

Until a plastic model is made (see the attachment)

Starting with the first Gunpla® "1/144 RX-78 Mobile Suit Gundam" released in July 1980, over 400 million Gunpla® units have been sold in Japan alone. We will introduce the process in which Gunpla® is made.

1 Gunpla® planning

Decide the lineup

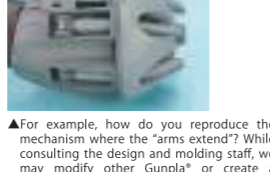
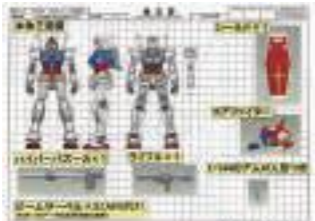
First, we think "What kind of Gunpla® is made"? Not to mention commercializing the new models that appear in TV series, OVAs and games, we may remake aircraft that appeared in past works based on the needs of users. There are many cases where new categories are planned in order to meet diverse needs.



2 Gunpla® development/design

Decide the specifications and gimmicks.

The person in charge of development consults with staff members who are in charge of design, molds and production. If there really is a mobile suit to commercialize, what kind of details and structure does it have? While imagining the real thing behind works such as animation, we will overlay development images and gimmick prototypes, and we will summarize the product specifications.

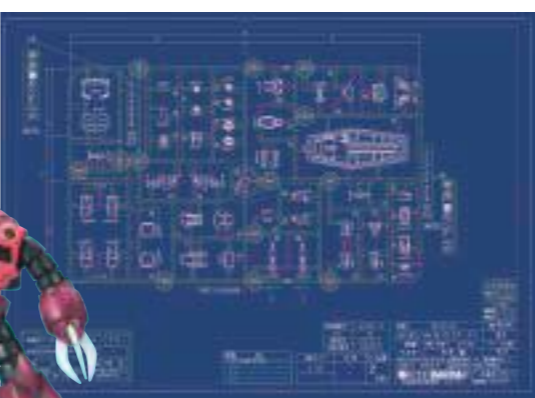


▲For example, how do you reproduce the mechanism where the "arms extend"? While consulting the design and molding staff, we may modify other Gunpla® or create a prototype for a new mechanism.

3 Gunpla® prototype/mold design

Place the finished parts in the runners.

This is a process that becomes the basis of mold making to design runners that have placed various parts that have been designed in the frame. While collecting the same kind of resin and parts of the same color, and considering searchability according to the assembly order, this is precisely a skilled technique to predict the flow of resin and to arrange runners in the manner of a puzzle.



Gunpla® production base Bandai Hobby Center



The Bandai Hobby Center in Shizuoka City is a production base for BANDAI SPIRITS CO., LTD. plastic models, including Gunpla® (Gundam plastic model). BANDAI SPIRITS CO., LTD. boasts the latest skilled techniques and technology for making plastic models here. We want to evolve the fun and entertainment of plastic models for customers around the world! Staff members are working on making new plastic models with enthusiasm.

Trial designs and prototypes

Once the product specifications are completed, do the design using 3D-CAD (a three dimensional design system using a computer). Starting with examining the proportions of the entire mobile suit, we will design the details of individual parts. In addition to pursuing a real and cool shape, how easy it is to make the design and yet make it interesting is a showcase of the designer's skill. Create a prototype with a three-dimensional printer based on the finished data. Make prototypes for each part of the plastic model and check the appearance of the product, movable gimmicks, and how to assemble the product. The hobby center three-dimensional printer employs a system which forms a solid by stacking ultraviolet curable resin.



▲We will advance the design while expanding the image with hand drawings at the beginning.

▲This is a three-dimensional printer that can create three-dimensional objects in the same way as printing digital camera photos with printers.

4 Mold manufacture

Mold making with electric discharge machining and craftsmanship

First, we prepare an electrode of a shape to be dug into a mold. Using a wire electric discharge machining machine, an outside shape of the part from the copper clump is precisely cut out while passing an electric current through a very thin metal wire. Next, with a machining machine, cut out the shape in three dimensions according to the design data and create a copper master. When applying high voltage to this copper master, when pressed against the steel which becomes the mold, the contact sparks with a discharge phenomenon, the heat melts the steel and the shape of the copper master is copied. Place the parts made in this way, carve the resin flow path connecting them, and complete the mold with the craftsman's hands.

Create a copper master with machining



Electric discharge machining



Completed mold piece



Finishing with the craftsman's hands



Mold completion



All of the existing molds are active



At the Bandai Hobby Center, laser processing machines that use metal laser engraving with laser beams are also used.



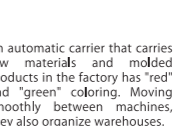
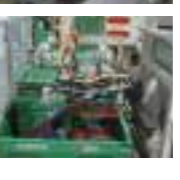
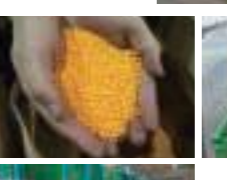
The stored mold can be used as soon as it is adjusted.

Engrave with a fineness of minimum 40 microns (1 micron = 1/1000 of 1 mm) and make a small part mold.

5 Gunpla® production

Molding resin into the mold and molding runner

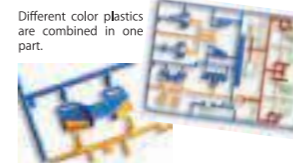
Place the finished mold in the injection molding machine, pour the plastic melted with heat into the mold, cool it and solidify it to make a plastic model runner. The Bandai Hobby Center is equipped with a special multicolor molding machine capable of simultaneously injection-molding four kinds of different plastics, and produces runners with various characteristics. In addition, an unmanned automatic transfer robot is used for replenishing resin pellets as raw material and moving completed runners to a warehouse, mass-producing them efficiently.



◀An automatic carrier that carries raw materials and molded products in the factory has "red" and "green" coloring. Moving smoothly between machines, they also organize warehouses.

Don't make the assembly too complicated!

Runners made of 4 colors of plastic



Different color plastics are combined in one part.

A moving joint is completed



The joint has already been made to move in the runner.

Assembly completed when separating



This is a palm part. When detached from the runner, parts of the hand that made the finger move are being completed.

6 Packaging

Completed Gunpla® packed in packages designed for each product

The Gunpla® package is designed to convey the appeal of mobile suits and products using the entire box. Packed molded runners are packed together with assembly instructions and decals, and shipped to various countries as well as within Japan.

Verify safety and robustness to complete

Can you assemble the product properly as per the instructions?
Can you enjoy it safely?
Are there fragile parts?
The staff in charge of quality control will actually make and check the product.



We sometimes review our products with professional eyes and sometimes from the perspective of a person who bought them.

