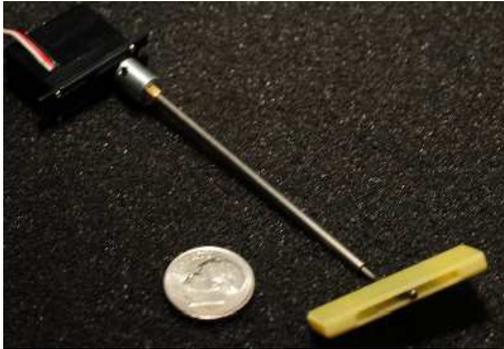


THE G2 RDS & DLG's (2/4/11)

By Harley Michaelis

Review the primary G2 RDS installation instructions. LEFT: picture shows 1/4" x 5/16" IRF coupler for Hyperion DS09, gauge 13 hypo shaft with sliding 1/8" hex end, .0625" drill stock wiper & a pocket with a "slightly snug" fit to it. Weight with 2" shaft is 3 grams. RIGHT: Wiper & pocket are "home-made". See pg. 2. Weight is 2 grams.



To size a shaft to length, lay servo in position in the wing, coupler fully slipped on the gear. Outside the wing, place the shaft where its hex end would butt inside the coupler. Size the shaft to length, allowing for the wiper to be attached.

Couplers come tapped for opposing, tiny set screws oriented as illustrated below. These & a pin secure it to the output gear. The drawing represents a rear view of the coupler & wiper of the right flap in neutral, wing inverted. So oriented, one set screw is accessible in neutral & the other as the flap is deflected downward. A tiny Allen wrench is provided.



1/32" PIN: The coupler comes drilled through for a 1/32" pin. The hole is a guide to drill through the gear. Fully seat the coupler, stabilize it with the set screws, then drill. Best bet for this delicate operation is to use a 1/32" bit in a pin vise. Plan to secure the head of a smaller diameter common pin with a dab of easily removed glue.

Manipulate the bent wiper into the shaft & pocket. Find the "sweet spot". Mark where the wiper exits the shaft. Outside the wing, attach wiper about 1/64" further into the shaft than the mark to shorten it for "fore-aft" movement. Use regular CA glue or the black, rubber-toughened CA such as the IC-2000 in the Bob Smith adhesive line.

Follow the primary instructions to finish the installation. Insert the pin, seat the upward pointing screw and then rotate the servo to seat the other one.

The uncut CA hinge on the left measures 1" x 1-½". Cut in half it makes a practical top & bottom but can be smaller if it can receive the bent wiper without it jamming the spacers. If a polygon shaped pocket is better suited, cut pieces accordingly.



Spacers between top and bottom must provide a "slightly snug" fit with the wiper. Before making spacer stock, settle on wiper wire if making your own. Find smooth nails in little see-through boxes. Use size 16 or 17 x 1-½". Snip head. Grip with vise or pliers. With scrap of hypo tubing, make a low radius bend the selected angle.

The picture and text below show how to make a jig to make "spacer stock" that fits wiper wire properly. For the base, find a smooth, flat piece of wood, such as a contest plaque.



The aluminum pieces, which measured .061" thick, makes spacer stock .0014" thinner than true 1/16" (.0625") wipers. They were cut 4" long and drilled with a ¼" bit to recess #4 x ½" flat-headed, sheet metal screws found at ACE Hardware. The aluminum pieces were spaced to receive sheet balsa 2" wide and shimmed up with strips of the same sandpaper sheet used for the little sanding block at the right. The block just fits to slide between the upright sides. The sandpaper touches only the balsa. If, in reality, the fit is too tight, add clear Scotch tape strips to the sanding block. If too loose, add them under the aluminum. Use light, uniform density balsa that sands down easily.

POCKET ASSEMBLY: Use thicker sheet balsa as a pinning board. Use straight pins to hold position and align parts. As seen at the top of the 2nd picture, position spacer material so the ends of a top or bottom will extend 1/8" to 3/16" over it. Holding with tweezers, dab a little CA+ on both ends. Position on the spacers. Press flat with block to cure. Trim excess spacers. Repeat with the other piece to make a pocket as seen by the item marked .060. Dab instant CA into spacer open grain ends to firm them up.

REAR OPENING SEAL: To keep adhesive out of the pocket use spacer stock as a removable "insert" sized as seen by the .060 item... Thinly coat it with paste wax. Through the pocket front, run it in to about 3/32" from the rear opening. From the rear opening, insert a strip of spacer material, 1/32" or so deep to wick join with instant CA. Hold assembly flat between blocks for good contact. Trim excess at the rear.

POCKET MOUNTING PRACTICE: With waxed insert in place, apply enough slower epoxy to fully fill between pocket & opening made for it. Push pocket and insert simultaneously so as to not break the seal. Pick up the ooze.

For real, make clearance in the hinged surface for the pocket. Control surface distortion with blocks pressed to both skins. As the epoxy cures against them, the flexible top and bottom become more rigid. Then remove the waxed spacers.