

# 5" PLANET INSTRUCTION MANUAL



**Maxitrak Ltd 10-11 Larkstore Park, lodge Road, Staplehurst  
Kent, TN12 0QY Tel: 01580 893030 Fax: 01580 891505  
email: [info@maxitrak.co.uk](mailto:info@maxitrak.co.uk) [www.maxitrak.co.uk](http://www.maxitrak.co.uk)**

## **Welcome to the Hobby of Model Engineering, from Maxitrak Ltd.**

We thank you for selecting one of our models, which we trust will provide you with long-term enjoyment, in both its building and operation.

This construction manual provides build instructions, and operational procedures for your model. The same manual is supplied with all models, irrespective of how the model is ordered i.e. Ready to Run, Fully Machined Painted Kit or Un-painted kit, therefore some pages may not be relevant for your model, but nevertheless could be useful in the future.

We have a policy of continual improvement to our product range, including on-going updates to the construction manuals. This is based on our own experiences and feedback from customers. We invite customers to contact us regarding their experience on any matter during the build or operation of their loco, should they consider there are errors, misunderstandings or procedures that could be better described in this manual.

We aim to provide a good quality basic model that is easy to build, operate and maintain. We also, encourage, support, and will assist, customers who wish to implement their own modifications, and we are also pleased to receive photographs of models to retain in our files.

We wish to ensure all customers are able to build and operate their model to their expectations, for which we have a 'helpline' available to provide technical and operational advice regardless how insignificant it may be considered.

We offer customers spares, servicing and boiler examination & testing facilities for all locomotives.

The above information is also relevant should you have acquired your locomotive second-hand.

***Pleased be assured of our best and personal attention at all times.***

Maxitrak Ltd, 10/11 Larkstore Park, Lodge Road, Staplehurst Kent, TN12 0QY. Great Britain

Tel: 01580 893030

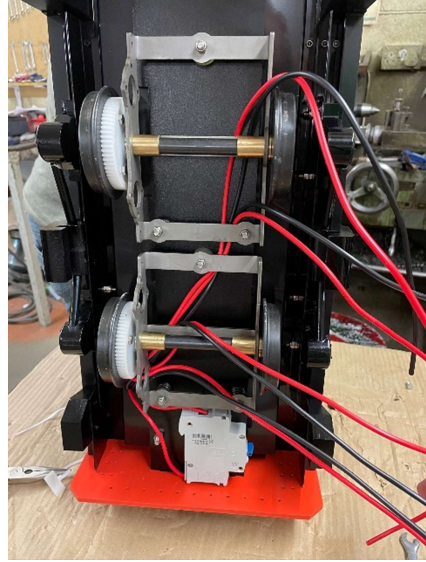
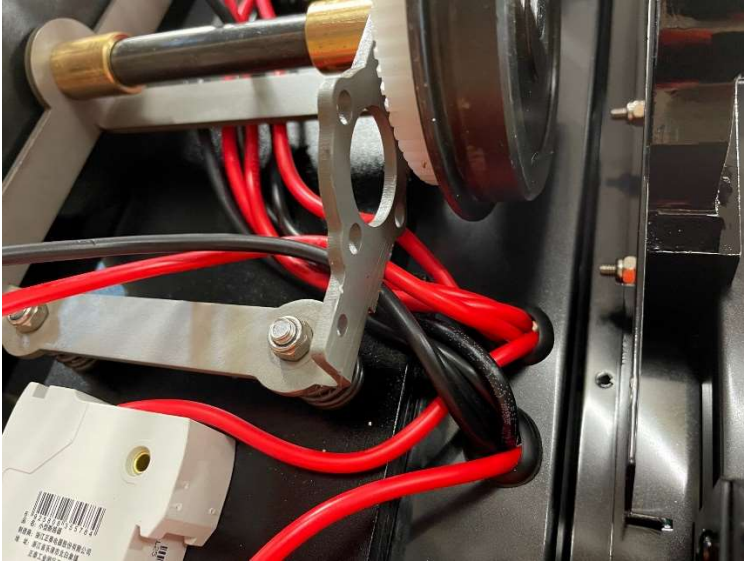
Email: [info@maxitrak.com](mailto:info@maxitrak.com)

## Kit Build instructions

To complete the kit, the following sequence is recommended:

Take the model and place it on its side, remove the bonnet so it does not fall off and get damaged.

You need access to the wheel sets to put the motors on, from the rear righthand side of the chassis you will see the motor wires, the wires are far too long and will need to be worked through the chassis into the appropriate position for each motor.



Each motor requires one red and one black wire, take care to position the wires away from any moving parts, including the wheel sets, also avoiding making sharp kinks in the wires as these can overheat when drawing amps at low revs.

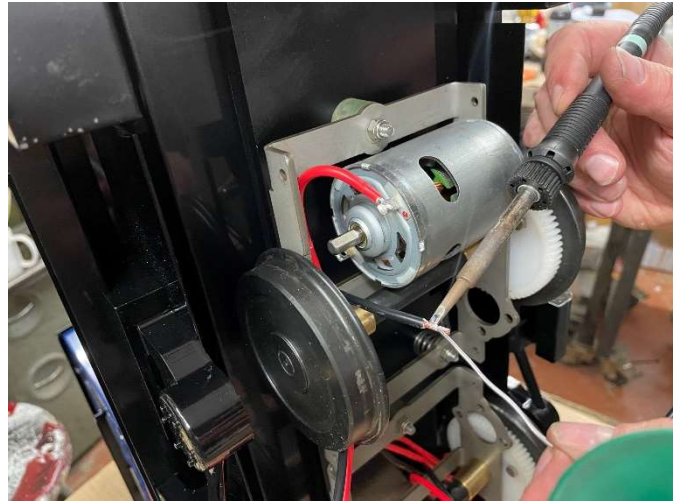
install the motors in place on the mounting bracket, there should be 0.5mm to 1mm clearance between gear and wheel as standard. If the gear rubs the back of the wheel, fit the spacer provided.



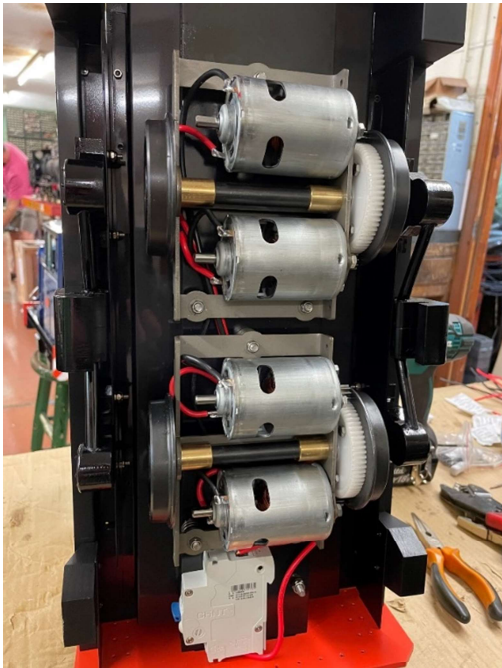
Trim the cables back so they have an easy run to the motors. Strip the insulation back about 6mm on each cable and push the end through the brass tab on the back of the motor, soldering on the cable.

*Check you get a good solder joint! You can load the wire with solder to help you keep it neat.*



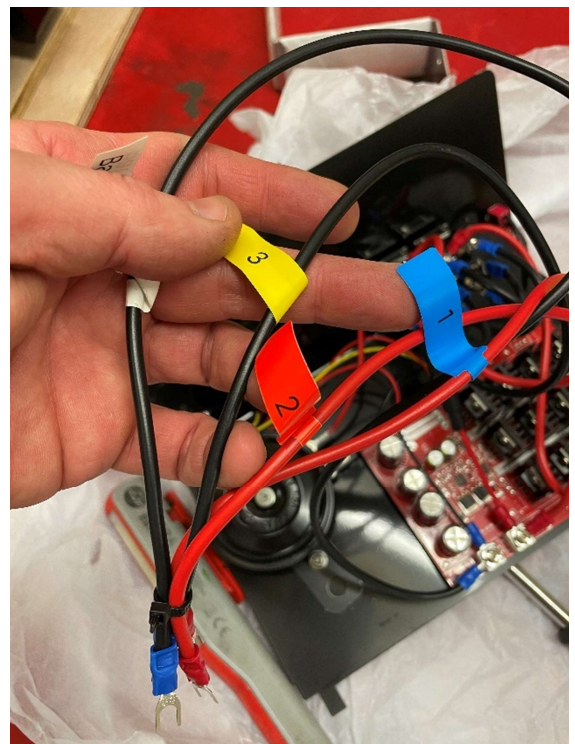
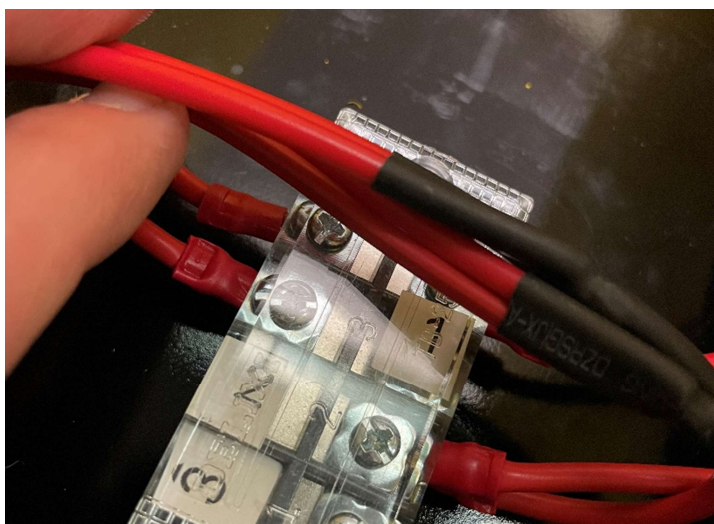


The motors have two terminals, one has a red dot on it to signify positive. The colour wire you chose to position on this red dot is not important, what is important is repeating this choice on each motor to ensure they are uniform. Failure to do this will result in motors running in alternate directions.

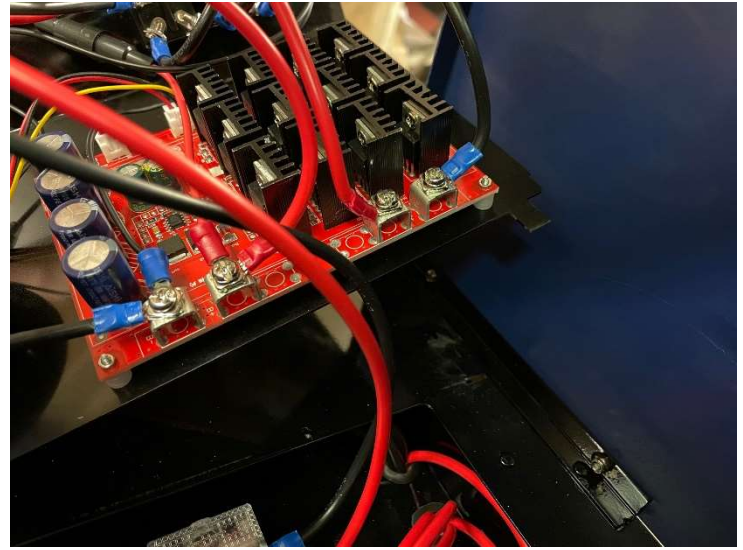


Lubricate the chassis, Vaseline the gears. This is a good time to check the body work and bolts as the models do get shaken about in transit and you may find some bolts work their way loose, tighten any you find. You can apply Loctite to prevent them loosening again if you wish. If you are missing bolts, please contact Maxitrak for spares.

You can now look to install the switch panel. It is easiest to install the wiring before mounting the panel. All wires are numbered and correlate to the numbered ports on the terminal block. The cover is easily removed, and wires are installed to the correct ports with the use of a screwdriver.







To install the panel remove two of the bolts on the roof, this will give you more flexibility in the cab to fit the switch panel. It is secured into two slots at the base and held at the top with a bolt and Nyloc nut.

If the chassis runs in the incorrect direction i.e forward for backwards or vice versa, remove the switch panel, and swap over motor wires on the control board (two screw terminals on the right bottom of the card, See wiring diagram on last page), putting back together when complete.

**OPTIONAL:** If you wish for a more secure fit of the bonnet you may choose to fit a section of rubber tube to the inside of the bonnet, this is done easiest if you put pipe on the lug and then cut off with a sharp blade, the rubber will stop any bonnet vibrations.



You are now ready to run your locomotive. If you require assistance at any stage of the build process, please do not hesitate to get in contact with Maxitrak.

## Driving and Maintenance Instructions

*Before running you will need:*

- A 12 volt battery, biggest that will fit the bonnet, 30 to 40 amp hours.
- Suggested size 037 or 038, (037 has flat terminals, 038 has round).
- A 12 volt charger, float type preferred.
- Lubricating oil for the bearings (car engine oil or similar)
- Petroleum jelly for the gearing (Vaseline)

For the first test run remove the bonnet top to gain access to the battery box. Place the engine on its side, Oil the axles where they enter the bronze bearings each side.

Put a little petroleum jelly on the gearing if they are not already treated. Put a 12 volt battery beside the bonnet top, connect red to positive + black to negative -. Switch on the circuit breaker under the cab floor. Select forward or reverse and make sure the brake switch is off. Turn the speed control knob up. The motors start to run. Check the running in forward and reverse as well as the brake. Disconnect the battery, stand the engine on its wheels and fit the battery back in the bonnet, reconnect the battery.



### **NOTE!!**

Be careful when fitting the bonnet top as the battery terminals can short circuit on the metal panel. Place a cloth over the battery or fit terminal covers to prevent this. This can happen even when the circuit breaker is off, especially in transit when the engine may be rattled about. **Always fit the battery terminals red to + black to – or the controller Will be damaged.**

The engine is now ready for the track.

Turn on the circuit breaker under the cab floor, select forward or reverse, make sure the brake switch is off and turn up the speed control knob. The engine should start to roll. Increase the speed as required, turn down to coast and operate the brake switch to stop.

## **Driving tips.**

Do not switch from forward to reverse when running this could damage the drive train.

Do not run the motors at or near stall speed for any length of time.

Be aware that a flat battery will draw more amps than a full one as the controller tries to compensate for loss of power.

If the circuit breaker trips let the engine cool before resetting, repeated resetting will overload and overheat the controller.

Do not run the battery completely flat, anything below 11.4 volt can cause battery damage. (A battery condition LED will tell you when you need to stop)

## **Maintenance**

Oil the axle bearings every time you use the model and frequently when running in model for maximum life.

Put a little petroleum jelly on the gears periodically, **do not put oil on the gears.**

Keep the vent holes in the motors clear of obstructions and dirt, if the loco is used on particularly dirty track the bottom vents can be covered with tape or a short piece of plastic pipe cut open to clip round the motor.

Put a spot of oil on the motor bearing, brush end (gear end has a sealed ball race bearing)

Store the engine in dry conditions, squirt WD40 or similar on wheels, motors etc before winter storage.

Remove the bonnet top to access the battery for charging, (a charging socket can be fitted to the switch panel or elsewhere on the loco if preferred)

Always charge the battery after use, and store fully charged. A float charger will always keep the battery in top condition and prolong its life.

Wash any acid spills with soapy water, dry thoroughly.

Wax the paintwork periodically.

***In the event of any problems or questions please contact Maxitrak tel: 01580 893030***

## Check List

### **Ready to Run**

Check list and instructions

Locomotive complete

### **Kit**

Check list and instructions

Locomotive incomplete

4 motors, with gears fitted

4 motor spacers

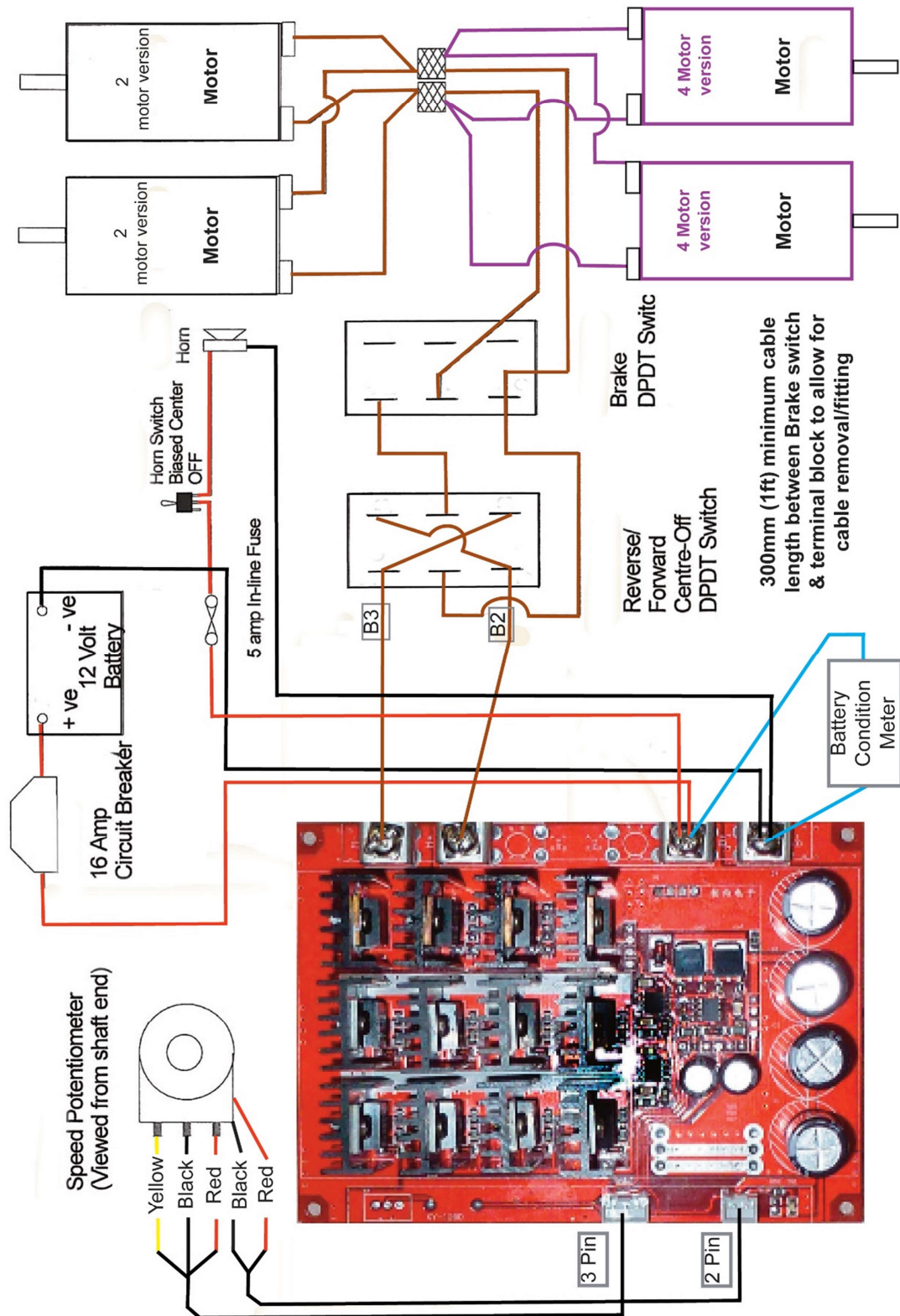
12 x M5 by 12 hexagon motor mounting bolts

2 x coupler pins





## Wiring Diagram



Maxitrak Ltd, 10-11 Larkstore Park, Lodge Road, Staplehurst, Kent TN12 0QY  
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