

RUDDER CONTROL HORN

- Drill and tap the hole in the horn for 2-56 threads.
- Use a 1/16" carbide cutter to cut the slot for the rudder control horn at the marked location. Use a small rectangular Perma-Grit file to finalize the slot.



- Use the control horn to set the depth of the slot. Trim the tab if necessary to avoid damage to opposite skin. Drill small holes in base of rudder to allow glue rivets to form.



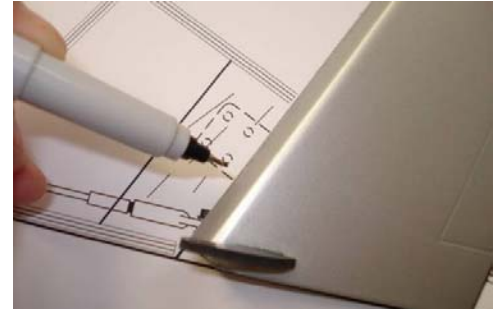
- Use the template to check proper position of the control horn.

- Apply plastic tape to form a 1/16" perimeter around horn.
- Apply AeroPoxy to the slot and in the holes of the control horn tab. Insert the horn into the slot. Secure the horn in place with masking tape while the glue cures.



HINGING THE RUDDER

- Lay the rudder over the plans and mark the locations of the (4) Hayes hinges on the pivot edge.
- Use a Dremel #409 disc to start the hinge slots, then use a Xacto #27 saw blade to enlarge and extend the slots. Scuff the hinges with #80 grit sand paper or a BVM Scuff Board and flex them ± 90 degrees on the pivot line.
- Use Slo-Zap or 5-minute epoxy to glue the hinges into the rudder.
- Use the same techniques to make the slots in the fin. Extend fin slots $3/8$ " towards the tip to allow for the swept hinge line.



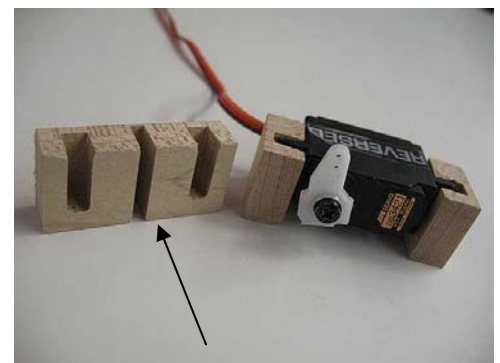
- Use a tapered cone tool and $3/32$ " drill bit to allow injecting Aeropoxy. Carefully apply the rudder with hinges wiping away extra glue. The rudder needs to swing freely 1 " either side of neutral at the root base on the fuse. Trial fit as necessary before gluing.



RUDDER SERVO MOUNT

Due to the size of the vertical fin, a mini-sized servo is required. BVM recommends the JR 3421 and the notched maple blocks are made for this servo.

- Install the rubber bushings that come with the servo into position but do not install the brass eyelets.



- ❑ Trim away the plastic gussets on the servo mounts that protrude above the rubber grommets.
- ❑ Remove the thin web that holds the two servo mount blocks together and trial fit the servo into the notch of each block.
- ❑ The servo arm is the standard 4-arm part. Clip off the two short arms and one long arm. Center the servo electronically and apply the arm to the spline.
- ❑ The servo is retained by a Poly-Ply strip .015" x1/2" that is secured to the maple blocks with (2) #2 x 3/16" button head screws. Drill (2) 1/16" pilot holes for the screws.

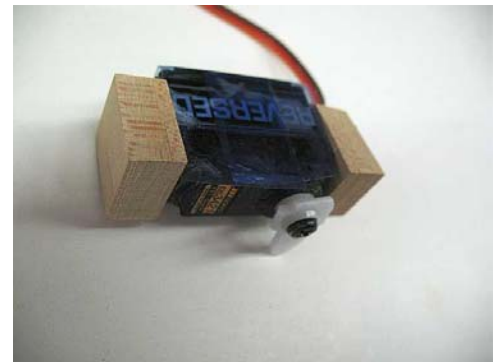


Note: A reverse servo is required on either the rudder or nose gear steering unless two channels are used and mixed.

- ❑ File notches in the servo access flange to allow the servo with blocks to pass through.



- ❑ Apply low tack plastic tape to the backside of the servo and then shape (on belt sander) the maple blocks to allow the servo to fit into the pocket and allow the fiberglass cover to fit onto the pocket flanges. Scuff the inside of the pocket to accept Aeropoxy.



- ❑ Apply fresh tape and a bit of Vaseline to the servo case to prevent glue adhesion.



- After sufficient test fitting, apply Aeropoxy to the maple blocks and a bit to the inside fin skin and carefully insert into the fin pocket. Use masking tape to hold in position until glue sets.



RUDDER LINKAGE

- The linkage for prototype is 4" center to center.
- Cut a 1 3/8" piece of 1/16" music wire and build the rudder linkage per the plans using silver solder. Note the bend needed to clear the cover plate.



RUDDER COVER PLATE

- Apply black ink to the tip of the servo arm and rotate it to both extremes. Press the cover plate in position to transfer marks to the backside of plate. Make initial cuts with a Dremel #409 disc. Use Perma-Grit files to enlarge the slot as necessary to accept the linkage and servo arm travel.
- The cover plate is retained with (4) panel screws as shown. Use a Perma-Grit countersink tool (BVM #RF9UF) to make screw heads flush.



Note: The screw heads and linkage can be brush painted with an appropriate Model Master (or similar) color paint.