

HANDBOOK OF GUNPLA MODELING

NOMOKEN
extra edition



SAMPLE

HANDBOOK OF GUNPLA MODELING



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SAMPLE

It has been 30 years since the release of the first plastic model "Gunpla" of the 'Mobile Suit Gundam' series!

Gunpla, which began with a simple style has evolved with each series and is now at the forefront of technology. You can assemble Gunpla without glue by snap fitting, and without paints thanks to multicolor molding and division of parts. The frame mechanism, which uses various materials and an advanced design, reproduces joints and movable gimmicks that move incredibly well!

By assembling the kit, you make not just a character model but also something that can be enjoyed like a toy or action-figure. It is this evolution in response to the times and the potential play value that has supported Gunpla's continued popularity.

This guidebook is for those who have no experience of building a "modern Gunpla" and for those who intend to start making them in the future.

We start by assembling a kit according to the instruction manual. We introduce techniques to improve the finish with an extra touch, such as staining and adding nuance to enhance realism. Finally, we will demonstrate painting using an airbrush and even remaking old kits in a modern way.

Even if it is difficult as a beginner to do something more elaborate, learning the techniques may help you find your way there. However, you make it and enjoy it depends on your own choices and preferences. I hope this book will help you to enjoy your own Gunpla.

Shin-ichi Hirayama photo



STEP

Let's build a kit!

SAMPLE



GN-0000
00 GUNDAM
BANDAI 1:144 scale plastic kit "HG"

The first step is a straight build

This is the point of STEP 1!

Plastic models are called a "kit" and contain all the necessary parts for assembly. "Straight builds" are assembled according to the instruction manual. Most Gunpla today are "snap-fit models" that can be assembled by just fitting parts together, so no hard work is necessary, but there are several tips and precautions for assembling them.

In this chapter, we will use the 1:144 HG 00 Gundam kit as an example.

1. Let's check what's in the kit

- What's inside the plastic model box? Check the names, instructions, and other information you need to know before you start assembling.



2. Cutting parts

- Separate the parts from the runner one by one. Try not to damage or break the parts.



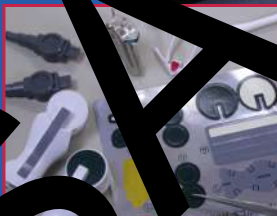
3. Assembling parts

- Assemble parts and understand the characteristics of the snap-fit. What if parts don't fit? What if you make a mistake? I will explain later how to deal with these situations.



4. Applying stickers

- Stickers are included to help you with color coding. Here are a few tips on how to make them fit perfectly, and a few things to keep in mind before applying them.



5. Managing parts

- You should know how to handle the parts during assembly and how to store them when assembly is interrupted so as not to lose parts or damage your work.



6. Finish

- The kit is assembled and finished. I will show you the completed kit and demonstrate some "poses" too, making use of the joint system characteristic of Gunpla.



What tools will we use?

► Nippers for plastic models have a distinctly shaped blade. The surface where the edge meets is flat so that it can cut in a straight line. Also, the tip is thin, so it is easy to insert the blade into small places.

▼ "Sharp Pointed Side Cutter" (2520 yen) from Tamiya. It is a bit expensive, but it cuts cleanly without distorting the plastic.



● Nippers

The first thing you should have for making plastic models are nippers. You can use them to cut parts from a "frame" called a runner. Nippers are a universal tool for cutting metal wires, etc., but the ones designed exclusively "for plastic models" have a thin edged blade and a flat cutting edge. They are easier to use and give a better finish if possible. If you can't find the ones designed for plastic models,



▲ "Sharp Pointed Side Cutter" (2520 yen) from Tamiya. It is a bit expensive, but it cuts cleanly without distorting the plastic.



▲ You can use nippers at dollar stores too. This one is for general use and for models. The cuts won't be clean, but you can at least use it for cutting out parts.



▲ If you want to use a generic substitute, you can use nail clippers instead. There is also a file attached to it, so you can shave the parts after you cut them.

● Tweezers

Tweezers are convenient for handling small parts. You can also use them to hold things like stickers that you don't want to touch directly with your fingers. There are "straight type," which are straight up to the tip, and "curve-neck type," which are slightly curved. If you are to choose one of them, I recommend the straight type.



▲ Tweezers are available for around 300 to 1000 yen. These are the straight type. Even a cheap pair is handy, so I would recommend you to get them. The pair in the picture is 1000 yen. The tip fits perfectly, and you can pick up small parts with it.



● Toothpick

A toothpick is a wooden stick with a sharp point and is a common household item. It is useful when you assemble small things. The softness and thickness of the wood can come in handy to stick in the back of a part for support or to gently rub stickers onto a surface.



● Cotton swab

You can use a cotton swab when you apply stickers, making use of its softness. When you begin painting models, you will also use it often for cleaning up. A normal one is more than enough, but one with a tip that frays less is easier to use.

1. Let's check what's in the kit

Once you've purchased a plastic model, you'll want to start assembling it, but before you do, check out what is inside the kit.

First, check the box containing the kit (package). There will be illustrations of the model characters, photographs of the finished product, and some specifications of the kit. These can be vital resources to give you a clear image before assembling. Information, such as the "1/144 Scale," indicates the scale compared to life size, and the larger the denominator, the smaller the model.

The box contains plastic parts and instructions. Some kits may include stickers, decals, or metal parts.

Also, before you put it together, make sure you have all the parts, and that they are not damaged.

On the front of the kit's box is the product name and an illustration of the character. This is called box art, and it is also one of the charms of plastic models.

On the side of the box there are photos of the finished product, gimmicks, moving parts, and other kit features. They will give you an idea of how the kit will look after completion.

A manual describing the procedures for assembly. It is also called an "instruction paper." It also includes information on color coding and details about the mobile suit which the kit is based, so you can refer to it as a data resource too.

The sides of boxes are what you see most often on display in local hobby stores. Check the scale, product name, kit grade, and price before purchasing.

These are the parts to assemble. They are connected to a frame-shaped tray, and these are contained in plastic bags so that pieces don't get lost.

Stickers to reproduce fine color coding and marks. The method of application differs depending on the type of sticker.

Read the instruction manual carefully

The instruction manual covers everything from part lists and assembly procedures, to notes and color guides. Even when there is something you don't understand, in most cases, you will find the answer is there if you read it carefully. You should read it before you start as this can prevent problems during assembly.



▲ The instruction manual begins with notes, and a key for the "icons" used in the assembly diagrams with their meanings. You can check parts and materials with the part list. Be sure to read it thoroughly before you start.

▲ These diagrams show how parts are put together. Pieces and mounting points are connected with lines. The dotted lines indicate fitting, while the solid lines are sticking. Read the instructions carefully to see which parts you should assemble first. Icons are also important.

▲ It also shows how it will look after completion. We will aim to complete this model as shown. You can check the orientations of the parts and what happens when you install them here. It also helps you to see how joints move, and you can refer to this when you pose your kit.

🔍 CHECK POINT

● Make the instructions easier to read

▶ The instruction manual contains a lot of information that can be accidentally overlooked. You can highlight areas you might forget. Marking them makes it easier to understand and may prevent mistakes.



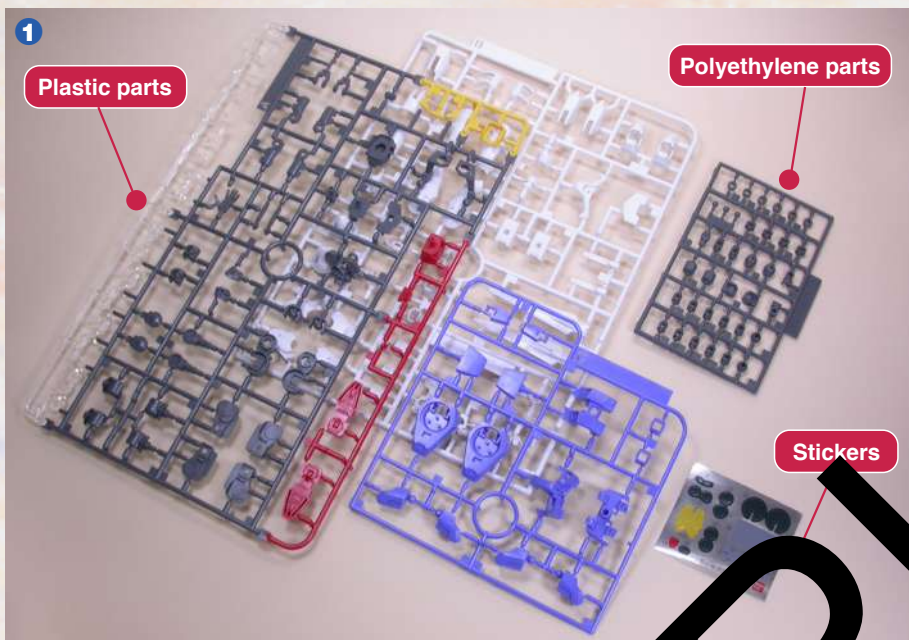
● Color Guide

▶ Gunpla today are already color-coded in the production stage, but if you're more focused on the finish, you can paint them. The color guide gives you the mix ratio of colors. You can mix your own color paints following it.

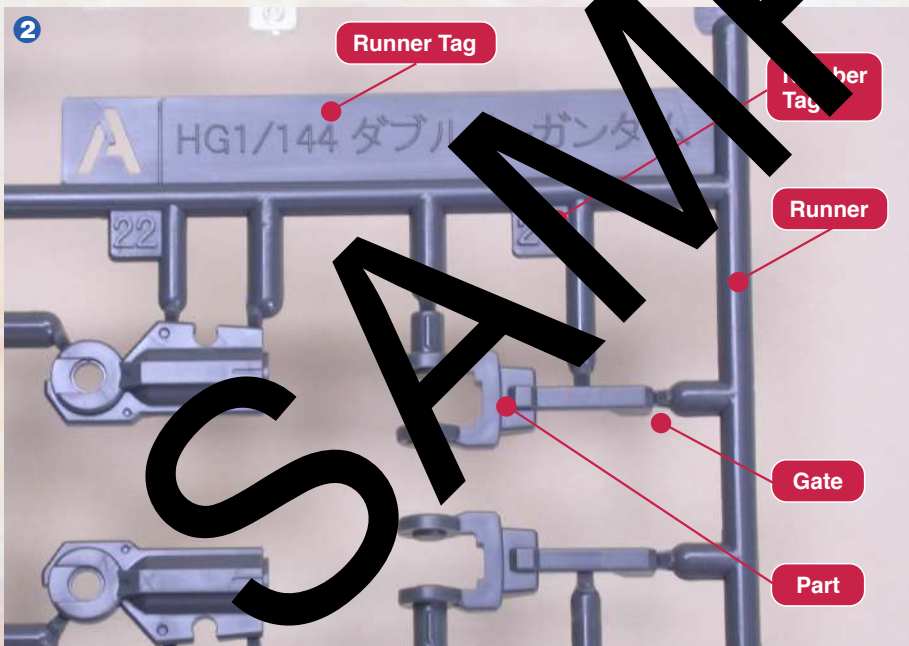


Kit Contents

Let's take a closer look at the contents of the kit. If you know the names, characteristics, and roles of each material, you should be able to assemble them smoothly.

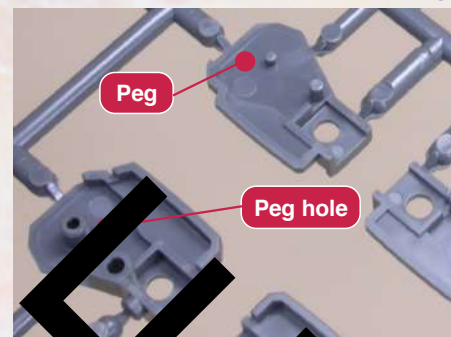


▲ All parts of the 1:144 HG 00 Gundam. There are color-coded plastic parts, some polyethylene parts, and stickers. The plastic parts come in six colors, so that the model will be already colored without painting it.



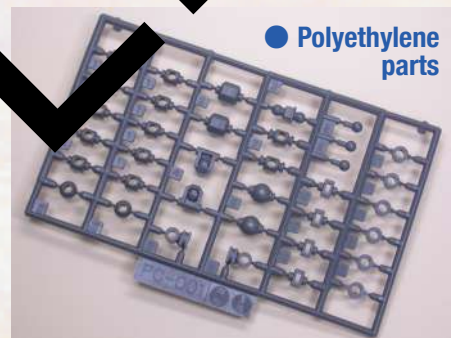
▲ Plastic parts are grouped according to the frame or runner they are attached to. Each runner has a label like "A" or "B," and each part is labeled with a number too, so you can refer to it as "A-1." Each piece is connected to the runner by a thin connection called a "gate."

● Snap-fit assembling



▲ The parts are joined together by interlocking them. This is called "snap-fit." You connect the pegs and peg holes on the surface of parts. No glue is needed. These "pegs" and "peg holes" are formally called "alignment notch" and "mating hole" respectively.

● Polyethylene parts



▲ Flexible polyethylene parts. Because they are more resistant to wear than plastic, they are used for bearings for joints. Runners with polyethylene parts are referenced by the letter "PC," so they can be easily identified. As they are flexible, be careful when setting them.

● Stickers



▲ Adhesive stickers to reproduce the colored details of small parts. Stickers of various colors are printed on silver-foiled backing paper. That's why they are also called "foil stickers." Since they are already made to fit, all you have to do is apply them.

🔍 CHECK POINT



● Multicolor molding

◀ The multicolor molding is a feature of Gunpla. Usually, plastic parts with the same color are all set in one runner. But, with Gunpla, they employ a unique technology called "system injection," which allows the use of different colors (and materials) in one runner.

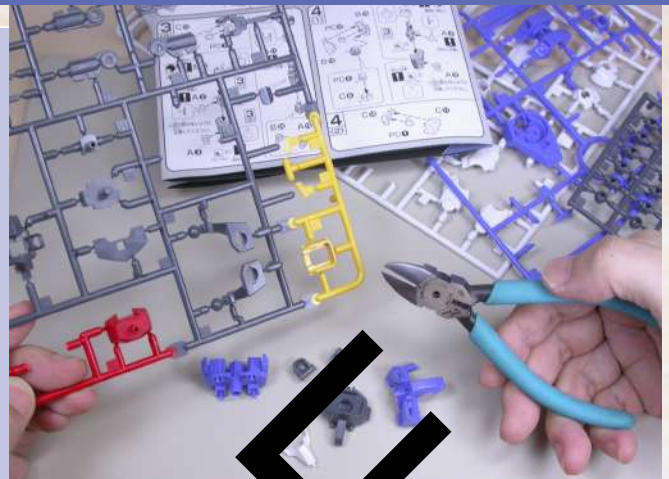


● Some parts are transparent

◀ There are transparent pieces (clear parts) among plastic parts. Clear parts are more fragile than colored ones, and if they get dirty or scratched, they are difficult to repair, so handle them carefully. See page 93 for details on how to repair scratches on them.

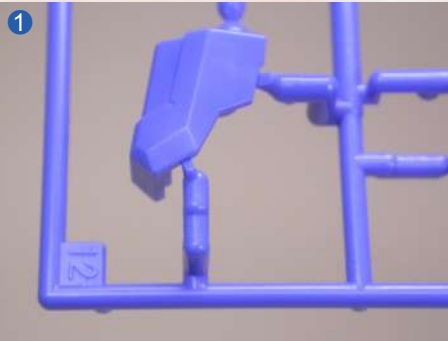
2. Cutting parts

Building begins with cutting out parts from the runners. As demonstrated earlier, cutting off the gates between the parts and the runners is a process called "gate cutting." Here's how to use plastic model nippers to cut gates neatly along the different shapes of the parts. You can divide the process into two stages. First, cut a piece from the runner with some excess, and then shave it off so that no gate remains on the surface of the part. The cut end of the gate remaining on the part is called a "nub mark." If the gate sticks out and remains here, the part will not fit properly, or it will not look good after completion, so remove it carefully.

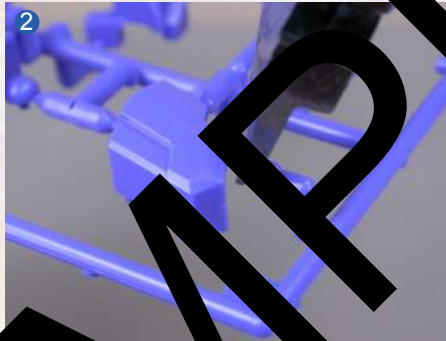


Cut in two stages

When you cut a part connected to the runner with nippers, the force applied may cause the cut end to become crushed or discolored white. To prevent damage, cut the gate a little further away from the part. Remove the remaining nub afterwards to get a beautiful clean finish.



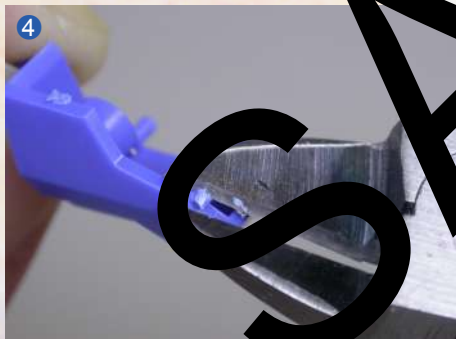
▲ When cutting off a piece, check the part number carefully. Then, look closely at the shape of the gate and decide which angle and where you should insert the nippers before cutting the part off.



▲ When cutting, place the flat edge of the nippers next to the part and cut the gate slightly away from it. In the photo, the distance of the gate is quite high, so hold the nippers vertically to cut it.



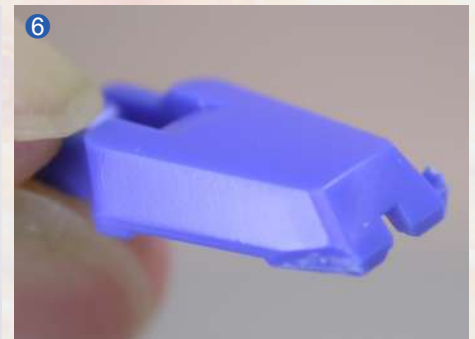
▲ The part detached from the runner. You can see that the cut end of the gate is jagged. If you forcefully try to cut the edge of this area, the rough area may get bigger.



▲ Cut off the remaining nub again with nippers by placing the flat side of the blade against the part. As the runner is no longer in the way, it is easier to guide the blade to where you need it. There will be less distortion on the cut edge because you can now cut it very finely.



▲ The nub has been removed. You can achieve this result if you stick to the basics of cutting parts. If you want to improve the finish after you remove the nub marks, I will introduce how to do this in "STEP 2."

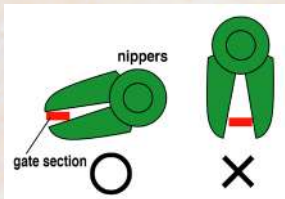


▲ If the gate is at the corner of a part, you may accidentally cut off some of the part along with it. The photo shows an example of this kind of mistake. You have to place the nippers at an appropriate angle to prevent cutting the piece along with the gate.

🔍 CHECK POINT

● Gate and nippers orientation

▶ When you are cutting a gate use nippers to cut the thinner side of the gate section. As you require less force to cut it, there will be less distortion and discoloration.



● Occasionally, you can cut it just once

▶ If you are going to cut off parts that will be hidden after completion or that won't affect the fitting, you can cut the gates with nippers at the closest point to the parts.

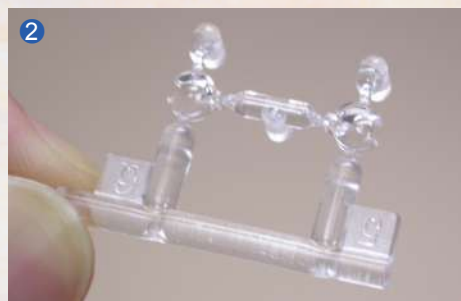


Runners in the way of the blade

What to do when a runner is in the way and you can't insert your nipper's blade at the right angle.



▲ When the gate is short and you want to insert the nippers alongside the part. In this case the runner was in the way so I cut out a piece to make it easier to insert them in the right place. I of course also used the nippers to cut the runner.



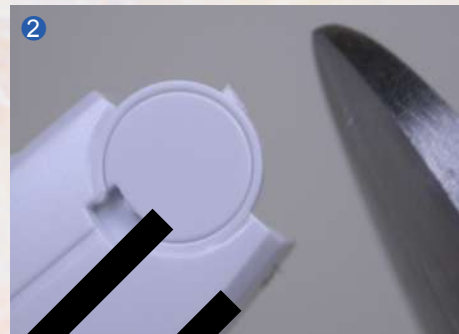
▲ This is an example of a piece that I cut out together with the surrounding runners. It will make it easier to insert the nippers into the gates. You'll have to be careful when you handle small clear parts.

Be careful with these parts

In some cases, you can't finish gates neatly, even if you use the cut-in-two-stages method. This is especially true of parts with a curved surface. Let's cut the nubs off little by little, taking our time.



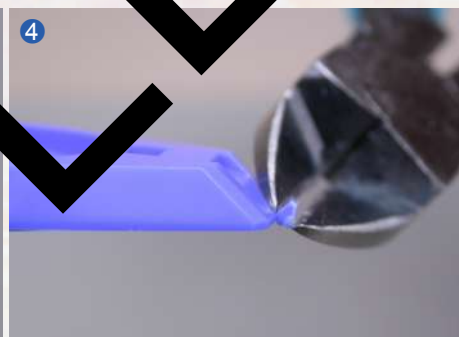
▲ This circular part has a gate connected on the edge. If you cut it off carelessly with nippers, it is likely to break the part itself or leave a mark.



▲ Therefore, instead of trying to cut it in one go, cut several times following the curve. First, place your nippers and nip on one side of the gate on the edge.



▲ Change the nipper's angle and cut off the remaining part. It is not a good idea to cut along the outer shape of the gate. The trick is to cut it off by little so that the gate itself won't get disturbed.



▲ Placing the nipper on a diagonal surface to cut the gate. You should check not only the thickness of the gate but also the shape of the part before you try to cut it off to avoid chipping the part.

Undergates

"Undergate" refers to gates on the back of a part. Since their nub marks do not appear on the surface, they don't affect the overall finish, which is why you find them in transparent parts and plated kits. However, if you don't cut them off neatly, they disrupt the fitting of the parts.



▲ An example of an undergate. The gate sits on the back of the part, not on the side. You need to make it flat as it will affect the fitting.



▲ Start cutting the gate from the side of the part as in standard gate cutting, not from the back. The photo shows an example of this.



▲ Next, cut off the remaining part of the gate at the back. Place the blade of the nippers on the surface close to the nub and cut it away. You don't have to worry about the damage of the cut edge as it won't be visible on the inside.

CHECK POINT



● Use a knife for the second cut

◀ So far, we have used only nippers to cut the parts. But you can use a hobby knife instead when you make the second cut. This way, it's easier to get a cleaner finish. Check out page 22 for details.



● Some kits do not require nippers

◀ Some SD Gundam and entry-level kits introduce the "touch gate" method, where you can twist off the part from the runner with your finger. With this kind of kit, you can make plastic models without nippers.

3. Assembling parts

As explained earlier, recent Gunpla models are "snap-fit" so that they can be assembled by only fitting parts together. Here's how to build a snap-fit Gunpla kit.

In snap-fit kits you connect the parts with pegs and peg holes or by interlocking them, and the connections are made to be a little tight. You need to apply pressure to secure them together. Be careful when you assemble them as they may not come apart easily if you make a mistake. Please refer to the charts in the instruction manual to avoid attaching a part in the wrong direction too.



Assemble the model by "interlocking" parts

The snap-fit method allows the parts to be assembled simply by interlocking them. There are several ways to do this. Check out what you should pay attention to.



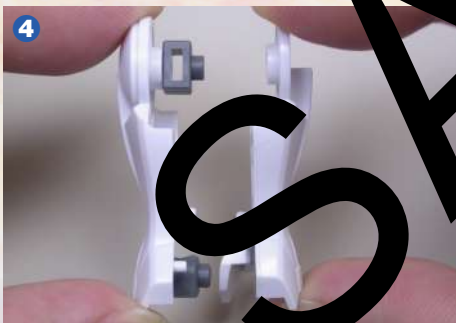
▲ An example of snap-fitting. You can secure parts by connecting the pegs on their back to the corresponding holes. If the peg is long or if there are multiple pegs on the same part, it means that it will be secured more tightly. Pegs may also be flat like plates.



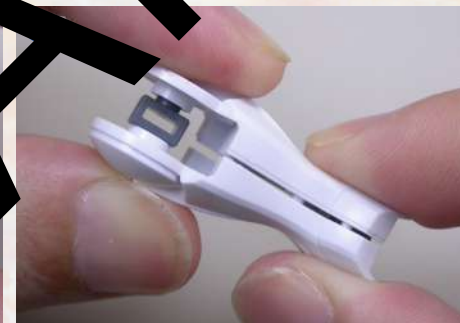
▲ Example 2. In this case, insert the peg part on the left into the hole space on the right. The dimensions of the parts are just right, so they work as pegs. Cut off any gates on the edges of the parts, or they will prevent parts from fitting properly.



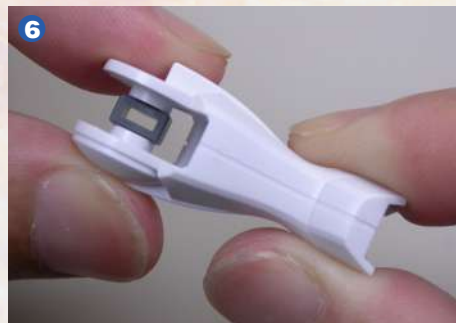
▲ Example 3. Insert the bar of the blue part into the "C" shaped dent of the part below. The opening is a little tight, so press the bar down until it makes a sound and is secured in place. You can disconnect the parts, but if you do it too many times, they will become loose.



▲ Let's assemble the part from the first example. First, connect to one side the polyethylene parts that will need to be sandwiched together. Next, align both parts along the direction of the pegs (horizontal in this case). Be careful not to tilt them.



▲ Press down on the two parts while keeping them parallel. Try to avoid pressing it unevenly so that the gap formed isn't diagonal. Proceed while making sure that the parts inserted in the middle are attached.



▲ Press down firmly at the end so that the edges of the parts fit tightly together. If you connect them well, the seam line between the pieces won't stand out. Repeat this process with all parts.

🔍 CHECK POINT

● Prepare all the parts before starting to assemble

▶ To make the process smoother, instead of cutting out and assembling parts one by one you can cut out all the parts listed in a section of the instruction manual beforehand.



● Handling small parts

▶ Use tweezers to handle small parts rather than your fingers. Hold the part with the tweezers until you insert the peg into the hole, and then press it firmly with your fingers. Be careful not to flick off the parts as you handle them.



Inserting polycaps

Polycaps are softer than plastic parts and are often inserted or sandwiched inside other parts, so you need to be careful when installing them.



▲ Here I am inserting a polycap into a part. It is difficult to push it in with fingers, so I used a stick (in this case, a cut off from a runner). You should adjust the orientation of the polycap so that it will not tilt inside.



▲ This is a bad example of installing a polycap. If it's not properly inserted into its socket, the peg will be crushed. A polycap with a hole easily warps when pressed.



▲ In such a case, you can insert a cut-off runner or a tool into the hole. It will make the polycap harder to crush and you can fit the peg into the plastic part firmly. It also makes it easier to adjust the position.

Common mistakes

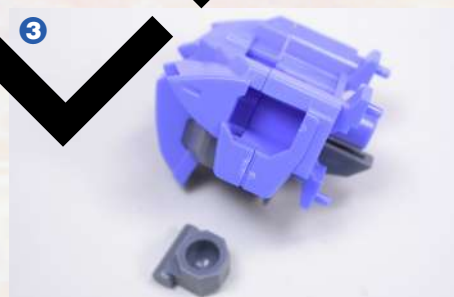
Here I am going to show you examples of common mistakes made during assembly. If you feel something is wrong, check the instructions carefully to make sure you are set in the right places and in the right direction.



▲ At first glance, it looks like it's assembled without any fault; however, the white part should be further down. The orientation of the part is 90 degrees off. In some cases, parts can fit even when they're not positioned correctly, so be careful.



▲ They do not fit well enough. A combination of the parts is not correct. This is because the tabs on the parts are not in the right way. Let's cut them cleanly.



▲ One common mistake is realizing that you forgot to insert a polycap only after you already assembled the parts! If you notice this too late you'll have to go back and reassemble a lot of parts.

When you want to disconnect parts

Even if you want to disconnect parts to reassemble them, it's not always easy to do it with your fingers. Try to separate them gradually.



▲ Place the tip of a knife between the parts where they join, then twist the knife a little to make a gap between them. The parts can get scratched, so it is better to place your knife's tip where the scratch will not stand out.



▲ Gradually you are going to see a gap opening up between the parts. Change the position of the knife and repeat the process until there is a gap between all the joints. If you can remove the parts evenly, they won't be distorted, and you can assemble them again later.



▲ If you don't have enough room to insert the blade between parts, try to move them little by little so that they come loose. Repeat this several times, and they will gradually come off.

🔍 CHECK POINT



● Changing the direction of the polycap

◀ What if when trying to insert a part you realize that the polycap's hole is not facing the correct direction? You can insert a toothpick or something similar to change the position.



● Check joint movement

◀ After you assembled polycaps and joints, check to see if they move smoothly and how wide their range of articulation is. You may find things that do not actually move much, but once you check everything, you will know how to handle it after the kit is completed.