



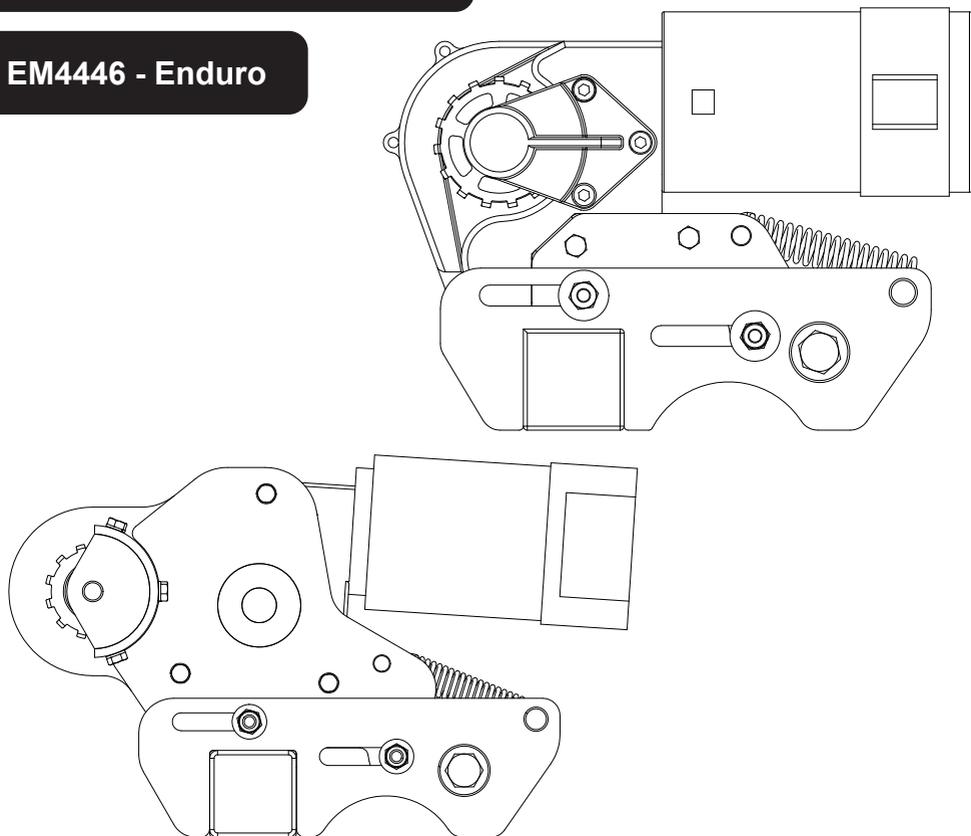
REMOTE CARAVAN MOVER
Installation Guide and
User Information

EN

QTR-M004

EGO400 - Quattro Titanium

EM4446 - Enduro

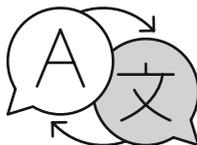


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www.purpleline.co.uk/qtr-m004



- UK** Please visit www.purpleline.co.uk/caravan-movers before installation to check for any updates on product specifications, usage, safety or installation instructions.
- DE** Bitte besuchen Sie www.purpleline.co.uk/caravan-movers VOR Installation auf Aktualisierungen zu Produktspezifikationen, Nutzung, Sicherheit und Einbauvorschriften zu überprüfen.
- NL** Kunt u terecht op www.purpleline.co.uk/caravan-movers vóór de installatie te controleren of er updates over productspecificaties, het gebruik, de veiligheid of de installatie-instructies.
- IT** Si prega di visitare www.purpleline.co.uk/caravan-movers prima dell'installazione per verificare eventuali aggiornamenti sulle specifiche di prodotto, l'uso, la sicurezza o le istruzioni per l'installazione.
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Document Control

Original Instructions

Manual Reference: QTR-M004

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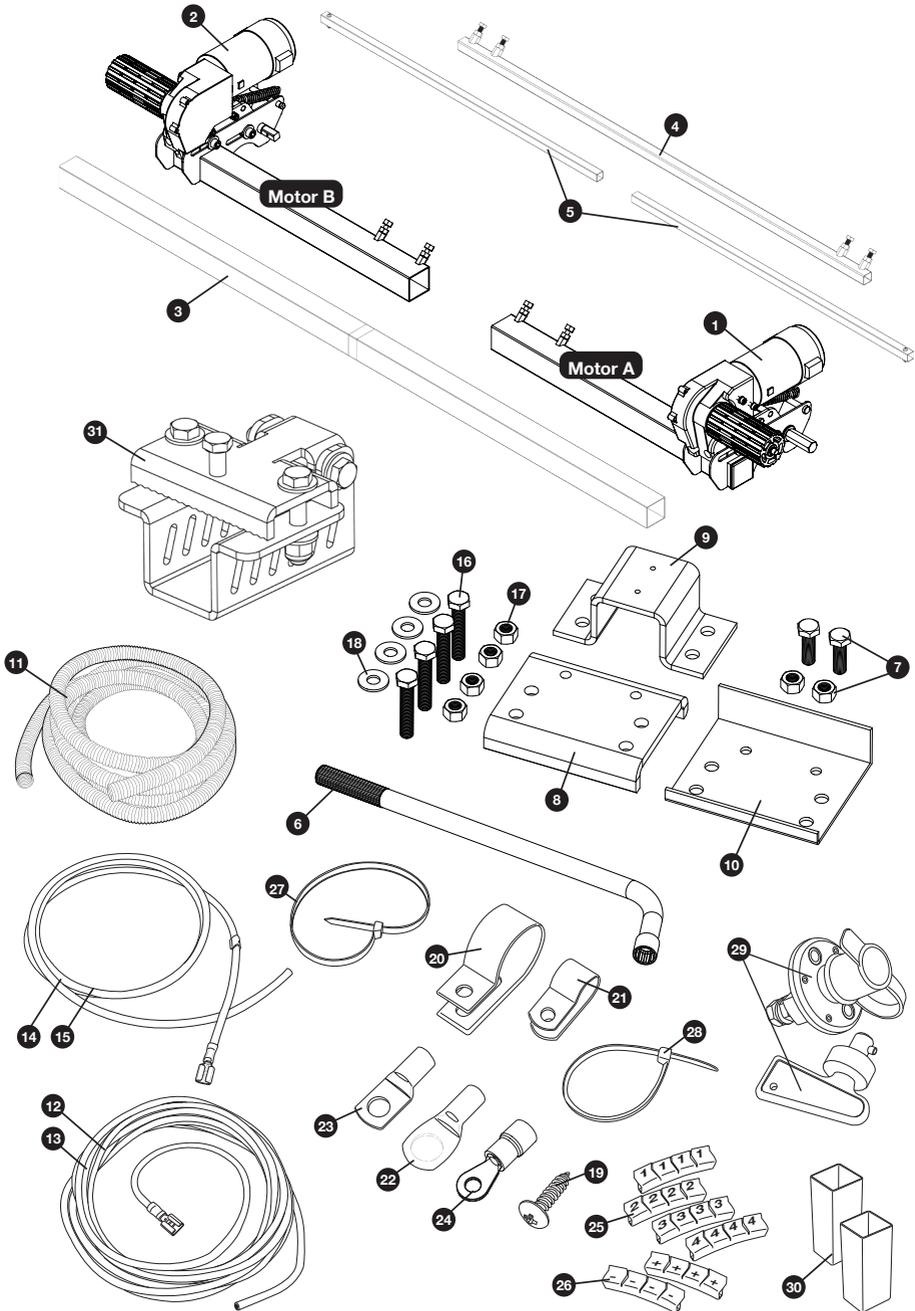
Package Contents (Fig.A)

REF	QTY	DESCRIPTION
1	1	Motor Unit (A)
2	1	Motor Unit (B)
3	1	Main Cross Bar
4	1	Cross Actuation Centre Bar
5	2	Cross Actuation Insert Bars
6	1	Engagement Tool
7	4	Classic Clamp - Stop Nut and Bolt*
8	2	Classic Clamp - Upper Plate*
9	2	Classic Clamp - U Plate*
10	2	Classic Clamp - Lower Plate*
11	1	Convoluted Cable Trunking
12	2	Positive (+) Red Motor Wire
13	2	Negative (-) Black Motor Wire
14	1	Positive (+) Red Battery Wire
15	1	Negative (-) Black Battery Wire
16	8	Classic Clamp - M10x55mm Bolt
17	8	Classic Clamp - M10 Nyloc Nut
18	8	Classic Clamp - Ø10mm Washer
19	20	M4x15mm P-Clip Screw
20	10	Cable P-Clips 19.2mm
21	10	Cable P-Clips 10.4mm
22	4	Battery Terminal Connector Ø8mm
23	4	Terminal Ring Connector Ø6mm
24	4	Terminal Ring Connector Ø4mm
25	3	Cable Number Markers (1,2,3,4)
26	3	Cable Polarity Markers (+,-)
27	4	Motor Unit Cable Ties 8x400
28	10	Cable Ties 2x70
29	1	Power Isolation Switch (inc. Key and Fixings)
30	2	20mm Roller Distance Spacers
31	2	Shark Clamp Mounting System*



*Depending on model, either Classic Clamp or Shark Clamp will be supplied.

Fig.A



Technical Reference Diagrams

Fig.1

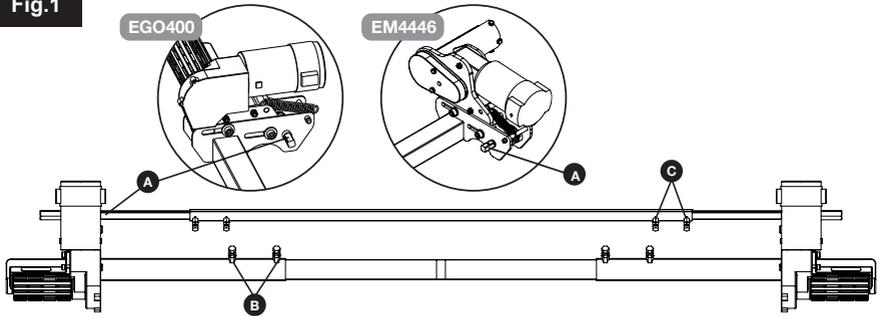
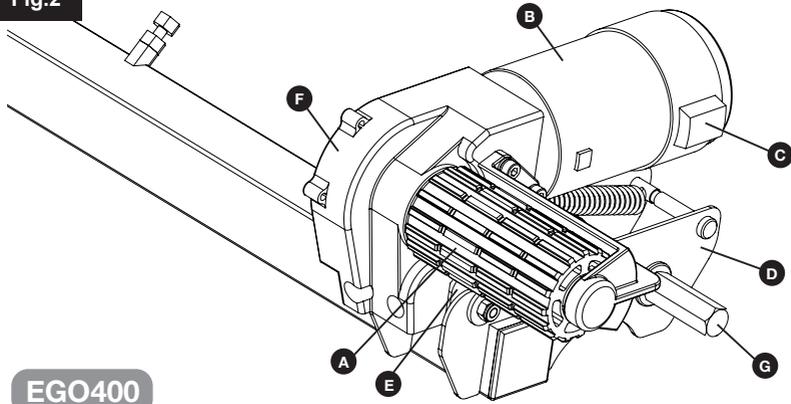
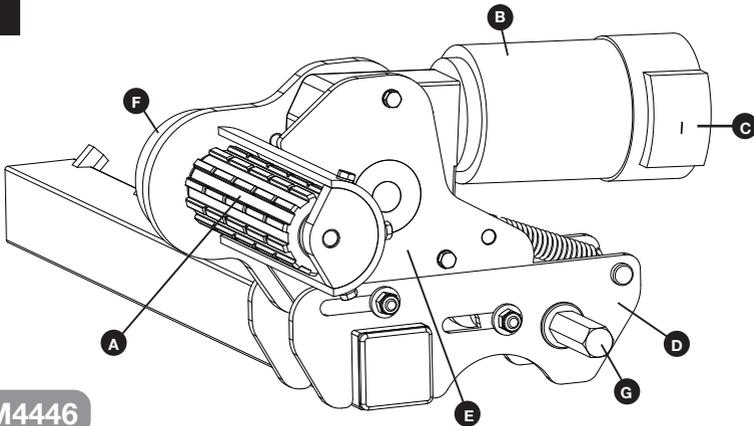


Fig.2



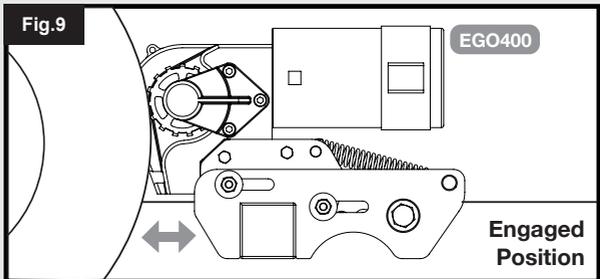
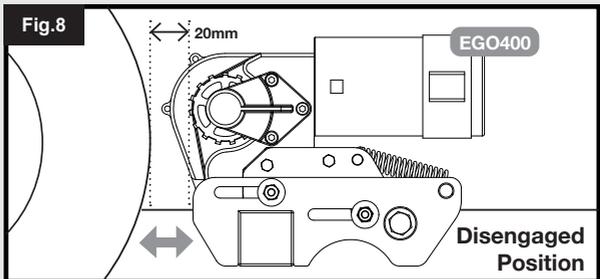
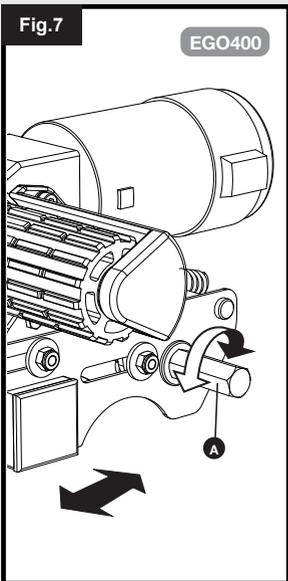
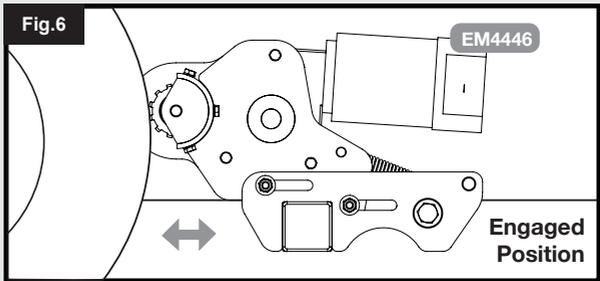
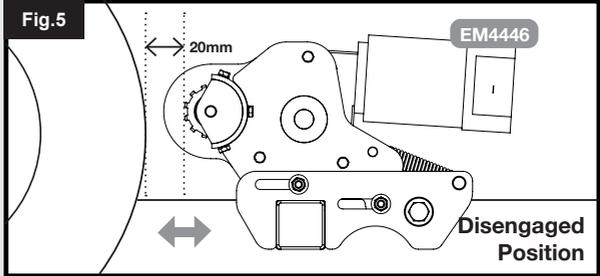
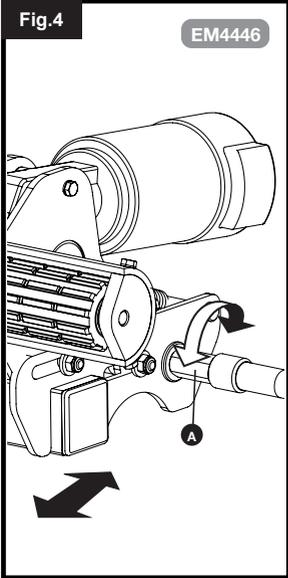
EGO400

Fig.3



EM4446

Technical Reference Diagrams



Technical Reference Diagrams

Fig.10

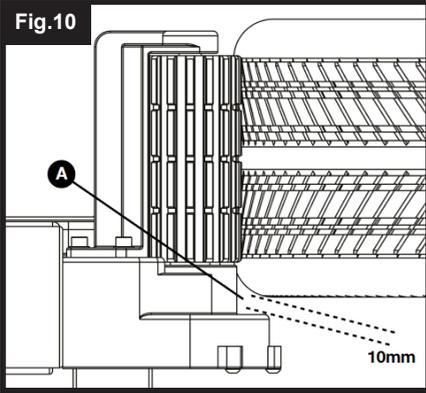


Fig.11

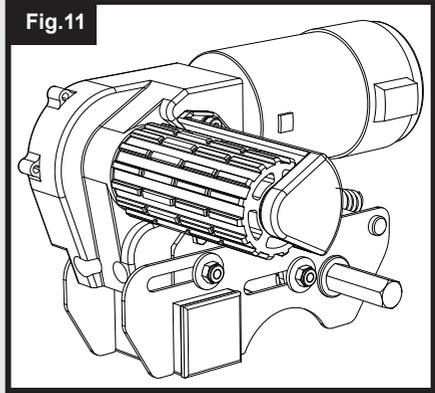


Fig.12

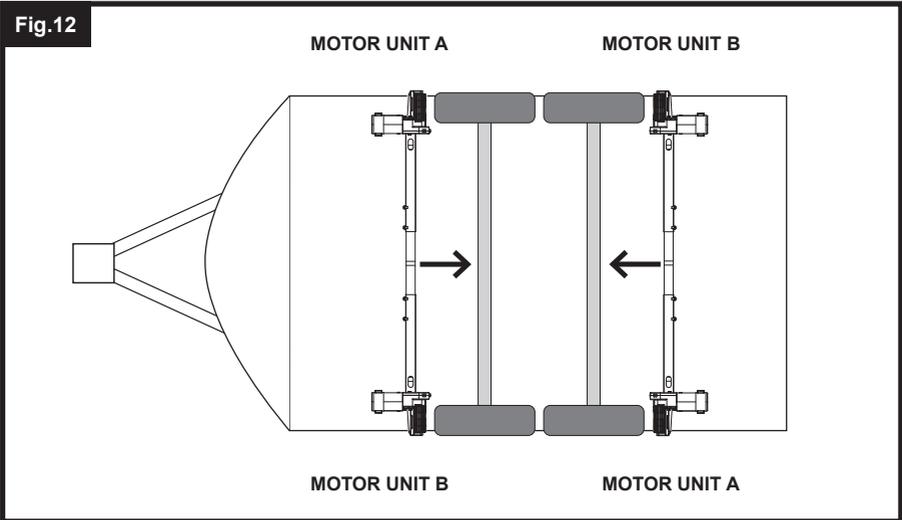
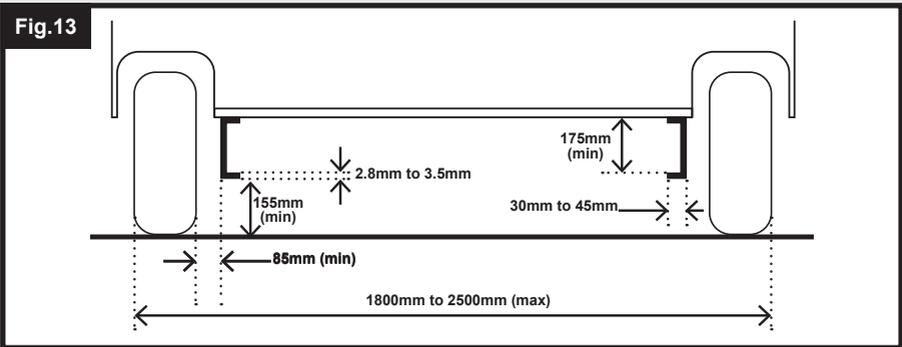
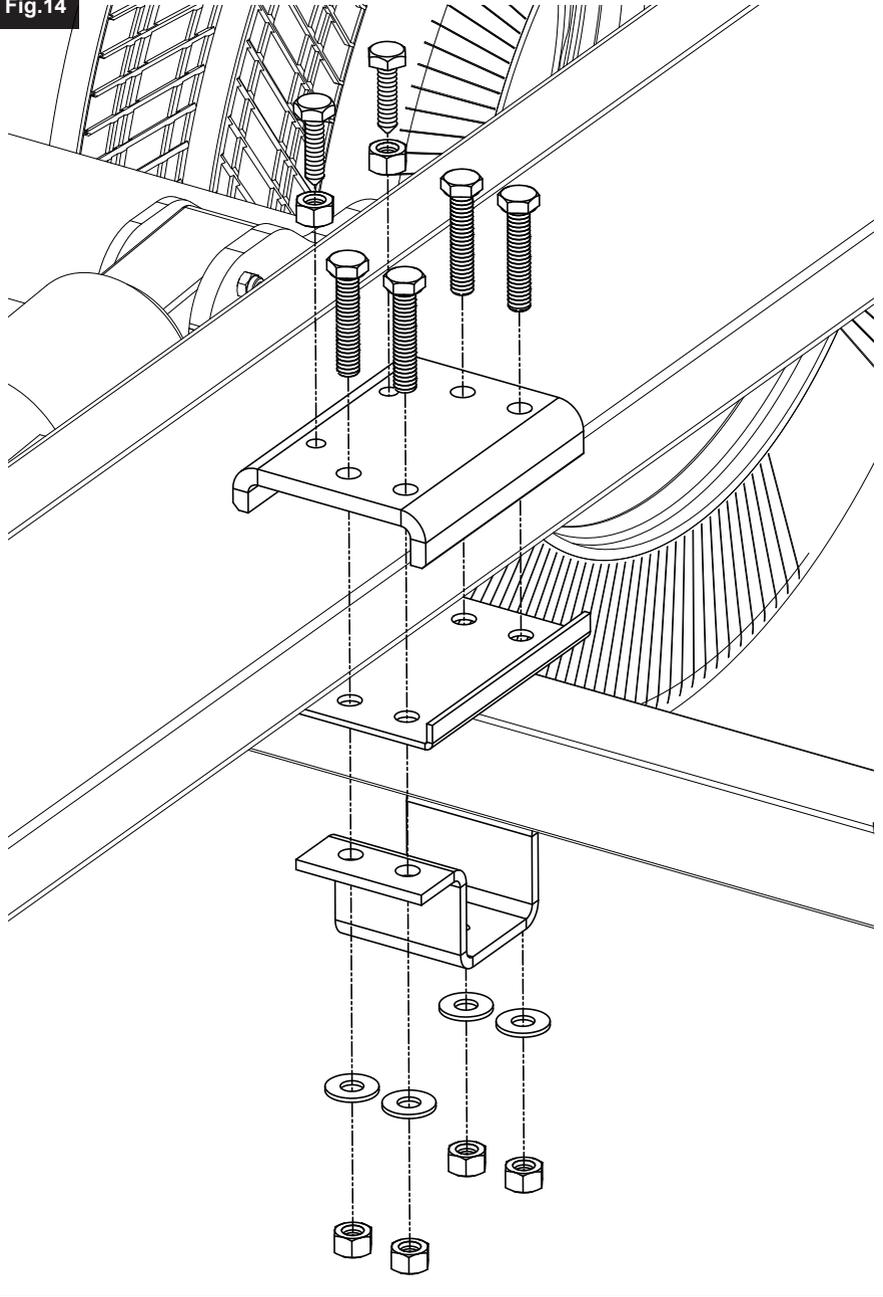


Fig.13



Technical Reference Diagrams

Fig.14



Introduction

Thank you for choosing this caravan mover. 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 proceeding 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 installation manual covers two models of Caravan Mover: EM4446 - Enduro and EGO400 - Quattro Titanium. Any differences between the models are detailed where appropriate. The mover system consists of two 12V motor-powered rollers, a 12V electronic control box and a remote control. To function, the motor-powered rollers must be engaged against the tyres of your caravan. The cross actuation system enables you to simultaneously engage the rollers of both movers. Once this is done the mover is ready for operation. The remote control will allow you to move your caravan in any direction.

Fitting Guidelines

The chassis clamps provided with this system are suitable for fitting onto most standard caravan chassis that have an L-shape or U-shape profile (Fig.11). Please refer to Fig.13 for reference on dimensions and clearances BEFORE you proceed any further with installation. If your chassis has different dimensions to those shown in Fig.13 then various chassis clamp adapters are available to suit the majority of UK and Continental caravans; please refer to the section of this manual entitled 'Optional Fitting Adapters'.

Specification

Model Number	EGO400	EM4446
Operational Voltage	12 Volt DC	12 Volt DC
Average Current Consumption *	25 Ampere (approx)	25 Ampere (approx)
Maximum Current Consumption †	76 Ampere (approx)	76 Ampere (approx)
Speed	12cm per sec. (approx)	9cm per sec. (approx)
Approx. Net Weight (inc. all fixings & accessories)	35 Kg	40 Kg
Safe Working Load (SWL) Twin Motor/Quad Motor	2250Kg/3500Kg	2250Kg/3500Kg
Minimum Width (caravan/trailer)	1800mm	1800mm
Maximum Width (caravan/trailer)	2500mm	2500mm
Power Source (caravan leisure battery)	12V	12V

* Average Current Consumption readings when using an approx. 1100Kg single axle caravan on a hard, level surface.

† Maximum Current Consumption readings when using an approx. 1100Kg single axle caravan ascending a 1:4 (25%) gradient.

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.



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 - Mechanical Components

To begin mechanical installation, ensure that your caravan is placed on a hard, level surface. Where possible the use of a lifting ramp or an assembly pit is ideal for access and personal safety.

Make sure your caravan is prepared for installation. Clean the relevant mounting areas of your chassis to ensure a secure fitting of the mover system. Check before installation that important areas, such as drains, spare tyres etc. do not cause any obstruction to the installation of the mover system and its intended functionality.

Unpack all of the components and check that all parts are present (see Package Contents Fig.A). The installation instructions will continue to reference the part numbers displayed in Fig.A. Prior to and throughout the installation, ensure that the movers remain in the DISENGAGED position (see Fig.5 or Fig.8), as the unit will not fit correctly otherwise.

Installation - Classic Clamp System

Loosely assemble motor framework side (1), motor framework side (2) and main cross bar (3) (see Fig.1). The nuts (Fig.1.B) for cross bar fixing must be no more than finger-tight at this stage. Assemble the cross actuation bar by sliding the actuation bars (5) into the actuation centre bar (4) and mount to the motor assembly rods (Fig.1.A). Fix the actuation bars to these rods using the provided nyloc nut and bolt (pre attached to actuation bars). The nuts (Fig.1.C) for fixing must be no more than fingertight at this stage.

Place the assembly (Fig.1) loosely under the caravan. In principle, the unit should be fitted in front of the caravan road wheels, but if fitting in this position is not possible, it is permissible to fit it to the rear of the wheels by rotating the whole assembly by 180° degrees (note: in this scenario, refer to the rear axle schematic when wiring up your system). Ensure that the Main Cross Bar (3) is positioned in the centre of the caravan/mover assembly (the centre is marked). Adjust the lateral position of each motorside so that the rollers are central to the tyre, or as close to the centre as possible, ensuring 10mm of space is left between the tyre and gearbox of the mover (Fig.10)

Study Fig.14. On one side of the vehicle, elevate the framework assembly and loosely fit the clamping assembly to the framework and chassis as per Fig.14. Provided clamp fixings (7,16,17,18) must be no more than finger-tight at this stage. Once self supported via the loose fixings, proceed to repeat the process on the other side of the vehicle.



Take due care when elevating and fixing the framework and clamps. Use lifting aids and/or a second persons when lifting/fitting.

With the main assembly loosely fitted onto the chassis, slide the whole assembly along the chassis until the rollers (Fig.2.A or Fig.3.A) are 20mm away from the surface of the each tyre (see Fig.5 or Fig.8). Two 20mm spacers (30) are provided to set this distance. Note that the movers should be in the disengaged position when the 20mm spacing is set. When setting the spacing, ensure that the rollers on both movers are centrally in line with the vehicle tyres both horizontally and vertically, to allow for the best possible wheel contact (see Fig.10 for reference). If the roller widths exceed that of the tyre, ensure that the end of the roller is aligned with the outer wall of the tyre. Overhang on the inside wall of the tyre is acceptable on thinner tyres, and should not drastically affect function or grip.



It is important that each roller is at exactly the same distance away from the tyre. The whole assembly must be parallel to the caravan/trailer axle for the system to operate as intended.

Installation - Classic Clamp System cont.

Once satisfied with mover spacing, fully tighten the four nyloc nuts (17) on both clamping assemblies (Fig.14) to a torque setting of 40 ft lbs/55Nm, then the bolts (Fig.1.B and Fig.1.C) on each motor side framework to a torque setting of 9ft lbs/12Nm. Re-check the distance of 20mm from the rollers to the tyres and if necessary, loosen the bolts and re-adjust the position of the assembly. Once satisfied with the position of the assembly, fit and tighten the Chassis Stop Nuts & Bolts (7) in each of the Classic Clamp Upper Plates (8) (see Fig.14). Tighten to a torque setting of 40 ft lbs/55Nm. The Stop Bolts grip the lip of the chassis and help prevent the mover from sliding along the chassis.

The main mechanical components have now been installed.

Installation - Shark Clamp System

Loosely assemble the main cross bar (3) inside motor framework side (1) and motor framework side (2) (see Fig.1). The nuts/bolts (Fig.1.B) on the motor frameworks, must be no more than finger-tight at this stage. Assemble the cross actuation bar by sliding the actuation bars (5) into the actuation centre bar (4) and mount to the motor assembly rods (Fig.1.A). Fix the actuation bars to these rods using the provided nyloc nut and bolt (pre attached to actuation bars). The nuts (Fig.1.C) for fixing must be no more than fingertight at this stage.

Place the assembly (Fig.1) loosely under the caravan. In principle, the unit should be fitted in front of the caravan road wheels, but if fitting in this position is not possible, it is permissible to fit it to the rear of the wheels by rotating the whole assembly by 180° degrees.

Typically the Shark Clamp will be pre-assembled onto the motorsides for ease of fitting, but if the clamps have been purchased separately or are not pre-assembled, they should be assembled onto the framework as shown in (Fig.15). Before attempting to install the mover onto your caravan chassis ensure that the pinch bolts (Fig.16.B) are removed and put safely to the side.

In turn, open each jaw to its widest position (loosen nuts if required) and hang the motorside framework onto the chassis. If the caravan chassis is a tall U profile, the nuts (Fig.16.B) may need to be removed first to allow the jaws to be opened wide enough.

Loosen the crossbar nuts/bolts (Fig.1B) and adjust the lateral position of each motorside so that the rollers are central to the tyre, or as close to the centre as possible, ensuring 10mm of space is left between the tyre and gearbox of the mover (Fig.10). After adjusting ensure the clamps haven't moved out of position by holding the framework motorside firmly, while reaching round and pushing the clamps outwards until the fastening bolts and chassis are within 1-2mm of each other. Once happy with the overall width of the mover system, tighten crossbar nuts/bolts (Fig.1.B and Fig.1.C) to 9ft lbs/12Nm to set the width.

Slide the whole assembly along the chassis until the rollers (Fig.2.A or Fig.3.A) are 20mm away from the surface of the centre each tyre (Fig.5 or Fig.8). Two 20mm spacers (30) are provided. Fully tighten the clamp bolts (Fig.16.A) on both clamping assemblies to a torque setting of 40 ft lbs/55Nm. When tightening one clamp bolt, the other may loosen slightly so it may take several passes to get both bolts fully torqued on each clamp. A tip is to do all clamp bolts up until there is a strong resistance before torquing fully.



It is important that each roller is at exactly the same distance away from the tyre. The whole assembly must be parallel to the caravan/trailer axle for the system to operate as intended.

Installation - Shark Clamp System cont.

Insert pinch bolt (Fig.16.B) and tighten to a torque setting of 18 ft lbs/25Nm, ensuring while doing this, that the retaining nut is at the highest position. Once the bolt is secure, tighten the retaining nut. Finally tighten the pivot bolt (Fig.16.C) to 9ft lbs/12Nm.

The main mechanical components have now been installed.

Installation - Mechanical Components (AWD Configuration)

To install an All Wheel Drive configuration on your caravan, follow the same instructions outlined in the previous 'Installation - Mechanical Components' sections. AWD set up follows the exact same process, with the only difference being the orientation of the movers. In an AWD configuration, the movers powering the rear axle of the vehicle must be orientated facing the front of the trailer (see Fig.12).

Ensure to follow the AWD configuration section of the Electrical/Electronic installation manual closely to ensure that these motor assemblies work as intended and not against one another.

Mover Engagement/Disengagement

With the EM4446 Enduro and EGO400 Titanium mover models, the process of engaging is a manual one. To engage your motors, place the engagement tool (6) onto the motor spindle (Fig.2.G or Fig.3.G) parallel to the ground at a position facing away from the wheel in question. To engage the motor, rotate the engagement tool through 180deg rotating toward the wheel in question (see Fig.4 or Fig.7). If you cross actuation bars have been mounted correctly, the process of engaging one mover, should subsequently also engage the opposite side of the vehicle.

The engagement mechanism utilises a simple over-centre cam that pushes the rollers onto the tyres and then locks into place automatically. If the mover has been installed correctly, at exactly 20mm away from the tyres when disengaged, the amount of force provided onto the tyre by the roller will be sufficient for most circumstances of use (Fig.6 or Fig.9).

Note: Irrespective of which side of the vehicle you are operating the engagement from, the tool should always rotate toward the wheel to engage, and away from the wheel to disengage.

To disengage the rollers, simply refit the tool onto one of the spindles and rotate away from the tyre. Please note that you will feel a small amount of resistance initially as you disengage the cam from its locked position; the spring will then do the rest of the work and pull the roller away from the tyre and into the fully disengaged position (Fig.5 or Fig.8).

Installation - Electrical/Electronic Components

Please refer to manual supplied with electronics for wiring installation, operation instructions and troubleshooting, or visit www.purpleline.co.uk/qtr-m003

Guarantee

Quattro® caravan mover systems are provided with a UK parts only warranty for a period of 7-years (EGO400 Quattro Titanium) and 5-years (EM4446 Enduro) which includes the first 12 months statutory, plus an additional extended warranty period of 6 and 4 years respectively. Please note that the extended warranty periods are only offered if Product Registration is completed and returned within 14 days from the date of purchase. 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 five year 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.

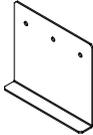
This warranty cover is available only to the original purchaser of the product and is non-transferable.

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.

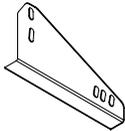
Optional Fitting Adapters

Additional chassis clamp adapters shown below are available for purchase:



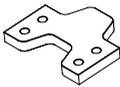
Low Profile Chassis Adapter Plates (Part No. CM-029)

If your chassis frame height is less than 140mm these plates must be fitted to lower the assembly to provide the correct height of 185mm. Drilling of your chassis may be required. Note: In some countries, the installation must be checked by a professional technician in order to adhere to local regulations.



Narrow Gauge Chassis Adapters (Part No. CM-030)

These plates must be utilised if you have an AL-KO Vario III/AV chassis which has a frame thickness of less than 2.8mm. These must be positioned behind the axle using pre-drilled holes already available on the chassis; so your mover must be fitted behind the axle.



16mm Spacers - 1 pair (Part No. CM-028/Q)

Use spacers to lower the mover assembly if your chassis has a frame height of between 140 to 185mm. A maximum of 3 sets of spacers can be utilised to achieve correct frame height of 185mm. A set of extended clamp bolts must be used in conjunction with these spacers (Part No. CM-031).

[For use with Classic Clamp only.]



Set of 8 M10 x 100 Bolts (Part No. CM-031)

Set of 8 extended clamp bolts for use with 16mm spacers.

[For use with Classic Clamp only.]



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