CUSTOMGRIP TECHNIQUES

MAKIKNG CUSTOM RESILIENT GRIPS
By Charles Alexander

To me there is nothing quite as beautiful as a well designed rod with a stylish handle or grips. I'm speaking here of rods with handle assemblies that are not available through commercial outlets or retail stores. This is one of the things that separates the custom rod, from the mass produced variety. There are so many things that we as custom rod builders can do when can it comes to resilient grips that the best advice I can give is to let your imagination go to work. There is practically no limit to what we can accomplish with this material.

Different kinds of resilient or foam like materials are in use or have been tried for fishing rod grips. One of the oldest Is Hypalon, a Dupont trade name. Made of rubber and plasticizers, it is also one of the heaviest. As such, it is used less and less although the term has become somewhat of a generic one by some people for all grip materials. Attempts to make Hypalon lighter In weight by introducing more air Into the extrusion have not been very successful and the weight reduction has been minimal. As a result, true Hypalon is used today on only a very few heavier salt water rods.

At the other end of the spectrum a very light material, Veltex, made its appearance a few years ago. It is made of a plastic not too unlike Styrofoam. Also sold by dealers under other names such as Mouseskin, these grips lack Strength and resiliency (the ability to spring back from compressive forces). As a result they are prone to dent and chunks break off. The lack of resiliency also keeps the material from stretching as much, and mounting on the rod blank ils more difficult and less secure.

Some of the materials tried in the past hâve not held up well to the weather. Their surface has formed a crust which then cracks. You may run into some of these grips during repairs, where the only thing you can do is power sand off the crust. It reduces the grip diameter slightly and is only a temporary remedy since the new surface will again crust over in time.

Of materials currently in use, I would caution against using any that is too soft (too spongy). As has been mentioned frequently here in the Journal, too soft a grip material is tiring to the angler's hand. From a rod building standpoint, it is also more difficult to shape since the soft material rolls away from the abrasive, producing an out-of-round grip. In my work I also do a lot of gluing together of pieces of grip material. If It is too soft the glue bonds are much weaker.

The best grip material I have found for my purposes is from Clemens held on a shaft for turning. Customgript has the proper density and resiliency, and also comes in economical unshaped 18" lengths as well as preformed grips. Another unique thing about this material is that it is available in the exciting Variegated two-tone warm gray color which looks like wood grain when shaped. The "chameleon-like" comes from appearing grey on black blanks and brown on brown blanks. As such, the Variegated is an excellent choice for the background grip into which are inlaid other colors. The other colors presently available from Clemens are black, brown, bright blue, and mahogany.

So much for the material itself, let's turn to the techniques for fashioning custom handle

assemblies. One piece of equipment you will need is a lathe of one sort or another for both cutting and shaping. This can be a wood or metal lathe, a rod building lathe, or a home-made power rig. What is important is that you have adequate high speed and/or torque on a set-up that runs true with little friction. Since most operations will be on the grip before it is installed on the rod, the space between the chuck and the tailstock need only be a bit longer than the longest grip you plan to make.

For cutting, your lathe will need to be equipped with a tool rest. This is what you brace your tool, preferably a sharp scalpel or knife against as you feed the cutting edge into the revolving grip material. If need be you can fashion your own tool rest from blocks of scrap wood.

The grip material needs to be held on a shaft for turning in the lathe. You have a number of options here. Scraps of old or broken blank can be used, as can strong hardwood dowels that have been previously varnished (the varnish makes it easier to slide the grip material on and off). Personally, I feel the best shafts are the steel mandrels sold by Clemens for use in their complete rod builder's lathe. These are 18" long in four different diameters, and all have a 60 degree conical hole in one end to fit a live center on the lathe tailstock. They are rigid and will not whip or vibrate. Incidentally, on any shaft or mandrel if the inside hole on the grip material does not fit as tight as necessary, you can easily shim it out with a bit of masking tape. This is sometimes necessary because the end of the extruded grip material does not always run true to size.

Assuming that you are working with the unshaped Customgrip, let's review the initial preparation. First, just rough cut a piece of a piece of material just slightly longer than the finished grip. You can use any sharp knife for this. Now, slip the cut length of grip over the turning shaft or mandrel, and chuck it up in the lathe. Turn the lathe by hand first, to safely position your tool rest. Take a scalpel or X-Acto knife and with the lathe running, true up one end of the grip. Measure the desired length to the other end and place a mark on the grip. Turn on the lathe again and using your mark, cut the grip to length.

The next step is to remove the skin on the outside of the piece of unshaped grip. This is present from the extrusion and curing process and is considerably tougher and more difficult to abrade than the foamed grip material. Don't let this discourage you. Once you get the hang of it you can remove it quite easily. I've heard of rod builders who use Dragon Skin, Stanley Shurform planes, files end even wood lathe gouge chisels to remove the outer skin. I suppose they all work. My own experience however, is that a very open abrasive does very well as long as it is open coat so that it cannot clog. In the traditional sandpaper format, Clemens Super Sandpaper in #20 grit (Very Coarse) works well. In the last year, however, I switched to their Sand 'Screen' in #60 grit (coarse). This new unique product looks like window screening but the filaments are covered on all sides with silicone Carbide grit. The open screening is impossible to clog and does a great job of removing the outer skin and performing all the rough shaping. Cut the 9" x 11" sheets into convenient width strips.

Perhaps a word is in order here on shaping Customgrip as well as removing the outer skin. Most of us have rod building lathes powered by small sewing machine type motors. While these motors do not have a lot of power (torque), they usually have a high speed (approx 5000 rpm no load). This speed is what you must use to your advantage when

shaping grips. Keep the speed high by not bearing down against the grip with the abrasive. Do not press so hard that you slow the motor very much. When the grip rotates lightly against the abrasive at high speed a lot of heat is generated. This is exactly what you want since when the grip material gets hot enough it will start to be cut almost like a hot knife through butter. Only if you have a considerably more powerful motor can you bear down with the strip of abrasive. Even then If the grip Is made of glued pieces, it is best to use heat rather than pressure.

When you have removed the skin from the unshaped grip, turn it into a straight cylinder of a constant outside diameter. From this you can cut out the pieces, really slices from which you will glue up the final grip assembly. The custom made grips we are referring to here, are all constructed by combining pieces of different color material. In some cases the slices are quite thin and in others they are a few inches long. They are joined in every conceivable combination.

As noted earlier, a single cut is made by holding a thin sharp blade, (scalpel, X-Acto. etc.) against your tool rest and feeding the cutting edge into the revolving grip material. Many times, however, you will want to cut washer like rings of exactly the same width. While it is possible to do this entirely free hand, some sort of dual cutting tool or measuring jig makes, it much easier and is highly recommended then all the rings will be precisely the same.

A few years ago at a National Seminar, Roy Taylor explained how he wraps and epoxy glues two pointed blades onto a handle cutting trim rings. The handle can be a strip of any rigid material (wood. metal. or plastic). Its thickness determines the separation between the blades, and hence the width of the ring out from the grip material. I made a similar cut by taping two scalpels together side by side. In the March-April 1983 issue, Bob Dishefy, in his article "Toole N Tips", mentioned the use of graphics arts adjustable Bi-Cutters for the same purpose. When using any of these two bladed cutting tools, do not try to feed the blades all the way into the revolving grip. The closer the blades are together the greater will be the chance the material will bind, kicking the tool back and ruining the ring you are trying to make. Instead, merely start the blades into the material, and then pull the tool away. This scores the grip and starts the cut. Use your single blade scalpel to complete the cut.

In order to review the basic procedure used, let's look at a simple example of a black grip with three 1/8" blue trim rings inlaid into it. We would first chuck a piece of blue material in the lathe and cut three identical 1/8" wide rings. Next, we would take a cylinder of black material of the appropriate length and chuck it in the lathe. We would decide on where we wanted to locate the blue rings in the grip and the length of the black spacers between those rings. The black grip would next be carefully measured, marked and then cut. All the pieces would then be ready for gluing.

In order to join the pieces with a resilient joint, we will need p use contact cement. Otherwise, the joints will be hard and rigid. It is very important that the contact cement be of a thin type (fairly runny). Thick, heavy contact cements such as Barge will not yield satisfactory results. Nor, will old contact cement which has a tendency to thicken with age. The only bond failures I have ever had were on grips where I used older, thickened cement.

Apply a thin but even coat to the entire surface of each piece of grip material to be joined. In our example this would be both sides of each of the three blue rings, and the appropriate faces of the black pieces. Remember, to use a thin coat, but covering all the surfaces. To hold the blue rings and other pieces while the cement dries, I place a length of masking tape on my workbench sticky side up. It is held there by two other pieces of tape, one across each end, sticky side down.

Allow the contact cement to dry for 20 minutes before joining. The pieces will stick to each other upon contact and will not be able to be slid or moved. Therefore, use a piece of scrap dowel or blank (thin enough for the pieces to grip, but slide over loosely), on which to align the sections before contact. After assembly, remove the grip and force the joints into tight contact by squashing together momentarily in a large vise or clamp, or by hanging the grip end first, on the workbench. This will strengthen the glue bonds considerably. I usually allow the grip to sit overnight before shaping with strips of coarse then fine, Sand Screen. Avoid excessive sanding pressure if the grip is made of many pieces. .

That's the basic procedure. Now, let's look at some specifics. When using Clemens wood grained Variegated grip material, it is important that all the pieces be cut from the longer piece and that all the grain are aligned. The easiest way to do this is to draw a straight line along the piece with a pen before cutting It. When gluing the smaller pieces together, make sure the pen marks line up (they'll disappear when the grip is shaped).

One very interesting grip that always draws a lot of attention is made from small rings, or slices, of Variegated. When the rings are glued together the grain is purposefully misaligned by a consistent space. This causes the grain to swirl around the grip when it is shaped with a taper. A lot of work admittedly, is spent in cutting and gluing, but like an intricate butt wrap, it is worth it on that special rod. Incidentally, this is a natural match-up on a rod with a spiral guide placement (Roberts Wrap). If it's a bass casting rod you can strip the vinyl material from the Fuji handle and replace it with spiraled Variegated Customgrip. Talk about a custom rod!

To make checkerboard inlays, I first made a jig from a tough plastic jar lid of the desired diameter (It originally was on a jar of garlic salt). I first turn the grip to the outside diameter and then cut it into washer like rings. A ring, then just fits inside the jar lid. The jig was made by accurately dividing the jar lid into eight equal pie-shaped segments, then cutting four slots in the opposing sides. With the grip material ring in the bottom, a thin metal 6" rule is inserted, on edge, into the slots. I then use a pen to rule a line on the grip ring, repeating for all four lines. The ring is removed from the jig and cut with a sharp knife blade into the eight sections.

To make a checkerboard of blue and black, I first section rings of each color. Assume the back ground color of the grip is Variegated. I glue the pie-shaped sections onto the face of the Variegated, alternating blue and black. On the next layer I interpose or switch the positions of the blue and the black sections. This is repeated for as many layers as desired. When the grip is slipped over a mandrel and shaped, the pie-shaped wedges of alternating color form a checkerboard effect.

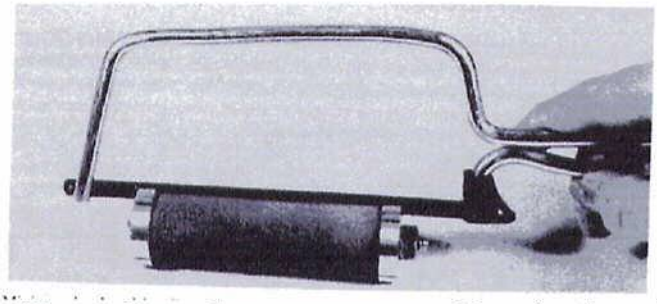
For an entirely different look I made another jig from a jar lid which produces a saw

tooth-like seam where two pieces of contrasting color are joined. In Its present form the jig requires an awful lot of measuring, cutting, and fitting to make as well as to use. It does serve to illustrate, however, the kinds of things that can be done with Customgrip. Your best tools are your imagination and your creativity. I find the best way to come up with ideas is to cut a large variety of different shapes and colors, then play around with fitting them together in different ways and different combinations. In the process you will undoubtedly discover custom designs that please you and your customers.

A few years ago at the Regional Seminar and the National Seminar, Ben Ritenour had some rods with stunning inlays of "burnt" (brown) cork and regular cork. His basic technique was to cut identical pieces from the burnt and regular cork, then interchange the pieces when he glued them together. Among other patterns he created were some very striking checkerboards. To cut identically sized pieces from the light and dark cork he used various steel pattern jigs which he had had made. We were quite impressed with Ben's work and wanted to reproduce the checkerboards. Our problem, however, was that our customers had a very definite preference for Clemens Customgrip, not cork. We therefore launched a personal program of coming up with a way to inlay a Checkered pattern in the resilient grip material. After a lot of cutting, gluing, and dissatisfaction and many pieces of grip thrown away, we finally evolved our present method. As we all know, a dedicated rod crafter doesn't let a little thing like repeated failures stop him! As Ben had his special pattern jigs for cork, we developed a few tools for our work. We'll try to describe them along with our technique.

Start by selecting the two colors for the checkerboard. Any combination with contrast will work, but from experience we'd suggest Clemens bright medium blue be one of them. It goes well with the black, mahogany, or brown. We might also mention here that the Variegated (wood grain) is an excellent material for the background or main grip color. Any checkerboard color combination looks terrific when inlaid in this unique grip.

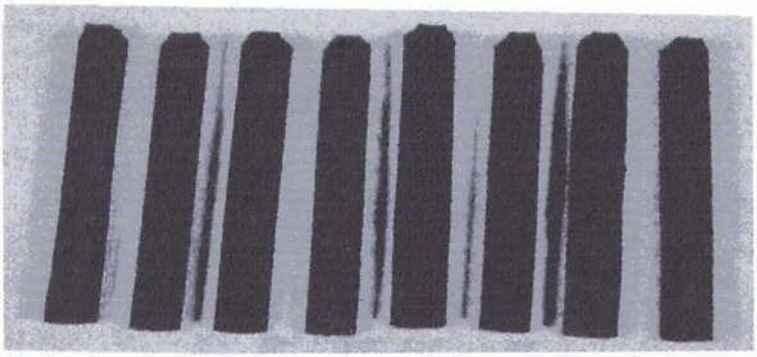
Cut equal lengths of your two checkered colors. One to one and a half inches works best for us. Slip the two pieces on a dowel or piece of scrap blank and turn them down to the same outside diameter (see photo # 1). This outside diameter step is most important since it determines the evenness of the pie shaped wedges. By working with 1", to 1 ½" lengths, there is less chance of the Customgrip moving while being cut into the eight wedges. If the material moves the wedges can come out uneven. Obviously, you want all the wedges to be identical.



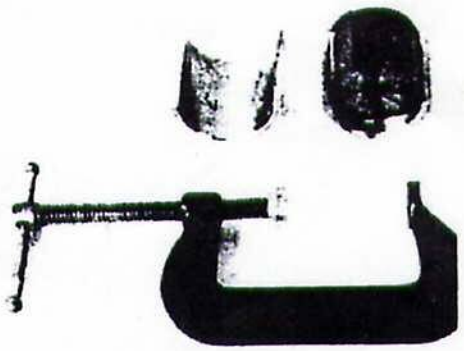
To cut the wedges we came up with a simple tool which we had made by a machinist. It consists of two hardened steel discs with eight evenly spaced slits. The discs are placed on each side of the 1 1/2" length of grip, and a threaded rod is used to screw them together (see photo #2.). The two discs are screwed together just tight enough to hold the Customgrip in place. Screwing it too tightly causes the grip to pucker, which will result in uneven wedges.

Line up the eight slits in the steel discs by rotating one of the discs. Insert a fine-toothed saw (such as an X-Acto, back or miter saw) and cut the grip piece into the eight wedges. This is one of the most exacting steps because if the eight wedges are cut unevenly, the finished checkerboard will not have the individual checks matched in size, nor will they line up properly.

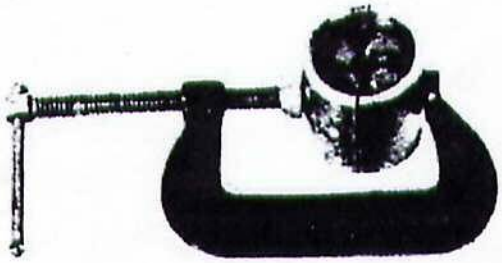
After you have cut the eight wedges from each of the pieces of Customgrip, inspect and measure each wedge to make sure they are all identical. Discard any that are not. Select four wedges of each color (see photo #3) which will be alternated and glued together.



In order to clamp the wedges together for gluing I made another tool. A length of steel pipe, with an inside diameter equal to the outside diameter of the Customgrip, was cut in half. To hold the two halves together with the wedges inside, a C- clamp is used (see photo #4).

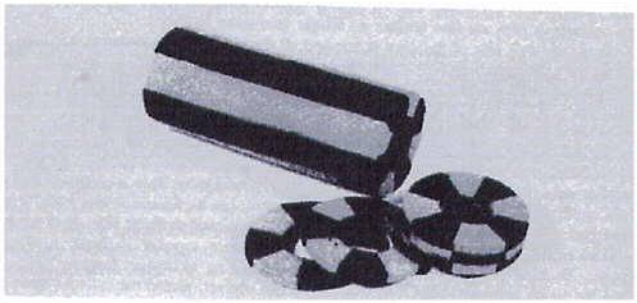


Before using the pipe clamp it is necessary to apply a coating of some sort of release agent. We use PAM, a household spray for frying pans and cooking. Spray each half of the pipe clamp lightly. You do not want to get any spray on the Customgrip wedges, so do it in a separate work area. Apply glue to the edges of each wedge and place the wedges in one half of the pipe. Join all eight wedges, alternating color, to form a complete cylinder. Next, carefully place the other side of the pipe clamp around the Customgrip. Hold the two halves of the pipe together with the C-clamp, and let set for24 hours (see photo #5).



After the glue has cured, remove the pipe clamp and place the checkerboard cylinder of Customgrip on a dowel or piece of scrap blank. Chuck the dowel in your lathe so that you can cut thin slices or rings, of the checkered grip material. This is just like cutting a trim ring from a regular piece of Customgrip.

It is important that the checkered rings all be exactly the same thickness. To assure this you can attach a razor or X- Acto blades to each side of a piece of Plexiglas. If the Plexiglas is 1/8'thick the rings will be 1/8" thick. Do not attempt to cut all the way through the Customgrip with this homemade



tool. Just start the cut to get the exact spacing, and then finish with a single blade. This ring cutting template tool was first described by Roy Taylor at a National Seminar a few years ago and was written up in the journal. Bob Dewshefy also described the use of graphic arts Bi-Cutters for the same purpose in 'the March-April 1983 issue of the Journal.

Cut the glued-up cylinder of Customgrip into rings or slices of the desired thickness. These rings are the building blocks from, which you make the checkerboard sections that are inlaid in your grips. Simply glue the rings together so that the colors are alternated. The way we do this is to first lay a piece of wax paper on a hard, flat surface such as a 4"x 6"piece of steel plate. On top of this we carefully place the glued checkerboard rings, usually three rings thick, followed by another piece of wax paper and another 4"x 6" steel plate. Finally, we put some additional weight on top.

All this must be done carefully so the glued rings do not move out of alignment with each other. After curing for 24 hours the checkerboard inserts are ready for inlaying in Customgrip handles.

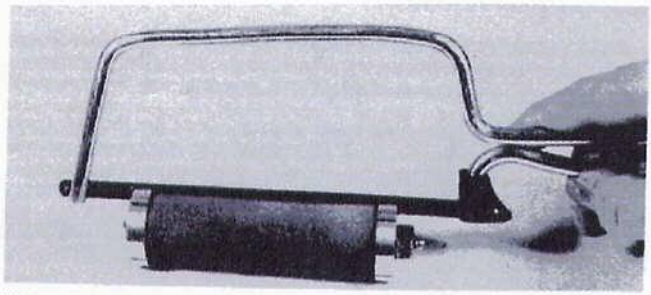
A word is in order about the glue used. Normally, when gluing simple trim rings of a solid color in Custom grip, thin contact cement is the best choice. Since the grip is resilient the glue should also be resilient and not produce a hard line. Our early experiments used contact cement but we found the grips assembled from many small pieces sometimes pulled apart either in shaping or later in use. We also tried five minute epoxy with similar results. Finally, we turned to regular slow cure epoxy and the techniques outlined above. With this, we have made a great number of strong grips over the last couple years, none of which have come apart. We should point out, however, that this method produces hard, non-resilient glue lines. Since our checkerboards are most often made of three 1/8" thick to ¼" thick rings, the entire checkerboard becomes hard and is not resilient like the rest of the grip into which it is inlaid. These are placed, however, in the fore and butt grips of freshwater spinning rods - areas the hand does not normally come in contact with. We, and our customers, therefore see no disadvantage in a hard checkerboard inlay.

In order to preserve the resilient cushiony feel of the Customgrip - assuming this is important to you - it will be necessary to use contact cement. Some. experimentation will be needed to create a stronger join, especially with many small pieces, and a slightly different technique than the above will have to be used.

For those interested, Dale has made the following suggestions.
Use only a thin runny brand of contact cement. Make sure all edges to be joined are completely covered with the cement and there are no bare spots. Allow the cement to dry at least 15-30 minutes before joining the pieces. The pieces must be brought together in perfect alignment since they cannot be moved after they are joined. After they are joined the cement covered edges must be forced together in "super contact" just briefly. This step (frequently missed) is extremely important in making very strong bonds with

resilient materials. A good example is putting felt soles on waders. The contact cement bond will be many times stronger if a piece of board is used to forcefully whack, thump and bang on the felt soles to force them against the rubber boots after the parts are joined. In like manner, each time two custom grip pieces are joined with contact cement; the glued edges should be squeezed together, momentarily, just as tightly as possible. Some times this can be done in a vise or by pounding, or even with your fingers. In short, do anything and everything you can to force the material together along the glue line into tighter contact even if it is only for a second.

One final suggestion about the checkerboard sections for inlaying in custom grip handles. When making these, make quite a few extra to keep on hand. Besides the great time savings of semi-mass production, they are always in demand when you are backlogged with orders.



Inlay Jig Instructions:

Your jig will accept Customgrip or cork cylinders up to 3" long with either ¼" inside diameter or 5/8" inside diameter. The custom grip or cork should first be shaped to an outside diameter not to exceed 1 ¼". Insert the material to be cut into the jig between the two end pieces and tighten nut until hand tight. Use a thin hack saw blade or X-Acto miter saw and insert the blade between the opposing cuts in the end plates. Carefully cut the material until almost all the way through. After all eight cuts are made, remove material and finish the cuts with a razor or scalpel.

Repeat the above steps with a contrasting colored material. Glue alternate colored wedges together to for the checkerboard. With Customgrip, use a thin layer of weldwood contact cement, joining one side of a wedge at a time while aligning the outside diameter. Spread the ring slightly to insert the last wedge. To strengthen the bond squeeze together momentarily. With cork, use epoxy glue and hold wedges together with rubber bands until dry.

True up the inlay in a lathe with light sandpaper and slice into rings of your desired thickness. "*Do NOT cut into rings until the inlay is trued*"