

CATARACT OARS

Do not use heat to remove your factory handles.

Gilman Grips will work with Cataract oars, but first you will need to remove the factory installed grip. Cataract counterbalance uses a steel slug as the core for their grips. Their unweighted grips are made with a fiberglass core instead of the steel core. Cataract uses epoxy to install their grips so they can be difficult or impossible to remove without cutting them out. Here's the step-by-step process for installing your Gilman Grips:

1) The simplest and easiest way is to cut the grip off of the oar shaft using a chop saw with a good carbide blade. If you have counterbalance you must cut $3\frac{3}{4}$ " off to get beyond the steel. This will shorten your oars by $3\frac{3}{4}$ " in length. If you cut off less than $3\frac{3}{4}$ " you *will cut into the steel slug* of the counterbalance. Be sure to wear safety glasses. Shortening your oars by $3\frac{3}{4}$ " may not work for everyone, but it is the simplest method to remove counterbalanced factory grips, and it may even help to balance your oars. In addition if you switch to a Sawyer oar blade you will gain back most of what you cut off because Sawyer blades are longer than Cataract blades.

A. If you're certain your oars are not counterbalanced, you only need to cut 2" off the oar, then you can easily knock out the rest of the grip. After cutting 2" off the end of the oar shaft, push out the foam plug by inserting a broom handle (or something similar that's long and skinny) through the end of the oar handle cylinder. Once the foam plug has been removed, you can knock out the remaining part of the grip with a steel slug. We recommend doing this outside to avoid damaging the floor. Insert a solid $1\frac{3}{8}$ " to $1\frac{1}{2}$ " diameter steel rod approximately 12" long into the oar end of the shaft with the oar grip pointing down toward the ground. Raise the oar up and down quickly so that the full weight of the steel rod is knocking the grip out like a hammer. Continue until the grip is knocked out. This method is very quick and effective. On the final blow, the steel rod will come out and hit the ground hard. Keep your feet out of the way and wear protective footwear. We recommend doing this outside to avoid damaging the floor. This method will take more time and require more work than cutting off the handle at $3\frac{3}{4}$ ".

B. If the remainder of the grip does not easily come out, you can use a $\frac{1}{4}$ " chisel to cut the inside of the grip cylinder and repeat the process. There are 2 inner rings that will need to be removed. One inner yellow ring and one center gray ring. Note that the outer ring is the oar shaft. DO NOT cut or pry against the oar shaft. Only chisel the inner two rings in four to five spots. This will make it easier to remove the remaining part.

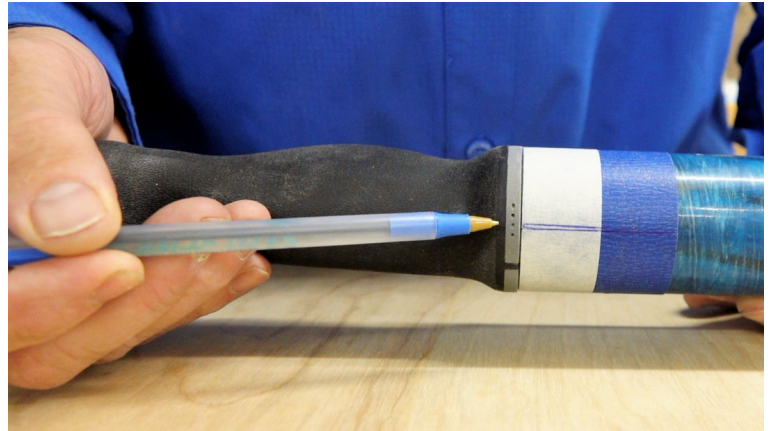
This picture shows the yellow/gray center two rings that need to be removed from the oar shaft (the outer ring is the oar shaft), and shows five chisel marks as discussed above.



C. If necessary, use a razor blade to scrape out any remaining epoxy once the factory grip has been removed. The inside of the oar shaft should be smooth with no high spots from epoxy

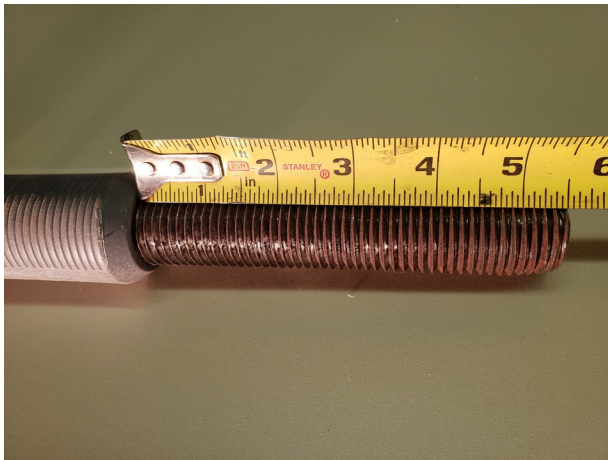
2) Indexing your Gilman Grips. The correct indexing/clocking is critical, and these directions must be followed precisely.

- A. Wrap a piece of 2" wide masking tape all the way around the oar shaft on the end where the grip will go. You will be drawing two lines on the tape at the center of the oar shaft on the top of the oar in step B. The top of the oar will be directly in line with the $\frac{3}{4}$ " button hole at the blade end of the oar. You will use these two lines to index your Gilman Grips to the top of the oar blade.
- B. Next, you need to find the center of the oar shaft. Place the oar on a flat surface long enough to support the full length of the oar. A flat floor, counter or table should work fine. Shim up each side of the blade end of the oar (with something the same height like two books or two same-sized blocks) until the blade sits flat. Next, elevate the grip end of the oar shaft with blocking or a book. Find a flat object that is 1" thick. On the button side of the oar shaft (the button is down by the blade), place your 1" thick object against the oar shaft at the grip end of the shaft and let it rest on top of the blocking you are using to prop up the grip end. Using your 1" object as a guide, trace a line on the tape with a ballpoint pen where the top of your 1" object hits the oar shaft. Rotate the oar 180 degrees, place your 1" object against the oar shaft where you drew your first line, and trace another line using your 1" guide. Now you will have two lines on the same side of the oar very close together. Your oar's **center line** is centered between these two lines. IMPORTANT: If there is any movement/play in the oar blade at the button, it is important to take all the movement out by twisting the oar shaft in the clockwise direction for one line and in a counterclockwise direction for the other line. This will give you the true center/top of the oar blade.
- C. Indexing your Gilman Grips. You will find four small round indexing marks on the collar of your Gilman Grips. The collar is the part of the grip that will butt up to the end of the oar shaft. The collar will be Gray on the Black grips or Lime Green on the Purple grips. When you install your Gilman Grips in step 3, you will find the second indexing mark from the top of the grip, and line this indexing mark up with your **center line** and the top of your oar blade.



3) Installing counterbalance. If you don't have counterbalance, go directly to step 4.

- A. Place the Gilman Grips all-thread counterbalance in a vice or have someone hang onto the counterbalance with large channel locks or a pipe wrench while you screw the Gilman Grips on by hand. Do not use any tools to hold the Gilman Grips, or you may damage them. Rotate the Gilman Grips handle clockwise by hand until the all-thread bottoms out and is sticking out $5\frac{1}{2}$ " past the end of the Gilman Grips cylinder.
- B. Add a small bead of silicone around the base of the cylinder at the all-thread to secure the all-thread to the Gilman Grips.



4) Installing your Gilman Grips. If needed, adjust the cylinder diameter to create a snug fit into the oar shaft.

- 1) After indexing your Gilman Grips (see indexing instructions), test the fit of the Gilman Grips in the oar shaft. We recommend using a file or sandpaper to slightly bevel the inside edge of the oar shaft to slip over the black TPE waterproof gasket on your Gilman Grips. The fit should be snug but the grip should slide all the way in until the collar of the Gilman Grips touches the oar shaft. The fit will not be as snug initially when the glue is applied, because it will lubricate the surfaces.
- 2) Oar shafts have slight differences in the inside diameter (I.D.) size. You may need to slightly adjust the diameter of the Gilman Grips cylinder for the proper fit. Sand down the diameter of your Gilman Grips cylinder to create the desired fit using 80-100 grit sandpaper. Have someone hold

the grip so the cylinder overhangs the edge of a bench. Don't put the Gilman Grip in a vice, which may damage it. Next, place a ½ sheet of sandpaper over the top of the cylinder. With one hand on each end of the sandpaper, slide the sandpaper back and forth, so you are sanding the top half of the cylinder. Repeat this process by rotating the grip 3 times using one-third of a rotation each time. Be sure to sand the cylinder evenly including the black TPE gasket at the collar each time. Repeat until you have the correct fit. Be sure the Gilman Grips will slip all the way into the oar shaft before applying the adhesive.

- 3) Once you have the correct fit, use 3M High-Strength Spray Adhesive ("Spray 90") to coat approximately 4" inside the oar shaft. Then, starting about ¾" away from the collar of the Gilman Grips, coat the Gilman Grips cylinder (the part that will slip into the oar shaft) with Spray 90, trying not to spray all the way to the collar. Let the application dry for about 2 minutes. Dry time is directly related to the air temperature and the time will need to be reduced in temperatures over 70 degrees.
- 4) Slip the Gilman Grips into the oar shaft, rotating and twisting the Gilman Grips back and forth as you slip it into the oar shaft. Once the Gilman Grips is inserted all the way to the TPE gasket, pull the Gilman Grips all the way out with a twisting motion. Let the parts dry for about 10 minutes.
- 5) Now apply a second coat of Spray 90 on each part exactly as you did previously. Let dry for approximately 2 minutes. The time will be shorter in hot temperatures and longer in cold temperatures.
- 6) Insert the Gilman Grips into the oar shaft again with a twisting motion, then pull back apart and let dry for about 30 seconds.
- 7) Use a paper towel to wipe off any excess glue at the end of the oar shaft.
- 8) Now ***in one motion*** insert the Gilman Grips all the way into the oar shaft and align the second indexing mark with your center line (see indexing instructions). It's best to slip the grip all the way in then rotate the Gilman Grips to the correct indexing mark. The Gilman Grips must be fully inserted and indexed before the adhesive becomes tacky. Do not bang the grip on the floor or use a hammer to bang the grip in. If the glue sets up before you get the Grip all the way in or indexed you can use a hot air gun to warm up and re-activate the adhesive. Do not overheat the oar shaft or apply heat to the TPE on the Grip. The glue should re-activate at about 300 degrees.
- 9) Repeat this process on the other oar. Re-check the alignment in about 20 minutes. Let the oars sit in a 70 degree or warmer room for a minimum of 48 hours undisturbed, to allow for the glue to cure before use. Do not let them sit in a cold room, because the glue will not cure properly. Use lacquer thinner to clean any excess glue off the oar.

Spray 90 can be purchased at most home improvement centers or good hardware stores for between \$11 to \$15. We recommend using only 3M Spray 90 because it is designed to be used with polypropylene and has a 600 pound psi shear strength. In addition, this adhesive can be reactivated with heat to make adjustments to the indexing or to remove the Gilman Grips. If your fit is sloppy or loose please follow the loose fit instruction and silicone not spray 90.

My cell number is 406-763-6464. Please give me a call if I can help. If you happen to be in Whitefish, MT, I would be happy to install your Gilman Grips for you.

Please call or email Cataract directly to let them know that you would like to see them incorporate Gilman Grips into their oars at the factory. +1 (801) 467-1204