

Dingo Servo Mounts

Micro10 Assembly Instructions. (Now at V2)

NOTE: This mount is now at **Version 2**. Only difference is that the switch mounting holes are now slotted to the edge of the frame.

Please read these instructions right through before commencing.

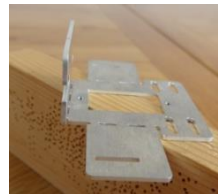
Take a little care with the assembly and you will have a really robust servo mount. Remember that you can only bend the aluminium once, so make sure you have the correct orientation before bending. (I cannot stress this enough! Check and double check before you bend.) Bending can be done by hand on the edge of a work bench or on a wooden block.

Before you start, make sure that all the parts are in the kit (see diagram on the back page.) Check the metal parts for excess flash from the lasercutting and remove if required with a small file or modelling knife. A small amount of burr on the edges will not affect operation, however check that the slider fits easily in both wings as tolerances here are quite tight and it needs to move freely for reliable operation.

Any pips can be easily filed away.

Start by folding the foot plate down along the dotted line. (Hold the top part firmly while bending to avoid any kinks in the motor mount section.) Make sure that this bend is fully 90 deg. You can always hold the part against the benchtop and just push a little more.

This is the block I use as a bending jig.



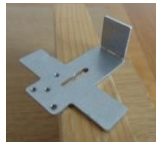
The 2 wings are bent in the opposite direction and can be bent by hand on a wooden block. You should end up with a unit which looks like the 2rd picture. Note that at this point the wings have not folded to 90deg. This will enable the fitting of the slider at a later stage, after which we will finalise these bends.



Now take the slider and fold along the short dotted line. Take some care here as the way you fold this will determine the final arrangement of the mount.

Dingo Servo Mounts

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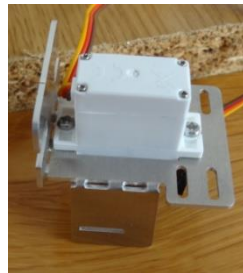
This fold is required for operating the switches if fitted.

(If you fold this one the wrong way, it will just mean that your actuator wire will be on the other side of the mount, but will still function fine. [\(If the Micro8 drill jig is used to align the holes, it just needs to be inverted. – see the notes on the Micro 8 drill jig download\)](#))

You should now have both parts ready to accept the servo motor.

This mount is designed to fit a Hobby King HK15178 or TowerPro SG90, but most 9g motors should also fit.

Now mount the servo motor from the back of the frame using the M2 x 6mm screws supplied. Make sure that the motor is oriented as per the picture. (The motor shaft is at the top – next to the foot plate.) A small dab of nail varnish or thread lock can be applied to the threads after fixing to prevent any loosening during operation although I have not found this necessary.



Now the servo motor needs to be centred by means of a servo tester or the control software.

Get the single actuator arm out of the servo pack and fit it as shown in the picture..

Attach with the small screw provided by the servo manufacturer. **(Be careful with these screws as they have a mind of their own and are hard to find replacements for)**

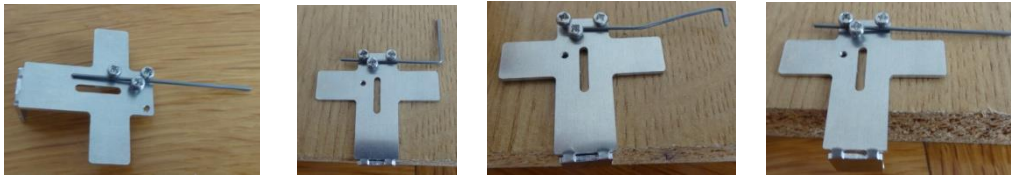


The next part we need to prepare is the slider

The 4 holes in the slider are tapped M2, but we will only use 3 of them. You need to decide now which way you will use the screws to hold your actuator wire. (See picture) The 3 very small M2x3mm screws are used here - anything longer may interfere with the actuator arm of the servo. Always put the screws in from the top – that is on the opposite side to the switch operating fold.

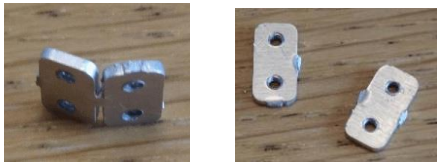
Dingo Servo Mounts

Micro10 Assembly Instructions. (Now at [V2](#))



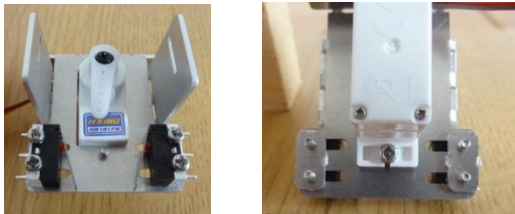
The unit is designed to accommodate up to 4 microswitches fitted with M2 screws and nut plates into the 4 slots at the “bottom” of the unit. 2 switches are included in the kit, but more can be ordered separately.

Separate the 2 nut plates by bending back and forth. The left over sprue can be filed off, if you like, but will not get in the way of operation.



You can now fit switches to the nut plate using 2 M2x10mm screws and the nut plate. The nut plate has 2 threaded holes spaced at exactly the right pitch for the switches. This allows the switches to be adjusted very easily without having to resort to spanners etc.

In Version 2 the switches can be slipped on after assembly as the slots are open to the edge of the frame



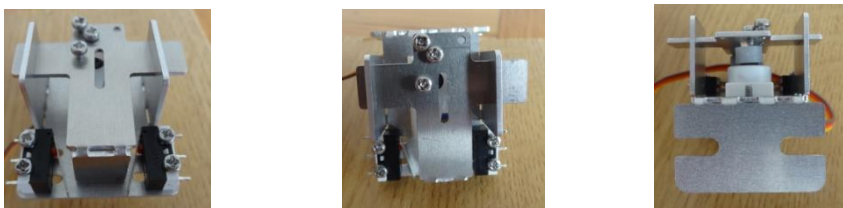
Make sure that the switch lever is facing the bottom of the mount ie. Away from the footing.

Note: It is possible to mount 2 switches on either side if required. For this you will need longer screws. These can be supplied with extra switches if required.

Move the switches towards the end of the slots away from the centre before operating the unit.

Insert the slider into the frame next.

Fit one side in first and slide all the way home. This can be a bit tricky and you might find one side goes in easier than the other.



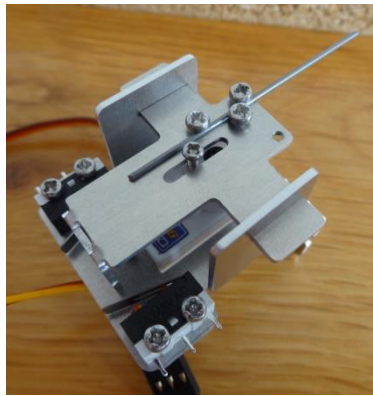
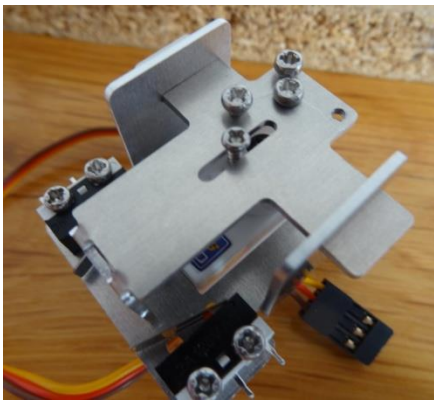
Dingo Servo Mounts

Micro10 Assembly Instructions. (Now at [V2](#))

Once the slider is in place and engaging with both slots in the wings, you can gently fold the wings up to their finished position by hand. Note: if you bend them just past the 90 deg point the slider will be trapped and should move easily from side to side and not fall out at either end.

The Slider is now secured to the Servo Motor arm by using the 1.7mm self tapping screw through the centre slot and into one of the servo actuator arm holes. The further you go from the centre of the drive shaft - the longer the throw will be. For most points in n or 00 gauge the hole closest to the drive shaft will probably suffice. This will also give you good travel on the servo motor and make setting the switches easier.

There will be some play in the unit which will give a small amount of hysteresis, but this has been designed for.



We can set the switch positions later but you may like to operate the servo to make sure everything is working as planned. Use a servo tester or your control software for this.

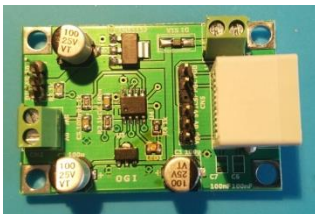
Now all that remains to be done is to fit the unit to the layout and set up the end positions using the control software of choice.

Once everything is working properly, the switches can be adjusted inwards so that they just operate at the end points of travel.

Dingo Servo Mounts have a single servo board unit which will operate this unit.

Other control boards are on offer from MERG (in kit form)

or from companies like Megapoints and Tam Valley Depot.



I hope you have many trouble free hours operating this unit.

I welcome feedback in order to improve the units for the future.

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Please forward any comments or issues to me.

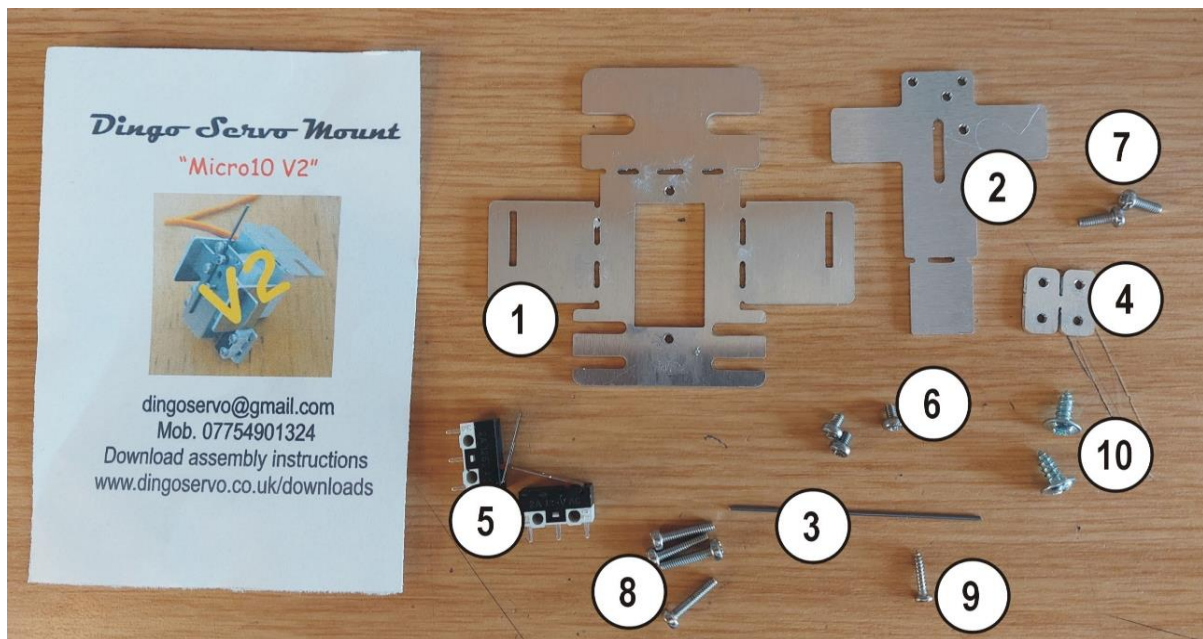
David Ingoldby

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No	Description	Qty
1	Main Body	1
2	Slider	1
3	Actuator wire (0.8mm)	1
4	Nut Plates	2
5	Switch (SPDT)	2
6	M2 x 3 mm Pozi Pan Head Screws	3
7	M2 x 6 mm Pozi Pan Head Screws	2
8	M2 x 10 mm Pozi Pan Head Screws	4
9	1.7mm Retaining Screw	1
10	3mm x 6mm long Flange fixing Screws.	2

Note: Multipacks do NOT contain switches, Nut Plates and the M2x10mm screws.



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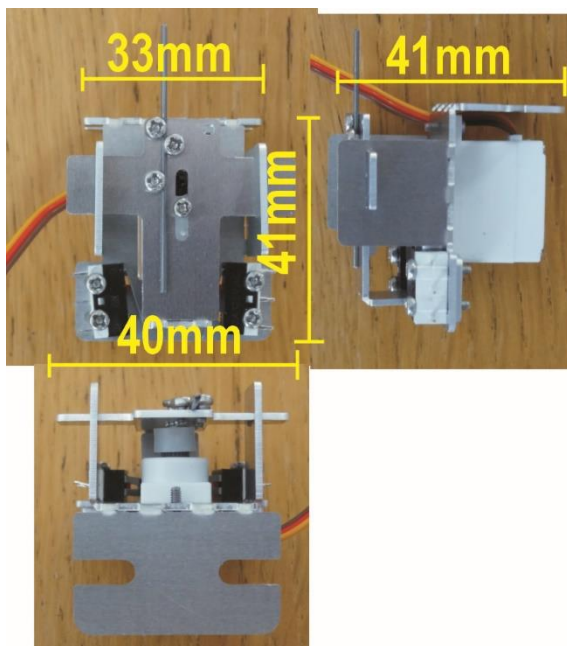
Micro10 Assembly Instructions. (Now at [V2](#))

NOTE: We originally designed this kit to have 20SWG (0.9mm) wire as an actuator. However, Imperial wires are now hard to come by so we substituted 1mm wire. During lockdown, we have only been able to source 0.8mm wire which seems to work well and is a little more “springy” and therefore less liable to break the points if overdriven.

Additional Information.

The attached picture shows approximate dimensions of the completed mount. Final sizes could be slightly different, depending on the overall size of the servo motor used, as well as the throw of the slider.

The Micro10 Kit is our latest Flagship mount. It is dimensionally the same size as the Micro8 but is some 8mm shallower, thus taking less depth under the baseboard.



The Micro 10 is also available in Multipacks of 4 units without switches, screws or nutplates. These are intended mainly for modellers who use their software to switch frogs, operate signals and control panel lights etc.

Switch packs will be available in 2 varieties. A standard switch pack comprising of 10 switches, 10 nutplates and 20 M2x10mm screws. An additional screw pack is available comprising of 10 switches and 20 M2x16mm screws for those wishing to operate 2 switches on either side (double stacked.)

The mount maybe used above the baseboard as well and the unit housed in a building or similar. The way you use the mount is up to your own imagination.

Trouble shooting.

There have been a few users which have had an issue regarding the lower Actuator pin tightening screw fouling on the motor horn on the original Micro 10. It would appear that there are some variations in the sizes of the servo motors and very occasionally this created the problem.

This has been addressed in V2 and the slider moved 0.5mm further out.

A second issue found is that if you are using a large movement on the mount you may need to trim a bit off the horn to prevent it from fouling the wings on the frame.