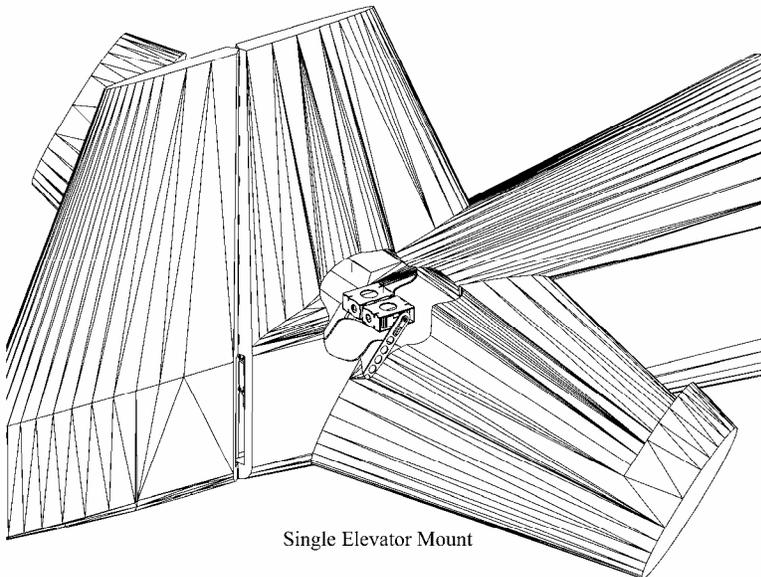




SINGLE ELEVATOR MOUNTING BOX INSTRUCTIONS

Thank you for purchasing the patent pending, DuRant Direct Drive single elevator servo mount. This mount allows you to install an elevator servo in the tail of an aircraft to power an elevator half. It is designed to be used in pairs to drive the elevators of very large aircraft. (If the fuselage width is less than 3.25" at the elevator hinge line, then use a dual elevator mount instead.)

Direct Drive is the ultimate in aircraft control. 100% servo torque is transmitted to the elevators - with zero travel, power, or precision loss due to linkage slop. Elevator travel is absolutely linear. Servo bearing and control hinge wear are greatly reduced. Fewer parts means less weight and greater reliability.



REQUIREMENTS

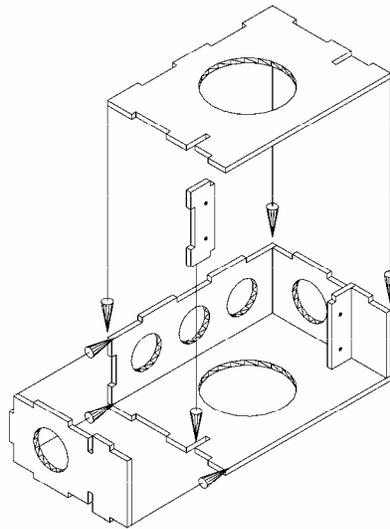
To begin, you will need the following:

- 1) Computer radio, programmable servos, OR JR Matchbox (or equivalent)
- 2) Removable style hinges, such as Dubro ¼ scale hinges part number 257.
- 3) Length of .047" piano wire.
- 4) Hanger 9 HD ½ servo arms. (Futaba - part number HAN3575, or JR - part number HAN3574)
- 5) Servo. This mount is designed for standard size servos not greater than .76" in width for mount #6, .82" wide for mount #6W, Or 1" wide for mount #6XW. Any standard servos will work - but we highly recommend quality servos, as your final control precision is only limited by the quality of your servos. Direct Drive especially optimizes the extreme precision of digital servos.
- 6) CA glue and basic modeling tools.

ASSEMBLY AND INSTALLATION

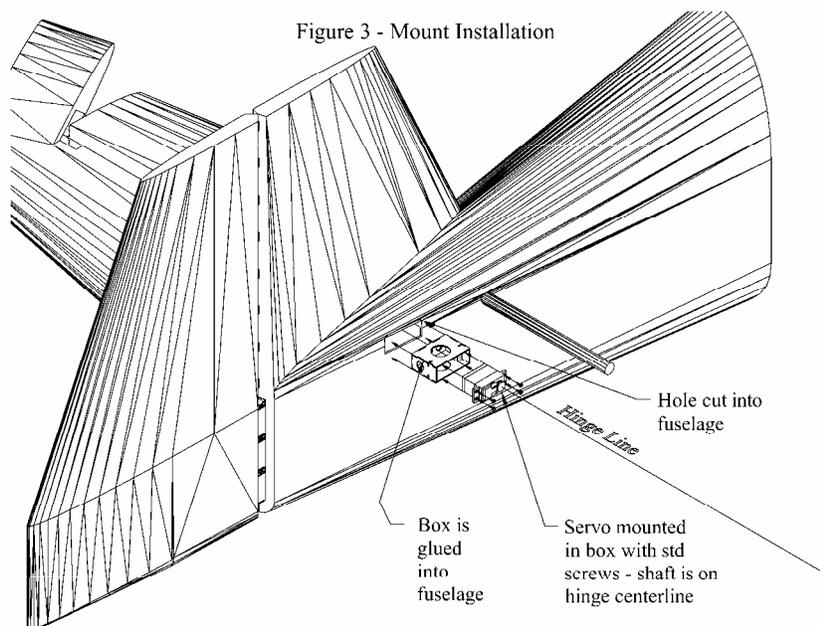
- Assemble the mount using thin CA or equivalent glue, referencing figure 2. Add a fillet of glue around the inside of all joints.

Figure 2 - Box Assembly



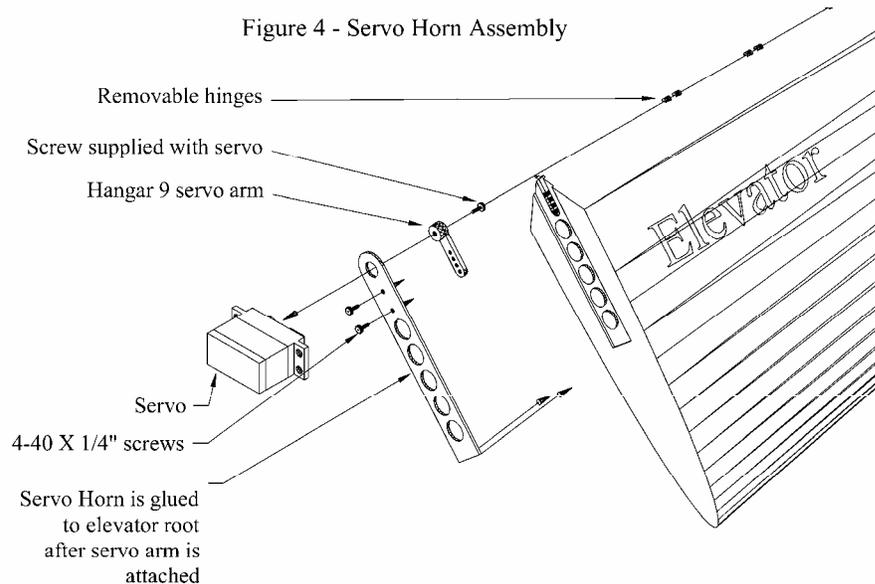
- Install your elevator onto the horizontal stabilizer using removable hinges. When satisfied with the fit and travel, remove the elevator.
- Accurately mark the hinge centerline where it intersects the fuselage. If you have a removable stabilizer, then remove the horizontal stabilizer. This will make cutting the hole for the mount much easier.
- If the stabilizer is not removable, you will have to trim the rear of the stabilizer as necessary to make room for the mount. In some aircraft this may require adding some reinforcement to the stabilizer to compensate.
- Place the mount against the fuselage in the location where it will be installed. Be sure the servo output shaft will be perfectly centered on the elevator hinge line, with the larger portion of the servo to the rear. Use a fine tipped marker to trace the shape of the mount onto the fuselage.
- Remove the mount and carefully cut an opening into the side of the fuselage along your tracing.

Figure 3 - Mount Installation



- Install the mount as shown in figure 3 using CA or equivalent wood glue. Do not install the servo at this time. It is shown in the diagram to show the relation of the elevator hinge line to the servo output shaft.

Note: If the stabilizer is not removable AND is already permanently installed on the aircraft, then you will have to extend the hole for the mount aft slightly. This will allow you to insert the mount into the fuselage, and then slide it forward into position. After it is located and glued, you can then plug the holes behind the mount with the scrap you cut out.



- Install a Hangar 9 servo arm (not supplied) onto the horn using two 4-40 X 1/4" bolts – as shown in figure 4. Use a drop of thin CA where the arm contacts the horn to lock the assembly together.
- Trim the elevator root as required so it will accept the horn assembly. The end should be perpendicular to the hinge line and at the proper distance from the servo shaft. The horn may be trimmed and tapered if necessary. Only about 2 inches of horn length is essential to bond to the elevator.
- Glue the horn assembly into place on the elevator root. Ensure the servo arm is exactly centered on the hinge line by running a .047" wire through the servo shaft mount hole in the arm and the adjacent hinges. Do NOT install the servo onto the horn yet.
- Install the control surface on the airframe. Check for clearance throughout the desired range of travel. The maximum travel possible will be between 50 and 60 degrees in each direction. Trim any areas that need more clearance. As a minimum, you will have to notch the elevator slightly to gain access to the servo arm mounting screw and also the stabilizer to clear the horn assembly.
- Construction is now complete.

SERVO INSTALLATION PROCEDURE

