

MAKING YOUR OWN POCKETS

By Harley Michaelis 1/15/12

You can't make couplers like Kimbrough or shafts/wipers like IRF Machine Works, but can most surely make pockets as I do and save a bundle. Here's how:

For tops and bottoms, counter top laminate such as Formica, the thinner vertical cabinet laminate, .028"-.040" carbon plate, PC board or anything thin that's a little rigid, will wear well and that epoxy will stick to, is just fine. Laminate sample chips cost nothing and the rest of the cost is too little to measure.

By making your pockets for a four servo wing, your outlay for IRF G2 System STD or HD hardware will be just \$7 for couplers, \$24 for shafts, \$10 for wipers and \$2 for Auxiliary Servo Screws.

To avoid surface slop and adverse bind, pockets must have a "slightly snug" fit with the bent wipers. It's on the order of .001" less than wiper diameter, but you don't have to measure it. You can tell by "feel" when it's "just right".

A rotary tool for cutting strips for tops and bottoms can be set up as pictured below.



Use a heavier duty 1-1/4" disk. Blocks are glued to a base between which the tool is snugly secured. Rubber bands over the top work but a screw down plate or bracket would be better.

I wanted to cut strips 1", 3/4" and 1/2" wide. For a fence, I used a 1/4" x 3/8" strip of bass seen by the silver colored part of the tool. On which to slide and cut the work, figure out how thick the balsa sheet on the base should be. Use a 1" wide strip between the fence and the disk. Place another outside of the disk. Wax and polish these for easy sliding and tack glue them down.

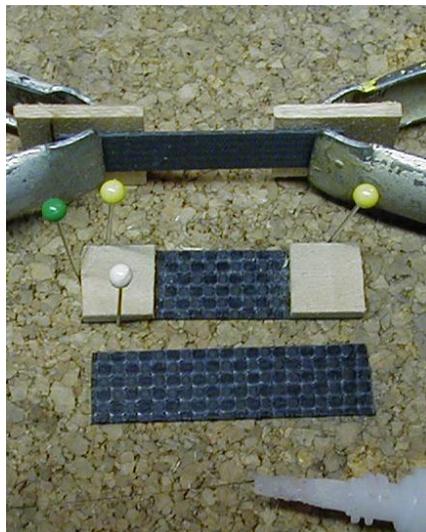
To cut strips 3/4" or 1/2" wide, place 1/4" and 1/2" shims (seen on the right) against the fence. A piece of carbon plate is at the lower left. The "L" shaped piece guides the work. Wear dust mask and eye protection. Disks can break and send pieces flying. Place the nozzle of a vacuum cleaner just beyond the disk to capture the carbon dust, etc.

Cut, saw or break strips into lengths needed. True up edges to get nicely matched pairs. If the face of the hinged surface is beveled for deflection, you can bevel the pocket after it's assembled, but before installing it.

Decide what to use for "spacers" to put tops and bottoms in perfect parallel planes and with a "slightly snug" fit with the wiper. Hard balsa or bass will work just fine. You'll likely have to uniformly block sand down something too thick. The ideal fit avoids play that could cause buzz at higher speeds and adverse bind to prevent return of a deflected surface to precise neutral. Cut the spacers a little oversized in perimeter so CA glue can be wicked around the three exterior sides where they overlap.

"Hands free" assembly is easy with spring clamps and pins. Clamp a spacer flat to a top or bottom. Wick around the outside overlaps. Repeat with the other spacer. Trim excess spacers. Use four pins as shown to position the assembly on a cork board, etc. Dab CA glue on the ends of the other piece, not on the spacers. Quickly invert and align it to the first piece. Hold down a moment with fingers for the glue to fire.

Wick thin CA through the open grain edges. Smooth edges. Check fit with the intended wiper. If too tight, with #320-400 "wet or dry" paper used wet, take a few swipes to the wiper surfaces that lay flat. If too loose, try another wiper or thin down the spacer material. If the pocket front should be beveled for deflection, do it next.



Wrap pocket ends with a single layer of fine thread, preferably Kevlar. It's essential that top and bottom stay in parallel planes during installation, neither bulging in or out. To assure this, prepare a waxed "insert" from spacer stock. Slip it in the opening. Over and under the pocket, fill with balsa shims and epoxy. Keep epoxy out of the slot. Keep all flat and straight until the epoxy has cured. Remove the insert

Puff a little dry keyhole lubricant into pockets to reduce friction. Blow them out with a compressed air canister to keep them clean.