

POWERTOUCH RV MOVERS

REMOTE CONTROL RV MOVER FAMILY

FREEDOM 4-POLE SINGLE AXLE AUTO

**INSTRUCTIONS for the Installation, Operation, Use,
Safety & Maintenance of the Powrtouch Freedom 4-Pole Auto**



YOUR PROOF OF PURCHASE WILL STATE YOUR UNIQUE POWERTOUCH FREEDOM SERIAL NUMBERS. PLEASE WRITE THEM ON THE FRONT OF THIS DOCUMENT FOR YOUR CONVENIENCE.

REGISTER YOUR INFORMATION WITH TRUMA

BEFORE CONTACTING TRUMA WITH A FAULT OR WARRANTY ENQUIRY PLEASE PAY SPECIAL ATTENTION TO SECTION 4 OF THIS DOCUMENT.

CUSTOMER NAME:.....

POWERTOUCH FREEDOM SERIAL No: 4FRA.....

ELECTRONICS SERIAL No: CDFM.....

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Powrtouch - A Truma Brand**

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Symbols used

-  Symbol indicates a warning
-  Note containing information

SECTION 1 – USING YOUR POWRTOUCH FREEDOM SAFELY

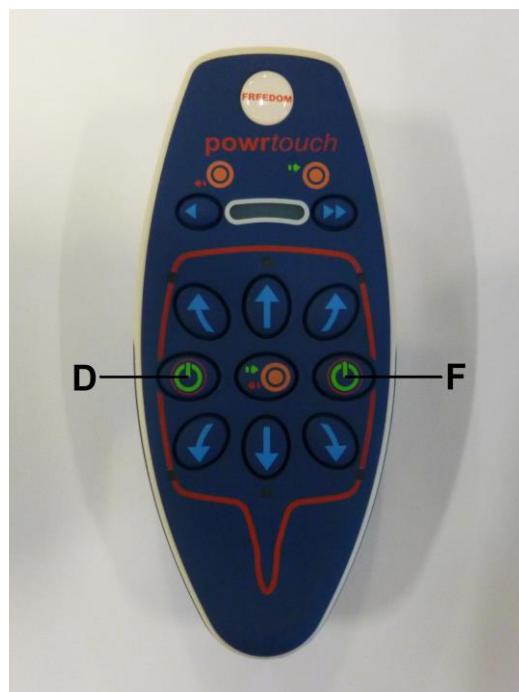
1.1 SAFETY CHECKS REQUIRED PRIOR TO USING YOUR POWRTOUCH FREEDOM

⚠ PLEASE READ CAREFULLY:

Before moving the RV with the Powrtouch Freedom, for safety reasons it should always be tested first. To do this turn on the Powrtouch Freedom at the Isolation Switch – **DO NOT PUT THE ROLLERS ON TO THE TIRES**. With the rollers off the tires check the handset functions drive the rollers correctly. Once this test has been satisfactorily completed only then should you engage the rollers to the tires and commence to move the RV.

IF IN DOUBT CONTACT TRUMA

1.2 EMERGENCY SWITCH OFF/STOP



[i] In the unlikely event of the Powrtouch Freedom malfunctioning, the system can be switched off by pressing either of the 'On' buttons (D or F) on the handset. Then turn off the Powrtouch Freedom at the Isolation switch and remove the key. **DO NOT** switch the Powrtouch Freedom back on before consulting Truma.

1.3 SAFETY & TECHNICAL AWARENESS

Please read the following instructions and technical information carefully and become familiar with the various components and controls prior to assembly and/or operation. Safety must always be the first consideration in fitting and operation. Failure to comply with these instructions could invalidate your Powrtouch guarantee. If you are in any doubt about the assembly or operation of the product consult Truma, for which contact details are shown on the front cover.

- The Powrtouch Freedom RV Mover (except handset) is a 12volt DC powered device and it should not under any circumstances be powered by any other power source than a 12volt DC leisure battery.
- [i] Using the Powrtouch Freedom with the RV connected to the ac power supply could cause damage to the RV internal charging system.**

- The 12volt leisure battery MUST be fully charged and in good condition to enable the Powrtouch Freedom to operate to its full performance specification – to check your battery see Section 5 Paragraph 5.4 of this instruction manual.
- The handset is powered by a 9volt DC battery (MN1604A or 6LR61).
- The wiring and cabling supplied by Truma for the installation of the Powrtouch Freedom are to the correct voltage and current rating, under **NO** circumstance should any other wiring or cabling be used unless supplied by Truma or written approval is given for their use. If cutting motor cables (not recommended) these should be kept of equal length, no cable joining system should be used to lengthen them.
- When the Powrtouch Freedom is switched on and/or in use there will be 12volts at the two battery terminals on the Electronics Control Box (ECB). Under no circumstance should any metal object be allowed to touch these terminals.
- The Powrtouch Freedom is not a RV jacking point and should never be used as such.
- The Powrtouch Freedom is not a brake or braking system and should never be used as such. When stopped always apply the RV handbrake and remove the rollers from the tires.
- Be aware that the Powrtouch Freedom adds weight to the RV and the corresponding weight of your mover must be considered when calculating your payload.
- Never allow children or persons unfamiliar with the use of the Powrtouch Freedom to operate the unit.
- When operating the Powrtouch Freedom, please ensure that no object (e.g. Body parts, clothing, hair or any other objects carried on the body) can become trapped by any moving parts of the mover (e.g. rollers).

FCC warning statement:

- This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
 - 1) This device may not cause harmful interference, and
 - 2) This device must accept any interference received, including interference that may cause undesired operation.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

SECTION 2 – OPERATION OF YOUR POWRTOUCH FREEDOM

2.1 POWRTOUCH FREEDOM OPERATION:

Carry out the Powrtouch Freedom pre-movement safety checks as Section 1 Paragraph 1.1; also ensure that the RV is safe to move and that there are no obstructions to prevent the engagement of the drive rollers to the RV tires.

2.2 SWITCHING ON THE POWRTOUCH FREEDOM

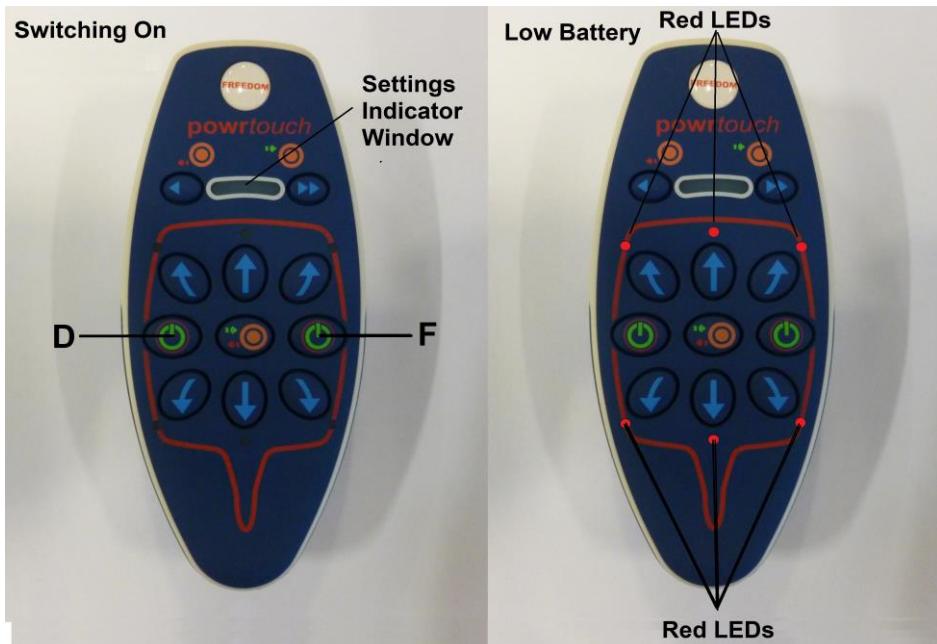
The Powrtouch Freedom control system is switched on by inserting the key into the isolation switch and then turning the key clockwise, the isolation switch is usually situated in the sealed area of the RV battery box. When the control board is switched on the unit first initialises, and then looks/waits for the welcome/coding signal from the handset. The green light should illuminate on the ECB situated in the RV. (See Section 5 Paragraph 5.3)

[i] When the Powrtouch Freedom is not in use it **MUST** always be turned off at the Isolation Switch and the key removed. If left switched on it will stay live for 20 minutes (approx.) before the ECB will go into a hibernation mode. The ECB can only be reinitialised by the following: -

- 1) Turning off the isolation switch
- 2) Remove the key from the switch
- 3) Wait for a minimum of 20 seconds
- 4) Then reinsert the isolation switch key and turn on
- 5) Turn on the handset and use the Powrtouch Freedom

WHEN NOT IN USE ALWAYS SWITCH IT OFF AND REMOVE THE KEY

2.3 SWITCHING ON THE HANDSET

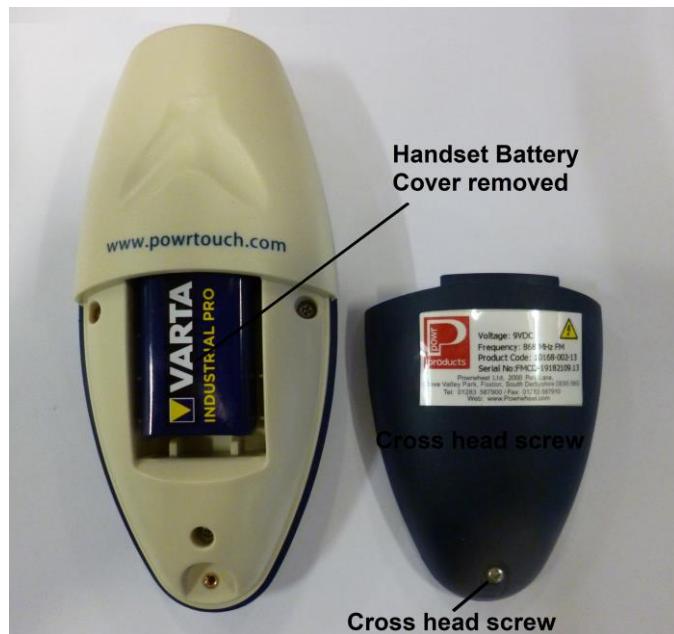


To switch on the handset press both the 'On' buttons (D and F) at the same time. Release them both when the LED array lights up in the settings indicator window. Once it is ready to operate then one green LED on the extreme right of the settings indicator window will remain on. If the top row & bottom row of Red LEDs flash alternating, then this is an indication that the handset battery voltage is low and the battery should be changed as soon as possible.

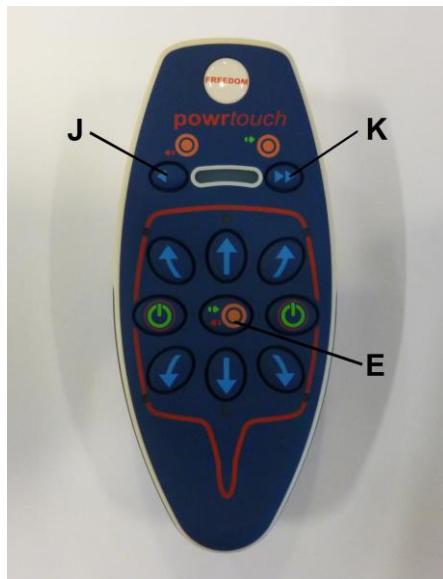
2.4 HANDSET BATTERY REPLACEMENT

To replace the handset battery the first step is to remove the small cross head screw on the back of the handset. When the small cross head screw is removed the battery box cover can be taken off providing access to the battery. The battery can then be removed from its connections and a new battery can be installed and the cover replaced. The battery required is a 9-volt DDC MN1604A or 6LR61.

i The use of rechargeable batteries is not recommended



2.5 ENGAGEMENT OF THE ROLLERS ONTO THE TIRES



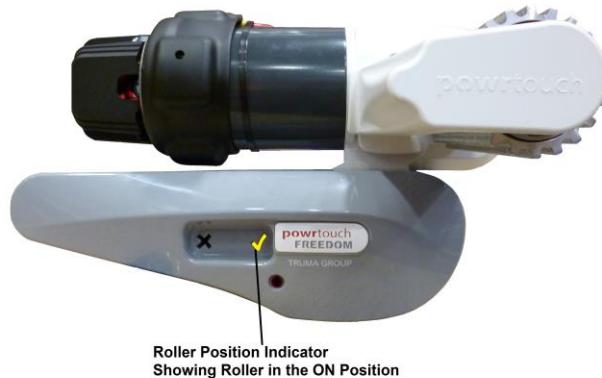
i If the actuators have been started by accident and need to be stopped immediately then press either of the 'On' buttons (D or F), see Emergency Switch Off - See Section 1 Paragraph 1.2.

With both the Powrtouch isolation switch and handset switched on then: -

1. Press and hold the 'Function' button (E)
2. Press the 'Roller Engagement' button (K) and then immediately release BOTH the E and K buttons
3. The green LEDs in the indicator window will scroll to the right. All 4 green LEDs will then flash as the mover is finalising its engagement cycle.

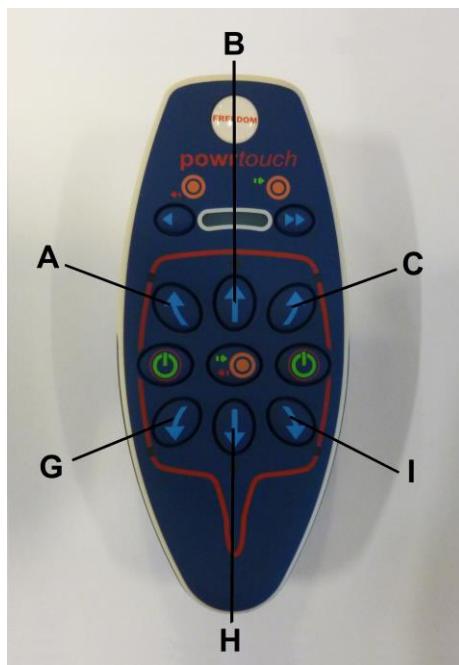
4. Always check that **ALL** rollers are fully engaged on to the tires of the RV before removing the handbrake. This can be done visually by checking the yellow Roller Position Indicator is in the correct position as shown below.
5. Always ensure that both sides have fully engaged before moving the RV.

⚠ DO NOT ATTEMPT TO MOVE THE RV UNTIL THE MOVER HAS FULLY PARKED I.E ALL 4 GREEN LEDs HAVE STOPPED FLASHING.



⚠ Once the Rollers are engaged ONLY then disengage the handbrake when you are ready to use the Powrtouch Freedom.

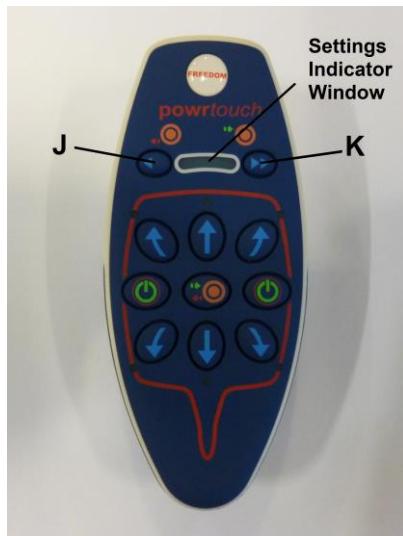
2.6 MOVING THE RV (HANDSET OPERATION)



The RV can be moved as required by pressing buttons A, B, C, G, H or I. The RV will move in the direction of the arrows printed on these buttons. Pressing opposite button A and I or C and G will make **single axle RVs (only)** rotate on their axis. The Electronics Control System also has a continuous movement capability in that if button B is being pressed then buttons A or C can be used, alternatively if button H is pressed then buttons G or I can be used, using this sequence will allow the Powrtouch to redirect the RV without stopping the forward or backward motion.

[i] Please note that the speed settings will always default to MAXIMUM – Speed changes can only be made when the RV is stationary

2.7 DECREASING AND INCREASING SPEED



When the handset is first switched on the settings indicator window will always show an illuminated green LED to the extreme right-hand side of the window and this is the default position of maximum speed (100%). The speed can be decreased by pressing the 'Speed Decrease' button (J), each time this button is pressed the speed will decrease by 25% and the green LED will move in the window to indicate the speed setting selected.

i The minimum speed setting is 25%. As the speed decreases the torque decreases in the same ratio i.e. 50% speed is 50% torque. This function of using a slow speed with lower torque setting is designed to maintain the RV's manoeuvrability in very restricted and/or confined spaces.

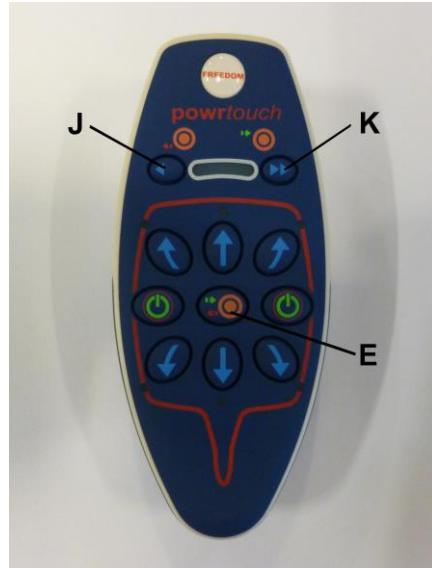
If the Powrtouch is not at its maximum speed, then the speed can be increased in 25% increments by pressing the 'Speed Increase' button (K). When changing the speed of the Powrtouch, the illuminated green LED will move (a maximum four stages) from the left to the right of the meter; when the LED is positioned at the extreme right of the display this indicates the Powrtouch has returned to the maximum speed setting. The speed can only be changed when the RV is not moving.

2.8 PRECISION CONTROL OF THE RV USING THE ELECTRONIC SOFT START FUNCTION

By utilising its very effective Electronic Soft Start System the Powrtouch Freedom can easily move the RV a distance of 1mm (0.04 inch) at a time. This small movement can be achieved by pressing and quickly releasing a direction button, this facility makes attaching the RV to the hitch of the vehicle, a simple operation. Reducing the speed will also give greater control of the RV when using the soft start in this way. 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.

2.9 RETRACTION OF THE ROLLERS FROM THE TIRES

⚠️ ALWAYS ENSURE THE RV HANDBRAKE IS ON BEFORE DISENGAGING THE ROLLERS FROM THE TIRES

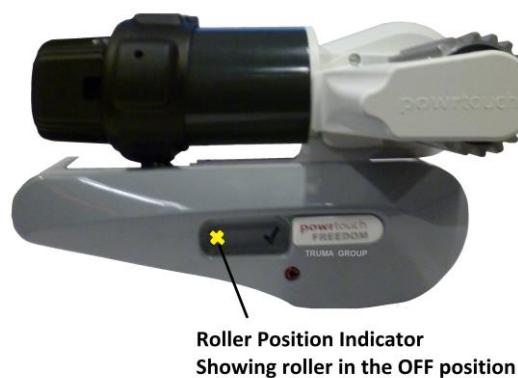


i If the actuators have been started by accident and need to be stopped immediately then press buttons D or F, see Emergency Switch Off - See Section 1 Paragraph 1.2.

With both the Powrtouch isolation switch and the handset switched on then: -

1. Press and hold the 'Function' button (E)
2. Whilst holding button E press the 'Roller Disengagement' button (J) and then immediately release BOTH E and J buttons
3. The green LEDs in the indicator window will scroll to the left. All the green LEDs will then flash as the mover is finalising its disengagement cycle.
4. Always check that **BOTH** rollers are fully disengaged from the tires of the RV before attempting to drive away. This can be done visually by checking the yellow Roller Position Indicator located in the correct position as shown below.

⚠ DO NOT TURN OFF THE RED ISOLATOR KEY UNTIL THE MOVER HAS FULLY PARKED. I.E ALL 4 GREEN LIGHTS HAVE STOPPED FLASHING.



i The rollers can be removed manually from the tires in the unlikely event that they do not retract electrically. (e.g. flat battery) To do this:

1. Switch off the isolation switch by turning the key anti-clockwise and removing.
2. Remove the end plug (shown in the picture below).
3. Insert the manual removal tool (T Bar) and turn 30 times anti-clockwise.
4. **If in doubt consult Truma.**



Freedom End View
Showing position for the T Bar after the end plug has been removed

2.10 SWITCHING OFF THE UNIT

The handset does not need to be turned off manually, except in the case of an emergency (See Section 1 Paragraph 1.2). If the handset is left unused for 3 mins approximately it will automatically turn itself off. However, once you have finished using the Powrtouch Freedom RV mover, ensure the unit is switched OFF with the isolation switch and the key is removed.

2.11 MAPPING (Tuning/Coding) INSTRUCTIONS – Given for Information ONLY

All electronics systems are supplied with the handset mapped (tuned/coded) to the ECB, should you require to map or remap the system the sequence is as follows: Using the plastic needle provided (attached under the hinged lid of the ECB) press the remap button through the small hole (labelled 'R') in the lid of the box, this enables the control board to search for a signal. Then switch on the handset, and it will transmit a welcome mapping signal to the control board and the system will automatically code.

2.12 FITTING AND REMOVAL OF THE SIDE COVERS



To fit the side-cover insert the three lugs on the side-cover into the three holes on the metalwork as shown in the picture above. Push the side-cover until the lugs click in place. Secure the side-cover with the retaining screw. Insert the retaining screw into the screw hole as shown in the picture above. Do not over-tighten the screw.

To remove the side-cover unscrew the retaining screw until free and pull the cover directly toward you.

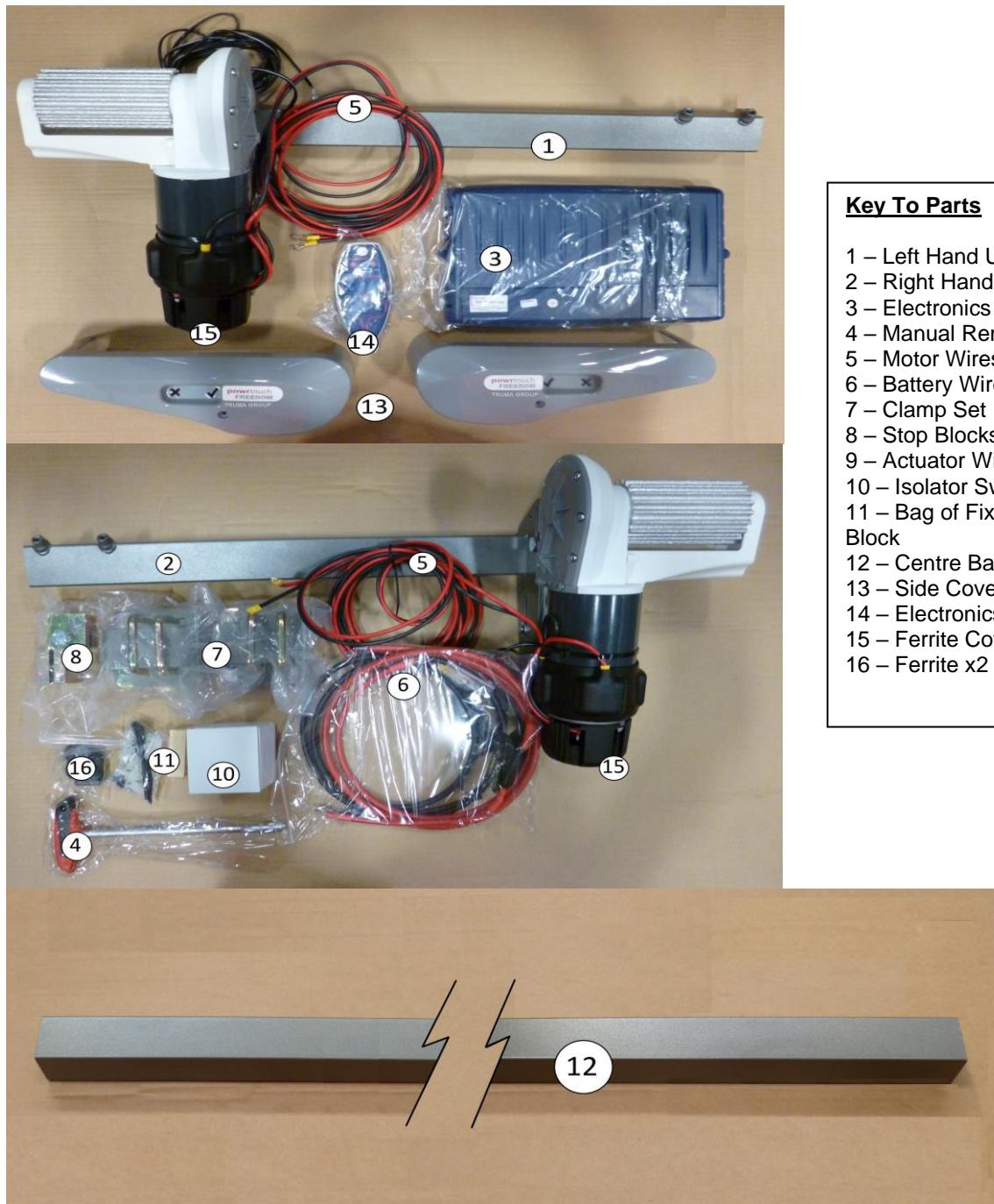
SECTION 3 – FITTING INSTRUCTIONS

Safety behavior and practices

⚠ Installation and service must be performed by an authorized Truma recommended installer, service agency, or OEM. Improper installation, alteration, service, or maintenance can cause property damage, personal injury, or loss of life. Installation as a Do-it-Yourself project is not authorized and voids all warranties.

3.1 RECEIVING YOUR POWERTOUCH FREEDOM

When unpacking the box there is a checklist of the components for the mover. Please check that all parts have been received before commencing the installation work (See Fig 2 showing component parts). If in doubt, please contact Truma. Contact details are on the front page of this document.



Key To Parts

- 1 – Left Hand Unit
- 2 – Right Hand Unit
- 3 – Electronics Control Box (ECB)
- 4 – Manual Removal Tool (T Bar)
- 5 – Motor Wires
- 6 – Battery Wire Set with Fuse
- 7 – Clamp Set
- 8 – Stop Blocks
- 9 – Actuator Wires
- 10 – Isolator Switch with Key
- 11 – Bag of Fixings & Wooden Block
- 12 – Centre Bar
- 13 – Side Covers
- 14 – Electronics Handset
- 15 – Ferrite Cover
- 16 – Ferrite x2

Fig 2. Pictures Showing Component Parts

3.2 TOOLING AND EQUIPMENT REQUIRED

To install the Powrtouch the following tooling and equipment will be required (not supplied):

- 10mm Socket & Ring Spanner
- 13mm Socket & Ring Spanner
- 17mm Socket & Ring Spanner
- Power Drill with 3mm & 10 mm Drill Bits suitable for wood
- 25mm Hole Saw for Plastic (for fitting isolation switch)
- 16mm Hole Saw for Plastic (for self-adhesive seals)
- Various Screwdrivers
- Multi-Purpose Silicon Sealant
- Lighting as necessary
- Trolley Jack or Axle Stands (for raising unit into position)
- Support Blocks, Wheel Chocks for Safety (to ensure the RV cannot move during the fitting operation)
- 8mm Allen Key
- Torque Wrench
- Safety Goggles

3.3 INSTALLING THE POWRTOUCH FREEDOM

⚠ NOTE: VERY IMPORTANT: BEFORE COMMENCING, PLEASE ENSURE THAT THE RV IS DISCONNECTED FROM IT'S 12 VOLT D.C. BATTERY SUPPLY AND ANY OTHER ELECTRICAL SUPPLIES (INCLUDING 120 VAC GRID POWER).

All electronic and electrical controls of the system are carried out by the Electronics Control Box (ECB) and isolation switch; please note the ECB has an built-in safety thermal fuse (set at 90° C). Should this fuse operate it will automatically reset itself when the system cools to an acceptable temperature.

The Isolation Switch must be accessible at all times when parking and moving the RV, please be aware of this when selecting the location for the switch (See Section 3 Paragraph 3.8).

Please check that the tires are of the same size and design (preferably from the same manufacturer) and not over worn (fitting to new or nearly new tires is the best option). It should be noted that as the RV tires wear, the roller to tire gap will increase, this could allow the Powrtouch rollers to slip when driving the tires, should this occur, the Powrtouch will require adjustment. Also ensure the tire pressures are correct to the manufacturer's recommendation prior to commencing the fitting of a Powrtouch. Also check that the chassis is in good condition without any damage and free from rust or corrosion etc.

Ensure that the handbrake is in the ON position before the RV is raised using the front stabilizers and Jockey Post/Wheel, the back stabilizers are then lowered to make sure the RV is fully stabilised, and no forward or backward movement can occur.

The pre-assembled ferrite cover must not be dismantled.

⚠ All work **MUST be carried out to ensure personal safety**

3.4 CHECKING THE CHASSIS DEPTH

All models of the Powrtouch Freedom are designed to fit on standard chassis depths of either 150mm (6 inches) or 200mm (7.8 inches) approximately.

3.5 MECHANICAL ASSEMBLY

⚠ For safety reasons it is recommended that the fitting of the Powrtouch Freedom should be undertaken on a flat hard surface. Before raising the RV, ensure the handbrake is on and then it can be raised as required (using trolley jack and/or axle stands) and secured in position using the RV steadyng legs with supporting blocks and wheel wedges as necessary; it is then helpful to lay down a ground sheet. Remove all items from the packaging onto the protective sheet. Ensure both rollers are in the DISENGAGED position, as the unit will not fit correctly otherwise. Loosely assemble the left-hand motor unit, right hand motor unit and alignment tube and place under the RV.

Wherever possible the Single Axle Powrtouch Freedom should be fitted in front of the RV road wheels, if this is not possible then it is acceptable to fit the unit behind the road wheels.

Using appropriate support blocks raise the loosely assembled unit into an approximate position, fit the clamps and U-Bolts (see Fig 3) to the chassis (do not tighten at this point). Adjust to the correct place using the 19mm (0.74 inches) spacer provided between the tire and the drive roller (on each side of the). Please note the spacer block should be a sliding fit between the tire and the coarse drive roller.

Also adjust the position of the drive rollers in relation to the tires by sliding the motor units on the alignment tube until the maximum amount of roller is in contact with the tire tread without any part of the unit fouling the tire or chassis. It is advisable to leave a minimum 10mm (0.39 inches) gap between the Powrtouch Freedom unit and the inside wall of the tire, this is to allow for the expansion of the tire when the rollers are engaged. Before tightening the u bolts to the recommended torque of 35 ft lbs, tighten the alignment tube pinch bolts and lock nuts making sure the alignment tube is approximately centralised; it is then advisable to check the roller / tire gaps again. The assembly should then be secured by tightening the U-bolts to the recommended torque of 35 ft lbs using a torque wrench.

Check both the above alignments at least once during the process and on completion.

Once the motor assemblies are completed the stop blocks should now be fitted on the chassis in a position directly behind the Powrtouch clamping plates to ensure that the motor assemblies do not slide along the chassis away from the tires when the drive rollers are engaged to the tires (see Fig. 3). Once correctly positioned they can be tightened using the locking bolt and nut with a torque wrench spanner set at 35 ft lbs.

FIG 3: CLAMP ASSEMBLY WITH STOP BLOCK

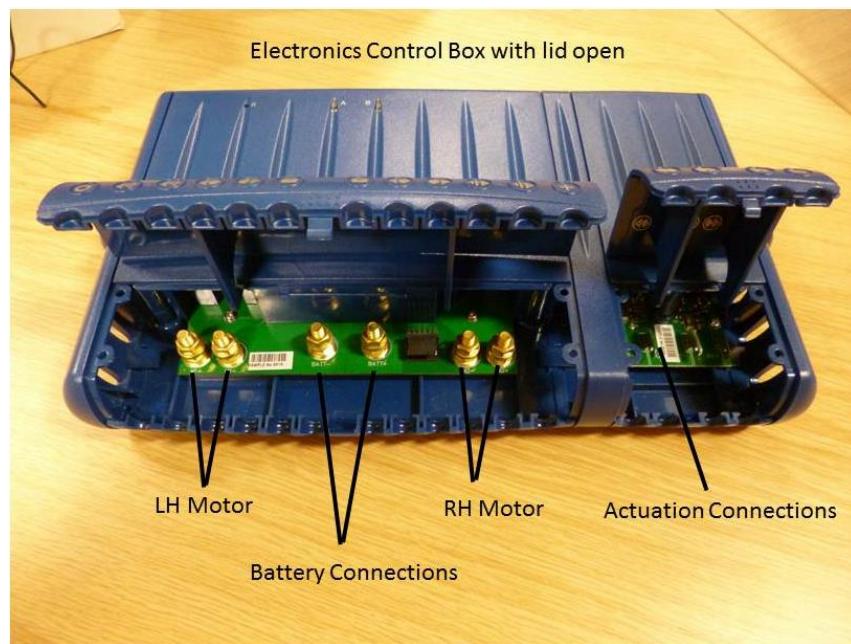


3.6 ELECTRICAL ASSEMBLY

⚠ - PLEASE ENSURE THAT THE BATTERY AND MAINS LEAD ARE BOTH DISCONNECTED FROM THE RV BEFORE COMMENCING INSTALLATION

[i] The terms right hand and left hand referred to on the electronics control box are determined by standing in front of the RV (at the hitch) facing the RV for a mover fitted in front of the wheels.

The recommended site for the Electronics Control Box (ECB) is inside the RV in the dry (bedding) locker behind the battery box. The ECB should be screwed to the floor using the screws provided. **Please note some RVs 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 10mm diameter holes in the floor approximately 150mm (6 inches) from the control box for the motor wires to be fed into the RV. 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 Powractuator wires (if fitted) can now to be routed along the underside of the RV 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 chafing 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 below Fig 6A1. The Powractuation Motors should be wired as shown in Fig 6F.



Should the Powrtouch Freedom be fitted behind the wheels then the motor wires for Motor 1 (LH) should be wired to M2 and the motor wires for Motor 2 (RH) should be wired to M1. The polarity of M1 & M2 should be reversed from the positions shown in Fig 6A1.

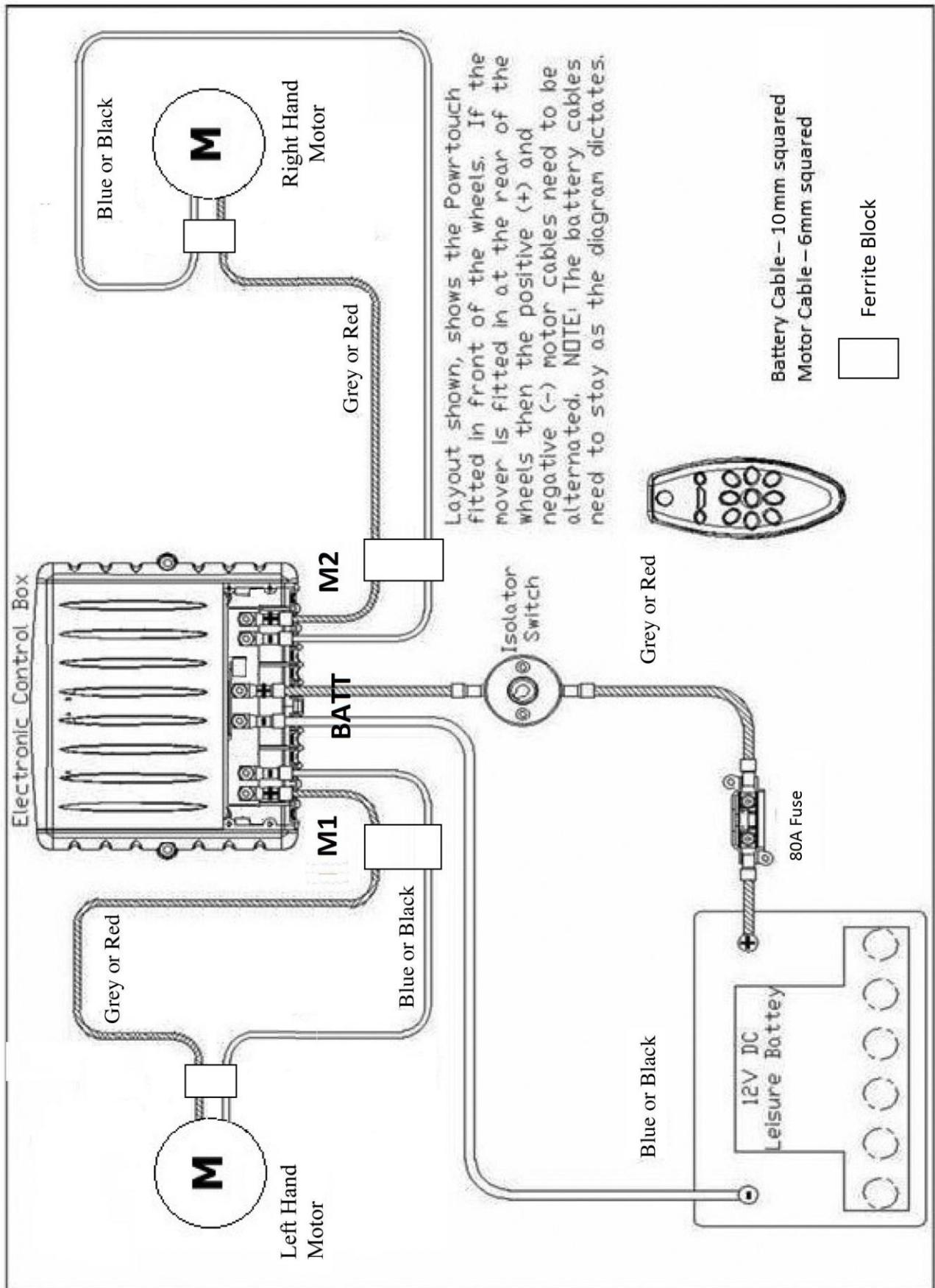
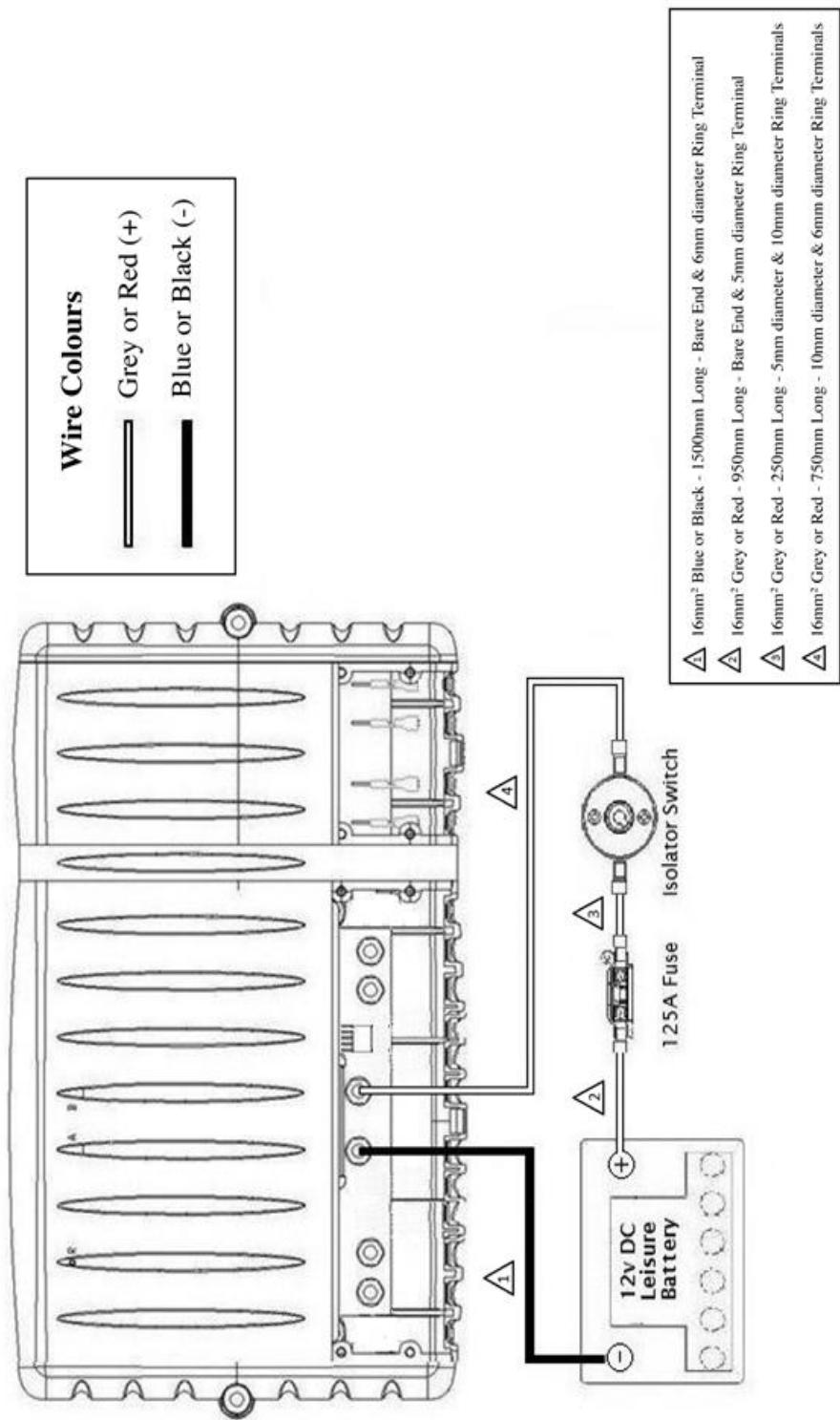


Fig 6A1. Electrical schematic diagram - Powrtouch Fitted Infront of the Wheels

Single Axle Battery Wiring Diagram – Fig 6A3



Electronic Control Box with Actuator

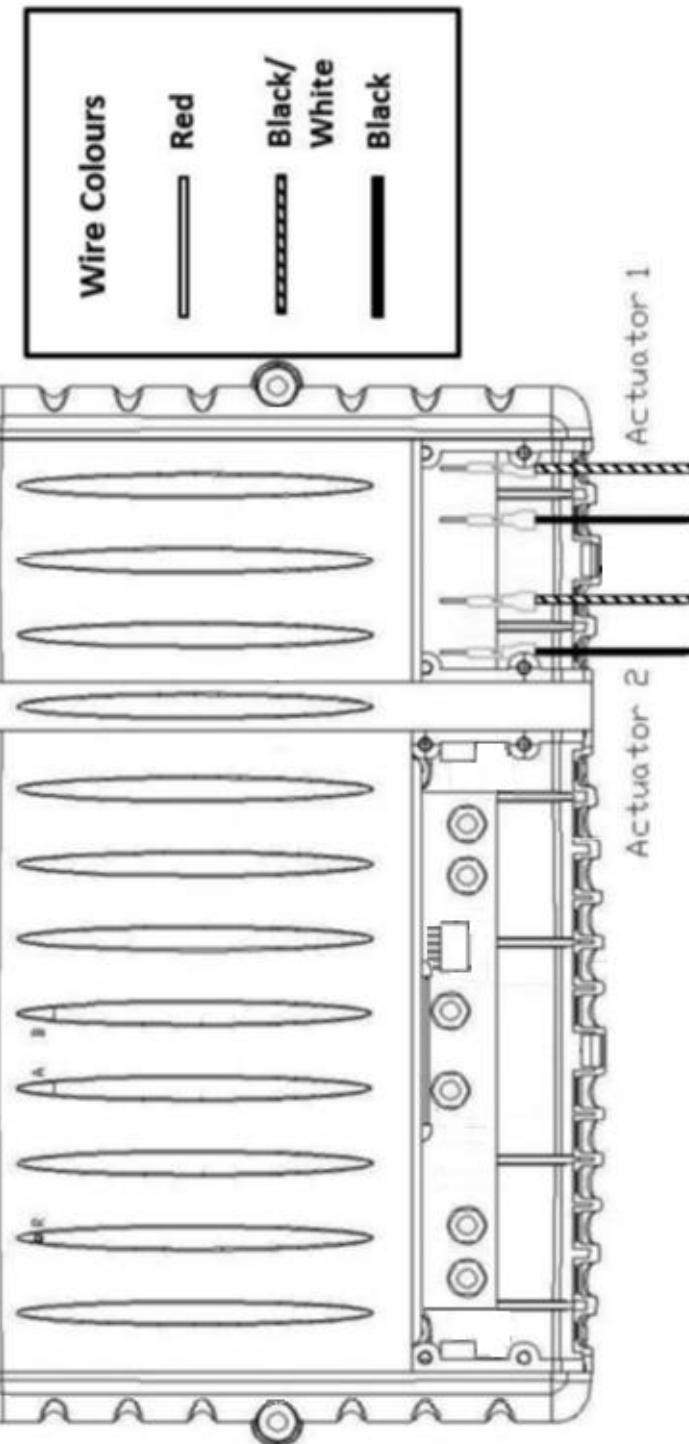


Fig 6F. Electrical schematic diagram - Powertouch Evolution Actuators

Any excess motor cable should then be coiled up (secure with cable ties as necessary) in a convenient position inside the RV. 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 recommended that motor cables should **NOT** be cut to ensure that:

- 1) They are of equal length
- 2) Should the Powrtouch Freedom be removed and refitted to a new or different RV then the cables can easily be reused.

Please ensure the battery is in good condition (See Section 5 Paragraph 5.4), a fully charged 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.)

A 110-Ampere hour battery is recommended for optimum operation of the Powrtouch Freedom. Smaller batteries may be utilised, but mover performance may be reduced. The aerial (thin black cable) should be let through the RV floor directly next to the ECB (drill a small 3mm (0.12 inches) hole as required) and then run in a straight line away from the ECB and all motor cables. The aerial should be clipped in place with the last 25mm (1 inch) of the cable left dangling down. Under no circumstances should the length of the aerial be changed either by cutting or extending by splicing into it.

3.7 CONNECTING TO THE RV BATTERY

Please be aware of the need for access to the isolation switch when parking your RV. The switch should also be fitted to be in an accessible position whilst the unit is in operation.

The Powrtouch is supplied with an inline switch which allows the isolation of the electrical control box from the Battery. The suggested location for the fitting of this switch is in the sealed side compartment within the battery box (**see NOTE below**), usually beneath the AC Power Supply connector. The reason for this location is to ensure that the Powrtouch isolation key will obstruct the use of the AC Power Supply connector; under no circumstances should the Powrtouch be operated while the RV is connected to the AC Power supply. Drill a 25mm (1 inch) hole with the hole-saw and the two 5mm (0.2 inches) clearance holes for the fixing nuts and bolts. When the holes are drilled install the switch and tighten up the nuts and bolts.

The electronics control box, isolation switch and the in-line fuse MUST NOT be located in the battery box or any compartments containing gas bottles. This is due to risk of explosion caused by leaking gas and a spark generated by the electronics, isolation switch or fuse.

The 16mm² (#5 AWG) battery cables are provided correctly terminated for their application and the length of these cables must not be altered in any way. The 1500mm (60 inches) Blue or Black (negative) battery cable is connected directly from the negative terminal of the RV battery to the negative terminal of the ECB. Starting from the non-terminated (bare end) 950mm (37.5 inches) of this cable is double insulated, this part of the cable must be connected to the battery. The 1000mm (39.4 inches) Grey or Red (positive) battery cable is all double insulated. This cable is used to connect the positive terminal of the battery (bare end) to one terminal of the inline fuse positioned in the RV. This fuse is provided to protect the ECB from overload or misuse. The battery cables have to pass through 16mm (0.63inches) dia. drilled holes in the battery box to gain access to the RV. These cables should be protected from chafing and the battery box sealed from leaking gas by the use of self-adhesive seals (supplied). These seals **MUST** be fitted. The 250mm (9.8 inches) Grey or Red (positive) battery cable connects the free terminal of the inline fuse to a terminal of the isolation switch. The 750mm (29.5 inches) Grey or Red (positive) cable then connects the second terminal of

the isolation switch to the positive connection on the ECB. Once connected these cables will then need to be securely fitted using the 'P' clips provided.

⚠ When making the connections to the battery it is recommended that connections are made to the electronics and isolator switch before connecting to the battery. Please ensure that their polarities are correct (Grey or Red Cables to Positive and Blue or Black Cables to Negative). Should they be connected incorrectly then this will result in damage to the electronics box.

- 1) Drill two 16mm (0.63 inches) dia. holes (making sure that BOTH seals will not overlap).
- 2) Clean surface with methylated spirits or similar.
- 3) Push the self-adhesive seal onto the shank end of a 10mm (0.4 inches) dia. drill bit then remove paper backing.



- 4) Locate the self-adhesive seal over the drilled 16mm (0.63 inches) dia. hole; the 10mm (0.4 inches) dia. drill bit will help to keep the seal central over the 16mm (0.63 inches) hole. Push firmly to the battery box surface.



- 5) Pull drill bit away.



- 6) Push cable through the self-adhesive seal.



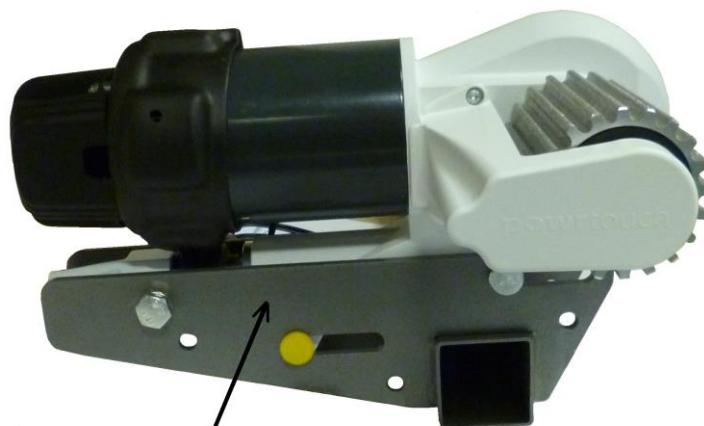
All remaining cables can then be connected to the ECB ensuring that they are fitted in accordance with Fig 6A1 and Fig 6F. The electrical assembly is now complete. Check the roller rotation corresponds to the handset controls and the actuators function correctly. Any hole(s) drilled for motor wires to access the RV should now be sealed with the silicon sealant to prevent ingress of damp or water. The Powrtouch Freedom side covers can now be fitted by securely pushing into place.

If you are unsure about the installation consult Truma

SECTION 4 – LOOKING AFTER YOUR POWRTOUCH

4.1 CLEANING THE POWRTOUCH FREEDOM

It is recommended that after your Powrtouch Freedom has been fitted the mechanical assembly would benefit from being sprayed with a light coating of wax oil (this could be repeated on an annual basis). By doing this you will be giving the mover better protection from water and rust. If necessary, it can be washed with clean water but under no circumstance should a pressure washer be used on a Powrtouch Freedom system. We recommend that your Powrtouch is cleaned and lubricated with a motorcycle chain lubricant (grease), or similar, once every 5 – 6 months.



Apply grease to the inside of this plate and the opposite plate where the motor assembly meets and slides within the plates. Grease all half units on the mover.

4.2 CLEANING THE DRIVE ROLLERS

Ensure that the rollers are kept clean; this can be undertaken by washing with a hard brush.

⚠ For safety reasons it is recommended that the isolation switch is turned off and the key removed prior to cleaning the rollers.

Also check that no stones or other debris are trapped in any part of the mechanism.

SECTION 5 – WARRANTY & FAULT FINDING

5.1 POWRTOUCH FREEDOM GUARANTEE

This limited warranty pertains solely to the “POWRTOUCH” (the “Product”) manufactured by Truma and sold through its affiliates and dealers in North America.

Truma warrants subject to the below stated conditions that the Product will be free from defects in material and workmanship, and will perform in accordance with the technical specifications set forth in the description of the Product for a period of twelve (12) months for newly manufactured parts from the original date of purchase. The original purchaser is advised to register the Product within two (2) months of purchase with www.truma.net in order to receive an extended warranty of an additional twelve (12) months. This limited warranty shall only apply if the Product was properly installed according to the installation instructions provided and in compliance with applicable codes.

During the warranty period, Truma will repair or replace, at its own discretion and costs, the defective Product or parts or components of such Product reported to Truma and which Truma determines was defective due to a warranty defect. Costs of diagnosis for a warranty defect are borne by Truma. Other costs of diagnosis are not included in this warranty. At the discretion of Truma, the replacement of the Product or parts or components thereof

- (i) may be newly manufactured,
- (ii) may be assembled from new or serviceable used parts that are equivalent to new parts in performance, or
- (iii) may have been previously installed.

The customer shall not attempt to repair the Product or resolve the problem without the prior consent of Truma. Any attempt by the customer to repair the Product or resolve the problem without the prior consent of Truma will void this warranty.

This limited warranty does not cover any defects attributable in whole or in part to

- (i) non-Truma products and services and / or alterations of out-of-specification supplies,
- (ii) accidents, misuse, negligence or failure of the customer to follow instructions for the proper use, care and cleaning of the Product,
- (iii) external factors (e.g., fire, flood, severe weather),
- (iv) failure of proper transport packaging, or
- (v) failure by the purchaser to comply with Truma’s installation and user manual regarding the Product.

All warranty claims must be reported to Truma’s authorized warranty service center in the United States: Truma Corp Service Center, **2800 Harman Dr., Elkhart, IN 46514, toll free: (855) 558-7862, fax. (574) 538-2426, service@trumacorp.com, www.truma.net**

The purchaser shall provide the following information regarding the potential warranty claim

- (i) serial number of the defective device,
- (ii) proof of purchase,
- (iii) purchaser’s contact information.

EXCEPT AS EXPRESSLY STATED AND SET FORTH HEREIN, THERE ARE NO WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT AND NO SUCH WARRANTIES OR REPRESENTATIONS SHALL BE IMPLIED UNDER ANY APPLICABLE LAW, IN EQUITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, A WARRANTY OF MERCHANTABILITY, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY WHICH MAY BE IMPLIED UNDER COMMON LAW OR UNDER THE UNIFORM COMMERCIAL CODE OF ANY STATE OR OTHER JURISDICTION OF THE UNITED STATES OF AMERICA.

Unless further limited herein, the entire liability of Truma and the customer’s exclusive remedy for damages from any cause related to or arising out of a warranty defect, regardless of the

form of action, whether in contract or in tort, will not exceed the amount of the purchase price for each purchase order for the Product which is the subject matter or directly related to the causes of action asserted.

Unless prohibited under applicable state law, in no event will Truma, its agents, subcontractors, affiliates, suppliers and employees be liable for

- (a) any incidental, indirect, special or consequential damages, including, but not limited to, loss of use, revenue, profits or savings, substitute rental or for any other reason, even if Truma knew or should have known of the possibility of such losses or damages,
- (b) claims, demands or actions against the customer by any person, except as provided by applicable law.

5.2 REPORTING A FAULT

ALWAYS ENSURE THAT YOUR BATTERY IS FULLY CHARGED AND IF YOU ARE IN DOUBT ABOUT BATTERY STATUS, USING THE BATTERY GAUGE ON YOUR RV, CHECK WITH THE VOLTAGE CHART SECTION 5 PARAGRAPH 5.4

⚠ PLEASE PAY SPECIAL ATTENTION TO TESTING THE BATTERY UNDER LOAD.

TO CARRY OUT THESE CHECKS THE RV MUST BE DISCONNECTED FROM ITS 120 VAC SUPPLY.

Before you call Truma to report a fault you should have the serial number of your Powrtouch available, as you will be asked for this information. It allows a Truma Engineer to locate the full manufacturing status of the mover and be able to advise you accordingly.

Also, before reporting a fault you are requested to check through the fault-finding list Section 5 Paragraph 5.5 to see if any of them can solve the problem. Failure to comply to this may result in you being asked to carry out some of these tests, thus delaying action to repair if required.

5.3 ELECTRONICS CONTROL BOX - LED STATUS

LED Status Array in Use	Red Light	Green Light
Power Up Normal	OFF	ON
Incoming Data Transmission	ON	ON
Awaiting Configuration	FLASH	FLASH
Alternating		
LED Status Array - Fault Diagnosis		
PCB Over Heat	FLASH	
Low RV Battery Voltage		FLASH
Over Current on MOSFET Drive	FLASH	FLASH
		Together

5.4 CHECKING THE CHARGE STATUS OF A 12 VOLT BATTERY

APPROX CHARGE STATE	VOLTMETER READING (No Load)	HYDROMETER READING
100%	12.7 v or over	1.27
75%	12.5 v	1.23
50%	12.4 v	1.20
25%	12.2 v	1.17
Discharged	12.0 v	1.10

i Voltage readings should be taken at least 4 hours (and could be up to 12 hours depending upon charging rates) after recharging to obtain an accurate reading.

The above figures are for the battery when under no load, if a battery is on the point of failing or not fully charged then the only test that will determine this is to take the readings under load (drop test). This can be achieved by using the Powrtouch mover with the rollers engaged to the tires and driving both rollers forwards or backwards, if the reading drops to 12 volts or less the safety cut out on the ECB will stop the Powrtouch to prevent damage to the battery. However, this is an indication of insufficient battery voltage to drive the Powrtouch caused by an under charged or failing battery.

PLEASE BEAR SAFETY IN MIND AND THAT BEING IN THE RV WATCHING THE METER YOU DO NOT DAMAGE THE RV BY RUNNING INTO AN OBSTRUCTION.

The above voltages are accurate at 25° Celsius (77° F). In temperatures less than this the battery performance and output decreases by 1.25% per degree.

5.5 FAULT FINDING CHART

Symptom of Fault	Possible Fault and Method of Correction
Unit fails to operate	Reset the ECB by turning off the isolation switch and removing the key for at least 20 seconds and then turning on again. The green light on the ECB should be illuminated.
Unit fails to operate – seems completely dead – Red Light flashing on ECB	Over heating - remove isolation key and leave 20 minutes to see if the thermal fuse will reset itself, RED LIGHT WILL STOP FLASHING and the ECB should not feel hot.
Unit fails to operate – seems completely dead	Check that the green light is illuminated on the electronics, if not check that the in-line fuse is not broken and 12volts DC is getting to the ECB.
Unit fails to operate or operates intermittently	Check the battery voltage of the handset is correct at 9.5 volts. If the 2 rows of Red LED's flash, then this is a sign the handset battery is low
Unit fails to engage on one side (auto mover only)	Ensure that both sides have fully disengaged before turning off the mover. Using the supplied T bar wind clockwise by 2 turns. The mover should then auto engage again when using the remote control. ALWAYS ENSURE THE MOVER HAS FULLY PARKED AND LIGHTS ON HANDSET HAVE STOPPED FLASHING BEFORE TURNING OFF YOUR ISOLATOR SWITCH
Unit fails to operate or moves intermittently	Badly connected or corroded battery terminals, check battery terminals are clean and connected as required.

Unit fails to operate or moves intermittently – Green light flashing on ECB	RV battery low - check voltage of battery (see battery voltages chart Section 5 Paragraph 5.4). Charge or renew RV battery.
RV fails to move or moves intermittently	RV battery low - with the rollers engaged move the RV and check the voltage drop on the RV battery meter. If this drops below 12 volts, it is advisable to have the battery tested by an accredited supplier, then as necessary charge or renew RV battery.
Roller will not disengage auto operation	See Section 2 Paragraph 2.9 Retraction of the Rollers from the tires.
Rollers slip on wheels	Disengage rollers from the tires and the gap should be 19mm approx. Also check the tire treads are not badly worn and the tire pressures are correct.
IF IN DOUBT CONSULT TRUMA	

i ADDITIONAL INFORMATION TO NOTE

1. To the best of our knowledge these instructions were accurate at the date of publication.
2. Wherever the Powrtouch Freedom is fitted this should be done in accordance with the local standards applicable to the installation of a remote-controlled RV moving system.

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