

POWRWHEEL LIMITED
MANUFACTURERS OF REMOTE
CONTROL CARAVAN/TRAILER MOVERS
POWRTOUCH REMOTE CONTROL

INSTRUCTIONS FOR THE INSTALLATION AND OPERATION
OF THE AM ELECTRONICS CONTROL SYSTEM



SECTION 1 – ELECTRICAL ASSEMBLY

Please ensure the battery is in good condition, a fully charged **leisure** battery **MUST** be used and can be either a lead acid or gel type (**Please note that car batteries are not suitable to operate Powrtouch Movers.**) An 85 –Ampere Hour for single axle and 110- Ampere Hour for twin axle caravan are the recommended battery size for optimum operation. Smaller batteries may be utilised but mover performance may be reduced also it must be upgraded on replacement.

AGAIN - PLEASE ENSURE THAT THE BATTERY AND MAINS LEAD IS DISCONNECTED FROM THE CARAVAN BEFORE COMMENCING INSTALLATION

Note: - The terms right hand (UK Near Side) and left hand (UK Offside) referred to on the electronics box are determined by standing in front of the caravan (at the ball hitch) facing the caravan.

The recommended site for the Electronic Control Box (ECB) is inside the caravan in the dry (bedding) locker behind the battery box. Before choosing a position for the ECB consideration **must** be given to allow access to the jack socket for the emergency umbilical cable. The black plastic lid will need to be removed to allow access to the fixing screw holes of the ECB; it should be screwed to the floor using

the screws provided. **Please note some caravans have under floor cables and/or pipes, checks must be made to ensure it is safe to drill.** If safe to do so then drill four 8 mm diameter holes in the floor approximately 150 mm from the control box for the motor wires to be fed into the caravan.. Start routing the wires from the motor, remembering to leave a small amount of slack cable near the motors to allow for their movement when the drive rollers are engaged. The motor wires (two each) and Powractor wires (if fitted) can now be routed along the underside of the trailer floor using the P clips provided (securing of the cables can be made with a suitable staple gun and the correct size staples – not provided). Care should be taken to ensure that the cabling is securely fitted so that no chaffing can occur and that it does not sag. Also ensure cables do not make contact with the steel chassis (unless suitable cable clips are used – not provided). If the Powrtouch is fitted in front of the wheels then the ECB should be wired as shown in Fig 6A. Should it be fitted behind the wheels then the Positive and Negative of the motors should be reversed shown in Fig 6B. Model 6 Powrtouch (All Wheel Drive) should be wired as shown in Fig 6C noting that only one isolation switch need be fitted, however it will require two positive wires from the battery. The Powractor should be wired as per Fig 6D. Any excess motor cable should then be coiled up (secure with cable ties as necessary) in a convenient position inside the caravan/trailer When coiling the motor cables please ensure that the coils are kept as far away from the electronics box and aerial as possible. It is recommend that motor cables should not be cut to ensure they are 1) of equal length and 2) if the Powrtouch is removed and refitted to a new or different caravan the cables can easily be reused.

The aerial (thin black cable) should be let through the caravan/trailer floor directly next to the electronics box (drill small 3mm hole as required) and then run in a straight line away from the electronics box and all motor cables. The aerial should be clipped in place with the last 25mm (1 ins.) of the cable left dangling down. Under no circumstances should the length of the aerial be changed either by cutting, extending or splicing into.

1.1 Connecting to the Battery

Please be aware of the need for access to the switch when parking your caravan/trailer. The switch must also be fitted to be in an accessible position whilst the unit is in operation.

The positive connection to the battery has an inline fuse to protect the ECB from overload or misuse. The unit is also supplied with an inline isolator switch to allow isolation of the electrical circuit from the Battery. The suggested location for the fitting of this switch is within the battery box/compartment beneath the 240v mains connector. Drill a 25mm hole with the saw and the two 5mm clearance holes for the fixing nuts and bolts, when the holes are drilled install the switch and tighten up the nuts and bolts. If a Powractor is fitted the operating switch for it should be fitted next to the isolation switch. **Under no circumstances must the electronics box or the isolation switch be located in a compartment with gas bottles. This is due to risk of explosion caused by leaking gas or a spark generated by the electronics or isolation switch.** Using the factory prepared and terminated cables (these cables MUST NOT be lengthened); this switch must be fitted to the Red (Brown) wire (+) between the positive connection in the control box, and the positive terminal on the battery. The Black (Blue) wire (-) is connected direct from the control box to the negative battery terminal, the cables will then need to be securely fitted using the 'P' clips provided.

Please ensure that the positive (Red/Brown) and negative (Black/Blue) are correctly connected to the electronics and the battery, should they be connected incorrectly then this will result in damage to the electronics box.

If cables should ever have to pass through drilled holes in the metal, wood or fiberglass then the cables should be protected from chaffing by the use of grommets/tubing/insulation tape (not provided). All cables can then be connected to the electronic control box ensuring that they are fitted in accordance with the labels on the control box, see fig. 6. On completion of assembly and testing of the ECB it will be sealed with a Guarantee Sticker, unauthorized breakage or removal of this seal may invalidate the warranty. The electrical assembly is now complete and the hole(s) drilled for the battery and motor wires should now be sealed with the silicon sealant to prevent ingress of gas, damp or water.

**If you are unsure about the installation consult a Powrwheel Engineer,
Telephone: 0870 7521762.**

1.2 Unique Frequency Handset Tuning

The unique frequency setting is carried out at the factory during the quality control testing procedures prior to delivery of the mover. The following instructions are therefore provided for information only. This multi-level frequency setting codes the handset to the ECB thus preventing any other handset working the ECB or moving your caravan.

Firstly make sure that the friction rollers are disconnected from the tyres.

On the Model 7 (All Wheel Drive) the handset will need to be mapped to both Electronics Boxes using the correct method shown below for the versions used.

Version 1 – This version is identified by the prefix T to the serial number shown on label situated in front of the cable connection screws on the Electronics Control Box (ECB)

Locate the ECB, which is usually fitted beneath one of the centre seats (bedding locker). Remove the guarantee sticker and then the four small screws, which hold on the black cover. Compare the picture with your unit (see fig 7). Locate the reset button by comparing the picture to your controller.

Make sure the battery is in the handset. Switch on the ECB (using isolation switch) and then the handset by pressing the two red buttons, and then press the reset button on the control box. The red LED will start flashing. Then press one of the direction arrows on the handset, the LED will stop flashing and the unit will start working. Your handset is now configured. Fit the new guarantee sticker provided.

Version 2 – This version is identified by the prefix E to the serial number shown on label situated in front of the cable connection screws on the Electronics Control Box (ECB)

Locate the ECB, which is usually fitted beneath one of the centre seats (bedding locker).

Remove the guarantee sticker and then the four small screws, which hold on the black cover. Compare the picture with your unit (see fig 7). Locate the reset button by comparing the picture to your controller.

Make sure the battery is in the handset. Switch on the ECB (using isolation switch) and then the handset by pressing the two red buttons, then press and hold down the reset button on the control box. The red LED will start flashing. Whilst still holding down the reset button, press one of the direction arrows on the handset, continue to press the direction button while the reset button is released, the LED will stop flashing and the unit will start working.

Your handset is now configured. Fit the new guarantee sticker provided.

1.3 Control Box: (Receiver)

Turn on the isolator switch, the green light will illuminate and stay on. The red light flashes and then stays illuminated. If either of the lights does not stay on but continues to flash, then this is an indication that there is a fault in the Powrtouch system please contact a Powrtouch engineer. Contact details are on the front cover. During the operation of the unit via the handset both lights will illuminate continuously. If the control box is left switched on for approximately 15 minutes and the system is not activated by the handset, then the unit will go into the hibernation mode and both lights will go out. Should this occur the isolator switch should be turned off and the key removed for a minimum of 20 seconds and then turned on again, this will reset the system and the lights will operate as above.

There are safety features built into the control box, your unit will shut down if one of the following conditions occur:

1. Thermal overload of the motors.
2. Battery voltage below 12 volts when not running
3. Battery voltage below 10 volts when motors running
4. Unit has not been used for 15 minutes.

As the isolator switch is required to reset your unit please make sure that it is fitted in a readily accessible place, **be aware of the need for access to the switch when maneuvering and /or parking your trailer.**

1.4 Handset: (Transmitter)

The Handset is powered by one PP3 9v battery, and is activated by **simultaneously pressing and holding down the two red 'on' buttons**, that are positioned just below the indicator light, once activated a green light will come on and the directional controls can now be used. The shape of the caravan is shown on the handset and the green light represents the tow ball of the caravan. Each button will respond and send the caravan in the direction shown, when doing a large turn it is possible to press the two opposite corner buttons (making one wheel go forward and the other in reverse), the opposite corners are the only combination of buttons that will work pressing any other two buttons will result in no movement of the caravan. Note the green light will fast flash when in operation. If the handset has not been used for a period of 30 seconds then it will automatically switch itself off. If the green indicator light on the handset starts to slow flash it is time for the PP3 battery to be replaced. Removing the rear cover of the handset and inserting the new battery into the position shown will achieve this. Replace the cover and the unit is now ready to test. Should the Powrtouch not be used for a period of time (i.e. winter storage) then the battery should be removed and stored separately from the handset, the handset should always be kept in a dry area. Due to the nature of radio signals they can be corrupted by large metal objects, terrain or external source of interference (such as burglar alarms, radio masts, PIR lights etc.). Under exceptional circumstances it may be necessary to use the umbilical cable as below.

1.5 Umbilical/Emergency Cable:

The umbilical cable is supplied to provide a hard wire connection of the handset to the electronics control box. Connections are made via the jack plug sockets; situated one on the end of the handset and the other in the electronic box just to the side of the red and green LED's

Always remove the 9-volt PP3 battery from the handset before using the cable
This cable should be used if:

- 1) The battery in the handset has failed
- 2) There is interference in the surrounding area affecting the transmission of the systems radio signals
- 3) Fault finding

NB: The cable should never be left connected to the electronics box when not in use; failure to remove the cable can result in the transmitting/receiving system failing to work. This cable is also carrying a live 9-v dc charge when the mover is switched on and could then cause a short circuit.

1.6 Checking the Product Installation

Place the trailer outside in an area free from the tow vehicle and clear of any obstruction, and with enough space to move freely. Ensure that the motor drive units are disengaged from the caravan tyres, the handbrake is on and the mains/charging cable is removed. Turn on the Powrtouch at the isolation switch and then press the two ON buttons on the handset that will switch it to the active mode, the small green light between these buttons will then illuminate. Please note that the handset will turn itself off automatically after 30 seconds if any button is not pressed (should this occur, reactivate the system as described above). Check all direction controls on the handset and ensure the rollers are rotating in the directions as indicated by the handset. If so, the unit is now ready to use, if not please recheck the wiring.

SECTION 2 - USING THE MOVER:

Once again ensure that the caravan is free from the tow vehicle, any obstructions and in a clear space. Using the 19mm socket wrench (supplied) engage the drive roller by turning the hexagon nuts on the end of the drive rollers just over ½ turn (approx 200 degrees). In some cases an extension to the socket wrench may be required; this is not supplied as part of the unit but can be obtained from your local tool or hardware store (it is also available on request from Powrwheel Limited). The movement should not be forced, but in case of difficulty first ensure that you are turning the nut in the right direction. You should feel the drive roller lock into place, and if the Powrbar is not installed then repeat this operation on the other drive roller. The isolator switch should be in the on position (and reset if required see under Control Box above).

If the Powractor is fitted then with the isolation switch in the on position the switch for the Powractor should be moved to the on position, when the rollers are fully engaged the switch should be returned to the neutral position (**NB The switch MUST always be in the neutral position when the full the rollers are fully engaged or disengaged**). The trailer is now ready to be moved.

Ensure the caravan/trailer hand brake is off and the steadying legs are raised.

Stand in front of the trailer and turn on the remote control handset by pressing both red buttons together. Press the button in the direction you wish the trailer to move as indicated by the outline shape of the caravan and the direction arrows on the handset. You will notice a low pitched whine from the unit as it begins to move, do not be concerned this is the Soft Start operating and the whine will stop when the mover is at full speed (it should only be a few seconds). Should the drive rollers slip during this operation please check that the distance between the drive rollers and the tyres is correct, if not reset the gaps and retighten? All movements are controlled remotely by a small handset. Simply by pressing one of the clearly labelled buttons on the handset the trailer can be moved in any direction of that button and turned on its own axis if required by using the opposite corner buttons. Please note that the opposite corner buttons are they only buttons that will work together, pressing any other two

buttons will result in the Powrtouch stopping or not moving. An umbilical/emergency cable is supplied as a back up to the remote control system. Stopping is completely automatic and occurs when a handset button is released. The Powrtouch moves at one speed only and may slow slightly going uphill and speed up slightly when going downhill. The Powrtouch has a very effective Soft Start facility that can be utilised to move the caravan about a 10mm or less at a time. This small movement can be achieved by pressing and quickly releasing a direction button (stabbing the button), this facility makes attaching the caravan to the tow ball of the car a very simple operation. It is recommended that a good practice session should be carried out on level ground and in an open space before any difficult manoeuvres are undertaken. After use the rollers on the manual system should be disengaged in a controlled manner. Hold the socket wrench firmly and do not allow the rollers to spin back under their own inertia. Failure to do this may cause a shock load to the system and can also allow the wrench to hit the ground; this will cause damage to the cam locking system. The Powractor system should be removed by using the off switch in the battery box that **MUST** be returned to the neutral position when the rollers are fully disengaged The handset will automatically turn itself off if it is not used (direction button not pressed) for approximately 20 seconds and when not in use should be stored in a warm dry area.

N.B. the rollers must always be disengaged when towing the caravan/trailer

SECTION 3 - OPERATING THE MOVER SAFELY:

- 1) The prime consideration when moving the caravan must be SAFETY
- 2) **ALWAYS REMEMBER TO TURN THE UNIT OFF AND REMOVE THE ISOLATION KEY WHEN NOT IN USE**
- 3) Always ensure that children and pets are kept well out of the way
- 4) The mover is designed to cope with most slopes depending upon the surface
- 5) The mover may not climb a 38 mm or greater kerbstone without the assistance of ramps or wedges
- 6) Do not leave the trailer parked for any length of time with the drive rollers engaged as this may cause damage to the tyres, i.e. Weekends, On-site, End of Season etc.
- 7) The trailer handbrake should be applied at all times when the mover is not in use. Do not rely on the mover to act as a brake, as some creeping may occur.