

One Piece Fiberglass Mold Construction

Simple Fiberglass Molds
Can Be Used For Making
Duplicate Parts For Many
Applications Including
Hobby & Automotive.
This Manual will
Show you how!

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By Steve Jones
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How To Make And Use A Fiberglass Mold

A fiberglass mold is used to reproduce fiberglass products and is the exact reverse (mirror image) of the item to be produced.

This tutorial will help guide you through the making of your first fiberglass mold. I will use a current project of mine to illustrate the procedures of producing a fiberglass mold. This guide includes many step by step pictures to aid you in your own project. I would suggest that you practice making a mold of a simple object to begin with. Once you have acquired the concepts and skills of mold making you will feel confident in tackling more difficult shapes.

Basic Steps Required For Mold Making

The Following Topics Will Be Discussed And Illustrated In This Manual.

- 1) Making / selecting plug
- 2) Preparing the plug for molding
- 3) Molding over your plug
- 4) Releasing your mold from the plug
- 5) Preparing the mold for use
- 6) Molding your first pieces
- 7) Materials list

This Manual Will Expand On This Basic Series Of Steps Needed To Make A Mold And Pull Parts.

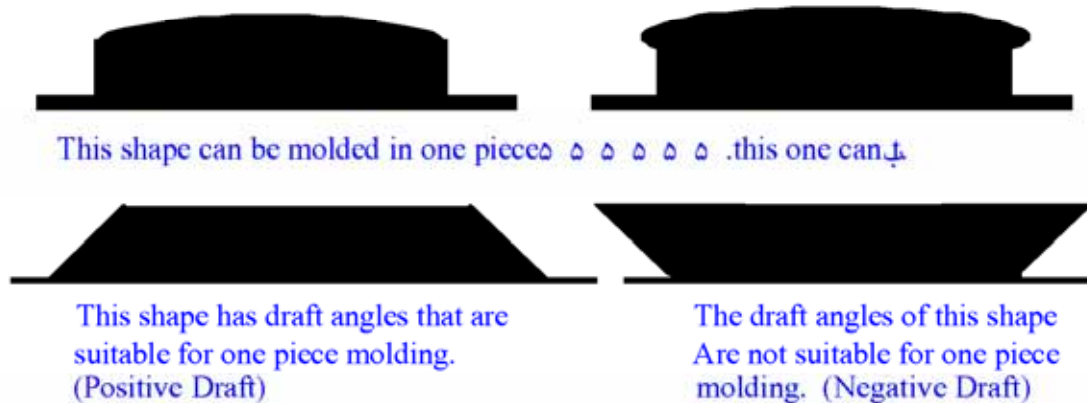
- 1) Prepare the plug with release wax and PVA
- 2) Apply tooling gelcoat
- 3) Apply microballoons to angles / details
- 4) Apply resin saturated fiberglass mat
- 5) Let the mold cure
- 6) De-mold
- 7) Clean and trim the mold
- 8) Apply mold release wax and PVA to the mold surface
- 9) Apply gelcoat to the mold
- 10) Apply resin saturated mat to the mold
- 11) Trim at the "trim stage"
- 12) Let part fully cure
- 13) Remove part from the mold

Basics of Plug Construction

To begin making a fiberglass mold, you must first have or make a plug. A plug is the original item that the fiberglass mold will be taken from. The plug must be exactly what you want to copy since it is representative of the final product that will be produced from your mold. If you are building your own plug for a specific part or item, it will pay huge dividends to spend the extra time to make your plug perfect. **Think of it this way, it is much easier to fix imperfections in your plug than it will be to fix the imperfections of every piece that you create with your mold.** It is important that the plug has the same specifications that are required in the final product.

It is also very important that the plug that you choose does not have opposing undercuts or locks. **Undercuts and locks will make it difficult if not impossible to remove your finished mold from the plug without destroying your work and wasting your time.** Below are cross sectional examples of shapes you can and can not mold in one piece.

Figure 1: Plug Shape and Angle Considerations



Your plug can be made from a variety of different materials. These materials include, but are not limited to wood, plaster, polyester resin, fiberglass, polyurethane foam, etc. The material that your plug is made from must be compatible with the resin system you are utilizing. I have not personally selected any plug materials that were not compatible with the resin that I have used, I do always inquire with the distributor of the resin that I will be using before I begin carving a plug. If the plug is to be made from a porous material such as wood, foam or plaster, the surface must first be sealed with resin or a combination of bondo or glazing putty and paint.

The photographs on the next page are of plugs that I have made for a current project of mine. Hopefully you will recognize them as pieces of a model of Speed Racers Mach 5.

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Figure 2: Main Body Sample

Main Body

Figure3: Under-nose Section Sample

Under-nose Section

Figure 4: Under-tail Section Sample

Under-tail Section

While I won't bore you with the details of how the pieces of these plugs were built, I will briefly discuss how they have gotten to this point. These plugs were built from a combination of mahogany door skin, foam, bondo and glazing putty. FYI, I like to put at least a 1/8 inch coat of bondo or glazing putty over foam in order to create a solid, non-porous surface. These plugs were shaped, sanded and filled until they were just about perfect. I then applied three double coats of high build automotive primer sanding each coats imperfections down in between coats with 220 grit (follow the paint manufacturers recommendations for the timing on this part).

Once I had removed all of the remaining imperfections, I progressively wet sanded the model with 400 grit - then 600 grit and finished with 1200 grit. You don't want to remove much material when sanding at this point. You want to create a nice smooth surface that has a polished look.

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Once wet sanding is complete, polish the surface by applying a coat of polishing compound by hand or low-speed power buffer. **You want to produce a smooth glossy finish; any scratches or rough areas will at the least show up in your mold and may fight you when it is time to de-mold your plug.** You can polish the plug over and over again to produce the desired finish.

Preparing The Plug For Molding

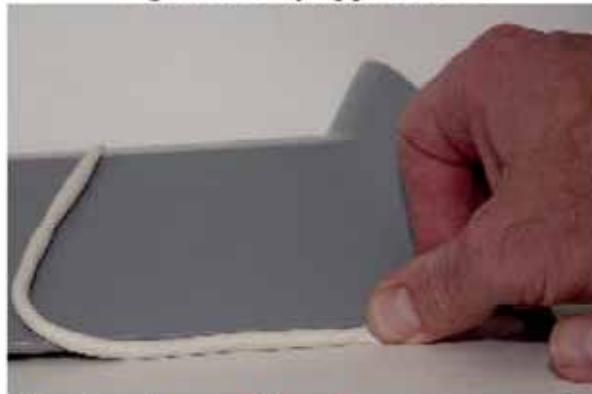
Materials Needed: Clay, Mold Release Wax, PVA

Since my molds require a flat, even underside, I mounted my plugs to pieces of 1 inch thick melamine covered particle board with plenty of room around the perimeter of my plug. The plugs can be seen mounted to the boards in the previous pictures.

Both melamine and mda make a good base for this application as they are non-porous and inexpensive. The plugs were screwed to the board from underneath.

After the plug has been attached, the gaps between the plug and the board have to be filled with modeling clay. I like to press the clay into the gaps with my fingers and then use the eraser of a pencil to push it flush. Excess clay is removed with the corner of an old credit card. (See Photos Below)

Figure 5: Clay application 1



Be sure to force the clay into the gaps. **You don't want your resin to seep underneath!**

Figure 6: Clay application 2



To ensure proper filling, use an eraser head to push the clay deeper into the gaps.

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Figure 7: Clay application 3



I like to use an old credit card to remove excess clay.
You must use something that won't scratch the plug or the base.

The plug is now prepared for the application of Mold Release Wax or another suitable mold release such as Part-All or TR-Hi-Temp wax. These waxes are in a paste form and have a high carnauba content. Five thin coats of wax are recommended but I always do six just because. Using a clean, lint free cloth, apply the first coat by hand using an overlapping, circular motion paying close attention to make sure that wax covers all areas, especially any nooks and crannies. Allow the wax to dry to a haze (30 - 40 min) and polish up by hand using a clean, dry, lint-free cloth. Allow several hours between coats. Repeat this process 5-6 times. For my project, I also applied wax to the melamine surface that I mounted my plug to.

Figure 8: Release Wax



Release Wax: Partall manufactured by Rexco
has always given me excellent results.

Figure 9: Wax On

Wax On: At least five coats. Notice that I covered some imperfections in the base board with masking tape. It is OK to do this. Just make sure to wax over the tape and apply PVA to it just like the rest of your project.

Figure 10: Wax Off

Wax Off: Buff the plug to a smooth, glossy finish

After the final coat of wax, allow the plug to sit at room temperature overnight. This will set and harden the carnauba wax. The surface may then be buffed to a shine (by hand or machine). The plug is now ready to be coated with a mold release agent. Poly Vinyl Alcohol (PVA) is the release agent of choice. PVA can now be applied to the surface of the waxed plug using either a spray gun (preferred) or a soft, lint-free cloth.

Figures 11 & 12: Mold Release & Spray Gun



PVA Mold Release



Typical Spray Gun

If the PVA is applied with a spray gun, apply 4 or 5 mist coats at 50 PSI. If the PVA is applied with a cloth, saturate the cloth and wipe the PVA onto the plug with one pass. The PVA will dry in approximately 30 - 60 minutes (depending on the ambient temperature) and is then ready for the first layer of tooling gelcoat.

Molding Over The Plug

Materials Needed: Air Compressor (optional), Dump Gun (optional), Tooling Gelcoat, Micro Balloons, Fiberglass Mat, Laminating Resin, MEKP Hardener, 16oz Paper Cups, Paint Rollers, Paint Brushes, Latex Gloves, Respirator, Acetone

Figures 13 & 14: Dump Gun & Gelcoat



Dump Gun: For Gelcoat



Tooling Gelcoat

Please remember to catalyze the gelcoat and resin before you apply it to your project. Failure to add MEKP catalyst to your gelcoat / resin may ruin your work.

From this point on, you should always protect yourself from the materials that you will be using. Wear a good quality respirator and gloves whenever using gelcoat or laminating resin. These materials are toxic!

Tooling gelcoat is preferably applied with a dump gun at a pressure of approximately 80psi. While gel coat can be applied with a brush or a roller, a spray gun provides full, even coverage. If the gel coat is not put on evenly, cure problems and premature release from the plug may result.

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Each gelcoat layer should be applied at a 10 - 15 Mil thickness (think 3-4 very, very thick layers of spray paint). Each gelcoat layer (you should do 2-3) should cure to the point where you can touch the gelcoat without it transferring to your skin or glove before you apply more material to its surface. Depending on how you mixed the gelcoat / MEKP hardener this should take at least 30 minutes. I usually mix 3 or 4 cc of MEKP to one 80% full 16oz cup of gelcoat. Note that the gelcoat gets slightly more MEKP than the resin that we will use later on in this mold building process.

Please be advised that once you have applied the tooling gelcoat that you have reached a point of no return. You must apply at least one layer of fiberglass mat over the gelcoat before you stop for the day. For this reason, you should start your project in the morning. If you gelcoat today and don't lay your first coat of fiberglass until tomorrow, you run the risk of having the gelcoat split from the fiberglass while de-molding. This would be undesirable, disappointing, etc.

Figure 15: Spraying Gelcoat



Spray the gelcoat at a distance of 6 to 12 inches. Make sure to apply the gelcoat evenly. Make sure to spread a drop cloth. Gelcoat is very adhesive and messy. You don't want gelcoat on something that you don't want gelcoat on.

Once you are satisfied that your plug is sufficiently covered with gelcoat, you can prepare for application of the first layers of fiberglass. Before fiberglass mat is laid on the plug, I like to mix a thick (apple sauce consistency) mixture of fiberglass resin and microballoons to brush into the details, angles, depressions and corners of the plug that may give me trouble while trying to lay the fiberglass mat.

Make sure that the mix of resin / microballoons and MEKP hardener that you use cures slow enough to give you adequate time to apply the first layer of mat before this mixture begins to cure.

Please note, I usually use 2.5cc of MEKP per 80% full 16oz cup of resin. On a day that is 75 degrees, this mixture of MEKP to resin will give you about 45 minutes to an hour of work time.

Cooler temperatures may require a bit more MEKP while working with resin in direct sunlight on a hot day will give very fast cure times and require less MEKP. You should experiment with this mixture and apply what you learn to both this and future projects.

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Figures 16 & 17: Micro-ballons & Resin Mix



Microballoons add resin and mix to an applesauce consistency. This mixture is brushed into the creases and detail areas of the plug prior to laying the mat. This process creates a better finished product.

You can see in the photo below, I have several cups of resin poured and ready to go. I pour what I think I will need for the job and then I catalyze it as I go.

Figures 18 & 19: MEKP mix & Glass Strands



Don't forget to mix MEKP with resin



Pull the mat apart, the loose strands overlap making your mold stronger.

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Figure 20: Micro-baloon applied

One piece of my project with gelcoat and microballoons applied. Apply the microballoons mixture with a brush to the corners, detail areas and edges of your plug.

Now your plug should be brushed or rolled with resin to ensure a nice tacky surface. At this point, the first layer of fiberglass can be applied. The first and second layer of fiberglass should be chopped strand mat to prevent pattern transfer through the gelcoat, which may happen if other fiberglass materials are used (such as a heavy weave glass cloth). The mold can then be built up using alternating layers of mat and woven fiberglass.

When applying the fiberglass mat, I like to liberally apply resin to the mat with a paint roller. To do this, I use a piece of plywood as a work surface. I tear the fiberglass mat into pieces that are proportional to the size and contours of the project. For my current project, I use pieces that are anywhere from 2' x 4' to 8' x 8'. I lay these pieces on the work surface and thoroughly saturate them with resin using my roller one piece at a time.

Figure 21: Mat Saturation

The photo above shows how I like to saturate the mat with resin. Note that the plug on my work surface has already been brushed with a coat of resin and partially covered with mat. Don't spare the resin when saturating the mat. I will sometimes dip the mat into my cup of resin (think au jus) to really get it wet and pliable. This technique is good when laying mat on areas like the points on the nose of this car project.

You should only wet enough mat that you can use within 5 minutes or so. Don't get too far ahead of yourself.

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The pieces of saturated mat are then laid on the plug and rolled / brushed to ensure that they lay flat against the plug. Repeat this process with piece after piece of mat. Be sure to overlap the pieces of mat by several inches so as to ensure complete coverage of the plug. After you lay each piece of mat on the plug, use small rollers to work the mat flat on the plug so as to remove any air pockets that may have formed between the mat and the plug. Fiberglass tends to soften the longer it is exposed to the uncured resin. For this reason you should continue to roll the mat over corners and edges of the plug until the mat conforms to your plug. Don't get frustrated; continue working the mat until it does what you want it to do. If parts of the mat continue to rise off the plug or appear to be dry, don't hesitate to apply more resin to those areas with a brush.

Figure 22: Applying fiberglass mat



Laying the resin saturated mat. At this point the entire plug has been covered with 2 layers of mat and resin. I am well on my way to finishing this mold. Notice how nice and flat the mat is laying on the plug. (This photo jumps ahead of my written tutorial only for the purpose of demonstrating the application of a piece of resin saturated mat.) Notice that I have applied fiberglass mat to the parting board as well as to my plug. This will create a nice flange around my mold that will make using the mold much easier.

Figure 23: Rolling the Mat

Rolling the Mat: Work the mat flat onto the plug. Work out as many air bubbles as possible. Air bubbles weaken the fiberglass and the mold. Notice that my roller is thoroughly saturated with resin.

Figure 24: Brush Application

Using a brush, add resin to the mat. I use the brush to push the mat to the plug and remove air bubbles. Areas of mat that don't want to cooperate can often be convinced with more resin.

Be careful to not allow too much resin to pool on your mold. Areas with thickly pooled resin are weak and can crack.

After your first layer of mat has been applied, you can stop work for the day if you need to. However, when you return to lay more mat layers, you must rough or scratch the surface of the mold with 60 grit sand paper. The idea behind this is that you want scratches in the surface to give the new fiberglass that will be laid on top of your mold something to adhere to. I took a second day to finish the build of this mold. Therefore sanding was necessary. See the photos below.

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Figures 25 & 26: Sanding and Finishing

Sanding to roughen the surface.
One or two passes will do.



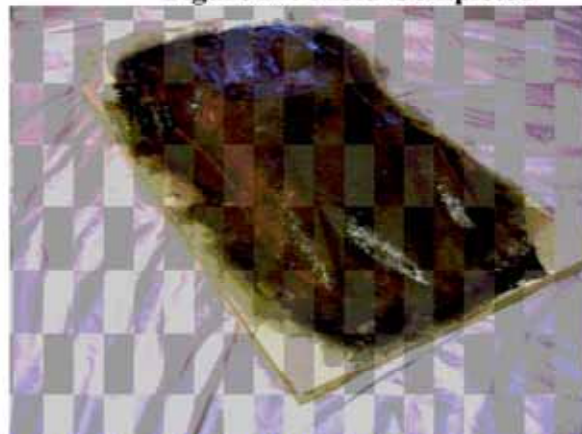
Finishing the third layer.

The number of layers of fiberglass that you build up is dependent on the size of the project. For a larger mold, like a 5 foot long, 20 inch wide, 18 inch deep model boat plug that I made, I like to make the mold 4 to 5 layers of mat thick. For a smaller project, like this car, 22 inches long, 10.25 inches wide and 3 inches deep, I like to make the mold 3 to 4 layers of mat and resin thick. **Once the fiberglass lay-ups are complete, the mold must be cured (left sitting) on the plug for a period of one week at room temperature to avoid warping.**

Releasing The Mold From The Plug / Base

Materials Needed: You will either need wooden or plastic wedges, a chisel and possibly a rubber mallet.

Now it is time to remove the mold from the plug and see what kind of a job you did. To remove the mold from the plug, small wooden or plastic wedges are used to separate the edges. I also like to use plastic putty knives to help separate the plug from the mold that I have created. If necessary, a rubber mallet can be used to gently tap the plug and, with patience, the two parts will separate. Incidentally, I have never actually needed to use a mallet to separate molds from plugs.

Figure 27: Mold Completed

This is the completed mold of the body portion of my project. In the end, three layers of resin and mat were used to build this mold.

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Figure 28: De-molding

I like to begin de-molding by using a chisel to lift the outer region of the mold from the base. All you are trying to do at this point is start the separation process. **Be very careful to avoid scratching the mold with the chisel. You don't want to ruin your work.**

Figure 29: Using Wedges

Leave the tip of the chisel between the mold and the base in order to maintain separation between the two pieces. Using a second wedge, in this case a paint stirrer with a wedged tip, slip it between the mold and the base. Slide it under far enough to increase separation but not enough to crack or overly stress the mold.

Figure 30: Lifting Mold from Plug



Use a third wedge, in this case I used a plastic putty spreader, to further expand the area of separation between the mold and the base. The idea is to slowly increase the pressure to lift the mold from the base and the plug.

Figure 31: Lifting Mold free from plug



With the wedges in place and separation beginning, I begin to leap frog my wedges around the perimeter of the mold. This shouldn't take long. This mold popped off its base / plug at the point shown in the photo above.

Figure 32: De-Molding Complete

The de-mold is complete. This is the result of everything going right. A plug without undercuts, a smooth surface with adequate wax and a good coat of PVA gives a result like this.

Figure 33: Completed Mold Underside

This is the underside of the mold as it came off the plug.

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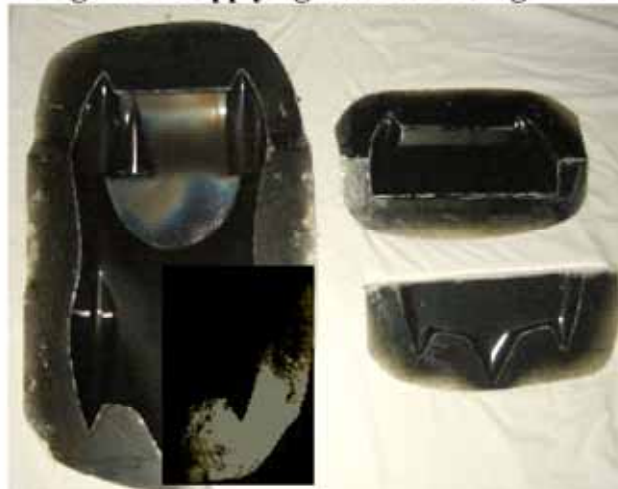
Preparing The Mold For Use

Materials Needed: Band Saw and / or Belt Sander (hand-held or stationary), Soap & Water, Mold Release Wax, PVA

The next step with your mold is to trim the rough, sharp edges. I like to use a band saw for this step. Using a belt sander will also work for this task. Trim the excess fiberglass from the perimeter of the mold. Be sure to leave a lip of several inches as shown below. When you are done trimming, thoroughly wash out the molds with soap and water. At this point, you can inspect the inside of your mold for any flaws. Flaws can be carefully filled with bondo and then sanded to match the contours of your mold.

Before using your new mold, you should apply 1-2 coats of mold release wax and apply a coat of P.V.A. to the surface of your mold. You should apply a new coat of mold release wax and PVA each time you use the mold. This "seasons" the mold and allows for progressively easier releases of your parts.

Figure 34: Applying Wax & Misting PVA



This is a photo of my completed molds. I am applying just a few coats of wax and a quick misting with PVA from being ready to make my first parts.

Molding The First Pieces

Materials Needed: Air Compressor (optional), Dump Gun (optional), Gelcoat, Fiberglass Mat, Laminating Resin, Hardener, 16oz Paper Cups, Paint Rollers, Paint Brushes, Latex Gloves, Respirator, Acetone

Making parts with your new mold is essentially the same process as building the mold. Begin by applying wax and PVA as described in the mold building section.

Figure 35: Applying PVA



Applying the PVA. Make sure there are no dust particles on the mold before the PVA is applied.

Once the PVA has dried to the touch, gel coat can either be sprayed or brushed on the surface of your mold.

Figure 36: Prepped for Gelcoat



PVA is dry and we are ready for the first coat of gelcoat.

Apply the gelcoat the same way that it was applied to your plug. Allow the first coat to cure to the point of tackiness, and then apply a second coat to make sure there is even coverage with no light spots. Remember, gelcoat can also be brushed on.

Figure 37: Using Dump Gun

Using a dump gun to apply gelcoat is the easy way to go. It ensures even coverage and is less likely to disrupt the PVA surface. You can apply the gelcoat with a brush to avoid the cost of the air compressor and the dump gun.

Once the second layer of gelcoat has cured to a tack, you can begin to lay fiberglass mat. I like to use 1 oz. or 1 \square oz. mat to make my parts. Brush an even layer of catalyzed resin over the gelcoated mold, then apply resin - rolled mat (as was discussed during the making of your mold). For projects like this (many contours), small pieces of mat are easier to work with. Larger pieces of mat trap air easier which means that you have to be more diligent at working out the air bubbles.

Work the mat with a roller and brush - adding more resin where necessary until all white areas in mat fibers have disappeared and all air bubbles have escaped. A small paint roller is ideal for rolling the resin soaked mat flat in your mold. Brushes can aid in pushing the mat flat against your mold in areas where the roller doesn't fit.

Figures 38 & 39: Removing Air Bubbles

I use a combination of a brush and a small trim roller, which were both purchased at Home Depot, to work the resin soaked mat into the curves and depressions of my mold. **Make sure to remove all of the air bubbles. Air bubbles will create unsightly flaws in your final product.** Keep rolling and or brushing / dabbing at the mat until you are happy with it. If you are not happy now, you won't be happy when you de-mold.

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For this lay-up, I only used one layer of 1 ½ ounce fiberglass mat. This will make for a strong, yet light part* (see below). I like to continue working the mat with my brush and roller until the resin starts to gel or until I am convinced that all of the bubbles have been removed and the mat has conformed to my mold.

Now, the hard work is over. You can save yourself time and mess by immediately cleaning any non-disposable tools with acetone.

Once your tools are clean, turn your attention back to your project. If you can catch the resin in the trim stage you can easily trim the overhanging fiberglass from your mold with a razor knife. The trim stage is when the resin is semi-hardened yet still flexible. Your knife should easily pass through the glass at this point leaving a clean, smooth cut. If the resin is too tacky, it will stick to the knife. If this is the case, wait another 15 to 20 minutes and try again. Trimming at this point is faster, easier and cleaner than waiting until you have de-molded.

Figures 40 & 41: Trimming



Trimming with a razor knife makes finishing the completed part much easier.

After your part has been trimmed, walk away from your mold. The only thing that you can do now is let it cure. I like to let my parts set in the mold for at least twelve hours. This gives the part time to fully harden. A part that is fully hardened before it is removed from the plug will give you the most faithful reproduction.

***Please note: for RC boat hulls I will use 2 to 4 layers of mat depending on the size of the hull. For hood scoops and fender flairs on full sized vehicles I will build 3 to 6 layers in order to hold up to wind forces and body flex.**

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Removing The Part From The Mold

If you waxed your mold well and applied a good coat or two of PVA, your part should easily pop out of the mold. I like to use wooden coffee stirrers, tongue depressors and plastic putty knives to accomplish the removal of my part.

Begin by pushing one stick between your part and the mold. Don't force it all the way under. You are just starting the process.

Figure 42: Removing the part (1)



First stick in place.

Figure 43: Removing the part (2)



The first stick will cause slight separation. Insert a second stick near the outer edge of the separation caused by the first stick. Insert this stick as deep as possible without forcing it or risking fracture of your part. This second stick will expand the area of separation between the mold and your part.

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Figure 44: Removing the part (3)



Continue the process of inserting sticks between the mold and your part. For reference, these coffee stirrers are inserted no more than two inches. Work your way around the part in this same fashion. Insert a stick wherever possible until your part lifts from the mold.

Figure 45: Removing the part (4)



This part completely separated from the mold with the insertion of five sticks.

Figure 46: Edge Trimming

These are all three of my parts as they came out of my molds. The edges can be trimmed with a Dremel tool or with a sanding block. Be careful, the edges will be sharp.

Figure 47: Completed Fiberglass Body

This is my finished product. The pieces were trimmed, joined and painted. Seeing your vision come to fruition in a 3D form that can be held and touched makes the time and effort worthwhile!

This completes this mold making tutorial. Before beginning your first mold, be sure to read through this manual several times. Start with a small, simple shape. Starting simple will greatly improve your understanding of the processes explained in this manual. Once you have mastered the basics, complex molds will come easy.

Happy Glassing!

Steve Jones

Materials List

This is a list of things that you will need to make a mold.

- 1) Laminating Resin: This is the basis of any fiberglass project. You will use this for both your mold and the pieces that you make with your mold. Resin is usually bought by the gallon but can be purchased in smaller quantities.
- 2) MEKP: This is what catalyzes or hardens the laminating resin and the gelcoat.
- 3) Tooling Gelcoat: This is harder and more durable than finishing gelcoat. You will use this to cover your plug during the initial stages of building your mold. Tooling gelcoat is usually black.
- 4) Gelcoat: This is what you will use to make your pieces. Gelcoat is sprayed or brushed into the cavity of your mold before mat and resin are laid down. Gelcoat comes in many colors and can be color matched much like paint.
- 5) Microballoons: This is used to thicken the laminating resin when you are trying to fill cavities and angles during mold construction. You can buy this by the fraction of a pound. A little bit (weight) goes a long way.
- 6) Fiberglass Mat: This adds strength and form to the resin. Mat is bought by the yard and comes in many different weights.
- 7) Mold Release Wax: This is applied to both your plug and the inside of your finished mold. Mold release wax helps prevent the resin and gelcoat from adhering to the surface of the plug or mold cavity.
- 8) PVA: This is sprayed or wiped onto the plug or mold cavity to prevent the resin and gelcoat from sticking. PVA goes on after the mold release wax.
- 9) Rollers & Brushes: Used for applying and spreading resin and gelcoat. These should be disposable as they are very difficult to clean.
- 10) Fume Mask: Keeps you from becoming horribly ill and full of cancer from your materials. A fume mask is a must.
- 11) Latex Gloves: These keep your hands clean. I use a lot of these.
- 12) Acetone: Used to clean up your tools after you are finished. This stuff cuts right through both the resin and the gelcoat.

Optional but Helpful Tools

- 1) Paint Spray Gun: Used to apply PVA. Spray PVA at about 40PSI at a distance of 12 inches.
- 2) Dump Gun: Used to spray gelcoat. Spray gelcoat at about 80PSI at a distance of 6 to 12 inches.
- 3) Air Compressor: Must have a pressure gauge and pressure control valve. If it is less than five gallons you will waste a lot of time waiting for it to come up to pressure once you have started working.

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Glossary Of Terms

Clay: Used to keep laminating resin from seeping into areas that you don't want it to go. This can be anything from quality modeling clay to play dough. I have even used silly putty in a pinch. Soft clay is much easier to work with.

Dump Gun: Used for applying thick materials with an air compressor. Gelcoat is nicely applied with this type of air gun.

Finishing Gelcoat: Used to build your products. This stuff can be buffed to a shine just like paint.

Gel: A term used to describe the resin or gelcoat when it begins to cure and is in transition from a liquid to a solid. The material will have a sticky jelly like consistency.

Laminating Resin: This is the resin used with fiberglass mat to make fiberglass. Laminating resin gives the mat form and strength.

Mat: Chopped mat used for giving your mold and pieces strength and form.

MDA: This is composite wood material. It is non porous and makes excellent base boards for mold projects. I have also carved various plugs from this material. This stuff can be bought at almost any home improvement store.

MEKP: Hardener used with both laminating resin and gelcoat.

Microballoons: Used to thicken laminating resin. This is useful for filling detail areas and angles prior to application of fiberglass mat.

Multi Piece Molds: These are for complex pieces with undercuts, negative drafts and locks.

Plug: The part that you will build your mold around. A plug can be either a custom piece that you made or an existing piece.

PVA: Poly Vinyl Alcohol is the mold release of choice. This goes over your plug after waxing. PVA has never failed me in a mold release. PVA is removed with water and soap.

Tooling Gelcoat: This is harder and more durable than regular gelcoat. It is used as a foundation for your mold.

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