

# Dingo Servo Mounts

## Magnetic Uncoupler Unit

### Safety Precautions.

Before installing this product, make sure that you have read the full instruction guide and are comfortable with the requirements.

Make sure that all parts, especially plastic packets, are kept away from young children.

These units are not toys, but serious modelling parts.

**Please Note:** Neodymium Magnets are hard and brittle they look like steel but have properties more like glass, if allowed to jump to steel or other magnets they will likely shatter.

They can also cause injury when they come together and trap fingers etc.

We recommend handling one at a time and sliding them carefully off of a metal surface like a biscuit tin or something similar.

Note that they can have serious impacts on mobile phones or laptops, so keep them far away from all electronic devices.

**Please handle with care.**

### Description and Origin

This Uncoupler Unit is designed to operate below the base board for the operation of Kadee magnetic couplers in OO scale or Dapol magnetic couplers in N scale.

The Unit is supplied **without magnets** and you will need to purchase

2 x bar magnets 42 x 10 x 8mm separately.

The parts list for the unit is as follows.

1	3D Printed Magnet Holder	
1	Mainframe	
1	Slider with spacer plate attached	Separate before Assembly
3	M2 x 6mm Pan Head Machine Screws	
4	M2 x 10mm Pan Head Machine Screw	
2	Fixing screws	
1	Micro Switch	
1	Nut Plate	
1	12mm Standoff	
2	M2 Hex Nut	

You will also need a 9g Servo HobbyKing HK 15178 , Tower Pro SG90 or similar

A servo tester to align the servo during assembly

A control board to operate the unit once assembled and fitted to layout

Magnets as required.

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Source of magnets:

[https://www.first4magnets.com/rectangular-c35/42-x-8-x-10mm-thick-n42-neodymium-magnet-14kg-pull-p3024#ps\\_0\\_3070|ps\\_1\\_1035](https://www.first4magnets.com/rectangular-c35/42-x-8-x-10mm-thick-n42-neodymium-magnet-14kg-pull-p3024#ps_0_3070|ps_1_1035)

<https://www.gotmagnets.co.uk/product/42-x-8-x10-mm-n52-neodymium-magnets/>

### Assembly

Begin assembly by bending the mainframe as per this picture.

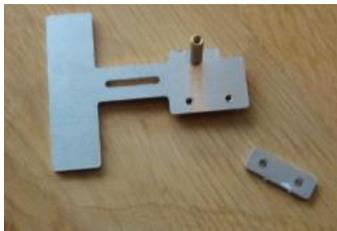
Note that the wings are not fully bent and are folded to the opposite side to the footplate



For more details on folding aluminium parts please see the videos on our website.

The Unit is folded very similarly to the signal mount.

**Please note that aluminium can only be folded once  
Make sure you are correct before folding.**



Fit the 12mm standoff to the Slider plate as shown. This screws into the slider, but a M2 nut is supplied to lock it in place. This standoff will operate the switch in the final unit.

Now separate the Spacer plate from the slider and fit the slider into the frame and fold up the wings to 90 deg.



Do **NOT** fit the motor before doing this as you will not be able to get the slider in once the motor drive pin has been fitted.

The slider should move freely up and down without falling out of the end slots.

You may need to tweak the bend slightly to get free movement.



Fit the switch to the slots with 2 x M2x10mm screws and the tapped nut plate.

Make sure that the switch lever is as per the picture on the left.

Move the switch to the bottom of the slots and

nip up the screws to secure.

Now take out the Servo motor and a single arm actuator horn.

Drill through the horn hole (either 2<sup>nd</sup> or 3<sup>rd</sup> from the centre hub to open the hole to 1.8mm.

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Screw the M2x6mm screw through this hole from the back (motor side). If the hole is a little too big, add a M2 nut to the front to make it secure.

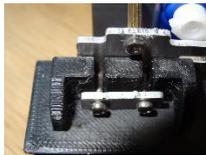
(Note this is an older picture showing a longer screw) Now centre the motor and fit the actuator horn at right angle to the motor as in the picture.



Now you can fit the motor through the rear of the frame making sure that the boss of the motor is in the side furthest from the footplate and making sure that the drive pin fits into the slider slot. Use 2 of the M2x6mm screws.

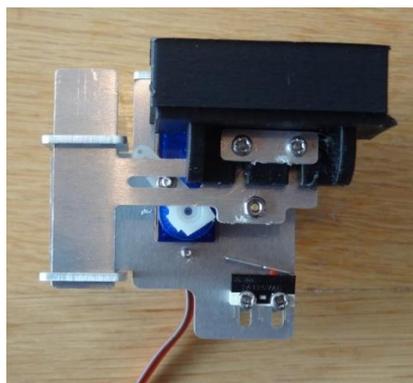
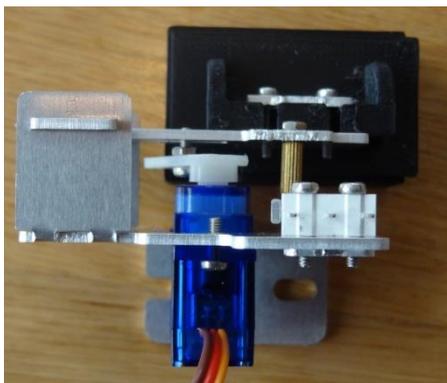


The finished article should look something like this.



Now fit the magnet holder to the slider with 2 M2x10mm screws going through the Spacer Plate previously snapped off from the slider, Then into the tapped holes on the slider plate.

The Magnet carrier will now slide into the space between these two plates and can be secured by tightening the 2 screws once everything is aligned.



Do Not fit the magnets yet, but hook the unit up to the servo tester or control board to make sure that it is operating correctly and that there is no fouling of moving parts.

I suggest attaching the unit to the layout before inserting the magnets as they will give you some issues by pulling your screw driver to one side etc.

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### Attaching to the layout

One needs to get the centreline of the track marked underneath the layout so that the magnets can straddle this line.

The best way to do this is to drill 2 small holes (say 1mm Dia) through the baseboard from the top about 2" apart along the centre line. These can be filled in later or covered with ballast.

Underneath the baseboard draw a line along these points which will give you a centreline of the track underneath the board.

Operate the uncoupler unit by means of a servo tester until the top of the magnet holder is in line with the footplate.

Now position the uncoupler unit so that the centre of the magnet holder is along this line.

The unit can now be fixed in this position by means of the 2 flange screws through the footplate.

Rotate the unit back to the lower position

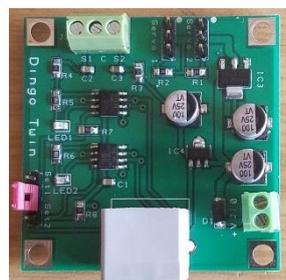
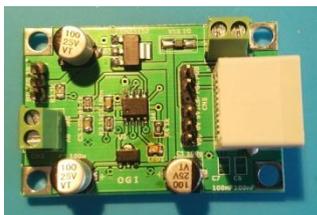
You can now insert magnets being careful not to damage the frame or the holder.

Check to see that everything is operating correctly and then set the switch at the lower end of the travel so that it just operates.

This will give you an indication of the unit being in its "At rest" position.

Dingo Servo Mounts have a single servo board unit and a Twin servo controller 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.



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

As this is a new product I welcome feedback to improve the units as we move forward.

Dave Ingoldby

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[www.dingoservo.co.uk](http://www.dingoservo.co.uk)

If you haven't already seen our amazing servo mounts in action, please check out the "Video Links" Page on our website