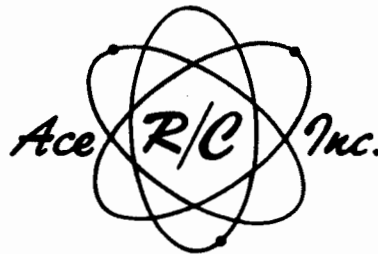


Don Srull's

MINI GG ACTUATOR PACKAGE



HIGGINSVILLE, MO. 64037

Here is a tested actuator that will expand your GG system's application into the realm of fun, low cost, .02 scale or sport airplanes. It's very simple to build.

PARTS LIST

- 1 Furuichi motor
- 1 Rand 6013 gear
- 1 Rand 6003 gear
- 1 .01 MF disc capacitor
- 1 Base--2" x 1 1/8" x 3/64" Synthane
- 1 Brace--5/8" x 3/8" x 3/64" Synthane
- 1 1 1/4" x 1/16" gear axle
- 1 1" piece of 1/32" piano wire
- 2 ~~1/56~~ x 1/4" screws
- 1 ~~2/56~~ nut
- 1 2/56 x 5/8" screw
- 3 #2 washers

The figure illustrates the construction. The Furuichi motor was chosen since it is a very low drain, highly efficient, and rugged little unit that will run nicely on 1.2 volts. To add a second pin to the Rand #6003 rudder crank gear, simply chuck up the 2/56 x 5/8" screw in your drill, thread end first, and file off part of the threads as shown. Cut the screw to 5/16" length and bolt in place at the indicated position. Use a bit of epoxy to assure it won't loosen. This pin will act as your rudder take-off. Attach the motor to the base--the 1-72 x 1/4" screws have to be shortened to 1/8". Thread the nut on all the way before cutting and remove after cutting to restore any threads that got bunged up. Gently press the pinion gear on the motor shaft so it will line up with the rudder crank gear. Make the brace and drill as specified. Epoxy the brace and the 1 1/4" long gear axle in place, making sure the gear fit is free. Carefully solder a small washer keeper on the axle to retain the gear, being careful not to damage the plastic gear with too much heat. Solder a .01 MF arc suppression capacitor across the brushes. The single capacitor is plenty when this motor is run on 1.2 volts.

Attach a charged nickel cad cell to the leads; the servo should turn over at a good clip with surprising power. The no-load drain will be about 70 mils. The servo centering force will come from stiff nylon or polypropylene hinges on the rudder. You will want to use these on scale models anyway, because they are virtually invisible. Next, add the 1/32" piano wire stop to the gear and trim the base where it hits to get exactly the same throw on either side; about 50 degrees is right. If you plan to use the actuator for .049 flying, you can add a conventional centering spring attached to the top of the elevator pin and to a bracket on the top of the base. A good, soft action spring can be made from about 15 turns of control line wire on a 1/8" diameter form.

SIMPLE, LIGHTWEIGHT G-G ACTUATOR FOR .01 TO .049'S

