

Wing servo box

There are excellent slim servos available for wings, particularly the thinner wings used for gliders. Less well developed are the mounts for them. SLEC makes some good ones but only if the size is correct for your model and servo.

While developing my prototype two metre soarer I made the mistake of leaving the servo mounts too late. The results worked but were untidy and clumsy, as you see.



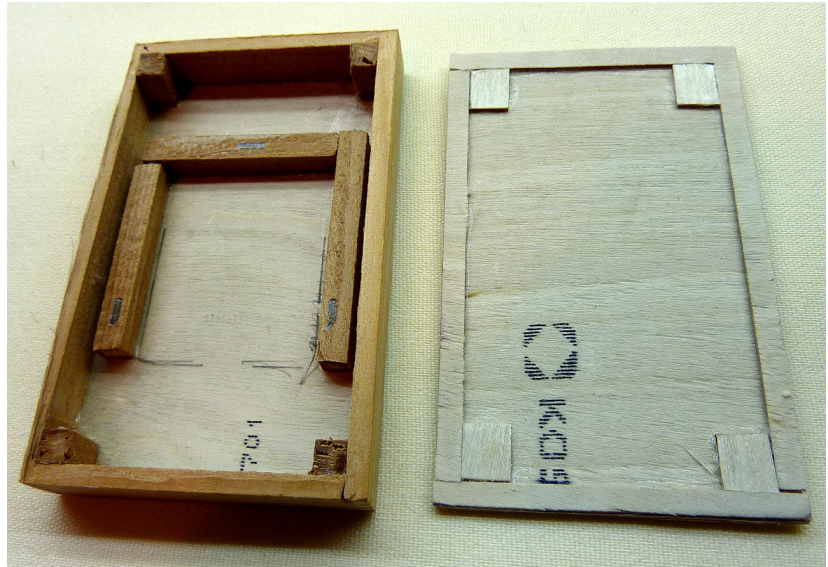
So I decided to design a mounting box for future versions and other models. The boxes will be installed when fitting ribs rather than at the end.

The servos I use - Corona CS-239MG (£7.07 4.6kgcm analogue) are exactly 10mm thick. The bottom and lid are made of 1mm birch ply. The sides are 3 x 10mm spruce with corner pieces for the threaded bushes cut from 5mm square spruce. A slot will need to be cut in one side for the wire to exit, to suit the location.

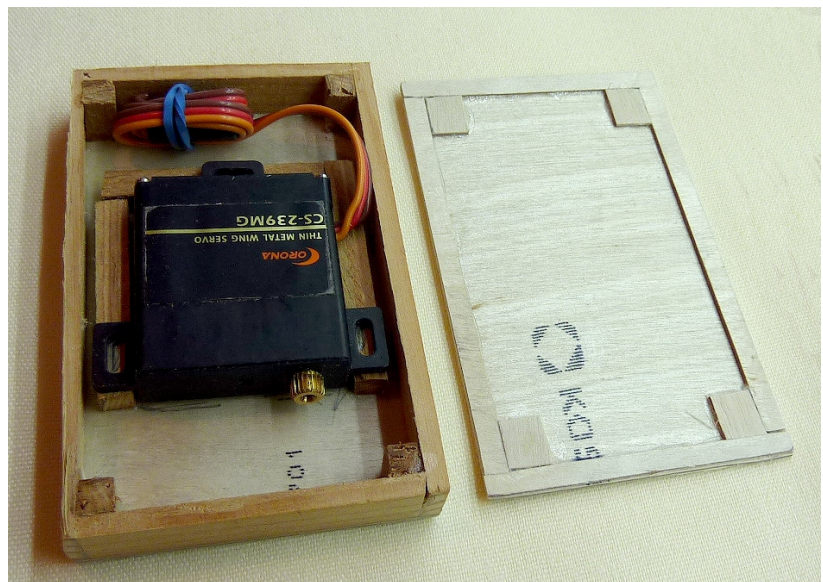


I made the box 80mm wide only because that was the gap between the ribs. It could be made a lot narrower to suit the servo and model. The lid has a strip of 1mm birch ply around the edges of its underside and squares in the corners. These allow a little more thickness for countersinks for the M2 x 4 screws holding it down.

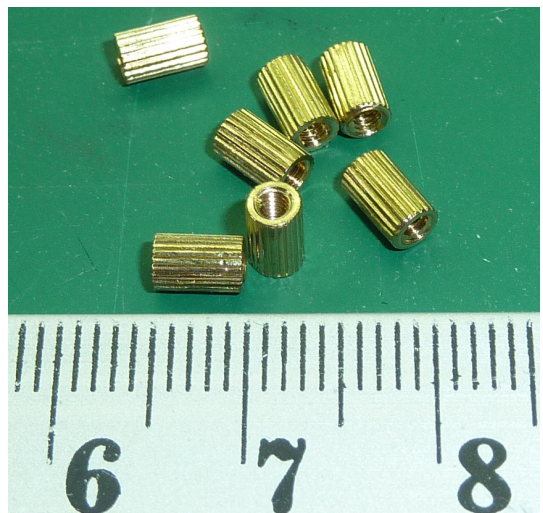
This shows the box with the servo frame and corner blocks glued in.



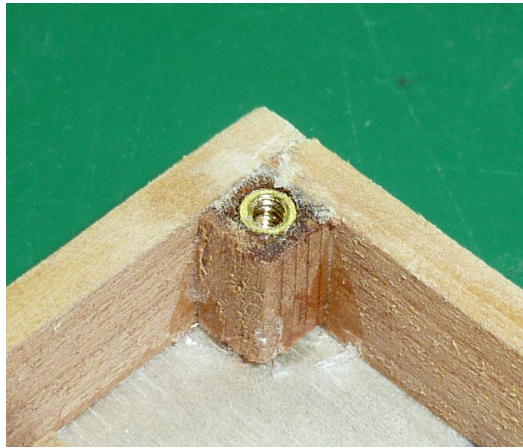
This shows the servo in position. 5mm square spruce was exactly the correct size to form the frame into which the servo fits. Short 2mm servo screws hold the servo down.



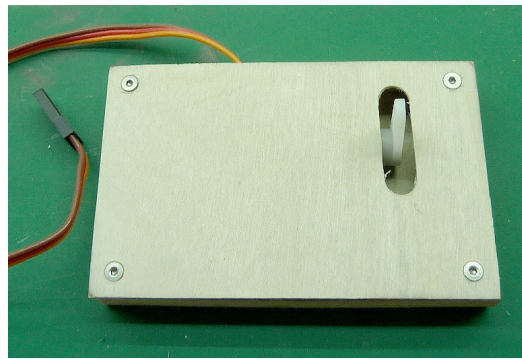
The lid is held down by M2 x 4mm allen head countersunk screws. The bushes for them are glued into 3mm holes drilled into the corner blocks using a diamond holesaw. They are sold for melting into plastic mouldings, for example those made with a 3D printer. They are called some combination of 'brass knurled thread insert'. I got mine for £2.65 for a hundred on eBay. That is the ex-China price so allow for the delivery period, usually about a month. A tiny drop of epoxy is all that is needed as there is almost no stress on them.



One insert glued in



The completed box



Total weight without the servo is 11.4g. I will probably do away with connectors to save space and weight by soldering the leads and using heat shrink. I am also testing two other slim wing servos from Hobby King, the HK15322MG (£7.61 1.75 kgcm digital) and the Turnigy BMS-555MG (£16.36 4.2 kgcm analogue).

Peter Scott © 2017
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