voids are easily generated because of filler is not contained. To solve this problem, the molds of TAKARA are high-quality made by various professional techniques. Such as uniform surface pressure and proof against resin leaking with a precision of one thousandth processing technology.



Power Semiconductor

With the popularity of electric vehicles and hybrid vehicles, the demand for power semiconductors is also rising. TAKARA also has practical experience with "TO", "DIP", "IPM" and "IGBT" modules.

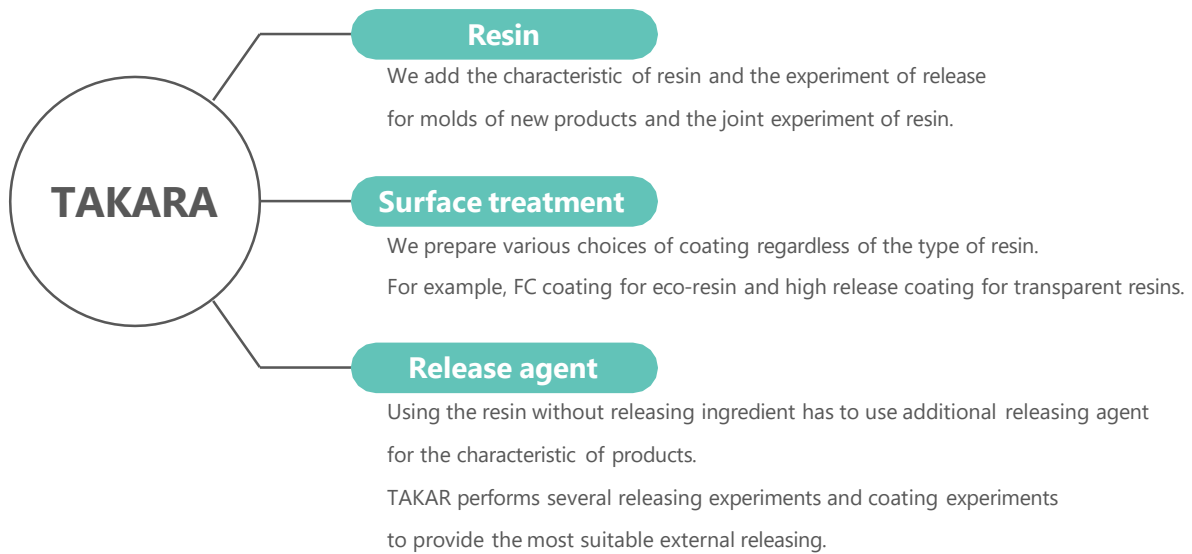
In addition, TAKARA can provide the proposal of process of front and back. Such as the insertion of a copper and ceramic heat sink, the production quantity or the matrix layout of the product of the production equipment.

TAKARA is devoted to...

In today's semiconductors, semiconductors of portable devices such as smart phones have become smaller and lighter. Moreover, the modularization and heat dissipation of power semiconductors have become more and more demanding on packaging and the relationships between semiconductor function and packaging has become closer.

For the demanding of customers, it could be responded indeed by individual vendor, like mold vendors, resin vendors etc. However, as mentioned above, it has become more and more difficult to respond all demands by single vendor, so that our company will naturally conduct experiments and development.

TAKARA and following vendors established cooperative systems based on joint experiment and joint development. It is possible to propose various choices for the problems that can not be only solved by mold.



FC coating

Today, the use of halogen-free resin is increasing due to environmental problems.

The problems of eco-resin is poor releasing and hinder productivity.

In TAKARA, we recommend the surface treatment called FC Coating for the problems of eco-resins.

H-Cr coat
200 shots

Poor release

Quality decline

Increased cleaning times

Productivity down, Cost up

FC coat
Over 300 shots

Improved release

Quality risen

Reduced cleaning times

Productivity up, Cost down

150% Extension!!

Resin on CAV

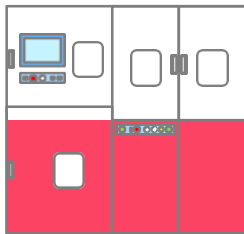
Molding system

With the product and quantity, we can provide from 3 tons presses for research to 180 tons equipment for automation. We have been developing and manufacturing by ourselves all the time, so we have prepared a variety of choices. Such as , the unique high vacuum system of TAKARA and automatic coating system of releasing etc.



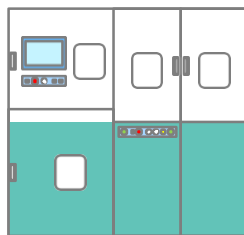
TMM-3000

- 3 tons press for research and development
- Can be used on table to become a space –saving design
- Can operate from the experiment of resin property to package of molding trial



COMET

- TAKARA standard machine from 60 tons to 180 tons series
- Loading unique the feedback system of molding to achieve stability of each shot
- It is possible to be customized according to different products



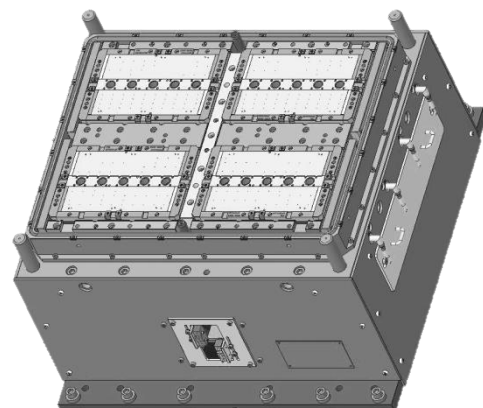
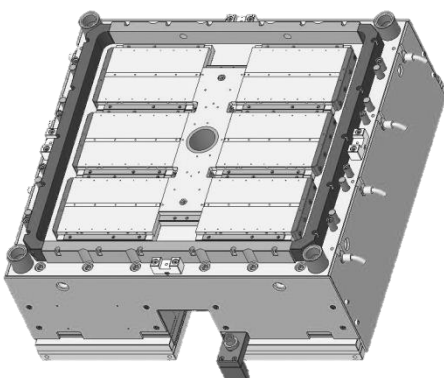
LS-TMS

- Automatic equipment for liquid resin
- For the small amount of simple resin changing system
- Loading the coating system of automatic standard release
- Handle resin containing phosphor and Nano particles as well



Conventional mold & MGP mold

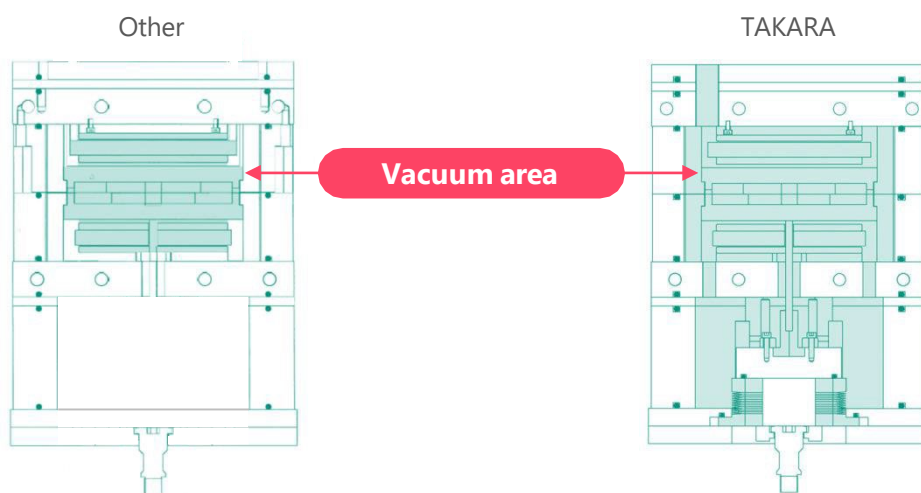
In the past, there have been more than 1000 production experience, regardless of the type of black resin or transparent resin. Also, MGP of QCC (Quick Change Chase) type can successfully operate to change the varieties and to increase capacity. According to the products, we can accurately provide recommendation form multi-tablet mold of auto mold to hydraulic equipment.





High vacuum system

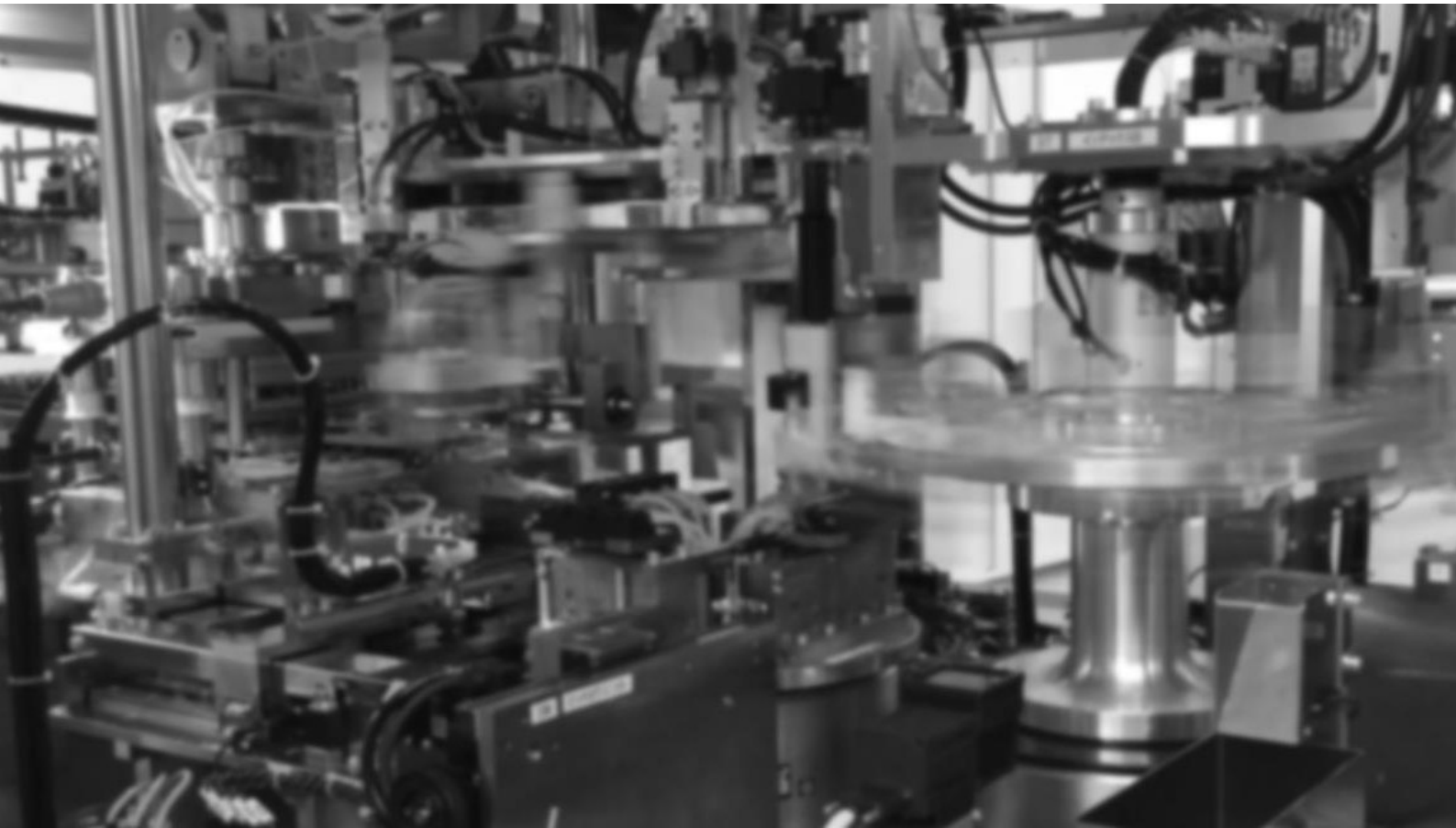
The high vacuum system of TAKARA is made by special sealed structure. The air leakage from the clearance of parts can be reduced successfully to reduce the voids and gold wires toppled by air leakage. Also, it takes only 2.5 seconds to depressurize to 20Pa.



Spray system

There are products in the transparent resin that must use an external release agent. In the past, the amount of release agent and coating unevenness were directly transferred to the product and had a poor quality effect.

TAKARA's release coating system selects the most suitable nozzle shape by multiple experiments. Also, sensing the flowing of the coating according to flow sensor, the average coating can be performed without waste.



Other system

We develop and manufacture a wide range of equipment, such as packaged Trim & Form and image inspection equipment. "Lead frame" → "Mold" → "Trim & form", one line process is also available.

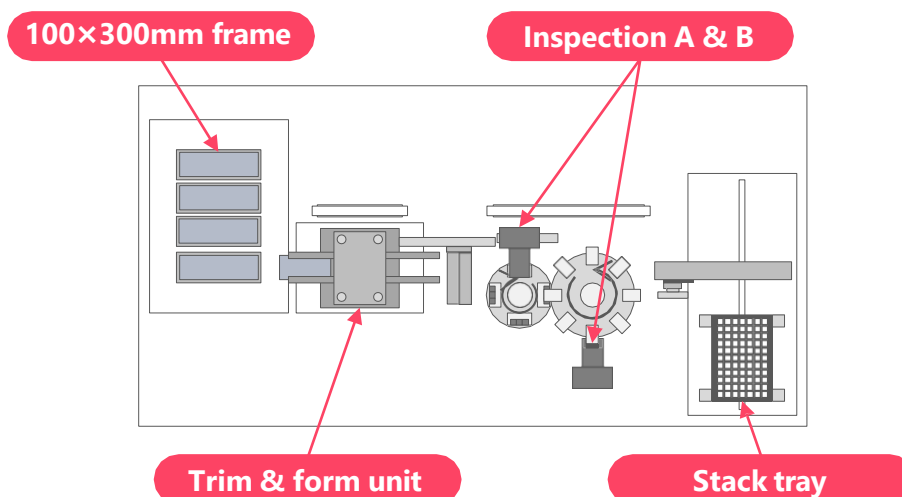
In addition, we can produce not only the semiconductors, but also product by injection molding. Therefore, please contact us whatever profession.

Trim & form system

The following equipment is continuously operated the following works. "Set the magazine" "Lead Frame Supply" "Trim & Form" "Inspection (Lead numbers / Length / Deformation/ Mark)" "Store in box"

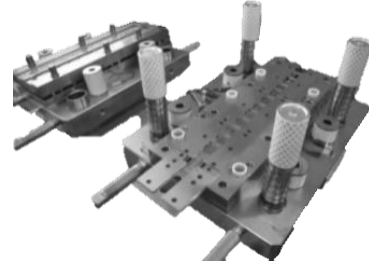
The Largest lead frame size is 100x300mm.

According to servo motor and direct drive motor, it can be carried and controlled with high speed.



Trim & form die

TAKARA has experience of trim & form die for short pitch package and different types of Sensors. Even for some special pin forms. TAKARA also has experience of them which can mold without pressuring the package.



Stamping die

The quality of lead frame plays an important role in QA. Besides that, we can give advices about molding process and, trim and form process. Also, we can propose the etching lead from for trail mold and production mold.



Injection & insert mold die

In addition to thermoplastic resins, CIM (Ceramic injection mold) and MIM (Metal injection mold) molding dies are also produced. Moreover, we can advise on high precision insert mold because we can manufacture stamping die.



Corresponding Product List

We can response all line from trail to production mold to coordinate with customer's expectation. Because it is a mold manufacturer, it can provide comprehensive advice through various technologies. For examples, Cost assessment for a small amount of products, Consider the shape and engineering review of the mass production process etc. Depends on use of the product and strategy for sale to support product creation of your company.

	Equipment / Line					Mold					Production
	Design	Processing	Assembly	Trail	Set up	Design	Processing	Assembly	Trail	Set up	Production
Transfer mold	●	●	●	●	●	●	●	●	●	●	○
Trim & form die	●	●	●	●	●	●	●	●	●	●	○
Stamping die	○	○	○	○	○	●	●	●	●	●	●
Injection mold	●	●	●	●	●	●	●	●	●	●	●
Insert mold	●	●	●	●	●	●	●	●	●	●	●
Various parts		●				●					●

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