

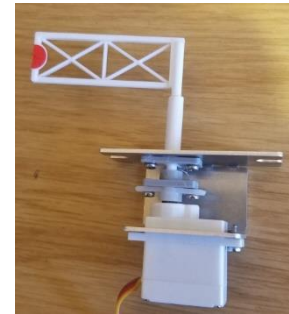
Dingo Servo Mounts

Crossing Gate Mount Assembly Instructions. (Updated)

Updated : New drive dog and Top flange and changed M2x4mm to M2 x 5mm screws

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. Any pips can be easily filed away.

Start by folding the Main plate along the dotted line to form a "U" Bracket. (Hold the top part firmly while bending to avoid any kinks in the motor mount section.) Make sure that both bends are 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.



(If you fold this one the wrong way, it will just mean that your servo will be on the other side of the mount, but will still function fine)

Next take the top Flange and fit it through the round hole in the top of the mount from inside the "U" and secure with the 2 M2 x 3mm screws. (Note all holes are pre-tapped for the screws.) The screws should finish more or less flush with the top of the mount and not protrude at all.



Now fit the larger tube into the top bracket.

At this point you might need to cut the tube to the required length so that it just fit flush to

the top of the baseboard. (Note you will need to drill a 5mm hole through the baseboard to accommodate this tube)

The tube should be a press fit, but can be secured with a small drop of glue if required.

Now prepare the Servo horn to drive the dog.



Start by taking the double ended horn from the servo packet and cutting the horn so that only 3 holes remain on each side of the centre.



Now drill the second hole on each side out to 1.8mm and fit the 2 M2 x 5mm screws through these holes from the "servo" side



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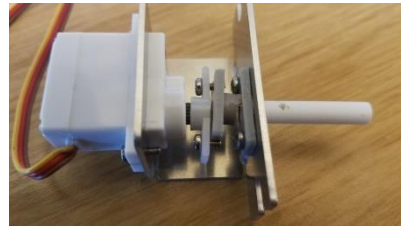
Now the servo motor needs to be centred by means of a servo tester or the control software. Attach the modified horn with the small screw provided by the servo manufacturer. **(Be careful with these screws as they have a mind of their own and are hard to find replacements for)**



Now we need to balance the dog on top of this arrangement and carefully fit the whole lot through from the bottom of the mount such that the dog is directly underneath the top flange.



Use the 2 M2 x 6mm screws to secure the motor.



Note: The Dog has been lengthened to make it easier to use with the SG90 servos. Also longer screws help with the attachment of these 2 parts.

The smaller tube will then pass through the outer tube and fit snugly into the dog. Test the unit to make sure that everything is moving smoothly.

Now all that remains to be done is to fit the unit to the layout with the 2 supplied flanged fixing screws and set up the end positions using the control software of choice.

I have 3D printed a OO crossing gate which has been glued to the smaller tube.

This has then been cut to length so that the gate swings correctly just above the track.

When setting up I move the servo to its one end position, then fit the gate and it should then swing to the other side when the servo is rotated to its other end stop.

Replacement tubes can be cut from styrene tube – 3/16" tube Evergreen Item No 226 and the 1/8" tube is Item No 224

You could also use 1/8" brass tube for the centre if you were soldering the whole unit together or you might want to glue a wire into the small tube and then operate the gate from that.

I know you are all very talented modellers and will come up with the right solution to suit your needs.

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

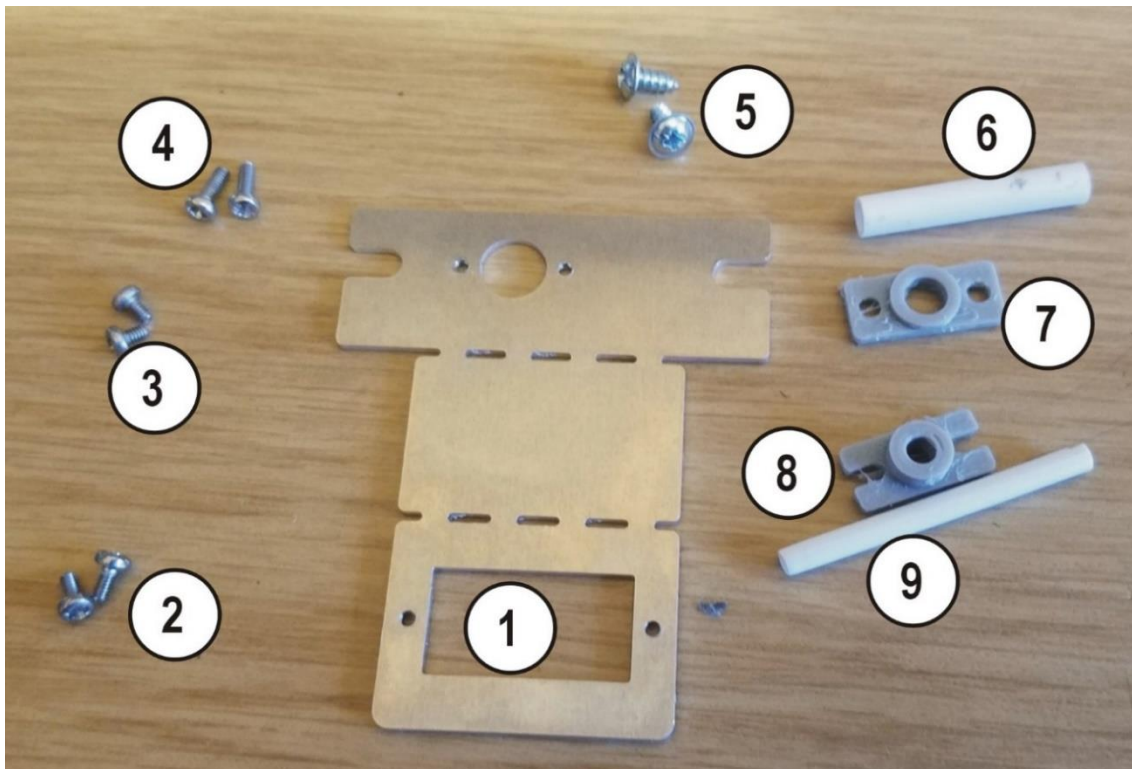
Other control boards are on offer from MERG (in kit form) or from companies like Megapoints and Tam Valley Depot.



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No	Description	Qty
1	Main Body	1
2	M2 x 5 mm Pozi Pan Head Screws (Prev 4mm)	2
3	M2 x 3 mm Pozi Pan Head Screws	2
4	M2 x 6 mm Pozi Pan Head Screws	2
5	3mm x 6mm long Flange fixing Screws.	2
6	3/16" Polystyrene Tube (Outer Tube)	1
7	Top Flange	1
8	Drive Dog	1
9	1/8" Tube (Inner Tube)	1
	2mm dia x 2mm Magnets (On back of Insert)	2



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

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

Please forward any comments or issues to me.

David Ingoldby

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Crossing Gate Mount Assembly Instructions. (Updated)

Adding a Clutch *(this should work OK with OO and N gauge models)*

I have had some comments since creating this mount especially about the problems encountered if the gate has not been moved and an expensive loco derails or worse falls on the floor after hitting the gate.

So here is the method of modifying the unit to contain a magnetic clutch so that the gate will **“Get out of the way”** when the train comes.

Grateful thanks to my friend Howard Watkins for demonstrating this method to me some years ago.

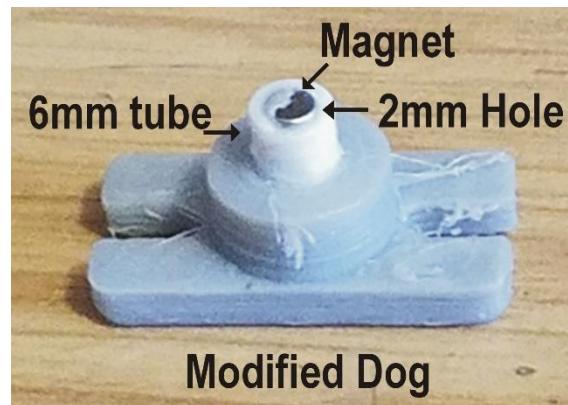
Firstly, you will need to modify the dog so as to contain a small magnet

Cut a short length of the 1/8” tubing to about 6mm – Once this is in the dog it should protrude by about 3mm from the top.

Carefully drill a 2mm hole in the top end for approx. 2mm into the tube.

Now fix a 2mm x 2mm dia rare earth magnet into this hole.

This tube can now be glued into the dog without getting any glue on the outside of the tube as this needs to run smoothly in the outer tube.



Now take the gate post (which has been cut to the correct length) and drill a 2mm hole carefully into the bottom of it to about 2mm deep.

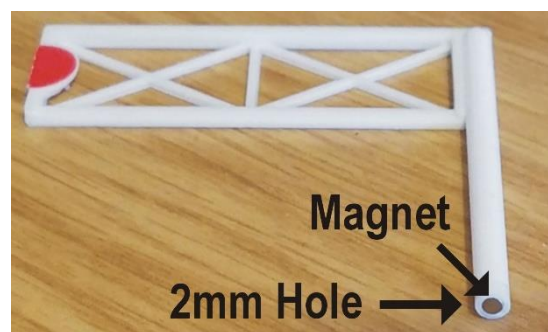
We need to get the 2 magnets to pull together and not push apart.

My simple method of getting this right is to put the second magnet on top of the dog so that they connect, and then carefully push the gate post over this magnet.

They will fit snugly and should now pull apart easily.

Reassemble the unit with the dog just entering the outer tube and when all is tightened up you can drop the gate post in from the other side.

The gate will now be able to move quite freely to position, but should have enough tension to operate freely with the servo, however, if a loco bumps into it the gate will swing away and can easily be reset once the offending loco has moved on.



We will be providing these 2 magnets in the kits from now on, but should you have bought a kit previously without magnets, I will happily post you a set free of charge.

Note: The magnets will be taped to the back of the pack insert card.