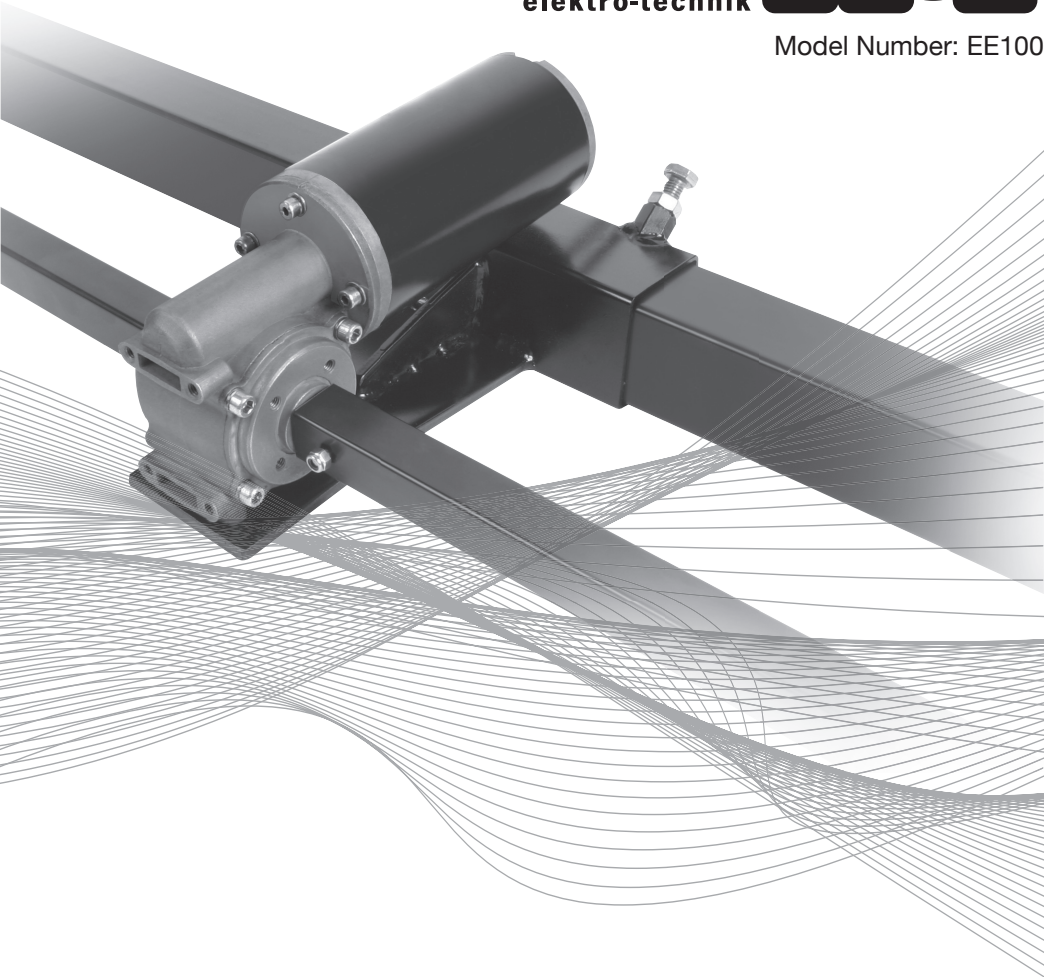




elektro-technik

Model Number: EE100



AUTOMATIC ENGAGEMENT KIT

Installation guide and user information

UK

Ref: EE100-UM-0411-Rev.A.

Diagrams

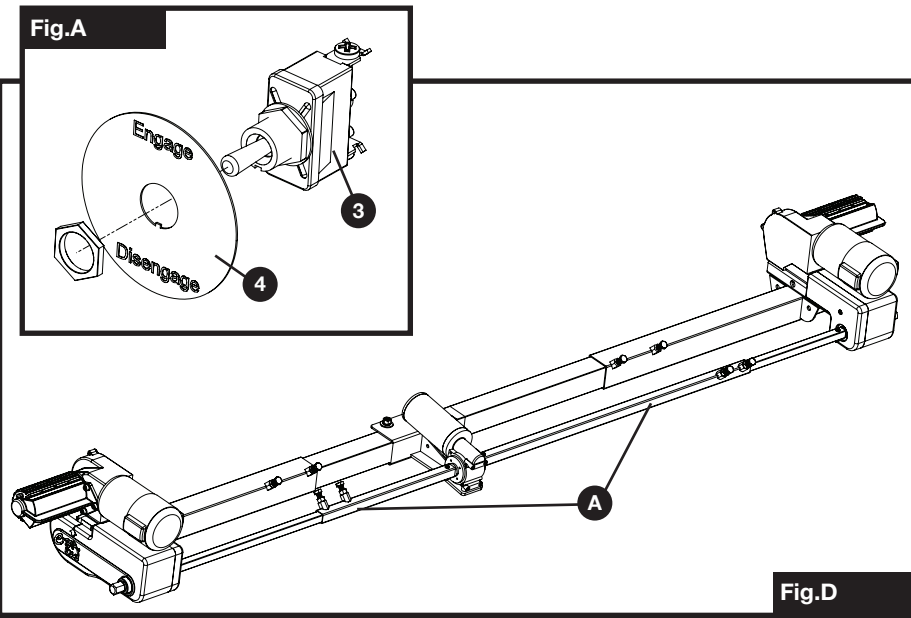
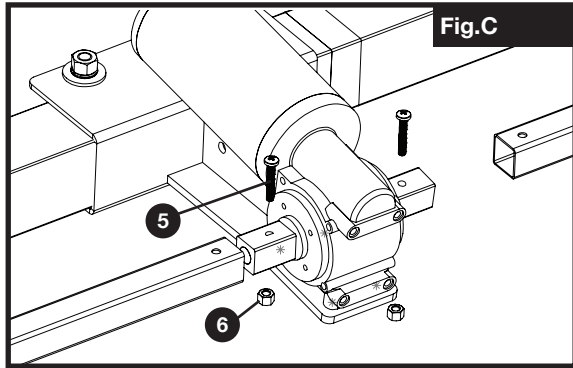
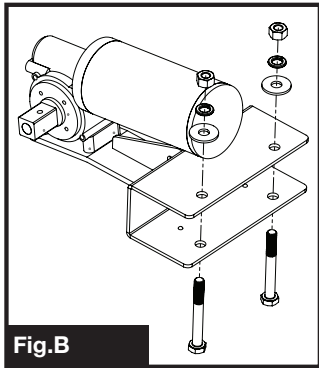
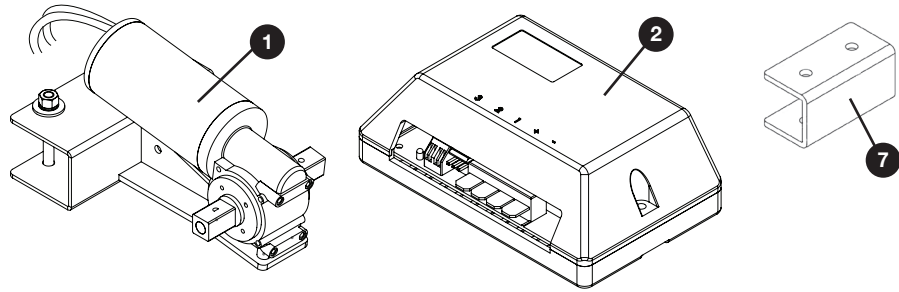
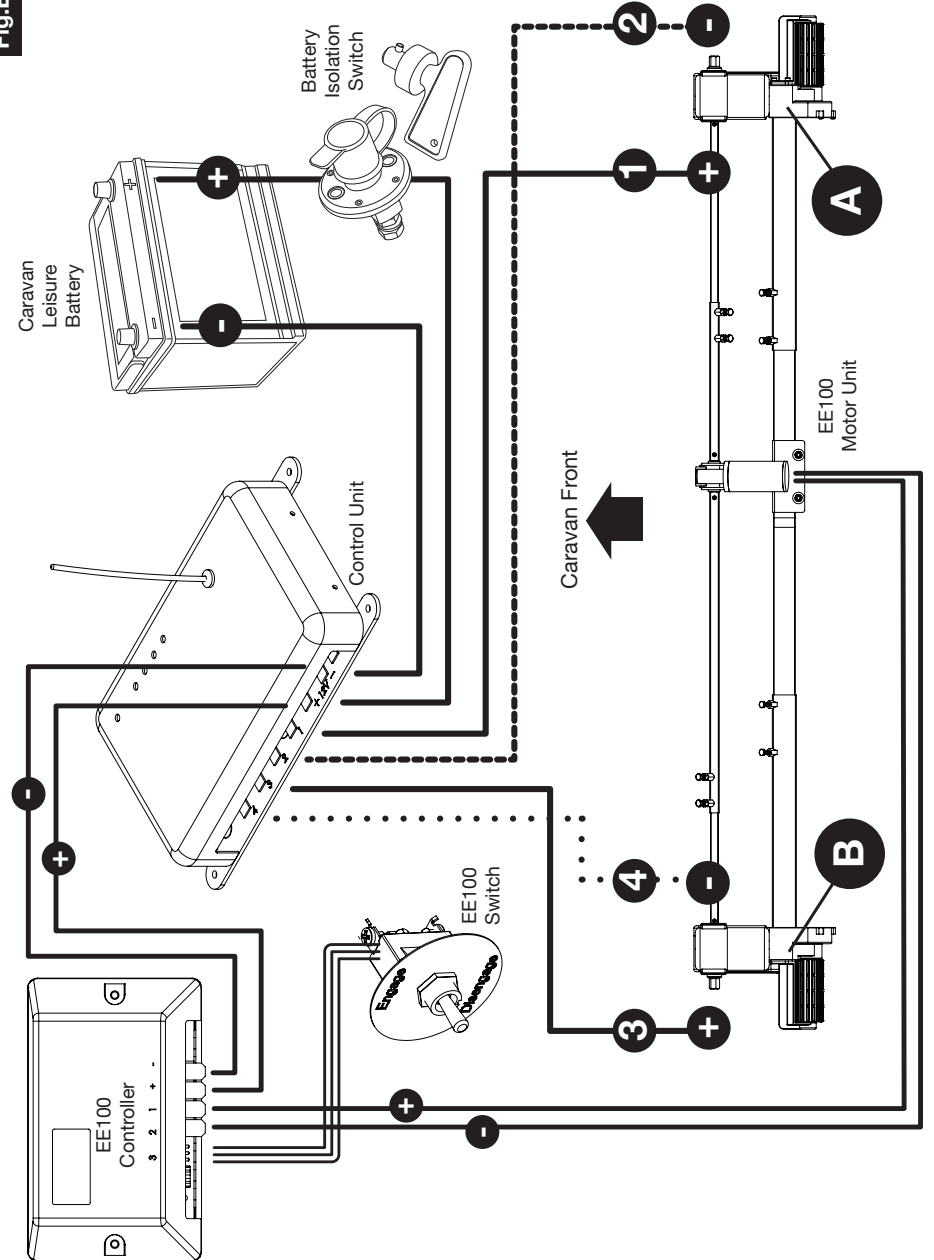


Fig.E



Introduction

The EE100 has been designed to be an upgrade to your Ego mover to enable the automatic engagement and disengagement of the traction rollers onto the caravan's tyres.

The EE100 has been designed to simply bolt onto the existing main cross bar of the Ego mover.

Installation Safety Guidelines



Important Safety Instructions

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



These symbols identify important safety precautions.



They mean **CAUTION! WARNING!**
SAFETY FIRST! IMPORTANT INFORMATION!

Before starting installation under the caravan:

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 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.

ALWAYS consult the main User Manual supplied with your Ego mover to ensure correct and safe operation.

Specifications

Specifications	
Designation	Ego Automatic Engagement System No. EE100
Operational Voltage	12 Volt DC
Average Current Consumption	27.5 Ampere (approx)
Interior Input Power/Output Power	330 Watts/125 Watts
Weight	4Kg (approx)
Torque	3.53Nm
Speed	338 r/min
Power Source (caravan leisure battery)	12V 110Ah (recommended) 12V 85Ah (minimum)

Package Contents

Ref	Qty	Description
1	1	Engagement Motor & Bracket inc. motor cables (2 x 5.2m)
2	1	Controller
3	1	On/Off Toggle Switch inc. switch cable with terminal block
4	1	On/Off Toggle Switchplate
5	2	M4 30mm Bolt for Cross Actuation Bar
6	2	M4 nut for Cross Actuation Bar
7	2	M8 x 65mm Bracket Bolt
8	2	M8 Bracket Nut
9	2	M8 Bracket Spring Washer
10	2	M8 Bracket Washer
11	1	Red (+) Power Cable for Controller (0.3m)
12	2	Black (-) Power Cable for Controller (0.3m)
13	4	Terminal Connectors

Installation - Mechanical



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



Working under a vehicle without appropriate support is extremely dangerous.

Place the caravan on a hard, level surface. The use of a lifting ramp or an assembly pit is ideal for access and personal safety.

Unpack all the components and check for the presence of all parts (see Package Contents List).

Make sure the caravan is prepared for installation. Check before installation that important areas, such as drains/spare tyre etc. do not cause any obstruction to the function of the mover after installation of the EE100 system.

If you are conducting this installation as an upgrade it is first necessary to disconnect the cross actuation bar from the Ego mover assembly.

Once this has been done, locate the motor and bracket assembly (1) onto the middle section of the main cross bar in a position that is away from any obstructions such as pipes, vents or the handbrake mechanism. The usual location will be just off-centre.

Once satisfied with the location, the bracket is attached to the cross bar using the supplied M8 65mm bolts, spring washers, washers and nylock nuts (7,8,9 & 10). Assemble together as shown in Fig.B. Tighten to a torque setting of 25Nm.

Now we need to re-use the original cross-actuation bar (part ref. E and D x 2 in your main Ego User Manual). The centre section of the cross actuation bar needs to be cut into 2 pieces. This can be done using a standard hack-saw or similar metal saw.

First, measure the distances between the inside edge of one of the motor units up to the corresponding square spindle on the engagement motor unit (1) and repeat the measurement for the other side. This will give an indication of where you will need to cut the bar. The cross actuation bar assembly will still operate as before so that it provides telescopic width adjustment, so there is a margin for adjustment. *Note: if the engagement motor has to be fitted very off-centre then it may be necessary to also cut one of the Cross Actuation Bar extensions.*

Installation - Mechanical

For reference, before cutting the centre bar, you must ensure that the narrower square tube extensions (D) slide into the centre sections by at least 100mm to ensure they are held securely by both 45° angled securing bolts and locking nuts on the bars.

Once satisfied with where the cut needs to be, proceed with cutting the centre bar.



Please note that cutting your existing cross actuation bar will not affect the standard warranty.



To ensure safe installation, it will be necessary to file off any sharp edges after the cut.

A hole needs to be drilled into the end of each centre section bar which will correspond with the holes on the square spindles that protrude from the engagement motor shaft (1). These holes need to be 5mm in diameter using a suitable HSS or similar drill bit suitable for use with metal.



Please observe caution when drilling to avoid personal injury.

A template (7) is provided to enable you to easily mark the holes in from the end of each cut bar. Position the template against the end of each bar, you can either mark the hole, remove the template and drill or secure the template in place using some form of clamp.



Note: Drill only through one side of the square tube at this stage.

Once you have drilled one side you can then offer up the bar onto the motor's shaft and line up the drilled hole. Once this is aligned you can drill through to the other side of the bar, using the shaft spindle as a guide to ensure the holes are perfectly aligned and not drilled at an angle.

Once the holes have been drilled on both sections of the centre bar, they can be secured into place using the supplied M4 nuts and bolts (5 & 6).

The extension ends of the bars can be refitted using the original nuts and bolts to the Ego motor assemblies and then the four bolts and locking nuts on the bars can be tightened.

Installation of the mechanical components is now complete.

Installation - Electrical/Electronic Components

The engagement motor is supplied pre-wired with red (positive) and black (negative) cables that are approx. 5.2 metres in length. These cables should be installed in the same manner as the existing motor cables that are fitted to the Ego motor assemblies.

To ease installation, the cables should follow the same route as the existing cables where possible. The cables can be secured along the cross bar by use of cable ties. The cables need to be routed through or close to the aperture in the floor of the caravan that is already utilised for the Ego motor unit cables.

Once the Engagement Motor (1) cables are secured and enter the caravan through the same (or close by) aperture as the existing Ego cabling, they will be in the correct proximity to connect to the Controller.

The Controller unit (2) should be installed either next to, or on top of the existing main Ego Control Unit. The use of double-sided hook and loop tape could be utilised to attach the Controller to the top of the Ego Control Unit as it provides a secure non-permanent installation or the Controller can be screwed into the floor of the caravan.

Cut the cables from the engagement motor to an appropriate length and remove approx. 5 mm of the insulation from the ends. Fix the spade connectors by using crimping pliers. A secure and good quality connection on each cable is essential.

Connect the red cable (+) to terminal 1 on the Controller and the black cable (-) to terminal 2 on the Controller (refer to Fig.E).

The cables that provide power to the Controller need to have the smaller terminal spade connectors fitted to one end. These cables will need to share the positive (+) and Negative (-) terminals of the main Control Unit, so if you are installing the EE100 as an upgrade, you will need to cut the spade terminals off the ends of the Ego mover's battery cables and refit new ones (supplied) that also include the smaller gauge power cables for the Controller.

Attach the combined battery and power cables onto the positive and negative terminals of the main Control Unit and the other ends to the positive and negative terminals on the Controller.



Caution! Make sure that you do not reverse the Positive (+) and Negative (-) connections. Incorrect connection (reverse polarity) will result in damage to the electronic components.

Installation - Electrical/Electronic Components

Now the On/Off Switch (3) needs to be installed. Ideally, this should be installed close to the Ego mover's Power Isolation Switch which is often installed within the battery compartment. Choose the location for the switch carefully to ensure that it will not obstruct any other connections/sockets such as the mains power hook-up.

To install the switch a 12mm diameter hole needs to be carefully drilled through the wall of the battery compartment (if that is the chosen location). Once drilled, fit the switch through the hole, fit the Switch Plate (4) over the threaded shaft of the switch and secure into place with the narrow depth nut (refer to Fig.A). The Switch Plate only fits onto the shaft of the switch in one position as it has a tongue that fits into a notch to ensure the correct orientation of the Switch Plate; this also inhibits rotation.

The pre-wired 3-core cable from the switch needs to be routed back to the Controller and should be secured using suitable p-clips or similar.

Attach the switch terminal block onto the Controller terminal 3; this only fits in one way.

Because the battery cables had to be removed from the main Control Unit during installation it may be necessary to 'pair' the Handset with the Control Unit again. Please refer to the main Ego User Manual for instructions on 'pairing/resetting'.

The EE100 Automatic Engagement System is now installed.

Operating the Automatic Engagement System

First switch on the system by turning on the Power Isolation Switch. A red LED will illuminate on the Controller.

To engage the traction rollers, move the On/Off Switch to the Engage position (lift switch up), the switch is spring-loaded and will return to the centre position on release. The Automatic Engagement System will now begin to operate and will automatically stop when the rollers have achieved the correct pressure onto the caravan's tyres.

You may now operate your Ego mover by double pressing the power switch on the handset.

After you have finished your manoeuvring, you need to push the On/Off Switch

Operating the Automatic Engagement System

down to the Disengagement position and the rollers will automatically retract. Once fully retracted the system will change rotation briefly so that the engagement gear mechanism is not left under any strain whilst not in use.

Once the operation has been completed, turn the Power Isolation Switch off.

Installation for a Four Motor Quattro® System

The EE100 can be utilised to automatically engage two sets of motors when installing a full four-motor Quattro® system on a twin-axle caravan.

For this installation an additional EE100 will need to be purchased and installed in an identical fashion apart from the On/Off Switch wiring. It is only necessary to use one On/Off Switch to operate both EE100 Controllers. The 3-core cable that is attached to the switch must be removed and then both 3-core cables connected to one switch.

In this way, only one switch has to be used to control both EE100 systems.

Notes

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