

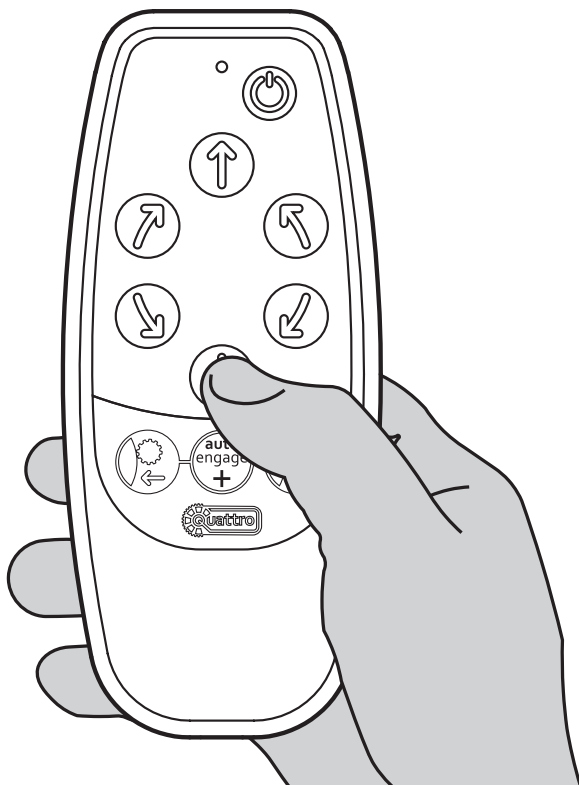


REMOTE CARAVAN MOVER
Electronics Installation Guide
and User Manual

EN

QTR-M003

CM-071 Basic Electronics

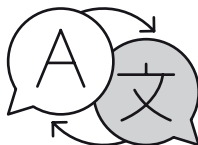


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Document Control

Original Instructions

Manual Reference: QTR-M003

REVISION	DESCRIPTION	ISSUE DATE
-	Original Instructions	08/01/2021
01	P14, P17 Diagram Corrections	13/01/2021
02	Visual Amendments	17/05/2021

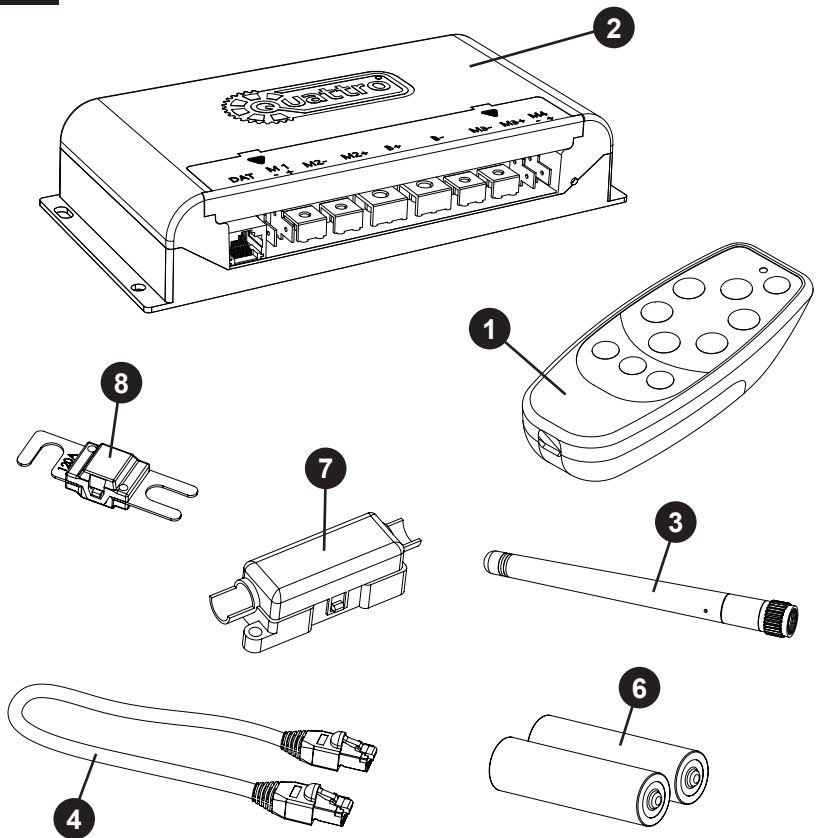
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Package Contents (Fig.A)

REF	QTY	DESCRIPTION
1	1	Handset
2	1	Electronic Control Unit
3	1	Antenna
4	1	Ethernet Data Cable
5	1	Handset Wrist Strap (Not depicted)
6	2	AAA 1.5V Battery
7	1	In-Line Fuse Housing
8	1	120A Fuse

Fig. A



Technical Reference Diagrams

Fig.1

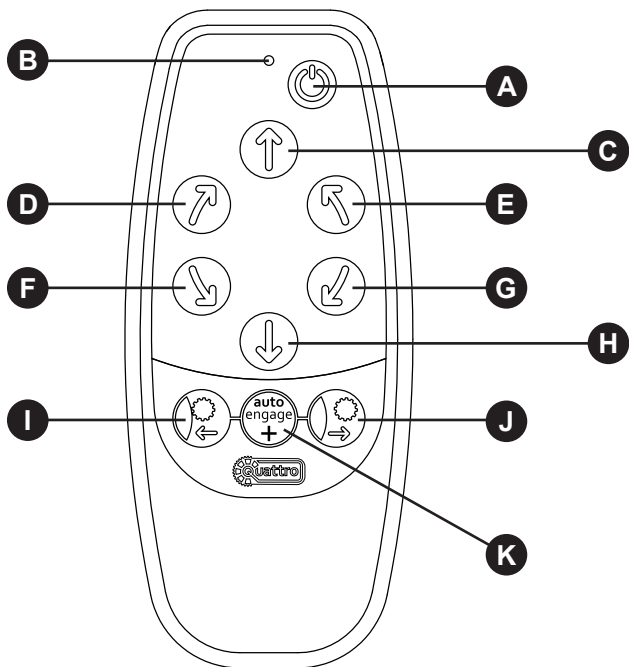
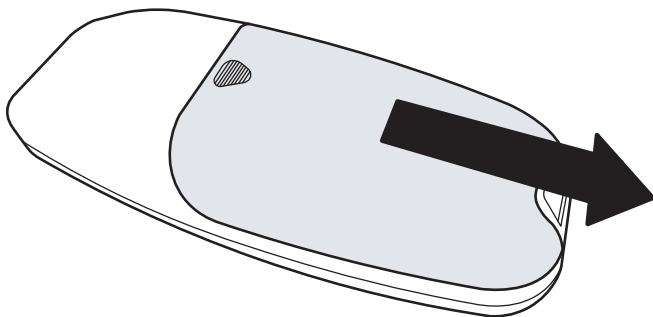


Fig.2



Technical Reference Diagrams

Fig.3

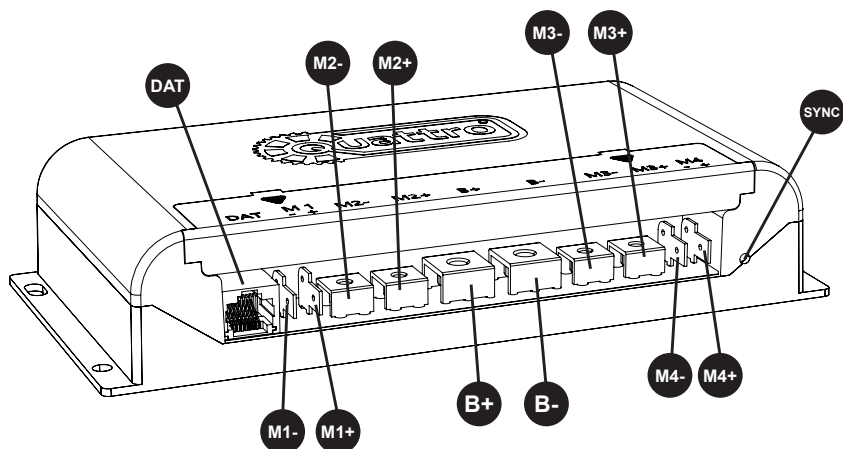
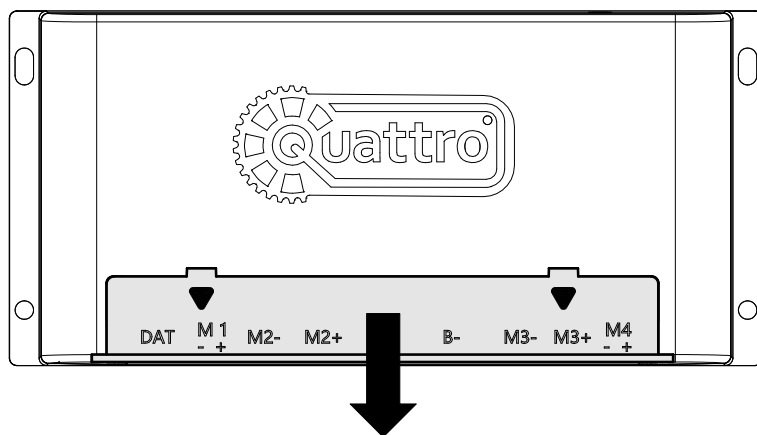


Fig.4



Technical Reference Diagrams

Fig.5

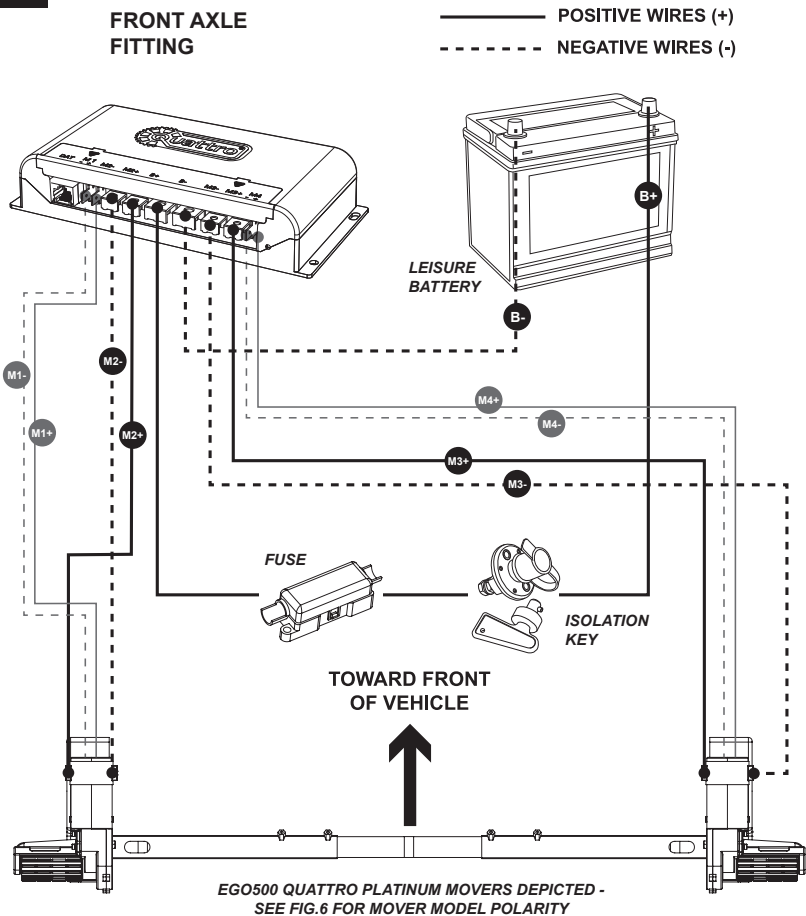


Fig.6

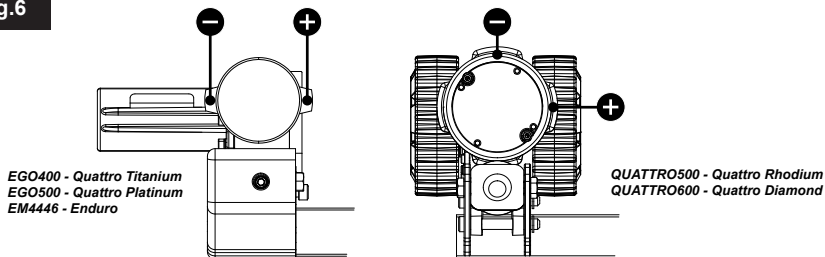
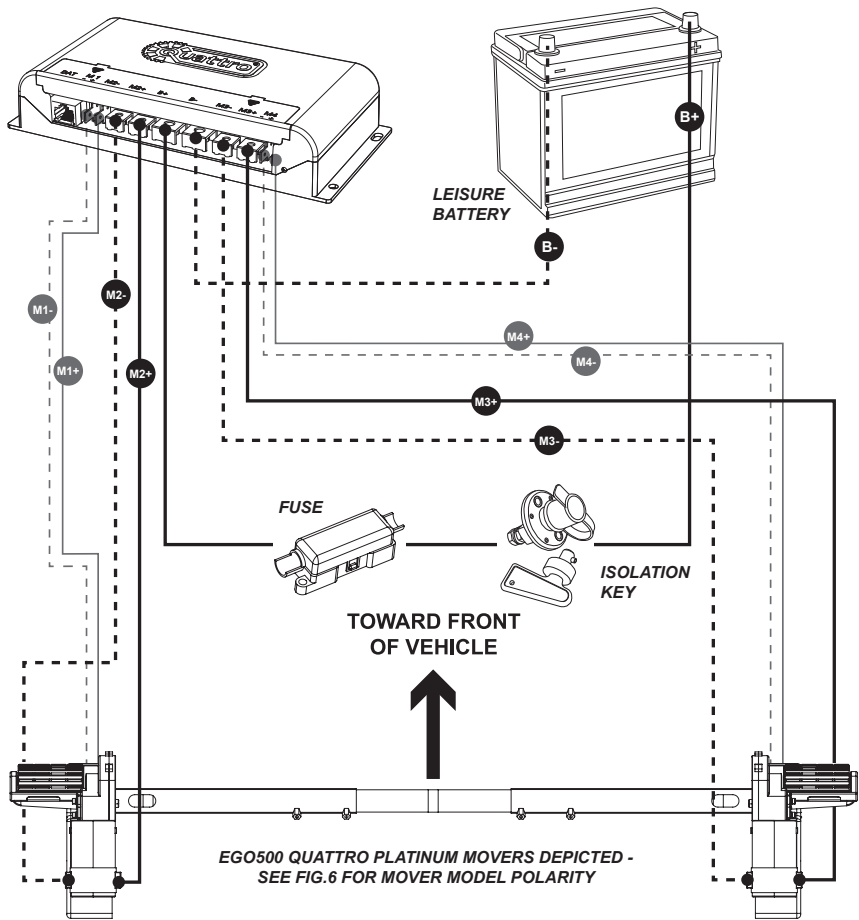



Fig.7

REAR AXLE
FITTING

—— POSITIVE WIRES (+)
----- NEGATIVE WIRES (-)



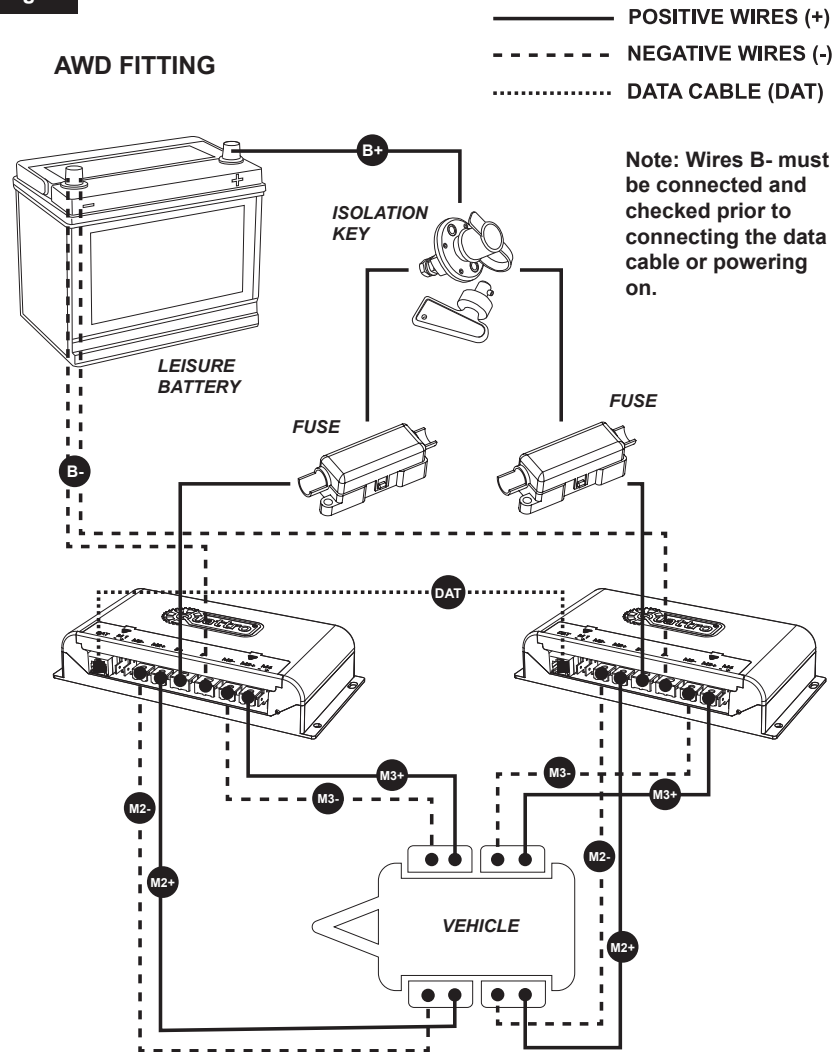
EGO500 QUATTRO PLATINUM MOVERS DEPICTED -
SEE FIG.6 FOR MOVER MODEL POLARITY

 If fitting movers to rear of wheels in a single axle set up, polarity of wires at motors must be reversed.

Technical Reference Diagrams

Fig.8

AWD FITTING



Introduction



This manual is a follow on from the installation guide provided with your caravan movers. Please read the installation guide thoroughly prior to attempting anything described in this Electronics installation guide and user manual.

Thank you for choosing these caravan mover electronics. This product has been produced according to high standards and has undergone careful quality control procedures. Simply by using the remote control you can move your caravan effortlessly into any position required within operating guidelines.



Before continuing with installation and starting to use the mover, please read this manual very carefully and be aware of all the safety instructions! The owner of the caravan will always be responsible for correct use. Keep this manual inside your caravan for future reference.

This electronics installation and User Manual covers the steps required to electrically wire your Basic electronics to your given caravan movers. On auto-engage mover models, the remote control handset enables you to simultaneously engage the rollers of movers in any given setup. Once engaged, your handset will allow you full directional control of your caravan, providing accurate manoeuvring and features such as on the spot rotation (single axle mode only).

Installation - Safety Guidelines



Read this User Manual carefully before installation and use. Failure to comply with these rules could result in serious injury or damage to property.

Before starting installation of the caravan mover:

DO check that the caravan is disconnected from the battery supply and the mains electrical supply.

DO only use adapters and accessories that are supplied or recommended by the manufacturer.

DO check that the tyres are not over worn (fitting to new or nearly new tyres is the best option).

DO make sure that the tyre-pressures are correct to the manufacturer's recommendation.

DO make sure the chassis is in good condition without any damage and is free from rust, dirt etc.

DO stop work immediately if you are in doubt about the assembly or any procedures and consult one of our engineers.

DO locate the battery isolation switch to be accessible at all times when parking and moving the caravan.

DO NOT remove, change or alter any parts of the chassis, axle, suspension or brake mechanism.

DO NOT operate the unit if you are under the influence of drugs, alcohol or medication that could impair your ability to use the equipment safely.

Installation - Safety Guidelines cont.



These instructions are for general guidance. Installation procedures may vary depending on caravan type.



Use appropriate support! Working under a vehicle without appropriate support is extremely dangerous. If you are fitting the mover system yourself, it is advisable that the installation is conducted by two people, as the mover will need to be raised up to the bottom of the caravan's chassis before the clamps can be installed.



Remember to complete the product registration form with the serial numbers of each motor assembly prior to fitting (see details within the Guarantee section of this manual).

Installation - Electrical/Electronic Components



This manual is a follow on from the installation guide provided with your caravan movers. Please read the installation guide thoroughly prior to attempting anything described in this Electronics installation guide and user manual.



Several items required for electrical/electronic installation are supplied alongside your motor movers. For reference to these items described in this manual, see the 'package contents' section of your installation guide.



Before attempting any electrical work, be sure to isolate the 12V supply from the battery and ensure any 230V electricity supply is disconnected.

Find a suitable place to mount the Electronic Control Unit (2), such as a storage area, under a seat or a bed. Make sure this place is dry and close to the battery (30 cm to 60 cm). Affix the supplied antenna (3) to the rear screw thread at the rear of the electronic control box prior to mounting. The unit can then be mounted on a flat base (horizontal) or on a wall (vertical). When choosing location, ensure that the unit cannot easily be damaged. Fix the Electronic Control Unit (2) into position with four of the screws provided with your mover fixings. If the length of these screws is not suitable for the desired location/material, please substitute as appropriate.

See Fig.4, remove the front cover as indicated. This will allow access to the various terminals on the electronics box. A cross head screwdriver will be required to screw down ring terminal connectors.

Drill a 25mm hole through the floor of the caravan approximately 150mm centrally in front of the control unit (2) terminals.



Take care to avoid any chassis members, gas pipes and electrical wires when drilling the required holes and fixing components to your vehicle.

Study Fig.5. The wiring diagram (Fig.5 depicts the wiring route when the motor units are installed on the FRONT wheels/axle, facing the rear of the trailer. Fig.6 displays the polarity of the terminals on the various mover variants. Note that these locations remain the same regardless of whether the motor is the left or right side mover.

Installation - Electrical/Electronic Components cont.

Locate the Power Isolation Switch, this will now need to be installed. If available, the ideal location for the isolator switch is inside the battery compartment; usually there is a space to the side of the battery. The chosen location needs to be one that will mean the Isolation switch is easily accessible in the event that the system needs to be switched off in an emergency. Nuts and bolts are provided to mount the switch but please substitute as necessary if they are not of a suitable type for the fitting location or material.

Install the Isolation Switch between the battery and the Control Unit (See Fig.5) along the positive [+] battery cable, using two of the provided 6mm Terminal Ring Connectors to link the cable to the switch terminals. These connectors will require crimping to the end of the wires. Ensure to leave sufficient wire length to reach from the battery to isolation switch and from isolation switch to electronics box.

On the positive [+] battery cable between the isolation switch and electronic control box, the fuse will also need installing. To do this, mount the 120A fuse (8) into the In-line Fuse case (7). Cut the positive [+] battery cable where necessary and again crimp 6mm Terminal Ring Connectors to either end to allow mounting to the fuse. The fuse case (7) can be screwed to a wall or floor in the same way as the electronics control unit.

With the supplied battery wires, proceed to wire the battery to the electronics box, via the previously installed isolation switch and fuse, as outlined in the wiring diagram (Fig.5). 6mm Terminal Ring Connectors are already attached to the battery wires for connection to the electronics box, whilst two sizes of ring connectors are supplied for connection to the battery itself.



Caution! Do not attempt to amend wiring that is connected to the battery and live. Always ensure that wires are disconnected from power when being worked on.



Caution! Ensure not to reverse the positive and negative battery connections. Incorrect connection (reverse polarity) will result in damage to the control box.

The positive and negative motor wires now need connecting to the system, these all feature a pre-installed spade connector at one end of each length. Again using Fig.5 for reference, proceed to route the motor wires through the hole previously drilled in the vehicle floor and along the underside of vehicle toward the designated motors. Supplied are various components which will aid with the safe fixing of these wires, including: Convoluted Cable trunking - to protect the wires from sharp edges, P-clips/screws - for mounting the wires to surfaces, and Cable Ties - to fix wires together or to sections of the chassis where necessary. Cable Number and Polarity markers are also supplied to aid with labelling of wires for ease of installation. When routing the wires, aim to keep these as central along the caravan as possible in attempts to keep the wiring the same length.

As with the battery wires, when satisfied with the routing, proceed to crimp the provided 4mm terminal ring connectors onto the ends of the wires for connection to the electronics box. The spade connectors for attaching to the motors are already fixed to the end of the motor wires.

For **Auto-Engage Mover Models** the final step will be to attach the engagement wires. These are already wired into your movers, and can be mounted under your caravan alongside the motor wires, again using the supplied mounting components where necessary. Study the various wiring diagrams, the spade connectors attach to locations M1+/- and M4+/- respective of which motor they are from. The positive wire is indicated by a singular white line running down its length.

NOTE: Depending on regulatory requirements in your area, it may be necessary to install heavier gauge wiring across the system. Please consult your dealer for further details if necessary.

Once all wires are correctly attached as per Fig.5, the electrical installation is complete.

Installation - Electrical/Electronic Components (AWD Configuration)

To install an All Wheel Drive configuration on your caravan, two separate electronics systems effectively need assembling. These two systems will be configured using the handset prior to initial use, however during installation there are only a few elements which need to be altered.

Start by wiring up your second mover system by following the same procedures stated in the previous section 'Installation - Electrical/Electronic Components'. Fig.7 displays the wiring schematic for this rear axle set up. Fig.8 can also be used for a general overview of how the twin axle wiring should be set up. Follow these diagrams closely to ensure that the movers are powered as intended and do not work against one another in operation.

Regarding the battery wires, the same isolation key can be used for both systems. To do this, connect the second electronics box using a length of wire from the isolation key to the box itself. There should be only a single positive battery wire connected to the battery itself, with two cables then splitting to the respective boxes via in-line fuses from the isolation switch onward. Use Fig.8 for reference.

To finalise the electrical set up, attach the Data Cable (4) between the relevant ports (Fig.3.DAT) in the electronic control units (2). Ensure this is firmly in place.

Follow the 'Operation - Handset Pairing' section of this manual closely for instructions on how to set up your remote control to correctly operate the AWD system.

Operation - Safety Guidelines



Caution! Please read these safety guidelines closely BEFORE attempting to operate your caravan mover system.

DO always check movers for any damage, before use.

DO remain aware, at all times, that ground clearance is reduced by around 50mm where the Movers have been fitted.

DO keep a maximum 5 meter distance between handset and electronics box when in use, to maintain signal strength.

DO be aware that the mover increases your caravan or trailer weight. So this reduces the payload of the caravan.

DO always make sure that the rollers are fully disengaged from the tyres when the mover is not in use. This is better for the tyres and for the mover.

DO always make sure that the rollers are fully disengaged before towing/moving the caravan by vehicle or manpower. If not damage can be caused to your tyres, mover and the towing vehicle.

DO always make sure that after you have finished using the Mover, the Battery Power Isolation Switch is switched off, with the key removed and stored in a safe place, out of reach of children or unauthorised people.

DO always make sure that the remote control handset is stored in a safe place, out of reach of children or unauthorised people.

Operation - Safety Guidelines cont.

DO always apply the handbrake after manoeuvring, before disengaging the drive rollers from the tyres.

DO NOT rely on the mover to act as a brake.

DO NOT exceed the stated maximum Safe Working Load (SWL).

DO NOT attempt to move or tow your vehicle with the motor movers engaged on the wheels.

DO NOT make any modifications on the caravan mover (mechanical or electronically). This can be very dangerous! No warranty claim will be accepted and we cannot guarantee the function of the mover if any modifications are made. Purpleline LTD are not liable for any damage whatsoever caused as a result of incorrect installation, operation or modification.



Always ensure that you are close enough to engage the caravan's handbrake, particularly when manoeuvring on uneven terrain and gradients/slopes, in case of mechanical failure. Do not use the mover as a brake, when you have finished manoeuvring always engage the caravan's handbrake.



Warning! Ensure that there are no persons or obstructions in the vicinity of the caravan prior to use.



If in doubt regarding any feature of the mover system and its operation, contact your mover dealer.

Operation - Handset Functions

Using Fig.1 for reference, familiarise yourself with the layout of the Remote Control Handset (1).

Power:

Fig.1.A = Power Button (double press)

Fig.1.B = Indication LED

Movement Controls:

Fig.1.C = Forward [F]

Fig.1.E = Forward Left [FL]

Fig.1.G = Reverse Left [RL]

Fig.1.D = Forward Right [FR]

Fig.1.F = Reverse Right [RR]

Fig.1.H = Reverse [R]

Engagement Controls:

Fig.1.I = Engage Button [ENG]

Fig.1.K = Auto-Engage Function Button [FN]

Fig.1.J = Disengage Button [DENG]





The Remote Control handset (1) is powered by two 'AAA' 1.5V batteries, to install these, slide off the back case of the handset as seen in Fig.2. Ensure only leak proof batteries are used. Check with local authority regarding the correct disposal of used batteries. Remove batteries from handset during long periods of inactivity.

Double press the power button (Fig.1.A) to turn the handset on. Once activated the LED (Fig.1.B) will illuminate. If the handset has not been used 60 seconds it will power off.

Operation - Handset Pairing / Mode Selection

The handset pairing procedure differs depending on the mover configuration you have installed on your vehicle. It is vitally important that the handset is set up in the correct mode to ensure that the movers operate as intended. With twin-axle vehicles for example, the turning abilities are of course very different to that of a single axle. Only by setting the movers up correctly, will you get the best possible performance out of your mover system.

Familiarise yourself with the handset functions (see 'Operation - Handset Functions') and electronic control box layout. These will need setting to both the correct model of mover, and the correct mode for your axle configuration. To set the correct model follow the table below:

Mover Model	Selection Description	Buttons
QUATTRO600 Quattro Diamond	Hold [FN] (Fig.1.K) and [R] (Fig.1.H) for 5 seconds.	 +  5 sec
QUATTRO500 Quattro Rhodium		
EGO500 Quattro Platinum	Hold [FN] (Fig.1.K) and [F] (Fig.1.C) for 5 seconds.	 +  5 sec
EGO400 Quattro Titanium		
EM4446 Enduro		

To set up the correct mode, see the following sections:

Single Axle Mode

Ensure batteries are installed into the handset as explained in previous section (Operation - Handset functions). Turn on isolation switch to provide power to the electronic control unit (2), a solid red LED will illuminate. Double press the power button (Fig.1.A) to turn on handset.

On your handset (1), press and hold [ENG] (Fig.1.I) and [DENG] (Fig.1.J) for 1 second to enter pairing mode. The indication LED (Fig.1.B) on your handset should continuously flash green. Press the small sync button as shown in Fig.3 on your electronic control unit (2). The LED on this box should quickly flash red, before producing a small clicking noise. The indication LED (Fig.1.B) on your handset should go solid green, and the LED on the electronics control unit (2) change to a slow red flash to indicate the two are paired.

Unless changed, the handset will be in Single Axle mode by default. Where the handset is not in the default mode, press and hold [FL] (Fig.1.E) and [FN] (Fig.1.K) for 5 seconds to select single axle mode. The handset will bleep once to indicate the mode has been set to single axle. Once set, the handset and control box will remember their pairing, and will be fully operational simply by powering on.

Pairing Mode:



Single Axle Mode:



Operation - Handset Pairing / Mode Selection cont.

Twin Axle Mode (only one driven axle)

Ensure batteries are installed into the handset as explained in previous section (Operation - Handset functions). Turn on isolation switch to provide power to the electronic control unit (2), a solid red LED will illuminate. Double press the power button (Fig.1.A) to turn on handset.

On your handset (1), press and hold [ENG] (Fig.1.I) and [DENG] (Fig.1.J) for 1 second to enter pairing mode. The indication LED (Fig.1.B) on your handset should continuously flash green. Press the small sync button as shown in Fig.3 on your electronic control unit (2). The LED on this box should quickly flash red, before producing a small clicking noise. The indication LED (Fig.1.B) on your handset should go solid green, and the LED on the electronics control unit (2) change to a slow red flash to indicate the two are paired.

The handset will be in Single Axle mode by default. To select Twin axle mode, press and hold [RL] (Fig.1.G) and [FN] (Fig.1.K) for 5 seconds. The handset will bleep once to indicate the mode has been set to Twin axle. Once set, the handset and control box will remember their pairing, and will be fully operational simply by powering on.

Pairing Mode:



Twin Axle Mode:



AWD Mode (twin axle, both driven)

To configure your system for AWD mode, the handset (1) must be paired with only the front axle electronic control unit (2). To do this, first ensure that as per section 'Installation - Electrical/Electronic Components (AWD Configuration)' the data cable (4) is correctly connected to the two control units. Ensure batteries are also installed into the handset as explained in previous section (Operation - Handset functions).

Turn on isolation switch to provide power to both control units, a solid red LED will illuminate on each box. Double press the power button (Fig.1.A) to turn on handset.

On your handset (1), press and hold [ENG] (Fig.1.I) and [DENG] (Fig.1.J) for 1 second to enter pairing mode. The indication LED (Fig.1.B) on your handset should continuously flash green. Press the small sync button as shown in Fig.3 on your FRONT axle electronic control unit (2). The LED on this box should quickly flash red, before producing a small clicking noise. The indication LED (Fig.1.B) on your handset should go solid green, and the LED on the electronics control unit (2) change to a slow red flash to indicate it is paired.

The handset will be in Single Axle mode by default. To select AWD mode, press and hold [RL] (Fig.1.G) and [FN] (Fig.1.K) for 5 seconds to firstly select Twin axle mode. The handset will bleep once to indicate the mode has been set to Twin axle. Once again, press and hold [RL] (Fig.1.G) and [FN] (Fig.1.K) for 5 seconds to select AWD mode. The handset will bleep in a short sequence to indicate AWD mode has been set. LED's on both electronics control units (2) should now be slowly flashing to indicate they are synced to one another, and the handset (1).

To test the configuration, ensure the movers are all disengaged with no obstructions, hold [F] (Fig.1.C). All four rollers should rotate. If no rollers rotate, or only one axle rotates, repeat the AWD setup process, starting with a full reset of your handset (1) as explained in the note below.

Operation - Handset Pairing / Mode Selection cont.

Note: For the handset (1) to be paired correctly for AWD, it must have not previously established a connection with either electronic control unit (4). If this is the case, follow the instructions under the *Full Handset Reset* section of this manual. Turn off your isolation key to cut the power to the electronics control boxes (2). Repeat the AWD pairing process as above.

Pairing Mode:



AWD Mode:



Full Handset Reset

There may be scenarios in which you need to cut pairing memory or reset the default settings of your handset. If this is the case, complete a full reset of your handset (1) by holding the power button (Fig.1.A) and [FN] (Fig.1.K) until the handset turns off (around 10 seconds). When your handset is next turned on, the LED will illuminate solid red. Pair your handset as applicable by following the relevant section of this manual, ensuring to select both the mover model and also axle mode.

Full Handset Reset:



Operation - Mover Engagement/Disengagement



Always ensure your caravan handbrake is on before engaging or disengaging the mover system to prevent unwanted movement of the caravan. Only release the handbrake when the movers are securely engaged to the tyres and you are ready to move the caravan.



Automatic Engagement - During transit/installation the engagement motor end block on Auto-Engage movers may rotate causing tightening. Before first use, place the manual engagement tool in the rear of the engagement end block (removing plastic cap) and turn the tool clockwise to ensure it is moving freely, there should be little resistance required to turn the tool.



Warning! When engaging/disengaging, ensure there is nothing obstructing or preventing the movement of the motors. Should the motors stop unexpectedly, check the immediate area for any potential obstructions.

Operation - Mover Engagement/Disengagement cont.

Switch on your isolation key to provide power to your control box. Turn on the handset, a solid green light should indicate that the two are paired, if not, see: Operation - Handset Pairing. For manual engage movers, see the relevant section in the Installation guide. For Auto-Engage Movers:

Engage:

Press and Hold [FN] (Fig.1.K) and [ENG] (Fig.1.I) for 1 second.



Disengage:

Press and Hold [FN] (Fig.1.K) and [DENG] (Fig.1.J) for 1 second.



Cancel engagement/disengagement:

Press [FN] (Fig.1.K).



Note: During disengagement, the mover will retract from the wheel, make contact with the end of its path of travel, and then proceed to move back toward the wheel for 1 second. This is the prevent long term contact of metal components and will reduce ceasing.

In the event of an issue, an engagement tool is supplied that can be used to manually engage/disengage auto-engage mover models. To use this remove the small plastic plug on the rear of the engagement motor and turn the engagement worm manually using the tool.

Operation - Manoeuvring



Caution! Please read the operation safety guidelines closely BEFORE attempting to operate your caravan mover system.

Using Fig.1 and the 'Operation - Handset Functions' section of this manual for reference, familiarise yourself with the handset button layout.

Turn on the Battery Power Isolation Switch. Activate the handset by double-clicking the power button (Fig.1.A). The indication LED (Fig.1.B) on the remote control will illuminate. Engage both rollers as described in the 'Operation - Mover Engagement/Disengagement' section of this manual. Before operating the Mover, release the handbrake.

Proceed to move the vehicle using the various buttons, ensuring at all times to be aware of your surroundings and terrain. In single axle mode, buttons [FR] (Fig.1.D) and [RL] (Fig.1.G) or [FL] (Fig.1.E) and [RR] (Fig.1.F) can be pushed together to use the spin on the spot function. This feature is disabled in twin axle and AWD modes.

Spin on the spot
options:



Operation - Manoeuvring cont.

The mover soft start feature of the motors means that for the first 2.5 seconds, the movers will operate at a lower speed. Note that the general speed can increase a little when going downhill and decrease a little when going uphill. The mover is more efficient when reversing the caravan up an incline.

After manoeuvring, apply the handbrake before disengaging the drive rollers from the tyres. Turn off the system by double-clicking the power button (Fig.1.A) on the remote control. The indication LED (Fig.1.B) on the remote control will turn off. Turn off the Battery Power Isolation Switch to cut power to the electronics control box(es).

Store remote control and isolation key in a safe place (out of reach of children or other unauthorised people).



Some mover models have a regenerative braking feature that allows full directional control to be maintained while moving downhill. This is achieved by feeding energy under braking back from the motors into the battery. Some lithium leisure batteries do not allow this and when an incompatible battery is detected, the feature will be automatically disabled within software to prevent damage. Therefore, when moving down an incline with an unsupported battery, manoeuvring is limited. To ensure the best performance and compatibility on a lithium battery we recommend only using approved batteries.



When manoeuvring is complete, ensure to apply your vehicle hand break prior to disengaging your movers or turning off your electronics unit or handset. Never rely on the movers to act as a break.

Hitching an Unhitching

It is possible to position the caravan's hitch exactly over a stationery car's tow ball using the mover system, however this should be done with caution.

Use the movement buttons on the remote control to bring the caravan to the car. It is better to reach the tow ball with several short "trips" rather than trying to do it in one "trip". When the hitch is right above the tow ball of the vehicle, lower the hitch to the ball and engage in the normal way using the jockey wheel. Hitch the caravan as you would for normal towing. Disengage the movers from the caravan's tyres (see Operation - Mover Engagement/Disengagement).



Do not attempt to tow your vehicle with the Movers engaged! Make sure that both rollers are fully disengaged. Trying to drive away with the mover still engaged, will damage the mover, your caravan tyres and strain your tow vehicle!

Maintenance

To prevent your leisure battery from becoming totally discharged during long periods of inactivity it must be disconnected and recharged before using again.

Please check regularly that the rollers of the drive units are free of any dirt, or debris that may have been picked up during use/during periods of inactivity.

Please check regularly the distance between the rollers and the tyres. In the neutral, fully disengaged position this must be 20mm.

Maintenance cont.

When your caravan is stored for an extended period of time (over winter for example) it is recommended to remove the leisure battery from the caravan. Make sure you keep it charged to ensure it is in good condition the next time you want to use it.

Once a year have your caravan movers maintained and visually inspected. This inspection must include all the bolt/nut connections, the cables and electrical connections and lubrication of movable parts/joints.

It is advised that you regularly check that no wiring connections have come loose across your motor mover system.

Long periods of inactivity generate the potential for elements of the movers to cease. Deal with this accordingly by applying lubrication and removing oxidation where necessary.

DO NOT use any form of pressurised water or chemical cleaning on your caravan movers.



When maintaining your motor mover system, be sure to isolate the electrical supply, failure to do so could result in electrocution.

In case of any failures or problems, please contact your Caravan Mover supplier.

Troubleshooting

Unit fails to operate or moves intermittently. Possible solutions are:

Handset not paired - Your electronic control unit LED will feature a slow constant red flash, and your handset LED a solid Green light to indicate connection. If this is not the case, follow relevant pairing instructions in the 'Operation - Handset pairing / Mode Selection' section of this manual.

Handset not turning on - Handset battery could be depleted. If empty, renew using two new 'AAA' 1.5V batteries.

Caravan battery low/empty - Check that the leisure battery is fully charged using a voltmeter. To operate effectively, the voltage of your battery should be at a minimum of around 12.8V.

Motor cable issue - Check all connections between motor cables and control unit to ensure these have not come loose or detached.

Battery cable issue - Check battery terminals, clean and connect again.

Low signal - before operating the mover ensure that the signal between the control box and handset is good. Your electronic control unit LED will feature a slow constant red flash, and your handset LED a solid Green light to indicate connection. Ensure your aerial (3) is correctly connected and the distance between the handset and control unit is no greater than 5m during use.

Handset modes not correctly set - In certain circumstances, the system will not operate if the correct modes have not been set. Follow the 'Operation - Handset pairing / Mode Selection' section of this manual.

Troubleshooting cont.

Rollers slip on wheels - Check that the disengaged distance of the rollers to the tyres is 20mm on both sides. Check for correct tyre pressure by referring to your caravan manufacturer's handbook. If the pressure is low, the roller would need to be pushed into the tyre further than usual to gain sufficient traction.

Rollers not engaging/disengaging (Auto-Engage Models) - Check the polarity of your engagement wiring (refer to relevant wiring diagrams). If the motor functions but stops short, ensure firstly that nothing is obstructing any given motor. Where necessary, lubricate the mover and framework to prevent ceasing.

Indication LED's

Note Indication LED's on both your handset and electronics control unit(s). The following guide can be used for reference:

Handset:

LED Status	Meaning
OFF	Handset Off or not receiving power.
RED/GREEN Flash	Attempting to pair to a previously established connection.
GREEN Flash	Pairing mode, attempting to establish new connection.
	Signal received, system in Operation.
RED Solid,Flash,Solid (accompanied by alarm)	System error: During set up - Handset has likely been incorrectly set to AWD mode (or data cable not properly connected, if AWD mode was intended) During Use - Refer to System Errors table.
Solid GREEN	On and Paired with control box.
Solid RED	Handset fully reset, all modes set to default

Electronics Control Box:

LED Status	Meaning
OFF	Off or not receiving power.
Solid RED	On, receiving power, awaiting pair.
Fast RED Flash	Pairing mode, attempting to establish new connection.
Slow RED Flash	Paired with handset, awaiting commands.
RED Solid,Flash,Solid (accompanied by alarm from handset)	Refer to System Errors Table.

System Errors

System errors can occur for numerous reasons. If persistent, contact your caravan mover dealer. Use the table below for reference and troubleshooting.

In any given LED indication, errors will be stated in the following way:



All system errors are accompanied by an alarm from the handset, this will clear alongside the flashing after around 8 seconds, or until the error has corrected. Various errors are listed below:

(RED) LED Status	Description	Possible Cause and Action
2 Flashes	Over Current (Motor)	Usually caused by overworking system, avoid excess load or steep slopes, check vehicle brakes are not engaged.
	Over Current (Battery)	
3 Flashes	Under Voltage	Usually caused by a low/flat battery, check voltage.
4 Flashes	Over Voltage	Usually caused by an incompatible battery, or when a charging system is in place whilst operating.
5 Flashes	Over Temperature	Usually caused by prolonged use on a heavy load. - Allow 5 minutes for electronics to cool down. - Break long periods of travel into shorter 'trips'.
6 Flashes	Critical Low Voltage Lockout	Usually caused by a loose or dry connection in wiring or use of an end of life battery. - Ensure system is powered off, Check wiring and terminal condition. - Verify battery condition through proper means (do not rely on internal caravan battery monitor).
8 Flashes	M2 Motor Driver Failure	Triggered when output voltage is not detected: - Possible short circuit on the motor. - Possible controller failure. Cycle power, if problem persists, do not use again and contact dealer for support.
	M3 Motor Driver Failure	
	M2 and M3 Motor Driver Failure	

Contact Information

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Guarantee

Quattro® caravan mover systems are provided with a UK parts only warranty. Any warranty claims must be directed through the place of purchase with a proof of purchase provided. Warranty cover is limited to products within UK mainland only. Within the warranty period, the manufacturer will, at their sole discretion, replace or repair any parts that have failed if deemed to be due to a manufacturing defect.

The manufacturer does not take responsibility for any consequential loss whatsoever.

Upon inspection, components that are missing when checked against the packing contents list must be reported to the place of purchase within 5 working days.

This warranty cover is available only to the original purchaser of the product and is non-transferable.

What is not covered:

- Normal wear and tear.
- Damage that is deemed to be due to customer misuse or neglect.
- The cost of repair following accidental damage, abuse of product or deliberate tampering.
- Warranty is not offered for any type of trade or commercial usage.
- As a result of the recall or modification of all equipment in a model range.
- Force Majeure e.g. Damage caused by extraordinary events or circumstance beyond anyone's control.
- Damage as a consequence of water ingress.
- Carriage or any additional charges incurred including travel or labour.
- Caravan electrics, including fuses, plugs, batteries, wiring connections and looms. Scratches, dents, paintwork and cosmetic trim.
- Damage as a result of incorrect installation and/or disregard to manufacturers fitting instructions.
- Cover will not be given to any part or component which is out of manufacture or no longer available.
- Cover will not be given if the product has been modified in any way.
- Damage occurring as a result of the product being used outside manufacturer's load recommendations.

Product Registration

Please register your Quattro® caravan mover online within 14 days of purchase. Registration is quick and simple, go to www.purpleline.co.uk/product-registration. Please retain your original purchase receipt.

Please fill-in the Serial Numbers + additional information and retain this manual for future reference. The serial numbers can be found on the product label on each of the motor sections. The serial number can be up to 18 digits long. Please make a note of your serial numbers in the section below for future reference. The serial numbers will be required for product registration.

Motor Serial No.	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																				
Date of Purchase																																					
Name of Dealer																																					



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Photographs & diagrams for illustration purposes only. Actual product may differ slightly. All weights & dimensions are approximate. The manufacturer reserves the right to change product specification without prior notice. E & OE.