

Dingo Servo Mounts

MiniPoint Ver 2 Assembly Instructions. For PowerHD HD1370A servos

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.

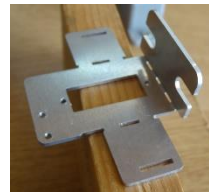
Any pips can be easily filed away.

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 the 2 switch mounting holes are on the Left as shown before this first bend However, if you fold it the other way the switch will just be on the other side. (not a problem)

Make sure that this bend is fully 90 deg. You can always hold the part against the benchtop and just push a little more. Be careful not to distort the frame in this process.

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.

See the diagram below to orientate the holes the right way round.



This fold is required for operating the switch 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.)

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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.



1. For normal under board mounting with pin straight up through tie bar.



2. As 1, but dog-legged to avoid an obstacle like a baton under the baseboard.



3. Configured for use with unit above the baseboard. This is commonly used in larger scales where the unit can be hidden under a building or similar. Also sometimes used in hidden staging yards where it is hard to access the underside of the baseboard.

At this point you can fit the slider into the frame and close the folds carefully to 90 deg
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.



(Note: I shot some of these pics on my mobile phone camera and it does tend to distort the picture somewhat and right angles may appear less so)

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.

Now prepare the servo horn

The kit contains a 3D printed horn as the horns supplied with the servos are rather flimsy
Take the M1.6 x 8mm screw and insert from the back (Servo side) of the 3D printed horn
It should self-start quite easily through the hole that is already in the servo horn



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(The object of using servos accurately in model railways, is to allow the servo a large swing, while only moving the pin a small amount. This mechanical disadvantage offers much greater control and tolerance.)

Now fit a Servo tester to the servo and centre the motor

This mount is designed to fit a PowerHD HD1370A servo

Fit the horn complete with screw to the servo with the tiny screw in the servo motor pack. **(Be careful with these screws as they have a mind of their own and are hard to find replacements for)**



Now mount the servo motor from the back of the frame using the M1.6 x 3mm 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.)

Also make sure that the horn screw engages with the slot in the slider.

I find it easier to fit the screw under the footplate first as this can be put into the servo and then the whole lot gently lowered into the frame.

(A small dab of nail varnish or thread lock can be applied to the servo fixing screw threads after fixing to prevent any loosening during operation although I have not found this necessary.)



Toggle the servo with the servo tester to make sure that everything moves OK

The unit is designed to accommodate just one microswitch fitted with the two M2x 8 screws

This must be fitted with the hinge of the switch lever towards the centre of the mount.

You will need to move the slider to the opposite side to allow you to fit the switch.



Once fitted, carefully move the slider by means of the servo tester and check that it just activates the switch as it passes the midpoint and continues smoothly over to the right.

You may have to gently tweak the folded leg on the slider to get this operating correctly

(Don't do too much or you may break the part off!)

Finally fit the actuator wire between the 3 screws on the slider.



Now fit the unit under the baseboard and make sure that when the unit is in the central position, the point or turnout is also central.

Operate the point / turnout carefully and listen to hear if the switch actuates at approximately the centre position.

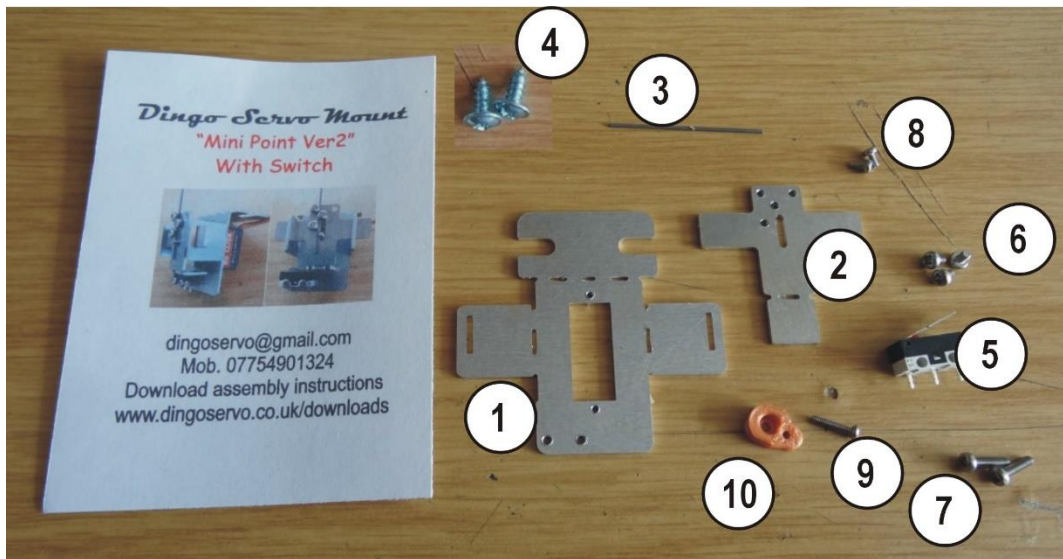
You can move the unit left or right by slacking off the fixing screws and sliding the unit a little one way or the other until the centre actuation is achieved, before tightening the fixing screws.

Make the final adjustments to the actuator wire and set your control software and you are ready to roll.

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No	Description	Qty
1	Main Body	1
2	Slider	1
3	Actuator wire (0.8mm 0.032")	1
4	3mm x 6mm long Flange fixing Screws.	2
5	Switch (SPDT)	1
6	M2 x 3 mm Pozi Pan Head Screws	3
7	M2 x 8 mm Pozi Pan Head Screws	2
8	M1.6 x 3 mm Pozi Pan Head Screws	2
9	M1.6 x8 mm Pozi Pan Head Screw	1
10	3D printed horn (Dog)	1



Note: You can double stack the switch if required using our Long Screw Multipack of switches and long screws

Please forward any comments or issues to me.

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

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

David Ingoldby

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